State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

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To: ALL DISTRICT DIRECTORS
ALL DEPUTY DISTRICT DIRECTORS
ALL DIVISION CHIEFS

Date: September 30, 2002

File:

From: BRENT FELKER
Chief Engineer

Subject: Guidelines for Use of *A+B* Bidding Provisions

The California Department of Transportation has established a 2002 strategic plan objective of increasing the number of projects that use *A+B* bidding provisions. *A+B* bidding is a method of determining the lowest responsible bidder and the number of contract working days for a project by requiring contractors to bid competitively with respect to both construction cost and project duration. Use of the *A+B* bidding method has resulted in substantial reductions in contract time on a number of State Highway construction projects. The benefit to the traveling public is reduced time in work zones.

Effective immediately, *A+B* bidding provisions shall be included in projects meeting selection criteria including estimated cost of $5 million or more and daily road user delay cost of $5,000 or more. The attached new *Guidelines for Use of A+B Bidding Provisions* provides implementation guidance and supersedes the *Conceptual Guidelines for Use of Cost/Time (A+B) Bidding Provisions* issued on June 12, 2000. The Division of Engineering Services, Office Engineer, has approved *A+B* bidding specifications and posted them on the Headquarter's Office Engineer Fileserver.

Exceptions to the project selection criteria may only be approved by Scott Jarvis, Chief, Office of Contract Administration, and the Division of Construction field coordinator assigned to your district or region.

Please contact Karla Sutliff, Chief, Division of Design, or Robert Pieplow, Chief, Division of Construction, if you have questions regarding this memorandum or attached guidelines.

Attachment

c: RBuckley; KSutliff; JMcMillan
District Office Engineers
RPieplow

Title: GUIDELINES FOR USE OF *A+B* BIDDING PROVISIONS

Purpose

To provide guidance for the use of *A+B* bidding provisions on State Highway projects.

Definitions

A+B Bidding, also referred to as cost-plus-time bidding, is a method of determining the lowest responsible bidder for projects by requiring contractors to competitively bid the construction cost and the number of working days to complete all work. The "Total Basis for Comparison of Bids" is the sum of *A* and *B*, where:

A is the contractor's bid amount for the sum of the item totals on the Engineer's Estimate for all work to be done, and

B is the product of the specified Cost per Day and the number of working days bid by the contractor.

Cost per Day is the sum of standard liquidated damages and additional liquidated damages.

Liquidated Damages (LD's) is the daily amount that the state assesses the contractor for each and every calendar day's delay in finishing the work in excess of the number of working days bid.

Standard LD's is the daily amount for the state's estimated field engineering and facility cost for construction contract administration. If no further lane or shoulder closures are required on the mainline highway to complete remaining work, only standard LD's are assessed.

Additional LD's is the daily amount for additional estimated costs to the state and/or public such as road user delay costs, costs resulting from delays to adjacent projects, social/economic impacts or business revenue loss. If the contractor is required to close lanes or shoulders on the mainline highway in order to complete remaining work, both standard LD's and additional LD's are assessed, which is the Cost per Day amount.

Background

A+B bidding provisions have been used in a number of projects in California since 1990, including most of the Cypress and Northridge earthquake projects. In 1995, as a result of a five-year study by the Department of Transportation (Department), the Federal Highway Administration stopped considering *A+B* bidding experimental and began encouraging policy development for implementation. In eight recent projects that used *A+B* bidding, ranging in total cost from $10 to $286 million, the number of working days bid for part *B* was 8 to 64 percent (78 to 515 days) less than the maximum working days allowed for responsive bids.

After bid selection, *A+B* projects are administered the same as traditionally bid projects. The main difference is that the total number of contract working days is determined by competitive bidding rather than by specification.

Experience has shown that *A+B* bidding, by generating an optimum number of contract working days, reduces construction-induced congestion and delays. The cost of work and project duration is balanced through competitive bidding. Benefits include:

- Encouraging bidders to develop more detailed and well thought out plans. Contractors with more efficient operations can generally bid shorter times.
- Encouraging contractors to develop innovative ways of reducing total construction time at the lowest cost when preparing bids and during construction.
- Encouraging contractors to schedule operations to maximize the efficiency of crews and equipment.
- Minimizing road user delay costs and inconvenience to motorists.
- Reducing the number of congestion-related complaints from motorists and local communities.
- Reducing congestion-related pollution and environmental impacts.

The Department has responded to Assembly Bill 1012 by developing project delivery improvement recommendations, one of which is the increased use of *A+B* bidding. The Department established an objective in the 2002 strategic plan to significantly increase the number of projects that use *A+B* bidding provisions.

Project Selection

Competitive bidding to shorten project duration is desirable; however, careful consideration should be given to project selection.

Include provisions for *A+B* bidding on projects with an estimated cost of $5 million or more and a daily road user delay cost (RUC) of $5,000 or more, except as follows. Do not use *A+B* bidding on projects that have 1) pending right-of-way clearance issues unless they can be mitigated prior to bid opening, 2) significant potential for third-party conflicts, or 3) other documented conditions that could prevent bidders from accurately estimating total contract working days or that could adversely affect prosecution of the work during construction.

These Guidelines and the Standard *A+B* Bidding Specifications do not include provisions for Incentive/Disincentive payments. See "Acceleration" for additional information.

Perform a constructibility review in accordance with Division of Design policy for all potential *A+B* projects. Check that plans, specifications, and estimates are relatively accurate and complete so bidders have the information needed to accurately estimate the most efficient construction time.

The team that performs the constructibility review should consider potential delays to construction progress associated with the following: hazardous waste, lead time for material procurement, industry-wide material shortages, shop plan review, curing times, settlement periods, permit restrictions, advanced notification for lane closures, multi-corridor traffic detour restrictions, coordination of utility

relocation work, utility construction windows, local noise ordinances, railroad and other agency agreements, etc.

The team should review potential conflicts with other projects (permit issues, special events, local development, etc.), considering contingency plans as appropriate.

If all criteria are met, include *A+B* bidding provisions in the project. If potential bidding or delay problems exist that cannot be mitigated, do not include A+B bidding provisions. Document the reasons supporting the decision to use or not use *A+B* bidding in the Project History File. Also, summarize the reasons in "Attachment A" of the PS&E submittal.

Working Days Estimate

Project engineers are responsible for determining the maximum number of working days allowed for bids to be considered responsive. Bids, on *A+B* projects, that exceed the maximum allowed working days will be rejected.

On typical *A+B* projects, working days are defined as per Section 8-1.06, "Time of Completion," of the Standard Specifications, the same as for traditional projects. Use the same procedure for calculating the maximum number of working days allowed on *A+B* projects as for estimating the number of specified working days on traditional projects. CPD 01-1, dated February 28, 2001, provides policy and guidelines for estimating construction contract time using critical path method (CPM) schedules.

The maximum number of working days allowed shall be sufficient to successfully complete all project work and appropriate to minimize exposing the traveling public to work zones.

Cost Per Day

Project engineers are responsible for determining the specified Cost per Day for part *B* of the bid on *A+B* projects. The Cost per Day equals the sum of standard LD's and additional LD's.

Standard LD's, the State's estimated overhead, is calculated in accordance with the formula in the November 29, 2001 memorandum to district directors from the Division of Engineering Services, Office Engineer, regarding "Liquidated Damages."

Additional LD's is the lesser of the RUC and 0.1% of the engineer's estimated cost for construction. District traffic managers are responsible for including the RUC in the transportation management plan (TMP) for all projects over $5 million. For example, if the RUC is $18,000 per day and the estimated construction cost is $15 million, since 0.1% of $15 million equals $15,000, additional LD's would be limited to $15,000 per day.

On some projects, costs other than the RUC may be considered for additional LD's. These could include costs resulting from delays to adjacent projects, social/economic impacts or business revenue loss. Other costs may only be included as additional LD's if 1) they are tangible, estimated damages to the state and/or public and 2) project specific approval is given by chief counsel, Legal Division, and

Chief, Division of Construction. The total amount of additional LD's shall not exceed 0.1% of the engineer's estimated cost for construction.

If the calculated Cost per Day seems to be excessive when considering bidding risk, potential economic impacts and traffic delay significance, adjustment may be appropriate. The project engineer may decrease the Cost per Day amount after getting advice and concurrence from the district traffic manager and the project manager. However, the Cost per Day used shall not be less than $5,000 per day.

PS&E Submittal

The PS&E Submittal must include the necessary information for *A+B* Bidding. The "*A+B*" field in the cover memo must be selected, to facilitate automation of the specifications through the database and the final "merge" of the final project special provisions. The standard LD's, additional LD's and Cost per Day must be listed. The applicable SSP's must be included in the draft special provisions, including SSP 08-018 for Time Related Overhead.

Contract Award

The "Total Basis for Comparison of Bids (A+B)" is used only at bid opening to compare the bids and determine the lowest bid. The contract bonds and the contract are based on the "A" bid amount. The number of days bid by the successful bidder becomes the contract working days, but the "B" amount is not paid to the Contractor.

Contract Administration

The schedules on *A+B* bidding projects tend to be aggressive, with little float, and are, therefore, more sensitive to delays. Give district construction advance notice of projects that are expected to have *A+B* bidding provisions. More construction engineering resources may be necessary because of aggressive schedules. Other aspects of contract administration are the same for *A+B* bidding projects and traditional projects, unless modified provisions are used with *A+B* bidding (such as for acceleration).

If the contractor exceeds the number of working days bid, and work remains that requires lane or shoulder closures on the mainline route, the contractor will be assessed the "Cost per Day" amount for each day's delay in completing the work. If lane or shoulder closures are not required to complete the remaining work, only the standard LD's will be assessed for each day's delay in completing the work. Contractors are likely to place a high priority on getting the mainline route open to traffic, even if they cannot finish all contract work prior to the last working day.

Acceleration

Aside from reducing traffic delay, there may be other reasons to shorten specific work durations, such as multiple project coordination, permit or right-of-way limitations, local funding agency concerns, etc.

If acceleration of the whole project or specific parts is justified, then acceleration techniques such as internal milestones, Incentive/Disincentive (I/D) or redefining working days as calendar days may be

applied to the project with approval from the district director. If working days are redefined as calendar days, the project engineer's construction CPM schedule must also account for the typical effects of weather in estimating total project duration.

Contact DES, OE, Office of Construction Contract Standards for special provisions for these cases. Refer to the *Conceptual Guidelines for Use of Incentive and Disincentive (I/D) Provisions* issued by the chief engineer to district directors on June 12, 2000 for guidance on using I/D provisions in projects.

Conclusion

Contract time is an integral part of every construction project. These guidelines are intended to provide a standard way of selecting projects and implementing *A+B* bidding provisions effectively. Use of *A+B* bidding provisions on projects in accordance with these guidelines does not require district director's approval. If you have questions or comments about this information, please contact the Division of Construction contract time specialist, Jim Cotey at (916) 657-5170 or by e-mail at Jim_Cotey@dot.ca.gov.

bc: Director's File
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Construction Subject File; Construction Author (Cotey) File

JC:sf