



National Stream Restoration Conference

2023

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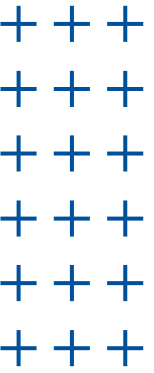
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ENGINEERS AND CONTRACTORS FINDING COMMON GROUND DURING CHALLENGING ECONOMIC TIMES

Chris L. Yow, PE

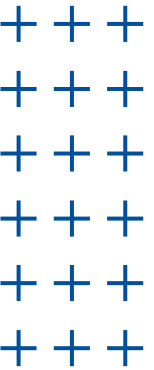
Project Roles



- **Owner** (Municipality, State Gov., Federal Gov., Private)
- **Engineer** (Consultant)
 - Sub-consultant
- **Architect** (Consultant)
 - Sub-consultant
- **General Contractor** (GC)
 - Sub-Contractor



Contract Documents



- **Project Manual**
 - Front End Documents
 - Specifications
 - Bid Form
- **Construction Drawings (Not Plans)**



Project Delivery Methods

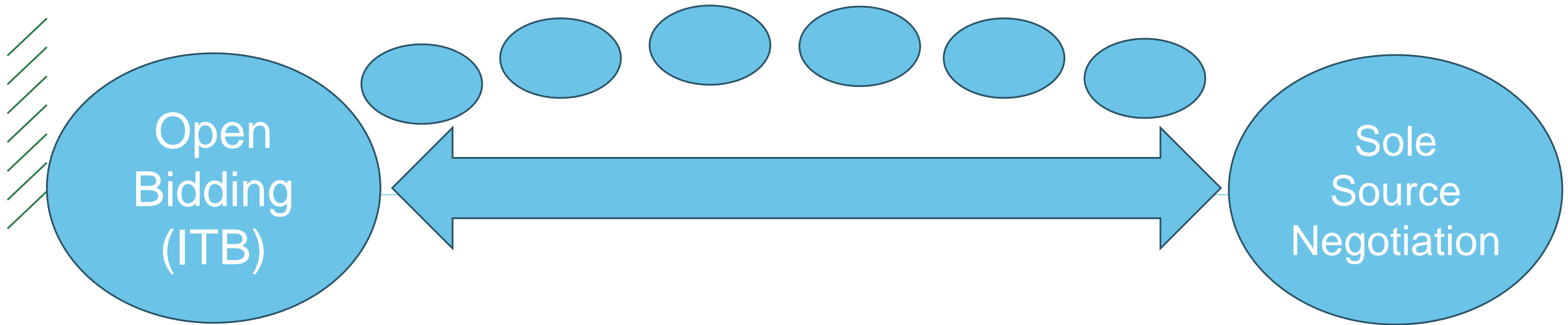


- Traditional (Design-Bid-Build)
- Alternative
 - Design-Build
 - Full Delivery
 - EPC
 - Cost Plus
 - Many others...



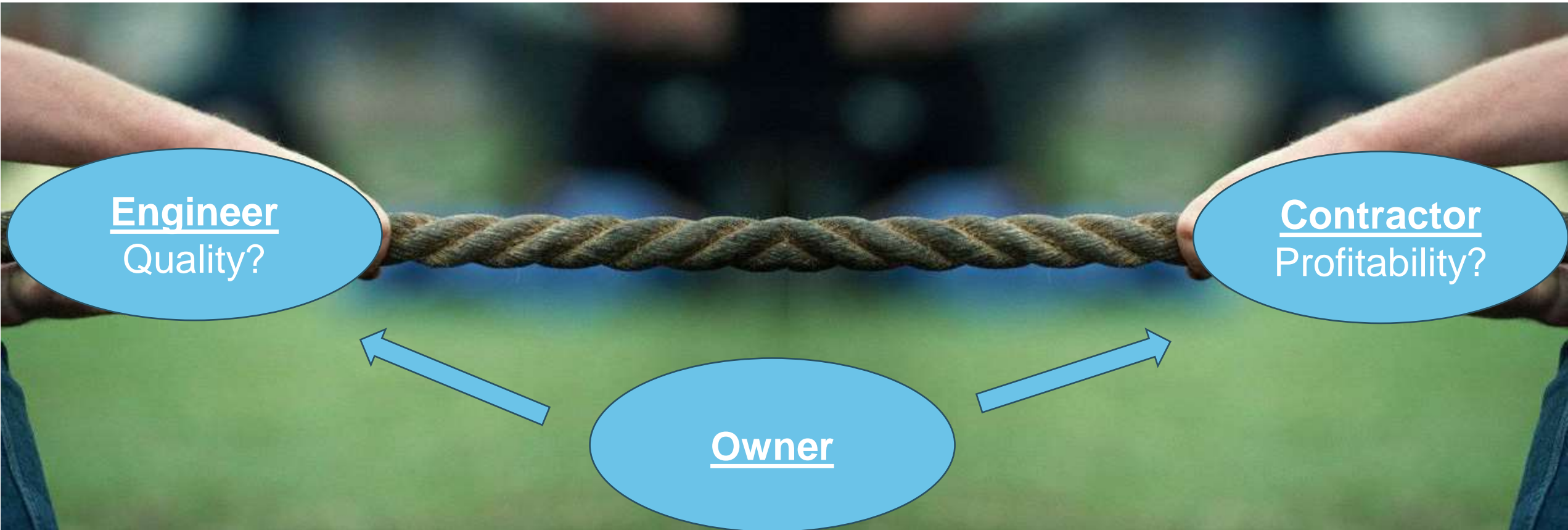
Hiring a GC

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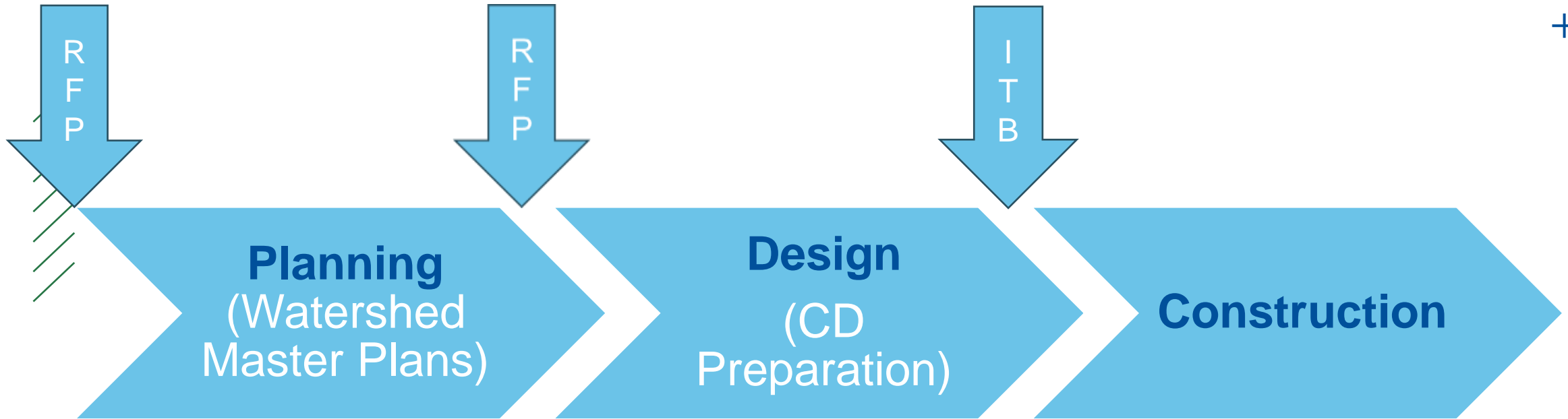
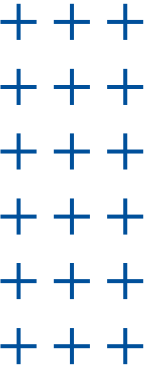


Owner-Engineer-Contractor

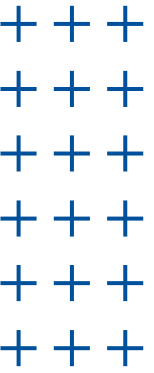
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Project Timeline



Planning Phase Considerations



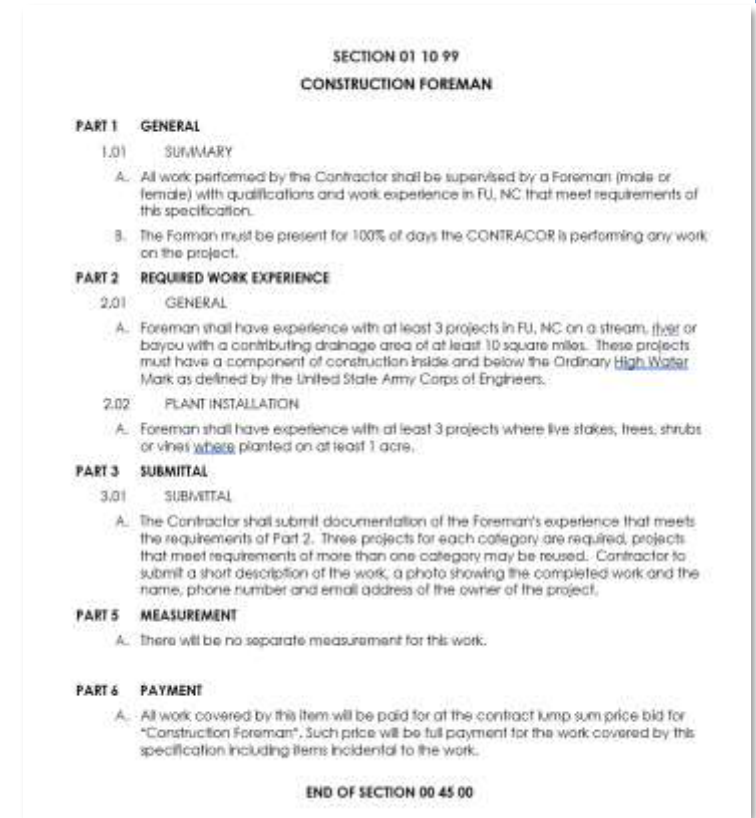
- Traditional (Design-Bid-Build)
- Alternative
 - Design-Build
 - Full Delivery
 - EPC
 - Cost Plus
 - CM At Risk
 - Sole Source Negotiation
 - Others...



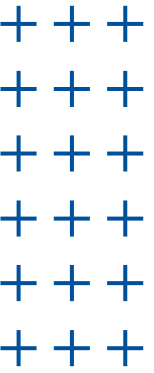
Design Phase Considerations



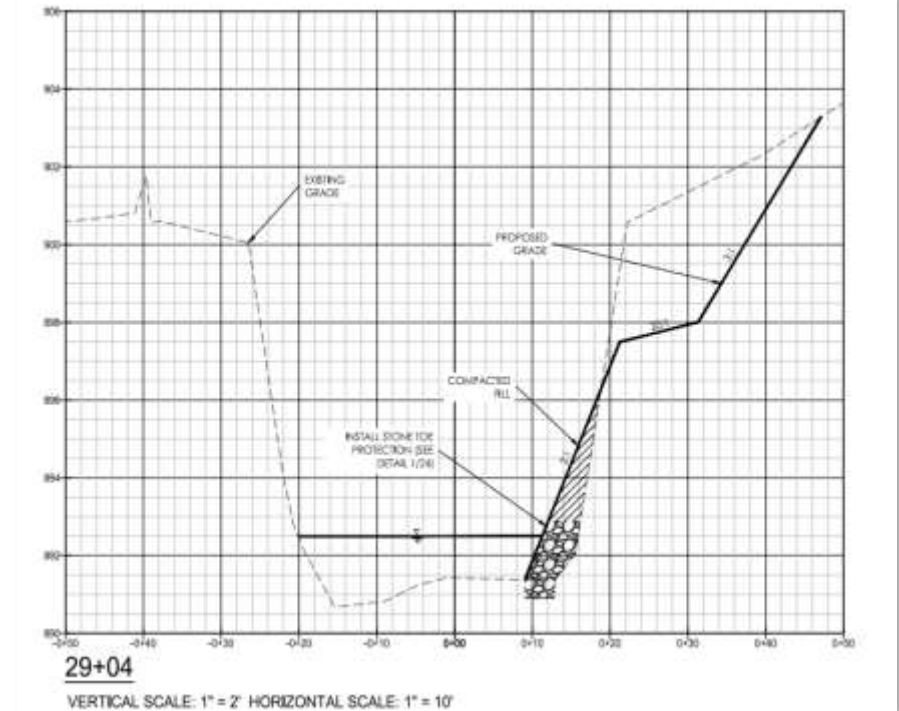
- Foreman Specification
- Part 1 General
- **Part 2 Required Work Experience**
 - **Foremen shall have experience with at least # projects...**
- Part 3 Submittal
- Part 4 Measurement
- Part 5 Payment



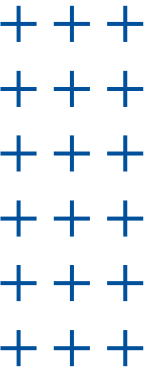
Design Phase Considerations



- Earthwork
 - Provide cross sections, DEM
 - Lump sum payment
 - ~~Quantity~~



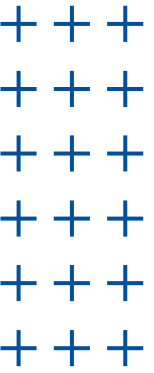
Design Phase Considerations



- Stone (Boulders and Rip-Rap)
 - Pay per TN?
 - Pay per EA?



Design Phase Considerations



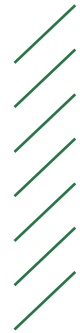
- Value Engineering
 - Review by Contractor(s)



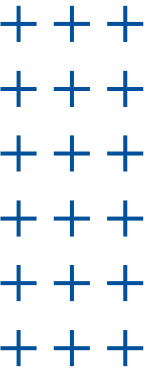
Construction Phase Considerations

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- Flexibility with Payment Specifications
 - Example – Coir Fiber Matting



Construction Phase Considerations



- Fuel Escalation
 - U.S. Energy Information Administration

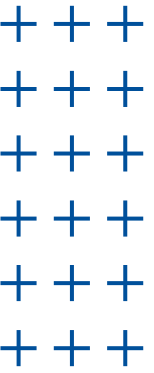


| <u>Index Cost</u> | <u>Per Hour Adjustment</u> | <u>Per Ton Adjustment</u> |
|-------------------|----------------------------|---------------------------|
| \$3.75-\$3.99 | \$1.00 | 1.50% |
| \$4.00-\$4.24 | \$2.00 | 3.00% |
| \$4.25-\$4.49 | \$3.00 | 4.50% |
| \$4.50-\$4.74 | \$4.00 | 6.00% |
| \$4.75-\$4.99 | \$5.00 | 7.50% |
| \$5.00-\$5.24 | \$6.00 | 9.00% |
| \$5.25-\$5.49 | \$7.00 | 10.50% |
| \$5.50-\$5.74 | \$8.00 | 12.00% |



Construction Phase Considerations

- Engineer's Flexibility with Construction Drawings
 - Revise construction sequence?
 - Site layout?
 - Crossing location or type of crossings?



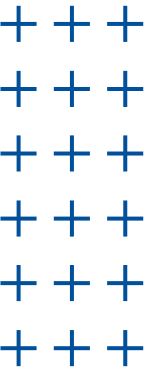
Construction Phase Considerations



- Communication
 - Frequent communication/documentation about out of tolerance work.
 - Establish a relationship with the Contractor.
 - Pick up the phone!



Where Do We Find Common Ground?



- **Quality of Construction Implementation**

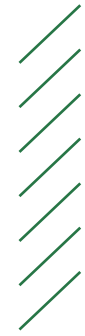
 - Owner & Engineer - achieved design goal

 - Gen. Contractor - Min. chance of returning for repairs

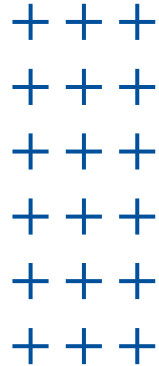
- **Contractor's Profitability**

 - Gen. Contractor – Makes estimated profit, stays in business

 - Owner & Engineer – GC stays in business, bids on next project, competitive market.



Where Do We Find Common Ground?





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The central logo features the word "BURNS" in a bold, white, sans-serif font, followed by a stylized logo symbol composed of two parallel white diagonal bars, and then the word "MCDONNELL" in the same font with a registered trademark symbol (®). To the left of the logo, there are several thin, parallel white diagonal lines.