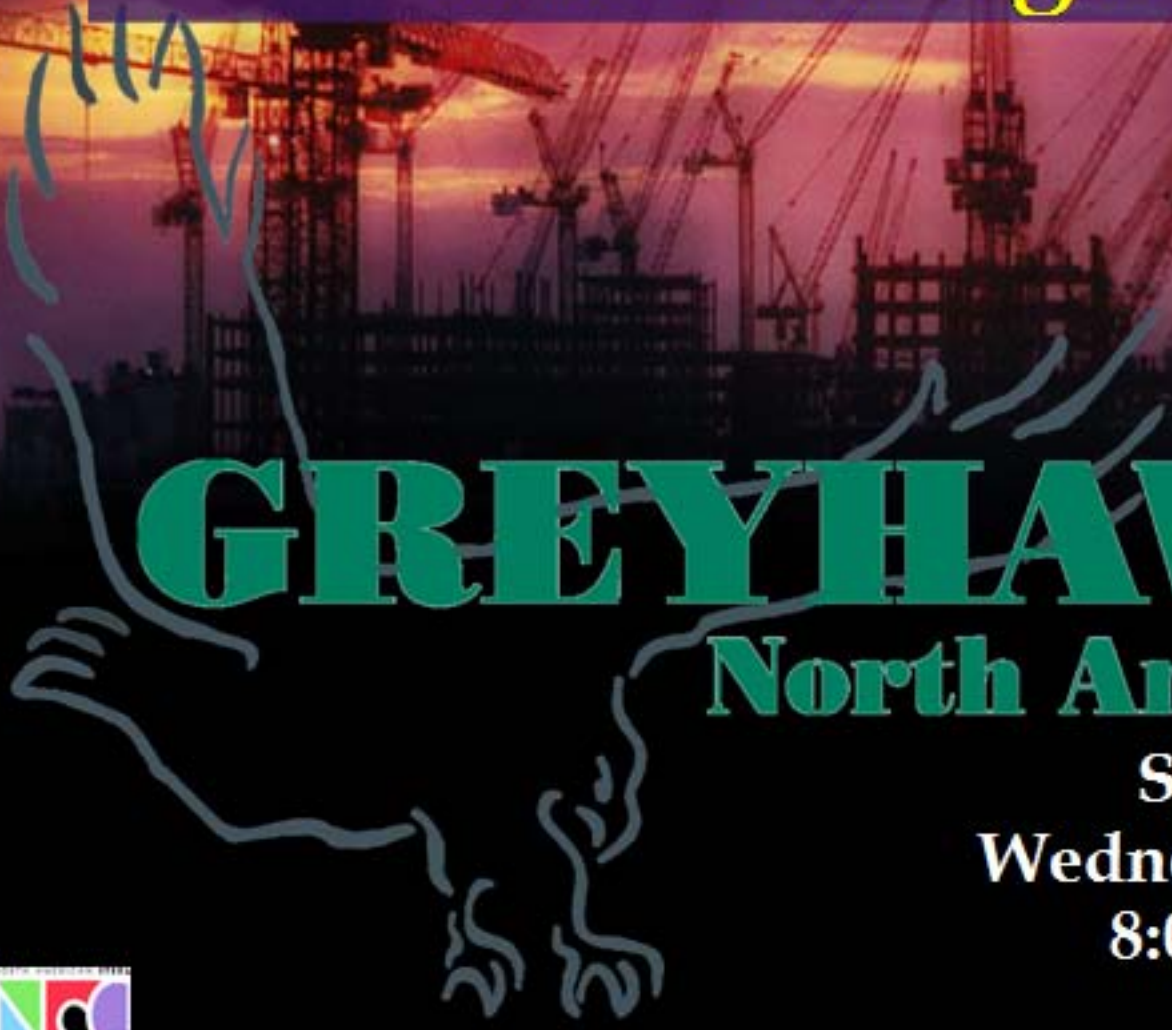
Managing the Impacts of Delay and Getting Paid for It



GREYHAWK®
North America

Short Course #3
Wednesday - April 6, 2005
8:00am to 12 noon

GREYHAWK

- Construction Management & Consulting firm
  - We manage construction
  - We help resolve disputes
- One of the nation's leading construction claims consulting firms
  - One of our niches is Steel Construction
  - Our clients are fabricators, erectors, detailers, EORs, architects, GCs, trade contractors and owners

Gary Berman, PE

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- Structural Engineer (Steel Guy)
- 27 years experience in design and construction
- Mediator and Arbitrator
- Former detailer / fabricator / erector
- Associated with over 250,000 tons of steel
- Founder, Journal of Construction Management
- Chair, Construction Manager Certification Institute (CMCI)
- Fellow, Construction Management Association of America (CMAA)

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- 38 years experience
- Former general contractor
- Nationally recognized expert in:
  - Delay analysis
  - Loss of efficiency
  - Propriety of terminations
  - Means & Methods
- Expert in F.A.R. construction issues

Contacting GREYHAWK

- Exhibit Booth **#431**
  - Today thru Friday
- Toll Free 1-888-280-HAWK (4295)
- www.greyhawk.com
- Business cards available after the presentation at the front desk

Today's Slides

Available April 11, 2005

1) Go to GREYHAWK's website www.greyhawk.com
1) Click on "Publications/Bulletin Board"
2) Click on "Presentations"
3) Find the .pdf file entitled "Managing the Impacts of Delay – NASCC Montreal 2005"

Why Are We (You) Here Today?

- The process of construction is not getting any easier
- Not surprisingly the "steel" folks are being blamed for the delays
- You're the ones being impacted and no one believes you
- You're being told to meet the schedule "or else"
- These delays are costing you a lot of money and no one will pay you what it really costs

So the bottom line is…
We're here to talk about your money

Let's set the stage…
Steel Issues in Today's World
Project Team
Design
Change

Project Team Issues

- Intra-contractual issues (within steel team)
- Change management
- Workmanship & Quality
- Schedule impact
- Inter-contract responsibility (e.g. anchor bolts or curtain wall clips)
- Communication
- If you are not the prime; you're a SUB!

Steel's Ripple Impact

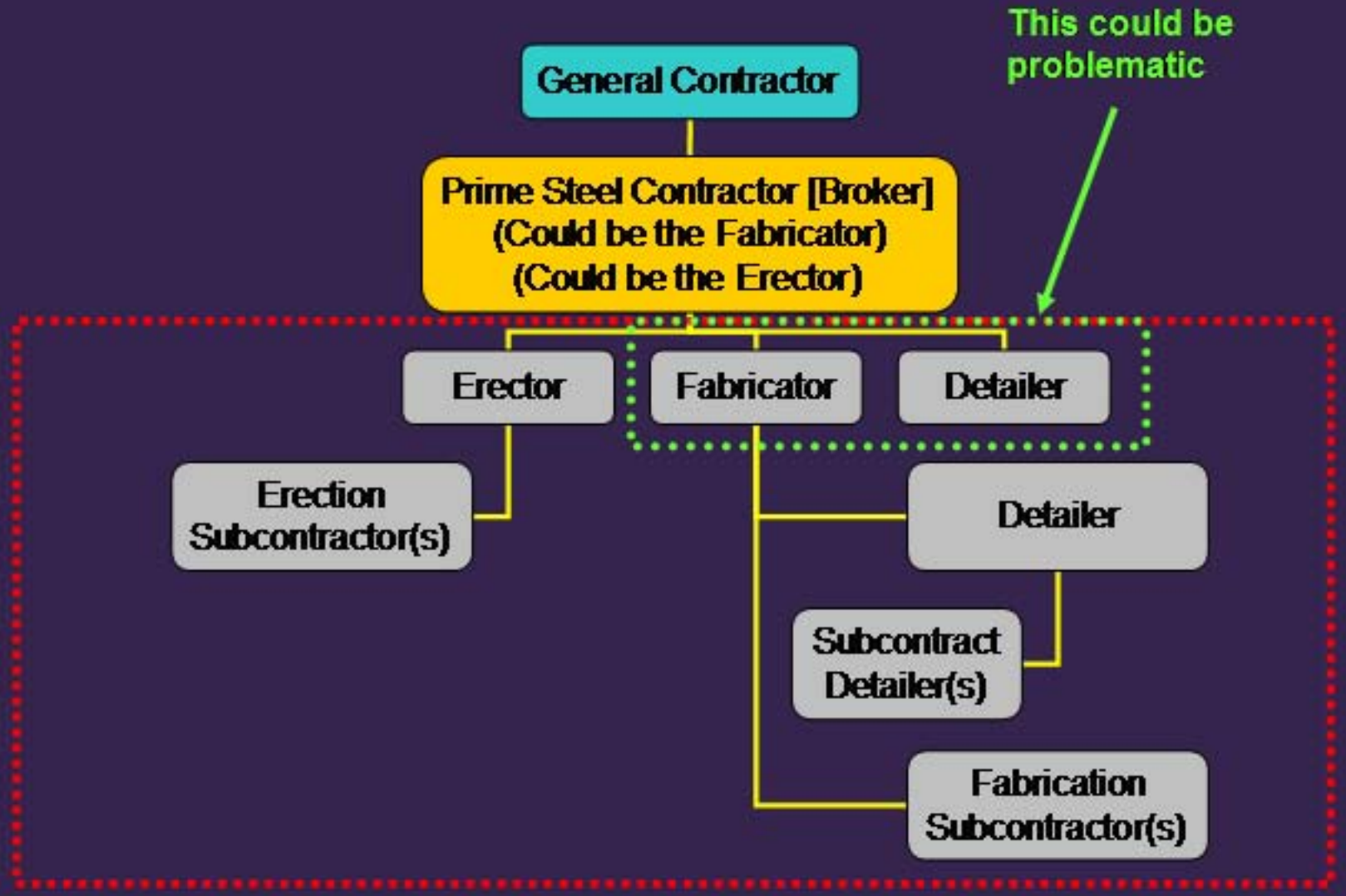
Pointing Fingers

What else is impacted…

Transportation
Storage
Inventory
Subcontractors
Mill Order
Labor Availability
Material Availability
…and more

Who's in the middle getting it from both sides?

How far down on the food chain are you?



Sub ≠ Prime Contractor

- SUB - Onerous contract provisions
  - Signing on, but not signing up
- PRIME or SUB - Steel Contractor Fears…
  - Bottom of the food chain
  - Your work is always on the critical path
  - First in, longest to wait
  - Critical dependence on others to do their job right and on-time (EOR, Foundations, ABs)
  - Betting the company on the results

Poor communication is the root cause of (Evil) most problems on a project!

Design Issues

- Omissions
- Not enough information
  - Number of RFIs
- Conflicts
- Errors
  - Geometry doesn't close
  - Connections
- Approvals
- Shop drawings
- Subsidizing the design
- Connections
- Multi-discipline coordination
- AISC code requirements
- Contractual responsibility

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- Connections
- Multi-discipline coordination
- AISC code requirements
- Contractual responsibility

We will answer the Question "why" later

Project Change Issues

- Managing steel contract scope changes and impacts
  - Cost
  - Time
  - Quality
  - Performance

You will hear a lot about this today

Top 10 Reasons for Change

6) Program discrepancies in design
7) Change in owner requirements
8) Change in external requirements
   - Change in building code, agency preferences
9) Uncovering unforeseen conditions
   - Existing structures, site variations
10) Uncovering undisclosed conditions

Top 10 Reasons for Change

1) Design errors and omissions
   - Contradictions, discrepancies, impossibilities, inconsistencies, leave-outs
2) Better, faster, cheaper
   - But for who?
3) Designer (EOR) preference
   - "Lighter is cheaper!"
   - "So what's a little more plate thickness"
   - "Welding/Bolting – it's about the same, isn't it?
4) Final coordination with equipment
   - Space, mechanical and electrical requirements
5) Change in market conditions
   - Product unavailability, new products, new information

Today's
Short Course
Managing the Impacts of
Delay and Getting Paid for It
GREYHAWK
North America

Impacts of Delay must be Managed to Get Paid
Here is what we want you to leave here with

Short Course Curriculum

Part 1 – CPM scheduling and analysis to demonstrate the delay impacts (Delay)

Part 2 - Making the decision on what acceleration techniques to employ (Managing – Decision Making)

Part 3 - Tracking the costs of the acceleration (Impacts) and preparing the change order (Getting Paid)

Part 4 – Questions and Answers

Project Premise

- You are a detailer, fabricator and/or an erector
- Steel is on the "critical path"
- S[illegible]hanged on the project – it's is
- [illegible]
- You are denied [illegible] extension
- You "must" finish your work on the contract completion date
- You must now accelerate
- You want to be paid for that acceleration

Has this ever happened to anyone here?

Actions you must do now…
Actions you should do…
We'll point these out with a
"$"

Schedule Analysis Methodologies

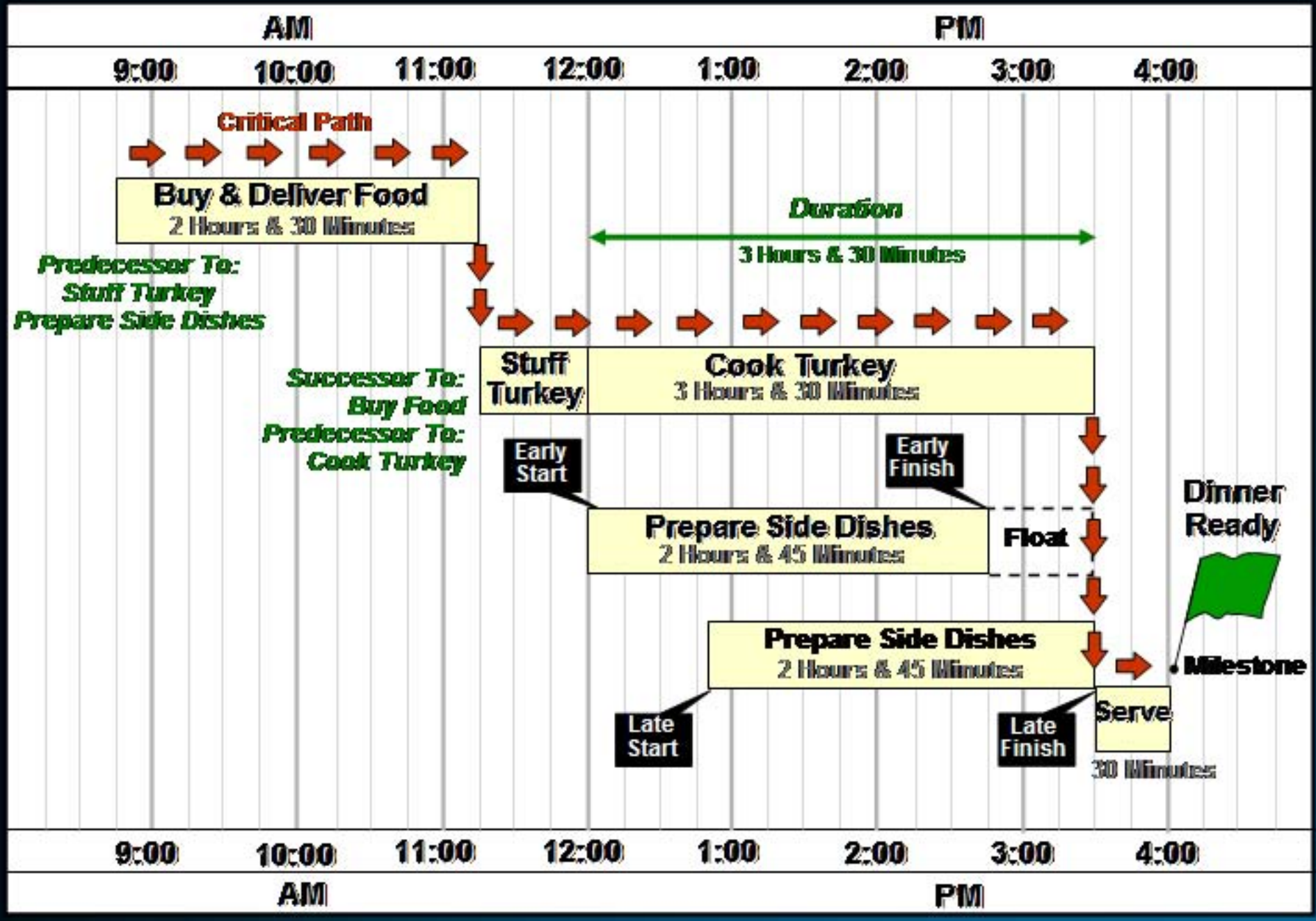
By Ian Street

Overview of CPM Scheduling

What is CPM Scheduling?

- Critical Path Method
- Planned activities in a logical order
- A network with proper relationships
- A tool to identify and monitor the critical path
  - the longest chain of sequential activities to complete the project

As-Planned Family Dinner CPM



When do you Need CPM Scheduling?

- Primary consideration is complexity
- Not dependent on project cost
- Not dependent on project duration
- May be dependent on number of contracts
- Rule of thumb
  - If you can remember all the activities and sequences, then you do not need a CPM schedule

Cost of CPM

- Roughly .2 to .5% of overall project costs in the range of $10 to $50 million
- For larger projects, CPM costs decrease slightly
- For smaller projects, CPM costs increase or are eliminated

Advantages of CPM

- Cost savings ~3% for changes – understand the impact of changes
- Determine if LD's or bonus/penalty provision should be applied
- Cash flows can be accurately predicted
- Time extension requests can be evaluated
- Monitor progress and coordinate owner move-in
- Provide a level of protection should litigation become necessary

Disadvantages of CPM

- Requires someone knowledgeable in CPM techniques, able to apply intellectual rigor and honesty
- Must be updated and maintained regularly to ensure work is accurately represented
- Garbage-in/garbage-out

Inherent Dangers

- Software has become very user friendly
- Skill is no longer required to produce a visually appealing schedule
- Dangers Include:
  - Failure in analyzing the critical path
  - Unrealistic activity durations
  - Poor management of the schedule
  - Accepting reports without electronic review
  - Failure to provide timely updates

Critical Path

- Dynamic
- Cannot assume baseline schedule will hold true throughout project
- Useful in alerting PM to potential problems
- Essential in determining responsibility for delay and entitlement to contract time extensions
- Bottom line – pointing fingers!

Activity Durations

- Often resulting from wild guesses
- Often based on time available to complete – working backwards
- Often "too long" to be meaningful
- Estimate should be examined
  - Accounts for productivity changes for similar work elements in differing conditions

Electronic Review

- Printout may look great - but schedule may be worthless as a CPM
  - Everyone could be misled until it's too late to react
- Very easy to:
  - hide flawed logic
  - hide activities
  - misrepresent project status
- Insist on electronic files for consultant/ expert

Incorporation of Changes

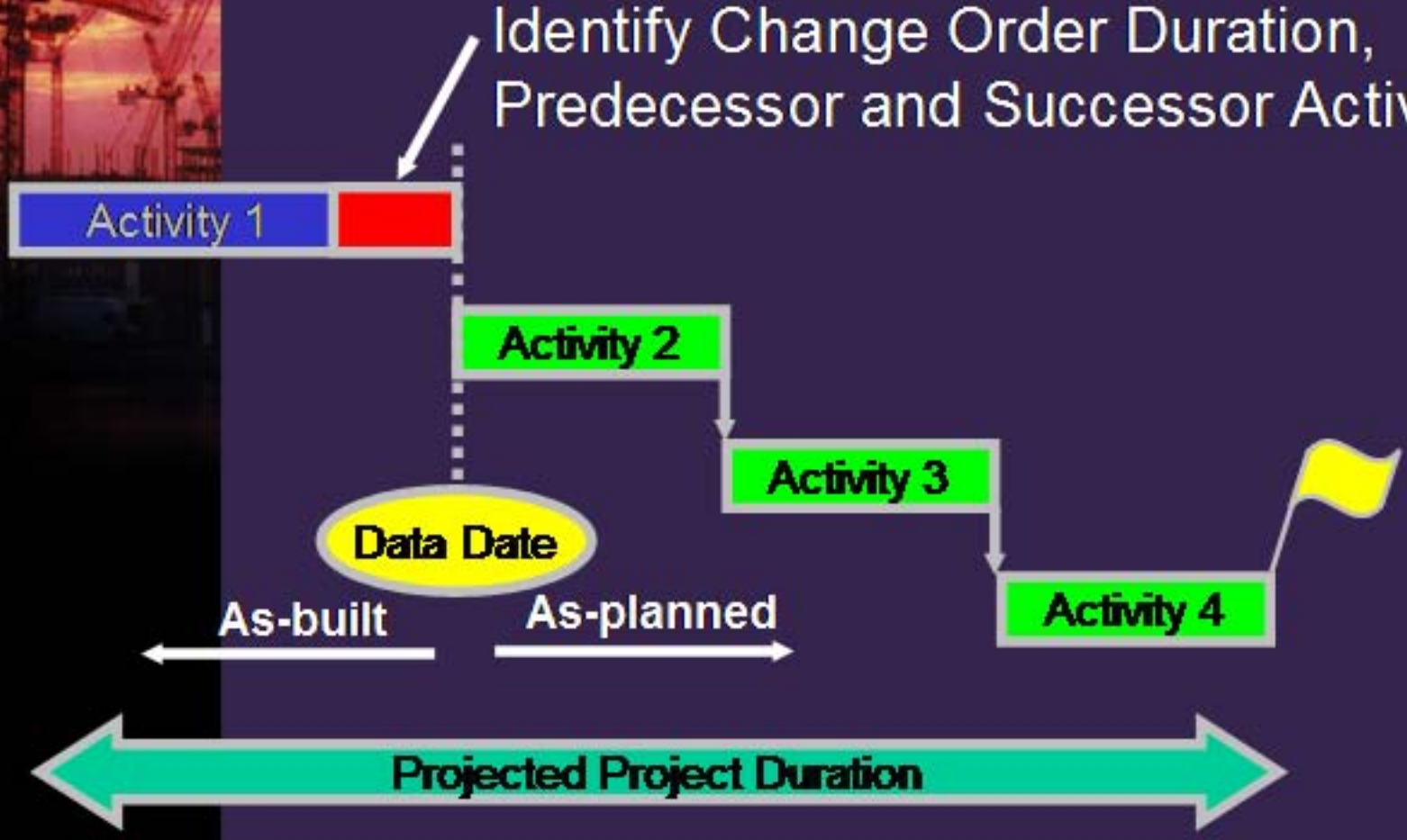
- Owner and contractor will seldom fully agree on
  - the total effect a change will have on the project schedule
  - how to properly account for the time impact of a change
- Contract defines updating frequency
  - however the following analysis may need to be performed for each occurrence of a substantive CO (*or any other significant out-of-scope event*)

Incorporation of Changes (cont'd)

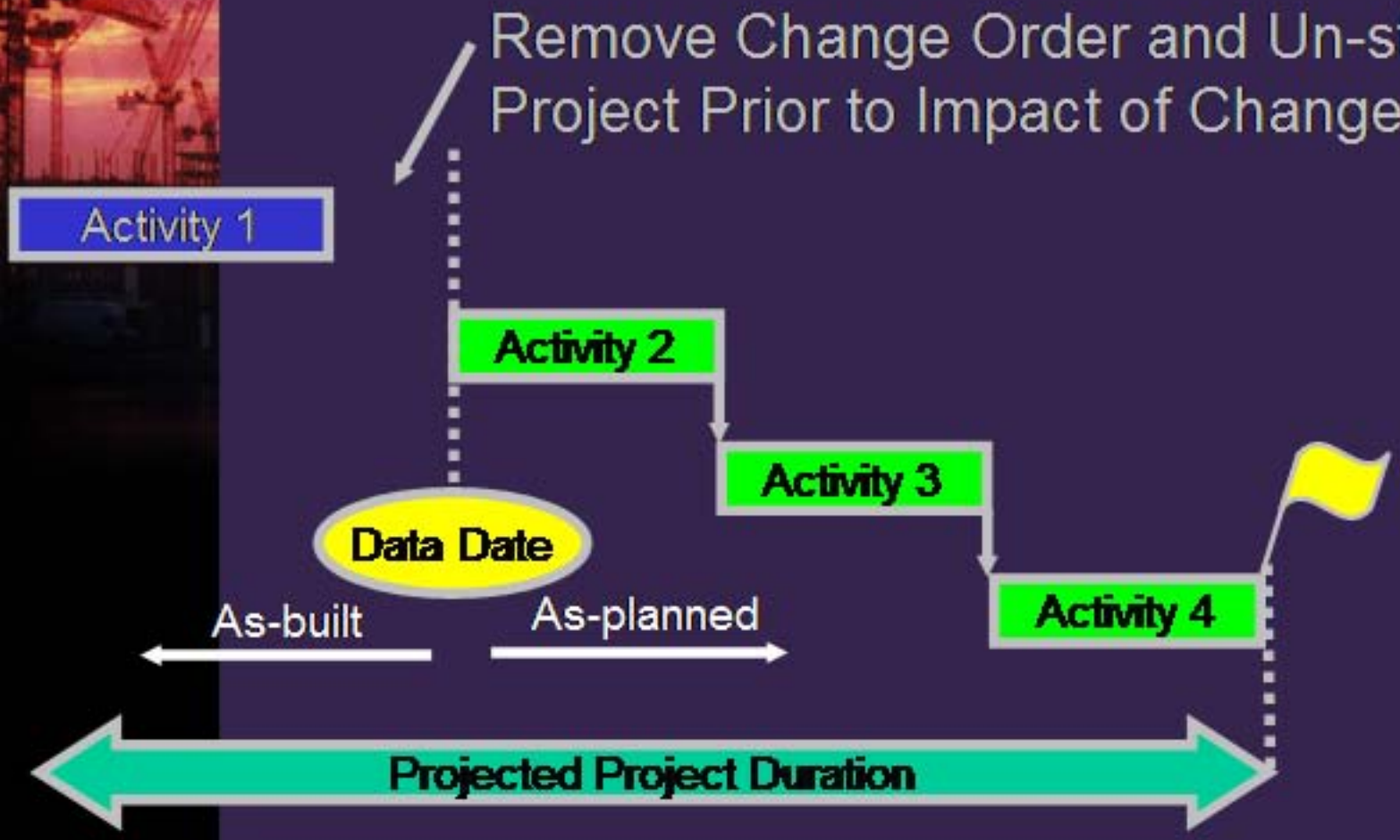
Schedule Impact Analysis –
Steps to validate a time extension

1. Identify changed condition
2. Quantify the duration of the change
3. Represent the change order as an activity in the schedule update
4. Run/Update the schedule
5. Remove change order activity
6. Analyze the result to identify time extension
7. Notify owner of CO impact, both for time & cost

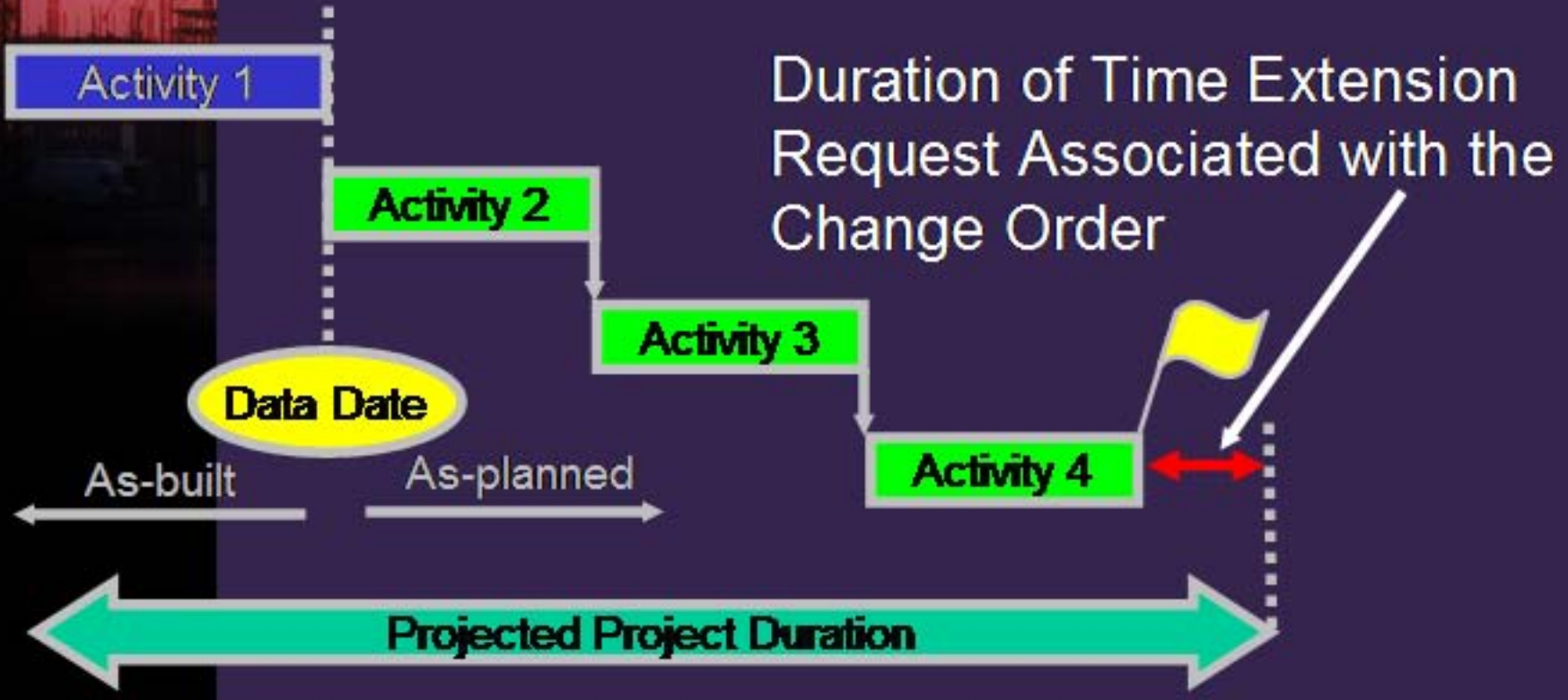
Incorporation of Changes (*Example*)



Incorporation of Changes (*Example*)



Incorporation of Changes (*Example*)



Incorporation of Changes
What to Submit?

- Develop submittal format
  - Written description of change
  - Written explanation of schedule impact
  - Fragnet of schedule change due to CO
  - Document CPM changes
    - logic, durations, additions, deletions, etc.

- Do the above for every substantive change event on the project

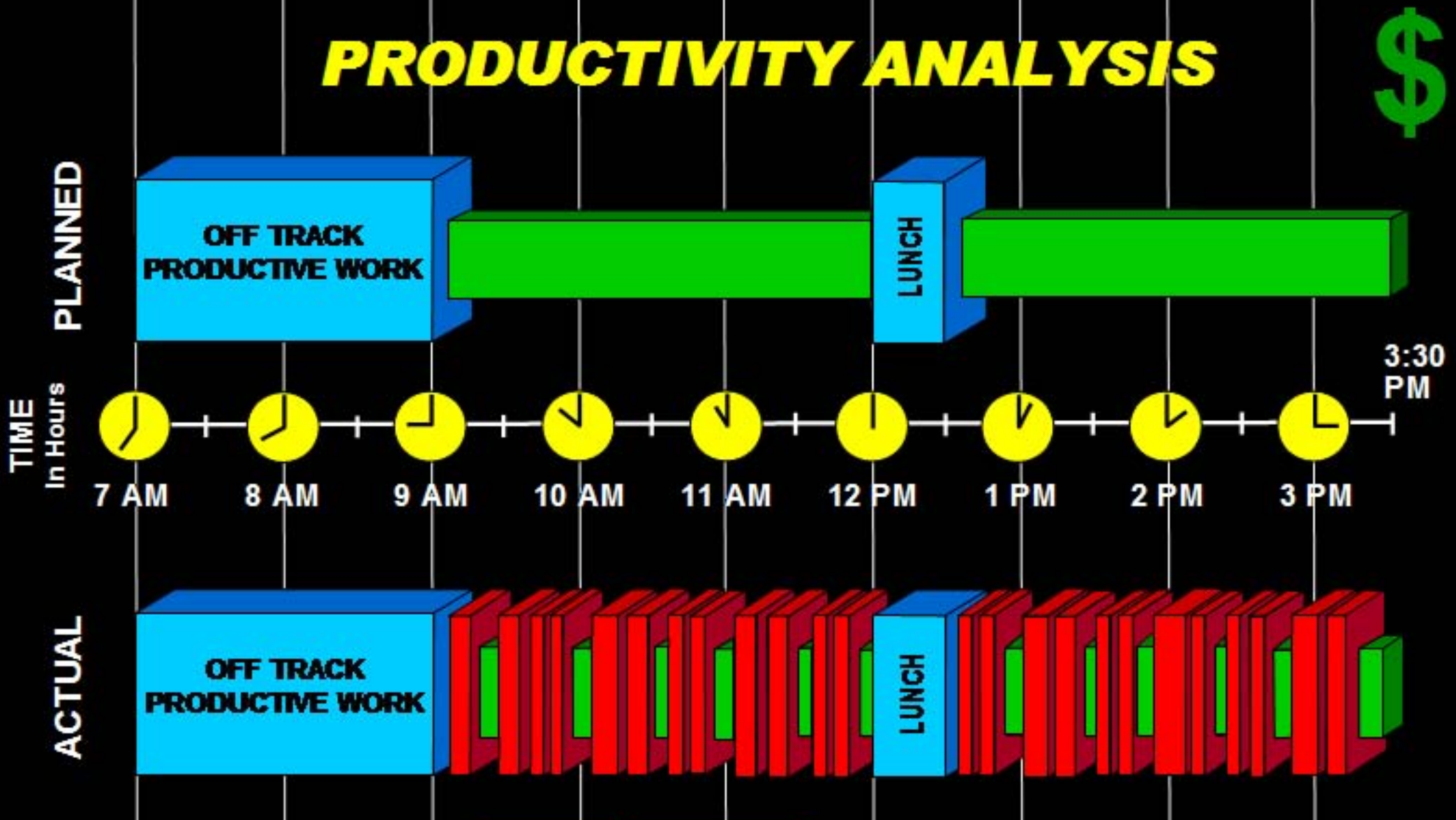
Incorporation of Changes (Things to Check)

- Multiple change orders
  - Check for concurrent delay
  - Driving or controlling change will be critical delay
- Changes to means & methods
  - No change to scope
    - Should not impact final completion
    - Be watchful for schedule abuses
      - Groundwork for future claim?
- Float belongs to the project

Impacts of a Change

- Direct impact of changes to the project
  - Productivity reduction
    - *Example follows*
  - Time delay
  - Additional labor required
  - Additional material & equipment
  - Acceleration to recover lost time
    - associated productivity impacts

PRODUCTIVITY ANALYSIS

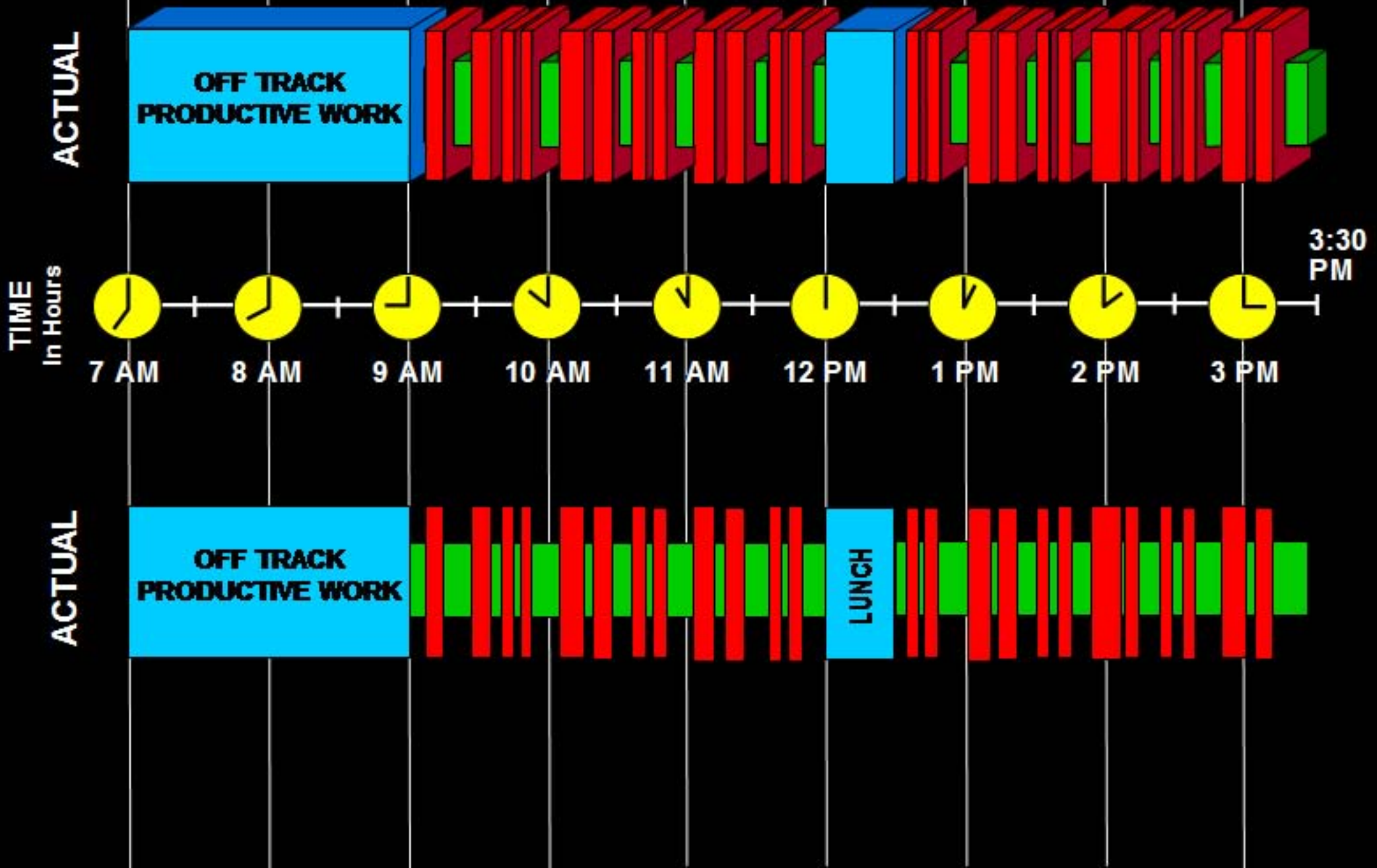


Description	Planned	Actual
Interruptions	1	25
Average Work Period	180 Min.	9 Min
Shortest Work Period	180 Min.	3 Min
Total Productive Time	6 Hours	2.78 Hours

Legend

- Unavailable Track work Time
- Planned Productive Time
- Unanticipated Idle Time

PRODUCTIVITY ANALYSIS



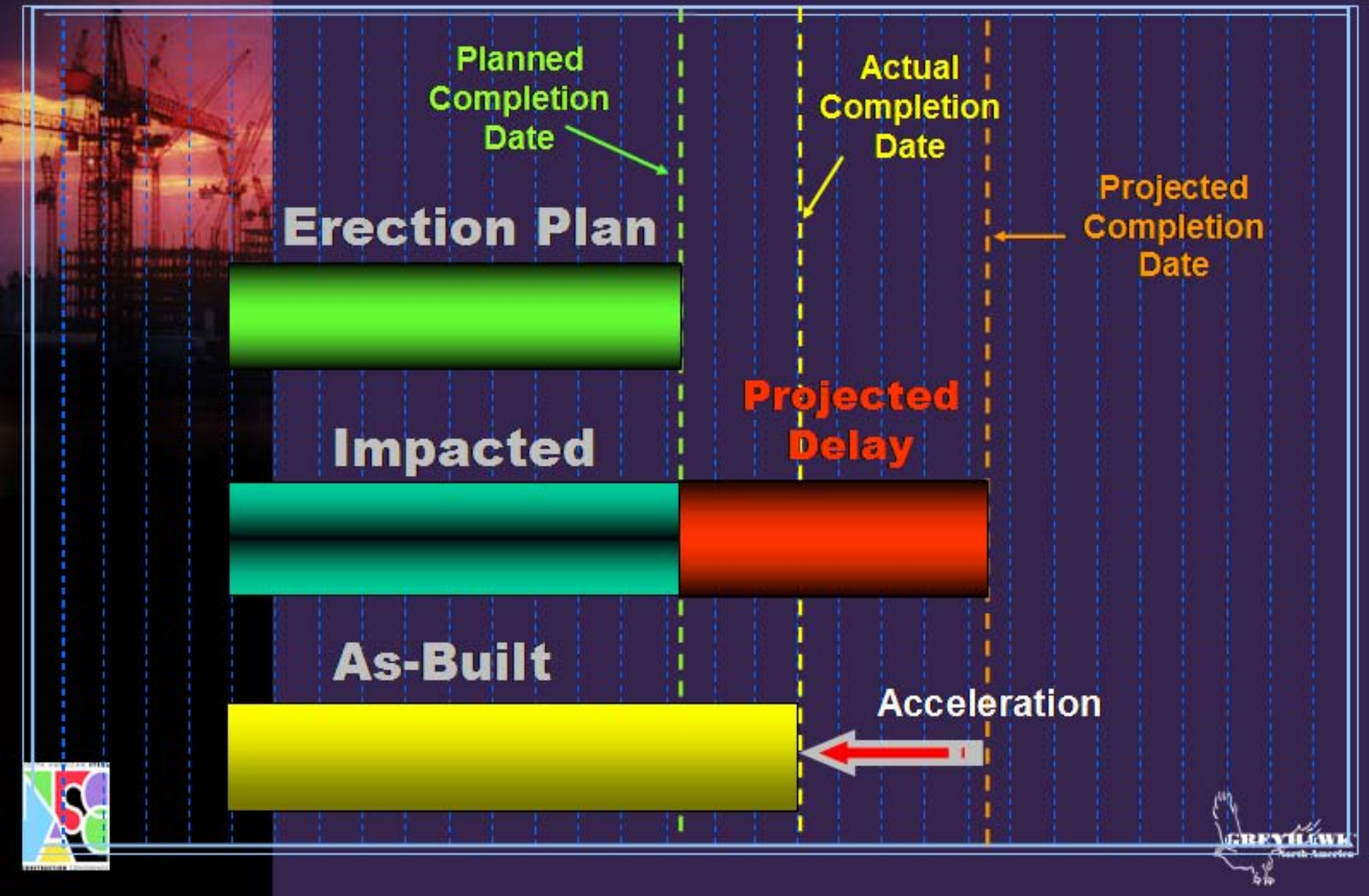
Incorporation of Changes

Summary of Key Points

- Duty to mitigate the time impact due to changes
- Fully document the changed condition
- Quantify time extension if warranted by producing schedule fragnet
- Quantify costs due to time impact
- Be consistent in format of time extension requests
- Timely (contemporaneous) resolution
- Float belongs to the project

CALCULATING THE DELAY

Delay


Planned Completion Date
Actual Completion Date
Projected Completion Date
Erection Plan
Projected Delay
Impacted
As-Built
Acceleration

Delay Types

- Excusable, Compensable
- Excusable, Non-Compensable
- Non-Excusable

Excusable, Compensable

- Delays are beyond the control of the steel contractor
- Delays are the responsibility of the owner or GC
- Steel contractor is entitled to a time extension and delay damages
- For example:
  - failure to provide site access for crane
  - timely review of steel shop drawings
  - design changes by the EOR

Excusable, Non-Compensable

- The delay is beyond the control of both the owner and the contractor
- The contractor is entitled to a time extension but no damages
- For example:
  - acts of God
  - strikes
  - labor disputes
  - weather
    - read your contract: are there weather days for the erector?

Non-Excusable

- The delay is the responsibility of the steel contractor
- The steel contractor is not entitled to either a time extension or damages
- For example:
  - failure to deliver steel in a timely fashion
  - failure to perform
  - defective work
  - Crane or equipment breakdowns
  - Undermanning or poor productivity

Delay Analysis Methodology

- Identify original planned schedule
- Prepare as-built schedule**
- Identify critical path
- Identify project impacts
- Identify critical delays

**Key Point: If managed properly, the updated schedule will become the as-built schedule, recording actual sequence of work, inactivity, areas of work, etc. This can save you a lot of money and time!

Schedule Analysis Techniques

Four Most Common Methods

- As-planned vs. As-Built
- Impacted As-Planned
- Collapsed As-Built
- Time Impact Analysis
  - Windows of time

As-Planned vs. As-Built

- Simple and inexpensive
- Total time approach
- Assumes planned schedule is reasonable and constructible
- Shows overall delay
- Assumes total amount of delay is recoverable
- Not well accepted by courts

IMPACTED AS-PLANNED

Impacted As-Planned Approach

- Assumes planned schedule is reasonable and constructible
- Retains original planned durations and logic
- Quantifies one party's delays
- Relatively inexpensive

Impacted As-Planned Procedure

- Start with reasonable as-planned schedule
- Insert delay events into planned schedule
- Do not adjust planned logic
- Measure delay by comparing the planned completion date to the impacted completion date.

Impacted As-Planned - Pros/Cons

Pros

- Relatively fast and inexpensive

Cons

- Actual execution of work departs from planned sequence due to impacts
- Final completion date of impacted as-planned may not be the same as the actual completion date – fails to consider mitigation efforts
- Does not address concurrent delays

COLLAPSED AS-BUILT

Collapsed As-Built Procedure

- Develop as-built schedule
- Use all significant activities, not just critical ones
- Identify all delay events including non-work days
- Determine as-built schedule logic
- Identify and quantify delays
- Delay is the difference between actual and collapsed schedule completion dates

Collapsed As-Built - Pros/Cons

Pros

- Reflects actual sequence of construction instead of planned
- All delay events are captured
- Impact of delays can be quantified fairly & accurately

Cons

- Excessive concurrency can result in overburdened resources
- Ignores timing of delays
- Fails to consider performance of weather sensitive work in adverse weather periods
- Project may not be constructible as collapsed
- Labor intensive and relatively expensive

Collapsed As-Built
Main Disadvantages

- After the fact logic ties may not reflect thinking of contractor during project
- Adjustment for anomalies can be subjective - Monday morning quarterbacking

TIME IMPACT ANALYSIS

Time Impact Analysis Approach

- Update baseline at onset of delays
- Logic and durations are updated
- Delay events captured
- Quantify impacts
- Observe shifts to the critical path

Time Impact Analysis Procedure

- Start with reasonable as-planned schedule
- Status schedule by developing as-built prior to onset of delay
- Develop a planned schedule for remaining work
- Establish critical path for remaining work

Time Impact Analysis Procedure (Cont')

- At end of first delay, develop planned schedule for remaining work
- This quantifies impact from first delay
- Status job at start of next delay
- Continue above process

Time Impact Analysis

Pros

- Very accurate results

Cons

- Very labor intensive and expensive method of analysis

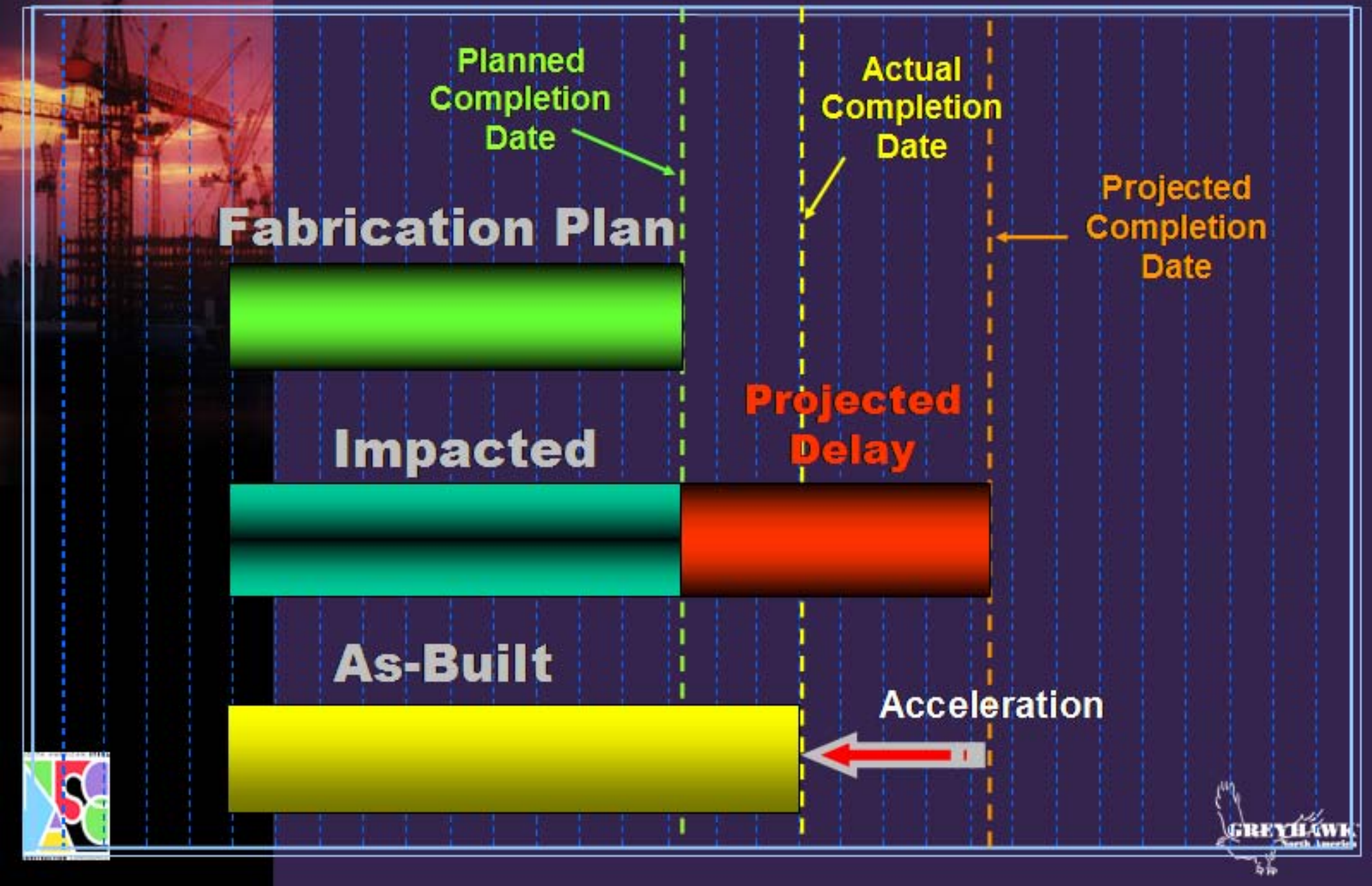
In Summary….

- As-planned vs. as-built
  Quick & inexpensive, but inaccurate
- Impacted as-planned
  Relatively quick and inexpensive, but not well accepted
- Collapsed as-built
  All delays and actual sequences addressed, but prone to subjective schedule manipulation. Labor intensive requiring extensive records
- Time impact analysis
  Very accurate, but requires complete project record and reasonable schedules. Relatively expensive and labor intensive

In Summary… (cont'd)

- CPM is well accepted within legal community as an analysis tool
- Different approaches may yield different results
- Method may be defined by contract
- Must meet test of common sense
  - Cause for the delay should be thoroughly investigated and the resulting impact (delay) must be demonstrated

Acceleration to Recover Delay



Acceleration

Required Linkage Between Event and Extra Cost

#1 - Contractor must encounter delay beyond its control

#2 - Contractor must submit proper time extension request to justify delay

#3 - Owner must wrongfully deny time extension request

#4 - Contractor must incur additional cost

#5 - Contractor must accelerate to overcome owner-caused delay

Acceleration Techniques

By Steven Tell

What is Acceleration?

- Accomplishing a greater amount of work than planned in the same timeframe
  - Owner's program change added 56 tons more steel to Phase 3 and a time extension cannot be granted
- Accomplishing the same amount of work as planned in less time
  - Design errors and omissions and RFI reconciliations delayed the start of Phase 3, but the contract completion date for steel cannot change

What Causes Acceleration?

- Steel contractor delays
- Excusable delays for which a time extension is not granted
- Extra work for which a time extension is justified but not granted

What should be done when acceleration is necessary?

1) Identify the steel critical path of the project
2) Identify those steel activities that must/can be accelerated
3) Determine the most cost effective means of accelerating
4) Determine if sufficient acceleration can be accomplished

Acceleration Techniques

- Increased number of ironworkers
- Increasing shift length
- Increase days worked per week
- Employ multiple shifts
- Schedule sequence revisions

What must be considered when increasing crew size?

- Additional supervision
- Crew overloading (Over manning)
- Crowding (Stacking of Trades)
- Additional equipment
- Safety

Additional Supervision

- Union requirements for Foreman or General Foreman
- Need for additional Superintendent
- Potential for dilution of supervision if none is added

Crew Overloading

- What is optimum crew size
- What is overloading
- Each additional added ironworker contributes less than the previously added ironworker
- Overloading losses can be estimated by using the tables in the *Corps of Engineers Modification Impact Evaluation Guide*

Overloading Example

- Erector has planned an activity with a duration of 15 working days and a crew size of 10
- Acceleration now requires that this activity be completed in 10 working days
- Determine rates of production required
- Calculate required production rate increase
- Determine overloading losses

Overloading Calculation

$$\frac{(1\text{job}\div 100\text{MD}) - (1\text{job}\div 150\text{MD})}{(1\text{job}\div 150\text{MD})} \times 100$$

$$\frac{.01 - .0067}{.0067} \times 100 = 49.25\ \%\ \text{increase in production required}$$

Using tables 4-3b and 4-3d from the *Corps of Engineers Modification Impact Evaluation Guide* we can determine the required crew size increase and the projected loss of efficiency.

Fig. 4-3b. Production gain at Crew Overloading

Fig. 4-3d. Unproductive labor at Crew Overloading

Overloading Calculation

The way to quantify these costs before the fact is:

	Original Plan	Accelerated Plan
Ironworkers	10	18
Hourly rate	$50	$50
Crew cost / day (for 8hrs)	$4,000	$7,200
Duration in Days	15	10
Crew labor cost	$60,000	$72,000
Taxes, fringes, etc. (28%)	$16,800	$20,160
Total crew cost	**$76,800**	**$92,160**

Acceleration loss of efficiency cost **$15,360 or ~17%**

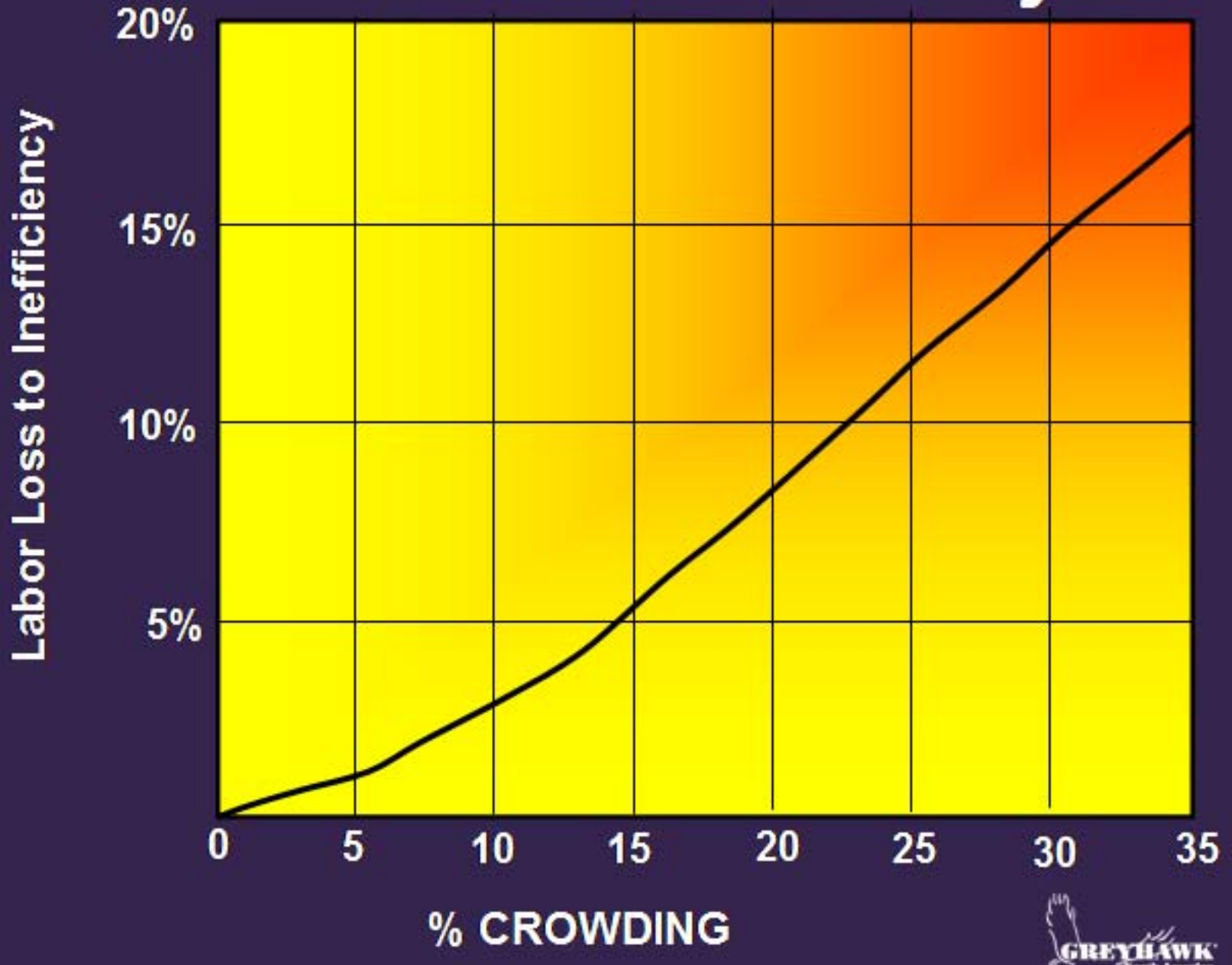
Crowding

- What is crowding?
- What causes crowding?

Crowding losses

- 18 ironworkers now have to work in an area that can optimally accommodate 15 ironworkers
- This represents 3/15 = 20% Crowding
- The activity was supposed to take 5 days

Fig. 4-2. Effect of Crowding on Labor Efficiency



Crowding Losses

- The new duration of the activity is then calculated
  - 5days X 1.08 = 5.4 days
- The loss is then calculated
  - 5.4 days – 5days = .4days loss
  - 18men X 8hrs X $/hr X .4 = $ loss
- This loss of time will either have to be accommodated or further accelerated to overcome

Additional Equipment

- Results from added ironworkers or new sequential activities
- Must adjust for original equipment cost

What must be considered when increasing shift length or days/week?

- Union agreements
- Premium pay
- Loss of efficiency
- Additional General Conditions costs

Premium Pay

- Only the premium portion of the hourly rate can be charged to acceleration
- The total premium hourly cost may be less than 1.5 times the straight time hour cost
- Only the actual difference should be charged

Loss of Efficiency

- Overtime causes a loss of efficiency
- Affects all hours worked
- Determining the total amount of overtime required is an iterative process
- Excessive losses should be avoided

Efficiency Losses

- There are many ways to measure/predict the losses due to overtime
  - Industry standards
    - Corps of Engineers
    - Business Roundtable
    - National Electrical Contractors Association
    - Mechanical Contractors Association
    - Department of Labor
  - Measured mile
  - Total cost analysis

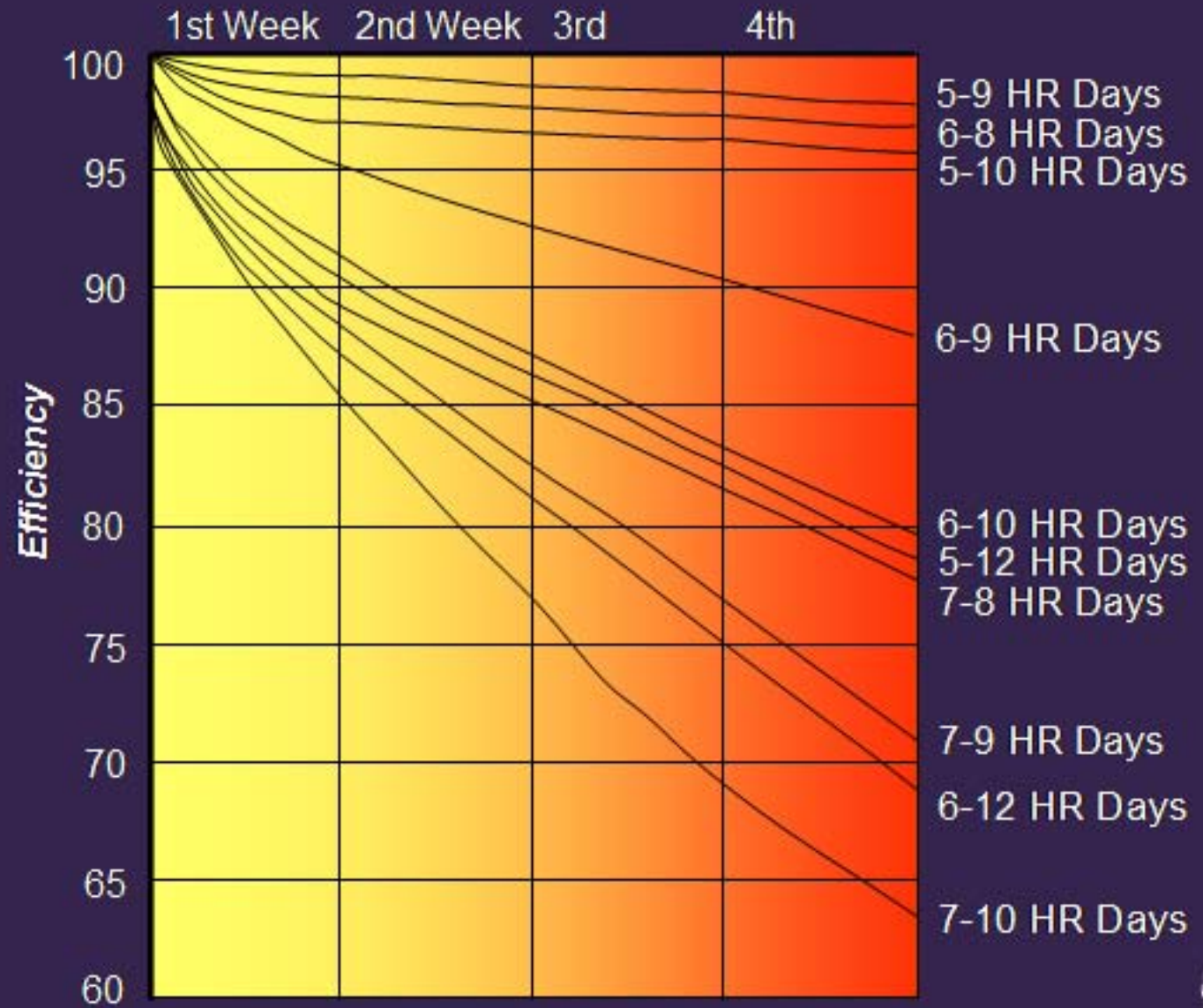
Industry Standards

- Show the losses incurred from working various overtime regimes (5x10, 6x8, etc.)
- Indicate excessive losses if overtime continues for too long
- Loss factors should only be applied to all working ironworkers

Corps of Engineers

- Figure 4-4 of the *Corps of Engineers Modification Impact Evaluation Guide*

Fig. 4-4. Effect of Work Schedule on Efficiency



Business Roundtable

- Chart shows the anticipated losses resulting from working successive 50 hour and/or 60 hour work weeks

^LOOKUP TABLES FOR ROUNDTABLE RATES

Business Roundtable Productivity Rates

^For Extended Overtime

^50 Hour Week Values		
Week	Productivity	Loss
1.00	0.93	0.07
2.00	0.93	0.07
3.00	0.90	0.10
4.00	0.90	0.10
5.00	0.87	0.13
6.00	0.87	0.13
7.00	0.80	0.20
8.00	0.80	0.20
9.00	0.75	0.25
10.00	0.75	0.25
11.00	0.75	0.25

^60 Hour Week Values		
Week	Productivity	Loss
1.00	0.90	0.10
2.00	0.90	0.10
3.00	0.86	0.14
4.00	0.86	0.14
5.00	0.80	0.20
6.00	0.80	0.20
7.00	0.71	0.29
8.00	0.71	0.29
9.00	0.66	0.34
10.00	0.66	0.34
11.00	0.66	0.34

National Electrical Contractors Association

- NECA provides a series of charts for various overtime regimes
- Sample chart for 5 X 10 hr day

NECA Chart for OT Loss of Efficiency
5 Days & 10 Hour Work days

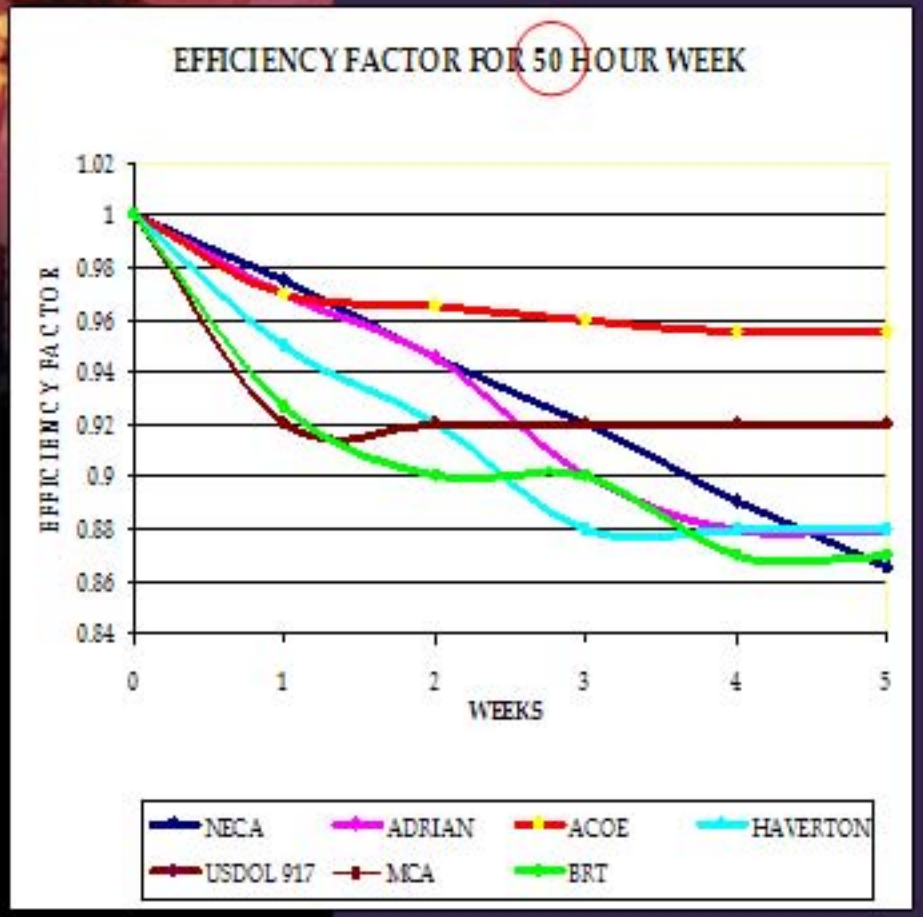
	Productivity		
	Low	Average	High
Week #1	95%	98%	100%
Week #2	92%	95%	97%
Week #3	89%	92%	94%
Week #4	86%	89%	91%
Week #5	83%	86%	88%
Week #6	80%	83%	85%
Week #7	77%	80%	82%
Week #8	74%	77%	79%
Week #9	71%	74%	76%
Week #10	69%	72%	74%
Week #11	68%	71%	73%
Week #12	67%	70%	72%
Week #13	66%	69%	71%
Week #14	65%	68%	70%
Week #15	64%	67%	69%
Week #16	63%	66%	68%

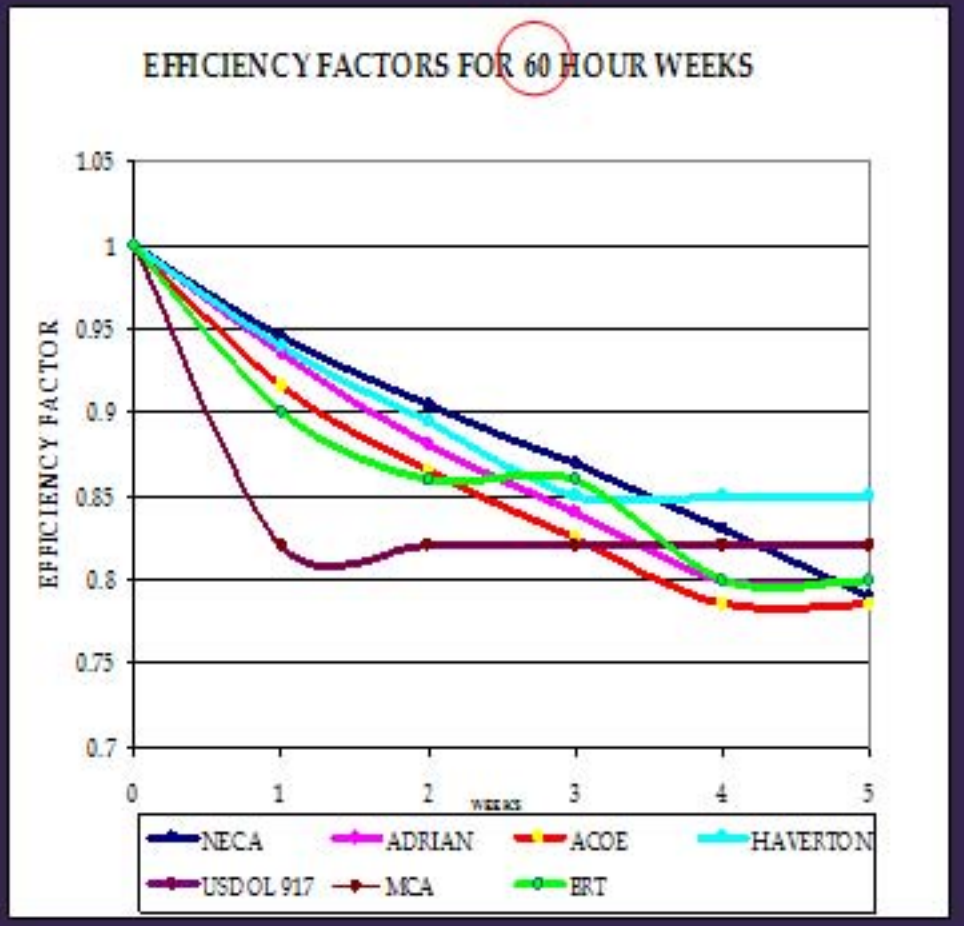
Productivity Loss		
Low	Average	High
0%	2%	5%
3%	5%	8%
6%	8%	11%
9%	11%	14%
12%	14%	17%
15%	17%	20%
18%	20%	23%
21%	23%	26%
24%	26%	29%
26%	28%	31%
27%	29%	32%
28%	30%	33%
29%	31%	34%
30%	32%	35%
31%	33%	36%
32%	34%	37%

Industry Standards

- Losses calculated by each of the industry standards are not identical
- The losses predicted really fall into a range of possibilities
  - The following slide shows a comparison of the losses predicted

Loss of Efficiency Calculation Comparison





Measured Mile Calculation

- Compares impacted to un-impacted productivity
- This method is used for an after the fact calculation
- Work must be similar in nature
  - YES: Hanging steel in Area 1 and hanging steel in Area 2
  - NO: Hanging steel in Area 1 and buttoning-up the steel in Area 2
- Its advantage is that it does not rely on the productivity anticipated in the bid

Total Cost Calculation

- Compares actual cost to anticipated (as-bid) cost
- This method is fraught with problems
- Must meet four (4) burdens of proof

Total Cost - Burdens of Proof

1) The original estimate was correct
2) Actual costs were higher due solely to the acceleration
   - or in other words – not caused by the steel guy or anything else
3) Actual costs incurred were reasonable under the conditions
4) No other way to calculate the claimed damages

Total Cost - Burdens of Proof

- Claim fails if does not satisfy all 4 burdens
- Compromise is a Modified Total Cost calculation
  - Make appropriate adjustments for bid errors, other impacts to the cost of the work and the reasonableness of the actual costs incurred
- Still the burden to prove that there was no other way to calculate the claimed damages

What must be considered when working multiple shifts?

- Shift differential
- Tool inventory, clean up/start up, material handling and coordination issues
- Site lighting
- Additional supervision
- Equipment costs
- Additional general conditions costs
- Safety, Maintenance & Clean-up

Shift Differential

- Generally required for second and third shifts
- Differential is generally less than overtime premium
- Workers more efficient than on OT
- Need sufficient work to justify the other costs associated with a second shift

Tool Inventory, Clean up/Start-up, Material Handling and Coordination Issues

- Duplicate handling of tools
- Loss of efficiency when each crew has to determine where the previous crew left off and what needs to be done

Site Lighting

- Working outdoors at night results in costs for site lighting equipment and operation
- Additional union required labor
- Potential loss of efficiency as a result of the crew working in artificial lighting

Additional Supervision

- Working supervision will be duplicated
- Additional superintendence may be required

Additional Site Security

- Will have to duplicate day shift site security
- Night shift site security may be more costly as a result of non-shared cost

Equipment

- Equipment used at night may be more costly due to non-shared cost

Schedule Sequence Revisions

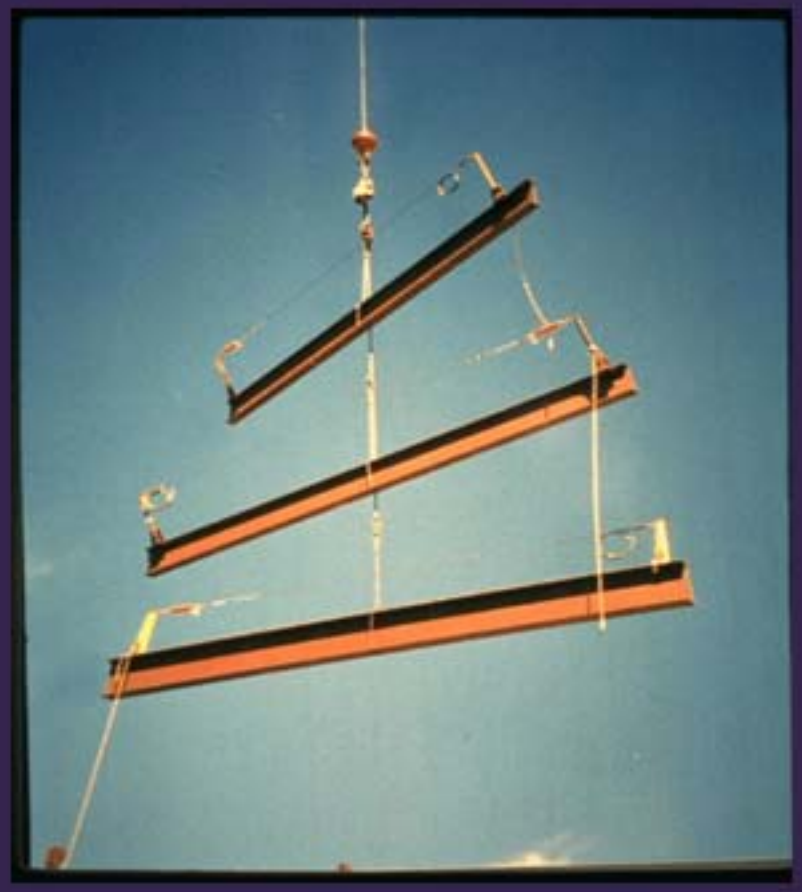
- The previously discussed acceleration techniques have been applied to a single long duration activity
- It is also possible to accelerate a project by taking activities that were planned to be performed sequentially and performing them simultaneously

Schedule Sequence Revisions (cont'd)

- Certain activities must be performed sequentially because of true logic constraints
- Other activities are scheduled in sequence for pure convenience
- Schedule sequence changes should be considered for those activities that can actually be done concurrently

What must be considered when making schedule sequence revisions?

- Staffing
- Supervision
- Equipment
- Safety



Staffing

- Additional crews would work on multiple steel activities simultaneously
- The previously discussed staffing issues would also apply here
- Multiple activities may permit the addition of more workers than would have been possible when accelerating a single steel activity

Additional Staffing Concerns

- Sufficient trained ironworkers
- Journeyman/apprentice ratio
- Learning curve issues

Supervision

- Similar to what was previously discussed
- Increased likelihood that the work will be more spread out
- May be an issue of whether sufficient qualified supervision will be available

Equipment

- May be more expensive (rental vs. owned)
- Added mobilization/ demobilization cycles

Site Considerations

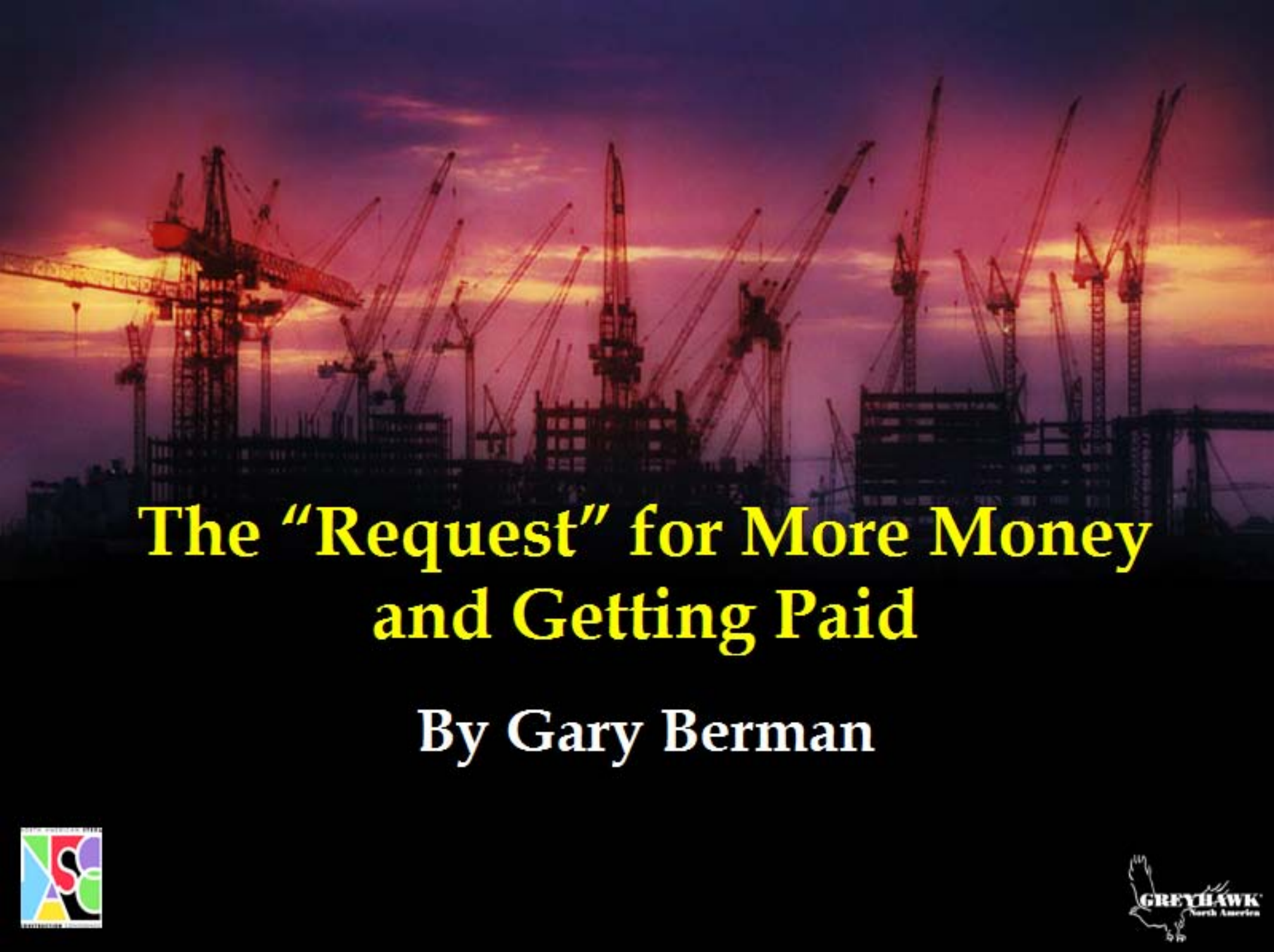
- Are there sufficient…
  - Toilets and changing areas
  - Tool storage facilities
  - Temporary power
  - Staging areas
- Can the site handle the increased flow of material deliveries?
- Crowding
- Interference with follow-on trades

Acceleration Summary

- Do not accelerate on an Ad Hoc basis
- Determine what must and can be accelerated
- Evaluate the effectiveness and cost of each potential acceleration technique
- Determine up front if the acceleration goal can be achieved

Acceleration Summary (cont'd)

- Select the most cost effective technique or combination
- For the acceleration costs identified and considered, document those costs as incurred
- Manage the acceleration effort to avoid losses of efficiency resulting in finishing later than if the acceleration effort had not occurred



The "Request" for More Money and Getting Paid

By Gary Berman

How Are Contractor's Doing It Today…

- Inflating claims – knowing that they will be paid cents on the dollar
  - Not a good idea
  - False claims
  - Credibility is at question
- Preparing accurate claims – but don't put in the effort to prove the case
  - Almost expecting to get paid because everyone knows you're right
- Preparing accurate claims – did your homework

Contract Provisions

- What notice must I provide?
- Is it in my scope? What happens if we disagree?
- Who has the authority to approve the change?
- What happens if I don't know the cost or time impact of the change?
- Must I have it in writing to proceed?
- What happens if we cannot agree on price?
- Is consent of the Surety necessary?

Contract Issues

- They define what to do and what happens when things go wrong!
- Contracts are legally intoxicating - I'm not sure lawyers really understand the legalize – do you?
- Contracts are like snowflakes
- Contracts are like M&Ms
- If you bid the real risks, you'll never get the job as low-bidder
- Do not assume you understand the provision by reading the headings
- Know whether your dispute is legal or technical, or both

The Change Order Request

- Meet the contract requirements
- Separate issues and bundle only "like" issues
  - Don't assume the people reviewing the request understand steel and your problems
- Contents
  - Factual narrative
    - What is different or what changed
    - Theory of recovery (entitlement)
  - What did the change cost
    - Give credit for the bid work
  - Backup documentation

Factual Narrative

- What did I bid… and here's the proof
- What is in my contract… and here's the proof
- What changed… and here's the proof
- Why did it change (sometimes you'll never know)
- How did the change affect my plan… and here's the proof
- Burden of proof – Cause and Effect

What Needs to be In the Change Order Request

…or Request for Equitable Adjustment

Change Order Request Contents

- If the change order needs it, then the request needs it

7.2 CHANGE ORDERS

7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect, stating their agreement upon all of the following:

.1 change in the Work;

.2 the amount of the adjustment, if any, in the Contract Sum; and

.3 the extent of the adjustment, if any, in the Contract Time.

Damages / Cost Language

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following:

.1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

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GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006-5292

This is not rocket science!

Whoops!

- Never let "them" associate dollars with weight
- Add language that this is for payment purposes only and **NOT for calculating the value of changed work.**

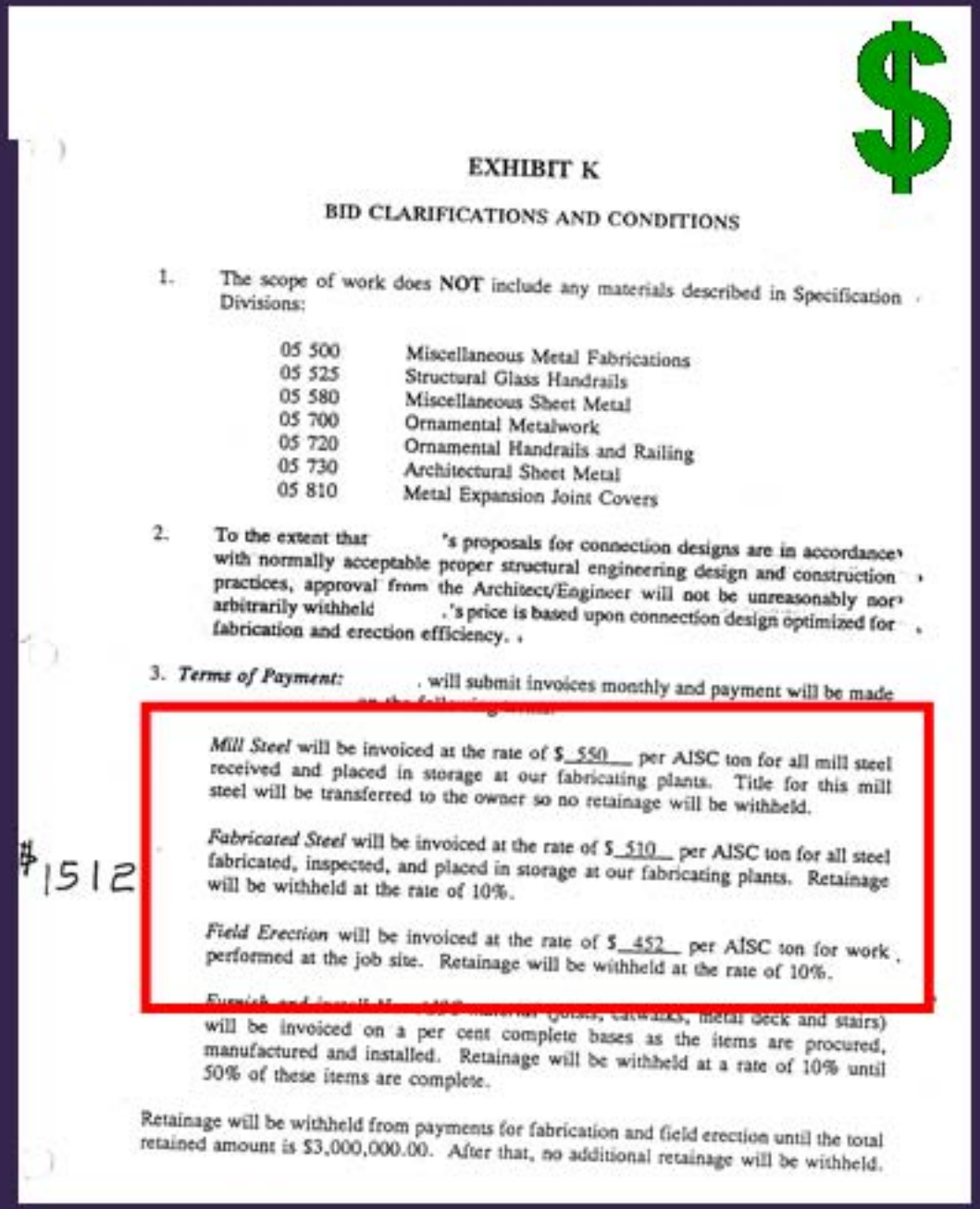


EXHIBIT K

BID CLARIFICATIONS AND CONDITIONS

1. The scope of work does **NOT** include any materials described in Specification Divisions:

05 500	Miscellaneous Metal Fabrications
05 525	Structural Glass Handrails
05 580	Miscellaneous Sheet Metal
05 700	Ornamental Metalwork
05 720	Ornamental Handrails and Railing
05 730	Architectural Sheet Metal
05 810	Metal Expansion Joint Covers

2. To the extent that 's proposals for connection designs are in accordance with normally acceptable proper structural engineering design and construction practices, approval from the Architect/Engineer will not be unreasonably nor arbitrarily withheld .'s price is based upon connection design optimized for fabrication and erection efficiency.

3. ***Terms of Payment:*** . will submit invoices monthly and payment will be made

#1512

Mill Steel will be invoiced at the rate of $ 550 per AISC ton for all mill steel received and placed in storage at our fabricating plants. Title for this mill steel will be transferred to the owner so no retainage will be withheld.

Fabricated Steel will be invoiced at the rate of $ 510 per AISC ton for all steel fabricated, inspected, and placed in storage at our fabricating plants. Retainage will be withheld at the rate of 10%.

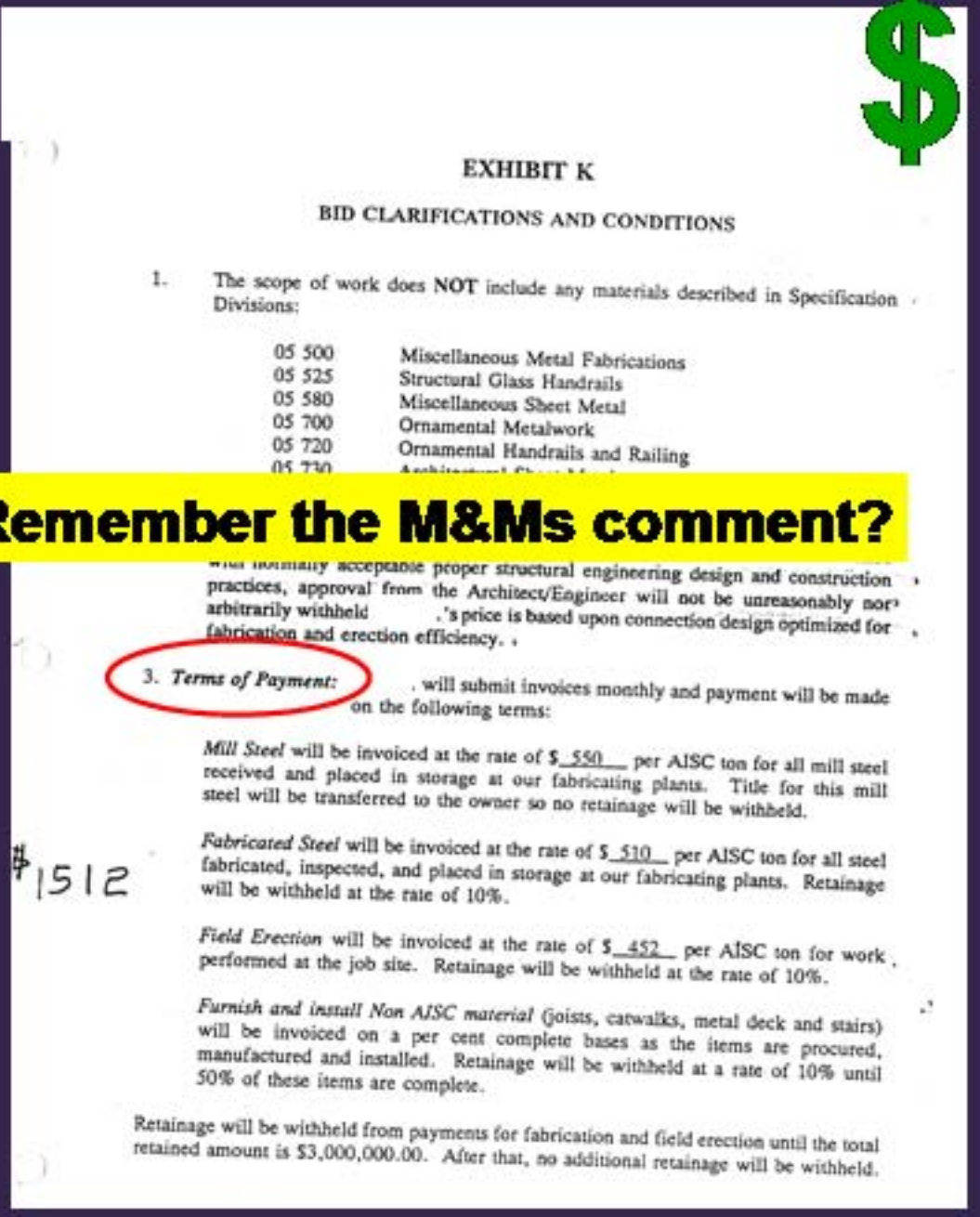
Field Erection will be invoiced at the rate of $ 452 per AISC ton for work performed at the job site. Retainage will be withheld at the rate of 10%.

Furnish and install [illegible] (joists, catwalks, metal deck and stairs) will be invoiced on a per cent complete bases as the items are procured, manufactured and installed. Retainage will be withheld at a rate of 10% until 50% of these items are complete.

Retainage will be withheld from payments for fabrication and field erection until the total retained amount is $3,000,000.00. After that, no additional retainage will be withheld.

Whoops!

- Never let "them" associate dollars with weight
- Add language that this is for payment purposes only and **NOT for calculating the value of changed work.**



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05 700	Ornamental Metalwork
05 720	Ornamental Handrails and Railing
05 730	

Remember the M&Ms comment?

practices, approval from the Architect/Engineer will not be unreasonably nor arbitrarily withheld .'s price is based upon connection design optimized for fabrication and erection efficiency.

3. *Terms of Payment:* . will submit invoices monthly and payment will be made on the following terms:

Mill Steel will be invoiced at the rate of $ 550 per AISC ton for all mill steel received and placed in storage at our fabricating plants. Title for this mill steel will be transferred to the owner so no retainage will be withheld.

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Fabricated Steel will be invoiced at the rate of $ 510 per AISC ton for all steel fabricated, inspected, and placed in storage at our fabricating plants. Retainage will be withheld at the rate of 10%.

Field Erection will be invoiced at the rate of $ 452 per AISC ton for work performed at the job site. Retainage will be withheld at the rate of 10%.

Furnish and install Non AISC material (joists, catwalks, metal deck and stairs) will be invoiced on a per cent complete bases as the items are procured, manufactured and installed. Retainage will be withheld at a rate of 10% until 50% of these items are complete.

Retainage will be withheld from payments for fabrication and field erection until the total retained amount is $3,000,000.00. After that, no additional retainage will be withheld.

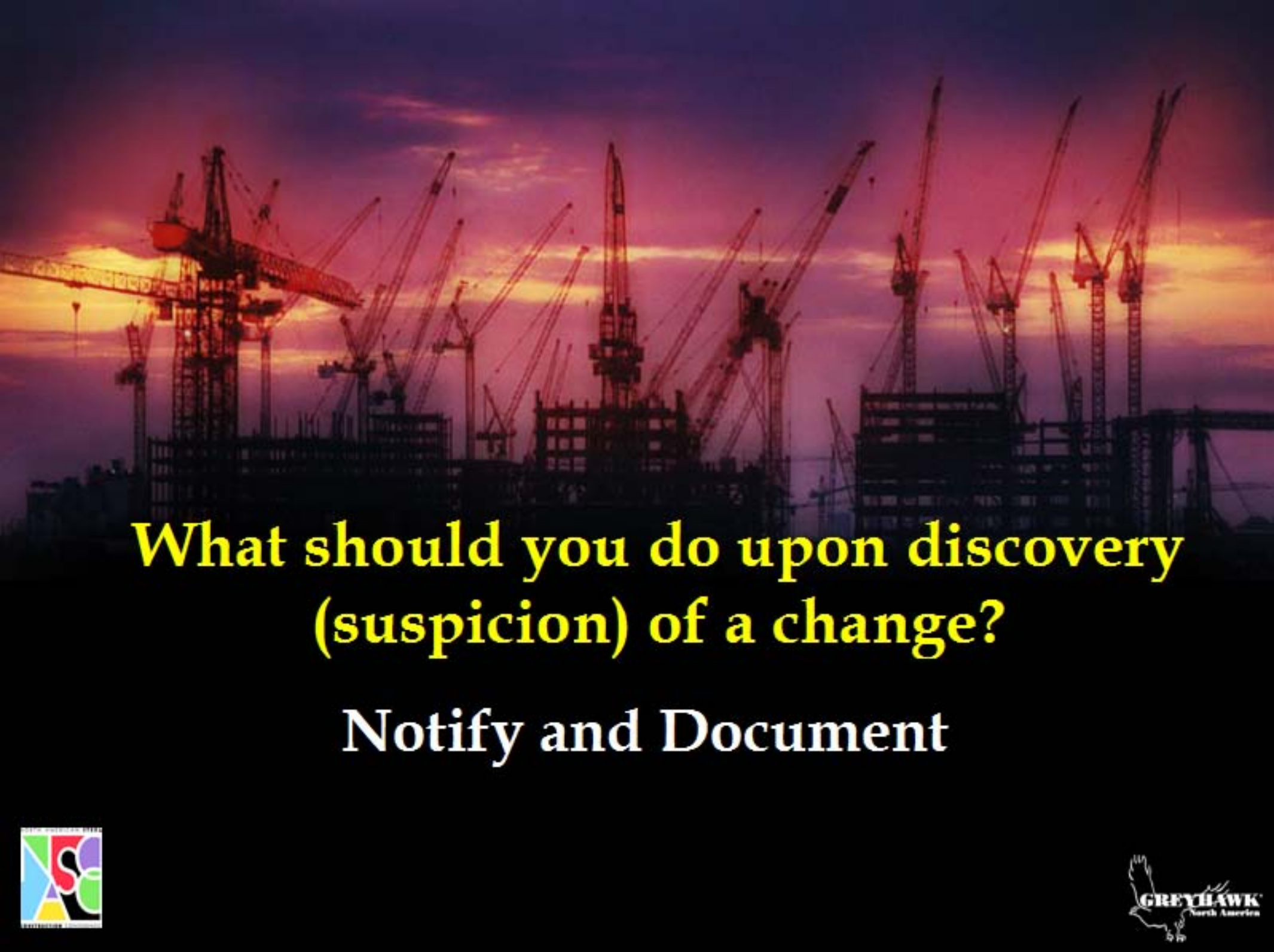
Common Contractual Change Order Life Cycle

- Discovery
- Notice
- Requ[illegible]paration [w/pricing]
- Subm[illegible]tion
- Neg[illegible]
- Approval
- Performing
- Include in *Payment Application*
- Get paid

Wouldn't life be sweet if this is the way it really happens

What Really Happens

- Somebody runs up to you and says "Oh Crap!"
- "Time is of the essence" so you negotiate over coffee in the field
- You get the verbal go-ahead and the proverbial "don't worry – my word is steel"
- Work gets done
- You start the change order request process
- "They" don't seem to remember "the deal"
- "They" now blame you for the change
- You have trouble getting paid
- The change gets bundled with other changes
- You collect, if you're lucky, cents on the dollar



What should you do upon discovery (suspicion) of a change?

Notify and Document

Notice

- Defined in contract
- Timely
- Why is "timely notice" important?
  - Contract requirement
  - It affords "someone" the opportunity to change their mind and make educated decisions
  - It avoids the "prejudice" argument
- Ask yourself: Why aren't you providing timely notice – what are we afraid of?
  - Afraid of the perception of "nickel & dime'ng"
  - Afraid I won't be asked to bid future work if I asked for change orders

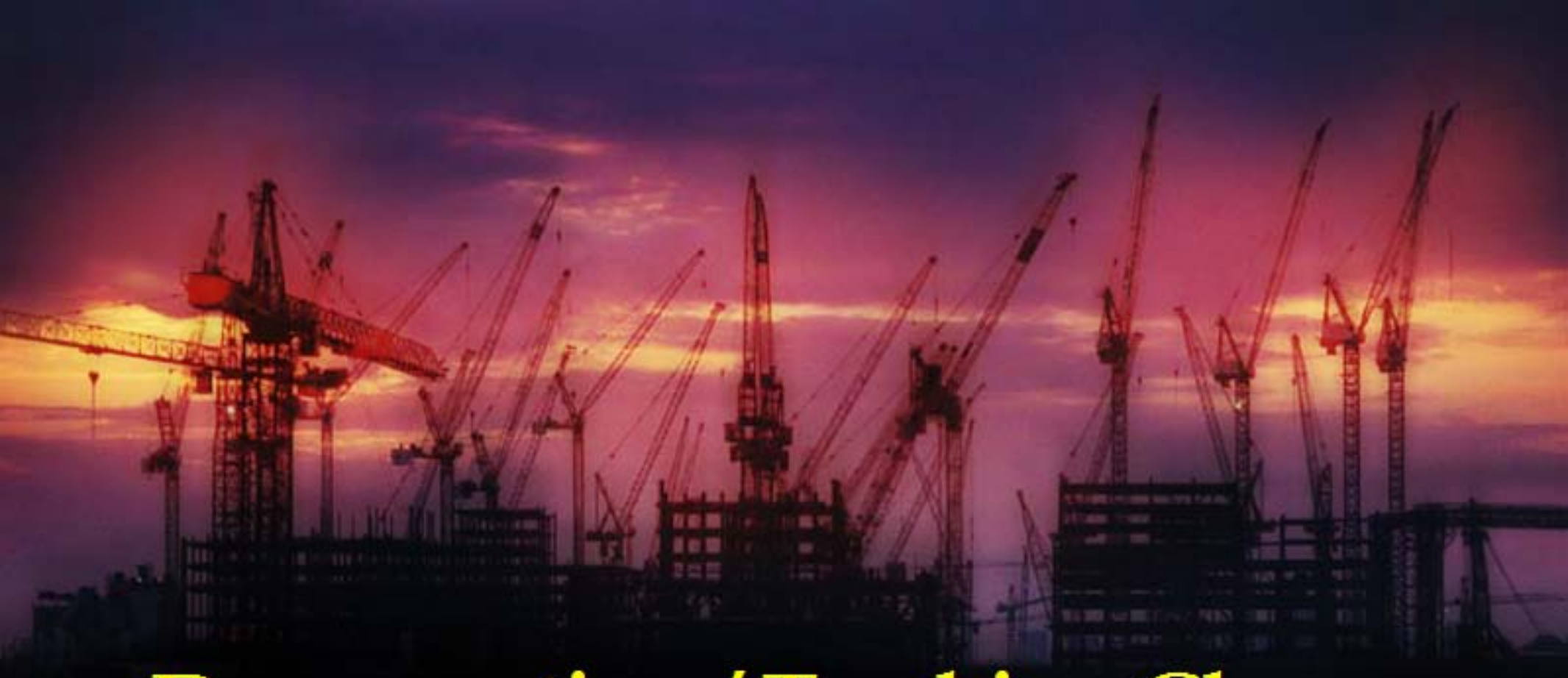
Document: Create Issue Files

- The minute you "feel" or "know" something is a change, create a file
  - You may never need this file, but you'll be glad you have it if you do

Issue File Contents

One (1) issue per file

- Stand-alone information
- Chronology of important dates
- Narrative of issue
- Who is involved and how – name names and point fingers
- Digital photographs and/or video
- Plans, sketches, diagrams, surveys, spec. sections, contract drawings or schedules
- Relevant documentation
  - Correspondence, minutes, logs, notes, reports
- Issue files become the backup documentation source for change orders



Documenting / Tracking Change

Documentation

- Daily Reports
- Project communication
- Photographs – digital is better
- Video

Daily Reports - the breadcrumbs that get you paid

- Date, page #, weather, visitors
- Work and activity description by work area/phase (Use column/level designations)
  - Tie to schedule activity numbers
- Problems or comments
- Workforce by contractor or crew
- Equipment on-site
- Material and equipment received/sent
- Meetings
- Note decisions
- Note changes
- Photographs

Go Electronic!

Daily Reports – Good Practices $

- Only use one side of the paper
- Make completion of reports a "daily" religion
- Stress accuracy and consistent format
  - Go electronic if you can
- Use piece marks and codes to identify steel movement – drawn, fabricated, and hung
  - Put into database contemporaneously
- **Should I also keep a personal log?**

Data

Steel construction lends itself to tracking progress from connection engineering thru buttoning-up

Today's Problem with Steel Data

- Cannot distinguish between CONTRACT and CHANGED work
- No one "really" knows where the documents are located
- The amount of duplication is staggering; email is not helping
- What is said via email is dangerous
- Marginalia is not helpful – but we agree it saves time

Detailer - Data

- Labor hours
- Drawing / Detailer Log
  - Drawn by, start, checked and finish dates, change dates, time
  - Activity worked on, by whom and how long
- Time Sheets
  - By person, by company
  - Track changed work with a special code
    - Should be coordinated with fabricator codes
- Drawings/Pieces released to the shop office

We recognize that this is sometimes detailing software dependent

Fabricator - Data

- Labor hours
  - Time cards for all workers by function
    - Templates, CNC, material handling, fitters, welders, etc.
  - Track changes with codes or other systems
- Released for fabrication
  - Track piece marks
- Fabrication
  - CNC processing data
  - Track piece marks thru the entire process
  - Track shipping piece numbers
- Shipping/Storage
  - Track shipping piece (assembly) numbers/data

Track The Details

- Only "Steel" people understand what it takes.
- $ are in the details

LABOR ANALYSIS - NEW ESTIMATE (7/22/94)
WEEK ENDING October 28, 1995

DRWG CODE	FAB/OPER. CODE	DESCRIPTION
	5000-00-19	EXTRAORDINARY HRS
	5000-00-20	SHOP HANDLING
	5000-00-21	YARD HANDLING
01	5000-10	WF COLUMNS SIMPLE FIT
01	5000-10A	WF COLUMNS W/B.P.
01	5000-10B	WF COLUMNS COMPLEX
01	5000-10D	WF COLUMNS W/BRACING
01	5000-11A	WF COLS LESS THAN 14" SIMPLE FIT
01	5000-11B	WF COLS LESS THAN 14" W/B.P.
01	5000-12	WF COLS LRG THAN 14" SIMPLE FIT
01	5000-12A	WF COLS LRG THAN 14" W/B.P.
02	5000-13	BLT-UP "T" OR CROSSFORM PL COL W/B.P.
02	5000-14	W ENTRY VERTICAL TRUSS FRAMES
02	5000-14	W ENTRY HORIZONTAL TS & W STRUTS
02	5000-15	BLT-UP BOX PL COLS
02	5000-15A	BLT-UP BOX PL COLS W/B.P.
01	5000-18	BLT-UP 3 WF SHAPE COL
01	5000-18A	BLT-UP 3 WF SHAPE COL W/B.P.
01	5000-19	COLUMNS T.S.
04	5000-21	BLT-UP 3PLATE GIRDERS
04	5000-22	BLT-UP CURVED BOX GIRDERS AT ROOF
04	5000-22	W-CURVED BMS & CANTILEVER
04	5000-23	BLT-UP SNOW GUTTER OVERHANG
03	5000-30	MOMENT CONNECTION BEAMS
03	5000-31	SIMPLE BEAMS (SKID & BULLEYE)
03	5000-32	SIMPLE BEAMS (LINE & BULLEYE)
03	5000-33	COMPLEX BEAMS
03	5000-34	BRACING BEAMS

Erector - Data

- Labor hours
- Shipping pieces received and unloaded
- Shipping pieces hung
  - By crew and crane
- Crane movement dates/location is key
- Track (if you can) labor to hang steel, plumb & bolt, welding, decking and studs
- Track changes with codes or other system

Methodology

Putting the submissions together to maximize your chance of getting paid

Bases for Change Order Requests

- Discrete
- Total Cost
- Modified Total Cost
- …or combinations thereof

Discrete

- Request for:
  - 1 piece of steel
  - 1 assembly or group of assemblies
  - 1 area / phase of work
- Sometimes hard (or impossible) to show how it was priced in your bid
  - e.g. connection material
- Best methods support theory of cause and effect:
  - I didn't bid it; the project needed it; I put it in; It impacted me; I didn't need the practice (pay me)

Total Cost Claims

- Do not have the data and cannot price the change discretely
- Subject to a lot of criticism – viewed as the easy way out (but it may legitimately be the only way)
- Assumes the steel guy did nothing to contribute to the cause of the delay or extra work
  - This is often not true and don't think you can hide the dead bodies

"Modified" Total Cost

- OK you finally admit that some of the problems are your fault
- You have now accounted for these problems in your time analysis and pricing and modified your total cost/time analysis
- Steel problems we often see…
  - Management of the project
    - e.g. I kept my crews because I was afraid I couldn't get them back when I needed them
  - Your inefficiencies
    - e.g. I elected to work consecutive weeks of overtime thinking I was getting more work done

Pricing Steel Claims

- Actual – Real Time
  - Time and Material (Force Account)
  - Efficiency/value can be disputed
- Forward Pricing – Guess Before
  - This could be risky
  - Use the same method of estimating used in the bid
  - DO NOT price by the square foot or by weight
- Independent Verification – Someone else does an educated guess

Actual Cost – T&M

*Cannot Accurately Forward Price**

- Daily Time Tickets
  - Note only the time for non-contract work
  - Describe work accurately (where and how much)
  - Describe personnel (who and how many)
  - Get time tickets signed daily by your client (even if you have a dispute)
    - *This is only an acknowledgement that this work was performed*
  - Put in issue or change files

*** Or not willing to take the risk**

Forward Pricing

- This has no more risk than your bid
- Use the same estimating procedures and standards used to bid the job
- Update rates, cost of material and equipment rates – unless contract says otherwise or contract has unit rates
- Calculate and include costs of inefficiencies
- Determine time impacts
  - Dependent on level of detail in your CPM schedule

Independent "Verification"

- This is usually is a check estimate
  - Of your forward pricing
  - Or of your actual time
- Obtain a 3rd party estimate of labor, material and equipment to perform certain work
  - Documents usually required
    - Bid documentation
    - Change documentation
  - Seeking price difference between bid and change
  - Get backup estimate sheets
- Don't use your friends

Steel Changes

- New – steel that was not in the bid documents
- Changed (Replaced) – work was in the bid documents, but has been changed (new shape, new size…)
- Deleted – work was in the bid documents, but has been completely removed from the project

Costs that Could be Included in the Request

- Direct
- Indirect
- Impact
- Consequential

Costs that Could be Included in the Request

- Direct
- Indirect

} Performance Costs

- Impact
- Consequential

Performance Costs

- Labor
- Material
  - Warehouse premiums
  - Value of purchased deleted steel
    - Credit scrap value
- Working supervision
- Off-site material storage
- Subcontractors
- Escalation
- Bond fee

Performance Costs (cont'd)

- Additional equipment
  - Idle equipment
  - Downtime & Maintenance
- Additional safety/protection
  - Handrail
  - Scaffolding
- Restocking costs
- Shipping costs
- Temporary heat, light, and power

Performance Costs (cont'd)

- Overhead
  - Shop overhead
    - Cleanup, material handling, maintenance
  - Field overhead
    - Supervision
  - SG&A (selling, general and administrative) i.e. Home Office OH
    - Project management
- Subcontractor Costs

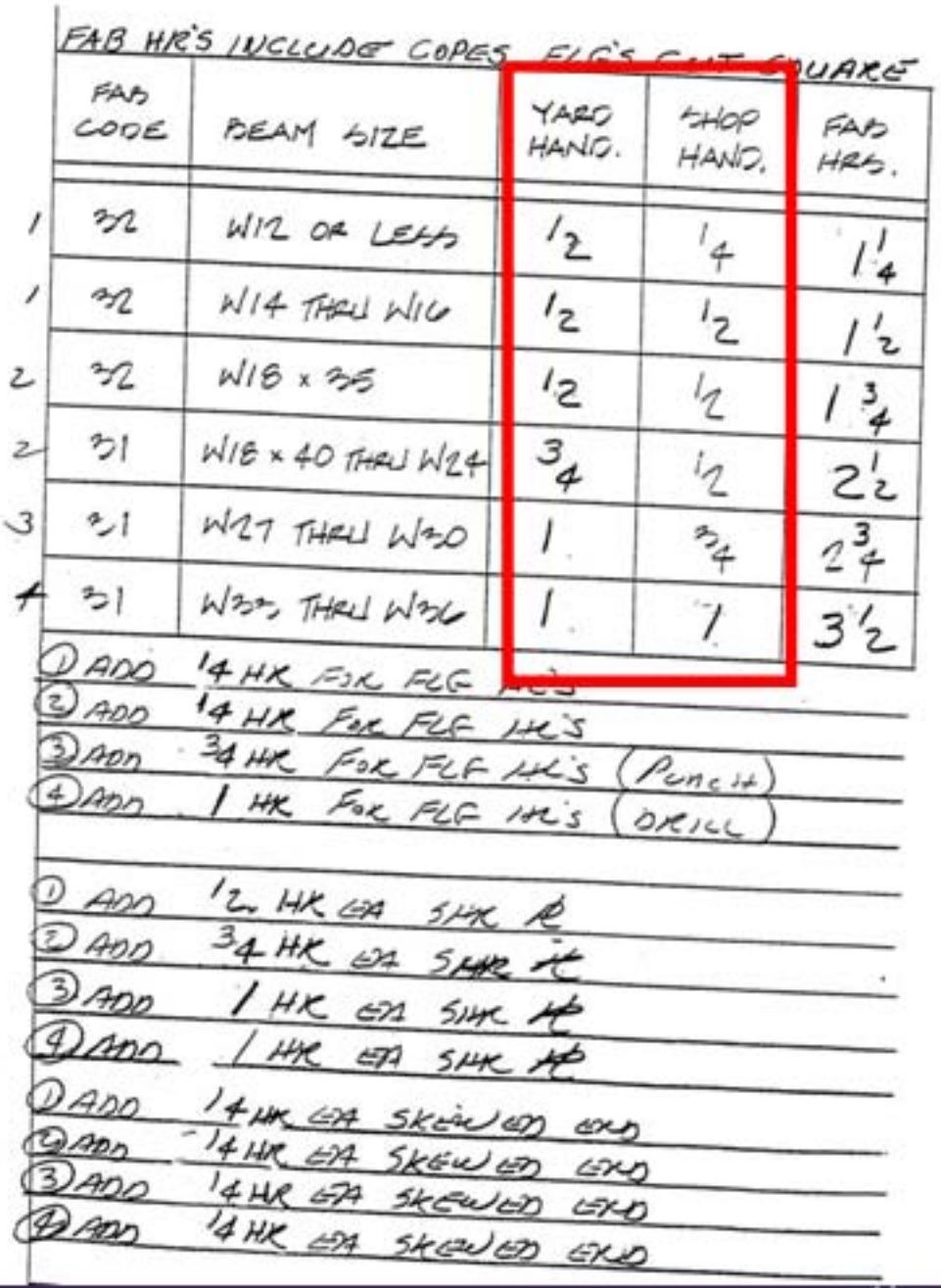
Factored Costs

- Use a % of fabrication costs to cover shop consumables.
- Use a % of erection costs to cover field equipment and consumables.
- Do not forget to include a % or labor costs for material handling during fabrication, transportation and/or in the field if staging is required.

Hopefully, this is also in your bid and your contract

Misc. $

- Standardize misc. costs
- Show these in your bid documents
- Use in all estimating
- Don't track actual costs if you use standard factors



FAB HR'S INCLUDE COPES, FLG'S CUT SQUARE

	FAB CODE	BEAM SIZE	YARD HAND.	SHOP HAND.	FAB HRS.
1	32	W12 OR LESS	1/2	1/4	1 1/4
1	32	W14 THRU W16	1/2	1/2	1 1/2
2	32	W18 x 35	1/2	1/2	1 3/4
2	31	W18 x 40 THRU W24	3/4	1/2	2 1/2
3	31	W27 THRU W30	1	3/4	2 3/4
4	31	W33 THRU W36	1	1	3 1/2

① ADD 1/4 HR FOR FLG HR'S
② ADD 1/4 HR FOR FLG HR'S
③ ADD 3/4 HR FOR FLG HR'S (PUNCH)
④ ADD 1 HR FOR FLG HR'S (DRILL)

① ADD 1/2 HR EA SHR
② ADD 3/4 HR EA SHR
③ ADD 1 HR EA SHR
④ ADD 1 HR EA SHR

① ADD 1/4 HR EA SKEWED END
② ADD 1/4 HR EA SKEWED END
③ ADD 1/4 HR EA SKEWED END
④ ADD 1/4 HR EA SKEWED END

Impact Costs

Due to Delay / Acceleration / Disruption

- Loss of efficiency or productivity
- Interest or carrying costs
- Change order/claims preparation
- Attorney Fees and other legal costs
- Cost of subletting work to avoid shop over-utilization

Consequential Costs

- Loss of profits
- Loss of bonding line
- Loss of credit line
- Interest
- Damaged business
  - Lost opportunity
  - Cancelled contracts

Direct vs. Indirect
Direct vs. Overhead

- Great controversy exists on the definitions
- How do you apply the 10%/10%?
- Your contract "should" but probably does not address the issue completely
- The answer is:
  - Define it in your schedule of values
  - Define it by the manner in which you do your cost accounting

Claim Summary

- Client should recognize every line item
- Don't leave anything out
- Revisions cause questions
  - Integrity
  - Veracity
- Give back proper credits and recognize all backcharges

CLAIM VALUE

CATEGORY OF COST	Claim Amount
Engineering Changes	$31,760
Detailing Changes (D)	$1,553,226
Fabrication Changes (F)	$4,526,407
Erection Changes (E)	$2,548,348
Material Changes (M)	$2,605,112
Premium Overtime Changes	$1,125,345
Extra Freight Costs	$36,787
Additional Crane Costs	$522,344
Decking	$520,706
Additional Project Management/Overhead	$1,238,574
Time and Material Charges	$383,487
Subtotal	$15,092,094
Profit @ 6.7%	$1,011,170
Supplied Crane Backcharge	-$234,360
Anticipated Change Adjustment	-$380,024
Interest	$1,018,713
Backcharge for redesign of ped. bridge	-$23,500
Contract Balance plus Unbilled	$5,549,755
Bond	$51,405
Grand Total of Monies Owed	$22,085,256

$17,173,382 = Claim

How Do I Price Changed Work?

1) Actual price of New work
2) Price Changed (added) work by adding the actual cost (T&M or forward-priced) of the new work and subtracting the cost of the work in the bid that has been replaced (if it has not already been performed)
3) Price Deleted work by subtracting the cost of the work in the bid (if it has not been performed)

How Do I Price Deleted Work?

- Use data/assumptions directly from your estimate sheets.
- Use the EXACT same method and unit rates as used to prepare your bid.
- Give back only "part" of your SG&A
  - Talk to your accountant
- Take into account scrap value, restocking, storage, material handling, etc.

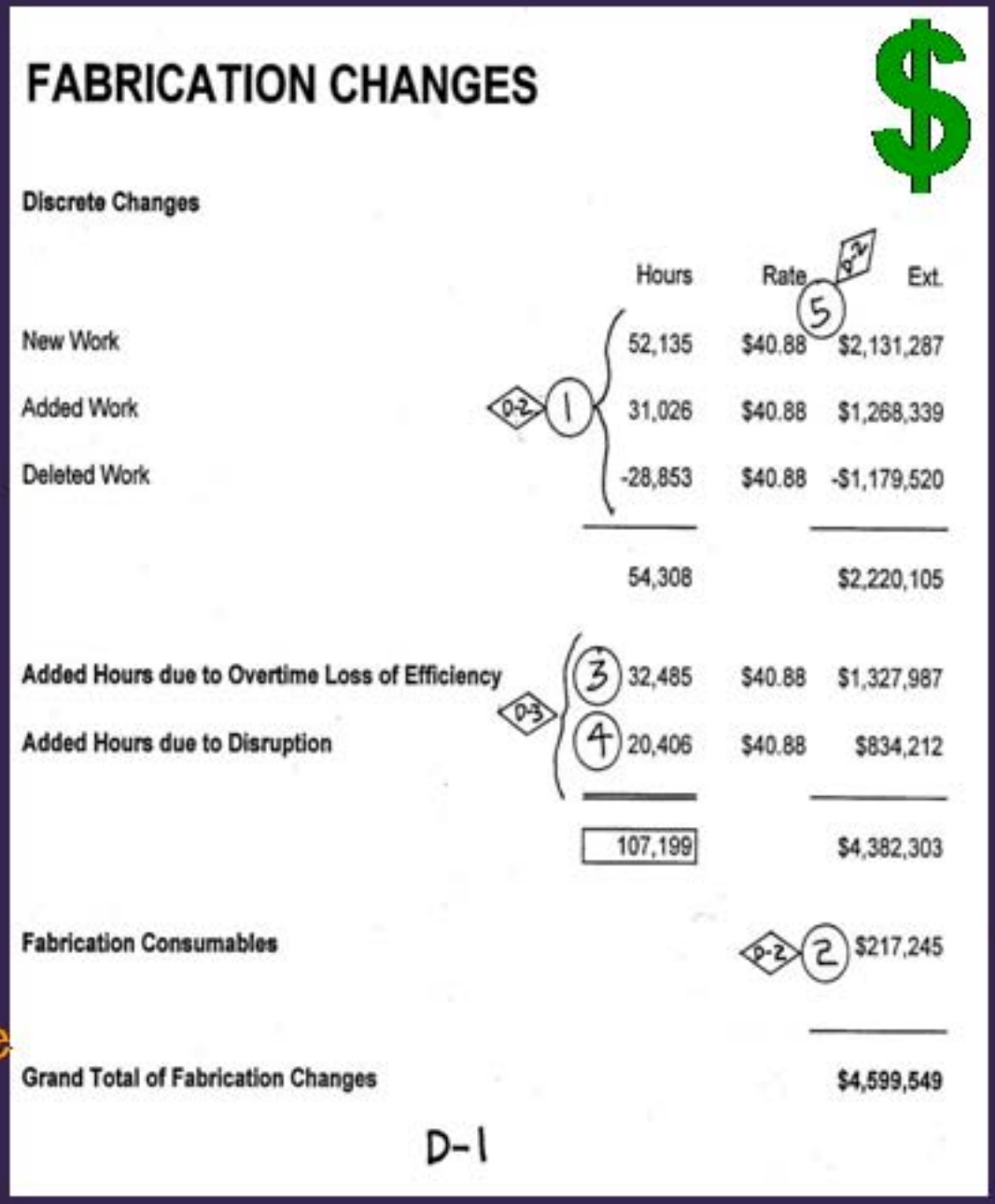
Costs You "May" Not Recover

- Attorney fees
- Interest
- Financing costs
- Claims consultant fees
- Other consequential damages

Show and Tell

- Make sure reviewers know exactly where each number came from and how numbers were calculated.
- Include backup documentation.

The more the reviewer doesn't understand, the slimmer your chances of collecting and/or the longer the process



FABRICATION CHANGES

Discrete Changes

		Hours	Rate	Ext.
New Work		52,135	$40.88	$2,131,287
Added Work	D-2 (1)	31,026	$40.88	$1,268,339
Deleted Work		-28,853	$40.88	-$1,179,520
		54,308		$2,220,105
Added Hours due to Overtime Loss of Efficiency	D-3 (3)	32,485	$40.88	$1,327,987
Added Hours due to Disruption	D-3 (4)	20,406	$40.88	$834,212
		107,199		$4,382,303
Fabrication Consumables	D-2 (2)			$217,245
Grand Total of Fabrication Changes				$4,599,549

D-1

(5) D-2

Reality Check

Project Hours

	Plant		Field		Detailing Hours	
Planned after 4/13/94	229,978	Hrs	151,607	Hrs	74,959	
Actual after 4/13/94	350,016	Hrs	209,195	Hrs	124,051	
Actual Unplanned/Unanticpated after 4/13/94	**120,038**	**Hrs**	**57,588**	**Hrs**	**49,092**	**Hrs**
Extra due to discrete change packages (All categories)	54,308	Hrs	43,501	Hrs	33,664	Hrs
Loss of Efficiency (OT)	32,485	Hrs	7,380	Hrs	4,802	Hrs
LOE due to Disruption	20,406	Hrs	0	Hrs	6,326	Hrs
Subtotal in Clai	**107,199**	**Hrs**	**50,880**	**Hrs**	**44,792**	**Hrs**
Hours for account	**12,839**	**Hrs**	**6,708**	**Hrs**	**4,300**	**Hrs**
	$524,850		$324,518		$150,496	Value
	10.7%		11.6%		8.8%	Percentage

12,839 hrs
$524,850
10.7%

6,708 hrs
$324,518
11.6%

4,300 hrs
$150,496
8.8%

Need to look at hours and dollars

The Submission

Request for Equitable Adjustment, or Change Order Request, or eventually the Claim

Contents of Submission

- Executive summary (could be the cover letter)
- Narrative and Pricing Summary
- Calculations and backup for costs of connection engineering, detailing, fabrication, freight and erection.
- All associated RFIs, sketches, directives, etc.
- Relevant contract drawings and specs
  - Marked-up and highlighted
- Relevant shop drawings
  - Marked-up and highlighted

Create Change Packages

- A group of changes that have been consolidated (bundled) into a single package
  - To expedite the review process
  - To facilitate understanding
- Use your contract as a guide

Change Package Contents

- CP summary showing pricing summary with total
- Pricing details of the components of the CP
- Documents that generated the change – bulletin, RFI, FW, FSSK, letter, etc. (w/sketches and color coded)

Change Package Contents (Cont'd)

- Pricing summary of detailed costs
  - (separate costs of connection engineering, detailing, fabrication and erection)
  - (separate new, added and deleted work)
  - Material (Piece numbers)
  - Labor and equipment
  - Supplies (Consumables, Tool Box, etc.)
  - Freight, scrap, storage, restocking, etc.
  - What about shop office, home office, and other SG&A?
- Include every engineering calc and shop drawing, with changes highlighted (color-coded), that pertain. Use an index.

Change Package

- Tell them what you want
- Tell them why you're entitled
- Prove that it's real
- Don't make the reviewer find the backup documents
- The more you do…
  - Increase chances
  - Reduce time

PACKAGE SUMMARY

Package: FSSK- 1929
Type: Beam
Amount: $ 28,941.59
Phase: 6
Zone: AZ
Level: 39

Description of Change:

This FSSK added over 10 tons of new floor framing at level 39 in the area of column lines F-H and 16-18. This framing work was added by FSSK's 1929 and 1929R1. Dimensional information necessary to perform the work was provided verbally in Revision 1 to FSSK 1929.

rawing S-070 (BUL #8) shows the subject area without the framing and the Bulletin #15 version of this drawings shows the framing additions in FSSK's 1929 and 1929R1.

Index of Package Contents:

• Package Summary
• "Cover Sheet Summary for Individual Change" sheet
• Pricing Summary Sheet
• Change Summary
• "Material Cost By Change" sheet
• "FSSK Take Off Sheets" (9 pages)
• Fabrication Summary Sheets -11x 17 (8 sheet)
• "Shop Labor Page Summary" sheet
• "Field Erection Information for Changes" sheet
• "Field Equipment and Supplies" sheet
• "Field Manhours and Supplies" sheet
• "Costs Summary Sheet for Changes" sheet
• Detailing hours summary for FSSK- 1929R1
• "Associated Piece Marks" sheet
• "For Pricing FSSK 1929 & 1929R1
• FSSK- 1929 Dated 12-21-94
• FSSK- 1929R1 Verbally Received 1-5-95
• Weld Sheet - Shop & Field
• Drawings: *Detail Drawings:* D5359, D4675, D4694, D4695, D4754, D4800, D4892, D5039, D5416, D1630, D1631,D1946 *Erection Drawing*: FW131
• Drawings : S-070 (BUL# 8&15)

Backcharges

Upstream and Downstream

Owner's Damages

- Lost revenues for use
  - Lost sales, rental income, ticket sales, etc.
- Increased
  - A/E, CM, Consulta
- Overhead
- Diminutive Value
  - e.g. change in market conditions

…or the dreaded Liquidated Damages (LDs)

General Contractor Damages

- Everything upstream from the Owner passed downstream to the steel contractor
- Other trade's claims due to the steel guy's delay
- Extended General Conditions
  - Supervision
  - Field Overhead
  - Equipment
- Escalation

Liquidating Agreements

- Liquidating agreements – who am I jumping into bed with?
  - Upstream
  - Downstream

1) Being paid "today" a discounted amount for the steel claim
2) Entering into an agreement to be paid a pro-rata portion of a settlement or award

Getting Help

This allows you to concentrate on finishing the project and managing your business

Who Do I Get Help From?

- Lawyers – legal issues
- Claims Consultants
  - Project management
  - Technical issues
    - Preparing a change order request
    - Refuting a change order request
  - Expert testimony
- Specialty Engineers / Consultants
- Accountants
  - Get your financials in order

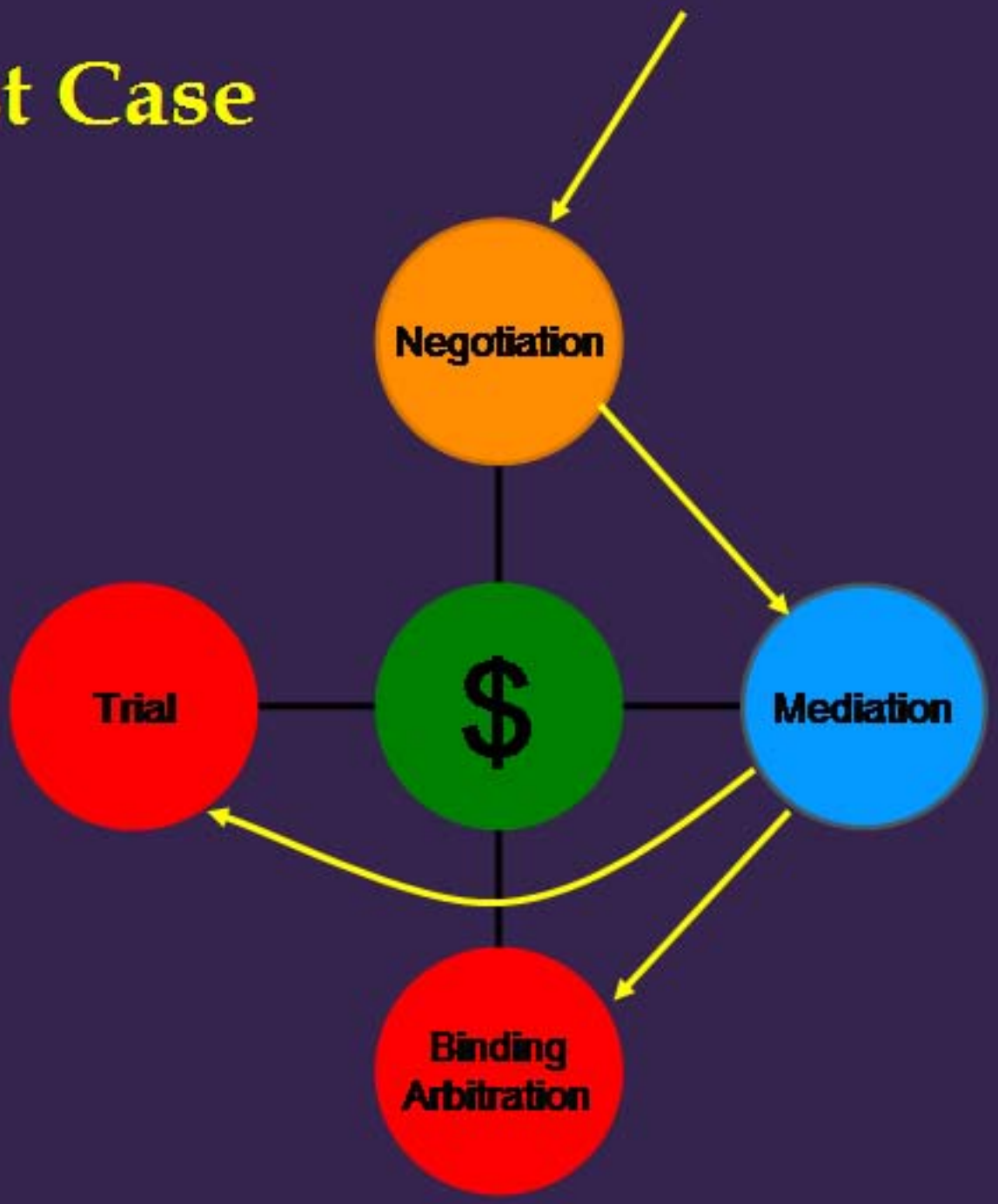
Lowering the Costs of Help

- You have the data
- You have the documents organized
- You have issue files
- You keep the issues technical in nature; not legal
  - i.e. don't breach your contract
- Maintain your integrity
- Maintain the momentum

Process Issues

How do I get paid – who decides?

Worst Case



Negotiation

- You are in control of your fate
- Negotiation is an art – not everyone is good at it
- You may not want to show your entire hand at this time
- Emotions can get in the way
- Stakeholders may not be objective

Mediation

- You are in control of your fate
- A 3rd party is facilitating the "negotiation" through a more formal process
- Success does depend on the strengths of the mediator
- Do not hold out thinking you are going to get a windfall awarded by arbitrators or a jury

Arbitration - Binding

- You are "not" in control of your fate
- Your lawyer can influence the panel
- Arbitration is a "trial"
- Arbitration may not cost less than a trial
- The quality of the arbitrators matters
  - Make sure at least one of them understands "contracting"
- You can get a "detailed" written decision

Trial

- You are not in control
- Your lawyer is not in control
- Your fate is in the hands of a non-technical judge or even worse "a jury"
  - "a jury" who has probably been raked over the coals by a contractor on their house
- You can be right and still lose
  - your not liked, not trusted or perceived negatively
- Some cases a better off in trial than ADR because of the legal nuances
- Sometimes the persona of your expert or lawyer could make or break your case

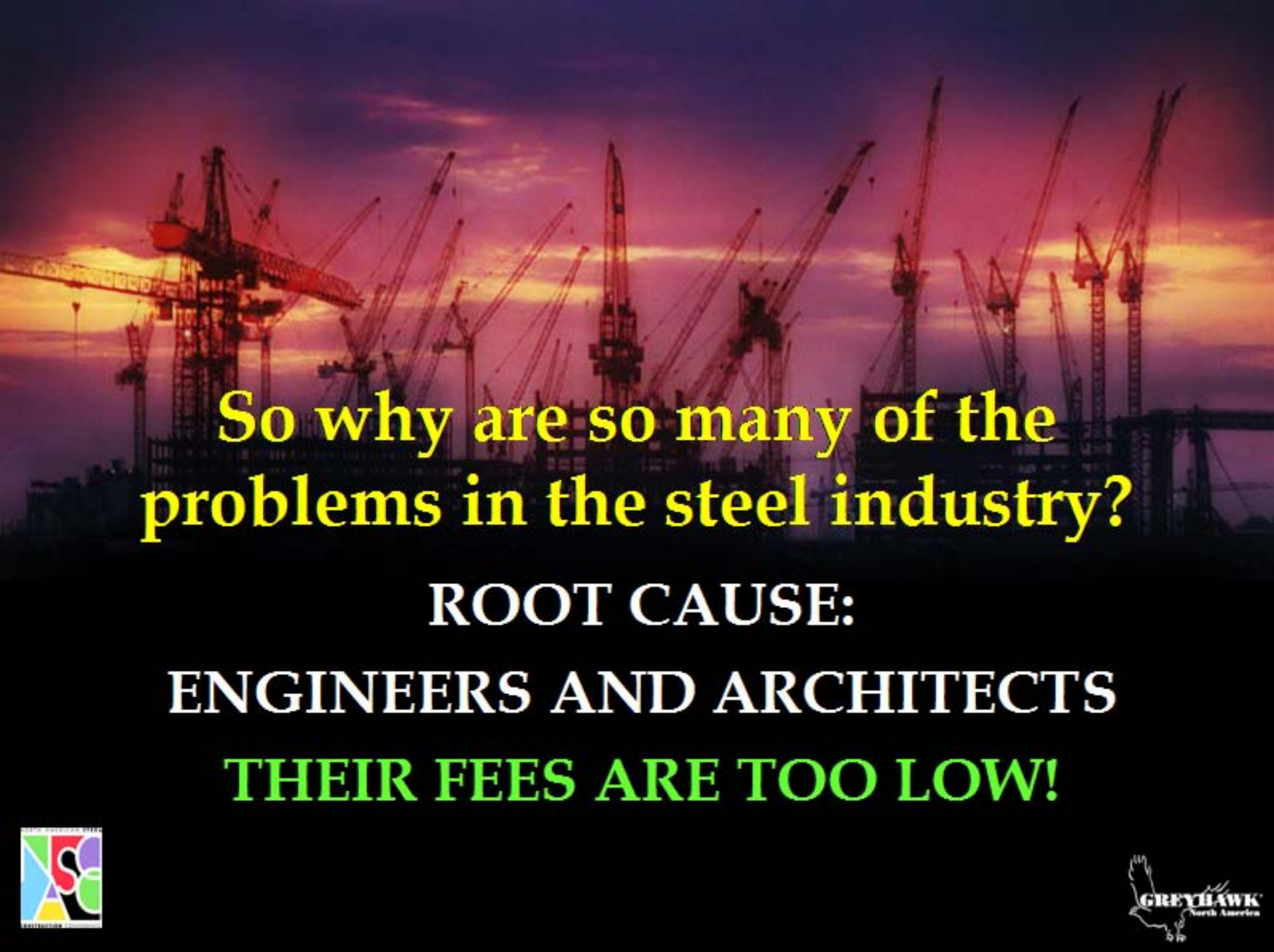
Other Methods of Adjudication

- Mini-trials
- Non-binding arbitration
- Dispute review boards
- Special Master

Preparing For A Fight

- It takes time and resources
  - only lawyers and experts make money in the end
- Collect all hard copy documents
- Consolidate all electronic documents
- Give your lawyer and consultants everything
  - Bad news
  - Bad facts
  - Where the bodies are buried

We're wrapping up
But we still want to discuss an important issue…
This is Gary's soap box…


So why are so many of the problems in the steel industry?
ROOT CAUSE:
ENGINEERS AND ARCHITECTS
THEIR FEES ARE TOO LOW!
GREYHAWK
North America

What Do Low Fees Mean?

- Incomplete design drawings – high RFIs
- Inexperienced A/Es (The "B" Team)
- Too few A/Es
- Errors and Omissions
- Lack of A/E supervision
- Excessive response time to RFIs and Approvals
- Subsidizing the design by the steel team

Suggestions

- Making money is better than winning work
  - Winning work you can't make money on will eventually put you out of business
- Bid jobs where you know the EOR's reputation
  - Size, experience, responsiveness, etc.
- Foster relationships with EORs
- Help EORs everywhere you can

So in conclusion…

Impacts of Delay must be Managed to Get Paid

Here is what we hoped you got

Getting Paid for Acceleration

- Know how to calculate the delay
- Know how to make the correct decisions to mitigate the delay
- Communicate with your client
- Prepare an accurate request and don't leave anything to the imagination
- Seek help if you need it.

Just to Remind You…
Today's Slides

Available April 11, 2005

1) Go to GREYHAWK's website www.greyhawk.com
2) Click on "Publications/Bulletin Board"
3) Click on "Presentations"
4) Find the .pdf file entitled "Managing the Impacts of Delay – NASCC Montreal 2005"

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- Toll Free 1-888-280-HAWK (4295)
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Thank you for your time and attention

Any questions?