**Bid Documents, Bid Analysis, Cost Control**

Construction Estimation, Planning and Control

CE4333

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**Bid Documents**

- Invitations to bid
- Instructions to bidders
- Bid forms
- Drawings
- Specifications
- Requirements for bonds and insurances
- Appendices

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**Contract Documents**

- Bid documents *after* contract has been signed
- + Change orders during the construction process
- + Signed agreements, bonds, insurances, plans, specs. (CSI, DOT etc)

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**Players**

- Owner (Provides the money: Project financing!!)
- Architects/Engineers (Provides all plans/specs.: contract documents)
- Contractors (Builds in accordance with the contract)
- Sub-contractors

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**Types of Contracts**

- Lump sum
- Unit-price
- Cost + Fee
- Incentive Contracts
- Guaranteed Maximum Price (GMP)

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**Bid Forms**

- Lump-sum Contracts
  - Base bid prepared for entire project (At-Risk)
  - When quantity of work to be performed is definite and well defined
- Unit-price Contracts
  - Specify unit costs for necessary work
  - Be careful to specify all work units
  - Direct cost +
Bonds

- Surety: financial stability, experience
- Bid Bonds
- Performance Bonds
- Material and Labor Payment Bond
  - (Project Close-out, releasing liens)

Insurances

- Read Text

Other Docs.

- Drawings
- Change orders
- Addendum
- Alternates

Bid Analysis

- CSI Format (slide)
- Conversion ratio (CR):
  - Ratio by which raw materials are converted to the finished product

  $\text{CR} = \frac{[\text{TB} - \text{MC}]}{\text{MC}}$

  TB: Total Bid Price
  MC: Material Cost including taxes

Payment Schedules

- Working on borrowed money
- Payments made on % completion
- An agreed schedule of payment:
  - Owner’s Bid Price (pre O&P)/Division Reqmt. = Cost Allocation per division (CA/div)
  - CA/div x Contractor’s estimate = Division payment sched.
- Balanced/Un-balanced bids
Cost Control

• Controlling on-going expense
• Information required:
  ▪ % Completion
  ▪ Estimate of cost of material stored on-site
  ▪ Accrued expense (so far, independent of payment)
  ▪ Estimated cost
• Check Accrued Expenses so far vs. Estimated Expense

<table>
<thead>
<tr>
<th>Item</th>
<th>Overhead Estimate</th>
<th>Cost Allocation</th>
<th>Forecast Schedule</th>
<th>Contracted Estimate</th>
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<tr>
<td>1. General Engineering</td>
<td>614,321</td>
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<td>436,841</td>
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<td>6. Wood and Panels</td>
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<td>7. Steel and Masonry</td>
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<td>9. Fixtures</td>
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<td>10. Specialties</td>
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<td>13. Special/Construction</td>
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<td>Total Bill Price</td>
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