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DEPARTMENT
OF UTILITIES

CITY OF SACRAMENTO
CALIFORNIA

1395 35th AVENUE
SACRAMENTO, CA
95822-2911

ENGINEERING
SERVICES DIVISION

November 12, 2002

PH 916-264-1400
FAX 916-264-1497/1498

City Council
Sacramento, California

Honorable Members in Session:

**SUBJECT: SACRAMENTO RIVER WATER TREATMENT PLANT EXPANSION PROJECT
(PN: ZF52) - APPROVAL OF CHANGE ORDER NO. 5 FOR \$4,888,670 AND
RESTORATION OF CITY MANAGER AUTHORITY**

LOCATION AND COUNCIL DISTRICT:

The Project is located at the Sacramento River Water Treatment Plant, 1 Water Street, in Council District 1 (see attached map).

RECOMMENDATION:

Staff recommends that the City Council approve the attached resolution authorizing the City Manager to execute Change Order No. 5 in the amount of \$4,888,670 with Kiewit Pacific Co. (Kiewit) for the Sacramento River Water Treatment Plant Expansion Project and restoring the City Manager's Change Order approval authority for future changes.

CONTACT PERSON: Gary A. Reents, Engineering Services Manager, 264-1433
Gary E. Gosse, Supervising Engineer, 264-1426

FOR COUNCIL MEETING: November 26, 2002

SUMMARY:

The proposed Change Order totaling \$4,888,670 to Kiewit will be compensation for costs related to unforeseen site conditions consisting of the following: 1) unforeseen buried debris, 2) unforeseen soil conditions, and 3) unforeseen structural pile modifications. Unforeseen site conditions resulted in changed construction methods, materials, equipment, and caused construction delays to the Project.



CITY OF SACRAMENTO
DEPARTMENT
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Making a Difference in Your Neighborhood

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Sacramento River Water Treatment Plant Expansion Project (PN: ZF52)

COMMITTEE/COMMISSION ACTION: None

BACKGROUND

Kiewit Pacific Company was awarded the construction contract for the Sacramento River Water Treatment Plant Expansion Project (Project) on September 25, 2001, for \$79,257,000. The expansion project consists of the construction of a new 50 million gallon per day treatment train for producing drinking water for the City. The project also consists of making utility and structure improvements to existing site facilities. Notice to Proceed for construction of the Project was given to Kiewit on October 1, 2001.

This Project is one of four large Water Supply Projects currently in progress; the other three projects are: 1) Sacramento River Water Treatment Plant Replacement Intake Project (ZF57), 2) E.A. Fairbairn Water Treatment Plant Intake Structure Modification Project (ZF47), and 3) E.A. Fairbairn Water Treatment Plant Expansion Project (ZF43).

The Mayor and City Council were informed of the possibility of unforeseen conditions at the project site by Memorandum from James Sequeira dated November 7, 2001. The proposed Change Order will compensate for all costs related to unforeseen site conditions including: buried debris, soil conditions, and structural piles modifications. Background information for each of these items is provided below:

1) Unforeseen Buried Debris:

Initial work on the site consisted of major earthwork and rough site grading to allow subsequent construction activities to begin. In particular, it was necessary to first construct site retaining walls and filter waste washwater lagoons to allow construction of the major hydraulic structures, site buildings, and associated piping and electrical utilities. During the week of October 15, 2001, previously unidentified and uncharacterized buried debris was exposed in site excavations. On October 24, 2001, because of safety concerns, the City suspended all construction work on the Project. On November 2, 2001, the City implemented a site field sampling and analysis program to characterize the exposed buried debris and site soils. Test results were received on November 16, 2001; and based upon the results, the City allowed construction work on the Project to restart on November 21, 2001.

During the implementation of the site field sampling and analysis program, the City decided to minimize further potential excavation of buried debris and opted

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to completely re-engineer and re-design the Project's major retaining walls and filter waste washwater lagoons. The design and construction changes were as follows:

A) Retaining Wall No. 2; the design and construction of this wall was changed from 800 linear feet of fully excavated, gravity type, spread footing to a raised footing supported with driven steel H-piles. Approximately 14,000 linear feet of H-piles and 1,440 welded steel H-pile connections were made to properly raise this retaining wall. The design also required the addition, import, and placement of approximately 5,000 cubic yards of soil fill from off-site locations.

B) Filter Waste Washwater Lagoons; the design was completely changed to minimize the need for excavation. The geometry, wall heights and associated piping and connections were changed. In addition, 35 feet of additional lagoon width was added. The design also required the addition, import, and placement of approximately 10,000 cubic yards of soil fill from off-site locations.

Change Order costs associated with unforeseen buried debris are \$2,760,730.

2) Unforeseen Soil Conditions:

Due to the nature of the deep sands that underlay the Project site, several unforeseen soil conditions affected the Project as follows:

A) General site sub-grade settlement has been greater than expected. Underlying soils within the footprint of pile-supported hydraulic structures have settled more than 12 inches. Soils adjacent to hydraulic structures have settled more than 6 inches. Geotechnical predictions for settlement were on the order of 2 to 4 inches. The addition and import of approximately 40,000 cubic yards of soil from off-site locations was required to make up for the settled conditions.

B) Excavations in various areas around the site had to be wider; flattened excavations and/or shored excavations were required due to the unstable nature of the sandy soils. Geotechnical soil borings did not discover the magnitude of the sandy soils. This condition affected the sequence and timing of construction activities.

C) The moisture content of certain soils existing on the Project site was higher than indicated in the Geotechnical soils report. The moisture content had to be reduced with the addition of a liming process before this soil could be utilized for Project fill.

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Change Order costs associated with unforeseen soil conditions are \$1,683,940.

3) Unforeseen Structural Pile Modifications:

The construction of the project involved the fabrication and installation of 2,500 driven pre-stressed concrete structural piles having a total length of approximately 32 miles. During the on-site pile-testing program the test results indicated that the underground soil conditions necessitated increasing the length of some piles and shortening the length of others. This condition required additional work to lengthen or shorten the piles.

Change Order costs associated with structural pile modifications are \$444,000.

Negotiations on unforeseen site conditions began in July 2002. The negotiations reduced the Contractor's requested dollar amount from \$8,062,691 to \$4,888,670 and also reduced the requested time extension from 128 days to 70 days.

FINANCIAL CONSIDERATIONS

The requested Change Order No. 5 in the amount of \$4,888,670 is 6.2% of the total \$79,257,000 bid cost of the Project. To date, the approved total Change Order amount is \$379,044 for Change Orders 1-4.

The total project cost including inspection, engineering, control system programming, construction management support, change orders and contingency is \$98,288,295. As of November 12, 2002, the unobligated balance in the Sacramento River Water Treatment Plant Expansion Project (413-500-ZF52) is \$7,546,325. Sufficient funds are available in ZF52 to cover the cost of Change Order No. 5 and complete the project.

ENVIRONMENTAL CONSIDERATIONS

The unforeseen buried debris discovered at the project site was characterized, removed, transported to, and disposed of, at off-site locations in compliance with applicable environmental requirements.

POLICY CONSIDERATIONS

This action is consistent with Chapter 3.60, Article IV of the City Code concerning change orders.

This expansion project is consistent with the City's Sacramento Area Water Forum commitments.

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ESBD CONSIDERATIONS

Due to the nature of this project an Emerging Small Business (ESB) goal of 10.0 percent was established for the Project. Kiewit provided a 12.55 percent ESB participation which exceeded the established project goal.

Respectfully submitted,



Gary A. Reents
Engineering Services Manager

RECOMMENDATION APPROVED:

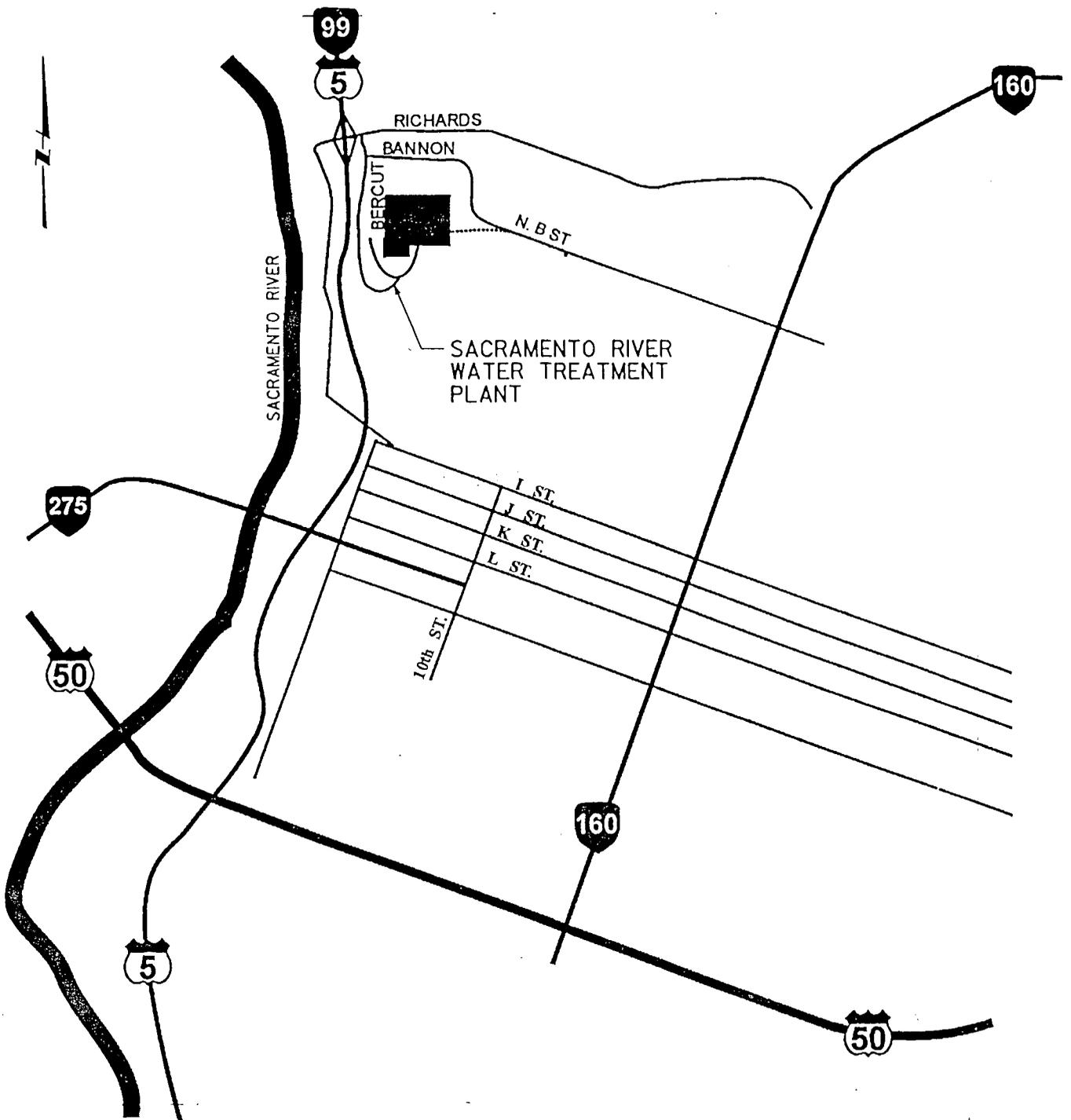


Robert P. Thomas
City Manager

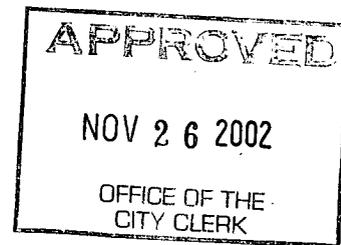
APPROVED:



James G. Sequeira
Director of Utilities



LOCATION MAP



RESOLUTION NO. 2002-784

ADOPTED BY THE SACRAMENTO CITY COUNCIL

ON DATE OF _____

RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE CHANGE ORDER NO. 5 IN THE AMOUNT OF \$4,888,670 WITH KIEWIT PACIFIC CO. (KIEWIT) FOR THE SACRAMENTO RIVER WATER TREATMENT PLANT EXPANSION PROJECT (PN: ZF52) AND RESTORING THE CITY MANAGER'S CHANGE ORDER APPROVAL AUTHORITY FOR FURTHER CHANGES

BE IT RESOLVED BY THE SACRAMENTO CITY COUNCIL THAT:

The City Manager and City Clerk are authorized to sign and execute a Change Order No. 5 in the amount of \$4,888,670 with Kiewit Pacific Co. (Kiewit) for the Sacramento River Water Treatment Plant Expansion Project (PN: ZF52) and restoring the City Manager's Change Order approval authority for future changes.

MAYOR

ATTEST:

CITY CLERK

FOR CITY CLERK USE ONLY

RESOLUTION NO.: _____

DATE ADOPTED: _____