

**HOLBROOK CITY COUNCIL**  
**AGENDA ITEM REQUEST**

**ISSUE/ITEM:** *Construction of Electric Distribution Facilities for the Hopi Truck Plaza Lift Station*

**DATE OF MEETING:** *September 22, 2009*

**ACTION REQUESTED:** *Approval of agreement #W467836 with Arizona Public Service to install an overhead transformer.*

**BACKGROUND:** The pump for the Hopi travel plaza lift station keeps tripping the breaker. The pump company was contacted for the possible cause of breaker tripping. It was discovered that this pump requires 230 volts. The APS line is currently only providing 208 volts. Pumps in the past were built with a voltage range and the newer pumps are being built with a specific voltage. This is why the older pump worked without any trouble. Currently all other lift stations run on 230 volts.

This construction will allow the City to be consistent with all of the lift station pumps. The cost of installing the transformer is \$7,601.00. APS is a sole source provider. A backup pump that that can be interchanged easily will be purchased at a later date.

**GENERAL PLAN:** To coordinate system-wide infrastructure improvements among redevelopment areas, older neighborhoods, Growth Areas, and cost-effective out-of-city limit sectors.

**IF A BID, LIST VENDORS BID SENT TO:** N/A

**BUDGET LINE:** 002-092-5041 – Professional and Consulting Services

**FUNDS AVAILABLE:** \$42,610

**Approvals (as required)**

City Manager



Finance Director





**AGREEMENT  
TO CONSTRUCT ELECTRIC DISTRIBUTION FACILITIES**

The parties to this Agreement are ARIZONA PUBLIC SERVICE COMPANY, an Arizona corporation, hereinafter called "APS" and  
"CITY OF HOLBROOK"

hereinafter called "Customer." In consideration of the promises and provisions set forth below, the parties to this Agreement agree as follows:

**1. CONSTRUCTION**

1.1 APS shall construct electric distribution facilities as an extension of its present facilities in order to serve HOLBROOK, Arizona, in accordance with the attachments set forth in Section 4 to this Agreement and APS' line extension tariff, "Schedule 3: Conditions Governing Extensions of Electric Distribution Lines and Services," hereinafter called "Extension Policy." The terms and conditions of APS' Extension Policy and the attachments described in Section 4 are hereby incorporated in full into this Agreement.

1.2 The earthwork, conduits and materials necessary for construction shall be provided by the parties as follows: NAr shall provide distribution line and service line earthwork; APS shall provide equipment, manholes, and transformer pad(s) (unless otherwise noted on the sketch); NA shall provide and install conduit(s) (unless otherwise noted on the sketch). Customer-provided earthwork, conduits, materials, and installation(s) shall be provided in accordance with the attached sketch(es), specifications(s), and Trenching Agreement - Requirements, and shall be approved by APS prior to APS commencing the installation of lines and equipment.

1.3 Distribution facilities shall be installed by APS in the location indicated on the attached sketch(es). Customer agrees to the location of APS' facilities and agrees to convey an easement on its property to APS (in APS' standard Utility Easement form attached hereto) for APS' use at that location. Customer shall provide APS access to these distribution system facilities at all times, and shall not block or interfere with said access in any way, including fencing or the placement of obstructions adjacent to and on the door-side of cabinets, transformers, or any other equipment.

1.4 All meters are to be located as shown on the sketch, a copy of which is attached to this Agreement. No variation to the meter locations identified may be made unless approved in writing by an authorized representative of APS.

1.5 Customer's "on and off" site construction required in support of APS' construction is estimated to begin on AUGUST 2009, and to be completed on SEPTEMBER 2009. APS' construction is estimated to begin on SEPTEMBER 2009, and to be completed on SEPTEMBER 2009, contingent upon scheduled completion of Customer's "on and off" site construction in accordance with APS' specifications. These dates are provided only as estimates, are not binding upon APS, and are subject to change to accommodate APS' workload, material requirements, or other factors.

## **2. PAYMENT**

APS shall not begin any construction pursuant to this Agreement until it receives from Customer a payment of \$ 7,601.00 DOLLARS, which sum equals the installation cost to APS of extending service to Customer. Such payment shall be non-refundable and shall include all costs for the local facilities and municipal street lighting facilities required to serve Customer's anticipated load. A breakdown of these costs are attached hereto as the Project Invoice Cost Summary. Such payment is due to APS upon Customer's execution of this Agreement.

## **3. GENERAL PROVISIONS**

3.1 This Agreement shall be binding upon and inure to the benefit of the heirs, administrators, executors, or assignees of the parties to this Agreement, provided, however, that no assignment or other transfer of this Agreement shall be binding upon APS or create any rights in Customer's assignee until such assignment or other transfer is approved and accepted in writing by an authorized representative of APS.

3.2 All electric facilities install pursuant to this Agreement shall be owned by APS.

3.3 APS may use the installed facilities to serve other customers, and may extend service to other customers from the facilities located within the easement(s) conveyed by Customer pursuant to this Agreement.

3.4 This Agreement does not require APS to construct any line extensions to future customers not included in the attached sketches.

3.5 This Agreement will become effective only upon the execution of this document by duly authorized representatives of the parties and payment by Customer to APS of the total amount set forth in Section 2.

3.6 The prevailing party in any proceedings instituted by either party regarding a dispute concerning this Agreement shall be entitled to recover its reasonable attorney's fees, costs, and expenses.

3.7 If any term or condition of this Agreement is held to be invalid, void, or otherwise unenforceable by any court of competent jurisdiction, that holding shall not affect the validity or enforceability of any other term or condition of this Agreement, unless enforcing the balance of this Agreement would deprive either party of a fundamental benefit of its bargain.

3.8 This Agreement contains the final and complete agreement between the parties for the construction of the line extension described herein and supersedes all prior and contemporaneous conduct, agreements, statements, representations, negotiations, course of conduct, course of dealing, and communications pertaining to the subject matter hereof, whether written or oral. The parties shall not be bound by or be liable for any statement, representation, promise, inducement, or understanding of any kind not set forth in or formally incorporated into this Agreement

#### **4. ATTACHMENTS**

The provisions, terms, and conditions of each of the following documents, attached to this Agreement, are hereby incorporated in full into this Agreement.

Design Sketches

Sales Invoice

Project Invoice Cost Summary

**5. EXECUTION AND EFFECTIVE DATE**

This Agreement has been executed by the duly authorized representatives of the parties, and shall be effective as of the date signed by APS.

**ARIZONA PUBLIC SERVICE**

**CUSTOMER Or CUSTOMER'S REPRESENTATIVE**

SIGNATURE: \_\_\_\_\_  
NAME: MIKEL COLE  
TITLE: ENERGY DELIVERY MANAGER

SIGNATURE: \_\_\_\_\_  
NAME: RANDY SULLIVAN  
TITLE: FINANCE DIRECTOR

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

MAILING ADDRESS:  
PO BOX 970  
HOLBROOK, AZ 86025-0970

PERMANENT PHONE NUMBER:  
928 524-6226

The individual executing this Agreement on behalf of Customer represents and warrants: (i) that he or she is authorized to do so on behalf of Customer; (ii) that he or she has full legal power and authority to bind Customer in accordance with the terms herein and, if necessary, has obtained all required consents or delegations of such power and authority.

APS Invoice No: AR  
Prepared By: \_\_\_\_\_  
Date: \_\_\_\_\_

Amount Paid \$ 7,601.00  
(Including taxes)  
Date Received: \_\_\_\_\_



# Project Invoice Cost Summary

**WO#** W467836

**Project Leader** LJOHNSON

**WO Description** HB/CITY OF HB LIFT STATION CHANGE  
OUT OH XFMR BANK

**Customer Name** CITY OF HOLBROOK

**Site Address** I-40

## Local Facilities Charges

## Cost

	Total Project Cost	\$	8,101.00
	LFC Material Cost \$	3,663.00	
	LFC Labor Cost \$	4,438.00	
	*Less APS System Improvement Cost	\$	0.00
	*Less APS System Allowance Cost	\$	0.00
	Less APS Street Light Cost	\$	0.00
	Less Other	\$	500.00
<b>Subtotal (1)</b>	<b>Cost of Local Facilities</b>	<b>\$</b>	<b>7,601.00</b>

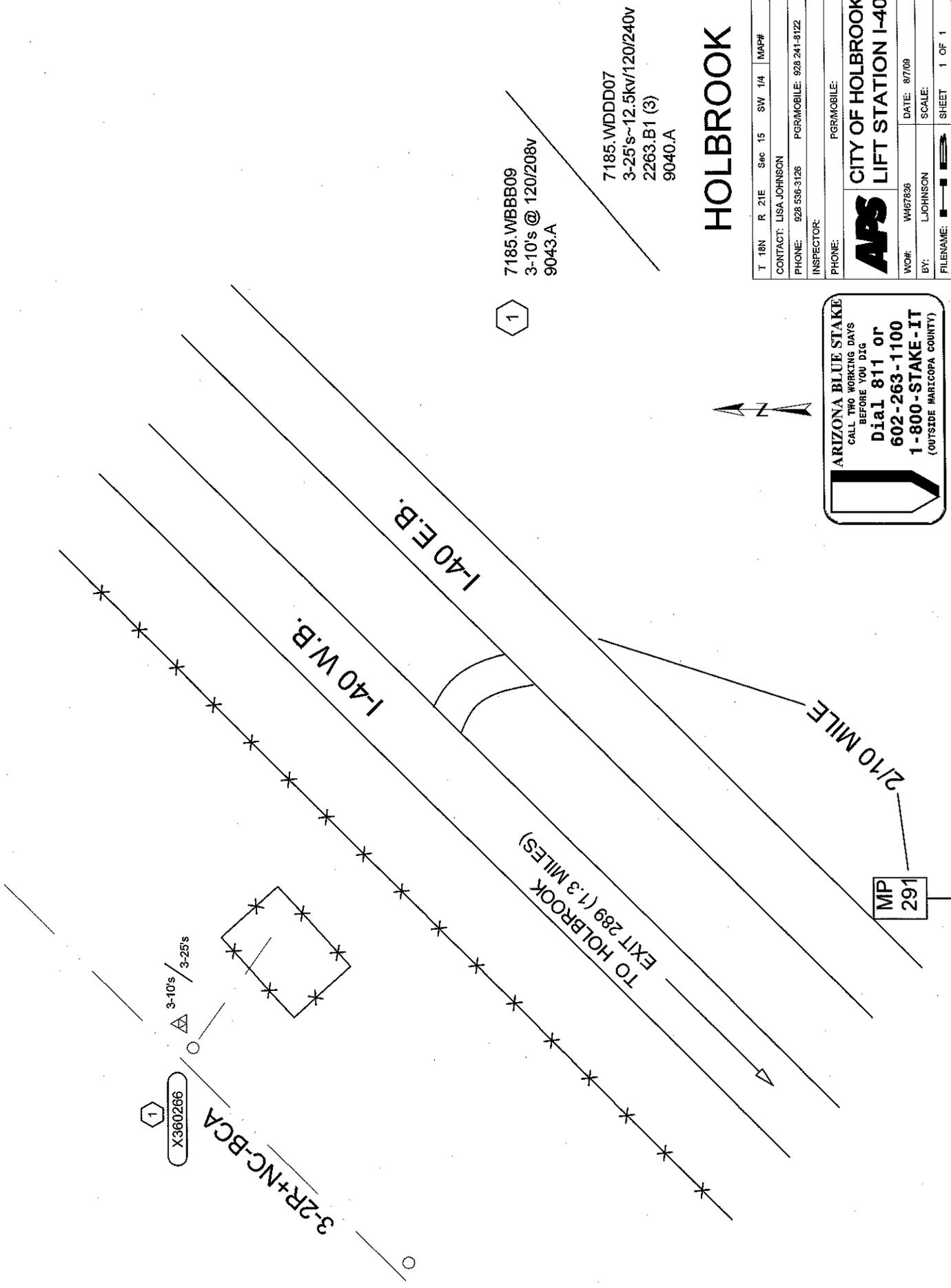
## Municipal Street Light Costs

<b>Subtotal (2)</b>	Poles, Fixtures & Other	\$	0.00
<b>(Subtotals 1+2)</b>	<b>Customer Project Cost (Before Tax)</b>	<b>\$</b>	<b>7,601.00</b>
	Less Customer Cash Receipts	\$	0.00
	<b>Customer Amount Due (Before Tax)</b>	<b>\$</b>	<b>7,601.00</b>

### LFC Major Material List

Description	Qty
-------------	-----

NAME: CITY OF HB/LIFT STATION  
 JOB NUMBER: W467836



7185.WBBB09  
 3-10's @ 120/208v  
 9043.A

7185.WDDDD07  
 3-25's~12.5kv/120/240v  
 2263.B1 (3)  
 9040.A

# HOLBROOK

T 18N	R 21E	Sec 15	SW 1/4	MAP#
CONTACT: LISA JOHNSON				
PHONE: 928 536-3128 PGR/MOBILE: 928 241-8122				
INSPECTOR:				
PHONE:				
PGR/MOBILE:				
<b>APS</b> CITY OF HOLBROOK				
<b>LIFT STATION I-40</b>				
WORK:	W467836	DATE:	8/7/09	
BY:	L. JOHNSON	SCALE:		
FILENAME:		SHEET	1	OF 1

**ARIZONA BLUE STAKE**  
 CALL TWO WORKING DAYS BEFORE YOU DIG  
 Dial 811 or  
 602-263-1100  
 1-800-STAKE-IT  
 (OUTSIDE MARICOPA COUNTY)

**HOLBROOK CITY COUNCIL**  
**AGENDA ITEM**

**ISSUE/ITEM:** Levee Certification – Phase 2 Geotechnical Investigation

**DATE OF MEETING:** September 22, 2009

**ACTION REQUESTED:** Approve J.E. Fuller/Kleinfelder Scope and Fee for Phase 2 Geotechnical Investigation

**BACKGROUND:** J.E. Fuller and Kleinfelder are under contract with the City to certify the city's three (3) levees. The certification process is required by FEMA. The main purpose of Phase I (preliminary) explorations was to characterize the geology of the area and the soil types present, and to develop general ideas of soil and levee fill material strength and permeability. An estimated fee for the Phase 2 work was provided with the Phase 1 scope of services but could not be determined without first completing the Phase 1 work. This work was completed August 2009. Based on the Phase 1 investigation, the total amount required for the Phase II geotechnical investigation change order is **\$142,300**. Phase 2 will provide additional information necessary to certify the levee system and enable Kleinfelder to submit the report to FEMA.

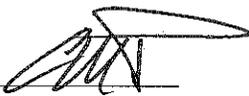
Breakdown of Total Project Cost	Original Contract	365,840
	Phase 2	142,300
	Total	\$508.140

**GENERAL PLAN:** NA

**Budget Line:** 001-086-5049 Contract Services

**Funds Available:** \$511,300.00

**Approvals (as required)**

  
\_\_\_\_\_  
  
\_\_\_\_\_

## JE Fuller/ Hydrology & Geomorphology, Inc.

Jon Fuller, PE, RG, PH, CFM, DWRE	Brian Iserman, PE, CFM	Brian Fry, PE, CFM	John Wallace, PE, CFM
Ted Lehman, PE	Jeff Despain, PE, CFM	Brian Schalk, PE, CFM	Robert Shand, PE
W. Scott Ogden, PE, CFM	Patricia Quinn, PE, RLS	Jon Ahern, PE, CFM	Ian Sharp, PE, CFM
Robert Lyons, PE, CFM	Dave Meyer, GIT	Skyler Witalison, BS	Chris Rod, PE
Mike Kellogg, RG, CFM	Dwight Nield, BS	Nate Vaughan, PE	Cyrus Miller, PE, CFM
Hari Sundararaghavan, PhD, PE, CFM	Annette Griffin, AAS	Cory Helton, EIT, MS	

September 17, 2009

City of Holbrook  
c/o Carlo Pilgrim, City Manager  
465 1<sup>st</sup> Avenue  
City of Holbrook, AZ 86025

**RE: Holbrook Levee System FEMA-Based Levee Certification Documentation and Technical Data Notebook Submittal to FEMA Change Order No. 2 Request**

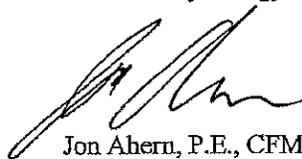
Dear Mr. Pilgrim:

This letter is written to request authorization of Change Order No. 2 per the above referenced project.

Please have authorized persons execute a copy of this letter in the spaces provided below and return to me. This letter when signed by both parties constitutes an amendment and supplement to the Contract. Please notify me in writing immediately if this letter is not in accordance with your instructions.

Sincerely,

JE Fuller/Hydrology & Geomorphology, Inc.



Jon Ahern, P.E., CFM  
Project Engineer

8400 S. Kyrene Rd., Ste 201  
Tempe, Arizona 85284  
480-752-2124 (voice)  
480-839-2193 (fax)

1 West Deer Valley Rd., Ste 101  
Phoenix, AZ 85027  
623-889-0166 (voice)  
480-839-2193 (fax)

523 N. Beaver St., 2<sup>nd</sup> Floor  
Flagstaff, AZ 86001  
928-214-0887 (voice)  
928-214-0887 (fax)

40 E. Helen Street  
Tucson, Arizona 85705  
520-623-3112 (voice)  
520-623-3130 (fax)

Change Order No. 2 dated September 17, 2009 to the agreement between City of Holbrook, ("Client") and JE Fuller Hydrology and Geomorphology, Inc., ("Consultant") dated March 25th, 2009 ("the Agreement") concerning Recertification of the Holbrook Levee System (the "Project").

The Consultant has entered into the Agreement with Client for the furnishing of professional services, and the parties now desire to amend the Agreement.

Therefore, it is mutually agreed that the Agreement is amended to include Additional Services in the form of Change Order No. 2 (attached) to be performed by Consultant and provisions for **additional compensation in the amount of One Hundred Fourth Two Thousand Three Hundred Dollars (\$142,300)** by the Client to the Consultant, as set forth in Change Order No. 2. This additional compensation results in a total fee for professional services of \$508,140, which includes both Base Contract fee (\$133,290), Change Order No.1 fee (\$232,550) and Change Order No. 2.

CLIENT:

CITY OF HOLBROOK

By: \_\_\_\_\_

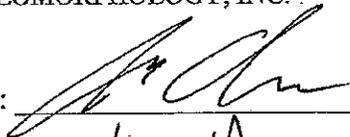
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date signed: \_\_\_\_\_

CONSULTANT:

JE FULLER HYDROLOGY AND  
GEOMORPHOLOGY, INC.

By:  \_\_\_\_\_

Name: Jon Ahern

Title: Vice President

Date signed: September 17, 2009

## CHANGE ORDER NO. 2

### HOLBROOK LEVEE SYSTEM FEMA-BASED LEVEE CERTIFICATION DOCUMENTATION AND TECHNICAL DATA NOTEBOOK SUBMITTAL TO FEMA CITY OF HOLBROOK

#### SCOPE OF WORK

September 17, 2009

#### Introduction

Change Order No. 2 is intended to address the Phase 2 Geotechnical Evaluation of the Holbrook Levee System as required to meet FEMA accreditation criteria and outlined in the tasks below. Exceptions to this Scope of Work are those tasks that are specifically noted as additional services.

#### Task 1. Phase 2 - Additional Geotechnical Investigation and Documentation

See Kleinfelder Phase 2 Scope of Services.

#### Cost for Engineering Services

Change Order Tasks	JEF	KLF	SWI	Total
Task 1. Geotechnical Explorations and Documentation	N/A	\$142,300	N/A	\$142,300
Total Estimated Fee for Change Order No. 2 (Phase 2 Geotechnical)				\$142,300

#### Assumptions:

1. **Costs for Engineering Services are based on a level of effort to complete Phase 2 of the Geotechnical Investigation.**
2. Supplemental Survey Work is included as part of Change Order #1. If additional survey work is required to meet project objectives, a fee estimate will be provided to the City for review and approval.
3. Geotechnical evaluation (Phase 1 and 2) will address geotechnical elements required for certification documentation in the TDN submittal. Specifically, the following geotechnical elements contained in FEMA MT-2 Form 3, Section E Levee/Flood:

Item 5 Embankment and Foundation Stability

Item 6 Floodwall and Foundation Stability

Item 7 Settlement, and

Item 9 Other drainage criteria, sub items a, and b.

4. See Kleinfelder Phase 2 Scope of Services for Geotechnical Assumptions
5. Client will obtain any access permits necessary to perform work as outlined in the Scope of Work above.
6. Scope of Work does not include any review or submittal fees.

**Additional Services:**

Additional services may be provided by the Consultant, for additional fee, and only upon request by the Client.

**Phase 2 - Additional Geotechnical Investigation and Documentation**

**HOLBROOK LEVEE SYSTEM  
FEMA-BASED LEVEE CERTIFICATION DOCUMENTATION  
AND TECHNICAL DATA NOTEBOOK SUBMITTAL TO FEMA  
CITY OF HOLBROOK**

**September 17, 2009**

Kleinfelder will be used for the Phase 2 Geotechnical Investigation as described in following Scope of Work:



August 31, 2009  
File No.: 103788 (1.7)

Jon Ahern, PE  
JE Fuller Hydrology and Geomorphology, Inc.  
1 West Deer Valley Road, Suite 101  
Phoenix, Arizona 85027

**SUBJECT: Change Order No. 1  
Phase II Scope of Services and Cost Estimate  
FEMA Certification of the City of Holbrook Levees  
Holbrook, Arizona**

Dear Mr. Ahern:

Kleinfelder is pleased to present this scope of services and cost estimate for services provided to the City of Holbrook in connection with the geotechnical engineering services required for the Federal Emergency Management Agency (FEMA) certification of the Holbrook Levee System which is located in Holbrook, Arizona. The scope of work and fee provided herein is based upon a review of United States Army Corps of Engineers (USACE) and FEMA requirements.

Kleinfelder is committed to providing quality service to its clients, commensurate with their wants, needs and desired level of risk. If a portion of this proposal does not meet your needs, or if those needs have changed, Kleinfelder is prepared to consider appropriate modifications, subject to the standards of care to which we adhere as professionals. Modifications such as changes in scope, methodology, scheduling, and contract terms and conditions may result in changes to the risks assumed by JE Fuller, Inc. as well as adjustments to our fees.

#### **BACKGROUND AND PURPOSE OF PROJECT**

Kleinfelder has completed Phase I of the 2009 Scope of Services for JE Fuller Hydrology and Geomorphology, Inc. (JE Fuller) for the FEMA certification of the Holbrook Levee System. The results of our Phase I study are presented in Kleinfelder's report titled: "Geotechnical Evaluation Report, Phase I FEMA Certification of Holbrook Levees," dated August 26, 2009. In addition, the results of levee inspections are

presented in Kleinfelder's report titled: "Levee Inspection Memorandum Letter, Holbrook Levees," dated December 18, 2008.

It is understood that the Holbrook Levee system has a FEMA Provisionally Accredited Levee (PAL) agreement that expired in July 2009. It is acknowledged that this levee is within FEMA Region 9 jurisdiction.

Kleinfelder will conduct the Phase II geotechnical study to satisfy requirements of 44CFR 65.10, FEMA Policy Memorandums No. 34 and No. 43, USACE EC 1110-2-6067 and other technical memos and policies regarding levees. This Phase II scope and fee was developed from the results of the above referenced Phase I geotechnical study.

### SCOPE OF WORK

As defined by the EC 1110-2-6067 "Certification of Levee Systems for the National Flood Insurance Program," September 30, 2008,, levee certification is a technical finding that for the floodplain in question there is a certainty that the levee system protecting the area will contain the base (1% annual exceedance) flood. The sole purpose of levee certification is to validate that areas protected from flooding by the levee in question may be shown on Flood Insurance Rate Maps (FIRMS) as protected from the 1% chance exceedance flood. Levee certification findings do not address nor are the findings concerned with public safety, performance of the levee system for floods other than the 1% event, nor risk to floodplain residents from floods that will exceed system capacity.

As presented in the original Kleinfelder Phase I proposal, dated April 24, 2009, additional work would be required based upon the findings of the Phase I exploration. Recommendations for additional work presented in the referenced Kleinfelder Phase I geotechnical report are the subject of this change order.

The following sections describe our proposed scope of services for the completion of Phase II of this project. The task numbers have been continued from the Phase I scope of work.

**Task 2.1 Phase II Site Explorations.** The Phase II exploration is designed to supplement data presented in Kleinfelder's referenced Phase I geotechnical report, dated August 26, 2009. As developed from Section 6.2 and 6.3 of the aforementioned report the following work items are proposed:

- Two borings are proposed to be advanced to approximately 50 feet below existing grade on the landside and riverside levee toe near North Levee Station 470+00. Similarly, one boring is proposed to be advanced to 60 feet below the levee crown at North Levee approximately station 474+70 (sand dune area). In addition, one additional Electrical Resistivity Tomography (ERT) line is proposed

in this area. The purpose these borings and ERT line is to better characterize the extent of the upper foundation sands and to better characterize the levee subsurface for cross-section development and subsequent analysis for seepage and stability.

- Two borings are proposed to be advanced to approximately 50 feet below existing grade on the landside and riverside toe near levee North Levee station 440+00 (meander bend). In addition to the borings, one ERT and one P-wave (Vp) Tomography seismic line is proposed along the riverside toe at this location. The purpose of these borings is to better characterize the levee subsurface for cross-section development and subsequent analysis for seepage and stability.
- Four borings are proposed to be advanced to approximately 40 feet below existing grade in the vicinity of North Levee station 350+00 to 362+00 (pond area). These borings will be spaced out along the riverside and landside toe. In addition, we propose two borings to 50 feet below levee crown in this area. Two ERT lines and one Vp Tomography line is proposed in this area to better characterize the levee and foundation materials for the development of cross-sections and subsequent seepage and stability analysis.
- Two borings are proposed to be advanced to approximately 40 feet below existing grade in the vicinity of McLaws Levee station 32+50 (McLaws area). These borings will be advanced along the riverside and landside toe. In addition, we propose two ERT lines and one Vp Tomography line in this area to better characterize the levee and foundation materials for the development of cross-sections and subsequent seepage and stability analysis.
- A total of seven culvert and three utility penetrations will be explored with geophysical methods to obtain data regarding the soil backfill structure and strength around the pipe. We proposed to perform ReMi seismic refraction and ground penetrating radar (GPR) over these areas. A total of seven ReMi lines and seven GPR traverses are proposed.
- Closed-circuit television inspections are proposed to be performed at the five CMP levee pipe penetrations.
- In support of this geotechnical effort and subsequent stability analysis. Additional surveys will be required by others and is not included in this cost estimate. We estimate a total of four levee cross-sections will be required at the following areas: North Levee-Pond area, sand dune area, and meander area as well as McLaws area. Exact locations of the cross sections will be determined shortly after completion of drilling. In addition, location and elevation survey will be required at all new boring locations as described above.

Field investigations will be performed in accordance with EM 1110-2-1913. A Kleinfelder registered professional geologist or engineer will observe or supervise drilling operations, log boreholes according to ASTM 2488 and USACE Engineering Manual for Geotechnical Investigations (EM 1110-1-1804) and collect samples for laboratory

testing. Boring logs in gINT format will be provided with the Levee Final Report (Task 2.4).

**Task 2.2 Laboratory Testing.** Laboratory tests are proposed to further characterize the levee engineering properties and levee fill. The number and the locations of samples to be tested will be determined based on the results of Task 2.1. For the purpose of this scoping we have assumed the following laboratory testing schedule for Phase II:

Test	Number of tests
Atterberg limits	30
Sieve Analysis w/ Hydrometer	30
Density and Moisture Content	30
Triaxial Shear (Consolidated, Undrained)	2
Dispersive Soils (ASTM D 6572)	20

**Task 2.3 Engineering Evaluations.** Engineering evaluations will be performed based on the requirements of 44 CFR Section 65.10, FEMA Procedure Memoranda No. 34 and 43, and the following U.S. Army Corps of Engineers guidelines as applicable:

- EM 1110-2-1913 *Design and Construction of Levees*
- EM 1100-2-1904
- EC 1110-2-6001 *Seismic Analysis of Dams and Levees*
- EC 11102-6067 Certification of Levee Systems for the National Flood Insurance Program
- ETL 1110-2-569 *Design Guidance for Levee Underseepage*

Geotechnical evaluations will address requirements B4 and B5 of 44 CFR Section 65.10 and will include seepage, slope stability and settlement analyses. Seepage analyses will address through-seepage, underseepage and seepage induced piping under steady-state conditions associated with the 100-year flood water surface. Levee slope stability will be evaluated under static conditions associated with the 100-year flood and rapid drawdown from the 100-year water surface. A pseudo-static (seismic) slope stability analysis will also be performed. Settlement analyses will be performed to assess the potential and magnitude of future losses of freeboard as a result of levee settlement. Seepage analyses will be performed based on the "blanket theory" and steady state seepage conditions using computer software SEEPW. Slope stability analyses will be conducted using computer software SlopeW. In accordance with FEMA requirements, one cross section will be checked using a different slope stability computer program (UTEXAS). We have assumed that four cross-sections will be analyzed: North Levee- one each in the pond, meander, sand dune area and McLaws Levee – clay blanket area.

If our findings identify any deficiencies and indicate that additional explorations and/or repairs are required to meet the certification criteria, we will negotiate a revised scope and budget at this point. Otherwise we will proceed with Task 2.4.

**Task 2.4 Geotechnical Evaluation Report.** Kleinfelder will prepare a Geotechnical Evaluation Report in support of FEMA certification in accordance with 44 CFR Section 65.10. We assume that a final summary report to FEMA will be prepared by JE Fuller. Kleinfelder has included time to review JE Fullers report and provide comments for the submittal to FEMA. Kleinfelder's Final Geotechnical Evaluation Report will be prepared in accordance with EC 11102-6067, and will clearly state whether the levee meets requirements B4 and B5 of 44 CFR 65.10. The report will contain the following information:

- levee description;
- summary of available information, including overall performance history and O&M;
- site visit summary;
- site investigations;
- laboratory testing;
- embankment and foundation stability;
- settlement; and,
- seismic issues.

#### **ASSUMPTIONS**

- We assume reliable survey information will be provided by JE Fuller for further development of our cross sections.
- It is our understanding that information characterizing the flood hazard as described in EC 11102-6067 Section 9f will be provided by an H&H consultant and is outside Kleinfelder's scope.
- We assume that embankment protection and erosion analyses are outside Kleinfelder's scope and will be addressed by others.
- We assume JE Fuller will provide survey elevation data at all boring locations.
- We assume the use of mud rotary drilling methods will be used within areas of "flowing sands" as encountered during the Phase I exploration. For the purpose of this estimate, we have assumed a total of 20 feet of mud rotary drilling for each bore hole.

One electronic copy of a draft report will be submitted to JE Fuller for review and comments. Once complete, five copies of the final Geotechnical Evaluation Report will be provided to JE Fuller for submittal to FEMA.

#### **COST ESTIMATE**

The tasks specified in this scope of work will be provided on a time and expense basis not to exceed \$142,300 without prior authorization.

#### **STATEMENT OF CONFIDENTIALITY**

All site-specific data generated and reports written for this project are the proprietary information of our client and will not be released by Kleinfelder without written permission. The results presented in any oral or written report will be based on the information acquired during the geotechnical study.

#### **AUTHORIZATION**

Kleinfelder's services will be performed in accordance with the previously executed Independent Subcontractor Agreement with JE Fuller dated May 5, 2009. Your signed authorization will document your concurrence with the presented scope of services, assumptions, schedule, limitations, and fees.

All information gathered during Kleinfelder's assessment is considered confidential and will be released only upon written authorization of the client or as required by law. If there is a need for any change in the scope of services or schedule described herein, please call us immediately. Changes may require revision of the proposed fee, which will be communicated to you upon assessment of the requested changes that affect the fee.

Our work will be performed and findings will be obtained in substantial conformance with the geotechnical engineering practice that exists within the area at the time of our field study. No warranty is expressed or implied.

#### **LIMITATIONS**

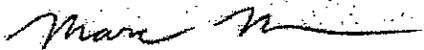
Our work will be performed and findings obtained in substantial conformance with the geotechnical engineering practice that exists within the local practice geographic area at the time of our investigation. No warranty, either express or implied, is made.

**CLOSING**

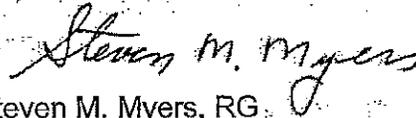
Kleinfelder appreciates the opportunity to present this proposal. Should you have any questions concerning this proposal, please do not hesitate to contact the Project Manager, Marc Moncilovich at (480) 763-1200.

Sincerely,

**KLEINFELDER WEST, INC.**



Marc N. Moncilovich, RG  
Geotechnical Project Manager



Steven M. Myers, RG  
Desert Southwest Regional Manager

MNM:SMM:jas

Attachments: Table 1

**Consultant**  
Kleinfelder West, Inc.

**Client**  
JE Fuller Hydraulics and  
Geomorphology, Inc.

Signed: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Signed: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**TABLE 1**  
**ESTIMATED FEES - KLEINFELDER, INC.**  
**Holbrook levees Phase II**

<u>PHASE II LABOR</u>	<u>UNIT</u>	<u>NO. OF UNITS</u>	<u>UNIT COST</u>	<u>COST</u>
PRINCIPAL PROFESSIONAL	HOUR	44	\$ 230.00	\$ 10,120.00
SENIOR PROFESSIONAL	HOUR	20	\$ 145.00	\$ 2,900.00
PROJECT PROFESSIONAL	HOUR	146	\$ 120.00	\$ 17,520.00
STAFF PROFESSIONAL II	HOUR	138	\$ 105.00	\$ 14,490.00
STAFF PROFESSIONAL I	HOUR	186	\$ 85.00	\$ 15,810.00
SENIOR TECHNICIAN	HOUR	0	\$ 80.00	\$ -
CADD OPERATOR/DRAFTSPERSON	HOUR	42	\$ 75.00	\$ 3,150.00
WORD PROCESSOR	HOUR	10	\$ 65.00	\$ 650.00
ADMINISTRATION	HOUR	12	\$ 60.00	\$ 720.00

TOTAL LABOR HOURS: 598

TOTAL LABOR \$ 65,360.00

PHASE II EXPENSES

<u>ENGINEER/GEOLOGIST</u>	<u>UNIT</u>	<u>UNITS</u>	<u>COST</u>	<u>COST</u>
PER DIEM (Kleinfelder)	DAY	14	\$ 91.00	\$ 1,274.00
TRAVEL (airfare and parking)	EACH	0	\$ 500.00	\$ -
MILEAGE (Company & Personal Vehicle)	EACH	1900	\$ 0.550	\$ 1,045.00
			<b>SUBTOTAL</b>	<b>\$ 2,319.00</b>

SUBCONTRACTORS - DRILLING

Mob/Demob	DAY	10	\$ 350.00	\$ 3,500.00
Mileage	MILE	390	\$ 2.50	\$ 975.00
Hollow Stem Drilling	FOOT	340	\$ 10.50	\$ 3,570.00
Mud Drilling	FOOT	260	\$ 33.00	\$ 8,580.00
Grout Abandonment	FOOT	600	\$ 8.00	\$ 4,800.00
Set up/move/cleanup	HOUR	7	\$ 150.00	\$ 1,050.00
Shelby Tube samples	EACH	13	\$ 75.00	\$ 975.00
Support vehicle	DAY	10	\$ 200.00	\$ 2,000.00
utility clearance	HOUR	4	\$ 75.00	\$ 300.00
Per Diem	MILE	8	\$ 210.00	\$ 1,680.00
			<b>SUBTOTAL</b>	<b>\$ 27,430.00</b>
			<b>MARKUP 10%</b>	<b>\$ 2,743.00</b>

SUBCONTRACTORS - Geophysical

Seismic & GPR (7 tomo, 7 remi, 7 GPR, nr	EACH	1	\$ 16,100.00	\$ 16,100.00
ERT (7 lines, incl mob)	EACH	1	\$ 10,940.00	\$ 10,940.00
			<b>SUBTOTAL</b>	<b>\$ 27,040.00</b>
			<b>MARKUP 10%</b>	<b>\$ 2,704.00</b>

SUBCONTRACTORS - Pipe Inspection

Video 5 pipes/penetrations	EACH	1	\$ 2,200.00	\$ 2,200.00
			<b>SUBTOTAL</b>	<b>\$ 2,200.00</b>
			<b>MARKUP 10%</b>	<b>\$ 220.00</b>

LABORATORY

Afterbergs	EACH	30	\$ 75.00	\$ 2,250.00
Sieve analysis and hydrometer	EACH	30	\$ 187.00	\$ 5,610.00
Density and moisture	EACH	30	\$ 27.00	\$ 810.00

**TABLE 1**  
**ESTIMATED FEES - KLEINFELDER, INC.**  
**Holbrook levees Phase II**

Triaxial Shear CU 3-pt stage	EACH	2	\$ 950.00	\$ 1,900.00
Dispersive soils	EACH	20	\$ 75.00	\$ 1,500.00
			<b>SUBTOTAL</b>	<b>\$ 12,070.00</b>
			<b>SUBTOTAL FOR PHASE - II</b>	<b>\$ 142,086.00</b>
<u>MISCELLANEOUS EXPENSES</u>				
FIELD SUPPLIES/RENTAL EQUIP	EST.		\$ 50.00	\$ 50.00

**TABLE 1**  
**ESTIMATED FEES - KLEINFELDER, INC.**  
**Holbrook levees Phase II**

MESSENGER/SHIPPING	EST.	\$ 180.00	\$ 180.00
		<b>SUBTOTAL</b>	<b>\$ 230.00</b>
		<b>TOTAL EXPENSES</b>	<b>\$ 230.00</b>
		<b>TOTAL FEE</b>	<b>\$ 142,316.00</b>