FIRST AMENDMENT TO THE AGREEMENT
FOR PROFESSIONAL ENGINEERING SERVICES
BETWEEN THE TRUCKEE RIVER FLOOD MANAGEMENT AUTHORITY
AND ATKINS NORTH AMERICA, INC.

RECITALS:

1. On January 15, 2018, the Truckee River Flood Management Authority ("TRFMA") and Atkins North America, Inc. ("Consultant") entered into an Agreement for Professional Engineering Services in which Consultant agreed to provide professional engineering consulting services to advance the design level of the Vista Narrows element of the TRFMA's Flood Protection Plan from an approximately 15% design level to an approximately 60% design level.

2. On February 20, 2018 TRFMA entered into a Design Agreement with the United States Army Corps of Engineers (USACE) for Design of the Truckee Meadows Project. That Agreement anticipated that TRFMA and USACE would identify a common feature of the TRFMA and the USACE flood protection plans and perform preconstruction engineering and design for that feature, including preparation of plans and specifications.

3. TRFMA and USACE have conferred and agreed upon a common features element: terracing along the southern bank of the Truckee River on TRFMA’s property at 1724 S. McCarran Blvd. and the UNR Mill and McCarran parcel (McCarran Blvd. Terracing Design).

4. Because of significant time sensitive projects, USACE will not be able to perform the design and engineering work for the McCarran Blvd. Terracing Design in a timely manner.

5. TRFMA has agreed to perform the design and engineering work for the McCarran Blvd. Terracing Design in order to ensure that it will be completed in a timely fashion, and will seek credit for that work toward its contribution share under the Design Agreement Between the Department of the Army and the Truckee River Flood for Design for the Truckee Meadows Project of February 20, 2018.
6. TRFMA desires that Atkins North America, Inc. (Consultant) perform the design and engineering work for the McCarran Blvd. Terracing Design project pursuant to the terms of the Agreement for Professional Engineering Services of January 15, 2018.

7. The attached Scope of Services was submitted to and reviewed by USACE, and USACE concluded that the Scope of Services is technically sound, meets USACE guidelines, falls within the USACE planning and engineering schedule, and that work could be initiated pursuant to that Scope of Services.

8. Consultant is duly qualified, ready, willing and able to perform the work set forth on the attached Scope of Services by virtue of its expertise.

The parties therefore agree as follows:

ARTICLE 1 - EFFECTIVE DATE

The effective date of this First Amendment shall be October 12, 2018. Work shall commence on the effective date of this Agreement.

ARTICLE 2 – General

The Agreement for Professional Engineering Services is hereby amended and modified in all relevant places to accomplish the intents and effects stated herein. All amendments relate back to the original contract date. All other words, phrases and provisions in the Agreement for Professional Engineering Services remain in full force and effect.

ARTICLE 3 – Amendment to the Scope of Work

The Agreement for Professional Engineering Services, Article 2, Section 2.1, Scope of Services, is hereby amended to include those services set forth in Attachment A to this First Amendment to the Agreement for Professional Engineering Services.

ARTICLE 4 – Amendment to the Maximum Total Contract Amount

The Agreement for Professional Engineering Services, Article 3, Section 3.1, Compensation for Services, shall be amended to increase the total maximum compensation by $1,019,981.00 and shall read: “Consultant’s compensation shall be a maximum of $4,236,882.00 over the term of this contract plus certain expenses . . . .”

IN WITNESS WHEREOF, the parties have executed this First Amendment to the Agreement for Professional Engineering Services.
ATKINS NORTH AMERICAN, INC.

By: _____________________________  Date: ______________________

Harshal Desai, PE, CFM,
Principal in Charge

TRUCKEE RIVER FLOOD MANAGEMENT AUTHORITY

By: _____________________________  Date: ______________________

Jay Aldean, Executive Director

Attachment A: Scope of Services
Attachment A
Scope of Services
McCarran Boulevard Terracing Design

PURPOSE AND PROJECT UNDERSTANDING
The McCarran Boulevard Terracing Design Project (Project) will advance the conceptual terracing design developed in the Truckee River Flood Management Authority’s (TRFMA’s) Alternative 4 Locally Preferred Plan and the U.S. Army Corps of Engineers’ (USACE’s) Alternative 3 Floodplain Terracing Plan. The Project is located on two parcels at the northwest corner of Mill Street and McCarran Boulevard (012-320-01 and 012-320-05) owned by TRFMA. The Project identified with this scope of work is sub-divided into multiple tasks and advances the conceptual design of this river terracing from approximately 15% of final design to 100% final design.

The Project includes approximately 2,400 linear feet of river terracing on the south bank of the Truckee River (STA 3234+00 to STA 3210+00) and 2,400 linear feet of earthen levee. The Project includes 100% design plans for the river terracing portion of the Project and a spoils site that could possibly be preliminary (approximately 60%) design of the levee segment. This segmented design approach allows for the river terracing portion of the Project to proceed in the event the levee segment is not constructed at the same time. Under this approach, excess material from the levee terracing will not need to be stockpiled or hauled offsite instead it will be placed, graded, compacted in the levee footprint with drainage and foundation treatment sufficient for it to be completed as a structural levee at a future date. The Project does not include work in the Truckee River channel or on the north bank.

Atkins will provide civil design services under contract with TRFMA and will receive technical support from the USACE. Atkins will program manage the river terracing and potential levee design by monitoring the overall Project schedule, holding coordination meetings, and compiling work performed for the Project into the Project design and design report.

For purposes of this scope of work and proposal and due to significant project elements and hydraulic modeling of the area having been developed by TRFMA over a significant amount of time, this Project is not expected to deviate significantly from the design concept previously developed by the USACE or TRFMA’s preliminary engineering. The following represents the detailed scope tasks associated with the Project. The Atkins team is represented throughout as CONSULTANT.

Execution of this contract is expected to initially include execution of Tasks 1 through 8 based on preliminary discussions with the USACE. However, if the USACE or TRFMA present a written request Atkins (CONSULTANT) may provide any one of the items identified in Task 9 (or others yet to be identified) to support the design effort and supplement USACE staff.
The following files / documents / access will be provided by the USACE or TRFMA for Atkins to prepare a 30% design for the Project:

1. All CAD files included in the Corps’ Truckee Meadows Flood Control Project Engineering Plans Alternative 3 Floodplain Terracing Plan, plot date 13 May 2013.
2. Existing condition CAD surface including LiDAR of the Project area.
3. CAD design surfaces for Project improvements.
4. Access to DrChecks for USACE QC reviews.

Assumptions and Exclusions:

- Environmental associated work is not included in this scope of work and will be performed by TRFMA’s environmental consultant.
- CONSULTANT will provide design related information to TRFMA’s environmental consultant but will not be required to do any permitting work.
- Right-of-entry or any other access permits (private party, City, NDOT, etc.) are not required because TRFMA owns both parcels where the Project will be located.
- No additional field surveying beyond the project limits will be required upstream or downstream to tie this Project to the overall flood project design.
- USACE will be doing the hydraulic modeling for the Project.
- Hydraulic modeling of the Project elements alone will be able to show a no adverse impact result (i.e. no increase in the 100-year WSE).
- Evaluation of hydrology in the Preliminary Engineering project is not included in this scope.
- FEMA coordination will not be necessary, and a CLOMR is not included in this scope.
- Design plans are not anticipated to include landscape and aesthetics sheets or revegetation sheets.
- Specifications will be generated and compiled by the USACE. CONSULTANT’s role will be limited to reviewing specifications developed by the USACE and providing comments.
- Right-of-way or real estate support will not be needed since the Project is anticipated to be contained within TRFMA owned parcels.
- Minimal coordination will be required with NDOT for the levee tie in location at McCarran Boulevard. Analysis of the existing McCarran Boulevard fill is not included.
- CONSULTANT will not be responsible for meeting agendas and minutes for weekly or monthly meetings led by the USACE.
Schedule:

Given a notice to proceed of November 1, 2018 the following general schedule is proposed. This schedule has been developed based on CONSULTANT’s ability to perform civil design work and may shift if USACE supporting Project decisions, information flow, or submittal review time necessitates.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Design Stage</th>
<th>Anticipated Start Date</th>
<th>Duration</th>
<th>Due Date</th>
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<td>1, 2, 8</td>
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<td>2</td>
<td>Project Management, Coordination, and Meetings</td>
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<td>4</td>
<td>Geotechnical Investigation</td>
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<td>5</td>
<td>30% Design Plans and Specifications Table of Contents</td>
<td>$57,638</td>
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<td>60% Design Plans, Specifications, DDR, Quantities, and Utility Coordination</td>
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Fee with optional services:

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<td></td>
<td><strong>Total with Optional Services</strong></td>
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Task 1. Quality Control

CONSULTANT is responsible for developing a Quality Control Plan (QCP) that describes the experience and background of the Independent Technical Review (ITR) personnel, process for submittals, review schedules for milestones, and deliverable specific review personnel by discipline. The CONSULTANT must submit and receive approval of the QCP with USACE and ITR personnel and receive approval prior to proceeding with Quality Control (QC) work.

CONSULTANT’s QC work is anticipated to be largely limited to the design plans, utility relocation information, and quantity estimates. It is assumed that review of the specifications, Design Document Report (DDR), and other information developed by the USACE will be QC’d as part of the USACE District Quality Control (DQC) session.

All products will be QC’d using the process identified in the QCP and documented. ITR personnel must not be actively involved in the design or analysis and, during the ITR, will review work products for items including but not limited to: calculation accuracy, analysis assumptions, design criteria, design format, consistency, biddability, constructability, etc. Documentation must be complete, finalized, and archived for each submittal. Archived QC files shall be made available for the USACOE’s Quality Assurance (QA) checks. QC documentation will at a minimum identify the reviewer, comments made, comment resolution, and change verification.

CONSULTANT shall certify in a Quality Control Certification (QCC), at final submittal, that the QCP has been followed and ITR and DQC activities have been performed and resolved. The QCC will be identified in the QCP and will be agreed upon by the CONSULTANT and USACE prior to certification. The QCC and archived ITR documentation will be included as a deliverable with the final submittal.

Leads responsible for each scope of work item are noted below for the QC, ITR, DQC, QCC, Agency Technical Review (ATR), Safety Assurance Review (SAR), and Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) review. USACE will coordinate reviews. CONSULTANT will provide responses to civil design comments and will coordinate changes with other disciplines to facilitate review comment backchecks.

- Design plans – CONSULTANT
- Quantities – CONSULTANT
- Utility matrix - CONSULTANT
- Geotechnical Investigation - CONSULTANT
- Specifications - USACE
- DDR – USACE
- ATR – USACE (60% and 90% submittals)
- SAR – USACE (90% submittal)
- BCOES – USACE (60% and 100% submittals)
- Environmental, landscape, real estate, and other supporting material - USACE

USACE Standards:

- CESPD R 1110-1-8 Quality Management Plan, dated 30 December 2002
• ER 1110-1-12 Engineering and Design Quality Management, dated 21 July 2006

**Task 1 Deliverables:**

1. Quality Control Plan (QCP) – prior to QC effort
2. Quality Control Certification (QCC) – final submittal
3. Independent Technical Review (ITR) documentation for each deliverable – each milestone submittal, final submittal
4. Responses to DrChecks comments for DQC, ATR, BCOES, and SAR reviews
5. Updated plans, specifications, and DDR to address comments as required to facilitate review backchecks

**Task 2. Project Management, Coordination, and Meetings**

**Project Management**

Project management will include Project budgeting, invoicing, team coordination, CONSULTANT team meeting preparation and attendance, development and distribution of CONSULTANT team meeting agendas/minutes, coordination with TRFMA and USACE staff, and preparing and submitting monthly progress reports to TRFMA. A one (1) to two (2) page progress report will be prepared and submitted monthly with Project billing during the design phase and will summarize; Project % complete, financial % complete, schedule, work accomplished, and major issues. Atkins anticipates the preparation of up to five (5) progress reports. Progress reports will generally describe the work completed within the billing period, the approximate percent complete of the Project, and whether the Project is on schedule.

**Coordination and Meetings**

Previously developed data and files is expected to be provided by TRFMA and the USACE. CONSULTANT will collect and review existing reports, data, and modeling information provided by TRFMA and the USACE relevant to the Project area. This information is expected to provide a confirmation of the Corps’ National Economic Development (NED) plan and TRFMA’s Locally Preferred Project (LPP) design elements and cost/benefit data that the Project is based on.

- NED CAD files
- Existing condition and design surfaces
- McCarran bridge as-built plans
- All currently available utility information

Project site visits are anticipated to be required to refine the design and coordinate with stakeholders or utility companies.

- CONSULTANT anticipates that up to three (3) site visits may be required.
- Anticipated attendees include; CPM, TPM, USACE staff, local agencies, and local utility companies
- CONSULTANT will prepare field maps and agendas as requested by TRFMA or the USACE

Weekly coordination will be required between the CONSULTANT Project Manager (CPM) and the TRFMA Project Manager (TPM) to provide weekly updates, discuss design progress, and issue resolution.
• Number of meetings
• Number of attendees
• Location and duration
• Requirements for coordination

Monthly coordination will be required between the CPM and the USACE for Project Delivery Team (PDT) meetings.

• CONSULTANT anticipates that up to 18 monthly PDT meetings may be required
• Anticipated attendees include; CPM, TPM, and USACE staff. Other staff may attend several meetings as needed but will not be recurring attendees.
• Meetings are anticipated to be held at the USACE’s Sacramento office and require no more than 8 hours for the meeting and travel from Reno, Nevada.
• CONSULTANT will come prepared to the meeting and may be asked to provide design plan progress sets or other relevant design information. It is assumed that the USACE will provide the meeting agenda and minutes.

Design review meetings will be held for each submittal milestone for the PDT. CONSULTANT will review comments provided by the USACE upon receipt and prepare responses for the meeting.

• CONSULTANT anticipates that up to five (5) design review meetings may be required
• CONSULTANT anticipates that up to four (4) additional ATR, SAR, and BCOES meetings may be required
• Anticipated attendees include; CPM, TPM, and USACE staff
• Meetings are anticipated to be held at the USACE’s Sacramento office and require no more than 8 hours for the meeting and travel from Reno, Nevada.
• CONSULTANT will come prepared to the meeting with preliminary responses to design review comments if provided five (5) working days in advance.
• Review meeting is expected to result in finalization of design review comment responses and provide sufficient direction for the CONSULTANT to address comments for the next submittal.
• It is assumed that the USACE will provide the meeting agenda and minutes.

Other PDT, agency, and utility company coordination is expected to be required throughout the Project life cycle and will be conducted primarily by conference call. Coordination will be conducted to resolve design issues, information exchange, and other items as necessary for the Project schedule.

• Expectations
• Location
• Attendees
• Requirements for meeting
  o PDT
  o Agency
  o Utilities
**Task 3. Field Survey**

**Verify Property Boundaries**

Field survey will be performed for APNs 012-320-05 and 012-320-01 to verify the property boundaries for the Real Estate property map that will be developed for the 90% submittal.

**Geotechnical Exploration Survey**

Field survey of exploration locations and elevations will be performed within the Project area.

**Supplemental Survey**

Supplemental survey will be performed to spot check the topographic surface (provided by TRFMA), identify utilities that are not currently in the existing utility file, and locate general site features needed for the design plans. Because the CAD surface will be provided by TRFMA, it is anticipated that the majority of this work can be completed using GPS and will take no longer than twelve (12) days total throughout the Project duration.

**Task 4. Geotechnical Investigation**

Geotechnical investigation will be performed by Construction Materials Engineers, Inc. (SUB-CONSULTANT). SUB-CONSULTANT’s geotechnical services include test pit excavations, vertical test borings, and laboratory testing, at the discretion of USACE. Exploration locations and elevations will be surveyed by CONSULTANT prior to exploration. Field adjustments due to access limitations may necessitate resurveying the locations and elevations.

*At the time of this proposal, USACE has not defined the desired geotechnical field and laboratory scope of work required; therefore, we have conservatively assumed the following services will be required based on past experience with similar projects and discussions with USACE.*

Prior to commencement of field exploration, USA Dig will be contacted to locate existing utilities at the site. SUB-CONSULTANT will take standard precautions to lower the risk of damaging underground structures; however, underground exploration is inherently risky as it is not possible to precisely locate all underground structures. Private utility lines are anticipated due to the private and historical (previously farmed) nature of the property. It should be noted that USA Dig does not cover private utility lines. If insufficient or incorrect data results in damage to underground structures, the cost for repair will be the responsibility of TRFMA.

**Field Exploration – Test Pits**

The requested subsurface field exploration consists of excavating up to six (6) test pits to depths of 10 feet below ground surface (bgs), to refusal, or to groundwater, whichever comes first. Test pits will be approximately equally spaced at 500 foot spacing along the proposed terracing. Due to narrow drives, fences, and heavy vegetation, test pit locations may be relocated with the approval of USACE. Test pits will be excavated with a rubber-tired backhoe.

Soils encountered will be visually classified and logged in the field by our field representative. Disturbed soil samples (approximately ½ gallon) of representative soil horizons will be obtained for laboratory testing. Test pits will be backfilled using the equipment at hand. Backfill will be loosely placed and disturbed areas regraded to the extent possible.
It is assumed all explorations will occur outside of the wetted perimeter of Truckee River and a Nevada Division of Environmental Protection Working in the Waters permit will not be required. Furthermore, excavations are assumed to be within currently owned TRFMA parcels and outside of NDOT Right-of-Way.

Field Exploration – Drilling

The requested subsurface field exploration includes a total of eight (8) vertical test borings near the proposed levee location (west of McCarran Blvd and north of Mill Street) to depths of 30 feet bgs. Borings will begin using hollow stem auger techniques. Groundwater is expected to be shallow in the area and mud rotary drilling techniques may be required to collect soil samples located below the groundwater table to prevent heaving. The proposed drill rig is capable of performing both hollow stem auger and mud rotary techniques.

Due to the possibility of soft subgrade soils, we are proposing to complete the work with a track mounted drill rig. Based on conditions at the time of drilling, a two-wheel drive truck mounted drill rig may be used.

SPT (1.4”ID) and Modified California (2.4”ID) sampling will be completed in the test borings at intervals varying from 2.5 to 5 feet. The number of blows to drive the sampler one-foot into undisturbed soil (Standard Penetration Test) is an indication of the density and shear strength of the material. If soft fine-grained soils are encountered, Shelby tubes may be pushed.

Our geotechnical personnel will log material encountered during exploration in the field in accordance with ASTM D2488. The groundwater surface will be measured if encountered. Representative soil samples will be returned to our laboratory for testing. Borings will be backfilled with grout or bentonite chips. Excess soil cuttings and drilling mud will be disposed of on site.

Laboratory Testing

Anticipated laboratory testing includes index testing, soil moisture content, direct shear testing, moisture-density unit weights, unconfined compression testing, corrosion testing, hydraulic conductivity, and triaxial testing to determine undrained shear strengths. Actual test quantities will be determined by USACE and billed at a unit rate; cost estimates provided below are anticipated test quantities and are subject to change.

SUB-CONSULTANT’s laboratory is certified as a USACE qualified material testing laboratory. For specialized strength and hydraulic conductivity testing, CME will outsource these tests to an USACE qualified material testing laboratory out of California.

Task 5. 30% Design Plans and Specifications Table of Contents

Design Plans

CONSULTANT will develop the 30% design plans from the Cops’ previous NED plan set and format for the Project area. Design plans format will use USACE standards and sufficiently identify the construction elements associated with the river terrace and levee for the PDT. This submittal is expected to be used primarily for the PDT to discuss the Project and is not expected to include any significant amount of new design detail.

- 4 General sheets will be submitted will include a cover sheet, title sheet and index, vicinity map, and location map. Title sheet and index will include a schedule of drawings, legend, and list of
abbreviations. Vicinity map will be a single line type showing major cities, nearby towns, major streams and rivers, current routes of nearby highways and railroads, and a north arrow. Location map will show the Project location on a small-scale location map indicating the general relationship between the Project and nearby streets. The location map will include a north arrow and show the approved Project boundaries, the construction haul roads, location and phone numbers of the nearest medical facility, and the approved location of any borrow or disposal areas.

- 2 Plan sheets are anticipated to be required
- 1 Profile sheet is anticipated for this submittal
- 1 Typical Section sheet will be included
- 1 Details sheet will be included
- 1 Cross Sections sheet will be included
- Applicable USACE standards are: ERDC-ITL TR-12-6 A/E/C CAD Standard Release 6.0 and ERDC ITL TR-12-1 CAD Drafting
- Vertical datum is assumed to be National Geodetic Vertical Datum of 1988
- Horizontal projection is assumed to be North American Datum 1983, Nevada State Plane, West Zone, FIPS Zone 2703 feet
- Submittal plans will be single layer PDF, 22” x 34” (ANSI D) in gray scale.
- Plan sheet scale is assumed to be 1” = 40 feet, however will be adjusted as necessary to produce clear design details and avoid plan sheet clutter. Scales will be clearly identified on each design plan sheet

USACE Standards:

- ERDC-ITL TR-12-6 A/E/C CAD Standard Release 6.0
- ERDC ITL TR-12-1 CAD Drafting
- ER 1110-2-1150 Design for Civil Works Projects, dated 31 August 1999
- CODP02L0 SPK File Naming Convention for Civil Works CADD Drawings, dated 11 April 2008-Rev 3
- ER 1110-1-8155 Specifications, dated 10 October 2003
- REFP21L0 Architect-Engineer 35% Design Submittals
- REFP22L0 Architect-Engineer 65% Design Submittals
- REFP23L0 Architect-Engineer 100% Design Submittals
- And potentially EM 1110-2-1913 Design and Construction of Levees, dated 30 April 2000

**Engineering Considerations and Instructions for Field Personnel (ECIFP)**

This report will summarize the engineering considerations and provide instructions to field personnel to aid them in the supervision and inspection of the construction contract. For the 30% submittal, an ECIFP outline will be submitted for review.

**Specifications**

At the 30% submittal, specification development will be limited to defining the table of contents (TOC).

- SPECSINTACT software will be used to prepare specifications
• CONSULTANT will coordinate with USACE staff to identify specifications likely needed.
• Anticipated specifications include but are not limited to; Project standards, construction standards, river terracing/excavation, and levee construction.

**Task 5 Deliverables:**

1. 30% Design Plans
2. 30% ECIFP Outline
3. 30% Specifications TOC

Note: quantity estimates, DDR, and utility coordination/relocation will not be developed at this submittal stage.

**Task 6. 60% Design Plans, Specifications, DDR, Quantities, and Utility Coordination**

**Design Plans**

CONSULTANT will advance the design level of detail for the river terrace and levee shown in the previous submittal to be appropriate for the current submittal. The plans will include plan views, longitudinal profiles, elevation views, traffic plans, haul routes, cross-sections, and details necessary to show the features of the Project. The plans will also show overall construction Project footprint, all utilities and relocations, tree removals, fence and floodwall removals, proposed terracing grading, material stockpiling areas, and disposal areas. This submittal is expected to develop additional design detail as identified and provided by the PDT and be sufficiently detailed for this level of design detail. Design information is expected to be provided by the USACE PDT staff for general grading and erosion control from the USACE hydraulic lead, environmental and landscape,

• General sheets and Plan sheets will be updated from the previous submittal
• Total sheet count estimates for the following are for this submittal and subsequent submittals
  o Up to 3 Profile sheets
  o Up to 2 Typical Section sheets
  o Up to 3 Details sheets
  o Up to 12 Cross Sections sheets
  o Up to 2 Traffic Control sheets

Real estate support is expected to consist of supplying design information (utilities, operations footprint, easements, permanent Rights-of-Way, haul routes, improvement footprints, etc.) in GIS or CAD format to the USACE PDT staff. CONSULTANT is not expected to create additional mapping, documentation, take letters, or deliverables. It is expected that the USACE PDT staff will provide direction for easement sizes and location, Rights-of-Way, stockpile locations, and disposal sites for this effort.

**Specifications**

Specifications sections will be developed by the USACE PDT. CONSULTANT will collate specifications sections and populate the specifications document with the provided information. CONSULTANT will provide some review and feedback to the USACE PDT staff to help insure the specifications accurately
represent the design features and constraints. The draft specifications file will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

**ECIFP**

The 60% ECIFP will advance the outline developed at the 30% submittal to include design data, material sources, construction methods, etc. to develop a full report. The ECIFP will discuss why specific methods and designs were selected and provide insight and background data for field personnel to use when reviewing contractor proposals and while resolving construction questions. The report will be relatively short and organized for quick reference use while in the field. The discussions will abbreviate and complement information provided in the plans and specifications. Because the USACE is developing the specifications, it is assumed that the CONSULTANT will be responsible for gathering information for the ECIFP from the participating USACE PDT members, reviewing and formatting.

**DDR**

CONSULTANT will develop the DDR as a Word document which will be populated with input from each of the USACE PDT members and expanded upon at each submittal. The DDR will include a TOC, narrative, and appendices. The TOC will be developed based on feedback from the USACE PDT staff. CONSULTANT will be responsible for compiling information from the PDT, assembling the DDR, and providing the completed document to the USACE Technical Lead for the DQC review.

The narrative is anticipated to include a complete explanation of the basis of design discipline-by-discipline, results of field investigations performed, and discussion of items that warrant special attention. The following is a summary of major DDR sections and lead developer for those sections.

- Overall DDR compilation, general sections, and formatting – CONSULTANT
- Geotechnical Investigation - CONSULTANT
- Hydraulic analysis and considerations – USACE
- Environmental investigations and studies – USACE
- Design elements – CONSULTANT
- Landscape elements – USACE
- Impacts, operations and maintenance, real estate requirements, costs, schedule, recommendations, etc. - USACE

Appendices will include copies of all pertinent correspondence, design calculations, analyses, and submittal review comments. The intent of the DDR is to provide a Project history from inception to completion of the design documents. Hard copies of the DDR are expected to be mainly 8.5” x 11” format with 11” x 17” format where needed.

**Quantities**

Quantities will be developed using AutoCAD Civil 3D and other spreadsheet estimating tools and forwarded to the USACE Technical Lead for incorporation into the Micro-Computer Aided Cost Estimating System (MCACES), Second Generation (MII) file that will be used. The MCACES file will be developed by, populated, and edited by the USACE. CONSULTANT will be responsible for providing quantities, coordinating with the USACE Cost Engineering staff (who will also develop the equipment list), and developing the Project bid schedule.
Utility Coordination

CONSULTANT will identify all utilities within the Project site, coordinate with utility owners, and classify as either removal, relocation, or protect in place. Based on preliminary knowledge of the Project site, expected utilities include; gas, water, electric, drainage, sewer, telecommunications, overhead and buried lines. CONSULTANT will perform a data search of existing utilities and request as-built information from utility owners. Fees for utility as-builts are included with this scope.

CONSULTANT will develop a Project matrix for all known utilities on the site and identify; location, owner, data source, and action to be taken. It is assumed that utility owners will provide relocation or abandonment details to be included in the design plan set and that CONSULTANT will not have to engineer or design utility relocations.

Task 6 Deliverables:

1. 60% Design Plans
2. 60% Specifications (with bid schedule)
3. 60% ECIFP
4. 60% DDR (with Project utility matrix)
5. 60% Quantities

Task 7. 90% Design Plans, Specifications, DDR, Quantities, and Utility Coordination

Design Plans

CONSULTANT will update the river terracing design plans for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. At this stage of the Project, the levee design will remain at approximately the 60% level with the intent of serving as a spoil location. CONSULTANT will perform an ITR on the design plans in accordance with the QCP and forward design plans, when ready for submittal, to the USACE Technical Lead. CONSULTANT will support the QA process as requested, providing the ITR review comments, resolution, and certification.

Specifications

CONSULTANT will update the specifications for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. The draft specifications will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

ECIFP

CONSULTANT will update the ECIFP for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. The draft ECIFP will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

DDR

CONSULTANT will update the DDR for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. The draft DDR will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.
Quantities

CONSULTANT will update the quantities for the submittal based on design updates and comments from the previous submittal and will forward to the USACE Technical Lead for incorporation into the MCACES file and incorporation into the submittal documents for the DQC review.

Utility Coordination

CONSULTANT will update the utility matrix for the submittal based on comments from the previous submittal and will perform an ITR in accordance with the QCP. When the ITR is complete, a ready for submittal matrix will be forwarded to the USACE Technical Lead. CONSULTANT will support the QA process as requested, providing the ITR review comments, resolution, and certification.

Task 7 Deliverables:

6. 90% Design Plans
7. 90% Specifications (with bid schedule)
8. 90% ECIFP
9. 90% DDR (with Project utility matrix)
10. 90% Quantities
11. Real Estate boundary maps (to assist USACE in preparation of Take Letter)

Task 8. 100% / Final Design Plans, Specifications, DDR, Quantities, and Utility Coordination

Design Plans

CONSULTANT will update the design plans for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. CONSULTANT will perform an ITR on the design plans in accordance with the QCP and forward design plans, ready for submittal, to the USACE Technical Lead. CONSULTANT will support the QA process as requested, providing the ITR review comments, resolution, and certification.

Specifications

CONSULTANT will update the specifications for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. The draft specifications will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

ECIFP

CONSULTANT will update the ECIFP for the submittal based on additional information developed by the PDT and comments resolved from the previous submittal. The draft ECIFP will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

DDR

CONSULTANT will update the DDR for the submittal based on additional information developed by the PDT, which is assumed to be minor at this stage, and comments resolved from the previous submittal. The
draft DDR will be forwarded to the USACE Technical Lead for incorporation into the submittal documents for the DQC review.

Quantities

CONSULTANT will update the quantities for the submittal based on design updates, which are assumed to be minor at this stage, and comments from the previous submittal and will forward to the USACE Technical Lead for incorporation into the MCACES file and incorporation into the submittal documents for the DQC review.

Utility Coordination

CONSULTANT will update the utility matrix for the submittal based on comments from the previous submittal and will perform an ITR in accordance with the QCP. When the ITR is complete, a ready for submittal matrix will be forwarded to the USACE Technical Lead. CONSULTANT will support the QA process as requested, providing the ITR review comments, resolution, and certification.

Task 8 Deliverables:

12. 100% Design Plans
13. 100% Specifications (with bid schedule)
14. 100% ECIFP
15. 100% DDR (with Project utility matrix)
16. 100% Quantities

Task 9. Optional Services (If Requested)

The above base scope of services was developed with the understanding that an encroachment permit will not be needed and that the USACE will be performing the tasks identified below. However if the USACE cannot support these services, CONSULTANT may be requested by TRFMA or the USACE, to support any one of the following additional services to help the project remain on schedule. This task will not be performed without formal written approval from TRFMA or the USACE at which time a detailed scope and fee will be identified.

- NDOT encroachment permit
- Hydraulic modeling
- MCACES support