HONOLULU AUTHORITY for RAPID TRANSPORTATION

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September 29, 2016

TO: HART Board of Directors

THROUGH: Michael D. Formby
Acting Executive Director

FROM: Chris Takashige
Director of Design and Construction
Officer-in-Charge

John Moore
Project Manager

SUBJECT: WOFH – HNTB Technical Design Management
Contract No. CT-HRT-10H0137

Overview

This Contract Change Order compensates the Design-Builder's designers, HNTB Corporation (HNTB) and its Subconsultants, for technical design management for the period from August 25, 2012, through the design completion date of March 31, 2015. This time period includes the 13-month Archaeological Inventory Survey (AIS) investigation suspension period. It should be noted that all costs directly associated with the AIS have been settled previously. Requests for additional design work extended HNTB's design duration from May 31, 2011 to an end date of March 31, 2015. HNTB design management staff continued to attend numerous meetings with HART, State of Hawaii Department of Transportation (HDOT), Hawaiian Electric Company, Inc. (HECO), the Department of Transportation Services (DTS), the Honolulu Board of Water Supply (BWS), the Core Systems Contractor (CSC), and others for coordination and interface during the AIS investigation suspension period and through the end of the design duration. The technical design management effort continued on a daily basis despite delays due to delayed execution of agreements with property owners and third party agencies. Changes to the work which delayed design completion were beyond the control of HNTB.

The Design-Builder submitted the original Contractor Request for Change (RFCC) No. 113 in October 2014, requesting $9,396,291.00 in compensation relating to HNTB's technical design management costs. The Design-Builder later reduced its requested compensation amount to $7,690,977.00. HART's evaluation of the issues, and subsequent discussions/negotiations with the Design-Builder, has reduced the requested compensation amount to $4,517,160.00.

Justification

Design management was expressly excluded from authorized design change orders with the understanding it would be addressed in the future as a separate change order. The approach of

CITY AND COUNTY OF HONOLULU, Alii Place, Suite 1700, 1099 Alakea Street, Honolulu, Hawaii 96813
Phone: (808)768-6159 Fax: (808)768-5110 www.honolulutransit.org

addressing design management cost separately from the technical design work was established early in the project with HART and the Design-Builder during the development and negotiation of the notice to proceed (NTP) delay change orders and again during the AIS suspension period. HNTB was compensated for authorized design changes during this time period.

The considerable amount of change on the West Oahu Farrington Highway (WOFH) Guideway Project increased the base design work and extended the design duration thereby increasing HNTB's design management effort. In response to the changes to the WOFH Guideway Project, HNTB submitted and contracted thirty-four (34) change orders for additional technical design work requested by HART after August 24, 2012.

In order to help mitigate design review delays, HNTB repackaged the utility designs into smaller packages for agencies such as HDOT, BWS, and HECO. This increased the number of originally anticipated or agreed upon design submittal packages from 42 to 130.

Increased design management efforts included work elements with temporary holds or constraints, such as station foundations, Traction Power Substation (TPSS) site work, Waipahu High School site improvements, and Leeward Community College portable buildings.

The most significant issues that increased the design management duration are as follows:

- Delays with Utility Agency/Third Party Agreements
- Third Party Requirements (Traffic Signal System, extended paving limits, intersection configuration changes, etc)
- Delayed NTP for the Core Systems Contract delayed design interface, which caused redesign of TPSS sites and other system site changes (RFID 000354 – Changes to System Sites 1, 5, 8 & 9)
- Department of Land and Natural Resources right of entry delays near piers 55-61
- R. Lee property right of entry delays in Work Area 6 affected geotechnical investigation and structural design progression
- Revisions to Leeward Community College Station and site design
- Ho'opili mass grading
- Ho'opili Station relocation
- Waiawa Scour analysis and design change
- Kaloi Scour analysis and design change

All work associated with this Contract Change Order is inclusive of all services and deliverables associated with HNTB's Technical Design Management, including but not limited to the following:

- Design management costs for additional design work and changed design work performed in the period from August 25, 2012, through the end of the design duration. Design management, interface management, coordination, and project documentation, including project controls, quality control, document control, and all other management tasks performed in the period from August 25, 2012, through the end of the design duration
- All design management staff, including subconsultant staff, key discipline managers, quality control managers, CADD managers, document control

specialists, project control specialists, project schedulers, and project administrative support provided during the period from August 25, 2012, through the end of the design duration.

These changes are new items not associated with any prior executed change orders.

The recommended "Fair and Reasonable" compensation of $4,517,160.00 is based on the technical design management cost included in the Design-Builder's original Contract, subsequent Contract Change Orders, and level of effort consistent with the needs of the WOFH Guideway Project. It should be noted that the recommended compensation is approximately forty-eight percent (48%) of the Design-Builder's original requested compensation.

Recommendation

HART Board of Directors to approve this Contract Change Order in the amount of $4,517,160.00 to compensate HNTB and its subconsultants for design management for the period of August 25, 2012 through the design completion date of March 31, 2015.

Fiscal Impact

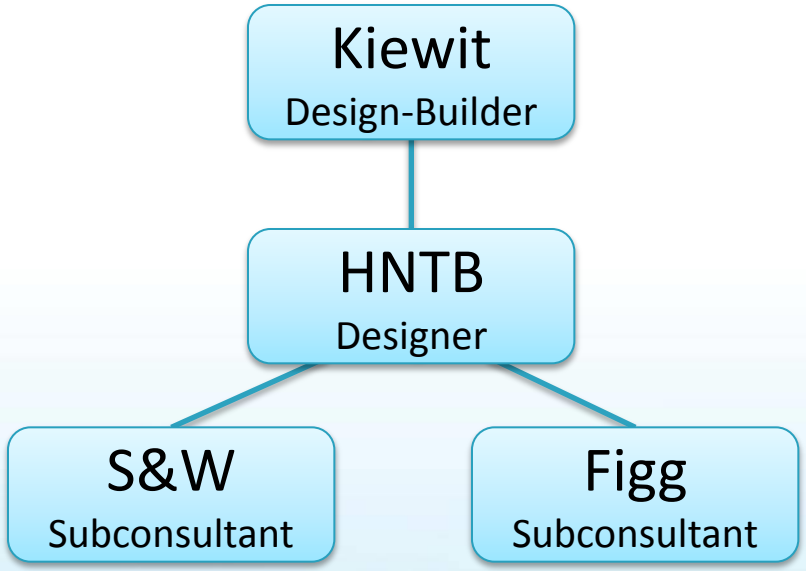
Allocation from WOFH budget contingency is required to fund this change value of $4,517,160.00.

HNTB Technical Design Management Costs for WOFH Contract

September 29, 2016

Overview

- HNTB's relationship with Kiewit, the design-builder



- Extension and changes to the design portion of the contract
  - Designer was compensated for changes in design, but technical design management was specifically excluded by HART.
  - Technical design management was the management personnel who actively directed and supported the design team.

Technical Design Management Staff

- Technical Design Management staff includes:
  - Key discipline managers (Geotechnical, Structural, Civil, etc.)
  - Quality control managers
  - CADD managers
  - Document control specialists
  - Project control specialists
  - Project schedulers
  - Administrative support

Issues Increasing Technical Design Management Duration WOFH Contract

For Example: The following changes necessitated additional design, and extended the design period and review cycles:

- **Leeward Community College (LCC) Design Changes:** Through discussions with LCC and Interface with Station Designer it was determined that modifications to both the Station Access Structure and final campus improvements were different than the RFP drawings which had been issued in 2009.
- **Waiawa Scour Analysis and Design Change:** There was no hydraulic analysis available to the design-builder during the initial design. The hydraulic analysis was to be owner furnished and was not completed by the time of the initial design. The subsequent data necessitated changes to the design.

Cost Overview

- **Bi-Lateral Change Order Negotiated with Design-Builder**

  WOFH: $ 4,517,160 (AIS delay resolved – not included in agreement)

- **Time Period**

  WOFH: Changes Started August 25, 2012 and continued through March 31, 2015

Justification

- Technical design management was specifically excluded from prior design change orders and agreed to be addressed in the future as a separate change order:
  - A significant number of overlapping changes occurred during this time period making it difficult to estimate the management effort at that time.
  - Deferring compensation allowed HART to review the management effort after completion and negotiate reasonable compensation for this item.

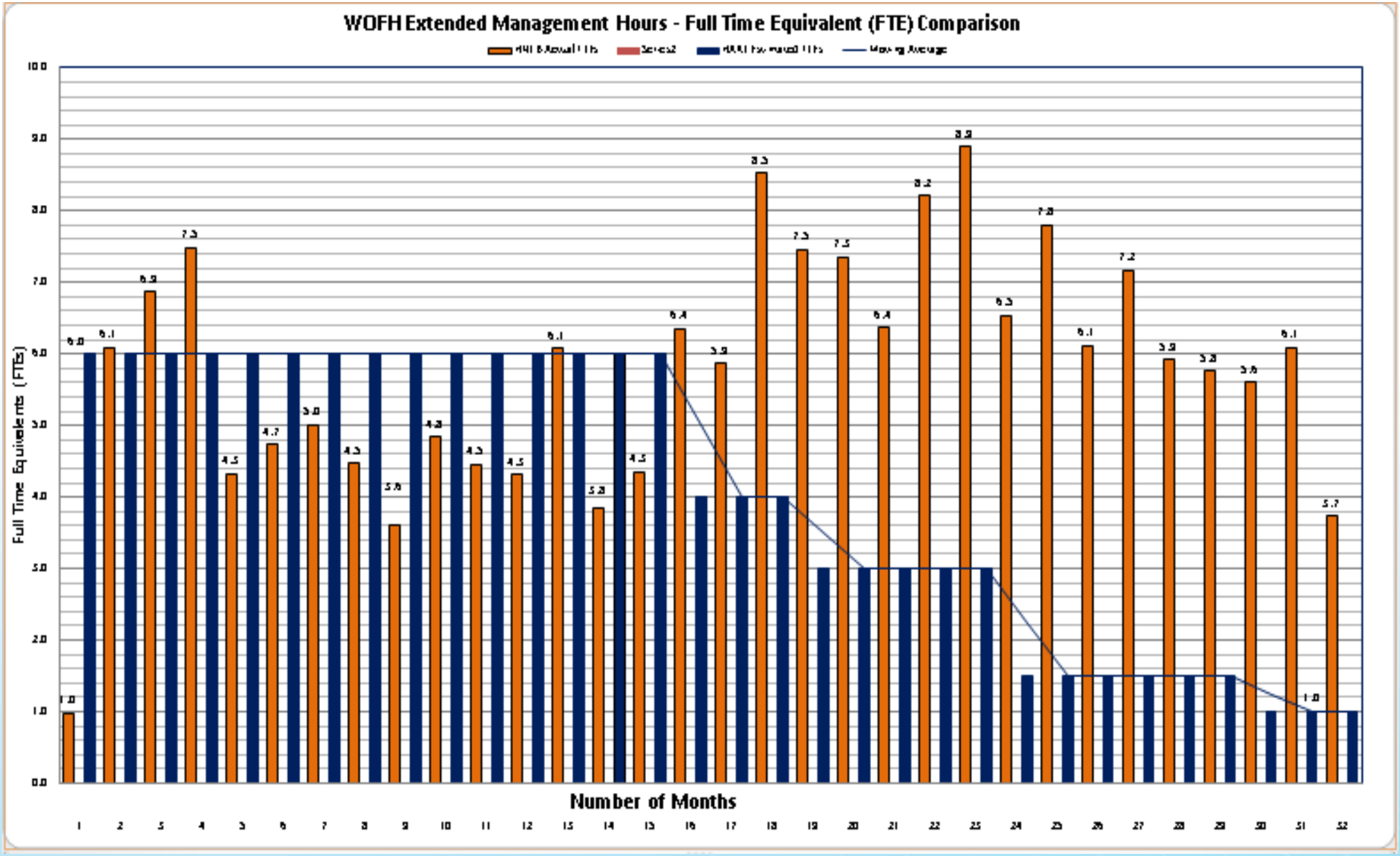
Change Order Cost Analysis
WOFH Contract

HNTB's Original Contract with Kiewit Included:

- 579 calendar days (October 29, 2009 to May 31, 2011)
- $24,820,000 design fee

Updated HNTB Contract:

- 1030 total calendar days (to August 25, 2012; AIS Suspension period August 2012 through September 2013)
- $37,855,233 revised design fee


WOFH Extended Management Hours - Full Time Equivalent (FTE) Comparison
Series2
Moving Average
Full Time Equivalents (FTEs)
Number of Months

Change Order Cost Analysis
WOFH Contract – HART's Estimate of Costs

Basis of HART's Estimate of Costs:

- Original contract and subsequent change orders up to August 25, 2012 ≈ $6,700 per day
- Projected forward to the end of the design period, March 31, 2015 (949 days)
- Excluded compensation for the 13-month AIS suspension period (-387 days – August 2012 through September 2013)
- 949 days – 387 days = 562 days times $6,700 = $3,765,400

1	Technical Design Management	$3,765,400
2	Design-Builder Change Analysis Preparation	0
	Subtotal Costs	**3,765,400**
3	*Mark-ups (profit, bond, GET)	231,840
	Total	**$3,997,240**
	**No Kiewit mark-up included in agreement*	

Change Order Cost Analysis

HART's estimate of costs considered the level of effort required during this time period, including the AIS suspension period. The analysis concluded:

- Technical design management staff classifications are consistent with the on-going tasks and technical needs of the project.
- Significant changes to the design and delayed design completion was beyond the control of the design-builder.
- Requests for additional design work and changed design work extended the design duration.
- The designer was compensated for additional design work and changed design work through the time period of August 25, 2012 to end of design in the Spring of 2015.
- The designer's extended technical design management costs were expressly excluded from design change orders for the period of August 25, 2012 to the end of design in the Spring of 2015.

Cost Impact of the Change Order

WOHF	
HNTB Change Request	$7,690,977
HART's Original Estimate	$3,997,240
Negotiated Change Order Amount	**$4,517,160**
Difference: 41% Reduction Significant reduction due to denial of time during 13 month AIS suspension period and limitation to 4 full time equivalent (FTE) personnel after restart.	

Mahalo!

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