

STATE OF TEXAS

COUNTY OF BEXAR

§ INTERLOCAL AGREEMENT FOR THE
§ BARBARA DRIVE DRAINAGE
§ PROJECT (SA-3)

THIS INTERLOCAL AGREEMENT (hereafter referred to as "Agreement") for the **BARBARA DRIVE DRAINAGE PROJECT, SA-3** is effective as of the 9th day of March, 2015 (hereafter referred to as "Effective Date"), by and between the **CITY OF SAN ANTONIO, TEXAS**, a Texas Home Rule Municipality (hereafter referred to as "City") and the **COUNTY OF BEXAR**, a political subdivision of the State of Texas (hereafter referred to as "County"), acting by and through its officers, hereto duly authorized. City and County singularly or collectively shall be referred to herein as "Party" or "the Parties." This Agreement is entered into by City and County pursuant to the authority granted by the provisions of the Interlocal Cooperation Act, Texas Government Code, Chapter 791. This Agreement is intended to further the purpose of the Interlocal Cooperation Act by increasing the efficiency and effectiveness of local governments.

WITNESSETH

WHEREAS, County proposed that County's SA-3 Project (Barbara Drive Drainage Project) between Barbara Drive and Shannon Lee, from McCullough Avenue to Skipper Drive, be made a part of City's Barbara Drive Project; and

WHEREAS, City and County have agreed City shall incorporate County's SA-3 Project (hereafter referred to as "the Project") into City's Barbara Drive Project; and

WHEREAS, the Project consists of removing and widening the existing concrete channel east of McCullough Avenue by replacing existing concrete box culverts with an earthen channel to extend just beyond Skipper Drive; and

WHEREAS, County shall provide funding to City, in a lump sum amount, for the estimated engineering, environmental, real estate and construction-related costs of the Project and City shall incorporate County's lump sum amount into City's budget for its Barbara Drive Project; and

WHEREAS, City shall construct the Project as part of City's Barbara Drive Project; and

WHEREAS, City shall be responsible for the maintenance of the Project after its completion; and

WHEREAS, the Parties desire to enter into this Agreement, to establish the rights and obligations of the Parties for the engineering, real estate acquisition, construction, operations and maintenance of the Project, and to establish the procedures for funding the Project;

NOW, THEREFORE, in consideration of the mutual covenants and agreement stated herein, the Parties agree as follows:

ARTICLE I

PURPOSE

- 1.01 The purpose of this Agreement is to establish the terms and conditions for: (1) managing the design and construction services associated with the Project, including construction disruption; (2) funding the engineering, environmental, real estate, and construction related costs for the Project; and (3) operating and maintaining the Project upon completion.

ARTICLE II

TERM

- 2.01 Except as otherwise provided herein, this Agreement shall commence upon the execution date of the last signatory party to the Agreement and shall end upon completion of the Project.
- 2.02 City has the duty to maintain the Project and to enforce warranties associated therewith. These duties shall survive the termination of this Agreement.

ARTICLE III

COUNTY'S FINANCIAL COMMITMENT

- 3.01 County shall provide funds to City not to exceed **Eight Million Five Hundred Thousand dollars and no/100 (\$8,500,000.00)** (hereafter referred to as "County's Contribution").
- 3.02 The Parties acknowledge that the financial commitments stated in this Agreement are independent of the necessary operating and maintenance expenses that are and will remain City's responsibilities during and after the Project.
- 3.03 **Eight Million Five Hundred Thousand dollars (\$8,500,000.00)** is the total maximum County funds commitment to City for the Project. County funding for the Project shall be used for engineering, environmental, real estate and construction-related costs of County's SA-3 Project. No other funds shall be available from County for the Project.
- 3.04 County has no obligation to pay any of the Project's design consultant's fees or expenses.

ARTICLE IV

OBLIGATIONS OF CITY

- 4.01 Pursuant to this Agreement, City shall perform and provide the following:
- a. Following County's negotiation and execution of an amended contract for the design of the Project with a design consultant, City shall accept the assignment of County's executed consultant's contract. City shall be responsible for paying all fees and expenses due to the design consultant under the consultant's contract with County, once the contract is assigned to the City.
 - b. City shall oversee and manage the construction of the Project. Final construction documents for the Project shall be provided to County for review and approval. If the County does not approve the final construction documents of the Project, City shall refund all unused portions of County's funding.

- c. City shall achieve the project goals to reduce the 100-Year Flood Plain in the proximity of Barbara Drive, without causing negative upstream or downstream impacts. If City requests changes to design for the Project, County will require that the same or better flood control benefits are achieved by the change, before it approves the design modification.
- d. City shall be responsible for the staging of construction and all necessary street closures during construction to minimize street closures.
- e. City shall maintain the property included in the Project and City shall be responsible for the maintenance and operating expenses for such property during the Project.
- f. City shall obtain the United States Army Corps of Engineers (hereafter referred to as "USACE") Individual Permit or Nationwide Permit, as determined by final design option. If required by USACE Individual Permit, City shall perform regular site maintenance of the Project, in accordance to the terms and general conditions of the USACE Individual Permit Verification issued under Section 404 of the Clean Water Act, including maintenance requested by the USACE Fort Worth District Regulatory Branch and its Compliance Officer for conformance with the Permit.
- g. City shall provide timely review and approval of design and construction contract documents for the Project.
- h. City shall obtain warranties from third parties and enforce the warranties on behalf of the Parties, if necessary.
- i. City shall acquire all necessary property for Project.

ARTICLE V

OBLIGATIONS OF COUNTY

5.01 Pursuant to this Agreement, County shall perform and/or provide the following:

- a. County shall provide a copy of the Preliminary Engineering Report, dated April 30, 2012, and Technical Memorandum #1, dated November 12, 2012, for the Project to City for review.
- b. County shall negotiate and execute an amended contract with a design consultant for the design of the Project. Following execution of said design consultant's amended contract, County shall assign the contract to City.
- c. County hereby identifies its Director of Public Works, or his/her designee, as Project contact.
- d. County is responsible to provide Eight Million Five Hundred Thousand dollars and no/100 (\$8,500,000.00) for this Project no later than fifteen (15) days after the San Antonio City Council and Bexar County Commissioners Court approves the Agreement for this Project.

- e. County shall provide timely review and approval of design and construction contract documents for the Project.
- f. County shall participate in design Project meetings, as needed.
- g. County shall have no responsibility to maintain the Project.

ARTICLE VI

JOINT OBLIGATIONS OF THE PARTIES

- 6.01 The Parties have agreed upon the design and construction of the improvements to be integrated into the Project, as reflected in the Preliminary Engineering Report and Technical Memorandum #1 for the Project.
- 6.02 If substantial changes are requested, City shall obtain County's approval that the flood control project goals are satisfied.

ARTICLE VII

DESIGNATION OF REPRESENTATIVES

- 7.01 City hereby appoints the Transportation and Capital Improvements Department Director/City Engineer, or his/her designee, (hereafter referred to as "City Project Manager"), as its designated representative under this Agreement. City Project Manager shall be the primary point of contact for City.
- 7.02 County hereby appoints the Director of the Public Works Department, or his/her designee, (hereafter referred to as "County Project Manager"), as its designated representative under this Agreement. County Project Manager shall be the primary point of contact for County.

ARTICLE VIII

COUNTY'S RIGHTS UNDER THIRD PARTY CONTRACTS

- 8.01 Upon City's acceptance of design consultant contract from County, County agrees City shall have the authority to contract, on behalf of the Parties, for all services necessary for the construction of the Project.
- 8.02 City shall provide County with a fully executed copy of each contract entered into by City for the Project.
- 8.03 In all Project contracts entered into by City, City shall include provisions reflecting:
 - a. With regard to insurance coverage, City shall require all consultants, sub-consultants, contractors, subcontractors and suppliers to maintain the insurance coverage limits set out in the written notice to County's Risk Manager. A summary of Project costs and Project description also shall be required. County shall be named as an additional insured on all

policies naming City as an additional insured and shall be entitled to make claims, to the extent of County's interest in the Project, under all insurance coverage. Prior to the commencement of any work by any service provider, vendor, consultant, contractor, subconsultant or subcontractor under this Agreement, City shall provide County's Risk Management office with copies of completed Certificates of Insurance and endorsements or policy materials necessary to document compliance with these requirements. Certificates shall be completed by an agent authorized to bind the named underwriters and their companies to the coverage limits and termination provisions shown thereon. County shall have no duty to pay for any services or work performed under this Agreement until the Certificates of Insurance and additional documents relating to the services or work for which payment is being requested have been delivered to County. County reserves the right to review the insurance requirements during the effective period of this Agreement, any extension or renewal hereof, and to modify insurance coverage and minimum limits when deemed necessary and prudent by County, based upon changes in statutory law, court decisions or circumstances surrounding this Agreement. City shall not allow any modifications whereupon County may incur increased risks.

- b. City shall require all contractors, consultants and service providers, including, but not limited to, all sub-consultants and subcontractors, to maintain statutory worker's compensation insurance for all of their employees with a waiver of subrogation in favor of City and County.
- c. City shall require in its contracts for services, construction and materials that the contracting parties, along with all sub-consultants and subcontractors, be required to indemnify County and City, their officials, employees and agents, for claims by third parties, as allowed by law.
- d. City shall require all consultants, sub-consultants, contractors, and subcontractors to provide all statutorily required payment and performance bonds at no additional cost to the Parties. On services for which performance bonds are not statutorily required, City shall determine whether to require performance bonds.
- e. City shall state in all agreements with third-parties that County is a third-party beneficiary to those agreements.

ARTICLE IX

PROJECT MANAGEMENT DURING DESIGN AND CONSTRUCTION

- 9.01 Upon City's acceptance of the design consultant's assignment of the contract, City shall manage, oversee, administer and carry out all of the activities and services required for the design and construction of the Project, to ensure that this Project is designed, constructed, equipped, furnished and completed with new materials in a good and workmanlike manner and in accordance with the terms of this Agreement and the design and construction documents of the Project.
- 9.02 City shall enforce substantial compliance, pursuant to the terms of the agreements with the contractors and subcontractors, and require that work continuously and diligently be performed to achieve substantial completion on or before the scheduled completion date set out in the Project schedule.

- 9.03 Upon approval of this Agreement by the governing bodies of the Parties, the Parties' respective Directors shall schedule a meeting to finalize the team structure and develop the procedures and processes necessary to coordinate design and construction in accordance with the standard business practices of those disciplines.
- 9.04 City's Project Manager shall provide written notice to County's Project Manager a minimum of ten (10) business days prior to the issuance of a Notice to Proceed for the start of construction on the Project.
- 9.05 In addition to the requirements of **Article XVIII** herein, City promptly shall furnish County's Project Manager with copies of all legal notices received by City affecting the Project including, without limitation, notices from governmental authorities and notices from any party claiming default in any payment obligation and any other notice not of a routine nature. City promptly shall give notice under **Article XVIII** herein of any suit, proceeding or action that is initiated or threatened in connection with the construction of the Project or against City and/or County in connection with construction of the Project.
- 9.06 For any environmental event that is caused by or at the direction of either City or County employees at the Project site, the Party hiring the event-causing employee(s) shall be liable. An environmental event shall mean spills, discharge, leakage, pumpage, drainage, pourage, emission, emptying, injecting, dumping, disposing or other release of a hazardous material which may cause a threat or actual injury to human health or the environment.
- 9.07 Within thirty (30) business days following substantial completion of construction of the Project, City shall:
- a. notify County in writing upon the substantial completion of construction, whereupon County may inspect the completed work to determine if construction has been completed in a satisfactory and workmanlike manner and substantially completed in accordance with the plans and specifications for such work.
 - b. submit all permits and inspection reports and, if applicable, obtain a Final Acceptance Letter and submit a copy of each of these documents to the County.
 - c. submit "record" drawings to County, along with copies of all warranties and operations documents.
- 9.08 Both City and County shall participate in a walk through at the point of substantial completion of the Project to identify the punch list items. City shall supervise and coordinate the completion of punch list items and warranty work. Both Parties shall participate in a final walk through to determine whether all punch list items have been resolved.
- 9.09 For information purposes, City shall provide County's Project Manager, as and when available, the schedule for permitting, design and construction of the Project. County shall be furnished said schedule when revised from time to time throughout the duration of the Project. The schedule(s) shall establish a date for substantial completion of each phase in sufficient detail to allow County to monitor the progress of the construction of the Project.

- 9.10 Within one hundred eighty (180) days after final completion of the Project, City shall deliver to County's Project Manager a final construction report which shall set out the total costs incurred in connection with those portions of the Project for which both County and City made financial contributions.
- 9.11 City shall maintain the books, records and documents pertaining to those portions of the Project for which County and City have joint participation. County representatives shall have access to and the right to examine same, upon reasonable notice to City's Project Manager. City's books, records and documents relating to the Project must be maintained separately from other City projects so that an examination by County representatives shall be limited to the documents for this Project.

ARTICLE X

DEFAULT

- 10.01 In the event of a material breach of this Agreement, the non-breaching party shall give the breaching party written notice of such breach which shall detail the nature of the breach. The party receiving the notice of breach shall be given thirty (30) days to cure the breach. If the breach is not corrected to the reasonable satisfaction of the non-breaching party by the end of the thirty (30) day period, the non-breaching party may give written notice of termination of this Agreement to the breaching party and seek to recover damages not to exceed the amount paid by the non-breaching party for the Project.

ARTICLE XI

TERMINATION FOR CONVENIENCE

- 11.01 Whenever either party, in its sole discretion, deems it to be in that party's best interest, it may terminate this Agreement for convenience. Such termination shall be effective thirty (30) days after the terminating party delivers written notice of termination of convenience to the other party. If the Agreement is terminated by a party prior to completion of the construction of the Project, after payment of any unpaid obligations for completed work, City shall refund to County any remaining portion of County's Contribution. The Parties shall have no additional liability to one another for termination under this **Article XI**.

ARTICLE XII

PRIOR AGREEMENTS SUPERSEDED

- 12.01 This Agreement, including the exhibits, constitute the entire Agreement of the Parties regarding the subject matter of this Agreement and supersede all previous agreements and understandings, whether written or oral, relating to such subject matter.

ARTICLE XIII

ASSIGNMENT OR TRANSFER OF INTEREST

- 13.01 Neither Party may assign its rights, privileges and obligations under this Agreement, in whole or in

part, without the prior written consent of the other Party. Any attempt to assign without such approval shall be void.

ARTICLE XIV
LEGAL CONSTRUCTION

- 14.01 In case one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalid, illegal or unenforceable provision shall not affect any other provision hereof and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

ARTICLE XV
COMPLIANCE WITH LAWS AND ORDINANCES

- 15.01 Both Parties shall comply with all federal, state and local laws and ordinances, in connection with the work and services performed under this Agreement.

ARTICLE XVI
TEXAS LAW TO APPLY

- 16.01 This Agreement shall be construed under and in accordance with the laws of the State of Texas and all obligations of the Parties created hereunder are performable in San Antonio, Bexar County, Texas.

ARTICLE XVII
AMENDMENT

- 17.01 No amendment, modification or alteration of the terms of this Agreement shall be binding unless the same be in writing, dated subsequent to the date hereof and be duly executed by the Parties hereto.

ARTICLE XVIII
NOTICES

- 18.01 All notices required to be given under this Agreement shall be in writing and either shall be personally served against a written receipt therefore or given by certified mail or registered mail, return receipt requested, postage prepaid and addressed to the proper party at the address which appears below, or at such other address as the Parties hereto may hereafter designate in accordance herewith, unless a provision of this Agreement designates another party and provides a different address. All notices given by mail shall be deemed to have been given at the time of deposit in the United States mail and shall be effective from such date.

If to County: Bexar County Judge
 Bexar County Commissioners Court

100 Dolorosa, Suite 1.20
San Antonio, Texas 78205

With a copy to: Bexar County
Director of Public Works
233 N. Pecos, Suite 420
San Antonio, Texas 78207

If to City: City Clerk
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

With a copy to: Director of Transportation and Capital Improvements Department
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

ARTICLE XIX
FORCE MAJEURE


- 19.01 Neither Party shall be responsible for delays or lack of performance by such entity or its officials, agents or employees which result from acts beyond that entity's reasonable control, including acts of God, strikes or other labor disturbances or delays by federal or state officials in issuing necessary regulatory approvals and/or licenses. In the event of any delay or failure excused by this Article, the time of delivery or of performance shall be extended for a reasonable time period to compensate for delay.

ARTICLE XX
MULTIPLE COUNTERPARTS

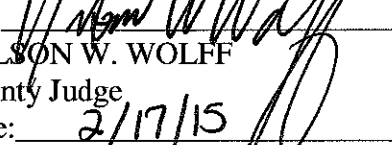
20.01 This Agreement may be executed in separate identical counterparts by the Parties hereto and each counterpart, when so executed and delivered, shall constitute an original instrument and all such separate identical counterparts shall constitute but one and the same instrument.

EXECUTED IN DUPLICATE ORIGINALS, EACH OF WHICH SHALL HAVE THE FULL FORCE AND EFFECT OF AN ORIGINAL, ON THIS 9 DAY OF March, 2015.

CITY OF SAN ANTONIO

fr By: 
SHERYL SCULLEY
City Manager
Date: 3-9-15

COUNTY OF BEXAR

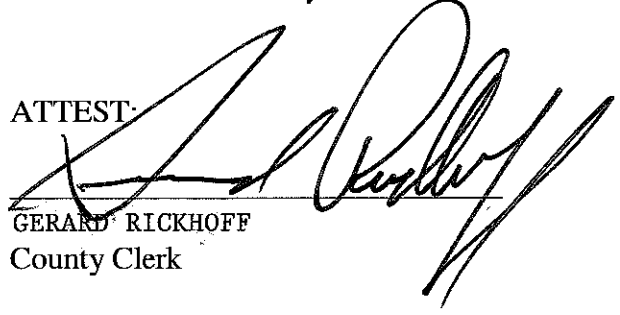
By: 
NELSON W. WOLFF
County Judge
Date: 2/17/15

ATTEST:

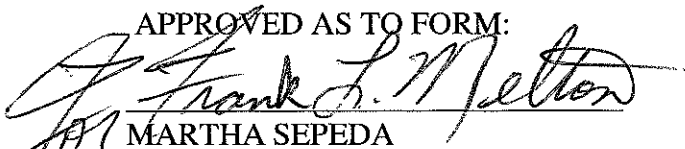

LETICIA VACEK
City Clerk



ATTEST:



GERARD RICKHOFF
County Clerk

APPROVED AS TO FORM:

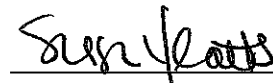

MARTHA SEPEDA
City Attorney

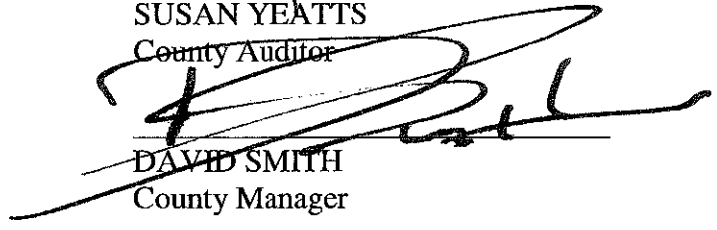
APPROVED AS TO LEGAL FORM:

NICHOLAS "NICO" LAHOOD
Criminal District Attorney
Bexar County, Texas

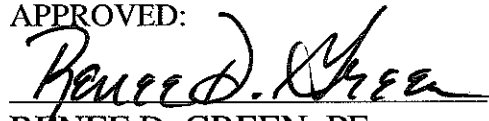

JILL TORBERT
Assistant Criminal District Attorney-Civil Section

APPROVED AS TO FINANCIAL CONTENT:


SUSAN YEATTS
County Auditor


DAVID SMITH
County Manager

APPROVED:


RENEE D. GREEN, PE
Director of Public Works/County Engineer

ORIGINAL

STATE OF TEXAS

§ ASSIGNMENT OF AMENDED

COUNTY OF BEXAR

§ ENGINEERING SERVICES AGREEMENT

Bexar County, in consideration of City of San Antonio executing its contractual obligations specified in the Interlocal Agreement for the Barbara Drive Drainage Project (SA-3), by this instrument grants, conveys and assigns to the City of San Antonio all right, title and interest now owned and held by Bexar County in the Amended Engineering Services Agreement (hereafter referred to as "Amended Agreement") executed by Bexar County and Don Durden Inc., dba Civil Engineering Consultants on Feb 17, 2015, a copy of which is attached to this Assignment, incorporated herein by reference and labeled as Exhibit A. (The original Engineering Services Agreement that the parties executed on July 26, 2011 is attached as Exhibit B and incorporated herein). Additionally, Bexar County assigns to City of San Antonio its obligations to Don Durden Inc., dba Civil Engineering Consultants, as set forth in the Amended Agreement.

The City of San Antonio, in consideration of the interest assigned herein, accepts all of the right, title and interest in the rights, duties and obligations of Bexar County pursuant to the Amended Agreement and agrees to be bound by all of its terms and conditions. The City of San Antonio agrees to assume and perform all the duties of Bexar County pursuant to the Amended Agreement, including payments due Don Durden Inc., dba Civil Engineering Consultants.

This Assignment is made subject to the following: Bexar County makes this Assignment without any warranty of any sort, expressed, implied or statutory. Bexar County expressly disclaims any warranty of title and assigns to the City of San Antonio only so much right, title or interest as Bexar County now has in the Amended Agreement assigned.

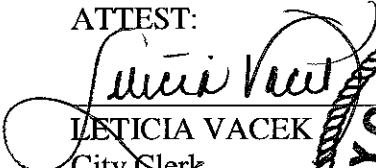
EXECUTED IN DUPLICATE ORIGINALS, EACH OF WHICH SHALL HAVE THE FULL
FORCE AND EFFECT OF AN ORIGINAL, ON THIS 9 DAY OF
March, 2015.

CITY OF SAN ANTONIO

By: 
SHERYL SCULLEY
City Manager

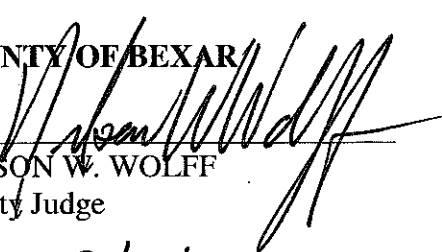
Date: 3-9-15

ATTEST:


LETICIA VACEK
City Clerk

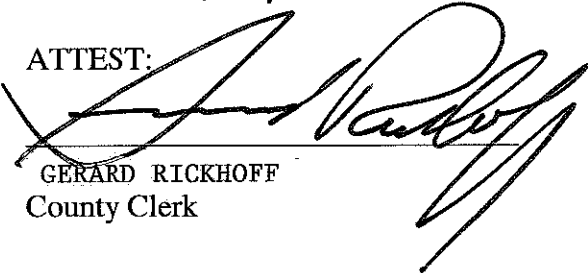


COUNTY OF BEXAR

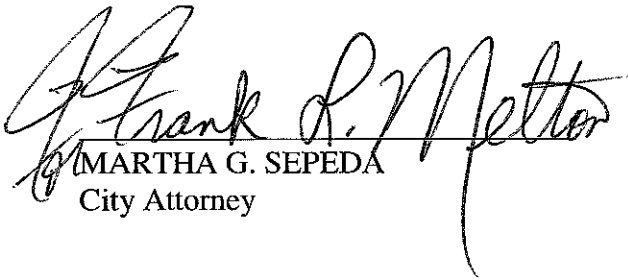
By: 
NELSON W. WOLFF
County Judge

Date: 2/17/15

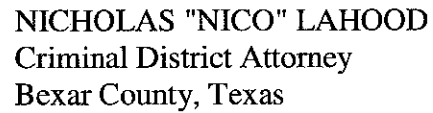
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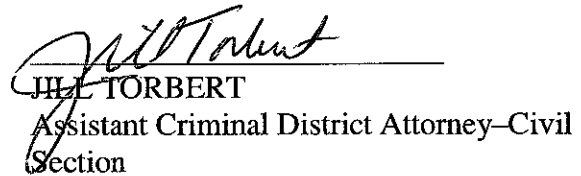

GERARD RICKHOFF
County Clerk

APPROVED AS TO LEGAL FORM:


MARTHA G. SEPEDA
City Attorney

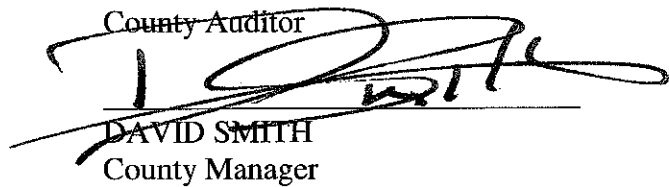
APPROVED AS TO LEGAL FORM:


NICHOLAS "NICO" LAHOOD
Criminal District Attorney
Bexar County, Texas


JILL TORBERT
Assistant Criminal District Attorney—Civil
Section

APPROVED AS TO FINANCIAL
CONTENT:


SUSAN YEATTS
County Auditor


DAVID SMITH
County Manager

APPROVED:



RENEE D. GREEN, PE
Director of Public Works/County Engineer

Exhibit A

Exhibit A

BC 2011-261

STATE OF TEXAS §
 §
COUNTY OF BEXAR §

FIRST AMENDED
ENGINEERING SERVICES
AGREEMENT

This amendment (the "First Amended Agreement") is made and entered between the County of Bexar ("COUNTY"), and **Don Durden Inc., dba Civil Engineering Consultants** ("CONSULTANT"), **11550 IH 10 West, Suite 395, San Antonio, Texas 78230**, Engineers duly licensed and practicing under the laws of the State of Texas (also, individually, a "Party" or, collectively, the "Parties").

RECITALS

WHEREAS, on July 26, 2011, COUNTY and CONSULTANT entered an agreement (the "Agreement") for CONSULTANT to provide professional engineering services in connection with the **Barbara Drive (SA-3)** Project; and

WHEREAS, COUNTY desires to expand the scope of the Project and to establish the amount of compensation to be paid to the CONSULTANT for the additional engineering and construction services needed to complete the design and construction phase services for **Barbara Drive (SA-3)** (the "Project").

NOW, THEREFORE, the Parties agree as follows:

ARTICLE I AMENDMENTS

1.01 The Agreement is amended by replacing Article 2.01 in its entirety as follows:

COUNTY hereby appoints the Director of Public Works/County Engineer ("COUNTY's Designated Representative"), as its representative under this Agreement. COUNTY's Designated Representative shall be the primary point of contact for CONSULTANT unless the COUNTY's Designated Representative delivers to CONSULTANT a written notice designating another individual to act as COUNTY's Designated Representative.

1.02 The Agreement is amended by replacing Article 3.01 in its entirety as follows:

CONSULTANT shall perform the services listed in First Amended Exhibit 1 under Preliminary Design Phase items (1-4) and as described in First Amended Attachment A (1-4), Detailed Design Phase items listed in First Amended Exhibit 1 (1-3) and as described in First Amended Attachment A (1-3) and Construction Phase items listed in First Amended Exhibit 1 (1-3) and as described in First Amended Attachment A (1-3).

1.03 The Agreement is amended by replacing Article 3.02 in its entirety as follows:

CONSULTANT shall perform the specified additional services listed in First Amended Exhibit 1 under Preliminary Design Phase Specified Additional Services (1-2) and as described in First Amended Attachment A (1-2), Detailed Design Phase Specified Additional Services listed in First Amended Exhibit 1(1-7) and as described in First Amended Attachment A (1-7).

1.04 The Agreement is amended by modifying the remit to address listed in Article 14.04 as follows:

Bexar County Risk Management Coordinator
Management and Finance Department
Paul Elizondo Tower
101 W. Nueva, Suite 900
San Antonio, TX 78205

1.05 The Agreement is amended by modifying Article XIX as follows:

County Notice copies to:
Director of Public Works/County Engineer
233 N. Pecos, Suite 420
San Antonio, Texas 78207

1.06 Exhibit 1 is replaced by the First Amended Exhibit 1, attached to this First Amended Agreement.

1.07 Attachment A is replaced by in the First Amended Attachment A, attached to this First Amended Agreement.

1.08 Appendix B is replaced by First Amended Appendix B, attached to this First Amended Agreement.

ARTICLE II

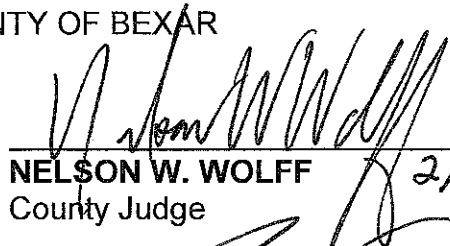
OTHER TERMS AND CONDITIONS

2.01 Except as modified by this First Amended Agreement, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect.

EXECUTED THIS 17th DAY OF February, 2015, IN DUPLICATE ORIGINALS, EACH OF WHICH SHALL HAVE THE FULL FORCE AND EFFECT OF AN ORIGINAL.

COUNTY OF BEXAR

BY:


NELSON W. WOLFF
County Judge

2/17/15

ATTEST:

BY:


GERARD C. RICKHOFF
County Clerk

CONSULTANT

BY:


for **DON DURDEN, PE**
President

APPROVED AS TO LEGAL FORM:

NICHOLAS "NICO" LAHOOD

Criminal District Attorney

Bexar County, TX

BY:



JILL TORBERT

Assistant District Attorney

Civil Section

APPROVED AS TO FINANCIAL CONTENT:

BY:



SUSAN YEATTS

County Auditor

BY:



DAVID SMITH

County Manager

APPROVED:

BY:



RENEE D. GREEN, PE

Director of Public Works/County Engineer

FIRST AMENDED EXHIBIT 1
FEE SCHEDULE FOR PROFESSIONAL SERVICES

SECTION 1
BASIS FOR COMPENSATION:

1.01 Amount of Payment

A. The CONSULTANT shall receive as payment for the work performed under this First Amended Agreement the total fee not to exceed \$ 1,461,376.22 unless a modification of the First Amended Agreement is approved in writing by the COUNTY.

B. The CONSULTANT will be paid for the work performed under this First Amended Agreement in accordance with the following schedule:

Preliminary Design Phase

1. <u>Engineering Service</u>	<u>\$ 350,503.53**</u>
2. <u>Survey Services</u>	<u>\$ 95,255.00**</u>
3. <u>Geotechnical Services</u>	<u>\$ 28,058.80**</u>
4. <u>Environmental/Permitting Services</u>	<u>\$ 3,080.00**</u>

Total Preliminary Design Phase Items Not to Exceed \$ 476,897.33**

Detailed Design Phase

1. <u>40% Design Phase</u>	<u>\$ 332,876.78</u>
2. <u>70% Design Phase</u>	<u>\$ 135,342.81</u>
3. <u>95% Design Phase</u>	<u>\$ 79,813.43</u>

Total Detailed Design Phase Items Not to Exceed \$ 548,033.02

Construction Phase

1. <u>Bid Phase Services</u>	<u>\$ 31,812.36</u>
2. <u>Construction Phase Services</u>	<u>\$ 66,969.00</u>
3. <u>Project Close Out</u>	<u>\$ 19,592.00</u>

Total Construction Phase Items Not to Exceed \$ 118,373.36

Total Preliminary, Detailed Design and

Construction Phases Not to Exceed \$1,143,303.71

Preliminary Design Phase Specified Additional Services

1. <u>Additional Survey Cross-Section</u>	<u>\$ 3,100.00**</u>
2. <u>Technical Memorandum</u>	<u>\$ 49,972.51**</u>

Total Preliminary Design Phase Specified

Additional Services Not to Exceed \$ 53,072.51**

Detailed Design Phase Specified Additional Services

- | | |
|--|---------------------|
| 1. <u>LOMR Survey Services</u> | <u>\$ 25,000.00</u> |
| 2. <u>Engineering Services - LOMR</u> | <u>\$ 50,000.00</u> |
| 3. <u>Enhancement/Landscape Plan</u> | <u>\$ 50,000.00</u> |
| 4. <u>Subsurface Utility Engineering (SUE)</u> | <u>\$ 25,000.00</u> |
| 5. <u>Tree Mitigation Services</u> | <u>\$ 50,000.00</u> |
| 6. <u>Geotechnical Engineering Services</u> | <u>\$ 15,000.00</u> |
| 7. <u>Structural Design Services</u> | <u>\$ 50,000.00</u> |

Total Detailed Design Phase Specified

Additional Services Not to Exceed \$ 265,000.00

Total Preliminary and Detailed Design Phase Specified

Additional Services Not to Exceed \$ 318,072.51

** Funds previously expended under Preliminary Design Phase \$529,969.84

- 1.02 CONSULTANT shall not be paid for any service performed by the COUNTY or services not required to develop this Project.
- 1.03 Cost for routine photocopy and paper reproduction, cellular phone costs, pager costs and computer time costs will not be paid as a reimbursable but is to be included in the above fees and overhead costs.
- 1.04 If the scope of the Project is substantially increased, CONSULTANT shall be compensated for the increase in effort in accordance with Appendix "A".
- 1.05 CONSULTANT shall not proceed with services listed under 1.01 B until CONSULTANT has received authorization for the specific phase, services and/or specified services from the COUNTY's Director of Public Works/County Engineer or his designee.

SECTION 2
CHANGES

- 2.01 CONSULTANT and COUNTY acknowledge that the fees as determined in paragraph 1.01 above have been established predicated upon the scope of the Project as agreed to by COUNTY and CONSULTANT. Minor changes in scope as determined by the COUNTY will not be cause for renegotiation of the fees or additional services. For additional services, compensation shall be subject to renegotiation in accordance with Appendix "A".

- 2.02 Fees will not be paid where fees are set out in this FIRST AMENDED AGREEMENT but no work is done by CONSULTANT for the work described by the fee.

SECTION 3
METHOD OF PAYMENTS

- 3.01 Payment shall be made to CONSULTANT based upon the several Phases as described heretofore and in accordance with the following:

A. Preliminary Design Phase: Payments for this Phase shall be as follows:

- a. Engineering Services: Payments up to the percentage shown below will be payable in monthly installments for this task authorized by COUNTY and shall not exceed the schedule below unless otherwise authorized by COUNTY:

Submittal Percentage	Prior to receipt of approved submittal, invoices shall not exceed	Upon receipt of approved submittal and prior to next approved submittal, invoices shall not exceed
30%	25% of Engineering Services Fee	26% to 69%
Draft PER 75%	70% of Engineering Services Fee	71 % to 89%
Pre-Final PER 95%	90% of Engineering Services Fee	91% to 95%
100%	100% of Engineering Services Fee	N/A

- b. Survey, Geotechnical, Environmental and Public Meetings: Payments of up to 95% of the fees for these services under this Phase shall be payable in monthly installments. The remaining 5% shall be payable after approval of the Preliminary Design Phase by the COUNTY.

B. Detailed Design Phase: Payments for this Phase shall be as follows:

- a. Engineering Services: Payments up to the percentage shown below will be payable in monthly installments for this task authorized by COUNTY and shall not exceed the schedule below unless otherwise authorized by COUNTY:

Submittal Percentage	Prior to receipt of approved submittal, invoices shall not exceed	Upon receipt of approved submittal and prior to next approved submittal, invoices shall not exceed
40%	30% of Engineering Services Fee	31% to 59%

70%	60% of Engineering Services Fee	61 % to 89%
95% Pre-Final	90% of Engineering Services Fee	91% to 95%
100%	100% of Engineering Services Fee	N/A

- b. Survey, Geotechnical, Environmental and Public Meetings: Payments of up to 95% of the fees for these services under this Phase shall be payable in monthly installments. The remaining 5% shall be payable after approval of the Detailed Design Phase by the COUNTY.

C. Construction Phase: Payments for this Phase shall be as follows:

- a. Bid Services: Payments will be payable in monthly installments based on percentage complete for this task as authorized by COUNTY
- b. Construction Services: Payments up to 90% will be made in monthly installments for this Service in proportion to the construction work completed by the Construction Contractor. However, the remaining 10% payment due for this Service will be withheld until such time as the record drawings referenced in Article 9.01 have been furnished, and the final field alteration adjusting quantities have been prepared and submitted by CONSULTANT.
- c. Project Close Out: Payments of up to 95% of the fees for these services under this Phase shall be payable in monthly installments. The remaining 5% shall be payable after approval of Final Warranty Inspection.

D. Specified Additional Services: Payments will be payable in monthly installments based on percentage complete for those tasks authorized by COUNTY.

- 3.02 No payments to CONSULTANT for additional services as set forth in Appendix "A" will be made after 90 days from date of Project completion unless authorized by the COUNTY's Designated Representative.
- 3.03 CONSULTANT shall be compensated on the basis specified for extra services not included in the First Amended Agreement as set forth in Appendix "A", for only those aforementioned field alterations that have been deemed eligible by the COUNTY for compensation, however, CONSULTANT shall not be compensated for field alterations made necessary by CONSULTANT's errors or omissions.
- 3.04 The CONSULTANT may submit a maximum of one invoice voucher per calendar month for work covered under this First Amended Agreement. The invoice voucher shall be submitted to the COUNTY. The invoice voucher shall represent the value, to the COUNTY, of the partially completed work as of the date of the invoice. The CONSULTANT shall attach thereto a summary of each pay item in Section 1.01 B of this First Amended Exhibit 1, percentage completed and prior payments in a form acceptable to the COUNTY.

SECTION 4
SUBCONTRACTORS

4.01 The CONSULTANT shall contract with the following subcontractors for work described in the subcontractors' proposals, dated prior to the execution date of this First Amended Agreement and on file with the Director of Public Works/County Engineer, for the amount stated below.

Preliminary Design Phase:

SUBCONTRACTOR	SERVICES	AMOUNT OF PROPOSAL	
Halff Associates, Inc.	Hydrologic & Hydraulic Services	Basic	\$148,472.30
	Subsurface Utility Engineering	Additional	\$ 5,240.00
	Hydrologic & Hydraulic Services	Additional	\$ 16,875.00
Jaster-Quintanilla San Antonio, LLP	Structural Engineering	Basic	\$ 4,200.00
Terracon Consultants, Inc.	Geotechnical Engineering	Basic	\$ 25,508.00

Detailed Design Phase:

SUBCONTRACTOR	SERVICES	AMOUNT OF PROPOSAL	
Terracon Consultants, Inc.	Environmental Services	Basic	\$ 22,845.00
	Tree Mitigation Services	Additional	\$ 50,000.00
	Geotechnical Engineering Services	Additional	\$ 15,000.00
Halff Associates, Inc.	Engineering Services	Basic	\$146,805.02
	LOMR Services	Additional	\$ 50,000.00
	SUE Services	Additional	\$ 25,000.00
Bender Wells Clark Design	Engineering Services	Basic	\$ 8,150.00
	Landscape Plan	Additional	\$ 50,000.00
Jaster Quintanilla San Antonio, LLP	Structural Design Services	Additional	\$ 50,000.00

Construction Phase:

SUBCONTRACTOR	SERVICES	AMOUNT OF PROPOSAL	
Halff Associates, Inc.	Bid Services	Basic	\$ 7,035.36

FIRST AMENDED APPENDIX "B"
PROFESSIONAL SERVICES CONTRACT
PRODUCTION SCHEDULE

All work done by CONSULTANT under this First Amended Agreement shall be completed and delivered to COUNTY for review and approval, if required, within the following time periods, exclusive of COUNTY review time.

A. Preliminary Design Phase

- a. CONSULTANT shall submit interim deliverables per the Attachment A Preliminary Design Phase based upon the approved Project Schedule.
- b. Preliminary Design Phase 100% deliverable shall be complete within 180 calendar days after receipt of notice to proceed with this Phase.

B. Detailed Design Phase

Submittals for this Phase after receipt of notice to proceed with the project shall be as follows:

- a. CONSULTANT shall submit interim deliverables per the First Amended Attachment A Detailed Design Phase based upon the approved Project Schedule.
- b. Detailed Design Phase 100% deliverable shall be complete within 785 calendar days after receipt of notice to proceed with this Phase.

C. Construction Phase

- a. Bid Services complete within 45 calendar days from the date of First Advertisement.
- b. Construction Phase Services shall be completed within 30 calendar days after the County submits the "Record Drawings" to the Consultant or the date the final claim is submitted by the Contractor, whichever is later.
- c. Project Close Out Services shall be completed upon final approval of Final Warranty Inspection.

FIRST AMENDED ATTACHMENT "A"

Barbara Drive SA-3 SCOPE OF SERVICES

PRELIMINARY DESIGN PHASE SERVICES

Project Description

The work to be performed under the Agreement shall consist of providing surveying and engineering services required for the Preliminary Design Phase of the Barbara Drive (SA-3) project in Bexar County.

The Project is located in north central Bexar County, generally south of LP 410, east of San Pedro Ave, and west of US 281. The Project consists of three major tasks: 1) Review and evaluate the most current D-FIRM and the modeling on which it is based to determine if the model reflects the drainage areas, associated flood discharges, and other physical features accurately and in sufficient detail to afford a reasonable level of confidence that the D-FIRM is accurate. If the evaluation determines the model is reasonably accurate, no additional modeling of existing conditions will be required; however if the level of detail and/or model accuracy is in doubt, model the existing conditions and determine the extent of the flooding in the project area; 2) Using the results obtained in 1) above, develop a conceptual solution to eliminate flooding of streets and residential structures along Tributary A to Airport Tributary, including the elimination of the low water crossing at the intersection of the existing concrete channel with McCullough Avenue, near Barbara Drive; 3) Preliminary design of:

- a. an underground storm drainage facility to replace the concrete-lined open channel between McCullough and the confluence of the box culverts located approximately 800-ft east of McCullough, and
- b. an underground storm drainage system along McCullough from Barbara Dr. to Sharon St., and
- c. from McCullough, along Barbara Drive, Oblate, Dellwood, Pinewood, and El Montan.

In determining the most feasible method of eliminating flooding of residential structures, the alternative of voluntary and/or involuntary real estate acquisitions shall be evaluated along with storm drainage and roadway reconstruction.

CONSULTANT shall provide the following services in conjunction with the preparation of a Preliminary Engineering Report in accordance with recognized industry standards which are similar in size, scope, and budget to the Project:

CONSULTANT shall provide the following services to prepare a Preliminary Engineering Report in accordance with recognized industry standards which are similar in size, scope, and budget to the Project:

1. Engineering Services

A) Project Initiation – This task shall consist of project initiation activities.

- 1) Project Initiation – Prior to kick-off meeting, the CONSULTANT shall designate, in writing, one Registered Professional Engineer licensed to practice in the State of Texas to be the Project Manager throughout the duration of the Project for project management and all communications, including billing, with the COUNTY and Program Manager. The CONSULTANT shall not replace the designated Project Manager without the written approval of the COUNTY.
- 2) Quality Control/Quality Assurance Plan – The CONSULTANT shall submit a Quality Assurance/Quality Control Plan within 10 calendar days after the kick-off meeting for review and approval. The QA/QC Plan should include, as a minimum, the following:
 - a) Project description, location, limits and minimum design criteria
 - b) Project deliverables and schedules
 - c) Organization chart showing responsibilities for design services and for quality control checks, which shall be conducted by an independent person qualified in the specific area of review
 - d) Communications/coordination plan outlining the protocol for all communications related to the Project
 - e) Format and schedule for checking design reports, calculations, plans, and specifications for accuracy and completeness. The plan should make provisions for review of reports, plans, specifications, and estimates provided by sub-consultants. The CONSULTANT shall ensure that sub-consultant work is in accordance with their approved scope.
 - f) Format and procedure for documenting all issues, design directions, design decisions, review comments, and review comment responses
 - g) Format and procedures for certifying that all of the requirements of the QA/QC plan have been met and that all comments and issues have been resolved to the satisfaction of the reviewer

B) Project Schedule, Invoice, Progress Reports, and Progress Meetings

- 1) Project Schedule – The CONSULTANT shall submit an approved Program format Project Schedule within 10 calendar days after the kick-off meeting.
- 2) Invoice Submittals – The CONSULTANT shall submit to the Program Offices its invoices of services completed and compensation due, arranged by tasks. The invoice submittal shall be submitted to the Program Manager by the 6th day of each month and include the following:
 - a) Invoice – The budgeted and currently authorized amounts for each task, along with the invoiced and to-date amounts on the provided Program

invoice forms.

- b) Project Schedule Updates – An updated Project Schedule and related documents.
 - c) Progress Reports – A monthly report of the status of work performed through the end of the month. The CONSULTANT shall summarize decisions or agreements made, and shall outline unresolved or pending issues requiring the COUNTY's involvement or decision on the provided Program template.
- 3) Kick-off and Progress Meetings – The CONSULTANT shall meet with the Program Manager's Representative as often as necessary, but not less than monthly. The CONSULTANT shall prepare an agenda and sign-in sheet. The agenda must be submitted 24-hours before the meeting. The CONSULTANT shall prepare and distribute meeting minutes within three (3) working days of a meeting.

C) General Project Design Parameters and Criteria

- 1) CONSULTANT shall be represented by a Registered Professional Engineer licensed to practice in the State of Texas at meetings of any official nature concerning the Project, including but not limited to scope meetings, review meetings, pre-bid meetings, and pre-construction meetings, provided that CONSULTANT has reasonable advance notice of the meeting.
- 2) All engineering documents released, issued, or submitted by or for a registered engineering firm, including preliminary documents, must clearly indicate the engineering firm name and registration number. Additionally, all completed documents submitted for final approval or issuance of a permit must bear the seal with signature and date adjacent thereto of a Registered Professional Engineer licensed to practice in the State of Texas associated with CONSULTANT.
- 3) The design standards to be used shall include but not be limited to the City of San Antonio Unified Development Code, City of San Antonio Capital Improvements Management Services Design Guidance Manual and for outside city limit projects the applicable County Design Standards, the TXDOT Roadway Design Manual and Bridge Design Guidelines, TXDOT Hydraulic Design Manual, Highway Capacity Manual, the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets (Green Book), AASHTO Guidelines for Geometric Design of Very Low-Volume Roads (ADT ≤ 400), AASHTO LRFD Bridge Design Specifications, AASHTO Guide for the Development of Bicycle Facilities, Texas Manual on Uniform Traffic Control Devices (TMUTCD), ADA Accessibility Guidelines, San Antonio River Basin Regional Modeling Standards for Hydrology and Hydraulic Models, Bexar County Technical Memorandum IDF Curves, and the Texas Pollutant Discharge Elimination System (TPDES) Guidelines as appropriate for the most cost effective design.

- 4) The minimum drawing standards to be used for construction document preparation include but are not limited to the following:
 - a) the City of San Antonio Capital Improvements Management Services Design Guidance Manual, including latest revisions, unless otherwise directed by the COUNTY.
- 5) The Opinion of Probable Construction Cost estimate (excluding land costs) shall be based on the latest unit prices in Bexar County for similar work and include adjustments to reflect the ease or difficulty of constructing the Project.
- 6) Site visit(s) (Number of visits will vary) shall be conducted in order to evaluate the project area conditions, take photographs of the area, and assess adjacent land use characteristics.
- 7) CONSULTANT shall coordinate with each of the Utility Company Coordinators throughout the Preliminary Design Phase. Unless directed otherwise, the COUNTY shall be present at all meetings with the Utility Companies. In conjunction with each project submittal, CONSULTANT shall deliver to each of the Utility Companies for their review and comment the documents described in b) below. The data shall be submitted to each utility company in a format acceptable to each utility company (e.g., CD, hard copy, email, etc.), provided however that CONSULTANT shall not be required to create any special format beyond that created as a part of its basic scope of work. Some of the work under this section will be performed by Halff Associates as described in the proposal from Halff Associates dated March 10, 2011, on file with the Director of Public Works/County Engineer and incorporated by reference herein. (Affected utility companies include, but may not be limited to: SAWS, CPS Energy Electric [aerial, major/minor underground & transmission], CPS Energy Gas, and Telecommunication [AT&T CATV, etc.], Pipelines, etc.)
 - a) CONSULTANT shall compile, maintain, and update a Utility Conflict Log to include phone logs and all correspondence with all utility owners' representatives. Provide the most current copy of the conflict list to the COUNTY at each progress meeting and milestone submittal, and coordinate with utility companies to resolve conflicts. The Utility Conflict Log should include the following information:
 - i. Owner of the facility, including the facility address and the name and telephone number of the contact person at the facility;
 - ii. Location of potential conflict, identified by station and offset;
 - iii. Type of facility;
 - iv. Expected clearance date, if known;
 - v. Status of the conflict resolution;
 - vi. Effect on construction; and
 - vii. Type of adjustment required.

- b) CONSULTANT shall create an existing utility exhibit clearly reflecting existing utility locations, type of facility, and potential conflicts. Utility locations for the PER will be depicted in accordance with Quality Level C.
- c) Consultant shall inquire with each utility company with facilities in the project area regarding their plans for system rehabilitation, replacements, upgrades, etc. and consider those plans in formulation of recommendations for this Project.
- d) CONSULTANT may be required to contract separately with a Utility Company. COUNTY shall be notified and fully involved with the preparation of Scope of Services, associated fee negotiations and preparation of required plans, specifications and estimates for the utility in conjunction with the Project.

If CONSULTANT contracts separately with a Utility Company, CONSULTANT shall provide all work products developed through tasks under this contract to the Utility Company. Tasks include, but are not limited to, utility investigations, existing ROW and easement surveying, and topographic surveying.

- 8) CONSULTANT shall identify necessary documents as required for any design exceptions.

D) Specific Project Design Parameters and Criteria

- 1) Identify permit requirements for each design option, as well as determine permit requirements for the chosen design option for future submittal. Typical permits may include, but are not limited to, WPAP, TDLR, CLOMR, County or City Floodplain Development, ROW, etc. Note (remove note prior to finalizing): this phase does not include any preparation of documents or applications for permitting submittals or any actual submittals to begin the process of obtaining permits. All permits will be obtained during the Design Phase once a final design option is chosen
- 2) A Hydrologic and Hydraulic Study shall be performed and will include as follows:
 - a) DFIRM analysis and modeling of Tributary A to Airport Tributary east of San Pedro Avenue – The existing DFIRM is based on a HECRAS model that reflects incorrect structure sizing, and an insufficient level of detail. In addition to normal hydrologic and hydraulic modeling, Halff Associates will review, correct, enhance and update the current effective model as described in the proposal from Halff Associates, dated May 20, 2011, on file with the Director of Public Works/County Engineer and incorporated by reference herein. CEC will review the hydrology and hydraulic results, data, and models submitted for the corrected effective model.
 - b) As part of the H&H study, Halff will develop the Energy Grade Line (EGL) elevation for the 100 year storm event at the confluence of the box culverts east of McCullough. If the EGL elevation indicates flooding of

nearby residential structures AND if the EGL elevation is a function of inadequate capacity of the existing 3) 12 x 12 box culvert (and not the Olmos Dam Flood Pool), CEC will collaborate with Halff in determining if the EGL is a function of inadequate capacity of the existing 3) 12x12 box culvert (and not the Olmos Dam Flood Pool), and in conferring with the COUNTY to determine an appropriate course of action.

CEC's collaboration with Halff will involve analyzing results of downstream control analysis and corrected effective model and assessing the potential impact on flood plain elevations and extent. Communicating results to Program and discussing recommended approaches to lowering EGL and HGL at confluence. Generating and routing final consolidated set of comments to Halff. Confirming comments are addressed.

c) Flood Control Conveyance

- i. Evaluation of alternatives to enhance the hydraulic capacity of the triple 12x12 box culvert downstream of the confluence - If the analysis of the existing 3) 12x12 box culvert outfall indicates that nearby structures are flooded as a result of inadequate capacity (See Section 1.D)2)), CONSULTANT may evaluate alternatives intended to increase the hydraulic capacity of the underground 3)12x12 culvert. Alternatives that would be evaluated include:

- a) the feasibility of constructing of an additional parallel underground box culvert or pipe culvert
- b) the feasibility of removing the earth on top of the 3) 12x12 box culvert to create an open channel on top of the culvert
- c) the feasibility of removing the existing 3) 12x12 box culvert and replacing it with an adequately sized underground facility

In evaluating these alternatives, the cost of the improvements will be estimated and compared to the cost of purchasing the structures that would be removed the 100 flood by constructing the improvements. Other considerations would be the impact on utilities in the affected area, and the effect of a lowered EGL on the cost of upstream improvements. The analysis will assume that the floor of the box cannot be lowered since doing so would require reconstruction of all or part of the channel between US 281 and the downstream end of the box. This effort will be coordinated with Halff & Associates.

- ii. Development of Flood Control Concepts – Develop and analyze several flood control concepts, and select the three most promising options to be evaluated for the study area. The study area is from about 1000 feet downstream of McCullough to the end

of the current box culverts on El Montan, east of San Pedro. Provide options to Program and Halff for comment.

CEC will collaborate with Jaster Quintanilla regarding a limited analysis regarding structures required in limited rights of way necessary to collect and convey floodwaters within the project area. This limited analysis will be performed by Jaster Quintanilla as described in Category 1 of its proposal dated June 9, 2011.

Review and analyze Halff's initial results for Q100 (ultimate) for the three selected options. Make adjustments and recommend a final drainage configuration for the study area. Provide results of the three studied options along with our recommendation for the preferred option modeling to the Program.

Review and analyze Halff's results of the preferred option for the 2 flows (Q100 and Q5 (ultimate)) and compare to the corrected effective model. Discuss benefits of preferred option. Route to the Program for comments and provide final consolidated set of comments to Halff. Confirm comments are addressed.

Develop Project drainage schematic sheet

- d) H&H Report shall be provided as described in the proposal from Halff Associates, dated May 20, 2011, on file with the Director of Public Works/County Engineer and incorporated by reference herein.

3) Roadway Design Controls

a) Grading Design

- i. Establish roadway design criteria for project;
- ii. Prepare preliminary horizontal and vertical alignments and transitions of mainlanes at cross streets.
- iii. Prepare preliminary project location sheets.
- iv. Develop preliminary typical sections for submittal and approval of geometrics. Prepare existing and proposed typical section sheets based on approved typical sections.
- v. Prepare preliminary cross-sections.
- vi. Calculate preliminary earthwork quantities.

b. Local Drainage Design

- i. Prepare preliminary design for a storm drainage system(s) to collect interior street flows and properly discharge said flows. Design of the system shall include establishing drainage design criteria, developing drainage area maps, sizing of storm lines, inlets, etc.

4) Prepare a Preliminary Engineering Report. The PER Format shall at a

minimum conform to the standard Preliminary Engineering Report – Table of Contents (Flood Control Project) supplied by the COUNTY. Deviations to format may be permitted with prior approval from the COUNTY. Draft table of contents should be submitted prior to submitting the report.

- a) Prepare an Executive Summary.
- b) Prepare an Introduction Section, describing the relevant flooding and/or flood control history of the Project, the problem(s) the Project is intended to solve, and any other information that is relevant to the preliminary engineering report. Also, document public involvement efforts relative to the Project, including records of community opposition to and support for the Project.
- c) Prepare a section describing the alternatives that were reviewed.
 - i. Two alternatives will be considered; one will evaluate the cost of purchasing the residential and commercial structures subject to the 100 year flood. In calculating the cost of this alternative, current appraisal district values will be employed. The other alternative will evaluate the cost of exclusively “structural” solutions to eliminate flooding of these structures. CONSULTANT may confer with COUNTY to determine if a “blended” alternative involving both buyouts and structural solutions should be evaluated.
- d) Prepare a summary of survey and base mapping efforts conducted, including an exhibit reflecting the areas surveyed and the project control and benchmarks established.
- e) Include H&H Report Executive Summary.
- f) Prepare a section discussing roadway design, such as typical sections, roadway geometry, pavement design, and other factors.
- g) Prepare a section discussing construction issues, traffic control, etc. In this section discuss:
 - i. the advantages and disadvantages of constructing the Project in one, two, or three phases, with particular attention paid to the cost of temporary transitional structures.
 - ii. constructability issues related to the removal and replacement of the open concrete channel with underground facilities.
- h) Include a summary of the geotechnical report.
- i) Include a section discussing environmental impacts using the Environmental Memorandum as a reference. The Environmental

Memorandum will be provided by the COUNTY.

- j) Prepare a section discussing real estate impacts. Include supporting data (maps with owner and area required) addressing any anticipated real estate needs. Real estate should include all proposed right of way, drainage easements, temporary construction easements, and/or full or partial parcel acquisitions for drainage facilities. Identify potential issues such as specific right of entry difficulties, mandatory or non-mandatory full partial acquisition, and possible condemnations.
- k) Prepare a section summarizing utilities on the project site, relocation, and coordination. Include utility log.
- l) Prepare a section discussing permitting issues (WPAP, TDLR, CLOMR, etc.)
- m) Prepare and summarize Opinion of Probable Construction Cost estimates for all alternatives. Discuss sources used to obtain historical average unit bid costs, significant variations from average bid costs, and methodology and assumptions used to develop the construction cost.
- n) Include a conclusion clearly outlining recommendations and project benefits.
- o) Include meeting minutes and site visit reports as an appendix.
- p) CONSULTANT shall furnish COUNTY with eight (8) hard copies for projects inside city limits or four (4) hard copies for projects outside city limits. CONSULTANT shall also furnish four (4) CDs containing an Adobe Acrobat PDF copy of Draft report and all supporting data, models, etc, and the Program QA/QC Certification Form.
- q) CONSULTANT will address review comments. COUNTY to provide review comments from all review entities to the CONSULTANT in one complete package.
- r) CONSULTANT shall resubmit eight (8) hard copies for projects inside city limits or four (4) hard copies for projects outside city limits. CONSULTANT shall also furnish four (4) CDs containing an Adobe Acrobat PDF copy of Final report, all supporting data, all electronic files (CADD, GIS, H&H models, & spreadsheets), etc., the completed draft comment spreadsheet, and the Program QA/QC Certification Form.

Engineering Deliverables/Submittals requiring COUNTY approval:

- 1) Project Manager Designation Letter
- 2) QA/QC Plan

- 3) Project Design Schedule
- 4) Draft PER Table of Contents
- 5) Draft/Final PER and H&H Reports

2. Surveying Services

CONSULTANT shall provide a Registered Professional Land Surveyor to perform field surveys. All surveys shall comply with the latest revision of the Professional Land Surveying Practice Act of the State of Texas and shall be accomplished under the direct supervision of a currently licensed State of Texas Registered Professional Land Surveyor. Survey services shall conform to the minimum requirements below.

- A) Obtain right of entry agreements. Prepare Right of Entry agreements to adjacent landowners, obtain COUNTY signature on Right of Entry agreements, and coordinate with landowners as required to acquire approval of Right of Entry agreements for field work outside of the existing public Rights-of-Way. The COUNTY will provide the outline of the agreement. CONSULTANT will submit agreements to the COUNTY for signature and the CONSULTANT will mail and track receipt of executed agreements.
- B) CONSULTANT shall prepare an abstract map using Bexar County Appraisal District and Bexar County Clerk websites. This map shall be used to identify ownership and approximate boundaries of all properties potentially affected by this Project. This map is not a boundary survey.
- C) Establish project control for the site in NAD 83, TXSC surface coordinates and NAVD 88 vertical datum. Primary Vertical Datum and associated Bench Marks shall be same as found on Bexarfloodfacts.org website and used for the dFIRM Floodplain Maps
- D) CONSULTANT shall survey cross sections, drainage features, and other relevant information to support the Hydrologic and Hydraulic Study described in Section 1.D.2, above. The channel and culvert survey controls, stationing, cross-sections, sketches and photographs will conform to the FEMA Guidelines and Specifications for Flood Hazard Mapping Appendix N: Data Capture Guidelines. Topographic survey boundaries and cross sections are shown per Exhibit A.
- E) CONSULTANT shall perform topographic surveying needed to prepare a base map of the project area in sufficient detail to support the development of engineering concepts, sketches, typical sections, preliminary profiles and other exhibits, all in support of the Preliminary Engineering Report described in Section 1.D) 3) above.
- F) CONSULTANT shall survey surface evidence of existing underground and overhead utilities and support the development of an exhibit reflecting Quality Level C depictions of existing utilities. The Level "C" SUE will be performed per the standard of care guideline, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, CI/ASCE 38-02.

3. Geotechnical Services

Geotechnical Services shall be provided as described in the proposal from Terracon dated February 17, 2011, on file with the Director of Public Works/County Engineer and incorporated by reference herein.

4. Environmental/Permitting Services

All Environmental/Permitting tasks will be performed by the COUNTY's Environmental Representative. The CONSULTANT shall coordinate with the Environmental Representative during project progress meetings. Coordination will be required to provide the Environmental Representative with project information such as design alternatives and areas of disturbance. The CONSULTANT shall provide all work products developed through tasks under this contract to the Environmental Representative as needed.

The CONSULTANT shall perform the following coordination services:

- A) Coordination with the Environmental Representative to provide project details and information and electronic files
- B) Review the Environmental Memorandum and provide comments related to the project design. The Environmental Memorandum will include the following:
 - (1) Environmental Report Summary (reports developed & significant findings)
 - (2) USACE Permitting Assessment (Section 404 Mitigation needs)
 - (3) Ecological Resource/Environmental Constraints Map
 - (4) Environmental Timeline & Schedule
 - (5) Preliminary Tree Assessment – COUNTY'S tree expert to perform a preliminary walk through with assessment
 - (i) Preliminary recommendation for tree canopy or survey procedure
 - (ii) Estimate of percentage of significant/heritage trees & list of predominate species
 - (iii) Significant observations of feature trees or tree clusters with GPS coordinates
- C) Briefly discuss the environmental impacts in PER using the Environmental Memorandum as a reference. The Environmental Memorandum will be provided to the CONSULTANT by the COUNTY.

PRELIMINARY DESIGN PHASE SPECIFIED ADDITIONAL SERVICES

1. Additional Survey Cross-Section

Additional survey of cross sections upstream and downstream of the confluence - CONSULTANT shall obtain up to 10 additional cross sections. Cross sections shall be an average of 500 ft long.

2. Technical Memorandum

Additional Services to perform additional H&H studies to supplement the Preliminary Engineering Report were authorized as Preliminary Design Phase Specified Additional Services per letter from Civil Engineering Consultants, dated July 25, 2012 and paid for under Preliminary Design Phase Specified Additional Services.

DETAILED DESIGN PHASE SERVICES

Project Description and Background

The work to be performed under the Agreement shall consist of providing engineering and surveying services necessary to develop construction documents for drainage improvements for the Barbara Drive (SA-3) Project. This project is located in north central Bexar County, generally south of Loop 410, east of San Pedro Ave, and west of US 281.

Civil Engineering Consultants (CEC) submitted a Preliminary Engineering Report (PER) for the Barbara Drive (SA-3) Project on April 30, 2012. The PER presented a plan to mitigate flooding along Tributary A to the Airport Tributary (Tributary A) between Skipper Drive and El Montan. Because the estimated construction cost of that plan exceeded the funding budgeted for the project, the PER presented cost mitigation strategies that could be implemented to reduce the estimated construction cost of an initial phase. In addition, the Hydrology and Hydraulic Report (H&H Report) supporting the PER disclosed significant areas of flooding along Unnamed Tributary 4 in Olmos Creek Watershed (Tributary 4). Tributary 4 was shown to experience severe flooding during a 100-year rainfall event, in particular that section of McCullough between Rampart and Springwood.

Subsequent to the review of the PER, CEC was directed to develop a Technical Memorandum to (1) study the feasibility of one of the mitigation strategies in the PER and estimate construction cost of the street and drainage improvements needed to terminate Project SA-3 on Barbara Drive just south of Oblate using traffic grate inlets as an interim measure, and (2) to determine the probable scope and cost of street and drainage improvements needed to mitigate flooding along Tributary 4 north of its confluence with Tributary A. The results of these studies were summarized in Technical Memorandum #1 dated November 12, 2012 which supplements the PER.

The County has reviewed the results of the studies performed to date and has identified significant challenges associated with the construction of the proposed improvements (summarized in County's Memorandum dated February 6, 2013) including funding limitations, accessibility and constructability challenges with working in a narrowed-width drainage alley, and adverse impacts to property owners located adjacent to the concrete-lined open channel. The County has assessed the option of buying out approximately 35 homes located adjacent to the open channel (along the north side and/or south), and using the real estate acquired to construct a new open channel with adequate capacity to convey floodwater for the 100-year ultimate design storm. CEC understands that the buyout of these homes would be voluntary and would be performed by the City of San Antonio.

Project Work Plan

The County has requested that CEC provide the engineering and surveying services needed to develop the design of the drainage improvements based on the home buyouts and open channel concept. For this concept, alternatives for modifying the existing drainage system would potentially be as follows:

1. Remove the existing concrete-lined channel, the confluence structure, and the (3) 12'X12' culvert between the confluence and the outfall at the Olmos Golf Course, and replace with a new open channel with adequate capacity to convey the 100-year ultimate design storm. The proposed open channel shall be vegetated with natural channel design elements.
2. Upstream of confluence, the existing (2) 10'X10' culvert would be modified as needed between Barbara Drive and the confluence to accommodate the improvements made to the existing system in the drainage alley. In conjunction with culvert modifications, the alley north of Barbara Drive shall be reviewed for potential improvements to help alleviate flooding from the rear of the properties along the north side of Barbara Drive.

The findings of the Technical Memorandum #1 shall be verified with the open channel design to determine future phasing of projects along Tributary A and Tributary 4.

Below is the basic scope for the engineering and surveying services to be provided by Civil Engineering Consultants and its design team necessary for the detailed design and preparation of final construction documents for this Project. The project design and deliverables will be in accordance with City of San Antonio Design Guidance Manual (2012).

1. 40% Design Phase

01. Initial Scope Meeting, Technical Memorandum, and Project Management

01.010. Prepare Design Summary Report and Attend Initial Scoping Meeting

01.020. Prepare Technical Memorandum

01.020.010. H&H Analysis/Modeling for Open Channel Concept

010.020.010.010. Update the geometry for the PER XPSWMM Model with additional topographic survey and other data updates, as necessary.

010.020.010.020. Revise Hydrology for the entire watershed using unit hydrograph methods as per the Regional Modeling Standards.

010.020.010.030. Develop a 1D XPSWMM model to simulate the DFIRM HEC-RAS model to make the case for using XPSWMM 2D.

010.020.010.040. Develop revised Existing Conditions model

with updated geometry and hydrology. Run for the 4% Annual Chance Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Perform debugging and calibration of the model to establish updated existing conditions model. Map results of model and validate with known flooding conditions.

010.020.010.050. Develop a proposed conditions model for the open channel concept designed by CEC. Run for the 4% Annual Chance Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Model four design phases at the direction of CEC. Ensure that no negative impacts occur during each design phase. Map results of model for each phase for the 4% ACE Future Development storm event plus freeboard as well as the 1% ACE Future Development storm event.

010.020.010.060. Prepare a technical H&H write up and provide necessary supporting data for Technical Memorandum.

01.020.020. Preliminary Drainage Design

01.020.030. Determine Real Estate Acquisition Needs

01.020.040. Identify Utility Impacts and Easement Needs

01.020.050. Environmental Studies (Coordinate with CoSA EMD as needed)

010.020.050.010. Conduct Phase I ESA of up to 33 Residences

010.020.050.020. Conduct Asbestos Surveys of up to 33 Residences

010.020.050.030. Identify environmental regulatory requirements and permitting strategy

01.020.060. Coordinate with CEC on possible channel alignment and space available for enhancements

Develop Concepts for new use of Green Space and possible enhancement features

Prepare mounted plan and meet with Homeowner's group (1 time) to present landscape concept

010.020.060.010. Prepare one rendered site plan and additional sketches of a limited number (maximum 4) of specific enhancement elements such as trail, seating, play areas, etc. for inclusion in the Technical Memorandum

prepared by CEC.

- 01.030. Project Management
 - 01.030.010. Prepare Project Schedule
 - 01.030.020. Project Invoicing and Progress Report
 - 01.030.030. Coordinate with Project Design Team

02. Right of Way Surveying – The City will provide all ROW Data

- 02.010. Acquire Ownership information – City will Provide
- 02.020. Prepare Right of Entry letters (18 lots on north side of alley and 16 lots on south side; 4 lots located adjacent to Skipper Drive) – City will coordinate with property owners in securing right of entry agreements.
- 02.030. Survey ROW
 - 02.030.010. Apparent ROW only
 - 02.030.020. Barbara Dr, Shannon Lee, and Skipper Dr from Barbara to Olmos Golf Course

03. Topographic Surveying/ Base Mapping

- 03.010. Establish or Re-establish Primary Project Control
- 03.020. Establish Secondary Project Control
- 03.030. Set Project centerline or baseline (100' Interval)
- 03.040. Survey topographic features
 - 03.040.010. From Confluence to the Outfall at Olmos Golf Course (approx. 1,135 ft);
 - 03.040.020. Tie down limits of concrete riprap located at Olmos Golf Course area from the Outfall to approximately 1,500 ft downstream;
 - 03.040.030. From downstream end of open channel located north of Oblate to the Confluence (approx. 350 ft)
 - 03.040.040. Barbara Drive - approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway) from McCullough Ave to Skipper Dr.
 - 03.040.050. Shannon Lee – approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway) from McCullough Ave to Skipper Dr.
 - 03.040.060. Oblate - approx. 200 ft east and west along the roadway (from ROW to ROW) where the existing storm drain system crosses the road.
 - 03.040.070. Survey of topographic features excludes improvements located on residential lots (ie, structures, foundations, sidewalks, driveways, mailboxes, fences, etc.).
- 03.050. Survey Cross sections as follows (only where ROE can be secured):
 - 03.050.010. Beginning at downstream side of drainage structure located in the drainage alley from McCullough Avenue to the Outfall at Olmos Golf Course (total length approx.. 1668 ft). Cross section intervals @ approximately 150 ft or every other lot at an estimated width of 350 ft, from southern edge of pavement

- at Barbara Drive to northern edge of pavement at Shannel Lee.
- 03.050.020. Beginning at the Outfall located at Olmos Golf Course to a point located about 1330 ft downstream – cross sections @ 150 ft intervals at an estimated width of 200 ft.
- 03.050.030. From the Confluence to Oblate (total length approx. 520 ft) – cross sections @ 100 ft intervals at an estimated width of 80 ft.
- 03.050.040. One ft contour data will be utilized for areas beyond the limits of survey.
- 03.060. Secure utility maps
 - 03.060.010. Water
 - 03.060.020. Sanitary Sewer
 - 03.060.030. Natural Gas
 - 03.060.040. Underground Electric
 - 03.060.050. Overhead Electric
 - 03.060.060. Underground Telephone
 - 03.060.070. Overhead Telephone
 - 03.060.080. Underground Cable Television Overhead Cable Television
- 03.070. Survey Quality Level C locates
 - 03.070.010. Water
 - 030.070.010.010. Valve Box elevations
 - 030.070.010.020. Valve Stem elevations
 - 03.070.020. Sanitary Sewer
 - 030.070.020.010. Manhole Rings and Covers elevations
 - 030.070.020.020. Invert elevations and details (sizes, configurations, flow directions, north arrow)
 - 03.070.030. Natural Gas
 - 030.070.030.010. Valve Box elevations
 - 030.070.030.020. Valve Stem elevations
 - 030.070.030.030. Test box elevations
 - 03.070.040. Storm Drainage
 - 030.070.040.010. Manhole rings and covers elevations
 - 030.070.040.020. Invert elevations and details
 - 030.070.040.030. Curb inlets
 - 030.070.040.040. Top elevations
 - 030.070.040.050. Floor and invert elevations
 - 030.070.040.060. lateral details (sizes, configurations, flow directions, north arrow)
 - 030.070.040.070. Outfall elevations
 - 03.070.050. Culvert and headwall dimensions and elevations
 - 03.070.060. Underground Electric
 - 030.070.060.010. Manhole rings and covers elevations
 - 03.070.070. Telephone
 - 030.070.070.010. Manhole rings and covers elevations
 - 03.070.080. Underground Cable Television

- 030.070.080.010. Manhole rings and covers elevations
- 03.080. Survey Trees
 - 03.080.010. Perform survey of all trees with trunk diameter > 4".
 - 03.080.020. Tree survey data shall include species, trunk diameter and spread.
 - 03.080.030. Includes tag descriptions of surveyed trees to correlate to the digital survey data.
- 03.090. Survey Bridges and Structures – Not Used.
- 03.100. Develop Project Layout Sheets w/Survey Control Points
- 03.110. Stake Storm Drain Outfall Alignment (Coordinate w/Environmental Division)

04. Roadway Design

- 04.010. Establish Typical Sections for existing and proposed showing lane, sidewalk, and clear zone widths, etc. for roadways where drainage improvements cross the existing roadway/pavement.
- 04.020. Develop Horizontal Roadway Alignments
- 04.030. Develop Roadway Profiles
 - 04.030.010. Barbara Drive (east of McCullough Ave)
 - 04.030.020. Oblate Drive (north of Barbara Dr)
 - 04.030.030. Skipper Drive – not included in scope of services.
 - 04.030.040. McCullough Ave – not included in scope of services.
- 04.040. Develop Plan and Profile sheets for 1" = 40' plans on 11" x 17" format. Plans will include:
 - 04.040.010. Existing ground profiles at centerline and left and right ROW
 - 04.040.020. Proposed Horizontal Roadway alignments showing
 - 040.040.020.010. Centerline geometry (centerline bearings, PI, PC, and PT stations, centerline curve data, curb return radii, etc.)
 - 040.040.020.020. Curb locations and geometry
 - 040.040.020.030. Lane widths
 - 040.040.020.040. Sidewalk widths and locations
 - 040.040.020.050. Transitions and extent of construction of intersecting streets (coordinate with SAWS)
 - 040.040.020.060. Proposed Roadway Profile
 - 040.040.020.070. Utility Crossings

05. Hydrologic & Hydraulic Analysis

- 05.010. H&H Analysis for Existing and Proposed Conditions
 - 05.010.010. Update Proposed XPSWMM 2D Model as per the design plans prepared by CEC. Run the 10% ACE, 4% ACE future development conditions, 2% ACE, 1% ACE, 1% ACE future development conditions, and 0.2% ACE storm events for up to 2 phases of the design. Map the 4% ACE future development plus freeboard and the 1% ACE future development conditions storm events for each design

phase. Provide updated profiles and mapping for each update, which will occur for 40%, 70%, 95%, and 100% milestone submittals. Modeling proposed channel or storm sewer configurations differently from the Technical Memorandum will be considered additional services.

05.010.020. Develop an H&H Report – Detail and provide all criteria, methodologies, assumptions, models, output results, exhibits, and supporting data. Provide update to the report for each of the submittals reflecting changes to the project model.

05.020. Regulatory Coordination

05.020.010. Determine Limits of FEMA Remapping – Develop floodplain mapping and determine the appropriate tie in locations. Coordinate with the City and SARA on acceptable limits for FEMA remapping.

05.020.020. Develop a CLOMR Package for Review – CLOMR report and models will be developed for only the primary phase of the design and will be developed in accordance with the Regional Modeling Standards and FEMA criteria. This work does not include FEMA or SARA review fees, and will not include an Environmental Species Assessment (ESA). The CLOMR will be submitted with the 90% design submittal, and will be developed as follows:

- Tributary A will be remapped as a Zone AE with BFEs.
- Tributary 4 is not currently mapped and will not be mapped other than indicating the backwater from Tributary A.
- Since Tributary A is currently mapped Zone A, the CLOMR will not include a Duplicate or Corrective Effective model. Halff will provide models from the Technical Memorandum making the case for using XPSWMM 2D, but will not provide official duplicate and corrected effective models for submission to SARA or FEMA.

06. Drainage Design

06.010. Storm Drainage Facilities – NOT USED.

06.020. Culverts - Oblate Dr. and Barbara Dr. (east of McCullough Ave)

06.020.010. Prepare Plan and Profile Sheets for box culvert structures and/or cross drainage culverts

06.020.020. Prepare Hydraulic Data Sheets as required

06.030. Channels

06.030.010. Prepare Typical Section and Plan & Profile Sheets for Channel Improvements

06.030.020. Prepare Grading Plans and Details

- 06.030.030. Identify and design energy dissipation facilities
- 06.030.040. Establish channel armoring and erosion control areas

07. Pavement Design.

- 07.010. Geotechnical engineering and pavement design report prepared by Terracon for the initial PER will be utilized as needed. The need for additional geotechnical data will be determined during design and will be covered under Additional Services.

08. Prepare Cross Sections

- 08.010. Roadway Cross Sections (at 50' intervals and at critical locations)
- 08.020. Channel Cross Sections (at 50' intervals and at critical locations)
- 08.030. Box Culvert Excavation Cross Sections (at 50' intervals and at critical locations)

Exclusion: Channel and Box Culvert Excavation Cross Sections that are developed for the design of this project are for information and will not be included in plan sheets as part of the construction plan set. As such, cross-section sheets for channel and box culvert excavation are not included in the fee. However this service is available upon request.

09. Utility Coordination / Management

- 09.010. Update Utility Basemap to extend to the limits of the project area
- 09.020. Perform Utility Coordination (Section 5.0 of the DGM) as follows:
 - 09.020.010. Send notice to all utility owners requesting block/system maps, including the project scope and a project location map.
 - 09.020.020. Identify apparent utilities in the project vicinity and surrounding area by topographic survey, field investigation, by requested marking on the ground and by available record search.
 - 09.020.030. Prepare initial Utility Basemap Layout (Quality Level C) sufficient to identify all utilities in the project vicinity and distribute to all utility companies for review and comments/verification.
 - 09.020.040. Conduct **Utility Kickoff Coordination Meeting** to discuss project scope, schedule and to discuss Utility owner's comments on the Utility Basemap Layouts.
 - 09.020.050. Compare utility locations to proposed project and assess conflicts.
 - 09.020.060. Insert utilities into preliminary roadway and drainage cross sections and profiles to show vertical locations of existing utilities.
 - 09.020.070. Conduct initial utility conflict analysis for SAWS water and sewer, CPS gas, and all other utilities affected by the project. Identify potential conflicts in the Utility Conflict Matrix.

- 09.020.080. Prepare Initial List of SUE needs for the project required to fully characterize utilities with potential high impact on the project.
- 09.020.090. Initiate coordination for design of all utilities that may require relocation and conduct **2nd Utility Coordination Meeting**; Prepare Minutes And Distribute
- 09.020.100. Optimize street and drainage design to minimize/avoid conflicts with utilities.
- 09.020.110. Recommend/Assign Utility Alignments for all affected utilities.
- 09.020.120. Prepare and provide Utility Coordination report for the Project, attaching utility conflict matrix, phone log, letters, responses, emails and other correspondence related to the Utility Coordination Task.
- 09.020.130. Perform Intermediate Utility Coordination as follows:
 - 090.020.130.010. Coordinate relocation/adjustment design with joint bid utilities.
 - 090.020.130.020. Complete SUE related work, obtain results, and incorporate findings
 - 090.020.130.030. Coordinate design with non-joint bid utilities.
 - 090.020.130.040. Complete utility basemap, resolved all known utility conflicts and update utility conflict matrix.
 - 090.020.130.050. Complete 70% cross sections to verify existing utility locations.
 - 090.020.130.060. Complete utility proposed design components and incorporate into overall plans.
 - 090.020.130.070. Assess remaining utility conflicts and make recommendations in the final design submittal.
 - 090.020.130.080. Make Recommendations for utility locates that will be deferred to the construction phase.
 - 090.020.130.090. Provide Utility Coordination Report Supplement to address changes since the initial submittal, including attached letters and other correspondence.
 - 090.020.130.100. In the Utility Coordination report, include a narrative with list of major design changes from previous submittal.
- 09.020.140. Perform Final Utility Coordination as follows:
 - 090.020.140.010. Address comments from prior phase.
 - 090.020.140.020. Resolve remaining utility conflict resolution.
 - 090.020.140.030. Finalize plans, sections, and details

- related to utility coordination.
- 090.020.140.040. Provide construct phase utility coordination needs assessment.
- 090.020.140.050. Update Utility Coordination Report, including a narrative with a list of major design changes from previous submittal.

10. Other Plans

- 10.010. General Sheets - prepare front end sheets (Title, Index, Project Layout, General Notes, Summary of Estimated Quantities)
- 10.020. Prepare Signing and Pavement Marking Plans and Details - Not Used.
- 10.030. Prepare Traffic Signal Plans – Not Used.
- 10.040. Prepare Construction Sequencing Plan
 - 10.040.010. Construction Phasing Typical Sections
 - 10.040.020. Construction Phasing and Sequence of Work
 - 100.040.020.010. Prepare Exhibit showing preliminary construction phasing/sequencing, and a sequence of work narrative. Exhibit and narrative will include all proposed improvements including joint-bid utilities.
 - 100.040.020.020. Develop options for phasing construction with the ROW acquisition and demolition process.
- 10.050. Prepare Traffic Control Plan
 - 10.050.010. Conceptual Construction Phasing Layouts
 - 10.050.020. Prepare Construction Phasing Layouts
 - 100.050.020.010. Construction Phasing and Sequence of Work Narrative
 - 100.050.020.020. Identify detours and/or haul route requirements
 - 100.050.020.030. Develop Traffic Control Plans and Details
- 10.060. SW3P Plans and Details
 - 10.060.010. Prepare SW3P Narrative
 - 10.060.020. Prepare SW3P Plans and Details
 - 10.060.030. Design Erosion and Stability BMPs
 - 10.060.040. Design Outlet and Outfall Stabilization
- 10.070. Prepare Driveway Plats – Not Used.
- 10.080. Prepare Demolition Plans
 - 10.080.010. Develop PS&E for demolition as a separate, stand-alone bid package.
 - 10.080.020. Includes typical bidding services and tabulation of bid results.
 - 10.080.030. Does not include construction phase or inspection services. These services are available upon request.
- 10.090. Develop Details and Specifications
 - 10.090.010. Develop Special Project Details

- 10.090.020. Prepare List of Governing Specifications
- 10.090.030. Prepare Special Provisions
- 10.090.040. Prepare Special Specifications
- 10.090.050. Identify and Incorporate Applicable CoSA and/or TxDOT Standard Details

11. Environmental / Permitting (Coordination, Studies and Design)

- 11.010. General Environmental Coordination
 - 11.010.010. Coordinate and support CoSA Environmental Management Division (EMD) per Section 8 and Appendix 8 of the DGM.
 - 11.010.020. Incorporate any environmental information provided by the EMD into the design plans (ie, mitigation features, environmental areas of concern, etc).
 - 11.010.030. Provide design detail information that may be required to complete environmental processes and permitting (ie, area of concern quantity calculations and layouts).
 - 11.010.040. Finalize all environmental coordination and provide necessary design information to complete special specifications
 - 11.010.050. Incorporate EPIC Sheet provided by EMD
 - 11.010.060. Provide complete package of environmental special specifications, environmental permitting, special notes, and EPIC sheet for EMD Review and final approval.
- 11.020. Review Project and determine other Permitting Requirements (CoSA will be responsible for all environmental investigations and assessments.) Terracon will review the preliminary design phase submittal and prepare a letter summarizing expected permitting requirements for coordination with CoSA.
- 11.030. Prepare Tree Permit
 - 11.030.010. Prepare Tree Inventory/ Preservation Plans and Details.
 - 11.030.020. Tree Tabulation. Prepare tree permit application and secure tree permit. These services do not include tree planting for mitigation. Any landscaping design is beyond the scope of these Basic Services.
 - 11.030.030. Coordinate with CoSA Arborist

12. Other Meetings and Coordination (including meeting minutes)

- 12.010. Public Meetings
 - 12.010.010. Attend Public Meetings (3) and prepare meeting exhibits
 - 12.010.020. Address public comments and record changes requested by citizens/business owners; submit meeting minutes and Q&A list
- 12.020. Complete Streets Public Meeting and Field Analysis Checklist
- 12.030. Technical Memorandum Review
- 12.040. 40% Plans Review Meeting
- 12.050. 70% Plans Review Meeting

12.060. 95% Plans Review Meeting

13. Cost Estimating

- 13.010. Prepare and/or Update Opinion of Probable Construction Costs for Preliminary Design, 40%, 70%, 95%, and 100% Milestones. Includes:
 - 13.010.010. Verify bid items, descriptions, units of measure and quantities for base plans and joint bid plans;
 - 13.010.020. Determine unit cost for each task quantity and develop an estimate of construction costs for base and joint bid plans separately;
 - 13.010.030. Track estimation of costs directly attributed to implementation of Complete Streets separately to allow for long-term assessment of cost factors associated with Complete Streets (DGM, p. 12-8).

14. Milestone Plan Submittals

- 14.010. Assemble Milestone Plan Submittals/Deliverables
 - 14.010.010. Prepare Milestone Checklist for 40%, 70%, and 95% (Appendix 7 of DGM).
 - 14.010.020. Update Project Design Summary Report
 - 14.010.030. Prepare Written Responses to All Previous Comments
 - 14.010.040. Perform QA/QC and Complete Certification Form
 - 14.010.050. Assemble and Submit Plan Deliverables (5 bound sets plus PDFs and DGNs on CD; and upload to PrimeLink)

2. 70% Design Phase

01. Initial Scope Meeting, Technical Memorandum, and Project Management

- 01.010. Prepare Design Summary Report and Attend Initial Scoping Meeting
- 01.020. Prepare Technical Memorandum
 - 01.020.010. H&H Analysis/Modeling for Open Channel Concept
 - 010.020.010.010. Update the geometry for the PER XPSWMM Model with additional topographic survey and other data updates, as necessary.
 - 010.020.010.020. Revise Hydrology for the entire watershed using unit hydrograph methods as per the Regional Modeling Standards.
 - 010.020.010.030. Develop a 1D XPSWMM model to simulate the DFIRM HEC-RAS model to make the case for using XPSWMM 2D.
 - 010.020.010.040. Develop revised Existing Conditions model with updated geometry and hydrology. Run for the 4% Annual Chance Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Perform debugging

and calibration of the model to establish updated existing conditions model. Map results of model and validate with known flooding conditions.

010.020.010.050. Develop a proposed conditions model for the open channel concept designed by CEC. Run for the 4% Annual Chance Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Model four design phases at the direction of CEC. Ensure that no negative impacts occur during each design phase. Map results of model for each phase for the 4% ACE Future Development storm event plus freeboard as well as the 1% ACE Future Development storm event.

010.020.010.060. Prepare a technical H&H write up and provide necessary supporting data for Technical Memorandum.

01.020.020. Preliminary Drainage Design

01.020.030. Determine Real Estate Acquisition Needs

01.020.040. Identify Utility Impacts and Easement Needs

01.020.050. Environmental Studies (Coordinate with CoSA EMD as needed)

010.020.050.010. Conduct Phase I ESA of up to 33 Residences

010.020.050.020. Conduct Asbestos Surveys of up to 33 Residences

010.020.050.030. Identify environmental regulatory requirements and permitting strategy

01.020.060. Coordinate with CEC on possible channel alignment and space available for enhancements

Develop Concepts for new use of Green Space and possible enhancement features

Prepare mounted plan and meet with Homeowner's group (1 time) to present landscape concept

010.020.060.010. Prepare one rendered site plan and additional sketches of a limited number (maximum 4) of specific enhancement elements such as trail, seating, play areas, etc. for inclusion in the Technical Memorandum prepared by CEC.

01.030. Project Management

01.030.010. Prepare Project Schedule

01.030.020. Project Invoicing and Progress Report

01.030.030. Coordinate with Project Design Team

02. Right of Way Surveying – The City will provide all ROW Data

02.010. Acquire Ownership information – City will Provide

02.020. Prepare Right of Entry letters (18 lots on north side of alley and 16 lots on south side; 4 lots located adjacent to Skipper Drive) – City will coordinate with property owners in securing right of entry agreements.

02.030. Survey ROW

02.030.010. Apparent ROW only

02.030.020. Barbara Dr, Shannon Lee, and Skipper Dr from Barbara to Olmos Golf Course

03. Topographic Surveying/ Base Mapping

03.010. Establish or Re-establish Primary Project Control

03.020. Establish Secondary Project Control

03.030. Set Project centerline or baseline (100' Interval)

03.040. Survey topographic features

03.040.010. From Confluence to the Outfall at Olmos Golf Course (approx. 1,135 ft);

03.040.020. Tie down limits of concrete riprap located at Olmos Golf Course area from the Outfall to approximately 1,500 ft downstream;

03.040.030. From downstream end of open channel located north of Oblate to the Confluence (approx. 350 ft)

03.040.040. Barbara Drive - approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway from McCullough Ave to Skipper Dr.

03.040.050. Shannon Lee – approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway) from McCullough Ave to Skipper Dr.

03.040.060. Oblate - approx. 200 ft east and west along the roadway (from ROW to ROW) where the existing storm drain system crosses the road.

03.040.070. Survey of topographic features excludes improvements located on residential lots (ie, structures, foundations, sidewalks, driveways, mailboxes, fences, etc.).

03.050. Survey Cross sections as follows (only where ROE can be secured):

03.050.010. Beginning at downstream side of drainage structure located in the drainage alley from McCullough Avenue to the Outfall at Olmos Golf Course (total length approx.. 1668 ft). Cross section intervals @ approximately 150 ft or every other lot at an estimated width of 350 ft, from southern edge of pavement at Barbara Drive to northern edge of pavement at Shannel Lee.

03.050.020. Beginning at the Outfall located at Olmos Golf Course to a point located about 1330 ft downstream – cross sections @

- 150 ft intervals at an estimated width of 200 ft.
- 03.050.030. From the Confluence to Oblate (total length approx. 520 ft) – cross sections @ 100 ft intervals at an estimated width of 80 ft.
- 03.050.040. One ft contour data will be utilized for areas beyond the limits of survey.
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 - 03.060.020. Sanitary Sewer
 - 03.060.030. Natural Gas
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 - 03.060.080. Underground Cable Television Overhead Cable Television
- 03.070. Survey Quality Level C locates
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 - 030.070.010.010. Valve Box elevations
 - 030.070.010.020. Valve Stem elevations
 - 03.070.020. Sanitary Sewer
 - 030.070.020.010. Manhole Rings and Covers elevations
 - 030.070.020.020. Invert elevations and details (sizes, configurations, flow directions, north arrow)
 - 03.070.030. Natural Gas
 - 030.070.030.010. Valve Box elevations
 - 030.070.030.020. Valve Stem elevations
 - 030.070.030.030. Test box elevations
 - 03.070.040. Storm Drainage
 - 030.070.040.010. Manhole rings and covers elevations
 - 030.070.040.020. Invert elevations and details
 - 030.070.040.030. Curb inlets
 - 030.070.040.040. Top elevations
 - 030.070.040.050. Floor and invert elevations
 - 030.070.040.060. lateral details (sizes, configurations, flow directions, north arrow)
 - 030.070.040.070. Outfall elevations
 - 03.070.050. Culvert and headwall dimensions and elevations
 - 03.070.060. Underground Electric
 - 030.070.060.010. Manhole rings and covers elevations
 - 03.070.070. Telephone
 - 030.070.070.010. Manhole rings and covers elevations
 - 03.070.080. Underground Cable Television
 - 030.070.080.010. Manhole rings and covers elevations
- 03.080. Survey Trees
 - 03.080.010. Perform survey of all trees with trunk diameter > 4".
 - 03.080.020. Tree survey data shall include species, trunk diameter and

spread.

03.080.030. Includes tag descriptions of surveyed trees to correlate to the digital survey data.

03.090. Survey Bridges and Structures – Not Used.

03.100. Develop Project Layout Sheets w/Survey Control Points

03.110. Stake Storm Drain Outfall Alignment (Coordinate w/Environmental Division)

04. Roadway Design

04.010. Establish Typical Sections for existing and proposed showing lane, sidewalk, and clear zone widths, etc. for roadways where drainage improvements cross the existing roadway/pavement.

04.020. Develop Horizontal Roadway Alignments

04.030. Develop Roadway Profiles

04.030.010. Barbara Drive (east of McCullough Ave)

04.030.020. Oblate Drive (north of Barbara Dr)

04.030.030. Skipper Drive – not included in scope of services.

04.030.040. McCullough Ave – not included in scope of services.

04.040. Develop Plan and Profile sheets for 1" = 40' plans on 11" x 17" format. Plans will include:

04.040.010. Existing ground profiles at centerline and left and right ROW

04.040.020. Proposed Horizontal Roadway alignments showing

040.040.020.010. Centerline geometry (centerline bearings, PI, PC, and PT stations, centerline curve data, curb return radii, etc.)

040.040.020.020. Curb locations and geometry

040.040.020.030. Lane widths

040.040.020.040. Sidewalk widths and locations

040.040.020.050. Transitions and extent of construction of intersecting streets (coordinate with SAWS)

040.040.020.060. Proposed Roadway Profile

040.040.020.070. Utility Crossings

05. Hydrologic & Hydraulic Analysis

05.010. H&H Analysis for Existing and Proposed Conditions

05.010.010. Update Proposed XPSWMM 2D Model as per the design plans prepared by CEC. Run the 10% ACE, 4% ACE future development conditions, 2% ACE, 1% ACE, 1% ACE future development conditions, and 0.2% ACE storm events for up to 2 phases of the design. Map the 4% ACE future development plus freeboard and the 1% ACE future development conditions storm events for each design phase. Provide updated profiles and mapping for each update, which will occur for 40%, 70%, 95%, and 100% milestone submittals. Modeling proposed channel or storm

sewer configurations differently from the Technical Memorandum will be considered additional services.

05.010.020. Develop an H&H Report – Detail and provide all criteria, methodologies, assumptions, models, output results, exhibits, and supporting data. Provide update to the report for each of the submittals reflecting changes to the project model.

05.020. Regulatory Coordination

05.020.010. Determine Limits of FEMA Remapping – Develop floodplain mapping and determine the appropriate tie in locations. Coordinate with the City and SARA on acceptable limits for FEMA remapping.

05.020.020. Develop a CLOMR Package for Review – CLOMR report and models will be developed for only the primary phase of the design and will be developed in accordance with the Regional Modeling Standards and FEMA criteria. This work does not include FEMA or SARA review fees, and will not include an Environmental Species Assessment (ESA). The CLOMR will be submitted with the 90% design submittal, and will be developed as follows:

- Tributary A will be remapped as a Zone AE with BFEs.
- Tributary 4 is not currently mapped and will not be mapped other than indicating the backwater from Tributary A.
- Since Tributary A is currently mapped Zone A, the CLOMR will not include a Duplicate or Corrective Effective model. Halff will provide models from the Technical Memorandum making the case for using XPSWMM 2D, but will not provide official duplicate and corrected effective models for submission to SARA or FEMA.

06. Drainage Design

06.010. Storm Drainage Facilities – NOT USED.

06.020. Culverts - Oblate Dr. and Barbara Dr. (east of McCullough Ave)

06.020.010. Prepare Plan and Profile Sheets for box culvert structures and/or cross drainage culverts

06.020.020. Prepare Hydraulic Data Sheets as required

06.030. Channels

06.030.010. Prepare Typical Section and Plan & Profile Sheets for Channel Improvements

06.030.020. Prepare Grading Plans and Details

06.030.030. Identify and design energy dissipation facilities

06.030.040. Establish channel armoring and erosion control areas

07. Pavement Design.

- 07.010. Geotechnical engineering and pavement design report prepared by Terracon for the initial PER will be utilized as needed. The need for additional geotechnical data will be determined during design and will be covered under Additional Services.

08. Prepare Cross Sections

- 08.010. Roadway Cross Sections (at 50' intervals and at critical locations)
- 08.020. Channel Cross Sections (at 50' intervals and at critical locations)
- 08.030. Box Culvert Excavation Cross Sections (at 50' intervals and at critical locations)

Exclusion: Channel and Box Culvert Excavation Cross Sections that are developed for the design of this project are for information and will not be included in plan sheets as part of the construction planset. As such, cross-section sheets for channel and box culvert excavation are not included in the fee. However this service is available upon request.

09. Utility Coordination / Management

- 09.010. Update Utility Basemap to extend to the limits of the project area
- 09.020. Perform Utility Coordination (Section 5.0 of the DGM) as follows:
 - 09.020.010. Send notice to all utility owners requesting block/system maps, including the project scope and a project location map.
 - 09.020.020. Identify apparent utilities in the project vicinity and surrounding area by topographic survey, field investigation, by requested marking on the ground and by available record search.
 - 09.020.030. Prepare initial Utility Basemap Layout (Quality Level C) sufficient to identify all utilities in the project vicinity and distribute to all utility companies for review and comments/verification.
 - 09.020.040. Conduct **Utility Kickoff Coordination Meeting** to discuss project scope, schedule and to discuss Utility owner's comments on the Utility Basemap Layouts.
 - 09.020.050. Compare utility locations to proposed project and assess conflicts.
 - 09.020.060. Insert utilities into preliminary roadway and drainage cross sections and profiles to show vertical locations of existing utilities.
 - 09.020.070. Conduct initial utility conflict analysis for SAWS water and sewer, CPS gas, and all other utilities affected by the project. Identify potential conflicts in the Utility Conflict Matrix.
 - 09.020.080. Prepare Initial List of SUE needs for the project required to fully characterize utilities with potential high impact on the project.

- 09.020.090. Initiate coordination for design of all utilities that may require relocation and conduct **2nd Utility Coordination Meeting**; Prepare Minutes And Distribute
- 09.020.100. Optimize street and drainage design to minimize/avoid conflicts with utilities.
- 09.020.110. Recommend/Assign Utility Alignments for all affected utilities.
- 09.020.120. Prepare and provide Utility Coordination report for the Project, attaching utility conflict matrix, phone log, letters, responses, emails and other correspondence related to the Utility Coordination Task.
- 09.020.130. Perform Intermediate Utility Coordination as follows:
 - 090.020.130.010. Coordinate relocation/adjustment design with joint bid utilities.
 - 090.020.130.020. Complete SUE related work, obtain results, and incorporate findings
 - 090.020.130.030. Coordinate design with non-joint bid utilities.
 - 090.020.130.040. Complete utility basemap, resolved all known utility conflicts and update utility conflict matrix.
 - 090.020.130.050. Complete 70% cross sections to verify existing utility locations.
 - 090.020.130.060. Complete utility proposed design components and incorporate into overall plans.
 - 090.020.130.070. Assess remaining utility conflicts and make recommendations in the final design submittal.
 - 090.020.130.080. Make Recommendations for utility locates that will be deferred to the construction phase.
 - 090.020.130.090. Provide Utility Coordination Report Supplement to address changes since the initial submittal, including attached letters and other correspondence.
 - 090.020.130.100. In the Utility Coordination report, include a narrative with list of major design changes from previous submittal.
- 09.020.140. Perform Final Utility Coordination as follows:
 - 090.020.140.010. Address comments from prior phase.
 - 090.020.140.020. Resolve remaining utility conflict resolution.
 - 090.020.140.030. Finalize plans, sections, and details related to utility coordination.
 - 090.020.140.040. Provide construct phase utility coordination needs assessment.
 - 090.020.140.050. Update Utility Coordination Report, including a narrative with a list of major design changes from previous submittal.

10. Other Plans

- 10.010. General Sheets - prepare front end sheets (Title, Index, Project Layout, General Notes, Summary of Estimated Quantities)
- 10.020. Prepare Signing and Pavement Marking Plans and Details - Not Used.
- 10.030. Prepare Traffic Signal Plans – Not Used.
- 10.040. Prepare Construction Sequencing Plan
 - 10.040.010. Construction Phasing Typical Sections
 - 10.040.020. Construction Phasing and Sequence of Work
 - 100.040.020.010. Prepare Exhibit showing preliminary construction phasing/sequencing, and a sequence of work narrative. Exhibit and narrative will include all proposed improvements including joint-bid utilities.
 - 100.040.020.020. Develop options for phasing construction with the ROW acquisition and demolition process.
- 10.050. Prepare Traffic Control Plan
 - 10.050.010. Conceptual Construction Phasing Layouts
 - 10.050.020. Prepare Construction Phasing Layouts
 - 100.050.020.010. Construction Phasing and Sequence of Work Narrative
 - 100.050.020.020. Identify detours and/or haul route requirements
 - 100.050.020.030. Develop Traffic Control Plans and Details
- 10.060. SW3P Plans and Details
 - 10.060.010. Prepare SW3P Narrative
 - 10.060.020. Prepare SW3P Plans and Details
 - 10.060.030. Design Erosion and Stability BMPs
 - 10.060.040. Design Outlet and Outfall Stabilization
- 10.070. Prepare Driveway Plats – Not Used.
- 10.080. Prepare Demolition Plans
 - 10.080.010. Develop PS&E for demolition as a separate, stand-alone bid package.
 - 10.080.020. Includes typical bidding services and tabulation of bid results.
 - 10.080.030. Does not include construction phase or inspection services. These services are available upon request.
- 10.090. Develop Details and Specifications
 - 10.090.010. Develop Special Project Details
 - 10.090.020. Prepare List of Governing Specifications
 - 10.090.030. Prepare Special Provisions
 - 10.090.040. Prepare Special Specifications
 - 10.090.050. Identify and Incorporate Applicable CoSA and/or TxDOT Standard Details

11. Environmental / Permitting (Coordination, Studies and Design)

- 11.010. General Environmental Coordination
 - 11.010.010. Coordinate and support CoSA Environmental Management Division (EMD) per Section 8 and Appendix 8 of the DGM.
 - 11.010.020. Incorporate any environmental information provided by the EMD into the design plans (ie, mitigation features, environmental areas of concern, etc).
 - 11.010.030. Provide design detail information that may be required to complete environmental processes and permitting (ie, area of concern quantity calculations and layouts).
 - 11.010.040. Finalize all environmental coordination and provide necessary design information to complete special specifications
 - 11.010.050. Incorporate EPIC Sheet provided by EMD
 - 11.010.060. Provide complete package of environmental special specifications, environmental permitting, special notes, and EPIC sheet for EMD Review and final approval.
- 11.020. Review Project and determine other Permitting Requirements (CoSA will be responsible for all environmental investigations and assessments.) Terracon will review the preliminary design phase submittal and prepare a letter summarizing expected permitting requirements for coordination with CoSA.
- 11.030. Prepare Tree Permit
 - 11.030.010. Prepare Tree Inventory/ Preservation Plans and Details.
 - 11.030.020. Tree Tabulation. Prepare tree permit application and secure tree permit. These services do not include tree planting for mitigation. Any landscaping design is beyond the scope of these Basic Services.
 - 11.030.030. Coordinate with CoSA Arborist

12. Other Meetings and Coordination (including meeting minutes)

- 12.010. Public Meetings
 - 12.010.010. Attend Public Meetings (3) and prepare meeting exhibits
 - 12.010.020. Address public comments and record changes requested by citizens/business owners; submit meeting minutes and Q&A list
- 12.020. Complete Streets Public Meeting and Field Analysis Checklist
- 12.030. Technical Memorandum Review
- 12.040. 40% Plans Review Meeting
- 12.050. 70% Plans Review Meeting
- 12.060. 95% Plans Review Meeting

13. Cost Estimating

- 13.010. Prepare and/or Update Opinion of Probable Construction Costs for Preliminary Design, 40%, 70%, 95%, and 100% Milestones. Includes:
 - 13.010.010. Verify bid items, descriptions, units of measure and quantities for base plans and joint bid plans;

- 13.010.020. Determine unit cost for each task quantity and develop an estimate of construction costs for base and joint bid plans separately;
- 13.010.030. Track estimation of costs directly attributed to implementation of Complete Streets separately to allow for long-term assessment of cost factors associated with Complete Streets (DGM, p. 12-8).

14. Milestone Plan Submittals

- 14.010. Assemble Milestone Plan Submittals/Deliverables
 - 14.010.010. Prepare Milestone Checklist for 40%, 70%, and 95% (Appendix 7 of DGM).
 - 14.010.020. Update Project Design Summary Report
 - 14.010.030. Prepare Written Responses to All Previous Comments
 - 14.010.040. Perform QA/QC and Complete Certification Form
 - 14.010.050. Assemble and Submit Plan Deliverables (5 bound sets plus PDFs and DGNs on CD; and upload to PrimeLink)

3. 95% Design Phase

01. Initial Scope Meeting, Technical Memorandum, and Project Management

- 01.010. Prepare Design Summary Report and Attend Initial Scoping Meeting
- 01.020. Prepare Technical Memorandum
 - 01.020.010. H&H Analysis/Modeling for Open Channel Concept
 - 010.020.010.010. Update the geometry for the PER XPSWMM Model with additional topographic survey and other data updates, as necessary.
 - 010.020.010.020. Revise Hydrology for the entire watershed using unit hydrograph methods as per the Regional Modeling Standards.
 - 010.020.010.030. Develop a 1D XPSWMM model to simulate the DFIRM HEC-RAS model to make the case for using XPSWMM 2D.
 - 010.020.010.040. Develop revised Existing Conditions model with updated geometry and hydrology. Run for the 4% Annual Chance Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Perform debugging and calibration of the model to establish updated existing conditions model. Map results of model and validate with known flooding conditions.
 - 010.020.010.050. Develop a proposed conditions model for the open channel concept designed by CEC. Run for the 4% Annual Chance

Exceedance (ACE) and the 1% ACE Future Development Conditions storm events. Model four design phases at the direction of CEC. Ensure that no negative impacts occur during each design phase. Map results of model for each phase for the 4% ACE Future Development storm event plus freeboard as well as the 1% ACE Future Development storm event.

010.020.010.060. Prepare a technical H&H write up and provide necessary supporting data for Technical Memorandum.

01.020.020. Preliminary Drainage Design

01.020.030. Determine Real Estate Acquisition Needs

01.020.040. Identify Utility Impacts and Easement Needs

01.020.050. Environmental Studies (Coordinate with CoSA EMD as needed)

010.020.050.010. Conduct Phase I ESA of up to 33 Residences

010.020.050.020. Conduct Asbestos Surveys of up to 33 Residences

010.020.050.030. Identify environmental regulatory requirements and permitting strategy

01.020.060. Coordinate with CEC on possible channel alignment and space available for enhancements

Develop Concepts for new use of Green Space and possible enhancement features

Prepare mounted plan and meet with Homeowner's group (1 time) to present landscape concept

010.020.060.010. Prepare one rendered site plan and additional sketches of a limited number (maximum 4) of specific enhancement elements such as trail, seating, play areas, etc. for inclusion in the Technical Memorandum prepared by CEC.

01.030. Project Management

01.030.010. Prepare Project Schedule

01.030.020. Project Invoicing and Progress Report

01.030.030. Coordinate with Project Design Team

02. Right of Way Surveying – The City will provide all ROW Data

02.010. Acquire Ownership information – City will Provide

02.020. Prepare Right of Entry letters (18 lots on north side of alley and 16 lots on south side; 4 lots located adjacent to Skipper Drive) – City will coordinate with property owners in securing right of entry agreements.

- 02.030. Survey ROW
 - 02.030.010. Apparent ROW only
 - 02.030.020. Barbara Dr, Shannon Lee, and Skipper Dr from Barbara to Olmos Golf Course

03. Topographic Surveying/ Base Mapping

- 03.010. Establish or Re-establish Primary Project Control
- 03.020. Establish Secondary Project Control
- 03.030. Set Project centerline or baseline (100' Interval)
- 03.040. Survey topographic features
 - 03.040.010. From Confluence to the Outfall at Olmos Golf Course (approx. 1,135 ft);
 - 03.040.020. Tie down limits of concrete riprap located at Olmos Golf Course area from the Outfall to approximately 1,500 ft downstream;
 - 03.040.030. From downstream end of open channel located north of Oblate to the Confluence (approx. 350 ft)
 - 03.040.040. Barbara Drive - approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway from McCullough Ave to Skipper Dr.
 - 03.040.050. Shannon Lee – approx. 1,500 ft along the roadway (edge of pavement and centerline of roadway) from McCullough Ave to Skipper Dr.
 - 03.040.060. Oblate - approx. 200 ft east and west along the roadway (from ROW to ROW) where the existing storm drain system crosses the road.
 - 03.040.070. Survey of topographic features excludes improvements located on residential lots (ie, structures, foundations, sidewalks, driveways, mailboxes, fences, etc.).
- 03.050. Survey Cross sections as follows (only where ROE can be secured):
 - 03.050.010. Beginning at downstream side of drainage structure located in the drainage alley from McCullough Avenue to the Outfall at Olmos Golf Course (total length approx.. 1668 ft). Cross section intervals @ approximately 150 ft or every other lot at an estimated width of 350 ft, from southern edge of pavement at Barbara Drive to northern edge of pavement at Shannel Lee.
 - 03.050.020. Beginning at the Outfall located at Olmos Golf Course to a point located about 1330 ft downstream – cross sections @ 150 ft intervals at an estimated width of 200 ft.
 - 03.050.030. From the Confluence to Oblate (total length approx. 520 ft) – cross sections @ 100 ft intervals at an estimated width of 80 ft.
 - 03.050.040. One ft contour data will be utilized for areas beyond the limits of survey.
- 03.060. Secure utility maps

- 03.060.010. Water
- 03.060.020. Sanitary Sewer
- 03.060.030. Natural Gas
- 03.060.040. Underground Electric
- 03.060.050. Overhead Electric
- 03.060.060. Underground Telephone
- 03.060.070. Overhead Telephone
- 03.060.080. Underground Cable Television Overhead Cable Television
- 03.070. Survey Quality Level C locates
 - 03.070.010. Water
 - 030.070.010.010. Valve Box elevations
 - 030.070.010.020. Valve Stem elevations
 - 03.070.020. Sanitary Sewer
 - 030.070.020.010. Manhole Rings and Covers elevations
 - 030.070.020.020. Invert elevations and details (sizes, configurations, flow directions, north arrow)
 - 03.070.030. Natural Gas
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 - 03.080.020. Tree survey data shall include species, trunk diameter and spread.
 - 03.080.030. Includes tag descriptions of surveyed trees to correlate to the digital survey data.
- 03.090. Survey Bridges and Structures – Not Used.
- 03.100. Develop Project Layout Sheets w/Survey Control Points
- 03.110. Stake Storm Drain Outfall Alignment (Coordinate w/Environmental Division)

04. Roadway Design

- 04.010. Establish Typical Sections for existing and proposed showing lane, sidewalk, and clear zone widths, etc. for roadways where drainage improvements cross the existing roadway/pavement.
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 - 04.030.040. McCullough Ave – not included in scope of services.
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Plans will include:
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 - 040.040.020.010. Centerline geometry (centerline bearings, PI, PC, and PT stations, centerline curve data, curb return radii, etc.)
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05.020.010. Determine Limits of FEMA Remapping – Develop floodplain mapping and determine the appropriate tie in locations. Coordinate with the City and SARA on acceptable limits for FEMA remapping.

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- Tributary 4 is not currently mapped and will not be mapped other than indicating the backwater from Tributary A.
- Since Tributary A is currently mapped Zone A, the CLOMR will not include a Duplicate or Corrective Effective model. Half will provide models from the Technical Memorandum making the case for using XPSWMM 2D, but will not provide official duplicate and corrected effective models for submission to SARA or FEMA.

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06.010. Storm Drainage Facilities – NOT USED.

06.020. Culverts - Oblate Dr. and Barbara Dr. (east of McCullough Ave)

06.020.010. Prepare Plan and Profile Sheets for box culvert structures and/or cross drainage culverts

06.020.020. Prepare Hydraulic Data Sheets as required

06.030. Channels

06.030.010. Prepare Typical Section and Plan & Profile Sheets for Channel Improvements

06.030.020. Prepare Grading Plans and Details

06.030.030. Identify and design energy dissipation facilities

06.030.040. Establish channel armoring and erosion control areas

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- 08.030. Box Culvert Excavation Cross Sections (at 50' intervals and at critical locations)

Exclusion: Channel and Box Culvert Excavation Cross Sections that are developed for the design of this project are for information and will not be included in plan sheets as part of the construction plan set. As such, cross-section sheets for channel and box culvert excavation are not included in the fee. However this service is available upon request.

09. Utility Coordination / Management

- 09.010. Update Utility Basemap to extend to the limits of the project area
- 09.020. Perform Utility Coordination (Section 5.0 of the DGM) as follows:
 - 09.020.010. Send notice to all utility owners requesting block/system maps, including the project scope and a project location map.
 - 09.020.020. Identify apparent utilities in the project vicinity and surrounding area by topographic survey, field investigation, by requested marking on the ground and by available record search.
 - 09.020.030. Prepare initial Utility Basemap Layout (Quality Level C) sufficient to identify all utilities in the project vicinity and distribute to all utility companies for review and comments/verification.
 - 09.020.040. Conduct **Utility Kickoff Coordination Meeting** to discuss project scope, schedule and to discuss Utility owner's comments on the Utility Basemap Layouts.
 - 09.020.050. Compare utility locations to proposed project and assess conflicts.
 - 09.020.060. Insert utilities into preliminary roadway and drainage cross sections and profiles to show vertical locations of existing utilities.
 - 09.020.070. Conduct initial utility conflict analysis for SAWS water and sewer, CPS gas, and all other utilities affected by the project. Identify potential conflicts in the Utility Conflict Matrix.
 - 09.020.080. Prepare Initial List of SUE needs for the project required to fully characterize utilities with potential high impact on the project.
 - 09.020.090. Initiate coordination for design of all utilities that may require relocation and conduct **2nd Utility Coordination Meeting**; Prepare Minutes And Distribute
 - 09.020.100. Optimize street and drainage design to minimize/avoid conflicts with utilities.
 - 09.020.110. Recommend/Assign Utility Alignments for all affected

utilities.

09.020.120. Prepare and provide Utility Coordination report for the Project, attaching utility conflict matrix, phone log, letters, responses, emails and other correspondence related to the Utility Coordination Task.

09.020.130. Perform Intermediate Utility Coordination as follows:

090.020.130.010. Coordinate relocation/adjustment design with joint bid utilities.

090.020.130.020. Complete SUE related work, obtain results, and incorporate findings

090.020.130.030. Coordinate design with non-joint bid utilities.

090.020.130.040. Complete utility basemap, resolved all known utility conflicts and update utility conflict matrix.

090.020.130.050. Complete 70% cross sections to verify existing utility locations.

090.020.130.060. Complete utility proposed design components and incorporate into overall plans.

090.020.130.070. Assess remaining utility conflicts and make recommendations in the final design submittal.

090.020.130.080. Make Recommendations for utility locates that will be deferred to the construction phase.

090.020.130.090. Provide Utility Coordination Report Supplement to address changes since the initial submittal, including attached letters and other correspondence.

090.020.130.100. In the Utility Coordination report, include a narrative with list of major design changes from previous submittal.

09.020.140. Perform Final Utility Coordination as follows:

090.020.140.010. Address comments from prior phase.

090.020.140.020. Resolve remaining utility conflict resolution.

090.020.140.030. Finalize plans, sections, and details related to utility coordination.

090.020.140.040. Provide construct phase utility coordination needs assessment.

090.020.140.050. Update Utility Coordination Report, including a narrative with a list of major design changes from previous submittal.

10. Other Plans

10.010. General Sheets - prepare front end sheets (Title, Index, Project Layout, General Notes, Summary of Estimated Quantities)

10.020. Prepare Signing and Pavement Marking Plans and Details - Not Used.

10.030. Prepare Traffic Signal Plans – Not Used.

10.040. Prepare Construction Sequencing Plan

- 10.040.010. Construction Phasing Typical Sections
- 10.040.020. Construction Phasing and Sequence of Work
 - 100.040.020.010. Prepare Exhibit showing preliminary construction phasing/sequencing, and a sequence of work narrative. Exhibit and narrative will include all proposed improvements including joint-bid utilities.
 - 100.040.020.020. Develop options for phasing construction with the ROW acquisition and demolition process.
- 10.050. Prepare Traffic Control Plan
 - 10.050.010. Conceptual Construction Phasing Layouts
 - 10.050.020. Prepare Construction Phasing Layouts
 - 100.050.020.010. Construction Phasing and Sequence of Work Narrative
 - 100.050.020.020. Identify detours and/or haul route requirements
 - 100.050.020.030. Develop Traffic Control Plans and Details
- 10.060. SW3P Plans and Details
 - 10.060.010. Prepare SW3P Narrative
 - 10.060.020. Prepare SW3P Plans and Details
 - 10.060.030. Design Erosion and Stability BMPs
 - 10.060.040. Design Outlet and Outfall Stabilization
- 10.070. Prepare Driveway Plats – Not Used.
- 10.080. Prepare Demolition Plans
 - 10.080.010. Develop PS&E for demolition as a separate, stand-alone bid package.
 - 10.080.020. Includes typical bidding services and tabulation of bid results.
 - 10.080.030. Does not include construction phase or inspection services. These services are available upon request.
- 10.090. Develop Details and Specifications
 - 10.090.010. Develop Special Project Details
 - 10.090.020. Prepare List of Governing Specifications
 - 10.090.030. Prepare Special Provisions
 - 10.090.040. Prepare Special Specifications
 - 10.090.050. Identify and Incorporate Applicable CoSA and/or TxDOT Standard Details

11. Environmental / Permitting (Coordination, Studies and Design)

- 11.010. General Environmental Coordination
 - 11.010.010. Coordinate and support CoSA Environmental Management Division (EMD) per Section 8 and Appendix 8 of the DGM.
 - 11.010.020. Incorporate any environmental information provided by the EMD into the design plans (ie, mitigation features, environmental areas of concern, etc).

- 11.010.030. Provide design detail information that may be required to complete environmental processes and permitting (ie, area of concern quantity calculations and layouts).
- 11.010.040. Finalize all environmental coordination and provide necessary design information to complete special specifications
- 11.010.050. Incorporate EPIC Sheet provided by EMD
- 11.010.060. Provide complete package of environmental special specifications, environmental permitting, special notes, and EPIC sheet for EMD Review and final approval.
- 11.020. Review Project and determine other Permitting Requirements (CoSA will be responsible for all environmental investigations and assessments.) Terracon will review the preliminary design phase submittal and prepare a letter summarizing expected permitting requirements for coordination with CoSA.
- 11.030. Prepare Tree Permit
 - 11.030.010. Prepare Tree Inventory/ Preservation Plans and Details.
 - 11.030.020. Tree Tabulation. Prepare tree permit application and secure tree permit. These services do not include tree planting for mitigation. Any landscaping design is beyond the scope of these Basic Services.
 - 11.030.030. Coordinate with CoSA Arborist

12. Other Meetings and Coordination (including meeting minutes)

- 12.010. Public Meetings
 - 12.010.010. Attend Public Meetings (3) and prepare meeting exhibits
 - 12.010.020. Address public comments and record changes requested by citizens/business owners; submit meeting minutes and Q&A list
- 12.020. Complete Streets Public Meeting and Field Analysis Checklist
- 12.030. Technical Memorandum Review
- 12.040. 40% Plans Review Meeting
- 12.050. 70% Plans Review Meeting
- 12.060. 95% Plans Review Meeting

13. Cost Estimating

- 13.010. Prepare and/or Update Opinion of Probable Construction Costs for Preliminary Design, 40%, 70%, 95%, and 100% Milestones. Includes:
 - 13.010.010. Verify bid items, descriptions, units of measure and quantities for base plans and joint bid plans;
 - 13.010.020. Determine unit cost for each task quantity and develop an estimate of construction costs for base and joint bid plans separately;
 - 13.010.030. Track estimation of costs directly attributed to implementation of Complete Streets separately to allow for long-term assessment of cost factors associated with

Complete Streets (DGM, p. 12-8).

14. Milestone Plan Submittals

- 14.010. Assemble Milestone Plan Submittals/Deliverables
 - 14.010.010. Prepare Milestone Checklist for 40%, 70%, and 95% (Appendix 7 of DGM).
 - 14.010.020. Update Project Design Summary Report
 - 14.010.030. Prepare Written Responses to All Previous Comments
 - 14.010.040. Perform QA/QC and Complete Certification Form
 - 14.010.050. Assemble and Submit Plan Deliverables (5 bound sets plus PDFs and DGNs on CD; and upload to PrimeLink)

CONSTRUCTION PHASE SERVICES

1. Bid Phase Services – If requested services exceed the scope and budgeted amount, additional compensation will be negotiated.

- 15.010. Finalize and Submit 100% Plans including Joint Bid Utilities (3 bound sets and PDF)
- 15.020. Finalize and Submit 100% Project Specifications Book (1 bound set and PDF)
- 15.030. Finalize constructability issues.
- 15.040. Review Utility Conflict Matrix and Address Pending Items, including:
 - 15.040.010. Address Comments from Reviewers
 - 15.040.020. Resolve outstanding utility coordination issues and provide plan notes.
 - 15.040.030. Finalize outstanding utility issues in the plans and specifications.
 - 15.040.040. Incorporate Proposed Joint Bid Utility plan info into Project.
 - 15.040.050. Update Utility Coordination Report (w/Conflict Matrix and coordinating documentation).
- 15.050. Attend 100% Review Meeting
 - 15.050.010. Finalize Review comments and resolution form.
 - 15.050.020. Coordinate w/Construction Inspector and Supervisor on any special conditions and/or revisions to standard details and specifications.
 - 15.050.030. Attend on site meeting with all utilities and pertinent parties as required
 - 15.050.040. Distribute Plans and Specifications to Contractors and Plan Rooms, and Maintain Plan Holder List.
- 15.060. Assist CoSA PM in preparing Advertising documents
- 15.070. Distribute Plans and Specifications to Contractors and Plan Rooms
- 15.080. Attend Pre-Bid Meeting, prepare and distribute meeting minutes
- 15.090. Answer Contractor Questions

- 15.100. Prepare and Distribute Necessary Addenda
- 15.110. Upload 100% plans, specifications, and addenda to web portal.
- 15.120. Attend Bid Opening.
- 15.130. Bid Tabulation - Evaluate Bids and Provide Recommendation of Award.

2. Construction Phase Services – To Be Activated as Needed. If requested services exceed the scope and budgeted amount, additional compensation will be negotiated.

- 16.010. Reestablish Project Control Points for Contractor Prior to Construction
- 16.020. Review Contractor Pay Estimates
- 16.030. Review/Negotiate Change Orders
- 16.040. Review Shop Drawings
- 16.050. Respond to RFI's
- 16.060. Project Site Visits and Reports (Minimum Two per Month)
- 16.070. Participate in Construction Progress Meetings and Prepare Meeting Minutes (Coincide with 16.060 when possible). Assumes attendance at bi-weekly meetings during the initial stages of construction (estimated at 6 months), with attendance at monthly meetings thereafter for an overall total of 20 progress meetings. Attendance at any additional meetings required will be considered Additional Services and a fee will be negotiated at that time the need is identified.
- 16.080. Final Walkthrough and Punchlist development, submittal to City, and Review
- 16.090. TDLR Inspection

3. Project Close Out – To Be Activated as Needed. If requested services exceed the scope and budgeted amount, additional compensation will be negotiated.

- 17.010. Prepare Record Drawings
- 17.020. Final Warranty Inspection
- 17.030. Assist PM Team with final reconciliation of quantities.

DETAILED DESIGN PHASE SPECIFIED ADDITIONAL SERVICES - To Be

Activated as Needed. If requested services exceed the scope and budgeted amount, additional compensation will be negotiated.

- 1. LOMR Survey Services** – Scope of work to be determined at a later date.
- 2. Engineering Services – LOMR** - Prepare LOMR Package for Submittal to FEMA – As-built survey will be incorporated into an XPSWMM 2D LOMR model and the resulting mapping will be submitted to SARA/FEMA as a final LOMR. The LOMR review fees are not included in this scope of services. This scope does not include an ESA, or significant changes to the geometry, hydrology, hydraulics, methodologies, and/or terrain data.
- 3. Enhancement/Landscape Plan for Green Space** – Scope of work to be determined during design.
 - 01.30.010. Prepare Civil Site Plans and Details
 - 01.30.020. Landscaping Plan and Details
- 4. Subsurface Utility Engineering (SUE)** – Scope of work to be determined during design.
 - 01.40.010. SUE Coordination
 - 01.40.020. Quality Level A
 - 01.40.030. Quality Level B
- 5. Tree Mitigation Services**
 - 01.50.010. The removal of significant or heritage trees in excess of the minimum preservation requirement may be mitigated in accordance with the methods outlined in the City of San Antonio Tree Ordinance. These methods may include establishment and maintenance of new trees on the project site, payment to the tree mitigation fund, or protection and maintenance of smaller trees or other natural areas existing on the site. Because of the range of potential services, and since the results of the Tree Preservation Plan are not currently known, specific Tree Mitigation services are not included in this scope of work, and will be determined in a later phase.
- 6. Geotechnical Engineering Services** – Scope of work to be determined during design.
- 7. Structural Design Services**
 - 01.70.010. Scope of work to be determined during design.

Barbara Drive SA-3 Estimated Level of Effort

Scope of Work:
Project work consists of H&M analysis and modeling necessary to validate the ultimate build out phase recommended in the Bexar County PER dated 11/2/2012 based on the open channel concept. Project work also includes the design and preparation of construction documents for drainage improvements that include an open channel with adequate capacity to convey floodwater for the 100-year ultimate design storm. Acquisition of real estate (home buyouts) and relocation of existing utilities will be required to accommodate the channel, and design of enhancement features for the final green space surrounding the project area will be included.

ACTIVITY	TIMELINE (CALENDAR DAYS)	FEE
DETAILED DESIGN PHASE		
1. 40% Design Phase	150	\$ 332,876.78
CEC		\$ 217,004.00
Half & Associates, Inc.		\$ 94,937.78
Bender Wells Clark Design		\$ 8,150.00
Terracon - Environmental		\$ 12,785.00
2. 70% Design Phase	120	\$ 135,342.81
CEC		\$ 96,088.00
Half & Associates, Inc.		\$ 33,189.81
Bender Wells Clark Design		\$ -
Terracon - Environmental		\$ 6,065.00
3. 95% Design Phase	90	\$ 79,813.43
CEC		\$ 57,141.00
Half & Associates, Inc.		\$ 18,677.43
Bender Wells Clark Design		\$ -
Terracon - Environmental		\$ 3,995.00
DETAILED DESIGN PHASE TOTAL	360	\$ 548,033.02

CONSTRUCTION PHASE			
1. Bid Phase Services	30		\$ 31,812.36
CEC			\$ 24,777.00
Half & Associates, Inc.			\$ 7,035.36
Bender Wells Clark Design			\$ -
Terracon - Environmental			\$ -
2. Construction Phase Services	365		\$ 66,969.00
CEC			\$ 66,969.00
Half & Associates, Inc.			\$ -
Bender Wells Clark Design			\$ -
Terracon - Environmental			\$ -
3. Project Close Out	30		\$ 19,592.00
CEC			\$ 19,592.00
Half & Associates, Inc.			\$ -
Bender Wells Clark Design			\$ -
Terracon - Environmental			\$ -
CONSTRUCTION PHASE TOTAL	425		\$ 118,373.36
DETAILED DESIGN PHASE SPECIFIED ADDITIONAL SERVICES			
1. LOMR Survey Services	CEC		\$ 25,000.00
2. Engineering Services - LOMR	Half		\$ 50,000.00
3. Enhancement/Landscape Plan	BWCD; CEC; JQ		\$ 50,000.00
4. Subsurface Utility Engineering (SUE)	Half		\$ 25,000.00
5. Tree Mitigation Services	Terracon		\$ 50,000.00
6. Geotechnical Engineering Services	Terracon		\$ 15,000.00
7. Structural Design Services	Jaster Quintanilla		\$ 50,000.00
DETAILED DESIGN PHASE SPECIFIED ADDITIONAL SERVICES TOTAL		\$	265,000.00
GRAND TOTAL	785	\$	931,406.38

Barbara Drive SA-3

Estimated Level of Effort

CEC Fee Proposal

TASK CODE AND DESCRIPTION	Units	Principal		Sr. Project Manager		Senior Engineer		Project Manager		EIT I		EIT II		EIT III		Tech I		Tech II		Admin/Coord		Survey Dept. Head		Survey Crew-3 man		Survey Crew-4 man		Survey Tech		Abstract or		Construct		Project Surveyor		TASK	
		HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$	HOURS	\$
1. 40% Design		0	57	0	141.5	191	0	332	0	463	0	108.00	\$38.00	332	0	463	0	108.00	\$38.00	332	0	463	0	330	0	204.00	\$204.00	330	0	204.00	\$204.00	330	0	204.00	\$204.00	1894.5	\$217,004.00
01. Initial Scope Meeting, Technical Memorandum, and Project Management																																					
01.010 Prepare Design Summary Report and Attend Initial Scoping Meeting		1	8	2	4																																
01.020 Prepare Technical Memorandum - Prepare and assemble		8	15																																		
01.030 1.8M Analysis/Modeling for Open Channel Concept																																					
01.040 0.010 Preliminary Drainage Design		2	4	10	20																																
01.050 0.020 Determine Real Estate Acquisition Needs		1	4	10	20																																
01.060 0.040 Identify Utility Impacts and Easement Needs		2	4	4	20																																
01.070 0.050 Environmental Studies (coordination and permitting requirements)		2	4	4	20																																
01.080 0.060 Develop Concepts for Green Space / Enhancement features		2	4	4	20																																
01.090 Project Management																																					
01.090.010 Prepare Project Schedule		1	4																																		
01.090.020 Project Involving and Progress Report		4	4																																		
01.090.030 Coordinate with Project Design Team		8	20																																		
02. Right of Way Surveying																																					
02.010 Acquire Ownership Information																																					
02.020 Prepare Right of Entry Assumptions 28 needed pre-acquisition																																					
02.030 Survey Apparent ROW (Barbara Dr, Shannon Lst, and Skipped Dr from Barbara to Olmos Golf Course)																																					
03. Geographic Surveying / Data Mapping																																					
03.010 Establish or Re-establish Primary Project Control																																					
03.020 Establish Secondary Project Control																																					
03.030 Set Project Control on baseline (100' interval)																																					
03.040 Survey topographic features		1	2	2	2																																
03.050 Survey Cross sections as follows (only where ROW can be secured):		1	2	2	2																																
03.060 Secure utility maps																																					
03.070 Survey Utility Level C Locals																																					
03.070.010 Survey Utility Level C Locals																																					
03.070.020 Survey Utility Level C Locals																																					
03.070.030 Survey Utility Level C Locals																																					
03.070.040 Survey Utility Level C Locals																																					
03.070.050 Survey Utility Level C Locals																																					
03.070.060 Survey Utility Level C Locals																																					
03.070.070 Survey Utility Level C Locals																																					
03.080 Survey Ties																																					
03.090 Survey Bridges and Structures - Not Used																																					
03.100 Develop Project Layout Sheets w/Survey Control Points																																					
03.110 Stake Storm Drain Outfall Alignment (Coordinate with Environmental Division)																																					
04. Roadway Design																																					
04.010 Establish Typical Sections																																					
04.020 Develop Horizontal Roadway Alignments																																					
04.030 Develop Roadway Profiles																																					
04.040 Develop Plan and Profile sheets																																					
05. Hydraulic & Hydraulic Analysis																																					
Not Used																																					
06. Drainage Design																																					
06.010 Storm Drainage Facilities - NOT USED																																					
06.020 Culverts - Obata Dr. and Barbara Dr. (East of McCullough Ave)																																					
06.020.010 Prep Plan & Profile Sheets - box culvert structures, cross drainage culverts																																					
06.020.020 Prepare Hydraulic Data Sheets as required																																					
06.030 Channels																																					
06.030.010 Prepare Typical Section and Plan & Profile Sheets for Channel																																					
06.030.020 Prepare Grading Plans and Detail Sheets																																					
06.040 SWAP Plans and Details																																					
06.040.010 Prepare SWAP Narrative																																					
07. Pavement Design																																					
07.010 Grate technical engineering and pavement design - review addit needs																																					
08. Prepare Cross Sections																																					
08.010 Roadway Cross Sections																																					
08.020 Channel Cross Sections																																					
08.030 Box Culvert Excavation Cross Sections																																					

Barbara Drive SA-3
Estimated Level of Effort
CEC Fee Proposal

	Principal	Sr. Project Manager	Senior Engineer	Project Manager	Project Engineer	EIT I	EIT II	EIT III	Senior Designer	Admin/C	Survey Dept. Head	Survey Crew-3 men	Survey Crew-4 men	Survey Tech	Abstract or	Construction Rep	Project Supervisor		
	\$230.00	\$180.00	\$165.00	\$150.00	\$130.00	\$88.00	\$88.00	\$108.00	\$85.00	\$83.00	\$60.00	\$198.00	\$204.00	\$230.00	\$93.00	\$95.00	\$145.00		
09. Utility Coordination / Management																			
09.010. Update Utility Basemap to extend to the limits of the project area																			
09.020. Perform Utility Coordination (Section 5.0 of the DGM) as follows:																			
09.020.010. Send notice to all utility owners requesting block/system maps, including the project scope and a project location map.																			
09.020.020. Identify apparent utilities in the project vicinity and surrounding area by topographic survey, field investigation, by requested marking on the ground and by available record search.																			
09.020.030. Prepare Initial Utility Basemap Layout (Quality Level C) sufficient to identify all utilities in the project vicinity and distribute to all utility companies for review and comments/verification.																			
09.020.040. Conduct Utility Kickoff Coordination Meeting to discuss project scope, schedule and to discuss Utility owner's comments on the Utility Basemap Layouts.																			
09.020.050. Compare utility locations to proposed project and assess conflicts.																			
09.020.060. Insert utilities into preliminary roadway and drainage cross sections and profiles to show vertical locations of existing utilities.																			
09.020.070. Conduct initial utility conflict analysis for SANIS water and sewer, CPs gas, and all other utilities affected by the project. Identify potential conflicts in the Utility Conflict Matrix.																			
09.020.080. Prepare Initial List of SUE needs for the project required to fully characterize utilities with potential High Impact on the project.																			
09.020.090. Initiate coordination for design of all utilities that may require relocation and conduct 2nd Utility Coordination Meeting. Prepare Minutes And Distribute																			
09.020.100. Optimize street and drainage design to minimize/avoid conflicts with utilities.																			
09.020.110. Recommend/Assign Utility Alignments for all affected utilities.																			
09.020.120. Prepare and provide Utility Coordination report for the Project, attaching utility conflict matrix, phone log, letters, responses, emails and other correspondence related to the Utility Coordination Task.																			
10. Other Plans																			
10.010. General Sheets-Title, Index, Project Layout, Gen Notes, Summary of Est Quantities																			
10.040. Prepare Construction Sequencing Plan																			
10.040.010. Construction Phasing Typical Sections																			
10.040.020. Construction Phasing and Sequence of Work																			
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12. Other Meetings and Coordination (including meeting minutes)																			
12.010. Public Meetings																			
12.010.010. Attend Public Meetings (6) and prepare meeting exhibits																			
12.010.020. Address public comments and record changes requested by citizens/business owners submit meeting minutes and Q&A list																			
12.020. Complete Streets Public Meeting and Field Analysis Checklist - N/A																			
12.030. Technical Memorandum Review																			
12.040. 40% Plans Review Meeting																			
13. Cost Estimating																			
13.010. Prepare and/or Update Opinion of Probable Construction Costs																			
14. Milestone Plan Submittals																			
14.010. Assemble Milestone Plan Submittals/Deliverables																			
14.010.010. Prepare Milestone Checklist for 40%																			
14.010.020. Prepare Project Design Summary Report																			
14.010.030. Prepare Written Responses to All Previous Comments																			
14.010.040. Perform Q&A/CC and Complete Certification Form																			
14.010.050. Assemble and Submit Plan Deliverables																			
2. 70% Design																			
0 41 0 119.5 133 0 205 0 348 0 24 8 0																			

Barbara Drive SA-3

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Barbara Drive SA-3

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Barbara Drive SA-3

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Barbara Drive SA-3

Estimated Level of Effort

CEC Fee Proposal

	Principal	Sr. Project Manager	Senior Engineer	Project Manager	Project Engineer	EIT I	EIT II	EIT III	CDOP Tech I	CDOP Tech II	Senior Designer	Admin/Coordinator	Survey Dept. Head	Survey Crew-3 men	Survey Crew-4 men	Survey Tech	Abstract or	Construction Rep.	Project Surveyor		
	\$220.00	\$180.00	\$165.00	\$150.00	\$133.00	\$88.00	\$59.00	\$108.00	\$85.00	\$83.00	\$110.00	\$60.00	\$158.00	\$204.00	\$230.00	\$93.00	\$75.00	\$95.00	\$145.00		
CONSTRUCTION PHASE																					
1. Bid Phase Services																					
15.020 Finalize and Submit 100% Plans including Joint Bid Utilities (3 bound sets and PDF)	0	4	0	46	78	0	37	0	24	0	0	18	0	0	0	0	0	0	0	207	
15.020 Finalize and Submit 100% Project Specifications Book (1 bound set and PDF)							12	6	15		4									35	
15.030 Finalize constructability issues.							2													14	
15.040 Review Utility Conflict Matrix and Address Pending Items, including:							8													21	
15.04010 Address Comments from Reviewers																				0	
15.04020 Resolve outstanding utility coordination issues and provide plan notes.																				0	
15.04030 Finalize outstanding utility issues in the plans and specifications.																				0	
15.04040 Incorporate Proposed Joint Bid Utility Plan into Project.																				0	
15.04050 Update Utility Coordination Report																				0	
15.050 Attend 100% Review Meeting																				0	
15.05010 Finalize review comments and resolution form.																				0	
15.05020 Coordinate w/Construction Inspector and Supervisor																				0	
15.05030 Attend on the meeting with all utilities and pertinent parties as required																				0	
15.05040 Distribute Plans & Specs to Contractors/Plan Rooms, Maintain Plan Holder List.																				0	
15.060 Assist CSEA PM in preparing Advertising Documents																				0	
15.070 Distribute Plans & Specs to Contractors and Plan Rooms, Maintain Plan Holder List																				0	
15.080 Attend Pre-Bid Meeting, prepare and distribute meeting minutes																				0	
15.090 Answer Contractor Questions																				0	
15.100 Prepare and Distribute Necessary Addenda																				0	
15.110 Upload 100% plans, specifications, and addenda to web portal.																				0	
15.120 Attend Bid Opening																				0	
15.130 Bid Tabulation - Evaluate Bids and Provide Recommendation of Award.																				0	
2. Construction Phase Services																					
16.010 Reestablish Project Control Points for Contractor Prior to Construction	0	12	0	202	205	0	40	0	0	4	0	0	0	12	0	2	0	0	1	479	
16.020 Review Contractor Pay Estimates		6	0	24	24	0	0	0	0	0	0	0	0	12	0	2	0	0	1	23	
16.030 Review/Reconcile Change Orders		4	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	
16.040 Review Shop Drawings			0	10	10	0	40													44	
16.050 Respond to RFIs		2	0	10	10	0	0													70	
16.060 Project Site Visits and Reports (Minimum Two Per Month)			0	0	0	0	0													32	
16.070 Participate in Construction Progress Meetings and Prepare Meeting Minutes			0	0	0	0	0													120	
16.080 Final Walkthrough and Punchlist development, submittal to City, and Review			0	0	0	0	0													120	
16.090 TDR Inspection				4	8		15													28	
																				12	
3. Project Close Out																					
17.010 Prepare Record Drawings	0	6	0	20	40	0	48	0	64	0	0	0	0	0	0	0	0	0	0	178	
17.020 Final Warranty Inspection		2	0	4	12	0	12		64		0	0	0	0	0	0	0	0	0	114	
17.030 Assist PM Team with final reconciliation of quantities.		2	0	8	12	0	15													22	
				8	15															42	
TOTAL DETAILED DESIGN PHASE & CONSTRUCTION PHASE SERVICES WITH HOUR BREAKDOWN																					
	0	156	0	606	721	0	786	0	1064	34	109	52	1	362	0	37	1	0	18	0	3847
TOTAL ADDITIONAL SERVICES WITH HOUR BREAKDOWN																					
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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DETAILED DESIGN PHASE SPECIFIED ADDITIONAL SERVICES - To Be Activated as Needed.

18. Additional Survey Services

18.010 Survey ROW - Boundary - NOT USED

18.090 LOMR Surveying (Post Construction) - Estimated Allowance

TOTAL ADDITIONAL SERVICES WITH HOUR BREAKDOWN

**Barbara Drive SA-3
Estimated Level of Effort
Subconsultant: Half Associated, Inc. Fee Proposal**

	Project Manager	Senior Engineer	QA/QC Engineer	Project Engineer III	EF II	Engineering/IS Tech	CAD Tech I	Admin/ Clerical	Survey Dept Head	Survey Manager	Survey Crew 2-Man	Survey Crew 3-Man	Survey Crew 4-Man	Abstractor	
	\$183.50	\$188.00	\$166.95		\$98.44	\$98.20	\$79.00	\$75.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
05. Hydraulic & Hydraulic Analysis															
05.010. H&H Analysis for Existing and Proposed Conditions	2	2	2	24	60	10								0	\$0.00
05.010.010. Update Proposed XPSWMM 2D Model	2	2	2	8	16	8								96	\$1,560.20
05.010.020. Develop an H&H Report														36	\$4,381.24
05.020. Regulatory Coordination															
05.020.010. Determine Limits of FEMA Remapping	2	1	2	2	8	8								21	\$2,032.02
05.020.020. Develop a CLOMR Package for Review	4	2	10	40	16									72	\$8,703.36
12. Other Meetings and Coordination (including meeting minutes)															
12.010. Public Meetings	3	3	3	8										0	\$0.00
12.010.010. Attend Public Meetings (1) and prepare meeting exhibits	2	2	2											14	\$1,713.36
12.050. 70% Plans Review Meeting														4	\$720.90
3. 95% Design	17.00	3.00	35.00	72.00	18.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0	\$18,677.49
01. Initial Scope Meeting, Technical Memorandum, and Project Management															
01.030. Project Management														0	\$0.00
01.030.010. Prepare Project Schedule														0	\$0.00
01.030.020. Project Invoicing and Progress Report	2	4	4	4										10	\$1,357.20
01.030.030. Coordinate with Project Design Team	4	8	8											12	\$2,056.60
05. Hydraulic & Hydraulic Analysis															
05.010. H&H Analysis for Existing and Proposed Conditions	1	2	10	40										53	\$6,786.60
05.010.010. Update Proposed XPSWMM 2D Model	1	1	4	16										30	\$3,300.94
05.010.020. Develop an H&H Report														0	\$0.00
05.020. Regulatory Coordination														0	\$0.00
05.020.010. Determine Limits of FEMA Remapping	4	4	16	8										32	\$3,722.44
05.020.020. Develop a CLOMR Package for Review														0	\$0.00
12. Other Meetings and Coordination (including meeting minutes)															
12.010. Public Meetings	3	3	3	8										0	\$0.00
12.010.010. Attend Public Meetings (1) and prepare meeting exhibits														8	\$1,257.72
12.010.020. Address public comments and record changes requested by citizens/business owners; submit meeting minutes and Q&A list														0	\$0.00
12.060. 95% Plans Review Meeting	2	2	2											4	\$720.90
CONSTRUCTION PHASE															
1. Bid Phase Services	8.00	2.00	8.00	24.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58	\$7,035.36
15.050. Attend 100% Review Meeting														0	\$0.00
15.050.010. Finalize Review comments and resolution form.	8	2	8	24	16									58	\$7,035.36
TOTAL DETAILED DESIGN PHASE & CONSTRUCTION PHASE SERVICES WITH HOUR BREAKDOWN	91	33	255	732	148	8	20	0	0	0	0	0	0	787	\$153,840.38

**Barbara Drive SA-3
Estimated Level of Effort
Subconsultant: Half Associated, Inc. Fee Proposal**

	Project Manager \$193.50	Senior CAD/OC Engineer \$169.00	Project Engineer III \$166.95	EST II \$98.44	Engineering/GS Tech \$88.20	CAD Tech I \$79.00	Asst. Chief \$75.60	Survey Right of Way \$0.00	Survey Manager \$0.00	Survey Crew 24Men \$0.00	Survey Crew 34Men \$0.00	Survey Crew 44Men \$0.00	Aspirator \$0.00
DETAILED DESIGN PHASE SPECIFIED ADDITIONAL SERVICES - To Be Activated as Needed.													
18. Additional Survey Services													
18.010. Survey ROW													
18.010.010. Boundary Survey													
18.020. Monument ROW													
18.030. Prepare ROW Map													
18.040. Preparation of Plats and Field Notes of parcels to be acquired													
18.050. Flag or Set New Corners													
18.060. LOMR Surveying (Post Construction)													
19. Additional Engineering Services													
19.010. Subsurface Utility Engineering (SUE)													
19.010.010. SUE Coordination													
19.010.020. Quality Level A													
19.010.030. Quality Level B													
19.020. Structural Design Services													
19.020.010. Prepare Retaining Wall Plans and Details													
19.030. Tree Mitigation													
19.040. Prepare LOMR Package for Submittal to FEMA													
TOTAL ADDITIONAL SERVICES WITH HOUR BREAKDOWN	0	0	0	0	0	0	0	0	0	0	0	0	\$0.00

**Barbara Drive SA-3
Estimated Level of Effort
Subconsultant: Terracon Consultants, Inc. Fee Proposal**

TASK CODE AND DESCRIPTION	Principal		Senior Project Manager		Senior Engineer		Senior Scientist		Project Engineer		Project Scientist		Project Geologist		Staff Engineer		Staff Geologist		Staff Scientist		Field Engineer		Field Geologist		Field Scientist		Sr. CAD/GIS Operator		Sr. CAD/GIS Assistant		Office Clerk		TASK HOURS	TASK /PHASE FEE																															
	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS	HOURS	UNITS																																	
DETAILED DESIGN PHASE																																																																	
1. 40% Design																																	0	6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	\$12,785.00
01. Initial Scope Meeting, Technical Memorandum, and Project Management																																																																	
01.010. Prepare Design Summary Report and Attend Initial Scoping Meeting																																																																	
01.020. Prepare Technical Memorandum																																																																	
01.020.010. H&I Analysis/Modeling for Open Channel Concept																																																																	
01.020.020. Preliminary Drainage Design																																																																	
01.020.030. Determine Real Estate Acquisition Needs																																																																	
01.020.040. Identify Utility Impacts and Easement Needs																																																																	
01.020.050. Environmental Studies (coordination and permitting requirements)																																																																	
01.020.060. Develop Concepts for Green Space/Enhancement Features																																																																	
01.20.060.010. Prepare one rendered site plan and additional sketches of a limited number (maximum 4) of specific enhancement elements such as trail, seating, play areas, etc. for inclusion in the Technical Memorandum prepared by CEC																																																																	
01.030. Project Management																																																																	
01.030.010. Prepare Project Schedule																																																																	
01.030.020. Project Invoicing and Progress Report																																																																	
01.030.030. Coordinate with Project Design Team																																																																	
11. Environmental / Permitting (Coordination, Studies and Design)																																																																	
11.010. General Environmental Coordination																																																																	
11.010.010. Coordinate and support CSA Environmental Management Division (EMD) per Section 8 and Appendix 8 of the DGM.																																																																	
11.010.020. Incorporate any environmental information provided by the EMD into the design plans (i.e. mitigation features, environmental areas of concern, etc).																																																																	
11.010.030. Provide design detail information that may be required to complete environmental processes and permitting (i.e. area of concern quantity calculations and layouts).																																																																	
11.010.040. Realize all environmental coordination and provide necessary design information to complete special specifications																																																																	
11.010.050. Incorporate EPC Sheet provided by EMD																																																																	
11.010.060. Provide complete package of environmental special specifications, environmental permitting, special notes, and EPC sheet for EMD Review and final approval.																																																																	
11.020. Review Project and determine other Permitting Requirements																																																																	
11.030. Prepare Tree Permit																																																																	
11.030.010. Prepare Tree Inventory/Preservation Plans Details																																																																	
11.030.020. Tree Inventory. Prepare tree permit application and secure tree permit. These services do not include tree planting for mitigation. Any landscaping design is beyond the scope of these basic services.																																																																	
11.030.030. Coordinate with CSA Arborist																																																																	
12. Other Meetings and Coordination (including meeting minutes)																																																																	
12.020. Public Meetings																																																																	
12.010.010. Attend Public Meeting (3) and prepare meeting exhibits																																																																	
12.010.020. Address public comments and record changes requested by citizens/business owners; submit meeting minutes and O&A list																																																																	
12.020. Complete Streets Public Meeting and Field Analysis Checklist																																																																	
12.030. Technical Memorandum Review																																																																	

Barbara Drive SA-3
Estimated Level of Effort
Subconsultant: Terracon Consultants, Inc. Fee Proposal

Estimated Level of Effort

																		Principal	Senior Manager	Senior Project Engineer	Senior Scientist	Project Scientist	Project Geologist	Project Architect	Project Engineer	Staff Geologist	Staff Engineer	Staff Scientist	Field Geologist	Field Scientist	CAD/GIS Operator	Admin Assistant	Clinical																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Subconsultant: Terracon Consultants, Inc. Fee Proposal

TOTAL DETAILED DESIGN PHASE & CONSTRUCTION PHASE SERVICES WITH HOUR BREAKDOWN																		
	0	8	42	0	0	0	0	0	0	10	0	0	117	0	7	0	131	\$22,845.00

[illegible]

Exhibit B

BC 2011-261

STATE OF TEXAS §
 §
COUNTY OF BEXAR §

ENGINEERING SERVICES AGREEMENT

This agreement (the "Agreement") is made and entered into in San Antonio, Bexar County, Texas, between the County of Bexar ("COUNTY"), and **Don Durden Inc., dba Civil Engineering Consultants** ("CONSULTANT"), **11550 IH 10 West, Suite 395, San Antonio, Texas 78230** Engineers duly licensed and practicing under the laws of the State of Texas (also, individually, a "Party" or, collectively, the "Parties").

ARTICLE I
PURPOSE

- 1.01 The purpose of this Agreement is for COUNTY to secure from CONSULTANT the professional engineering services required for **Barbara Drive (SA-3) Project** (the "Project"). The Project Limits run along Tributary A to Airport Tributary from San Pedro Avenue to the concrete outfall channel just east of McCullough Dr.

ARTICLE II
DESIGNATION OF REPRESENTATIVES

- 2.01 COUNTY hereby appoints the Executive Director of the Bexar County Infrastructure Services Department ("COUNTY's Designated Representative"), as its representative under this Agreement. COUNTY's Designated Representative shall be the primary point of contact for CONSULTANT unless the COUNTY's Designated Representative delivers to CONSULTANT a written notice designating another individual to act as COUNTY's Designated Representative.
- 2.02 CONSULTANT hereby appoints **Don Durden** as its designated representative under this Agreement and he is the primary point of contact for County.

ARTICLE III
SERVICES

- 3.01 CONSULTANT shall perform the services stated in Attachment A (Items 1 - 5).
- 3.02 CONSULTANT shall perform the optional services listed in Exhibit 1 under Optional Services (a-b) and described in Attachment A (a-b) if requested by the COUNTY's Designated Representative or his designee. If the Project requires expenditure of funds for Other Services Per County Direction (c on Exhibit 1 under Optional Services), approval shall be obtained from the Executive Director of COUNTY's Infrastructure Services Department and COUNTY's Watershed Program Director.

ARTICLE IV
ADDITIONAL TERMS AND CONDITIONS

- 4.01 CONSULTANT shall not commence work on this Project until it has been notified in writing to proceed. CONSULTANT shall begin work on this Project within ten (10)

calendar days of receiving written notice to proceed.

- 4.02 CONSULTANT, in consideration for the compensation herein provided, shall render the professional services specified in Attachment A, subject to other provisions of this Agreement.
- 4.03 CONSULTANT shall be represented by a registered professional engineer licensed to practice in the State of Texas at all meetings of any official nature concerning the Project, including but not limited to scope meetings, review meetings, pre-bid meetings, and pre-construction meetings.
- 4.04 All documents submitted for review, approval or issuance of a permit shall bear the seal with signature and date adjacent thereto of a registered professional engineer as required by the Texas Engineering Practices Act.
- 4.05 The minimum design standards to be used in all phases shall be the City of San Antonio Unified Development Code, the TXDOT Roadway Design Manual, and the American Association of State Highway and Transportation Officials (AASHTO) Green Book and Roadside Design Guide, in addition to those minimum design standards as stated under Attachment A as appropriate for the most cost effective design.
- 4.06 CONSULTANT shall not be responsible for construction means, methods, techniques, sequences, procedures of construction employed, or safety in connection with the Project; failure or negligence of any contractor, subcontractor, vendor, or other Project participant that is not under a contract with CONSULTANT.
- 4.07 The Parties intend for the City of San Antonio to be a third-party beneficiary to this Agreement.

ARTICLE V

PERIOD OF SERVICE

- 5.01 CONSULTANT shall complete the various phases of work under this Agreement in accordance with the Production Schedule in Appendix "B" of this Agreement. If, upon the review of phase work, corrections, modifications, alterations, or additions are required of CONSULTANT by COUNTY to achieve conformance to the requirements of this Agreement, COUNTY shall provide written notification to CONSULTANT. CONSULTANT shall complete these items before that phase is approved. Calendar days shall be charged for this period when changes are being made.
- 5.02 Upon acceptance and approval of the Preliminary or Detailed Design Phases, the COUNTY's Designated Representative will authorize in writing CONSULTANT to proceed with the next appropriate phase of work. However, if COUNTY elects to terminate or suspend CONSULTANT's efforts at the end of any phase for any reason (see TERMINATION OR SUSPENSION OF WORK, herein below), the total time expended up to that time will be charged against the total allowable time in the same manner as if no delay or suspension had occurred. However, if circumstance dictates, the COUNTY's Designated Representative may authorize extra calendar days or make adjustments to the Production Schedule as is deemed necessary to complete the required design.

- 5.03 If CONSULTANT fails to furnish the completed work, CONSULTANT by the execution of this Agreement acknowledges that COUNTY will sustain damages and hereby agrees to forfeit to COUNTY, as liquidated damages and not as a penalty, an amount for each day beyond the required day for completion and acceptance until actual date of completion and acceptance, as determined by the following schedule with that amount to be withheld and deducted from any amount due or owing CONSULTANT.

Total Compensation Paid Under this Agreement	Amount of Liquidated Damages Per Day
Up to \$ 500,000	\$ 50.00
\$ 500,000 to \$ 1,000,000	\$ 100.00
\$ 1,000,001 to \$ 2,000,000	\$ 150.00
\$ 2,000,001 to \$ 3,000,000	\$ 200.00
\$ 3,000,001 to \$ 4,000,000	\$ 250.00
\$ 4,000,001 to \$ 5,000,000	\$ 300.00
Over \$ 5,000,000	\$ 350.00

CONSULTANT further acknowledges that the amount is fixed and agreed upon by and between the Parties because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages COUNTY would in such event sustain, and COUNTY shall retain that amount. The failure of COUNTY to authorize a subsequent phase of the services for a period in excess of 90 days will be deemed a suspension. Such an event will give CONSULTANT the right to initiate termination activities as provided in this Agreement.

- 5.04 CONSULTANT shall not be responsible for any delay beyond CONSULTANT's reasonable control. Within 30 days from the occurrence of any such event for which time for performance by CONSULTANT should be extended under this provision, CONSULTANT may give written notice thereof to COUNTY stating the reason for such extension and the actual or estimated time thereof. The COUNTY in a reasonable time thereafter shall notify CONSULTANT on whether or not it is granting an extension of time based on such delay.
- 5.05 This Agreement shall remain in force for a period that may reasonably be required for the design, award of contract, and construction of the Project including any extra work and required extension thereto, unless discontinued as provided for elsewhere in this Agreement.

ARTICLE VI

COORDINATION WITH COUNTY AND CITIZENS

- 6.01 CONSULTANT shall hold periodic conference with the COUNTY's Designated Representative or his designee so that the Project shall have the full benefit of COUNTY's experience and knowledge of existing needs and facilities, and be consistent with its current policies and standards. To assist CONSULTANT in this coordination, COUNTY shall make available for CONSULTANT's use in planning and designing the Project all existing plans, maps, field notes, statistics, computations, and other data in its

possession relative to existing facilities and to this particular Project, at no cost to the CONSULTANT. COUNTY shall also furnish in a timely manner all standard sheets and design criteria for the Project. However, any and all such information shall remain the property of COUNTY and shall be returned if CONSULTANT is instructed to do so by the COUNTY's Designated Representative.

- 6.02 The COUNTY's Designated Representative will act on behalf of COUNTY with respect to the work to be performed under this Agreement. He shall have complete authority to transmit instructions, receive information, interpret and define COUNTY's policies and decisions with respect to materials, equipment elements and systems pertinent to CONSULTANT's services.
- 6.03 COUNTY will give prompt written notice to CONSULTANT whenever COUNTY observes or otherwise becomes aware of any defect in the CONSULTANT's services, in the performance of the Contractor, or any development that affects the scope or timing of CONSULTANT's services.
- 6.04 COUNTY and Contractor shall furnish approvals and permits from governmental authorities having jurisdiction over the Project and such approvals and consents from others as may be necessary for the completion of the Project. CONSULTANT will provide COUNTY reasonable assistance in connection with such approvals and permits such as the furnishing of data compiled by CONSULTANT and filling out applications for COUNTY's execution pursuant to other provisions of this Agreement, but shall not be obligated to develop additional data, provide extensive reports or appear at hearings or the like unless compensated in accordance with Appendix "A".
- 6.05 As directed by the COUNTY, CONSULTANT shall prepare necessary materials for use by the COUNTY at public meetings. This work is paid for under Public Involvement Services. Unless otherwise directed by the COUNTY, CONSULTANT will not need to attend public meetings, including HOA meetings, Open Houses, etc. If CONSULTANT is directed in writing by COUNTY to be at a public meeting, CONSULTANT will be paid for his service at the meeting under Other Services Per County Direction under Optional Services.

Any contact with citizens shall be in a courteous and honest manner. All contacts with citizens shall be documented and provided to COUNTY as soon as practical after the contact has been made. If necessary, CONSULTANT shall discuss the issue raised by citizens with COUNTY for a determination of how the issue should be addressed.

ARTICLE VII

FEE SCHEDULE

- 7.01 For and in consideration of the services to be rendered by CONSULTANT in this Agreement, COUNTY shall pay and CONSULTANT shall receive the fee set forth in Exhibit 1, attached to and made a part of this Agreement.

ARTICLE VIII
REVISIONS TO DRAWINGS AND SPECIFICATIONS

- 8.01 CONSULTANT will make without expense to COUNTY any revisions of the preliminary or final drawings, reports or other documents that may be required to meet the Agreement requirements and needs of COUNTY but, after the plans and specifications and other documents have been accepted and approved by COUNTY, any revisions, additions, or other modifications made at COUNTY's request which involves extra services and expense to the CONSULTANT shall be subject to additional compensation at a mutually agreed price set in advance of the alterations; or if no mutual agreement is concluded, then the extra expense and services shall be paid to CONSULTANT as Additional Services in accordance with Appendix "A".

ARTICLE IX
OWNERSHIP OF DOCUMENTS

- 9.01 All documents, including the original drawings, estimates, specifications, field notes and data, will remain the property of COUNTY; however, CONSULTANT shall maintain custody and control of such documents, subject to the following terms and conditions. CONSULTANT shall provide to COUNTY one set of Mylar reproducible and one copy in Adobe Acrobat PDF format of the record drawings and, upon completion of the Project, a copy of all other drawings or work product under this Agreement in hard format and Adobe Acrobat PDF format at no charge. COUNTY will pay CONSULTANT's cost of reproducing any additional copies requested. The Mylar reproducible and copies shall be the property of COUNTY, to be used as COUNTY desires, without restriction; and CONSULTANT specifically waives and releases any proprietary rights or ownership claims therein. However, any re-use by COUNTY of plans prepared pursuant to this Agreement without specific written verification or adaptation by CONSULTANT will be at COUNTY's sole risk and without liability or legal exposure to CONSULTANT. Any such verification or adaptation by CONSULTANT may entitle CONSULTANT to further compensation at rates to be agreed upon by COUNTY and CONSULTANT.
- 9.02 Because data stored on electronic media can deteriorate undetected or be modified, CONSULTANT shall not be held liable for the completeness or accuracy of the electronic data after acceptance by COUNTY. Only the submitted hard copy documents with CONSULTANT's seal on them will be considered instruments of service hereunder. If there is a discrepancy between the electronic files and the hard copies, the hard copies shall govern.

ARTICLE X
TERMINATION AND/OR SUSPENSION OF WORK

- 10.01 Either Party may terminate this Agreement. The terminating Party must issue a signed, written notice of termination to the other Party which shall take effect on the tenth day following that Party's receipt of the notice.

10.02 Procedures CONSULTANT to follow upon Receipt of Notice of Termination issued by COUNTY:

- A. Upon receipt of a notice of termination and prior to the effective date of the termination, CONSULTANT shall, unless the notice otherwise directs, immediately begin the phase-out and discontinuance of all services in connection with the performance of this Agreement and shall proceed to promptly cancel all existing orders and contracts insofar as such orders and contracts are chargeable to this Agreement. Within 30 days after receipt of the notice of termination CONSULTANT shall submit a statement, showing in detail the services performed under this Agreement prior to the effective date of termination.
- B. Copies of all completed or partially completed specifications and reproducible of designs and plans prepared under this Agreement prior to the effective date of termination shall be delivered to COUNTY as a pre-condition to final payment. These documents shall be subject to the restrictions and conditions set forth in 9.01 and 9.02 above. If CONSULTANT for any reason does not complete all services contemplated in this Agreement, CONSULTANT cannot be responsible for the accuracy, completeness or workability of the documents prepared by CONSULTANT if used, changed or completed by the COUNTY or by another party.
- C. Upon the above conditions being met, COUNTY shall promptly pay CONSULTANT that portion of the prescribed fee which the services actually performed under this Agreement bear to the total services called for under this Agreement, less previous payments of the fee.
- D. Failure by CONSULTANT to submit the statement and documents as required above shall constitute a waiver by CONSULTANT of any and all rights or claims to collect monies that CONSULTANT may rightfully be entitled to for services performed under this Agreement.

10.03 Procedures CONSULTANT to follow upon Receipt of Notice of Suspension if issued by COUNTY:

- A. Upon receipt of a notice of suspension and prior to the effective date of the suspension, CONSULTANT shall, unless the notice otherwise directs, immediately begin to phase-out and discontinue all services in connection with the performance of this Agreement and shall proceed to promptly cancel all existing orders and contracts insofar as such orders and contracts are chargeable to this Agreement.
- B. CONSULTANT shall prepare a statement showing in detail the services performed under this Agreement prior to the effective date of suspension.
- C. Copies of all completed or partially completed designs, plans and specifications prepared under this Agreement prior to the effective date of suspension shall be prepared for possible delivery to COUNTY but shall be retained by CONSULTANT until such time as CONSULTANT may exercise the right to terminate.

D. During the period of suspension, CONSULTANT shall have the option to at any time submit the above referenced statement to COUNTY for prompt payment of that portion of the prescribed fee which the services actually performed under this Agreement bear to the total services called for under this Agreement, less previous payments of the fee.

10.04 In the event that CONSULTANT exercises his right to terminate, within 30 days after receipt by COUNTY of CONSULTANT's notice of termination, CONSULTANT shall submit (if he has not previously done so) the above-referenced statement showing in detail the services performed under this Agreement prior to the effective date of suspension.

10.05 Additionally, the above-referenced copies of documents shall be delivered to COUNTY as a pre-condition to final payment.

10.06 Upon the above conditions being met, COUNTY shall promptly pay CONSULTANT that portion of the prescribed fee which the services actually performed under this Agreement bear to the total services called for under this Agreement, less previous payments of the fee.

10.07 Failure by CONSULTANT to submit the statement and documents as required above shall constitute a waiver by CONSULTANT of any and all rights or claims to collect monies that CONSULTANT may rightfully be entitled to for services performed under this Agreement.

ARTICLE XI

CONSULTANT'S WARRANTY

11.01 CONSULTANT warrants that he has not employed or retained any company or person other than a bona fide employee working solely for CONSULTANT, to solicit or secure this Agreement, and that he has not for the purpose of soliciting or securing this Agreement paid or agreed to pay any company or person, other than a bona fide employee working solely for CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this Agreement.

ARTICLE XII

EQUAL EMPLOYMENT OPPORTUNITY/MINORITY

BUSINESS ENTERPRISE

12.01 CONSULTANT agrees not to engage in employment practices which have the effect of discriminating against any employee or applicant for employment and will take affirmative steps to ensure that applicants are employed and employees are treated during employment without regard to their race, color, religion, national origin, sex, age, handicap, or political belief or affiliation.

ARTICLE XIII
SUBCONTRACT

13.01 All subcontracts for the performance of CONSULTANT'S obligations under this Agreement must contain the insurance and indemnity requirements imposed on CONSULTANT in Articles 14 and 15 below.

ARTICLE XIV
INSURANCE

14.01 CONSULTANT shall procure, pay for, and maintain during the term of this Agreement:

- a) Commercial general liability insurance of ONE MILLION DOLLARS (\$1,000,000.00), aggregate coverage, with ONE MILLION DOLLARS (\$1,000,000.00) for bodily injury, each occurrence, and ONE MILLION DOLLARS (\$1,000,000.00) for property damage, each occurrence. COUNTY and City of San Antonio (COSA) shall be named as additional insureds on this policy.
- b) Automobile liability insurance of ONE MILLION DOLLARS (\$1,000,000.00), aggregate coverage, with ONE MILLION DOLLARS (\$1,000,000.00) for bodily injury, each occurrence, and ONE MILLION DOLLARS (\$1,000,000.00) for property damage, each occurrence. COUNTY and COSA shall be named as additional insureds on this policy.
- c) Professional Liability Errors and Omissions insurance of ONE MILLION DOLLARS (\$1,000,000.00) each claim and ONE MILLION DOLLARS (\$1,000,000.00) aggregate. In the event of cancellation or termination, the policy shall have an Extended Reporting Period (or tail coverage) extending for a minimum of two years following immediately upon the effective date of the policy termination.
- d) Statutory worker's compensation insurance for all of CONSULTANT's employees with a waiver of subrogation in favor of COUNTY and COSA.
- e) CONSULTANT shall provide COUNTY with Certificates of Insurance prior to the execution of this Agreement evidencing that the stated coverages have been obtained and endorsements from the insurers that COUNTY has specifically been provided all protection required under this article. Upon request by COUNTY, CONSULTANT shall provide copies of all policies related to the Project.

14.02 CONSULTANT is responsible for all premiums and deductibles under all of the insurance policies required by these specifications.

14.03 CONSULTANT shall be responsible for obtaining Certificates of Insurance from the subconsultants, and upon request, furnish copies to COUNTY.

- 14.04 When there is a cancellation, non-renewal or material change in coverage which is not made pursuant to a request by County, CONSULTANT shall notify COUNTY of such and shall give such notices not less than thirty (30) days prior to the change, if CONSULTANT knows of said change in advance, or ten (10) days notice after the change, if CONSULTANT did not know of the change in advance. Such notice must be accompanied by a replacement Certificate of Insurance. All notices shall be given to COUNTY at the following address:

Bexar County Risk Manager
Bexar County Auditor's Office
101 W. Nueva Street, Suite 800
San Antonio, Texas 78205

- 14.05 If CONSULTANT fails to maintain the aforementioned insurance, or fails to secure and maintain the aforementioned endorsements, COUNTY may obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under this Agreement; however, procuring of said insurance by COUNTY is an alternative to other remedies COUNTY may have, and is not the exclusive remedy for failure of CONSULTANT to maintain said insurance or secure such endorsement. In addition to any other remedies, COUNTY may have upon CONSULTANT's failure to provide and maintain any insurance or policy endorsements to the extent and within the time herein required, COUNTY shall have the right to order CONSULTANT to stop work hereunder, and/or withhold any payment(s) which become due hereunder until CONSULTANT demonstrates compliance with the requirements hereof.
- 14.06 Nothing herein contained shall be construed as limiting in any way the extent to which CONSULTANT may be held responsible for payments of damages to persons or property resulting from CONSULTANT's or its subconsultant's performance of the work covered under this Agreement.
- 14.07 It is agreed that CONSULTANT's insurance shall be deemed primary with respect to any insurance or self-insurance carried by County for liability of CONSULTANT arising out of operation under this Agreement.

ARTICLE XV

INDEMNIFICATION

- 15.01 **CONSULTANT AGREES TO INDEMNIFY AND HOLD HARMLESS COUNTY AND CITY OF SAN ANTONIO AND THEIR ELECTED OFFICIALS, EMPLOYEES, REPRESENTATIVES, AND AGENTS (INDIVIDUALLY AND COLLECTIVELY AN "INDEMNIFIED PARTY") FROM AND AGAINST ANY AND ALL COSTS, LIABILITY, CLAIMS, LIENS, DAMAGES, LOSSES, EXPENSES, FEES, INCLUDING REASONABLE ATTORNEY FEES AND DEFENSE COSTS, FINES, PENALTIES, PROCEEDINGS, ACTIONS, DEMANDS, CAUSES OF ACTION, LIABILITY AND SUITS OF ANY KIND AND NATURE, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY OR DEATH, AND PROPERTY DAMAGE MADE UPON THE INDEMNIFIED PARTY ARISING OUT OF, RESULTING FROM, OR RELATED TO THE NEGLIGENT ACTS, ERRORS OR OMISSIONS OF CONSULTANT, INCLUDING ITS EMPLOYEES, OFFICERS, AGENTS AND SUBCONSULTANTS OR SUBCONTRACTORS WHILE IN**

THE PERFORMANCE OF CONSULTANT'S SERVICES UNDER THIS AGREEMENT. COUNTY AND CITY OF SAN ANTONIO SHALL HAVE THE RIGHT, AT ITS OPTION AND ITS OWN EXPENSE, TO PARTICIPATE IN SUCH DEFENSE WITHOUT RELIEVING CONSULTANT OF ANY OF ITS OBLIGATIONS UNDER THIS SECTION. CONSULTANT SHALL INDEMNIFY THE INDEMNIFIED PARTY AGAINST ANY CLAIMS THAT EQUIPMENT OR PROCESSES SPECIFIED FOR THE PROJECT VIOLATE COPYRIGHTS, PATENTS, LICENSES OR OTHER PROTECTED RIGHTS. CONSULTANT SHALL PROMPTLY ADVISE THE INDEMNIFIED PARTY IN WRITING OF ANY CLAIM OR DEMAND AGAINST THE CONSULTANT OR THE INDEMNIFIED PARTY WHICH RELATES TO OR ARISES OUT OF THE CONSULTANT'S ACTIVITIES UNDER THIS AGREEMENT. NOTHING IN THIS SECTION SHALL BE INTERPRETED TO CONSTITUTE A WAIVER OF ANY GOVERNMENTAL IMMUNITY AVAILABLE UNDER TEXAS LAW OR ANY AVAILABLE DEFENSES UNDER TEXAS LAW. THE PROVISION OF THIS ARTICLE XV ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND NOT INTENDED TO AND DO NOT CREATE OR GRANT ANY RIGHTS, CONTRACTUALLY OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY.

ARTICLE XVI SEVERABILITY

- 16.01 If for any reason, any one or more paragraphs of this Agreement are held invalid, that holding shall not affect, impair or invalidate the remaining paragraphs of this Agreement but shall be confined in its operations to the specific section, sentences, clauses or parts of this Agreement held invalid and invalidity of any section, sentence, clause or parts of this Agreement in any one or more instance shall not affect or prejudice in any way the validity of this Agreement in any other instance.

ARTICLE XVII ESTIMATES OF COST

- 17.01 CONSULTANT shall use unit prices provided by COUNTY for the estimates of construction cost. CONSULTANT in coordination with COUNTY will develop unit prices not available from COUNTY. CONSULTANT cannot and does not guarantee that proposals, bids or the construction cost will not vary from opinions of probable cost prepared by CONSULTANT.

ARTICLE XVIII ENTIRE AGREEMENT

- 18.01 This Agreement which incorporates Attachment A, Exhibit 1, and Appendix A and B represents the entire and integrated agreement between the Parties and supersedes all prior negotiations, representations, or agreements, either oral or written. This Agreement may be modified only by written instrument signed by both Parties. If there is an express conflict between or among the provisions of this Agreement and Attachment A, Exhibit 1, and Appendix A and B, the order of precedence is as follows:

- a) terms and conditions of this Agreement;

- b) Exhibit 1, and Appendix A and B; and
- c) Attachment A.

ARTICLE XIX

NOTICES

19.01 All notices provided to be given under this Agreement shall be in writing and shall either be personally served, documented with written receipt, or given by certified mail or registered mail, return receipt requested, postage prepaid and addressed to the proper party at the address which appears below, or at such other address as the Parties may designate in accordance with this Article. All notices given by mail shall be considered to have been given at the time of deposit in the United States mail and shall be effective from such date

If to COUNTY: Bexar County Judge
Bexar County Commissioners Court
Paul Elizondo Tower
101 W. Nueva Street, Suite 1019
San Antonio, Texas 78205

With copies to: Bexar County Executive Director of
Infrastructure Services
233 N. Pecos, Suite 420
San Antonio, Texas 78207

If to CONSULTANT: Civil Engineering Consultants
11550 IH10 West, #395
San Antonio, Texas 78230
Attn: Don Durden, PE

If to COSA Director of Public Works
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

With a copy to: City Clerk
City of San Antonio
P.O. Box 839966
San Antonio, Texas 78283-3966

ARTICLE XX

LAW GOVERNING

20.01 This Agreement, and all claims, disputes or other matters in controversy between the Parties will be governed by, and construed in accordance with, the laws of the State of Texas. All obligations of the Parties created hereunder are performable in Bexar County, Texas, and

exclusive venue shall lie in Bexar County, Texas.

**ARTICLE XXI
AMENDMENT**

21.01 No amendment, modification, or alteration of the terms of this Agreement will be binding unless it is in writing, dated subsequent to the date of this Agreement, and be duly executed by the Parties.

**ARTICLE XXII
ASSIGNMENT OF INTEREST**

22.01 CONSULTANT shall neither assign nor transfer its interest in this Agreement nor delegate any duty or obligation required by this Agreement, except as reflected in the Proposal, without the COUNTY's written consent. A change of more than thirty percent (30%) (cumulatively during the term of this Agreement) of the ownership of CONSULTANT's business entity will be deemed to be an assignment of the Agreement, which would give COUNTY the right to terminate this Agreement. CONSULTANT shall immediately notify COUNTY of any change of ownership of ten percent (10%) or greater during the term of this Agreement.

22.02 In the event of an assignment by CONSULTANT to which COUNTY has consented in writing, the assignee, or the assignee's legal representative, must agree in writing with COUNTY to assume, perform, and be bound by the covenants, conditions, and obligations contained in this Agreement.

EXECUTED THIS 26th DAY OF July, 2011, IN DUPLICATE ORIGINALS, EACH OF WHICH SHALL HAVE THE FULL FORCE AND EFFECT OF AN ORIGINAL.

COUNTY OF BEXAR

BY:


NELSON W. WOLFF
County Judge

ATTEST:

BY:


GERARD C. RICKHOFF
County Clerk

CONSULTANT

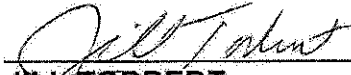
BY:


DON DURDEN, P.E.
President

APPROVED AS TO LEGAL FORM:

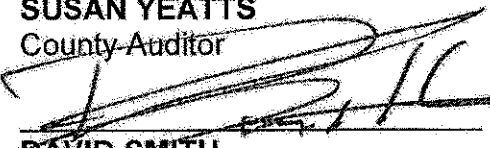
SUSAN D. REED

Criminal District Attorney
Bexar County, TX

BY: 
JILL TORBERT
Assistant District Attorney
Civil Section

APPROVED AS TO FINANCIAL CONTENT:

BY: 
SUSAN YEATTS
County Auditor

BY:  AKS
DAVID SMITH
Executive Director of Planning and
Resources Mgt/Budget Officer

APPROVED:

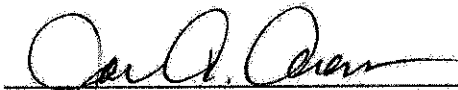
BY: 
JOE A. ACEVES, P.E.
Executive Director of Infrastructure Services

EXHIBIT 1
FEE SCHEDULE FOR PROFESSIONAL SERVICES

SECTION 1
BASIS FOR COMPENSATION:

1.01 Amount of Payment

A. The CONSULTANT shall receive as payment for the work performed under this Agreement the total fee not to exceed \$556,097.33 unless a modification of the Agreement is approved in writing by the COUNTY.

B. The CONSULTANT will be paid for the work performed under this Agreement in accordance with the following schedule:

Preliminary Design Phase

1. Engineering Service	\$350,503.53
2. Survey Services	\$ 95,255.00
3. Geotechnical Services	\$ 28,058.80
4. Environmental/Permitting Services	\$ 3,080.00
5. Public Involvement Services (\$1,000/Meeting)	\$ 1,000.00

Total Preliminary Design Phase Items Not to Exceed \$477,897.33

Detailed Design Phase N/A

Construction Phase N/A

Preliminary Design Phase Optional Services

a) Structural Integrity Investigations	\$ 25,100.00
b) Additional Survey Cross-Sections	\$ 3,100.00
c) Other Services per County Direction	\$ 50,000.00

Total Preliminary Design Phase Optional Services Not to Exceed \$ 78,200.00

1.02 CONSULTANT shall not be paid for any service performed by the COUNTY or services not required to develop this Project.

1.03 Cost for routine photocopy and paper reproduction, cellular phone costs, pager costs and computer time costs will not be paid as a reimbursable but is to be included in the above fees and overhead costs.

- 1.04 If the scope of the Project is substantially increased, CONSULTANT shall be compensated for the increase in effort in accordance with Appendix "A".
- 1.05 CONSULTANT shall not proceed with services listed under 1.01 B until CONSULTANT has received authorization for the specific phase, services and/or optional services from the COUNTY's Executive Director of Infrastructure Services or his designee.

SECTION 2 **CHANGES**

- 2.01 CONSULTANT and COUNTY acknowledge that the fees as determined in paragraph 1.01 above have been established predicated upon the scope of the Project as agreed to by COUNTY and CONSULTANT. Minor changes in scope as determined by the COUNTY will not be cause for renegotiation of the fees or additional services. For additional services, compensation shall be subject to renegotiation in accordance with Appendix "A".
- 2.02 Fees will not be paid where fees are set out in this AGREEMENT but no work is done by CONSULTANT for the work described by the fee.

SECTION 3 **METHOD OF PAYMENTS**

- 3.01 Payment shall be made to CONSULTANT based upon the several Phases as described heretofore and in accordance with the following:

A. Preliminary Design Phase: Payments for this Phase shall be as follows:

- a. Engineering Services: Payments up to the percentage shown below will be payable in monthly installments for this task authorized by COUNTY and shall not exceed the schedule below unless otherwise authorized by COUNTY:

Submittal Percentage	Prior to receipt of submittal, invoices shall not exceed	Upon receipt of submittal and prior to next submittal, invoices shall not exceed
Draft PER 75%	70% of Engineering Services Fee	71 % to 89%
Pre-Final PER 95%	90% of Engineering Services Fee	91% to 95%
100%	100% of Engineering Services Fee	N/A

- b. Survey, Geotechnical, Environmental and Public Meetings: Payments will be payable in monthly installments based on percentage complete for the specific services, surveying, geotechnical, environmental, and public meetings. When payments total 95% of the fee for the specific service, no further payments will be made until the Final Invoice for Engineering Services for this Phase is submitted and approved for payment.

B. Detailed Design Phase: Payments for this Phase shall be as follows:

- a. Engineering Services: Payments up to the percentage shown below will be payable in monthly installments for this task authorized by COUNTY and shall not exceed the schedule below unless otherwise authorized by COUNTY:

Submittal Percentage	Prior to receipt of submittal, invoices shall not exceed	Upon receipt of submittal and prior to next submittal, invoices shall not exceed
40%	30% of Engineering Services Fee	31% to 59%
70%	60% of Engineering Services Fee	61 % to 79%
90%	80% of Engineering Services Fee	81% to 95%
100%	100% of Engineering Services Fee	N/A

- b. Survey, Geotechnical, Environmental and Public Meetings: Payments will be made in monthly installments for all work completed for the following services: surveying, geotechnical, environmental and public meetings. When payments total 95% of the fee for the specific service, no further payments will be made until the Final Invoice for Engineering Services for this Phase is submitted and approved for payment.

C. Construction Phase: Payments for this Phase shall be as follows:

- a. Bid Services: Payments will be payable in monthly installments based on percentage complete for this task as authorized by COUNTY
- b. Construction Services: Payments up to 90% will be made in monthly installments for this Service in proportion to the construction work completed by the Construction Contractor. However, the remaining 10% payment due for this Service will be withheld until such time as the record drawings referenced in Article 9.01 have been furnished, and the final field alteration adjusting quantities have been prepared and submitted by CONSULTANT.

D. Optional Services: Payments will be payable in monthly installments based on percentage complete for those tasks authorized by COUNTY

3.02 No payments to CONSULTANT for additional services as set forth in Appendix "A" will be made after 90 days from date of Project completion unless authorized by the COUNTY's Designated Representative.

- 3.03 CONSULTANT shall be compensated on the basis specified for extra services not included in the Agreement as set forth in Appendix "A", for only those aforementioned field alterations that have been deemed eligible by the COUNTY for compensation, however, CONSULTANT shall not be compensated for field alterations made necessary by CONSULTANT's errors or omissions.
- 3.04 The CONSULTANT may submit a maximum of one invoice voucher per calendar month for work covered under this Agreement. The invoice voucher shall be submitted to the COUNTY. The invoice voucher shall represent the value, to the COUNTY, of the partially completed work as of the date of the invoice. The CONSULTANT shall attach thereto a summary of each pay item in Section 1.01 B of this Exhibit 1, percentage completed and prior payments in a form acceptable to the COUNTY.

SECTION 4
SUBCONTRACTORS

- 4.01 The CONSULTANT shall contract with the following subcontractors for work described in the subcontractors' proposals, dated prior to the execution date of this Agreement and on file with the Bexar County Watershed Program Director, for the amount stated below.

SUBCONTRACTOR	SERVICES	AMOUNT OF PROPOSAL	
Halff Associates, Inc.	Hydrologic & Hydraulic Services Subsurface Utility Engineering	Prelim.	\$148,472.30
		Opt.	\$ 5,240.00
Jaster-Quintanilla San Antonio, LLP	Structural Engineering	Prelim.	\$ 4,200.00
		Opt.	\$ 17,000.00
Terracon Consultants, Inc.	Geotechnical Engineering	Prelim.	\$ 25,508.00

APPENDIX "A"

COMPENSATION FOR ADDITIONAL PROFESSIONAL SERVICES

The fees as described in Exhibit 1 of this Agreement for the Preliminary Design, Detailed Design and Construction Phases of the Project shall provide compensation to CONSULTANT for all services specified under this Agreement to be performed by CONSULTANT or under CONSULTANT's direction except the services as set forth below. These additional services and the compensation to be paid by the COUNTY to CONSULTANT for CONSULTANT's performance when authorized in writing by the COUNTY's Designated Representative or his designee, are set forth as follows:

- A. The basis for compensation for additional services may be in one or more of the following forms:
 - 1. \$100.00 per hour for testimony of principals.
 - 2. Actual salary cost times a multiplier of 2.99 (actual not to exceed 2.99) to adjust for all benefits, overhead and profit with a stated maximum not to be exceeded.
 - 3. Reimbursement of non-labor expense and COUNTY directed subcontract expense at invoice cost plus a 15% service charge to cover all the CONSULTANT's administrative and coordination costs, with a stated maximum not to be exceeded.
 - 4. Lump sum.
 - 5. Lump sum per item of work.
- B. Examples of additional services (not all inclusive):
 - 1. Assistance to the COUNTY as an expert witness in any litigation with third parties, arising from the development or construction of the Project including the preparation of engineering data and reports.
 - 2. Re-staking all destroyed hubs and checking alignment of existing hubs upon authorization by COUNTY representative. Elevations of all hubs shall be reestablished. Re-staking shall be done as required, and a cut sheet based on such re-stake shall be prepared.
 - 3. Preparation of applications and supporting documents for governmental grants, loans or advances in connection with the Project.
 - 4. Preparation or review of environmental assessments and impact statements.
 - 5. Review and evaluation of the effect on design requirements of the Project of any assessments, statements, or documents prepared by others.
 - 6. Assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
 - 7. Revising previously accepted studies, reports, design documents or contract documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes or orders enacted subsequent to the preparation of such studies, reports and documents or are due to causes beyond CONSULTANT's control.

8. Preparing documents for alternate bids requested by the COUNTY; and preparing COUNTY-initiated addenda and delivery expense, when not a part of original bid package.
9. Investigations involving detailed considerations of operations, maintenance and overhead expenses.
10. Providing a Water Pollution Abatement Plan (WPAP) for projects over the Edwards Aquifer Recharge Zone and following through the TNRCC approval process.
11. Preparation of feasibility studies not required in the base Agreement.
12. Cash flow and economic evaluations, rate schedules and appraisals.
13. Detailed quantity surveys of materials, equipment and labor during or after construction phase.
14. Audits or inventories required in connection with construction performed by the COUNTY.
15. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitutions by the COUNTY proposed by Contractor(s); and services after the award of each contract in evaluating and determining the acceptability of an unreasonable or excessive number of substitutions proposed by Contractor.
16. Services involving out-of-town travel required of CONSULTANT.
17. Additional services during construction made necessary by a significant amount of defective or neglected work of Contractor(s).
18. Preparation of operating and maintenance manuals.
19. Additional or extensive assistance after initial startup in the utilization of any equipment or system such as post initial startup testing, adjusting and balancing.
20. Training personnel for operation and maintenance.
21. Services after the completion of the Construction Phase, such as inspections during any guarantee period and reporting observed discrepancies under guarantee called for in any contract for the Project.
22. Actual performance of test borings and other soil or foundation investigations and related analysis.
23. Detailed mill, shop and/or laboratory inspection of materials or equipment.
24. Additional copies of reports, drawings and specifications over the number specified in the Agreement.
25. Providing renderings or models for COUNTY use.
26. Preparation of and submittal of Flood Plain revisions to FEMA.
27. Project aerial mapping if required by the COUNTY beyond requirement of Agreement.
28. Preparation of all documents dealing with 404 permits, highway permits, and railroad agreements.

29. Detailed measurements and surveys for exploration for utilities, if required.
30. Provide a drawing with Metes and Bounds Descriptions that is tied to the County right-of-way strip map for all temporary and permanent easements that may be required.

C. Field Alterations

Except as allowed in Section "B" above for additional services, field alterations shall not affect the design phases or the construction phase fee.

D. Actual Salary Cost

Actual salary cost is defined as the actual cost of salaries of engineers, draftsmen, stenographers, survey crews, clerks, laborers, etc. for time directly chargeable to the Project, as agreed upon as an additional service.

F. Principals of the Consulting Firm

For the purpose of this provision, the Principals of the Consulting Firm and their total hourly charge will be as follows, except as stated previously for testimony as expert witnesses:

- | | |
|---------------------------------|----------------------|
| a) <u>Garland C. Galm, P.E.</u> | <u>\$ 175.00/ hr</u> |
| b) <u>Don Durden, P.E.</u> | <u>\$ 175.00/ hr</u> |

APPENDIX "B"
PROFESSIONAL SERVICES CONTRACT
PRODUCTION SCHEDULE

All work done by CONSULTANT under this Agreement shall be completed and delivered to COUNTY for review and approval, if required, within the following time periods, exclusive of COUNTY review time.

A. Preliminary Design Phase

- a. CONSULTANT shall submit interim deliverables per the Attachment A Preliminary Design Phase based upon the approved Project Schedule.
- b. Preliminary Design Phase 100% deliverable shall be complete within 180 calendar days after receipt of notice to proceed with this Phase.

B. Detailed Design Phase

Submittals for this Phase after receipt of notice to proceed with the project shall be as follows:

- a. CONSULTANT shall submit interim deliverables per the Attachment A Detailed Design Phase based upon the approved Project Schedule.
- b. Detailed Design Phase 100% deliverable shall be complete within N/A calendar days after receipt of notice to proceed with this Phase.

C. Construction Phase

- a. Bid Services complete within 45 calendar days from the date of First Advertisement
- b. Construction Phase services shall be completed within 30 calendar days after the County submits the "Record Drawings" to the Consultant or the date the final claim is submitted by the Contractor, whichever is later.

ATTACHMENT "A"

Barbara Drive SA-3

SCOPE OF SERVICES

Preliminary Design Phase Services

Project Description

The work to be performed under the Agreement shall consist of providing surveying and engineering services required for the Preliminary Design Phase of the Barbara Drive (SA-3) project in Bexar County.

The Project is located in north central Bexar County, generally south of LP 410, east of San Pedro Ave, and west of US 281. The Project consists of three major tasks: 1) Review and evaluate the most current D-FIRM and the modeling on which it is based to determine if the model reflects the drainage areas, associated flood discharges, and other physical features accurately and in sufficient detail to afford a reasonable level of confidence that the D-FIRM is accurate. If the evaluation determines the model is reasonably accurate, no additional modeling of existing conditions will be required; however if the level of detail and/or model accuracy is in doubt, model the existing conditions and determine the extent of the flooding in the project area; 2) Using the results obtained in 1) above, develop a conceptual solution to eliminate flooding of streets and residential structures along Tributary A to Airport Tributary, including the elimination of the low water crossing at the intersection of the existing concrete channel with McCullough Avenue, near Barbara Drive; 3) Preliminary design of:

- a. an underground storm drainage facility to replace the concrete-lined open channel between McCullough and the confluence of the box culverts located approximately 800-ft east of McCullough, and
- b. an underground storm drainage system along McCullough from Barbara Dr. to Sharon St., and
- c. from McCullough, along Barbara Drive, Oblate, Dellwood, Pinewood, and El Montan.

In determining the most feasible method of eliminating flooding of residential structures, the alternative of voluntary and/or involuntary real estate acquisitions shall be evaluated along with storm drainage and roadway reconstruction.

CONSULTANT shall provide the following services in conjunction with the preparation of a Preliminary Engineering Report in accordance with recognized industry standards which are similar in size, scope, and budget to the Project:

CONSULTANT shall provide the following services to prepare a Preliminary Engineering Report in accordance with recognized industry standards which are similar in size, scope, and budget to the Project:

1. Engineering Services

A) Project Initiation – This task shall consist of project initiation activities.

- 1) Project Initiation – Prior to kick-off meeting, the CONSULTANT shall designate, in writing, one Registered Professional Engineer licensed to practice in the State of Texas to be the Project Manager throughout the duration of the Project for project management and all communications, including billing, with the COUNTY and Program Manager. The CONSULTANT shall not replace the designated Project Manager without the written approval of the COUNTY.
- 2) Quality Control/Quality Assurance Plan – The CONSULTANT shall submit a Quality Assurance/Quality Control Plan within 10 calendar days after the kick-off meeting for review and approval. The QA/QC Plan should include, as a minimum, the following:
 - a) Project description, location, limits and minimum design criteria
 - b) Project deliverables and schedules
 - c) Organization chart showing responsibilities for design services and for quality control checks, which shall be conducted by an independent person qualified in the specific area of review
 - d) Communications/coordination plan outlining the protocol for all communications related to the Project
 - e) Format and schedule for checking design reports, calculations, plans, and specifications for accuracy and completeness. The plan should make provisions for review of reports, plans, specifications, and estimates provided by sub-consultants. The CONSULTANT shall ensure that sub-consultant work is in accordance with their approved scope.
 - f) Format and procedure for documenting all issues, design directions, design decisions, review comments, and review comment responses
 - g) Format and procedures for certifying that all of the requirements of the QA/QC plan have been met and that all comments and issues have been resolved to the satisfaction of the reviewer

B) Project Schedule, Invoice, Progress Reports, and Progress Meetings

- 1) Project Schedule – The CONSULTANT shall submit an approved Program format Project Schedule within 10 calendar days after the kick-off meeting.
- 2) Invoice Submittals – The CONSULTANT shall submit to the Program Offices its invoices of services completed and compensation due, arranged by tasks. The invoice submittal shall be submitted to the Program Manager by the 6th

day of each month and include the following:

- a) Invoice – The budgeted and currently authorized amounts for each task, along with the invoiced and to-date amounts on the provided Program invoice forms.
 - b) Project Schedule Updates – An updated Project Schedule and related documents.
 - c) Progress Reports – A monthly report of the status of work performed through the end of the month. The CONSULTANT shall summarize decisions or agreements made, and shall outline unresolved or pending issues requiring the COUNTY's involvement or decision on the provided Program template.
- 3) Kick-off and Progress Meetings – The CONSULTANT shall meet with the Program Manager's Representative as often as necessary, but not less than monthly. The CONSULTANT shall prepare an agenda and sign-in sheet. The agenda must be submitted 24-hours before the meeting. The CONSULTANT shall prepare and distribute meeting minutes within three (3) working days of a meeting.

C) General Project Design Parameters and Criteria

- 1) CONSULTANT shall be represented by a Registered Professional Engineer licensed to practice in the State of Texas at meetings of any official nature concerning the Project, including but not limited to scope meetings, review meetings, pre-bid meetings, and pre-construction meetings, provided that CONSULTANT has reasonable advance notice of the meeting.
- 2) All engineering documents released, issued, or submitted by or for a registered engineering firm, including preliminary documents, must clearly indicate the engineering firm name and registration number. Additionally, all completed documents submitted for final approval or issuance of a permit must bear the seal with signature and date adjacent thereto of a Registered Professional Engineer licensed to practice in the State of Texas associated with CONSULTANT.
- 3) The design standards to be used shall include but not be limited to the City of San Antonio Unified Development Code, City of San Antonio Capital Improvements Management Services Design Guidance Manual and for outside city limit projects the applicable County Design Standards, the TXDOT Roadway Design Manual and Bridge Design Guidelines, TxDOT Hydraulic Design Manual, Highway Capacity Manual, the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets (Green Book), AASHTO Guidelines for Geometric Design of Very Low-Volume Roads (ADT \leq 400), AASHTO LRFD Bridge Design Specifications, AASHTO Guide for the Development of Bicycle Facilities, Texas Manual on Uniform Traffic Control Devices (TMUTCD), ADA Accessibility Guidelines, San Antonio River Basin

Regional Modeling Standards for Hydrology and Hydraulic Models, Bexar County Technical Memorandum IDF Curves, and the Texas Pollutant Discharge Elimination System (TPDES) Guidelines as appropriate for the most cost effective design.

- 4) The minimum drawing standards to be used for construction document preparation include but are not limited to the following:
 - a) the City of San Antonio Capital Improvements Management Services Design Guidance Manual, including latest revisions, unless otherwise directed by the COUNTY.
- 5) The Opinion of Probable Construction Cost estimate (excluding land costs) shall be based on the latest unit prices in Bexar County for similar work and include adjustments to reflect the ease or difficulty of constructing the Project.
- 6) Site visit(s) (Number of visits will vary) shall be conducted in order to evaluate the project area conditions, take photographs of the area, and assess adjacent land use characteristics.
- 7) CONSULTANT shall coordinate with each of the Utility Company Coordinators throughout the Preliminary Design Phase. Unless directed otherwise, the COUNTY shall be present at all meetings with the Utility Companies. In conjunction with each project submittal, CONSULTANT shall deliver to each of the Utility Companies for their review and comment the documents described in b) below. The data shall be submitted to each utility company in a format acceptable to each utility company (e.g., CD, hard copy, email, etc.), provided however that CONSULTANT shall not be required to create any special format beyond that created as a part of its basic scope of work. Some of the work under this section will be performed by Halff Associates as described in the proposal from Halff Associates dated March 10, 2011, on file with the Bexar Watershed Program Director and incorporated by reference herein. (Affected utility companies include, but may not be limited to: SAWS, CPS Energy Electric [aerial, major/minor underground & transmission], CPS Energy Gas, and Telecommunication [AT&T CATV, etc.], Pipelines, etc.)
 - a) CONSULTANT shall compile, maintain, and update a Utility Conflict Log to include phone logs and all correspondence with all utility owners' representatives. Provide the most current copy of the conflict list to the COUNTY at each progress meeting and milestone submittal, and coordinate with utility companies to resolve conflicts. The Utility Conflict Log should include the following information:
 - i. Owner of the facility, including the facility address and the name and telephone number of the contact person at the facility;
 - ii. Location of potential conflict, identified by station and offset;
 - iii. Type of facility;
 - iv. Expected clearance date, if known;

- v. Status of the conflict resolution;
- vi. Effect on construction; and
- vii. Type of adjustment required.

- b) CONSULTANT shall create an existing utility exhibit clearly reflecting existing utility locations, type of facility, and potential conflicts. Utility locations for the PER will be depicted in accordance with Quality Level C.
- c) Consultant shall inquire with each utility company with facilities in the project area regarding their plans for system rehabilitation, replacements, upgrades, etc. and consider those plans in formulation of recommendations for this Project.
- d) CONSULTANT may be required to contract separately with a Utility Company. COUNTY shall be notified and fully involved with the preparation of Scope of Services, associated fee negotiations and preparation of required plans, specifications and estimates for the utility in conjunction with the Project.

If CONSULTANT contracts separately with a Utility Company, CONSULTANT shall provide all work products developed through tasks under this contract to the Utility Company. Tasks include, but are not limited to, utility investigations, existing ROW and easement surveying, and topographic surveying.

- 8) CONSULTANT shall identify necessary documents as required for any design exceptions.

D) Specific Project Design Parameters and Criteria

- 1) Identify permit requirements for each design option, as well as determine permit requirements for the chosen design option for future submittal. Typical permits may include, but are not limited to, WPAP, TDLR, CLOMR, County or City Floodplain Development, ROW, etc. Note (remove note prior to finalizing): this phase does not include any preparation of documents or applications for permitting submittals or any actual submittals to begin the process of obtaining permits. All permits will be obtained during the Design Phase once a final design option is chosen
- 2) A Hydrologic and Hydraulic Study shall be performed and will include as follows:
 - a) DFIRM analysis and modeling of Tributary A to Airport Tributary east of San Pedro Avenue – The existing DFIRM is based on a HECRAS model that reflects incorrect structure sizing, and an insufficient level of detail. In addition to normal hydrologic and hydraulic modeling, Halff Associates will review, correct, enhance and update the current effective model as described in the proposal from Halff Associates, dated May 20, 2011, on file with the Bexar Watershed Program Director and incorporated by reference herein. CEC will review the hydrology and hydraulic results, data, and models submitted for the corrected effective model.

- b) As part of the H&H study, Halff will develop the Energy Grade Line (EGL) elevation for the 100 year storm event at the confluence of the box culverts east of McCullough. If the EGL elevation indicates flooding of nearby residential structures AND if the EGL elevation is a function of inadequate capacity of the existing 3) 12 x 12 box culvert (and not the Olmos Dam Flood Pool), CEC will collaborate with Halff in determining if the EGL is a function of inadequate capacity of the existing 3) 12x12 box culvert (and not the Olmos Dam Flood Pool), and in conferring with the COUNTY to determine an appropriate course of action.

CEC's collaboration with Halff will involve analyzing results of downstream control analysis and corrected effective model and assessing the potential impact on flood plain elevations and extent. Communicating results to Program and discussing recommended approaches to lowering EGL and HGL at confluence. Generating and routing final consolidated set of comments to Halff. Confirming comments are addressed.

c) Flood Control Conveyance

- i. Evaluation of alternatives to enhance the hydraulic capacity of the triple 12x12 box culvert downstream of the confluence - If the analysis of the existing 3) 12x12 box culvert outfall indicates that nearby structures are flooded as a result of inadequate capacity (See Section 1.D)2)), CONSULTANT may evaluate alternatives intended to increase the hydraulic capacity of the underground 3)12x12 culvert. Alternatives that would be evaluated include:

- a) the feasibility of constructing of an additional parallel underground box culvert or pipe culvert
- b) the feasibility of removing the earth on top of the 3) 12x12 box culvert to create an open channel on top of the culvert
- c) the feasibility of removing the existing 3) 12x12 box culvert and replacing it with an adequately sized underground facility

In evaluating these alternatives, the cost of the improvements will be estimated and compared to the cost of purchasing the structures that would be removed the 100 flood by constructing the improvements. Other considerations would be the impact on utilities in the affected area, and the effect of a lowered EGL on the cost of upstream improvements. The analysis will assume that the floor of the box cannot be lowered since doing so would require reconstruction of all or part of the channel between US 281 and the downstream end of the box. This effort will be coordinated with Halff & Associates.

- ii. Development of Flood Control Concepts – Develop and analyze several flood control concepts, and select the three most

promising options to be evaluated for the study area. The study area is from about 1000 feet downstream of McCullough to the end of the current box culverts on El Montan, east of San Pedro. Provide options to Program and Halff for comment.

CEC will collaborate with Jaster Quintanilla regarding a limited analysis regarding structures required in limited rights of way necessary to collect and convey floodwaters within the project area. This limited analysis will be performed by Jaster Quintanilla as described in Category 1 of its proposal dated June 9, 2011.

Review and analyze Halff's initial results for Q100 (ultimate) for the three selected options. Make adjustments and recommend a final drainage configuration for the study area. Provide results of the three studied options along with our recommendation for the preferred option modeling to the Program.

Review and analyze Halff's results of the preferred option for the 2 flows (Q100 and Q5 (ultimate)) and compare to the corrected effective model. Discuss benefits of preferred option. Route to the Program for comments and provide final consolidated set of comments to Halff. Confirm comments are addressed.

Develop Project drainage schematic sheet

- d) H&H Report shall be provided as described in the proposal from Halff Associates, dated May 20, 2011, on file with the Bexar Watershed Program Director and incorporated by reference herein.

3) Roadway Design Controls

a) Grading Design

- i. Establish roadway design criteria for project;
- ii. Prepare preliminary horizontal and vertical alignments and transitions of mainlanes at cross streets.
- iii. Prepare preliminary project location sheets.
- iv. Develop preliminary typical sections for submittal and approval of geometrics. Prepare existing and proposed typical section sheets based on approved typical sections.
- v. Prepare preliminary cross-sections.
- vi. Calculate preliminary earthwork quantities.

b. Local Drainage Design

- i. Prepare preliminary design for a storm drainage system(s) to collect interior street flows and properly discharge said flows. Design of the system shall include establishing drainage design criteria, developing drainage area maps, sizing of storm lines, inlets, etc.

- 4) Prepare a Preliminary Engineering Report. The PER Format shall at a minimum conform to the standard Preliminary Engineering Report – Table of Contents (Flood Control Project) supplied by the COUNTY. Deviations to format may be permitted with prior approval from the COUNTY. Draft table of contents should be submitted prior to submitting the report.

a) Prepare an Executive Summary.

b) Prepare an Introduction Section, describing the relevant flooding and/or flood control history of the Project, the problem(s) the Project is intended to solve, and any other information that is relevant to the preliminary engineering report. Also, document public involvement efforts relative to the Project, including records of community opposition to and support for the Project.

c) Prepare a section describing the alternatives that were reviewed.

i. Two alternatives will be considered; one will evaluate the cost of purchasing the residential and commercial structures subject to the 100 year flood. In calculating the cost of this alternative, current appraisal district values will be employed. The other alternative will evaluate the cost of exclusively "structural" solutions to eliminate flooding of these structures. CONSULTANT may confer with COUNTY to determine if a "blended" alternative involving both buyouts and structural solutions should be evaluated.

d) Prepare a summary of survey and base mapping efforts conducted, including an exhibit reflecting the areas surveyed and the project control and benchmarks established.

e) Include H&H Report Executive Summary.

f) Prepare a section discussing roadway design, such as typical sections, roadway geometry, pavement design, and other factors.

g) Prepare a section discussing construction issues, traffic control, etc. In this section discuss:

i. the advantages and disadvantages of constructing the Project in one, two, or three phases, with particular attention paid to the cost of temporary transitional structures.

ii. constructability issues related to the removal and replacement of the open concrete channel with underground facilities.

h) Include a summary of the geotechnical report.

- i) Include a section discussing environmental impacts using the Environmental Memorandum as a reference. The Environmental Memorandum will be provided by the COUNTY.
- j) Prepare a section discussing real estate impacts. Include supporting data (maps with owner and area required) addressing any anticipated real estate needs. Real estate should include all proposed right of way, drainage easements, temporary construction easements, and/or full or partial parcel acquisitions for drainage facilities. Identify potential issues such as specific right of entry difficulties, mandatory or non-mandatory full partial acquisition, and possible condemnations.
- k) Prepare a section summarizing utilities on the project site, relocation, and coordination. Include utility log.
- l) Prepare a section discussing permitting issues (WPAP, TDLR, CLOMR, etc.)
- m) Prepare and summarize Opinion of Probable Construction Cost estimates for all alternatives. Discuss sources used to obtain historical average unit bid costs, significant variations from average bid costs, and methodology and assumptions used to develop the construction cost.
- n) Include a conclusion clearly outlining recommendations and project benefits.
- o) Include meeting minutes and site visit reports as an appendix.
- p) CONSULTANT shall furnish COUNTY with eight (8) hard copies for projects inside city limits or four (4) hard copies for projects outside city limits. CONSULTANT shall also furnish four (4) CDs containing an Adobe Acrobat PDF copy of Draft report and all supporting data, models, etc, and the Program QA/QC Certification Form.
- q) CONSULTANT will address review comments. COUNTY to provide review comments from all review entities to the CONSULTANT in one complete package.
- r) CONSULTANT shall resubmit eight (8) hard copies for projects inside city limits or four (4) hard copies for projects outside city limits. CONSULTANT shall also furnish four (4) CDs containing an Adobe Acrobat PDF copy of Final report, all supporting data, all electronic files (CADD, GIS, H&H models, & spreadsheets), etc., the completed draft comment spreadsheet, and the Program QA/QC Certification Form.

Engineering Deliverables/Submittals requiring COUNTY approval:

- 1) Project Manager Designation Letter
- 2) QA/QC Plan
- 3) Project Design Schedule
- 4) Draft PER Table of Contents
- 5) Draft/Final PER and H&H Reports

2. Surveying Services

CONSULTANT shall provide a Registered Professional Land Surveyor to perform field surveys. All surveys shall comply with the latest revision of the Professional Land Surveying Practice Act of the State of Texas and shall be accomplished under the direct supervision of a currently licensed State of Texas Registered Professional Land Surveyor. Survey services shall conform to the minimum requirements below.

- A) Obtain right of entry agreements. Prepare Right of Entry agreements to adjacent landowners, obtain COUNTY signature on Right of Entry agreements, and coordinate with landowners as required to acquire approval of Right of Entry agreements for field work outside of the existing public Rights-of-Way. The COUNTY will provide the outline of the agreement. CONSULTANT will submit agreements to the COUNTY for signature and the CONSULTANT will mail and track receipt of executed agreements.
- B) CONSULTANT shall prepare an abstract map using Bexar County Appraisal District and Bexar County Clerk websites. This map shall be used to identify ownership and approximate boundaries of all properties potentially affected by this Project. This map is not a boundary survey.
- C) Establish project control for the site in NAD 83, TXSC surface coordinates and NAVD 88 vertical datum. Primary Vertical Datum and associated Bench Marks shall be same as found on BexarFloodfacts.org website and used for the dFIRM Floodplain Maps
- D) CONSULTANT shall survey cross sections, drainage features, and other relevant information to support the Hydrologic and Hydraulic Study described in Section 1.D.2, above. The channel and culvert survey controls, stationing, cross-sections, sketches and photographs will conform to the FEMA Guidelines and Specifications for Flood Hazard Mapping Appendix N: Data Capture Guidelines. Topographic survey boundaries and cross sections are shown per Exhibit A.
- E) CONSULTANT shall perform topographic surveying needed to prepare a base map of the project area in sufficient detail to support the development of engineering concepts, sketches, typical sections, preliminary profiles and other exhibits, all in support of the Preliminary Engineering Report described in Section 1.D) 3) above.
- F) CONSULTANT shall survey surface evidence of existing underground and overhead utilities and support the development of an exhibit reflecting Quality

Level C depictions of existing utilities. The Level "C" SUE will be performed per the standard of care guideline, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, CI/ASCE 38-02.

3. Geotechnical Services

Geotechnical Services shall be provided as described in the proposal from Terracon dated February 17, 2011, on file with the Bexar Watershed Program Director and incorporated by reference herein.

4. Environmental/Permitting Services

All Environmental/Permitting tasks will be performed by the COUNTY's Environmental Representative. The CONSULTANT shall coordinate with the Environmental Representative during project progress meetings. Coordination will be required to provide the Environmental Representative with project information such as design alternatives and areas of disturbance. The CONSULTANT shall provide all work products developed through tasks under this contract to the Environmental Representative as needed.

The CONSULTANT shall perform the following coordination services:

- A) Coordination with the Environmental Representative to provide project details and information and electronic files
- B) Review the Environmental Memorandum and provide comments related to the project design. The Environmental Memorandum will include the following:
 - (1) Environmental Report Summary (reports developed & significant findings)
 - (2) USACE Permitting Assessment (Section 404 Mitigation needs)
 - (3) Ecological Resource/Environmental Constraints Map
 - (4) Environmental Timeline & Schedule
 - (5) Preliminary Tree Assessment – COUNTY'S tree expert to perform a preliminary walk through with assessment
 - (i) Preliminary recommendation for tree canopy or survey procedure
 - (ii) Estimate of percentage of significant/heritage trees & list of predominate species
 - (iii) Significant observations of feature trees or tree clusters with GPS coordinates
- C) Briefly discuss the environmental impacts in PER using the Environmental Memorandum as a reference. The Environmental Memorandum will be provided to the CONSULTANT by the COUNTY.

5. Public Involvement Services

As directed by the COUNTY, CONSULTANT shall prepare necessary materials for use by the COUNTY at public meetings. This work is paid for under Item 5 Public Involvement Services. Unless otherwise directed by the COUNTY, CONSULTANT will not be required to attend public meetings, including HOA meetings, Open Houses, etc. If CONSULTANT is directed in writing by COUNTY to be at a public meeting, CONSULTANT will be paid for his service at the meeting under Other Services Per County Direction under Optional Services. Any contact with citizens shall be in a courteous and honest manner. All project-related contact with citizens shall be documented and provided to COUNTY as soon as practical after the contact has been made. If necessary, CONSULTANT shall discuss the issue raised by citizens with COUNTY for a determination of how the issue should be addressed.

OPTIONAL SERVICES

a) Structural Integrity Investigation

Investigation of the structural integrity of existing old box culverts - CONSULTANT will investigate the condition of the existing double barrel 9' x 6' box culvert extending from McCullough Ave. and Barbara Drive upstream to just west of El Montan. The purpose of the investigation is to assess the apparent structural integrity of the culvert and determine if it can be used for a part of the storm drainage capacity in its current condition, with spot repairs, if it needs to be completely replaced. The work done under this item will be performed by CEC and by Jaster Quintanilla as described in the proposal from Jaster Quintanilla dated June 9, 2011 under Category 2, on file with the Bexar Watershed Program Director and incorporated by reference herein.

CEC will develop and implement a safety plan for the personnel conducting the observation of the box culvert structure. This work includes establishing safety protocols for confined space entry, and coordinating with the appropriate agencies and emergency personnel as required for approval of the safety plan. CONSULTANT acknowledges the interest of the County in participating in the inspection of the box culvert as a training activity. CONSULTANT will endeavor to schedule the inspection in such a manner so as to allow BWPC personnel to obtain the OSHA related certification needed to participate in this activity, provided however that such scheduling does not unreasonably prevent the CONSULTANT from completing its work under this contract.

b) Additional Survey – Cross Sections

Additional survey of cross sections upstream and down stream of the confluence - CONSULTANT shall obtain up to 10 additional cross sections. Cross sections shall be an average of 500 ft long.



Barbara Drive SA-3
BC 2011-261

Attachment A

NOT TO SCALE
LEGEND
VRS PRIMARY CONTROL
VRS SECONDARY CONTROL
LIMITS OF MCCULLOUGH &
CONFLUENCE BOUNDARY
LIMITS OF DETAILED TOPOGRAPHY
X-SECTIONS

CEC

GW ENGINEERING CONSULTANTS
11560 LA 10 WEST, SUITE 300
P.O. BOX 9995 FORT WORTH, TEXAS 76169
TEL: 817.335.1000 FAX: 817.335.1001
WWW.CEC-ENGINEERS.COM

**ESTIMATED LEVEL OF EFFORT
BARBARA DRIVE SA-3**

SUMMARY OF FEE

PRELIMINARY DESIGN PHASE SERVICES

1. Engineering Services	\$ 350,503.53
2. Surveying Services	\$ 95,255.00
3. Geotechnical Services	\$ 28,058.80
4. Environmental Services	\$ 3,080.00
5. Public Meeting	\$ 1,000.00
	<u>\$ 477,897.33</u>

OPTIONAL SERVICES

a) Structural Integrity Investigation	\$ 25,100.00
b) Additional Survey Cross-Sections	\$ 3,100.00
	<u>\$ 28,200.00</u>

GRAND TOTAL

\$ 506,097.33

BARBARA DRIVE SA-3

[illegible]

**BARBARA DRIVE SA-3
ESTIMATED LEVEL OF EFFORT**

POSITION DESCRIPTION	Quantity	Sr. Project Manager	Project Manager I	Project Engineer II	Project Engineer III	Project Engineer I	Project Engineer II	Project Engineer III	QA/QC Engineer	QA/QC Draftsperson	Chief (Eng.)	Project Surveyor	Survey Technician	3-Man Crew	3-Man Crew	Critical (Survey)	Total Labor Hrs.	Cost
RAW LABOR RATES		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
BILLABLE LABOR RATES		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
1) Include a conclusion 2) 5 paper copies, 4 CDs of Draft report & supporting data. 3) 5 paper review comments 4) 5 paper copies, 4 CDs of Final report, & supporting data.		2	6	1	20	8	20	4	8	8	6	8	8	8	8	8	8	\$1,080.00
		8	16	1						25	5						27	\$2,304.00
		1								8							17	\$1,584.00
																	23	\$2,460.00
TOTAL		11	23	2	20	8	20	4	8	33	11	8	8	8	8	8	76	\$6,428.00
SUMMARY																		
HOURS SUB-TOTALS		11	23	2	20	8	20	4	8	33	11	8	8	8	8	8	76	
BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
TOTAL		\$1,001.88	\$1,656.00	\$204.00	\$2,200.00	\$816.00	\$2,040.00	\$408.00	\$1,360.00	\$5,490.00	\$1,870.00	\$1,360.00	\$1,360.00	\$1,360.00	\$1,360.00	\$1,360.00		\$6,428.00
2. Surveying Services																		
A) Obtain Right of Entry agreements		3															3	\$270.00
B) Prepare a detailed map																		
C) Establish Project Control																		
D) Survey cross-sections, drainage features, & other relevant information																		
E) Perform topographic surveying																		
F) Survey surface evidence of existing utilities (if any)																		
TOTAL		3															3	\$270.00
SUMMARY																		
HOURS SUB-TOTALS		3															3	
BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
TOTAL		\$273.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$510.00	\$510.00	\$510.00	\$510.00	\$510.00	\$510.00	\$510.00	\$510.00		\$2,732.40
3. Geotechnical Services																		
See Attached Proposal from Tension Consultants, Inc. dated 02/17/11 Prime Subcontractor Mark Up																		
TOTAL																		
SUMMARY																		
HOURS SUB-TOTALS																		
BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
TOTAL		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00
4. Environmental Services																		
A) Coordinate with Environmental Reg. to provide project details		2	8														10	\$1,700.00
B) Review the Environmental Memorandum and provide comments		1	6														7	\$840.00
C) Briefly discuss the environmental impacts in the PER		1	6														7	\$840.00
TOTAL		4	20														24	\$3,380.00
SUMMARY																		
HOURS SUB-TOTALS		4	20														24	
BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)		\$91.08	\$72.00	\$102.00	\$110.00	\$102.00	\$102.00	\$102.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00	\$170.00		
TOTAL		\$364.32	\$1,440.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,400.00	\$3,400.00	\$3,400.00	\$3,400.00	\$3,400.00	\$3,400.00	\$3,400.00	\$3,400.00		\$8,004.32
5. Public Meeting																		
Attend 1 public meeting as directed by County (\$1,000/Meeting)																		
TOTAL																		
SUB-TOTAL Detailed Design Services Items 1-5																		\$14,946.72

**BARBARA DRIVE SA-3
ESTIMATED LEVEL OF EFFORT**

POSITION	DESCRIPTION	Quantity	Units	Sr. Project Manager	Project Manager	Project Engineer I	Project Engineer II	Project Engineer III	QA/QC Engineer	CADD Draftsperson	Cartographer (Eng.)	Project Surveyor	Survey Technician	3-Man GPS Crew	3-Man GPS Crew	Chief of Survey	Total Labor hrs.	Cost
	RAW LABOR RATES			\$51.08	\$35.00	\$24.50	\$31.01	\$23.75	\$81.08	\$19.29	\$13.75	\$32.79	\$23.00	\$45.48	\$45.48	\$16.52		
	BILLABLE LABOR RATES			\$178.00	\$138.00	\$102.00	\$110.00	\$74.00	\$170.00	\$75.00	\$60.00	\$130.00	\$80.00	\$160.00	\$165.00	\$60.00		
OPTIONAL SERVICES																		
3) Structural Integrity Investigation																		
Investigation of existing box culverts (See Attached Proposal from JQ dated 05/09/11 (Category 2)) Prime Subcontractant Mark-Up Safety Plan																		
	Total Hours			16	16	16	16	16	0	0	0	0	0	0	0	0	0	
SUMMARY																		
HOURS SUB-TOTALS																		
	BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)			\$170.00	\$120.00	\$140.00	\$110.00	\$75.00	\$170.00	\$75.00	\$60.00	\$130.00	\$80.00	\$160.00	\$165.00	\$60.00	0	\$17,000.00
	TOTAL			\$2,720.00	\$0.00	\$2,240.00	\$0.00	\$0.00	\$1,440.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0	\$17,000.00
4) Additional Survey Cross-Sections																		
	Additional cross-sections upstream and downstream of the confluence	10	500' sections	0	0	0	0	0	0	0	0	2	2	15	0	0	0	
	Total Hours			0	0	0	0	0	0	0	0	2	2	15	0	0	0	
SUMMARY																		
HOURS SUB-TOTALS																		
	BILLABLE RATE PER HOUR (LABOR BURDEN & OVERHEAD)			\$170.00	\$120.00	\$140.00	\$110.00	\$75.00	\$170.00	\$75.00	\$60.00	\$130.00	\$80.00	\$160.00	\$165.00	\$60.00	0	\$3,100.00
	TOTAL			\$0.00	\$0.00	\$280.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$260.00	\$160.00	\$2,400.00	\$0.00	\$0.00	0	\$3,100.00