

BOARD OF SUPERVISORS AGENDA ITEM SUMMARY

Requested Board Meeting Date: January 7, 2014

ITEM SUMMARY, JUSTIFICATION and/or SPECIAL CONSIDERATIONS:

Amendment # 1, Contract CT-TR-13000000000000000486, HDR Engineering, Inc., to provide structural engineering services for the COUNTY-WIDE BRIDGE LOAD RATING REVIEW AND REPORT PROJECT. This amendment extends the contract term and adds \$48,570.00 to complete additional testing. Funding sources: Federal Highway Bridge Fund (94%), RTA Funds (6%) Administering Department: Transportation

Effective Date: December 20, 2013

Termination Date: February 28, 2014

Original Contract Amount: \$316,845.00

Previous Amendment(s): \$0.00

Previous Contract Amount: \$316,845.00

Amount this Amendment: \$48,570.00

Revised Contract Amount: \$365,415.00

Cont #	: CT-TR-130486-01
Effective:	: 12-20-2013
Term	: 02-28-2014
Cost	: \$48,570.00
Rev	: \$48,570.00
Tot	: \$365,415.00
NTE	: Yes
Timex	: Yes
Renewal:	: 02-28-2014

Project Manager: Dave Zaleski, 724-6467
Department of Transportation

Contract Officer: Mark Koskiniemi, 724-3723
Procurement Department

Vendor is using a Social Security Number: No

AMS CT #: CT-TR-13000000000000000486

Please return to Harry Lewis.

CLERK OF BOARD USE ONLY:

BOS MTG. _____

ITEM NO. _____

Ver. 5
Vendor. 1
Pgs. 7
68204431.22/21 Procure Dept 12/23/13 PM02:39

To: COB 12-24-13
Agenda 1-7-14
(1)

PIMA COUNTY DEPARTMENT OF TRANSPORTATION

PROJECT: COUNTY-WIDE BRIDGE LOAD RATING
REVIEW AND REPORT PROJECT

CONSULTANT: HDR Engineering, Inc.
5210 East Williams Circle
Tucson, AZ 85711

CONTRACT NO.: CT-TR-1300000000000000486

AMENDMENT NO.: One (1)

FUNDING: Federal Highway Bridge Fund (94%),
RTA Funds (6%)

CONTRACT

NO CT-TR-1300000000000000486

AMENDMENT NO. 01

This number must appear on all
invoices, correspondence and
documents pertaining to this
contract.

CONTRACT TERM: 12/21/12 to 12/20/13

TERMINATION PRIOR AMENDMENT: N/A

TERMINATION THIS AMENDMENT: 2/28/14

ORIGINAL CONTRACT AMOUNT: \$ 316,845.00

PRIOR AMENDMENT(S): \$ -

AMOUNT THIS AMENDMENT: \$ 48,570.00

REVISED CONTRACT AMOUNT: \$ 365,415.00

CONTRACT AMENDMENT

WHEREAS, COUNTY and CONSULTANT have entered into the Contract referenced above; and

WHEREAS, COUNTY has requested load ratings for additional bridges and additional work is required to properly assess bridge conditions and to complete additional testing for structures that do not have plans; and

WHEREAS, the COUNTY wishes to retain the services of CONSULTANT for these services; and

WHEREAS, this will necessitate an increase in the Contract value and an extension of the Contract term.

NOW, THEREFORE, it is agreed as follows:

CHANGE the first paragraph of **ARTICLE I - TERM AND EXTENSION** as follows:

FROM: This Contract, as approved by the Board of Supervisors, shall commence on December 21, 2012, and shall terminate on December 20, 2013, unless sooner terminated or further extended pursuant to the provisions of this Contract.

TO: This Contract, as approved by the Board of Supervisors, shall commence on December 21, 2012, and shall terminate on February 28, 2014, unless sooner terminated or further extended pursuant to the provisions of this Contract.

CHANGE the first paragraph of **ARTICLE II - SCOPE** as follows:

FROM: CONSULTANT agrees to provide County-Wide Bridge Load Rating Review and Report services for the COUNTY as described in **EXHIBIT 'A' - SCOPE OF WORK (10 pages)** an attachment to this contract.

TO: CONSULTANT agrees to provide County-Wide Bridge Load Rating Review and Report services for the COUNTY as described in **EXHIBIT 'A' - SCOPE OF WORK (10 pages)** and **EXHIBIT 'A-1' - ADDITIONAL SCOPE OF WORK (3 pages)**, attachments to this contract.

ADD attached **EXHIBIT 'A-1' - ADDITIONAL SCOPE OF WORK (3 pages)** to the Contract.

✓

CHANGE the first paragraph of **ARTICLE III – COMPENSATION AND PAYMENT** as follows:

FROM: In consideration of the services specified in this Contract, the COUNTY agrees to pay CONSULTANT as follows: Not To Exceed Three Hundred-Sixteen Thousand, Eight Hundred-FortyFive and no/100 Dollars (\$316,845.00). CONSULTANT'S fees and method of compensation shall be based on an Hourly Not to Exceed Basis or other method mutually agreeable to both parties at the time services are requested in accordance with provisions described in **EXHIBIT 'B': CONSULTANT FEE SCHEDULE (2 pages)**, an attachment to this Contract.

TO: In consideration of the services specified in this Contract, the COUNTY agrees to pay CONSULTANT as follows: Not To Exceed Three Hundred Sixty-Five Thousand, Four Hundred-Fifteen and no/100 Dollars (\$365,415.00). CONSULTANT'S fees and method of compensation shall be based on an Hourly Not to Exceed Basis or other method mutually agreeable to both parties at the time services are requested in accordance with provisions described in **EXHIBIT 'B': CONSULTANT FEE SCHEDULE (2 pages)** and **EXHIBIT "B-1" – COMPENSATION (Additional Scope) (2 pages)**, attachments to this Contract.

ADD attached **EXHIBIT "B-1" – COMPENSATION (Additional Scope) (2 pages)** to the Contract.

This Amendment shall be effective on December 20, 2013.

All other provisions of the Contract, not specifically changed by this amendment, shall remain in effect and be binding upon the parties.

IN WITNESS WHEREOF, the parties have affixed their signatures to this amendment on the dates written below.

PIMA COUNTY:

Chair, Board of Supervisors

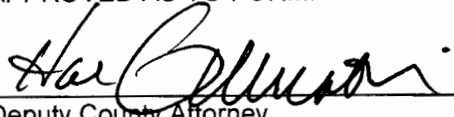
Date

ATTEST:

Clerk of the Board

Date

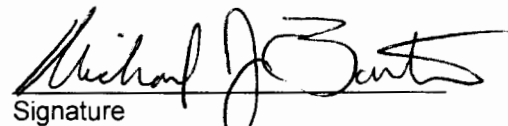
APPROVED AS TO FORM:


Deputy County Attorney
HAL GILBREATH

Name (printed)

12.23.13
Date

CONSULTANT:


Signature

Michael J. Barton, Vice President
Name and Title (Please Print) *& Tucson Managing Principal*

12/23/2013
Date

EXHIBIT 'A-1' - ADDITIONAL SCOPE OF WORK (3 pages)

August 30, 2013

Mr. Dave Zaleski, PE
Pima County Bridge Engineer
Pima County Department of Transportation
201 N. Stone Avenue, 4th Floor
Tucson, AZ 85701

Re: County-Wide Bridge Load Rating Review and Report Project
Federal Aid Project No. HBP PPM-0(234)A, ADOT TRACS No. SB447 01C
Contract Modification No. 1, HDR Project No. 202512

Dear Mr. Zaleski:

As the project needs have been identified or revised after the initial contract was negotiated, HDR has been asked to load rate one additional bridge, Structure Number 8294. In addition, we have found that certain tasks are requiring greater resources than were estimated in the original cost proposal. While we are aware that the project is billed on an hourly basis, we believe that it is time to increase the upset limit on the contract to ensure we don't run out of budget by performing these additional services. We are therefore requesting that our load rating contract be adjusted. Below is a list of additional services along with justification for the change.

1. **Description:** Additional Project Administration – Task 1.0

Justification: To date, the time required for this task is approximately 10 hours per month for project management, coordination, updating the bridge load rating schedule, tracking issues associated with undercapacity bridges, and other project administration tasks. Additional time is also required to coordinate with subconsultants and Pima County to plan and conduct a field assessment along with non-destructive testing (NDT) and limited destructive testing (LDT) for one additional bridge (SN 8294) on Marsh Station Road as described in Item 3 below. With approximately 3 months remaining to complete the contract, the estimated additional work for this task is 24 hours.

2. **Description:** Additional Field Activities – Task 4.0

Justification: As requested by Pima County, HDR will load rate one additional bridge (SN 8294) as described in Item 4 below. There are no as-built or construction plans available for this bridge and therefore a field assessment will be required. A field visit will be made to verify that the structure type and general condition is consistent with the NBI inspection report. In addition, the structural elements will be measured and documented as necessary to develop hand-drawn sketches that will be used to perform the load rating. This field assessment will be conducted at the same time that NDT and LDT testing are carried out on the bridge as described in Item 3 below.

3. **Description:** Additional Non-Destructive Testing (NDT) and Limited Destructive Testing (LDT) – Task 9.1

Justification: Since no plans are available showing the reinforcing steel in the bridge deck of the additional bridge, SN 8294, Inland Engineering, acting as a subconsultant to HDR, will visit the bridge site with HDR to scan the bottom side of the bridge deck with ground penetrating radar (GPR) in order to locate the reinforcing steel in the bottom of the bridge deck. A small section of the concrete deck will then be removed by Inland Engineering with chipping hammers or other approved methods to expose the reinforcing steel so that measurements of the size and spacing can be documented by HDR. Only one location will be exposed in the bottom of the bridge deck near midspan. It will be assumed that the reinforcing exposed in the bottom of one span is similar to the second span and therefore, only one span will be investigated.

Coring of the bridge deck of SN 8294 will be conducted by the Penhall Company in order to determine the compressive strength of the concrete. A total of 3 cores for compression testing will be taken. Filling of the core holes will be carried out by Inland Engineering using high-strength grout with a minimum compressive strength of 5,000 psi.

In addition to these tasks, HDR will document the findings from NDT and LDT testing and include them in the field assessment report for this structure.

4. **Description:** Additional Bridge Load Ratings – Task 5.4

Justification: As requested by Pima County, HDR will load rate one additional two-span cast-in-place concrete slab bridge. It is our understanding that the bridge, Structure Number 8294, is currently classified as a culvert, was constructed in 1933, and there are no plans showing the reinforcing steel in the bridge. The bridge carries Marsh Station Road over a small wash. It was recently discovered that the structure is supported on spread footings and does not have a bottom slab like a typical culvert. Therefore, the structure should be re-classified with ADOT as a bridge rather than a culvert.

HDR will prepare structural calculations to determine the load capacity of this bridge (SN 8294) using the AASHTOWare Bridge Load Rating Software (BrR) Version 6.4.1 (formerly known as Virtis). The calculations will be based on the measured dimensions and member sizes determined as part of the field assessment and NDT and LDT testing. It will also be assumed that there is no substantial negative moment reinforcing steel across the pier and therefore the evaluation will be based on simple span theory using the bottom reinforcing steel that will be found during NDT and LDT.

5. **Description:** Additional Bridge Load Rating Report – Task 6.0

Justification: This work includes the preparation of a bridge load rating report for the additional bridge, SN 8294. The report will be prepared in accordance with the original scope of work.

6. **Description:** Additional Bridge Load Rating Services – Task 9.2

Justification: As HDR has completed the load ratings for this project, several bridges have inventory ratings less than 1.0 which according to PCDOT policy will require load postings. In an attempt to minimize the number of bridges that will be load posted, HDR will refine their analysis of certain bridges to account for continuity across the piers, increase the allowable concrete tension stress from $3\sqrt{f_c'}$ to $6\sqrt{f_c'}$, review precast girder shop drawings and incorporate any changes into their analysis, and other items necessary to verify that the highest load rating is reported. This additional analysis was not included in the original scope of work. Depending on the geometry of the bridge and the number of spans, it is estimated that additional work on one bridge can take between 30 and 80 hours.

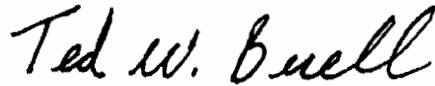
Based on the bridges that we have rated to date, we estimate that approximately 10% of the 56 total bridges in our contract, i.e. 6 bridges, will require a refined analysis. It is estimated that an average of 55 hours of additional work will be required for each of these bridges.

Attached, please find our cost proposal and estimated labor hours for these additional services.

If you have any questions, I can be reached by telephone at 584-3632 or by e-mail at Ted.Buell@hdrinc.com. Again we appreciate the opportunity to provide engineering services for this project.

Sincerely,

HDR ENGINEERING, INC.



Ted W. Buell, P.E.
Structural Engineer

Enclosures

HDR Engineering, Inc.
HDR Project Number: 202512
30-Aug-13

**COUNTY-WIDE BRIDGE LOAD RATING REVIEW AND REPORT PROJECT
FEDERAL AID PROJECT NO. HBP PPM-0(234)A
ADOT TRACS NO. SB447 01C**

**CONTRACT MODIFICATION NO. 1
COST PROPOSAL**

ESTIMATED DIRECT LABOR:

Staff Classification	Est. Hours	Average Hourly Rate	Labor Cost
Project Manager	71	\$58.35	\$4,143
Senior Engineer	33	\$74.56	\$2,460
Project Engineer	98	\$45.35	\$4,444
Design Engineer	197	\$34.67	\$6,830
CAD Technician	0	\$41.22	\$0
Accountant	2	\$36.98	\$74
Administration	2	\$22.01	\$44
Total Estimated Labor	403		\$17,996
Overhead @ 165%			\$29,693
Sub-Total (Direct Labor + Overhead)			\$47,688

ESTIMATED DIRECT EXPENSES:

	Units	
HDR Vehicle Mileage (Field Assessments @ \$0.565/mile)	60	\$34
Miscellaneous Field Expenses (supplies, meals, etc.)	1	\$50
Penhall Company (Limited Destructive Testing - Concrete Coring)		\$427
Reproduction Cost misc. @ .06/sheet	200	\$12
Deliveries, Postage, Fed-ex, UPS, etc.	1	\$25
Sub-Total Estimated Expenses		\$548

ESTIMATED OUTSIDE SERVICES AND CONSULTANTS:

	Cost
Inland Engineering (Non-Destructive Testing - GPR)	\$490
Sub-Total NDT & LDT Task 9.1	\$490

Total Estimated Outside Services	\$490
Total Estimated Cost to Consultant	\$48,236
Fee (Direct Labor + O.H. X 10%)	\$4,769
Subtotal Estimated Cost	\$53,495
Task 9.2 Additional Bridge Load Rating Services (Allowance included in original contract)	-\$4,925
Total Estimated Additional Cost to Contract	\$48,570

Additional services will be used upon written approval from the Pima County Bridge Engineer

