Contingency Quantities and Unbalanced Bidding

for
Geotechnical Consultant Workshop
May 2, 2005
by
Division of Contract Administration
The Issue

- Getting the greatest value for the money we spend

- The greater the risk for the contractor, the more he will charge us to do the work

- The better the estimated quantity, the higher expectation of a good bid
General Rules

- If there is a reasonable engineering certainty that the quantity is going to be used, ... put it in.

- If it is only possible that it is going to be used, ... Leave it out.
A Hypothetical Project in an Imaginary District
Bids Versus Low Bidder
Contingency Quantities and the “Low Bid”

- Deck Overlay project early 2004

- Four bids received, as follows:
  - Bidder1 Total: $692,362.00
  - Bidder2 Total: $696,391.08
  - Bidder3 Total: $739,243.00
  - Bidder4 Total: $921,850.00
Estimated vs Actual Quantities

- Superplasticized Dense Concrete Overlay (Material Only)

<table>
<thead>
<tr>
<th>Ref</th>
<th>Bid Quantity</th>
<th>Final Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>34.000</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>43.000</td>
</tr>
<tr>
<td>32</td>
<td>1</td>
<td>43.273</td>
</tr>
<tr>
<td>41</td>
<td>1</td>
<td>43.273</td>
</tr>
</tbody>
</table>
## Unit Pricing - all 4 Bidders

<table>
<thead>
<tr>
<th>Bidder</th>
<th>Volume (cy)</th>
<th>Price /cy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder 1</td>
<td>4</td>
<td>$800</td>
</tr>
<tr>
<td>Bidder 2</td>
<td>4</td>
<td>$500</td>
</tr>
<tr>
<td>Bidder 3</td>
<td>4</td>
<td>$295</td>
</tr>
<tr>
<td>Bidder 4</td>
<td>4</td>
<td>$180</td>
</tr>
</tbody>
</table>
So Who Was the True Low Bidder?

- New Totals using “corrected” quantity
  - Bidder1 = $819,998.90
  - **Bidder2 = $776,164.08**
  - Bidder3 = $786,309.07
  - Bidder4 = $950,560.28
Actions Resulting from Unbalanced Bid Analyses

- Recent Deck Overlay Project – Same Items
  - 3 bridges (reference numbers)
  - Bidder1 Unit Price = $800/CY
  - Bidder2 Unit Price = $150/CY
  - Bidder3 Unit Price = $150/CY
Analysis Results

- Quantities for this item historically are underestimated by 20-25%.

- The “Low Bidder” is not the low bidder if the quantities are incorrect by that margin.

- All bids rejected due to quantity error identified by unbalanced bidding.