

## **FIRST AMENDMENT TO AGREEMENT**

THIS FIRST AMENDMENT TO AGREEMENT ("Amendment") made and entered into effective the \_\_\_\_\_ day of \_\_\_\_\_, 2016 ("Effective Date") amends the Agreement heretofore entered into between the CITY OF FRESNO, a California municipal corporation (( "CITY"), and BLAIR, CHURCH & FLYNN CONSULTING ENGINEERS, a California corporation ("CONSULTANT").

### **RECITALS**

WHEREAS, CITY and CONSULTANT entered into an Agreement, dated June 12, 2015 ("Agreement") to provide professional design services for the CITY's Phase 2 Regional Transmission Mains ("Project"); and

WHEREAS, project bidding for one of the four Regional Transmission Main segments has been completed and project construction on that segment will be initiated, the parties have agreed to a scope of work that includes submittal review, attendance at project construction meetings, project site visits, preparation of record drawings, and design services for a change in the design of two of the segments, and

WHEREAS, the parties have negotiated changes in compensation that result in an increase in the total compensation of \$999,996 for the changes described in this amendment, and

WHEREAS, with entry into this Amendment, CONSULTANT agrees that CONSULTANT has no claim, demand or dispute against CITY.

### **AGREEMENT**

NOW, THEREFORE, the parties agree that the Agreement be amended as follows:

1. Exhibit A of the Agreement was authorized and is amended to include the services described in the attached Exhibit A-1.

2. Section 3(a) of the Agreement shall be modified such that CONSULTANT's sole compensation for satisfactory performance of all services required or rendered pursuant to this Agreement shall be a total fee not to exceed \$3,836,191.

3. The subsections of Section 3(a) of the Agreement identified below shall be modified in entirety to read as follows:

CONSULTANT'S sole compensation for satisfactory performance of all services required or rendered pursuant to this Agreement shall be a total fee not to exceed \$3,836,191, paid on a time and materials basis in accordance with the schedule of fees

contained in Exhibit A.

In the event of any conflict between the body of this Amendment and any Attachment hereto, the terms and conditions of the body of this Amendment shall control and take precedence over the terms and conditions expressed within the Attachment. Furthermore, any terms or conditions contained within any Attachment hereto which purport to modify the allocation of risk between the parties, provided for within the body of the Agreement or this Amendment, shall be null and void.

4. Except as otherwise provided herein, the Agreement entered into by CITY and CONSULTANT, dated June 12, 2015 remains in full force and effect.

[SIGNATURES APPEAR ON THE NEXT PAGE.]

IN WITNESS WHEREOF, the parties have executed this Amendment at Fresno, California, the day and year first above written.

CITY OF FRESNO,  
a California municipal corporation

BLAIR, CHURCH & FLYNN  
CONSULTING ENGINEERS, a  
California corporation

By: \_\_\_\_\_  
Thomas C. Esqueda, Director  
Department of Public Utilities

By:   
Name: Karl E. Kienow

ATTEST:  
YVONNE SPENCE, CMC  
City Clerk


Title: Vice President  
[If corporation or LLC, Board Chair,  
Pres., or Vice Pres.]

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

By:   
Name: Adam K. Holt

APPROVED AS TO FORM:  
Douglas T. Sloan  
City Attorney

Title: CFO / Secretary  
[if corporation or LLC, CFO  
Treasurer, Secretary or Assistant  
Secretary]

By:  8/12/16  
Brandon M. Collet Date  
Deputy City Attorney

Attachment: Exhibit A-1

## **Exhibit A-1**

### **SCOPE OF SERVICES**

#### **Consultant Service Agreement between City of Fresno ("City") and Blair, Church & Flynn Consulting Engineers ("Consultant")**

##### **Additional Services for the Phase 2 Regional Transmission Mains** PROJECT TITLE

### **Overview**

The City of Fresno Department of Public Utilities Water Division (City) is taking the next steps towards providing the City with treated surface water and reducing overdrafting of the available groundwater supply. The Regional Transmission Mains (RTMs) will interconnect the City's existing and proposed surface water treatment facilities and storage reservoirs with the water distribution network and allow the City to move large quantities of treated surface water throughout the system. The Phase 2 RTMs have been split into four design and construction segments roughly defined as follows:

- Segment A1 - Olive Ave - Fowler to First - 26,600 +/- feet of 54- to 66-inch pipe
- Segment A2 - Olive Ave - First to Fresno, Fresno / McKinley / Palm - 22,200 +/- feet of 24-to 48-inch pipe
- Segment B - Temperance / Kings Canyon - 7,400 +/- feet of 20- to 42-inch pipe
- Segment C - Chestnut - Olive to Winery - 11,900 +/- feet of 24- to 30-inch pipe

Final design and bid services are provided for Segments A1, A2, B, and C under a separate agreement, and this scope is intended to be an amendment to that agreement.

This scope includes engineering services during construction for Segments A1, A2, B, and C and design services for the Segment C realignment in the Chestnut Diagonal.

### **Scope of Services – Engineering Services During Construction**

#### **TASK 100 - ENGINEERING SERVICES DURING CONSTRUCTION FOR SEGMENT A1**

The purpose of this task is to complete Engineering Services During Construction (ESDC) for Segment A1. The ESDC work will include submittal review, response to Contractor questions, change order assistance, site visits/meetings, development of record drawings, and project closeout assistance.

CONSULTANT shall provide the ESDCs as described herein. With the exception of the Project Management subtask, the scope of these services is not based on a certain construction duration, but the estimated effort for each subtask is described below under each subtask.

It is understood that construction management and inspection services will be completed by a third party. For the purposes of the scope of work presented herein, the third party construction manager will be referred to as "CONSTRUCTION MANAGER."

This task includes the following activities:

### **Subtask 110 - Project Management**

CONSULTANT shall maintain effective project management and communication with the CONSTRUCTION MANAGER during construction. Monthly Progress Reports shall be prepared to summarize project work progress, issues, and scope and budget status.

The subtask shall consist of the following:

1. Monthly Progress Report, containing the following:
  - 1.1. Work Progress – A progress report of specific accomplishments during the reporting period, problems encountered or anticipated, and work scheduled for the next reporting period.
  - 1.2. Time Report – A report comparing the actual time expended towards each subtask compared with the estimated time.
  - 1.3. Anticipated Out of Scope Tasks – An itemization and brief description of any anticipated out of scope activities for which the CONSULTANT intends to request reimbursement.
2. Monthly invoices.

#### Assumptions and Clarifications

- a. Construction duration is assumed to be 17 months, based on the schedule received from the City on 3/17/2016.

#### Deliverables

- a. Monthly Progress Report, electronic only (PDF format).
- b. Monthly invoice, hard copy and electronic (PDF format).

### **Subtask 120 - Shop Drawing and Submittal Review**

CONSULTANT shall receive, review, comment on, and return shop drawings, submittals, and samples provided by the Contractor via the CONSTRUCTION MANAGER. Work related to shop drawings and submittals will be done using a SharePoint, or similar, site provided by the CONSTRUCTION MANAGER. Hard copies of shop drawings and submittals will generally not be provided to the CONSULTANT, and review comments will be provided digitally. The CONSTRUCTION MANAGER shall screen all submittals for form and general content conforming to that specified in the Contract Documents prior to transmitting them to the CONSULTANT. The purpose of reviewing submittals by CONSULTANT is to determine if the equipment and materials proposed by the Contractor will meet the design intent of the Project and the requirements stipulated in the Contract Documents.

#### Assumptions and Clarifications

- a. It is estimated that approximately one hundred fifty (150) submittals and equipment operations and maintenance manuals will be submitted by the Contractor. It is estimated

that approximately fifty percent (50%) of the original submittals will require a resubmittal process. The scope and budget assumes three (3) hours per submittal review time for one hundred fifty (150) submittals and one and one half (1.5) hours review time for seventy five (75) resubmittals for the CONSULTANT, sixteen (16) hours review time for the corrosion SUBCONSULTANT, and sixteen (16) hours review time for the tunneling SUBCONSULTANT.

- b. Factory acceptance tests and observations are not included.

### **Subtask 130 - Design Clarifications / Requests for Information (RFIs)**

CONSULTANT shall prepare Design Clarifications (DCs) as necessary to clarify design plans and specifications. These may be made at the request of the CONSTRUCTION MANAGER or in response to a need discovered during submittal review. DCs will be submitted to the CONSTRUCTION MANAGER for transmittal to the CONTRACTOR.

CONSULTANT shall respond to Contractor's Requests for Information (RFIs) on the Contract Documents forwarded by the CONSTRUCTION MANAGER. The CONSTRUCTION MANAGER will screen the RFIs submitted by the Contractor and will transmit to the CONSULTANT only those RFIs which require a response by the CONSULTANT. The work will involve both written responses to formal requests for information, and informal verbal telephone responses.

#### **Assumptions and Clarifications**

- a. The budget for this task is based on an estimate of a total of one hundred twenty five (125) DC/RFIs at an average of three (3) hours per DC/RFI for the CONSULTANT, sixteen (16) hours review time for the corrosion SUBCONSULTANT, and eight (8) hours review time for the tunneling SUBCONSULTANT.

### **Subtask 140 - Change Orders**

In the event changes to the Contract Documents are required, the CONSULTANT will assist the CONSTRUCTION MANAGER in review of Change Order Requests (CORs) or the CONSTRUCTION MANAGER's Requests for Proposals (RFPs) and with the preparation of Change Orders (COs). CONSULTANT, at the request of the CONSTRUCTION MANAGER, shall either: review the COR/RFP, or when COR/RFP requires redesign, prepare detailed CO specifications, drawings, and/or sketches.

The CONSTRUCTION MANAGER will prepare all cost estimates for each CO, and negotiate with the CONTRACTOR the cost and extension of Contract Time associated with each CO.

CONSULTANT shall assist with field changes for which a CO is not issued as referred by the CONSTRUCTION MANAGER. Field changes shall be checked for general compliance with the intent of the design.

#### Assumptions and Clarifications

- a. The budget for this task is based on assistance with eight (8) COR/RFP/COs at six (6) hours each.

#### **Subtask 150 - Attendance at Meetings/Site Visits**

CONSULTANT's representative shall attend and participate in certain project meetings at the job site in order to keep abreast of construction activities and be involved in questions which may arise concerning construction progress. During construction site visits, CONSULTANT's representative shall walk the construction area with the CONSTRUCTION MANAGER to observe construction progress and discuss relevant construction issues.

#### Assumptions and Clarifications

- a. CONSULTANT's representatives, consisting of the project engineer and an assistant engineer, shall attend up to sixteen (16) meetings total during the project duration to monitor construction progress and to facilitate resolution of construction issues as needed. If required, a representative from one of the CONSULTANT's subcontractor can attend instead of the assistant engineer. Each meeting is assumed to last no longer than four (4) hours.

#### **Subtask 160 - Record Documents and Project Closeout**

CONSULTANT shall prepare Record Contract Drawings to incorporate modifications of Drawings resulting from change orders, observed site conditions, and CONTRACTOR's record of construction.

#### Assumptions and Clarifications

- a. Construction changes will be monitored and recorded by the CONTRACTOR and CONSTRUCTION MANAGER. CONSULTANT shall incorporate field markups at the end of construction and translate into electronic Record Contract Drawings.
- b. The scope of work and budget assumes approximately forty five (45) drawings need to be modified at two (2) hours of CAD time per drawing, and one (1) hour of engineering time per drawing.
- c. Record drawings will not be prepared for traffic control plans.

#### Deliverables

- a. Electronic files of all construction record documents (AutoCAD and PDF format).
- b. Four (4) sets of full-sized drawings.
- c. Four (4) sets of half-sized drawings.

## **TASK 200 - ENGINEERING SERVICES DURING CONSTRUCTION FOR SEGMENT A2**

The purpose of this task is to complete Engineering Services During Construction (ESDC) for Segment A2. The ESDC work will include submittal review, response to Contractor questions, change order assistance, site visits/meetings, development of record drawings, and project closeout assistance.

CONSULTANT shall provide the ESDCs as described herein. With the exception of the Project Management subtask, the scope of these services is not based on a certain construction duration, but the estimated effort for each subtask is described below under each subtask.

It is understood that construction management and inspection services will be completed by a third party. For the purposes of the scope of work presented herein, the third party construction manager will be referred to as "CONSTRUCTION MANAGER."

This task includes the following activities:

### **Subtask 210 - Project Management**

CONSULTANT shall maintain effective project management and communication with the CONSTRUCTION MANAGER during construction. Monthly Progress Reports shall be prepared to summarize project work progress, issues, and scope and budget status.

The subtask shall consist of the following:

1. Monthly Progress Report, containing the following:
  - 1.1. Work Progress – A progress report of specific accomplishments during the reporting period, problems encountered or anticipated, and work scheduled for the next reporting period.
  - 1.2. Time Report – A report comparing the actual time expended towards each subtask compared with the estimated time.
  - 1.3. Anticipated Out of Scope Tasks – An itemization and brief description of any anticipated out of scope activities for which the CONSULTANT intends to request reimbursement.
2. Monthly invoices.

#### Assumptions and Clarifications

- a. Construction duration is assumed to be 14 months, based on the schedule received from the City on 3/17/2016.

#### Deliverables

- a. Monthly Progress Report, electronic only (PDF format).
- b. Monthly invoice, hard copy and electronic (PDF format).



## **Subtask 220 - Shop Drawing and Submittal Review**

CONSULTANT shall receive, review, comment on, and return shop drawings, submittals, and samples provided by the Contractor via the CONSTRUCTION MANAGER. Work related to shop drawings and submittals will be done using a SharePoint, or similar, site provided by the CONSTRUCTION MANAGER. Hard copies of shop drawings and submittals will generally not be provided to the CONSULTANT, and review comments will be provided digitally. The CONSTRUCTION MANAGER shall screen all submittals for form and general content conforming to that specified in the Contract Documents prior to transmitting them to the CONSULTANT. The purpose of reviewing submittals by CONSULTANT is to determine if the equipment and materials proposed by the Contractor will meet the design intent of the Project and the requirements stipulated in the Contract Documents.

### Assumptions and Clarifications

- a. It is estimated that approximately one hundred fifty (150) submittals and equipment operations and maintenance manuals will be submitted by the Contractor. It is estimated that approximately fifty percent (50%) of the original submittals will require a resubmittal process. The scope and budget assumes three (3) hours per submittal review time for one hundred fifty (150) submittals and one and one half (1.5) hours review time for seventy five (75) resubmittals for the CONSULTANT, sixteen (16) hours review time for the corrosion SUBCONSULTANT, and thirty two (32) hours review time for the tunneling SUBCONSULTANT.
- b. Factory acceptance tests and observations are not included.

## **Subtask 230 - Design Clarifications / Requests for Information (RFIs)**

CONSULTANT shall prepare Design Clarifications (DCs) as necessary to clarify design plans and specifications. These may be made at the request of the CONSTRUCTION MANAGER or in response to a need discovered during submittal review. DCs will be submitted to the CONSTRUCTION MANAGER for transmittal to the CONTRACTOR.

CONSULTANT shall respond to Contractor's Requests for Information (RFIs) on the Contract Documents forwarded by the CONSTRUCTION MANAGER. The CONSTRUCTION MANAGER will screen the RFIs submitted by the Contractor and will transmit to the CONSULTANT only those RFIs which require a response by the CONSULTANT. The work will involve both written responses to formal requests for information, and informal verbal telephone responses.

### Assumptions and Clarifications

- a. The budget for this task is based on an estimate of a total of one hundred twenty (120) DC/RFIs at an average of three (3) hours per DC/RFI for the CONSULTANT, sixteen (16) hours review time for the corrosion SUBCONSULTANT, and sixteen (16) hours review time for the tunneling SUBCONSULTANT

## **Subtask 240 - Change Orders**

In the event changes to the Contract Documents are required, the CONSULTANT will assist the CONSTRUCTION MANAGER in review of Change Order Requests (CORs) or the

CONSTRUCTION MANAGER's Requests for Proposals (RFPs) and with the preparation of Change Orders (COs). CONSULTANT, at the request of the CONSTRUCTION MANAGER, shall either: review the COR/RFP, or when COR/RFP requires redesign, prepare detailed CO specifications, drawings, and/or sketches.

The CONSTRUCTION MANAGER will prepare all cost estimates for each CO, and negotiate with the CONTRACTOR the cost and extension of Contract Time associated with each CO.

CONSULTANT shall assist with field changes for which a CO is not issued as referred by the CONSTRUCTION MANAGER. Field changes shall be checked for general compliance with the intent of the design.

#### Assumptions and Clarifications

- a. The budget for this task is based on assistance with eight (8) COR/RFP/COs at six (6) hours each.

### **Subtask 250 - Attendance at Meetings/Site Visits**

CONSULTANT's representative shall attend and participate in certain project meetings at the job site in order to keep abreast of construction activities and be involved in questions which may arise concerning construction progress. During construction site visits, CONSULTANT's representative shall walk the construction area with the CONSTRUCTION MANAGER to observe construction progress and discuss relevant construction issues.

#### Assumptions and Clarifications

- a. CONSULTANT's representatives, consisting of the project engineer and an assistant engineer, shall attend up to sixteen (16) meetings total during the project duration to monitor construction progress and to facilitate resolution of construction issues as needed. If required, a representative from one of the CONSULTANT's subcontractor can attend instead of the assistant engineer. Each meeting is assumed to last no longer than four (4) hours.

### **Subtask 260 - Record Documents and Project Closeout**

CONSULTANT shall prepare Record Contract Drawings to incorporate modifications of Drawings resulting from change orders, observed site conditions, and CONTRACTOR's record of construction.

#### Assumptions and Clarifications

- a. Construction changes will be monitored and recorded by the CONTRACTOR and CONSTRUCTION MANAGER. CONSULTANT will incorporate field markups at the end of construction and translate into electronic Record Contract Drawings.
- b. The scope of work and budget assumes approximately forty (40) drawings need to be modified at two (2) hours of CAD time per drawing, and one (1) hour of engineering time per drawing.
- c. Record drawings will not be prepared for traffic control plans.

### Deliverables

- a. Electronic files of all construction record documents (AutoCAD and PDF format).
- b. Four (4) sets of full-sized drawings.
- c. Four (4) sets of half-sized drawings.

## **TASK 300 - ENGINEERING SERVICES DURING CONSTRUCTION FOR SEGMENT B**

The purpose of this task is to complete Engineering Services During Construction (ESDC) for Segment B. The ESDC work will include submittal review, response to Contractor questions, change order assistance, site visits/meetings, development of record drawings, and project closeout assistance.

CONSULTANT shall provide the ESDCs as described herein. With the exception of the Project Management subtask, the scope of these services is not based on a certain construction duration, but the estimated effort for each subtask is described below under each subtask.

It is understood that construction management and inspection services will be completed by a third party. For the purposes of the scope of work presented herein, the third party construction manager will be referred to as "CONSTRUCTION MANAGER."

This task includes the following activities:

### **Subtask 310 - Project Management**

CONSULTANT shall maintain effective project management and communication with the CONSTRUCTION MANAGER during construction. Monthly Progress Reports shall be prepared to summarize project work progress, issues, and scope and budget status.

The subtask shall consist of the following:

- 1. Monthly Progress Report, containing the following:
  - 1.1. Work Progress – A progress report of specific accomplishments during the reporting period, problems encountered or anticipated, and work scheduled for the next reporting period.
  - 1.2. Time Report – A report comparing the actual time expended towards each subtask compared with the estimated time.
  - 1.3. Anticipated Out of Scope Tasks – An itemization and brief description of any anticipated out of scope activities for which the CONSULTANT intends to request reimbursement.
- 2. Monthly invoices.

### Assumptions and Clarifications

- a. Construction duration is assumed to be 11 months, based on the schedule received from the City on 3/17/2016.

### Deliverables

- b. Monthly Progress Report, electronic only (PDF format).
- c. Monthly invoice, hard copy and electronic (PDF format).

### **Subtask 320 - Shop Drawing and Submittal Review**

CONSULTANT shall receive, review, comment on, and return shop drawings, submittals, and samples provided by the Contractor via the CONSTRUCTION MANAGER. Work related to shop drawings and submittals will be done using a SharePoint, or similar, site provided by the CONSTRUCTION MANAGER. Hard copies of shop drawings and submittals will generally not be provided to the CONSULTANT, and review comments will be provided digitally. The CONSTRUCTION MANAGER shall screen all submittals for form and general content conforming to that specified in the Contract Documents prior to transmitting them to the CONSULTANT. The purpose of reviewing submittals by CONSULTANT is to determine if the equipment and materials proposed by the Contractor will meet the design intent of the Project and the requirements stipulated in the Contract Documents.

### Assumptions and Clarifications

- a. It is estimated that approximately one hundred (100) submittals and equipment operations and maintenance manuals will be submitted by the Contractor. It is estimated that approximately fifty percent (50%) of the original submittals will require a resubmittal process. The scope and budget assumes three (3) hours per submittal review time for one hundred (100) submittals and one and one half (1.5) hours review time for fifty (50) resubmittals for the CONSULTANT and eight (8) hours review time for the corrosion SUBCONSULTANT.
- b. Factory acceptance tests and observations are not included.

### **Subtask 330 - Design Clarifications / Requests for Information (RFIs)**

CONSULTANT shall prepare Design Clarifications (DCs) as necessary to clarify design plans and specifications. These may be made at the request of the CONSTRUCTION MANAGER or in response to a need discovered during submittal review. DCs will be submitted to the CONSTRUCTION MANAGER for transmittal to the CONTRACTOR.

CONSULTANT shall respond to Contractor's Requests for Information (RFIs) on the Contract Documents forwarded by the CONSTRUCTION MANAGER. The CONSTRUCTION MANAGER will screen the RFIs submitted by the Contractor and will transmit to the CONSULTANT only those RFIs which require a response by the CONSULTANT. The work will involve both written responses to formal requests for information, and informal verbal telephone responses.

#### Assumptions and Clarifications

- a. The budget for this task is based on an estimate of a total of forty (40) DC/RFIs at an average of three (3) hours per DC/RFI for the CONSULTANT and eight (8) hours review time for the corrosion SUBCONSULTANT.

#### **Subtask 340 - Change Orders**

In the event changes to the Contract Documents are required, the CONSULTANT will assist the CONSTRUCTION MANAGER in review of Change Order Requests (CORs) or the CONSTRUCTION MANAGER's Requests for Proposals (RFPs) and with the preparation of Change Orders (COs). CONSULTANT, at the request of the CONSTRUCTION MANAGER, shall either: review the COR/RFP, or when COR/RFP requires redesign, prepare detailed CO specifications, drawings, and/or sketches.

The CONSTRUCTION MANAGER will prepare all cost estimates for each CO, and negotiate with the CONTRACTOR the cost and extension of Contract Time associated with each CO.

CONSULTANT shall assist with field changes for which a CO is not issued as referred by the CONSTRUCTION MANAGER. Field changes shall be checked for general compliance with the intent of the design.

#### Assumptions and Clarifications

- a. The budget for this task is based on assistance with four (4) COR/RFP/COs at six (6) hours each.

#### **Subtask 350 - Attendance at Meetings/Site Visits**

CONSULTANT's representative shall attend and participate in certain project meetings at the job site in order to keep abreast of construction activities and be involved in questions which may arise concerning construction progress. During construction site visits, CONSULTANT's representative shall walk the construction area with the CONSTRUCTION MANAGER to observe construction progress and discuss relevant construction issues.

#### Assumptions and Clarifications

- a. CONSULTANT's representatives, consisting of the project engineer and an assistant engineer, shall attend up to five (5) meetings total during the project duration to monitor construction progress and to facilitate resolution of construction issues as needed. If required, a representative from one of the CONSULTANT's subcontractor can attend instead of the assistant engineer. Each meeting is assumed to last no longer than four (4) hours.

#### **Subtask 360 - Record Documents and Project Closeout**

CONSULTANT shall prepare Record Contract Drawings to incorporate modifications of Drawings resulting from change orders, observed site conditions, and CONTRACTOR's record of construction.

### Assumptions and Clarifications

- a. Construction changes will be monitored and recorded by the CONTRACTOR and CONSTRUCTION MANAGER. CONSULTANT will incorporate field markups at the end of construction and translate into electronic Record Contract Drawings.
- b. The scope of work and budget assumes approximately twenty five (25) drawings need to be modified at two (2) hours of CAD time per drawing, and one (1) hour of engineering time per drawing.
- c. Record drawings will not be prepared for traffic control plans.

### Deliverables

- a. Electronic files of all construction record documents (AutoCAD and PDF format).
- b. Four (4) sets of full-sized drawings.
- c. Four (4) sets of half-sized drawings.

## **TASK 400 - ENGINEERING SERVICES DURING CONSTRUCTION FOR SEGMENT C**

The purpose of this task is to complete Engineering Services During Construction (ESDC) for Segment C. The ESDC work will include submittal review, response to Contractor questions, change order assistance, site visits/meetings, development of record drawings, and project closeout assistance.

CONSULTANT shall provide the ESDCs as described herein. With the exception of the Project Management subtask, the scope of these services is not based on a certain construction duration, but the estimated effort for each subtask is described below under each subtask.

It is understood that construction management and inspection services will be completed by a third party. For the purposes of the scope of work presented herein, the third party construction manager will be referred to as "CONSTRUCTION MANAGER."

This task includes the following activities:

### **Subtask 410 - Project Management**

CONSULTANT shall maintain effective project management and communication with the CONSTRUCTION MANAGER during construction. Monthly Progress Reports shall be prepared to summarize project work progress, issues, and scope and budget status.

The subtask shall consist of the following:

- 1. Monthly Progress Report, containing the following:
  - 1.1. Work Progress – A progress report of specific accomplishments during the reporting period, problems encountered or anticipated, and work scheduled for the next reporting period.

1.2. Time Report – A report comparing the actual time expended towards each subtask compared with the estimated time.

1.3. Anticipated Out of Scope Tasks – An itemization and brief description of any anticipated out of scope activities for which the CONSULTANT intends to request reimbursement.

2. Monthly invoices.

#### Assumptions and Clarifications

a. Construction duration is assumed to be 11 months, based on the schedule received from the City on 3/17/2016.

#### Deliverables

a. Monthly Progress Report, electronic only (PDF format).

b. Monthly invoice, hard copy and electronic (PDF format).

### **Subtask 420 - Shop Drawing and Submittal Review**

CONSULTANT shall receive, review, comment on, and return shop drawings, submittals, and samples provided by the Contractor via the CONSTRUCTION MANAGER. Work related to shop drawings and submittals will be done using a SharePoint, or similar, site provided by the CONSTRUCTION MANAGER. Hard copies of shop drawings and submittals will generally not be provided to the CONSULTANT, and review comments will be provided digitally. The CONSTRUCTION MANAGER shall screen all submittals for form and general content conforming to that specified in the Contract Documents prior to transmitting them to the CONSULTANT. The purpose of reviewing submittals by CONSULTANT is to determine if the equipment and materials proposed by the Contractor will meet the design intent of the Project and the requirements stipulated in the Contract Documents.

#### Assumptions and Clarifications

a. It is estimated that approximately one hundred (100) submittals and equipment operations and maintenance manuals will be submitted by the Contractor. It is estimated that approximately fifty percent (50%) of the original submittals will require a resubmittal process. The scope and budget assumes three (3) hours per submittal review time for one hundred (100) submittals and one and one half (1.5) hours review time for fifty (50) resubmittals for the CONSULTANT, ten (10) hours review time for the corrosion SUBCONSULTANT, and eight (8) hours review time for the tunneling SUBCONSULTANT.

b. Factory acceptance tests and observations are not included.

### **Subtask 430 - Design Clarifications / Requests for Information (RFIs)**

CONSULTANT shall prepare Design Clarifications (DCs) as necessary to clarify design plans and specifications. These may be made at the request of the CONSTRUCTION MANAGER or in response to a need discovered during submittal review. DCs will be submitted to the CONSTRUCTION MANAGER for transmittal to the CONTRACTOR.

CONSULTANT shall respond to Contractor's Requests for Information (RFIs) on the Contract Documents forwarded by the CONSTRUCTION MANAGER. The CONSTRUCTION MANAGER will screen the RFIs submitted by the Contractor and will transmit to the CONSULTANT only those RFIs which require a response by the CONSULTANT. The work will involve both written responses to formal requests for information, and informal verbal telephone responses.

Assumptions and Clarifications

- a. The budget for this task is based on an estimate of a total of seventy (70) DC/RFIs at an average of three (3) hours per DC/RFI for the CONSULTANT, ten (10) hours review time for the corrosion SUBCONSULTANT, and four (4) hours review time for the tunneling SUBCONSULTANT.

**Subtask 440 - Change Orders**

In the event changes to the Contract Documents are required, the CONSULTANT will assist the CONSTRUCTION MANAGER in review of Change Order Requests (CORs) or the CONSTRUCTION MANAGER's Requests for Proposals (RFPs) and with the preparation of Change Orders (COs). CONSULTANT, at the request of the CONSTRUCTION MANAGER, shall either: review the COR/RFP, or when COR/RFP requires redesign, prepare detailed CO specifications, drawings, and/or sketches.

The CONSTRUCTION MANAGER will prepare all cost estimates for each CO, and negotiate with the CONTRACTOR the cost and extension of Contract Time associated with each CO.

CONSULTANT shall assist with field changes for which a CO is not issued as referred by the CONSTRUCTION MANAGER. Field changes shall be checked for general compliance with the intent of the design.

Assumptions and Clarifications

- a. The budget for this task is based on assistance with six (6) COR/RFP/COs at six (6) hours each.

**Subtask 450 - Attendance at Meetings/Site Visits**

CONSULTANT's representative shall attend and participate in certain project meetings at the job site in order to keep abreast of construction activities and be involved in questions which may arise concerning construction progress. During construction site visits, CONSULTANT's representative shall walk the construction area with the CONSTRUCTION MANAGER to observe construction progress and discuss relevant construction issues.

Assumptions and Clarifications

- a. CONSULTANT's representatives, consisting of the project engineer and an assistant engineer, shall attend up to seven (7) meetings total during the project duration to monitor construction progress and to facilitate resolution of construction issues as needed. If required, a representative from one of the CONSULTANT's subcontractor can attend instead of the assistant engineer. Each meeting is assumed to last no longer than four (4) hours.



### **Subtask 460 - Record Documents and Project Closeout**

CONSULTANT shall prepare Record Contract Drawings to incorporate modifications of Drawings resulting from change orders, observed site conditions, and CONTRACTOR's record of construction.

#### Assumptions and Clarifications

- a. Construction changes will be monitored and recorded by the CONTRACTOR and CONSTRUCTION MANAGER. CONSULTANT will incorporate field markups at the end of construction and translate into electronic Record Contract Drawings.
- b. The scope of work and budget assumes approximately thirty (30) drawings need to be modified at two (2) hours of CAD time per drawing, and one (1) hour of engineering time per drawing.
- c. Record drawings will not be prepared for traffic control plans.

#### Deliverables

- a. Electronic files of all construction record documents (AutoCAD and PDF format).
- b. Four (4) sets of full-sized drawings.
- c. Four (4) sets of half-sized drawings.

### **Scope of Services – Additional Design Services**

The RTM pipeline for Segment C was originally planned to be on the Chestnut Avenue alignment, extending northerly from Olive Avenue to Ashlan Avenue. The City has decided to eliminate that portion of the RTM that extended from Dakota Avenue northerly through Leaky Acres to Ashlan Avenue. The engineering design of the eliminated portion of the RTM has already progressed to a level of completion of more than 60 percent. Instead, the RTM is to be constructed on the Chestnut Diagonal alignment, extending northeasterly from Dakota Avenue to Winery Avenue. At Winery Avenue the RTM will connect to one or more existing water mains, or to onsite facilities at Pump Station No. 080, which is at the southwest corner of Chestnut Diagonal and Winery Avenue.

### **TASK 500 - DESIGN SERVICES FOR SEGMENT C REALIGNMENT ON CHESTNUT DIAGONAL**

#### **Subtask 510 - Topographic Surveys and Mapping**

The purpose of this subtask is to conduct required topographic surveying, determine the existing right-of-way, and obtain aerial photography required for the design and plan preparation for the revised alignment. This subtask includes the following activities:

- A. Conduct a topographic survey of the new alignment area, including the site of Pump Station No. 080. As directed by the City, the RTM will be routed in the northeast-bound lanes of Chestnut Diagonal, which accordingly will be the primary focus of the topographic survey.
- B. Provide traffic control for field surveying activities.
- C. Conduct research of records for rights-of-way and alignments for Chestnut Diagonal and Winery Avenue to establish new alignment rights-of-way and incorporate into topographic mapping.
- D. Conduct office and field utility investigations to obtain utility records and visually identify existing utility facilities. Incorporate utility investigation findings into topographic mapping.
- E. Obtain public domain aerial photography for the new alignment area and incorporate into topographic mapping.
- F. Prepare topographic base mapping of the new alignment area, incorporating right-of-way, utility and aerial photography information, suitable to serve as base mapping for the preparation of plan and profile drawings.

### **Subtask 520 - Geotechnical Investigations**

The purpose of this subtask is to perform a field and laboratory investigation as necessary to develop understanding of the excavation and backfill requirements for the trench for the revised alignment. This subtask includes the following activities:

- A. Provide three borings along the new alignment, at intervals no greater than approximately 1,000 feet.
- B. Conduct geotechnical investigation in conformance with the geotechnical scope for the overall RTM project.
- C. Prepare a supplement or addendum to the geotechnical report prepared for the overall RTM project, documenting field and laboratory efforts. Provide related recommendations for design and construction of the RTM, or provide a statement that recommendations already contained in the geotechnical report for the overall RTM project apply to the new alignment as well.

### **Subtask 530 - Environmental Compliance**

The purpose of this subtask is to obtain the required environmental clearance for the revised alignment. This subtask includes the following activities:

- A. Conduct environmental investigations for the new alignment area.
- B. Prepare a memorandum addendum to the Final Supplemental Mitigated Negative Declaration (SMND) to reflect the new RTM alignment and document that there is no increase in potential impacts.
- C. Coordinate with the City of Fresno to gain approval of the memorandum.

### **Subtask 540 - Utility Location Confirmation**

The purpose of this subtask is to locate utilities proximate to the revised alignment. This subtask includes the following activities:

- A. Locate existing underground utilities by pothole excavation methods at 10 locations.
- B. Conduct field surveys to precisely determine locations of potholed utility facilities.

### **Subtask 550 - Construction Documents**

The purpose of this subtask is to prepare construction documents for the revised alignment. This subtask includes the following activities:

- A. Revise one partial plan and profile (P&P) sheet to eliminate the original alignment and incorporate portion of new alignment.
- B. Prepare two new P&P sheets to incorporate remainder of new alignment.
- C. Prepare revised / new traffic control plans for new alignment area.
- D. Update corrosion control detail sheets to include additional test station locations as necessary.
- E. Incorporate revised / new plans into 90% complete construction document submittal for RTM Segment C.

## **TASK 600 - DESIGN SERVICES FOR TEMPORARY TRAFFIC CONTROL PLANS FOR SEGMENTS B AND C**

The original scope of services for the project included the preparation of basic temporary traffic handling plans, consisting of general traffic control requirements. The City has subsequently determined that detailed traffic control plans are required to be included in the Contract Documents. With the exception of the required time elements, the temporary traffic control plans should be developed to a level so that the City Traffic Division can issue permits using the plans, and they must be reviewed by Caltrans as required and required permits obtained. Accordingly, this will require coordination with and review of the plans by the City Traffic Division. The temporary traffic control plans will be included in the construction documents (90%) phase and the bid documents (100%) phase, and additional services required during the bidding phase will be provided.

### **Subtask 610 - Construction Documents Phase (90%)**

The purpose of this subtask is to prepare 90% temporary traffic control plans. This subtask includes the following activities:

- A. Attend meetings with the City Traffic Division, the County of Fresno, and Caltrans to determine the traffic control requirements.
- B. Prepare detailed 90% temporary traffic control plans for Segment B.
- C. Prepare detailed 90% temporary traffic control plans for Segment C.

- D. Apply for encroachment permit from Caltrans for temporary traffic control, including changeable message signs, in Caltrans' right-of-way.

#### Assumptions and Clarifications

- a. Temporary traffic control plans for Segment B are estimated to consist of fifteen (15) sheets.
- b. Temporary traffic control plans for Segment C are estimated to consist of twenty (20) sheets.
- c. For Segment B, one two-hour meeting with Caltrans, one two hour meeting with the County, and one two-hour meeting with the City Traffic Division are included.
- d. For Segment C, one two hour meeting with the County and two two-hour meetings with the City Traffic Division are included.

#### Deliverables

- a. Electronic files of all temporary traffic control plans in PDF format.
- b. Completed Caltrans encroachment permit application with required attachments.
- c. Ten (10) sets of full-sized drawings Segment B.
- d. Ten (10) sets of full-sized drawings Segment C.
- e. Four (4) sets of half-sized drawings for Segment B.
- f. Four (4) sets of half-sized drawings for Segment C.

#### **Subtask 620 - Bid Documents (100%)**

The purpose of this subtask is to prepare a final set of temporary traffic control plans that include the incorporation of all City review comments deemed applicable and all approval signatures. This subtask includes the following activities:

- A. Attend meetings with the City Traffic Division, the County of Fresno, and Caltrans to address particular issues related to the specified traffic control requirements and clarify plan comments.
- B. Finalize any outstanding issues with Caltrans and obtain encroachment permit.
- C. Prepare detailed 100% temporary traffic control plans for Segment B.
- D. Prepare detailed 100% temporary traffic control plans for Segment C.

#### Assumptions and Clarifications

- a. For Segment B, one two-hour meeting with Caltrans, one two hour meeting with the County, and one two-hour meeting with the City Traffic Division are included
- b. For Segment C, one two hour meeting with the County and two two-hour meetings with the City Traffic Division are included

### Deliverables

- a. Electronic files of all temporary traffic control plans in PDF format.
- b. Ten (10) sets of full-sized drawings Segment B.
- c. Ten (10) sets of full-sized drawings Segment C.
- d. Four (4) sets of half-sized drawings for Segment B.
- e. Four (4) sets of half-sized drawings for Segment C.

### **Subtask 630 - Bidding Phase Support**

The purpose of this task is to complete engineering bid period services related to the temporary traffic control plans, including response to bidder questions and preparation of related addenda content. The bidding phase support services will culminate with the development of conformed documents for the temporary traffic control plans. This subtask includes the following activities:

- A. Answer bidder technical questions related to the temporary traffic control plans, and provide related addenda content to the City for inclusion in project addenda.
- B. Prepare conformed drawings for the temporary traffic control plans (updated design drawings to include revisions contained in the addenda).

### Assumptions and Clarifications

- a. The scope and budget assume three (3) addenda will be prepared for both Segments B and C.
- b. The scope and budget assume that three (3) drawings need to be modified at two (2) hours for each drawing for both Segments B and C.

### Deliverables

- a. Electronic files of all construction record documents (AutoCAD and PDF format).
- b. Fifteen (15) sets of full-sized temporary traffic control drawings for both Segments B and C.
- c. Nine (9) sets of half-sized temporary traffic control drawings for both Segments B and C.

### **TASK 700 - ADDITIONAL UTILITY CONFIRMATION FOR SEGMENTS B AND C**

The original scope of services for the project included potholing for each of the utilities identified on the schematic plans prepared by others. The schematic plans did not include any services. As the design has progressed, it has been determined that potholes for each of the services that have subsequently been identified are required.

### **Subtask 710 - Pothole Existing Services**

The purpose of this subtask is to pothole the existing services along Segments B and C. This subtask includes the following activities:

- A. Prepare pothole plans identifying the services to be potholed that have the potential to impact the pipe alignments.
- B. Utilize vacuum excavation to obtain horizontal and vertical locations of the identified services.
- C. Prepare a summary sheet for each potholed service.

#### Assumptions and Clarifications

- a. The scope and budget assume sixty four (64) additional potholes are required, but a total of fifty seven (57) will be paid out of the Optional Supplemental Services under the original agreement.

#### Deliverables

- a. None.

### **Subtask 720 - Survey the Potholed Locations for the Services**

The purpose of this subtask is to locate the locations of the potholes performed under Subtask 710 by ground survey methods. This subtask includes the following activities:

- A. Perform the required surveying to determine the locations of the potholes.
- B. Provide traffic control for the pothole surveys.
- C. Transfer the surveyed locations of the each potholed service into the CAD basemaps.

#### Assumptions and Clarifications

- a. Each of the potholes performed for Subtask 710 will be surveyed and added to the CAD basemaps.

#### Deliverables

- a. None.

### **Subtask 730 - Update the Crossing Utility Tables**

The purpose of this subtask is to update the crossing utilities tables included in the plans to incorporate the potholed services. This subtask includes the following activities:

- A. Update the tables included in the plans.

#### Assumptions and Clarifications

- a. None.

## Deliverables

- a. None.

### **TASK 800 - TECHNICAL SUPPORT REGARDING WELDED STEEL PIPE VERSUS DUCTILE IRON PIPE**

The City has requested the preparation of a technical memorandum to compare the use of welded steel pipe to ductile iron pipe. Preparation of the technical memorandum will require research into the characteristics, the design life, the availability, and the costs and installation of the pipe materials.

#### **Subtask 810 - Required Research**

The purpose of this subtask is to perform the research required for the preparation of the TM. This subtask includes the following activities:

- A. Research the characteristics of the two pipe materials, including thickness of the metal portion and thickness of the mortar, standard lay lengths, and allowable joint deflections.
- B. Research the availability and lead times for the two pipe materials, including fittings.
- C. Research any issues with the health codes relative to joints in the new potable water mains at crossings of sanitary sewers and storm drains.
- D. Research the necessity or desirability of CLSM with the two pipe materials.
- E. Research the corrosion protection/monitoring differences between the two pipe materials.
- F. Research the construction costs of the two pipe materials.
- G. Research expected construction production rates for the two pipe materials.
- H. Research the expected design lives of the two pipe materials.

#### **Subtask 820 - Technical Memorandum Preparation**

The purpose of this subtask is to analyze the research performed during Subtask 810 and prepare the technical memorandum. This subtask includes the following activities:

- A. Analyze the research performed.
- B. Prepare the technical memorandum.
- C. Submit the technical memorandum for review.
- D. Follow up with the City to discuss any issues and provide any requested clarifications.

### **TASK 900 - SEGMENT B PIPE SIZE AND MATERIAL CHANGE**

Plans and specifications for Segment B were prepared at the 60% level, and submitted to the City. The 60% plans were based on the provided schematic design done by others. The City has now determined that they may change the pipe size on Segment B, and they have requested scope and fees to revise the plans as required to show a different pipe size and pipe material.

### **Subtask 910 - Plan Revisions**

The purpose of this subtask is to revise the already-prepared plans to show a different pipe size and pipe material. This subtask includes the following activities:

- A. Perform the required design to reflect a different pipe size, including any health code issues where existing sanitary sewers and storm drains are crossed, revising the pipe alignment and profile as required due to differences in allowable joint deflections and available fittings, and revising the quantity and locations of pipe appurtenances as required.
- B. Revise the already-prepared pipeline plan and profile drawings to incorporate the design discussed above.
- C. Prepare/revise construction details as required to accommodate the pipe material change.
- D. Prepare/revise the corrosion protection/monitoring details as required to accommodate the pipe material change.

#### Assumptions and Clarifications

- a. The total number of plan and profile sheets and general pipe alignment will remain the same as the already-prepared 60% plans.

#### Deliverables

- a. Plans will be submitted along the with the 90% submittal included under the original agreement.

### **Subtask 920 - Technical Specification Revisions**

The purpose of this subtask is to revise the already-prepared technical specifications to accommodate the different pipe size and material. This subtask includes the following activities:

- A. Revise the already-prepared technical specifications to incorporate the different pipe size and material.

#### Assumptions and Clarifications

- a. None.

#### Deliverables

- a. Technical specifications will be submitted along the with the 90% submittal included under the original agreement.