CAMINO REAL REGIONAL MOBILITY AUTHORITY
BOARD RESOLUTION

WHEREAS, the Camino Real Regional Mobility Authority (CRRMA) previously selected CEA Engineering Group, Inc. (Engineer) for the provision of consultant engineering services to the CRRMA for indefinite deliverables contracts; and

WHEREAS, the CRRMA and City of El Paso are parties to the Interlocal Agreement for the Development of Winn Road, which anticipates ingress and egress improvements for the Zaragoza Port of Entry by improving Winn Road from Pan American to the Zaragoza POE; and

WHEREAS, the CRRMA and the Engineer are parties to a Contract for Engineering Services (Contract) that establish various terms and conditions applicable to future work authorizations that can be used to provide various design services for plans, specifications and estimates (PS&E) to the CRRMA as the CRRMA may be requested from time to time; and

WHEREAS, the CRRMA and the Engineer now desire to execute a work authorization, pursuant to and in accordance with the Contract, in order for the Engineer to provide PS&E to the CRRMA for the Winn Road Project.

NOW, THEREFORE, BE IT RESOLVED BY THE CAMINO REAL REGIONAL MOBILITY AUTHORITY:

THAT the Executive Director be authorized to execute **Work Authorization No. 2** with CEA Engineering Group, Inc. including any additional documents or materials as may be required, for the provision of various design services for the Winn Road Project.

PASSED AND APPROVED THIS 10TH DAY OF FEBRUARY 2016.

CAMINO REAL REGIONAL MOBILITY AUTHORITY

_____

ATTEST: Joe Wardy, Vice Chair

_____

Susan A. Melendez, Board Secretary

APPROVED AS TO CONTENT:

_____

Raymond L. Telles
Executive Director

WORK AUTHORIZATION NO. 2
CONTRACT FOR ENGINEERING SERVICES

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 5 of the Contract for Engineering Services (the Contract) entered into by and between the CAMINO REAL REGIONAL MOBILITY AUTHORITY (the "CRRMA") and CEA ENGINEERING GROUP, INC., having its principal business address at 4712 Woodrow Bean Road, Ste. F, El Paso, Texas 79924 (the "Engineer").

PART I. The Engineer will perform engineering services generally described as the preparation of plans, specifications and estimate for the construction project known as Winn Road from Rio Del Norte to Pan American Dr and includes Pan American Dr. from Winn Rd. to Loop 375 in accordance with the project description attached hereto and made a part of this Work Authorization. The responsibilities of the CRRMA and the Engineer as well as the work schedule are further detailed in Exhibits A, B and C which are attached hereto and made a part of the Work Authorization.

PART II. The maximum amount payable under this Work Authorization is $1,631,937.30 and the method of payment is Specified Rate Basis as set forth in Attachment E of the Contract. This amount is based upon fees set forth in Attachment E, Fee Schedule, of the Contract and the Engineer's estimated Work Authorization costs included in Exhibit D, Fee Schedule, which is attached and made a part of this Work Authorization.

PART III. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Articles 3 thru 5 of the Contract, and Attachment A, General Provisions, Article 1.

PART IV. This Work Authorization shall become effective on the last date executed by the Parties hereto and shall terminate upon CRRMA final acceptance of the completed project, unless extended by a supplemental Work Authorization as provided in Attachment A, General Provisions, Article 1.

PART V. This Work Authorization does not waive the Parties' responsibilities and obligations provided under the Contract.

IN WITNESS WHEREOF, this Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

CAMINO REAL REGIONAL MOBILITY AUTHORITY

By: _____
Raymond L. Telles
Executive Director
Date: _____

CEA ENGINEERING GROUP, INC.

By: _____
_____
Date: _____

LIST OF EXHIBITS

Exhibit A	Services to be provided by the CRRMA
Exhibit B	Services to be provided by the Engineer
Exhibit C	Work Schedule
Exhibit D	Fee Schedule/Budget

Exhibit A

SERVICES TO BE PROVIDED BY THE CRRMA

The CRRMA shall perform and provide the following in a timely manner so as not to delay the service to be provided by the Engineer:

1. Authorize the Engineer in writing to proceed.

2. Place at Engineer's disposal all reasonably available information pertinent to the project, including previous reports, drawings, specifications or any other data relative to the project.

3. Designate in writing a person to act as the CRRMA's representative, such person to have complete authority to transmit instructions, receive information and interpret and define CRRMA's decisions with respect to the services to be provided by the Engineer.

4. Render decisions and approvals, as soon as reasonably possible to allow for the expeditious performance of the service to be provided by the Engineer.

[END OF EXHIBIT]

Exhibit B

SERVICES TO BE PROVIDED BY THE ENGINEER

I. PROJECT SUMMARY

The Winn Road project limits are from Rio Del Norte to Pan American Dr. and includes Pan American Dr. from Winn Road to Loop 375. The existing Winn Road is currently a 2 lane roadway and will be extended on new location to Rio Del Norte. Pan American Dr. is currently a 4 lane divided roadway. This project will consist of widening the existing Winn Road facility to a 4 lane divided facility, CRCP, illumination, safety appurtenances, drainage along Winn Road, landscaping and also rehabilitating the existing pavement along Pan American Dr. The project is anticipated to be let in August of 2018.

Professional Services will be provided by the Engineer to produce preliminary plan documents and final plans, specifications, and estimates (PS&E) for the widened roadway. These services generally will include environmental, schematic design, topographic surveying, pavement design, development of roadway geometry, drainage study along Winn Rd., right-of-way mapping, geotechnical, illumination, landscaping medians and parkways, stakeholder coordination, document preparation, and design services necessary for the preparation of PS&E. Coordination with the COEP as well as TXDOT, and all utilities is required. The Engineer will also be required to prepare a complete construction bid package, participate during the bid phase (respond to any questions received by prospective bidders and attend any pre-bid conference). Construction phase services will be limited to responding to requests for information, checking submitted shop drawings and developing final as-built plans.

II. SERVICES TO BE PROVIDED BY THE ENGINEER

Professional services to be provided by the Engineer will conform to the latest editions of the TXDOT Project Development Process Manual, the Roadway Design Manual, the PS&E Preparation Manual, and other applicable codes, ordinances, criteria, standards, regulations, policies, guidelines, practices and procedures.

The Engineer will work at the direction and supervision of the CRRMA Executive Director and its consultants, providing reports and findings, as required. The Engineer will work cooperatively and collaboratively with other governmental agencies and design consultant firms who are responsible for adjacent projects or jurisdictional approval.

Scheduling of activities below will conform to established CRRMA, County of El Paso and/or other municipal review and comment periods for each deliverable of the project.

The services to be provided by the Engineer may include, but is not limited to, the following key elements:

- Project Management
- Surveying
- Right-of-Way Mapping
- Geotechnical Investigations
- Environmental Studies
- Public Involvement Activities
- Schematic Design
- Drainage study
- Stakeholder coordination
- Plans, Specifications and Estimates
- Utility Coordination

A. Project Management

The Engineer, in coordination with the CRRMA, will be responsible for directing and coordinating all activities related to the Project. Project management and administration tasks shall include a Project Management/Work Plan, Progress Reporting, Coordination/Administration, Project Control/Scheduling, and Subconsultant Management. The prime provider's efforts shall include but not limited to the following:

1. Project Management/Work Plan
   1.1. Develop a Project Management/Work Plan to reflect the following:
      - Organization and responsibilities
      - Coordination and communication procedures
      - Coordination meetings
      - Deliverables
      - Graphic production standards
      - Quality control (QC) procedures/plan to ensure the accuracy and quality of the deliverables produced
      - Other important operational information pertaining to prime provider/CRRMA collaboration.
      - A Plan to meet the DBE goal of 10%
2. Progress Reporting
   2.1. Prepare and submit to the CRRMA monthly progress reports of activities completed during reporting period.
      2.1.1. Activities Completed
      2.1.2. Initiated and Ongoing Activities
      2.1.3. Planned Activities
      2.1.4. Problems Encountered/Problem Remedies
      2.1.5. Overall Status including Tabulation of Percentage Complete by Task
      2.1.6. Updated Project Schedule
   2.2. Prepare and Submit Invoices. The report shall be submitted as an attachment to the invoice submittal.
      2.2.1. Financial and DBE Participation
      2.2.2. Hours Worked by Individual

2.2.3. Hourly Rate
2.2.4. Monthly Invoice Amount as Compared to Baseline Monthly Estimate
2.2.5. Monthly Cumulative Invoice Amount as Compared to Baseline Monthly Cumulative Estimate
2.2.6. Reasons for Deviations from Baseline

3. Coordination/Administration
   3.1. The Engineer shall prepare for and attend one kick-off meeting to discuss project guidelines and present general project requirements and expectations.
   3.2. Maintain a communication tracking system, identifying all formal communications.
   3.3. Coordinate with the CRRMA's GEC staff regularly throughout project development.
   3.4. Compile and maintain a comprehensive Administrative Record.
4. Project Control/Scheduling
   4.1. Develop and maintain a Master Schedule for the Project indicating tasks/subtasks, critical dates, milestones, deliverables, and review requirements.
   4.2. Update and Schedule on a Monthly Basis
   4.3. Include all CRRMA GEC, TXDOT and other 3rd Party Reviews in the Schedule
5. Subconsultant Management
   5.1. Develop and implement a plan to manage subconsultants (as part of the project management plan).
   5.2. Prepare subcontracts for subconsultant(s).
   5.3. Monitor subconsultant activities (staff and schedule).
   5.4. Review and recommend approval of subconsultant progress reports and invoices.

Deliverables

- Project Management Plan
- Summaries of all meetings
- Administrative Record
- Project Schedule and monthly updates
- Subconsultant Contracts, Progress Reports and Invoices

B. Surveying

All surveying shall comply with the Professional Land Surveying Practices Act, Article 5282c, Vernon's Texas Civil Statutes. All surveying shall comply with applicable rules promulgated by the Texas Board of Professional Land Surveying. The Manual of Practice published by the Society of Professional Surveyors shall be used as a guide in determining accuracy requirements and procedures to follow. The prime provider's field surveying efforts shall include the following:

1) Project Control
   1. Establish primary and secondary control monuments. The horizontal and vertical datum for the existing control monuments will be as follows:
      - Horizontal – Texas State Plane Coordinate System of 1983(NAD-83 State Plane Coordinates)
      - Vertical – NAVD 88, GEOID 2012A.

2. Verify and locate improvements. Establish monument of parcels.

2) Ground Survey
   1. Perform a records search for all pertinent survey information, including Court House, GLO, private land, existing utilities and prepare a working sketch. Establish property ownership.
   2. The Engineer will provide a boundary and topographic improvements survey of the entire roadway corridor, and 200 feet beyond the proposed project limits and intersecting streets. Survey information beyond/outside the ROW will require permission from the impacted property Owner(s). Requests for access from private property owner(s) and surveys in private property will be the responsibility of the Engineer.
      i. A telephone order to Dig Tess will be placed to have the underground utilities marked (painted) on the surface. The survey will include tying these marks.
      ii. The topographic survey will include tying all visible utility features to include the following: water valves; water meters; sanitary sewer manholes; storm sewer manholes; electrical manholes; power poles; light poles; overhead lines; electrical control panels; traffic signals; traffic signs; telephone manholes and pedestals; stem walls; chain link fences; rock walls; trees, etc.
      iii. The survey will also include existing pavement, paint stripes, existing asphalt and concrete driveways, existing concrete sidewalks, ditches, stairs, steps, and existing concrete curb and gutter.
      iv. Surveying upstream and downstream of the bridge structures crossing the Playa Drain.
   3. Perform any ditch/channel cross-sections at 25-foot intervals along and perpendicular to the ditch/channel centerline for a distance of 500 feet left and right of the existing right-of-way (ROW).
   4. Prepare the parcel plats, descriptions and boundary calculations.
   5. Prepare the base map based on the proposed alignment and existing information.
   6. The Engineer will provide a boundary, topographic improvements survey for up to two offsite ponding areas. The survey shall include the preparation of the base map, boundary survey, survey plats, metes and bounds and monumentation.

<u>Deliverables</u>

- Final planimetric and topographic base map showing all mapped planimetrics and supplemental field survey data described above.
- Final Triangulated Irregular Network (TIN) file.
  - All electronic files shall be fully compatible with the State's MicroStation GeoPak system without further modification or conversion.
  - All MicroStation V8 2D and 3D files will be in U.S. survey feet.
- Parcel Plats
- Metes and Bounds

C. Right-of-Way Mapping

1. Perform a right-of-way survey.

1.1. Conduct reconnaissance survey of existing improvements.
1.2. Determine existing and proposed right-of-way limits, establish on the ground.
1.3. Determine/locate easements, public roads, and utilities.
1.4. Conduct reconnaissance of property corners & survey parent tracts.
1.5. Determine Actual property owners.

2. Acquire permission for Right of Entry As necessary or other written evidence of permission before entering private property.
   2.1. Draft ROE form and coordinate with property owners for signature.
   2.2. Contact log preparation and submission of right of entry forms.
3. Prepare right of way map and property description for the project limits.
   3.1. Prepare ROW map sheets in surface coordinates.
   3.2. Prepare property descriptions and calculations.
   3.3. Prepare ROW map sheets for offsite ponding areas.
   3.4. Set ROW monuments and permanent Type II monuments.

Deliverables

- Complete right of way map and property descriptions throughout project corridor
- Complete right of way map and property descriptions for offsite ponding areas
- Monumentation throughout project corridor

D. Geotechnical Investigations

1. Subsurface Exploration and Testing.
   1.1. Perform a geotechnical engineering investigation at the site of the project.
      1.1.1. Conduct subsurface explorations and provide information needed for the design of a cost effective pavement structural section for the proposed roadway improvements.
         - Contact utility one call services to mark all existing utilities in the project corridor prior to starting work activities.
      1.1.2. Implement traffic control as required to accomplish the exploratory drilling. Prepare and submit to the City/County for review and approval, necessary traffic control plans and permit forms.
      1.1.3. Field Exploration will consist of the following:

Quantity	Depth (ft.)	Sampling	Location
2	15	2.5’ intervals to 10’ 5’ intervals from 10’	Pan American Dr
4	15	2.5’ intervals to 10’ 5’ intervals from 10’	1,000 lineal feet along proposed Winn Rd alignment
2	30	2.5’ intervals to 10’ 5’ intervals from 10’	Bridge Crossing
4	20	2.5’ intervals to 10’ 5’ intervals from 10’	Proposed ponding areas
7	1	Asphalt pavement thickness by coring	750 lineal feet along Pan American Dr

1.1.4. Perform asphalt pavement thickness measurements along Pan American by coring methods.

1.1.5. Develop a laboratory soils testing program to perform moisture content (ASTM D 2216), dry unit weight (ASTM D 2937), percent passing the No. 200 sieve (ASTM D 1140), Atterburg limits determination (ASTM D 4318) and sieve analysis (ASTM D 6913) for each major soil type encountered. Utilize the index test to classify the recovered soils in accordance with the Unified Soils Classification System.

1.1.6. Derive soil strength utilizing the split spoon SPT blow counts or unconfined compressive strength tests (ASTM D 2166) on selected soils.

1.1.7. Perform a California Bearing Test (CBR) (ASTM D 1883) for each major soils type.

1.1.8. Perform a minimum of two percolation tests at each ponding area site (approximately 2) at the anticipated depth of pond.

2. Geotechnical Design

2.1. Perform an engineering evaluation in general accordance with the AASHTO pavement design guide to determine pavement base and pavement thickness for both a flexible and a rigid pavement section. Recommendations for mill and overlay requirements.

2.2. Provide recommendations for underground storm water pipe bedding and backfill.

2.3. Provide recommendations for illumination pole foundations, traffic signal mast arm foundations, retaining wall structures, and resistance of lateral loads for box culvert.

2.4. Summarize results of the geotechnical engineering investigations in a written report.

2.5. Perform a soil stability study for the ponding sites and incorporate into the report.

Deliverables

- Provide three (3) PE sealed and signed copies of report.
- Boring logs incorporated into the design set.

E. Environmental Studies

The Engineer shall perform tasks to complete technical environmental studies and advance the project through final NEPA approval. The Engineer shall prepare an EA and associated technical support documentation in accordance with the requirements of 23 CFR 771.119, FHWA T 6640.8A, TAC Title 43, Part 1, Chapter 2, TXDOT's Environmental Manual, and current TXDOT guidelines, policies, procedures, and all applicable Standards of Uniformity (SOU) in effect as of the date of execution of this Agreement. The EA shall document the social, economic, and environmental conditions and potential impacts of the proposed project and shall contain sufficient detail to meet regulatory requirements for legal sufficiency and provide satisfactory basis for thorough review by the State, having received NEPA assignment from the Federal Highway Administration (FHWA) in December 2014, and (where applicable) agencies with regulatory oversight. All deliverables shall meet regulatory requirements for legal sufficiency. For each deliverable, the Engineer shall perform quality assurance quality control (QA/QC) reviews of environmental documents and on other supporting environmental documentation. In advance of preparing the EA, the Engineer shall submit a detailed annotated EA outline for TXDOT's approval. The EA shall include the

following chapters/sections as applicable to the Project.

1. Need and Purpose
    1.1. The Engineer shall describe the proposed project and the transportation problem(s) or purpose and needs the proposed project is intended to address. This chapter shall also include the following:
    1.2. Description of the proposed project history, early coordination/planning, and a discussion about the proposed project's relationship to regional and/or statewide planning/transportation plans (logical termini and independent utility, linkage to system, capacity, and projected traffic/transportation demand).
    1.3. Description of bicycle and pedestrian accommodation considered, taking into consideration existing and anticipated bicycle and pedestrian facility systems and needs.
    1.4. Description of the planning process, including agency public involvement, and TXDOT and local transportation planning.
    1.5. Description of public involvement conducted for the project and plans for future public involvement, if any.
    1.6. Description of cost and project funding.
    1.7. Applicable regulatory requirements and required coordination.
    1.8. Discuss any right of way and all easements (existing and anticipated, permanent and temporary construction easements).
2. Alternatives
    2.1. The Engineer shall describe alternatives considered for detailed study. This chapter shall describe the process used to develop, evaluate, and eliminate potential alternatives based on the defined purpose and need of the project.
        2.1.1. A preferred alternative should be selected as a result of a rational screening process based on meeting project objectives, community and natural environmental impacts, cost, and other considerations, which should be explained in the EA. A matrix to compare the alternatives is recommended. The build alternative and the no-build alternative will be analyzed in the EA.
3. Affected Environment and Environmental Consequences
    3.1. The Engineer shall describe the existing human and natural environmental setting for the area affected by, and the potential direct effects of, the proposed project. The description will be limited to data, information, issues, and values that will have a bearing on possible impacts and mitigation measures. Methods of analyses for resources and issues that will be addressed in the EA are provided herein.
4. Socioeconomic Impacts
    4.1. The Engineer shall identify and evaluate the social and economic impacts of the proposed project.
    4.2. The Engineer shall use appropriate data sources, such as the U. S. Census, windshield surveys, maps, and aerial photographs to determine the potential for social impacts. Potential social impacts to be documented include:
    4.3. Demographics (population, ethnic/racial distribution, income) based on the most recent census or projections there from.
    4.4. Other populations (disabled, elderly).
    4.5. Land uses in the project area (community services, schools, etc.).

4.6. Mobility – pedestrian, bicycle, transit, cars.
4.7. Safety (traffic and potential for crime).
4.8. Other potential impacts identified in studies of social impacts.
4.9. The Engineer shall identify the property owners and tenants adjacent to a roadway project.
4.10. The Engineer shall identify all potential commercial and residential displacements.
4.11. The Engineer shall identify potential replacement housing or other replacement sites.
4.12. The Engineer shall identify the racial, ethnic and income level of affected individuals and communities, in order to determine any disproportionate impacts on any minority or low-income individuals or communities.
4.13. The Engineer shall develop mitigation measures for social, economic and community impacts for the build alternative.
4.14. The Engineer shall use public contact and public involvement to gather information from individuals and communities regarding social impacts of the proposed project.
4.15. The Engineer shall estimate losses and gains to tax revenues due to the location of the proposed project.
4.16. The Engineer shall evaluate travel modes and patterns in the study area, in order to determine any impacts the proposed project may have on access to homes, businesses and community services. The Engineer shall use predictive models, observation, and/or public contact to determine travel modes and patterns.
4.17. The Engineer shall identify and evaluate the potential for impacts to disabled and elderly individuals and populations. The Engineer shall use the U. S. Census and public contact to determine how the proposed project may impact these individuals and populations.

5. Land Use
5.1. The Engineer shall develop a general description of the project area. The Engineer shall analyze the potential impacts that the alternatives under study may have on land uses within the study area. The analysis should quantify the acreage that would be converted to transportation use and address the conformance of the proposed project with local and regional plans and policies.

6. Environmental Justice
6.1. In compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, conduct an environmental justice (EJ) analysis in accordance with the directives of FHWA Order 6640.23A (June 14, 2012) and US DOT Order 5610.2(a) (May 2, 2012). The analysis should also address the provisions and directives of Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency (LEP), and Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. Studies shall fulfill the requirements of Executive Order 12898. The purpose of the analysis is to determine if the project and the alternatives under study would have disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, on minority and low income populations as defined in FHWA Order

6640.23A. The analysis shall include but not be limited to the following activities:

6.2. Based on the latest available U.S. Census demographic data and U.S. Health and Human Services poverty data, identify EJ communities within the study area to determine the number and percent of low income and minority populations that could be effected by the proposed project. Supplement this information with input from local officials and stakeholders to further identify the distribution and concentration of minority and low income populations that may be adversely effected.

6.3. Determine if the project would have disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, on minority and low income populations. Such effects to be qualitatively or quantitatively evaluated include:

6.3.1. Location impacts of an upgraded or new facility or its components (e.g., roadway, interchange, toll plaza, lighting, etc.) relative to location of EJ populations, which could have an actual or perceived adverse effect.

6.3.2. Associated user impacts where changes in the transportation network (e.g., road closures, new access roads, relief routes, etc.) impact the travel patterns and access of EJ populations or result in a greater increase in diverted traffic through or near EJ populations.

6.3.3. The potential denial of benefits or disparate effects associated with being unable to access or make use of the upgraded or new facility (e.g., because of the cost of a toll or impeded access to the facility), thereby causing the EJ population to depend upon the use of a less efficient facility or route.

7. Airways-Highway Clearance

7.1. The Engineer shall identify airports within 20,000 feet of the proposed project and discuss potential impacts from project implementation.

8. Soils/Prime Farmland

8.1. The Engineer shall identify the geological resources and soils types within the project area according to the Natural Resources Conservation Service (NRCS) mapping units and address compliance with the Farmland Protection Policy Act (FPPA).

9. Beneficial Landscape Practices

9.1. The Engineer shall address the Executive Memorandum related to Beneficial Landscape Practices.

10. Invasive Species

10.1. The Engineer shall address the Executive Order related to Invasive Species.

11. Vegetation

11.1. The Engineer shall categorize and evaluate the vegetation of the study area according to TXDOT's Memorandum of Agreement (MOA) and Memorandum of Understanding (MOU) with the Texas Parks and Wildlife Department (TPWD).

12. Wildlife

12.1. The Engineer shall identify wildlife habitat in the study area and address potential impacts on wildlife. Mitigation of potential impacts including habitat loss and fragmentation and construction in wildlife areas will also be addressed.

13. Threatened and Endangered Species

13.1. The Engineer shall obtain data from the United States Fish and Wildlife Service

(USFWS) and the TPWD to determine the potential presence or absence of federally listed and proposed endangered or threatened species and critical habitat in the study area.

14. Wetlands and Other Waters of the US
    14.1. The Engineer shall identify wetlands and potential jurisdictional waters of the US within the study area and evaluate potential impacts to these resources. If necessary, the Engineer shall conduct wetland delineation, as appropriate.
15. Water Quality
    15.1. The Engineer shall obtain data from the water quality division of the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency (EPA) regarding threatened or impaired waters or streams, principal or sole-source aquifers, and wellhead protection areas, and will document TXDOT's compliance with the Clean Water Act and Safe Drinking Water Act. Applicable requirements of, and compliance with, Section 404 of the Clean Water Act will also be documented.
16. Floodplains
    16.1. The Engineer shall review National Flood Insurance Program (NFIP) maps to determine what portions of the study area are encumbered by the base (100-year) floodplain. Floodplain encroachment will be described and mitigation measures will be discussed, as appropriate.
17. Coastal Zone Management
    17.1. The Engineer shall evaluate the proposed project relative to the jurisdictional boundary of the Texas Coastal Management Program.
18. Archeological Resources
    18.1. The Engineer shall perform an archeological background study and archeological survey in accordance with the following specifications.
        18.1.1. The Engineer shall conduct a background study meeting TXDOT's SOU to include the following:
            18.1.1.1. The Engineer shall review site files at TARL and the Texas Historical Commission (THC) to determine whether previously recorded archeological sites are present within 1 kilometer of the project footprint. Review of the Texas Historic Sites Atlas shall be used for THC file review unless otherwise approved by TXDOT. If sites are present, the Engineer shall consult relevant site forms and archeological reports to provide a discussion of site types near the project corridor. The Engineer shall produce a clearly reproducible map, based on USGS 7.5' topographic maps, indicating areas where recorded archeological sites are present.
            18.1.1.2. The Engineer shall review NRCS soil maps, BEG geological maps, planning documents, USGS topographic maps, and any other available environmental data (including existing hazardous materials assessments) to determine the general landscape characteristics of the study area to assess the potential for archeological sites. The Engineer shall produce a clearly reproducible map, based on USGS 7.5' topographic maps, indicating where areas where preservation of intact archeological

deposits is likely/unlikely.

18.1.1.3. The Engineer shall produce a background study report that will describe the findings of the background studies, evaluate the potential for intact archeological deposits in the project area, provide recommendations about the proposed project's potential to affect eligible archeological sites, and make recommendations to TXDOT and the THC for archeological survey of the project area. This report will conform to TXDOT's SOU and will include the following information:

a. Relevant descriptive information about the proposed project.
b. Description of the project APE, including vertical APE.
c. Description of relevant background information from site files, soil maps, planning documents, and geological maps.
d. Description of the project area and previous impacts, landscape characteristics, or other variables affecting the integrity of known or unknown archeological sites in the project area.
e. Description of all previously recorded archeological sites found within 1 kilometer of the project area and their NRHP and SAL eligibility Evaluation of the extent to which previous impacts, landscape characteristics, or other variables affecting the possibility of finding intact archeological deposits within the project area.
f. Assessment of whether an archeological survey is necessary, and if so, the locations where it should be performed.
g. The Engineer shall prepare the background study report and will submit document for approval.

18.2. The conduct of an Archeological Survey (Reconnaissance or Intensive) shall conform to the current SOU for Archeological Survey Reports, available from the State. The Engineer shall undertake the following activities and demonstrate that these activities occurred by providing supporting data to the State.

18.2.1. Archeological surveys shall be performed for specific proposed transportation activities. Perform archeological surveys under a Texas Antiquities Permit issued by THC and signed by a State professional archeologist (TAC, Title 13, Part 2, Chapter 26).

18.2.2. Perform surveys, reporting, and documentation to satisfy the National Historic Preservation Act, Section 106 and Antiquities Code requirements for determining whether archeological sites are present in the project area, and whether test excavations or a higher level of archeological work is needed.

18.2.3. An archeological background study shall be performed prior to field work. If the Technical Expert has already performed an archeological background study or has been provided with a background study by the State, a new study will not be required.

18.2.4. Archeological Reconnaissance Surveys - The Engineer shall conduct a

Reconnaissance Survey as defined in 13 TAC 26.5(57) and 13 TAC 26.20(1). The Engineer shall submit a permit application for a Texas Antiquities Permit and a report on the work conducted under the permit. Permit applications for the conduct of an Archeological Reconnaissance Survey shall follow the current SOU for Individual Antiquities Permit Applications, which is available from the State. The content for Archeological Reconnaissance Survey reports shall follow the current SOU for Archeological Survey Reports, which is available from the State. The draft and final report shall also fulfill the reporting requirements for the Texas Antiquities Permit.

18.2.5. Archeological Intensive Survey - The Engineer shall conduct an Intensive Survey as defined in 13 TAC 26.5(35) and 13 TAC 26.20(2). The Technical Expert shall submit a permit application for a Texas Antiquities Permit and a report on the work conducted under the permit. Permit applications for the conduct of an Archeological Intensive Survey shall follow the current SOU for Individual Antiquities Permit Applications, which is available from the State. The content for Archeological Intensive Survey reports shall follow the current SOU for Archeological Survey Reports, which is available from the State. The draft and final report shall also fulfill the reporting requirements for the Texas Antiquities Permit.

19. Historic Resource Studies

19.1. The Engineer shall perform non-archeological historic-age resource studies related to compliance with Section 106 and Section 110 of the NHPA (36 CFR 800). Such studies include, but are not limited to non-archeological historic-age resource surveys, research and documentation efforts leading to historic context statements, nominations to the National Register of Historic Places (NRHP), Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) documents, and other mitigation activities such as creating, managing or updating inventories of historic-age properties. Identification, evaluation and documentation tasks shall be completed in accordance with the provisions of the Archeology and Preservation: Secretary of the Interior's Standards and Guidelines (48 FR Parts 44716 et seq. and requirements used by those of the National Park Service, and previously published in 36 CFR Part 61 (SOI Standards)).

19.2. The deliverables shall summarize the methods used for the historic resources studies, and shall summarize the results achieved. Each historic resources study shall have a deliverable. The summary of results shall be sufficiently detailed to provide satisfactory basis for thorough review by the State, FHWA, State Historic Preservation Office (SHPO), Texas Historical Commission (THC) and consulting parties. All deliverables shall be in sufficient detail to meet regulatory requirements for legal sufficiency. All deliverables shall be written to be understood by the public and must be in accordance with the TXDOT On-Line Environmental Manual.

19.3. Historic resource studies shall be performed and documented at sufficient levels to satisfy THC requirements for determining the presence of and documenting historically significant properties in the project Area of Potential Effects (APE) in accordance with 36 CFR 60 and 43 TAC, Part I, Chapter 2 and be State SOU compliant. All reports shall include the names and tasks performed of all technical

experts associated with the project. Performance of non-archeological historic-age resource studies shall include the following tasks as specified in a work authorization. Deliverables shall be transmitted in electronic and paper formats and meet the requirements set for in the State's SOUs.

19.4. Reconnaissance Survey for Non-Archeological Historic-Age Resources

19.4.1. Prior to beginning the Reconnaissance Survey for Non-Archeological Historic-Age Resources, the Engineer shall prepare the Project Coordination Request for Historic Studies (PCR) for TXDOT's review and approval, which will include recommendations for an APE and study area. Upon PCR approval, the Engineer shall conduct a literature review appropriate to the project area and its historic-age resources, and prepare a research design for a reconnaissance survey for non-archeological historic-age resources. The research design shall provide a succinct summary of the literature review results including known historic resources and results of public involvement tasks, clear descriptions of identification, evaluation and documentation tasks required, and associated budget figures and production schedules. The Engineer shall submit an electronic format copy of the research design to the State. The State assumes responsibility for transmitting the research design to the THC, as applicable under the 2015Programmatic Agreement among the FHWA, TXDOT, Texas State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings, and transmitting THC comments to the Technical Expert. The Engineer shall revise the research design to reflect comments by the State and/or THC. The research design shall be revised pursuant to the State's errors and omissions policy.

19.4.2. The Engineer shall conduct a reconnaissance survey conforming to the methodology outlined in the state and/or THC-approved research design. The reconnaissance survey shall not be implemented without prior approval of the research design by the State and/or THC. In addition prior to reconnaissance survey, the technical expert shall ensure that efforts have been made by the appropriate project officials to obtain right-of-entry (ROE) to properties in the study area that have the potential for historic properties if applicable. Each historic-age resource (defined in accordance with 36 CFR 60 as a building, structure, object, historic district or non-archeological site at least 45 years old at the time of letting) in the APE shall be documented in the following manner.

19.4.3. The Engineer shall provide photographic documentation for each historic-age resource sufficient in number and perspective to satisfy State and THC documentation requirements, except under circumstances beyond the Engineer's control. At a minimum this shall include an oblique view with the primary façade and the subject filling the frame. Properties listed or preliminarily determined eligible for the NRHP shall require additional photographs to be taken, including photographs that show the relationship between the historic resource and the proposed project area. Properties with more than one historic-age resource shall also require additional photographs.

19.4.4. The Engineer shall produce an inventory of all resources, provided in a table

form that details their project ID numbers, locations and addresses, property type and subtype classifications, stylistic influences, construction dates, integrity issues and preliminary eligibility recommendations.

19.4.5. The Engineer shall provide a technical report detailing the results of the reconnaissance survey. In the report the Engineer shall describe the findings of the reconnaissance survey, including preliminary assessments of direct, indirect and cumulative effects on historic properties, and make recommendations to the State for the need, if any, to conduct intensive survey efforts. The technical report shall have sufficient detail and clarity to provide THC with a basis for making determinations of NRHP eligibility without requiring submission of additional documentation or shall have sufficient detail and clarity to make recommendations concerning the scope of the intensive survey. The technical report should include an outline of the purpose and methodology of the project, a summary of the background history of project area, presenting historic contexts relevant to the time period associated with the historic-age resources in which to evaluate significance of resources for NRHP eligibility, and observations on patterns of settlement, development trends, resource distribution and analysis of survey data. All appropriate NEPA or federal regulatory language shall be included to provide sufficient clarity concerning eligibility determinations.

19.4.6. The Engineer shall submit a hard copy and an electronic format copy of the technical report.

19.4.7. The Engineer shall contact interested parties when applicable to determine local knowledge of historic resources in the project area.

19.5. Intensive Survey of Non-Archeological Historic-age Resources

19.5.1. The Engineer shall conduct an intensive survey in accord with the research design when applicable. The fee for completing an intensive survey is not included in the budget and would be developed under an amendment if it is determined to be necessary. Tasks associated with the intensive survey shall include:

19.5.1.1. Completion of a Texas Historic Sites Inventory form or a THC-approved equivalent for each resource identified as potentially NRHP eligible in the reconnaissance survey. At a minimum, each inventory form will provide sufficient detail about the location, physical characteristics, character-defining details, modifications and other integrity issues, associated outbuildings or historic landscape features, contextual relationships and historic background of the resource to finalize determinations of NRHP eligibility in accordance with 36 CFR 60.

19.5.1.2. Evaluation of each property identified as potentially NRHP eligible in the reconnaissance survey against NRHP criteria for significance and integrity in accordance with 36 CFR 60.

19.5.1.3. The Engineer shall prepare a survey report detailing the results of the intensive survey. This report shall describe the findings of the intensive survey and make recommendations to the State for NRHP eligibility of all resources and final assessments of direct,

indirect and cumulative effects on historic properties. The survey report shall have sufficient detail and clarity to provide THC with a basis for making determinations of NRHP eligibility without requiring submission of additional documentation.

19.5.1.4. The Engineer shall revise the survey report to address comments by the State and THC at no additional cost to the State and may be required to integrate the findings into another environmental document. The Technical Expert shall submit a hard copy and an electronic format copy of the survey.

19.5.1.5. The Engineer shall conduct tasks associated with public involvement, when appropriate, as part of the intensive survey conforming to the methodology outlined in the ENV-approved research design.

19.5.1.6. The Engineer shall contact interested parties when applicable in order to determine local knowledge historic resources in the project area.

20. Noise

20.1. The Engineer shall conduct a traffic noise analysis of the build alternative in accordance with the current version of TXDOT's (FHWA approved) "Guidelines for Analysis and Abatement of Roadway Traffic Noise". The analysis may include but not be limited to the following activities:

20.1.1. Identify noise sensitive land uses in the vicinity of the alternatives under study. Photo document representative receivers that might be impacted by highway traffic noise and may benefit from feasible and reasonable noise abatement.

20.1.2. Determine existing and predicted noise levels, using FHWA's latest Traffic Noise Model (TNM) software program for a representative sample of noise sensitive receptors for the design year traffic conditions. Perform computer modeling of existing noise levels and predicted (future) noise levels using the latest FHWA approved model.

20.1.3. Compare the predicted design year noise levels to the existing noise levels to assess the potential need for abatement in accordance with the FHWA noise abatement criteria and TXDOT's noise guidelines.

20.2. Propose noise abatement measures that are both feasible and reasonable.

20.3. Determine predicted (future) noise impact contours for transportation activities where there is adjacent undeveloped property where residential or commercial development is likely to occur in the near future.

20.4. The Engineer shall document the findings of the traffic noise analysis in the EA.

21. Air Quality

21.1. Prepare the air quality section in accord with the current version of the State's Air Quality Guidelines, Air Quality SOP, and Air Quality SOU. If the Air Quality SOP requires it, the document must contain the following air quality elements in the format prescribed in the TXDOT Air Quality SOU, provide the following information for nonattainment counties in the environmental document:

21.1.1. A statement providing the name of the nonattainment area, details on the nonattainment pollutants and nonattainment classification of the county or

counties where the project is located.

21.1.2. A statement indicating whether or not the project has been included in, and is consistent with, the current conforming metropolitan transportation plan (MTP). If it is not consistent with the MTP, contact the State for further instructions. Either bridging language will need to be used or the project will need to be revised.

21.2. A discussion of congestion management systems for the county or counties where the project is located and a list of committed projects to reduce traffic congestion in those counties.

21.3. Perform computer modeling of current and future year peak-hour carbon monoxide concentrations at project right-of-way lines using computer models, traffic data, and project plan maps provided by the State for projects that require a carbon monoxide Traffic Air Quality Analysis (TAQA). Compare the modeled current and future year peak-hour carbon monoxide concentrations to the one hour and eight hour carbon monoxide National Ambient Air Quality Standards. Include documentation of the methods and specifications used in modeling and the results of the modeling in the environmental document. This information should include traffic volumes, computer model(s) used, current and future year carbon monoxide concentrations, and percentages of the National Ambient Air Quality Standards for current and future year.

21.4. Perform a Mobile Source Air Toxics (MSAT) analysis and provide documentation in accordance with the current version of the State's Air Quality Guidelines, Air Quality SOP, Air Quality SOU, and the 2009 memorandum from FHWA regarding Interim Guidance Updates on Air Toxic Analysis in NEPA Documents. The following are required for a quantitative MSAT analysis:

21.4.1. A conference call with the State's District, ENV, MPO with jurisdiction, FHWA and the Engineer's Technical Expert.

21.4.2. The Engineer will take meeting minutes which will include the specifics for performing the quantitative MSAT analysis.

21.4.3. The analysis will be performed as agreed upon in the conference call and follow the most recent State and FHWA guidelines.

21.5. Perform a CO/PM hotspot analysis (only applies to CO/PM nonattainment and maintenance areas) and provide documentation in accordance with the current version of the State's Air Quality Guidelines, Air Quality SOP, Air Quality SOU, EPA conformity rule (40 CFR 93), and EPA hotspot guidance documents. If a CO/PM hotspot may be applicable, the conformity consultation process will need to be initiated by the District and MPO. The analysis will be performed as agreed upon in the conference call with the Consultation Partners.

21.6. Complete air quality cumulative and indirect impacts analysis as specified in the Cumulative and Indirect Impacts Analysis section of this attachment and include a discussion of the analysis in the environmental document. Contact the State if further guidance is needed.

21.7. A statement of construction activities.

21.8. Respond to public comments received on air quality issues.

22. Section 4(f) Properties

22.1. The Engineer shall identify Section 4(f) properties in the study area in accordance

with 49 USC 303. The properties identified shall include all property types listed in 23 C.F.R. 771.135 (49 USC 303). Coordination or compliance associated with the El Paso County WID No. 1 licensing agreements or Section 4(f) impacts (including de minimis) may be required. Coordination with the CCRMA, COEP, TXDOT, EPWU and the El Paso County WID No. 1 regarding the project, may be required and could include the preparation of or coordination for a Section 4(f) de minimis, programmatic, or individual assessment. Preparing documentation for a Section 4(f) *de minimis* assessment has been included in the fee. If it is determined that a programmatic or individual Section 4(f) assessment is required, the fee would be developed under an amendment.

22.2. The Engineer shall determine if Land and Water Conservation Fund Act funds were used for the Section 4(f) property in accordance with the regulatory requirements and TPWD guidelines.

23. Hazardous Materials

23.1. The Engineer shall conduct an Initial Site Assessment (ISA) to determine if the alternatives under study have the potential to impact municipal, industrial, and hazardous waste sites and materials. The ISA shall determine the potential for encountering potentially contaminated and hazardous materials in the study area, including possible environmental liability, increased handling requirements (e.g., soil or groundwater), and potential construction worker health and safety issues.

23.2. The ISA will be of sufficient detail to satisfy TXDOT's SOU for Hazardous Materials Initial Site Assessments, available from TXDOT. The ISA shall involve the following activities:

23.2.1. Determine the appropriate project-specific level of inquiry for the ISA. Consider preliminary project design and ROW requirements, including project excavation requirements, anticipated ROW acquisition, and the demolition or modification of structures.

23.2.2. The completed ISA shall include, when applicable, full copies of list search reports, including maps depicting locations, copies of agency file information, photographs, recommendations, and any other supporting information gathered to complete the ISA.

23.2.3. Prepare the ISA in accordance with TXDOT's ISA SOU format.

23.2.4. Consolidate the following ISA information for inclusion in the EA, including any mitigation commitments:

23.2.4.1. A concise description of the scope of the ISA, including disclosure of any limitations of the assessment.

23.2.4.2. A concise summary of relevant information gathered during the ISA, including sufficient information to show that the study area for the alternatives under study was adequately investigated for known or potential hazardous material contamination. Include a summary of early coordination or consultation conducted with regulatory agencies, local entities or property owners.

23.2.4.3. A concise summary of the findings of the assessment for each alternative under study, including an assessment of the potential that an alternative would impact an identified site during construction as well as disclosure of known or suspected hazardous

material contamination that is anticipated to be encountered during construction.

23.2.4.4. A discussion of any commitments recommended for performing further investigation of suspect areas, and justification for postponement of further investigation.

23.2.4.5. A summary of efforts to be employed by TXDOT to avoid or minimize involvement with known or suspected hazardous material sites during construction, and justification for not avoiding contaminated sites.

23.2.4.6. A discussion of any required or recommended special considerations, contingencies or provisions to handle known or suspected hazardous material contamination during ROW negotiation and acquisition, property management, design, and construction.

23.2.4.7. Should the findings of the ISA conclude that additional investigation, special considerations, or other commitments from TXDOT are required during future stages of project development, review those findings and commitments with TXDOT prior to completing the hazardous materials discussion for the environmental document.

24. Visual and Aesthetic Qualities

24.1. The Engineer shall provide a description of the visual quality of current conditions, including any unique visual or aesthetic qualities in the project area.

25. Permit Requirements

25.1. To the extent possible, the Engineer shall identify the need for permits for the proposed project.

26. Mitigation and Commitments

26.1. The Engineer shall summarize commitments that would be included as environmental permits issues and commitments and monitoring of commitments made with resource and regulatory agencies, as appropriate.

27. Construction Impacts

27.1. Potential adverse impacts associated with construction of the proposed project will be assessed.

28. Indirect and Cumulative Impacts

28.1. The Engineer shall evaluate the indirect and cumulative impacts (ICI) of the proposed project using the latest processes, procedures, and guidance issued by TXDOT and supplemented by guidance issued by National Cooperative Highway Research Program (NCHRP).

29. Conclusion

29.1. The Engineer shall identify discuss how the Build Alternative meets the project purpose and needs, explain the technical and economic considerations, and the rationale for selecting the Build Alternative.

30. EA Submittals

30.1. EA Review/Revision

30.1.1. The information gathered above will be compiled into a preliminary draft EA document. Each submittal listed below shall include one electronic copy of

the EA (in PDF format), and a completed comment/response matrix after GEC, TXDOT and FHWA reviews. The Engineer shall provide the following:

30.1.2. One copy of the preliminary draft EA document (V1) to the GEC for review. Upon receipt of comments, revisions will be made and the additional information needed to complete the items will be incorporated into the preliminary draft EA (V2)

30.1.3. One copy of the preliminary draft EA (V2) to TXDOT for review. Upon receipt of comments, revisions will be made and the additional information needed to complete the items will be incorporated into the draft EA (V3).

30.1.4. Ten copies of the draft EA (V3) will be prepared and provided to TXDOT for TXDOT-Environmental Affairs Division (ENV) review.

30.1.5. After receiving comments from ENV, revise the draft EA and submit the revised draft to TXDOT for FHWA review (V4) (10 copies).

30.1.6. Revise draft EA and submit 10 copies of the Final Draft EA (V5)

30.1.7. Revise final draft, if required, and submit 12 copies of the Final EA (V6).

31. EA for Environmental Decision

31.1. Based on the results of the public hearing and the comments received on the EA, the Engineer shall update the EA and associated technical support documentation, as appropriate. The Engineer shall address any TXDOT and FHWA comments on the updates made to the EA. The Engineer shall submit the updated EA to TXDOT.

32. Decision Document

32.1. The Engineer shall support TXDOT in the preparation and processing of the Finding of No Significant Impact (FONSI) for FHWA approval, if applicable. The Engineer shall prepare the Section 139(l) Statute of Limitations notice for processing and publication in the Federal Register, if applicable.

Deliverables

- Archeological Background Study Report and Survey Report
- Section 4(f) property assessment provided in EA.
- Environmental Assessment Outline
- Environmental Assessment
- Historic Resources Project Coordination Request Form
- Historic Resources Survey Report
- Environmental Assessment
- Decision Document/FONSI
- Updated EA
- Section 139(l) Statute of Limitations Notice

F. Public Involvement Activities

1. Public Involvement Program. The Engineer shall implement the public involvement program to support the EA process in accordance with 23 CFR 771, 36 CFR 800 and TAC Title 43, Part 1, Chapter 2. Activities include:

1.1. Preparation of a Public Involvement Plan

1.1.1. The Engineer shall prepare a public involvement plan that specifies strategies to engage stakeholders and outreach activities to be performed

1.2. Preparation of Contact Mailing List and Database

1.2.1. The Engineer shall compile and maintain a contact mailing list and database to include stakeholders, agencies and organization interested in the project.

1.2.2. The Engineer shall prepare and maintain Federal and TXDOT Legislative District maps including Legislator contact information.

1.3. Development of Website Material

1.3.1. The Engineer shall prepare website material (using text accessible format) to be uploaded to the CRRMA website.

1.3.2. The Engineer shall provide responses of public comments per meeting/hearing submitted via the CRRMA website.

1.4. Agency Coordination

1.4.1. Schedule, conduct and attend agency coordination meetings to include, but not limited to, TXDOT El Paso District, COEP, El Paso Water Utility, El Paso Water Improvement District (WID) #1, and Lower Valley WID.

1.4.2. Prepare draft and final agendas, exhibits, handouts, sign-in sheets, and presentations, etc.

1.4.3. Prepare draft and final meeting notes.

1.4.4. Document comments received and prepare responses.

1.5. Public Meetings

1.5.1. Schedule, conduct and attend public meetings (assume 2 meetings).

1.5.2. Prepare public meeting materials including sign-in sheets, flyers, meeting notices, meeting posters, exhibits, comment form, agenda, welcome letter, display ad, legal notice, press release, posters, script, presentation, press kits, and other meeting materials.

1.5.3. Coordinate preparation and review of public meeting materials (2 reviews).

1.5.4. Arrange for facilities, translation of materials, court reporter, interpreter, security, cleanup, etc.

1.5.5. Prepare and mail letters to interested parties and elected officials.

1.5.6. Distribute public meeting notices (bilingual black and white) and post posters (bilingual color).

1.5.7. Identify newspapers, prepare and coordinate public meeting notices –2 newspapers (English and Spanish) (bilingual display ad and legal notice) for local publication.

1.5.8. Ensure receipt of tear-sheets from local newspapers, scan for file and process payments.

1.5.9. Provide staff for public meeting.

1.5.10. Schedule and make facility and equipment arrangements.

1.5.11. Coordinate meeting facility set-up.

1.5.12. Coordinate meeting logistics.

1.5.13. Generate, review and summarize transcripts.

1.5.14. Document the comments received and prepare responses.

1.5.15. Prepare draft and final Public Meeting Summary Report.

1.6. Public Hearing

1.6.1. The Engineer shall schedule, conduct and attend public hearing (assume 1 hearing).

1.6.2. Prepare public hearing materials including sign-in sheets, flyers, meeting notices, meeting posters, exhibits, comment form, agenda, welcome letter, display ad, legal notice, press release, posters, script, presentation, press kits, and other meeting materials.

1.6.3. The Engineer shall coordinate preparation and review of public hearing materials (2 reviews) with OPI.

1.6.4. Arrange for facilities, translation of materials, court reporter, interpreter, security, cleanup, etc.

1.6.5. The Engineer shall prepare and mail letters to interested parties and elected officials.

1.6.6. Distribute public hearing notices (bilingual black and white) and post posters (bilingual color).

1.6.7. The Engineer shall identify newspapers, prepare and coordinate public hearing notices - 2 newspapers (English and Spanish) (bilingual display ad and legal notice) for local publication.

1.6.8. The Engineer shall ensure receipt of tear-sheets from local newspapers, scan for file and process payments.

1.6.9. The Engineer shall provide staff for public hearing.

1.6.10. The Engineer shall schedule and make facility and equipment arrangements.

1.6.11. The Engineer shall coordinate meeting facility set-up.

1.6.12. The Engineer shall coordinate meeting logistics.

1.6.13. The Engineer shall generate transcripts.

1.6.14. The Engineer shall coordinate Public Hearing Certification for incorporation in the Public Hearing Summary Report.

1.6.15. The Engineer shall prepare draft and final Public Hearing Summary Report. Summarize and include all comments received on the EA during the comment period. All substantive comments must be addressed. Responses prepared to address all substantive comments made shall be included in the Public Hearing Summary Report.

1.7. At the conclusion of the public involvement activities, the Engineer shall summarize the activities in the EA, including all agency and public coordination efforts, meeting dates, number of attendees, locations, common comments, and how public comments were addressed.

Deliverables

- Public Involvement Plan
- Project Mailing List Database
- Federal and TXDOT Legislative District Maps
- CRRMA Website Input Material
- Responses to Public Comments
- Agency Coordination Meeting Notes
- Newspaper advertisements and/or Legal Notices

- Public Meeting Material
- Public Meeting Summary Report
- Public Hearing Material
- Public Hearing Summary Report and Analysis Report
- Public Hearing Transcript
- Public Involvement Summary for the EA

G. Schematic Design

For the purpose of this scope of services, a proposed typical section of a four lane divided section will be used. The Engineer will develop the Design Schematic to include, but not be limited to, the following items:

1. Data Collection
   1.1. Photographic Record
      1.1.1. Collect relevant data along the corridor.
      1.1.2. Document any Landmarks along Existing Corridor.
      1.1.3. Prepare photos in JPG Format.
   1.2. Collect Utility/ROW Data
      1.2.1. Acquire all Existing Above and Below Ground Utility Plans and Documents (Public and Private).
      1.2.2. Acquire Listing of Utility Companies to be contacted and other pertinent information.
   1.3. Traffic and Transportation Data
      1.3.1. Acquire all regional transportation and mobility studies, environmental, planning and land use, and feasibility studies. CRRMA/GEC will provide all current and future traffic data required.
   1.4. Municipality Reports/Developments
      1.4.1. Acquire Documents for proposed developments along proposed route
      1.4.2. Illumination standards from appropriate agency
2. Submit design criteria to be used in the design of the Project for approval by CRRMA prior to beginning schematic design work. Preliminary Design criteria shall include, but not limited to, the following roadway elements: facility type, design speed, acceptable level of service, horizontal criteria, stopping sight distance, maximum curvature, and maximum super-elevation rates, vertical criteria, minimum and maximum gradient, K-values, and vertical clearances, cross section criteria, lane widths, shoulder widths, pavement cross slope and maximum side slopes, intersection horizontal and vertical criteria including corner radii, and design vehicle turning movements.
3. Complete Roadway Design efforts required to develop roadway elements of the Project, including the preparation of roadwayproposed culvert crossing, horizontal geometric designs, and vertical geometric designs for all main lanes, frontage road lanes, ramps, cross roads, and construction sequencing plan narrative and typical sections.
4. Design Schematic. The Design Schematic shall show, as a minimum:
   4.1. Typical sections of all improvements including widened or new bridge structures
   4.2. Roadway plan and profile and super elevation
   4.3. Location and text of proposed guide signs

4.4. Lane lines and arrows indicating the number of lanes
4.5. ROW limits:
- Provide design cross-sections to verify ROW requirements
- Show existing and proposed ROW limits
- Show existing (if any) and proposed easements
- Show the proposed toe of slope

4.6. New culvert bridge crossing limits at Rio del Norte over the Playa Drain
4.7. Retaining wall(s) limits
4.8. Noise wall(s) limits (if any)
4.9. Roadway lighting locations
4.10. Geometrics, such as pavement cross slopes, lane/shoulder widths, slope rates (for fills and cuts) of the typical sections of proposed main lanes, frontage roads, ramps, and cross roads (if any), shown in plan view and cross sections.
4.11. Current and projected traffic volumes as provided by TXDOT/CRRMA.
4.12. Control of access lines
4.13. Utility Conflicts/Adjustments (Location and Elevation Information)
4.14. Existing and Proposed Drainage Structures, offsite ponding areas
4.15. Preliminary traffic control and sequence of construction plan
4.16. Proposed signing and striping layout

5. Other Items to support the engineering design effort
5.1. Develop Engineer's cost estimate to include construction, ROW, utility relocations, and contingencies.
5.2. Prepare drainage analysis and maps of the existing and proposed drainage systems.
5.3. Develop initial aesthetic (, walls, sign supports, light fixtures, etc.) and landscaping enhancements.
5.4. Traffic analysis and conceptual intersection type recommendation at Pan American and Winn.
5.5. Traffic signal warrant analysis at the intersection of Pan American Dr. and Winn Rd.
5.6. Perform a preliminary review for ADA compliance.
5.7. Present reports and findings to CRRMA GEC, as required.
5.8. Work cooperatively and collaboratively with other governmental agencies and design consultant firms responsible for adjacent projects.

Deliverables

- Design Summary Report (DSR)
- Preliminary (30, 60, 90 and 100 percent) Design Schematic
- Cost Estimate for all phased Design Schematic submittals
- GeoPak and MicroStation .DGN files for Design Schematic
- Technical memorandum on traffic signal warrant analysis, drainage analysis, bridge concepts, lighting, ITS assessment, and aesthetics

H. Drainage Study

1. Perform a drainage study of the project watershed.
1.1. Determine the drainage requirements for the project.

1.1.1. The study will consider the location of retention ponding areas for storing runoff from the project. The study will be documented in a bound Drainage Study report signed and sealed by a Registered Professional Engineer in the State of Texas.

1.1.2. The study will identify any right of way requirements for locating and constructing new ponding areas and/or other drainage appurtenances required for the project.

2. Coordinate with the City of El Paso, TXDOT, and adjoining developers/property owners to check that all proposed drainage systems accommodate the proposed construction.
3. Drain design will be performed using WinStorm or GEOPAK Drainage. Cross drainage design will be performed using WINSTORM, HY 8 or HEC RAS. Design services will include the following:
   3.1. Prepare drainage area maps.
   3.2. Prepare culvert plan and elevation sheets.
   3.3. Prepare plan/profile sheets for storm drain systems and outfall ditches.
   3.4. Select standard details from City of El Paso or TXDOT list of standards for items such as inlets, manholes, junction boxes and end treatment, etc.
   3.5. Prepare details for non-standard inlets, manholes and junction boxes.
   3.6. Prepare drainage details for outlet protection, outlet structures and utility accommodation structures.
   3.7. Identify pipe strength requirements.
   3.8. Prepare drainage facility quantity summaries.
   3.9. Identify potential utility conflicts and design around them, wherever possible.
   3.10. Take into consideration drainage impacts to pedestrian facilities, utilities, driveways, retaining walls and concrete traffic barriers.
   3.11. If applicable, prepare Hydraulic Data Sheets for any bridge or cross drainage structures at outfall channel. (Indicate site location such as name of creeks and stations)
   3.12. Develop plans for all temporary drainage facilities necessary to allow staged construction of the project and to conform with the phasing of adjacent construction projects without significant impact to the hydraulic capacity of the area.
   3.13. Prepare design layouts, drainage area maps, and design of all drainage components. The Engineer shall design all conventional storm drainage and cross drainage in conformance with City of El Paso design guidelines.

Deliverables

- Three copies of the bound Drainage Study report.

I. Stakeholder Coordination

1. The Engineer will be responsible for implementing any stakeholder involvement. Services will include identifying stakeholders affected by the project and coordination of meetings to establish a proactive involvement process during the Project development. The stakeholder involvement activities sought under this scope of services, include, but are not limited to the following:
   1.1. Develop a plan and strategies to engage stakeholders.
   1.2. Organize and implement meeting logistics.
   1.3. Identify stakeholders and develop mailing list database.

1.4. Facilitate meetings.
1.5. Prepare and distribute involvement material.
1.6. Produce graphic materials to promote and educate stakeholders about the project.
1.7. Monitor and review comments received.
1.8. Prepare exhibits/displays for Meetings.
1.9. Prepare Meeting Summary, including a response to comments received.

Deliverables

- Stakeholder Involvement Plan
- Stakeholder Mailing List Database
- Meeting Material
- Meeting Summary

J. Plans, Specifications and Estimates (PS&E)

1. As necessary, update traffic data, right of way maps, and other information from previous projects and other activities.
2. Design Summary Report
   2.1. Complete the Design Summary Report
   2.2. Hold a Design Conference at the 30% design stage.
3. Initial design
   3.1. Develop traffic control plan/detour plans
   3.2. Obtain environmental permits
   3.3. Coordinate approval of pavement design
   3.4. Prepare hydrologic/hydraulic reports as necessary
4. Utility Coordination
   4.1. Research and determination of the location of existing utilities
   4.2. Minimization of utility conflicts with the proposed design
   4.3. Coordination with utilities to develop relocation plans
   4.4. Develop utility layout plan
   4.5. Develop utility relocation schedule
5. Roadway Design
   5.1. Design final vertical and horizontal alignments
   5.2. Develop cross-section and earthwork volumes
   5.3. Detail design elements throughout project including illumination, driveway access, bicycle and pedestrian facilities, landscape, and miscellaneous details
      5.3.1. Illumination, along Winn Road and Pan American Drive
         - Street light plans showing types and locations of light poles, ground boxes, electrical service and conduit
         - Perform electrical calculations using approved light standards
      5.3.2. Driveway access at existing facilities
         - Including transitions/modifications to existing streets
      5.3.3. Bicycle and pedestrian facilities
      5.3.4. Landscape Design, planting design
      5.3.5. Irrigation Design, including coordination for potential reclaim water use
   5.4. Submit design exceptions/waivers as required on project.
   5.5. Design culvert crossing at Rio del Norte over the Playa drain. Culvert will be in general accordance with TXDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2014.

5.5.1. Culvert Layouts will show plan and profile geometry of the structure.
5.5.2. Rip Rap Layouts will show riprap around the culvert.
5.5.3. Grading Layout will show grading at the culvert headwalls.
5.5.4. Summary of Estimated Culvert Quantities.
5.5.5. Applicable TXDOT Standard Sheets.

6. Operational design
   6.1. Develop signing and pavement marking plans
7. Drainage Design
   7.1. Develop retention pond design
   7.2. Prepare retention pond details
   7.3. Develop hydraulic design for culverts and storm drains
   7.4. Prepare culvert and storm drain details
   7.5. Design final vertical and horizontal alignments for storm drains
8. Traffic Control
   8.1. Attend up to two meetings to present and discuss the proposed construction sequence and traffic control plans for the project.
   8.2. Prepare traffic control drawings including: line diagrams; detour plans; TCP; general note guidelines for contractor to follow; TCP details/standards.
   8.3. Compile TCP Details/Standards using available TXDOT Standards.
9. Storm Water Pollution Prevention Plan (SW3P)
   9.1. Prepare SW3P Narrative
   9.2. Prepare Storm Water Pollution Prevention Plans
   9.3. Prepare SW3P Manual (Binder)
10. Final assembly of PS&E Package and supporting documents
   10.1. Complete final construction plans
   10.2. Develop standard and special specifications
   10.3. Develop special provisions
   10.4. Develop cost estimate
   10.5. Develop bid document package
   10.6. Support CRRMA's develop of project agreements related to the project
11. ADA compliance Services
   11.1. Engineer will perform plan review and inspections for ADA, T.A.S, and Texas Department of Licensing and Regulation requirements.
12. Bid Assistance
   12.1. Assist with bid process and provide answers to prospective bidders
   12.2. Attend prebid conference

Deliverables

- 30, 60, 90, 100% Submittals: The Engineer will prepare and provide five (5) reproducible copies of the 30, 60, 90, 100% Design documents and corresponding electronic (pdf) files
- Specification list
- QC redlines at (30, 60, and 90 percent) design reviews
- Preliminary (30, 60, and 90 percent) design review
- Final hydraulic report
- Final approved design exceptions/waivers
- Plans estimate
- Specification list, general notes, special provisions, specifications, special specifications

- Final signed and sealed construction plans
- Bid document package
- Environmental Permits

K. Utility Coordination

1. Utility Coordination
   1.1. Conduct a records research and acquisition of available as-built utility records. This information will be placed on the base map and provided to all utility companies.
   1.2. Designate known utilities throughout the ROW, as provided by utility owners.
   1.3. Conduct utility coordination meetings to review record drawings and proposed improvements with affected utility owners individually at each phase submittal. Utilities that may be affected include: El Paso Electric Company, Texas Gas Service, El Paso Water Utilities, Time Warner Cable, TW Telecom, ATT Telephone, AT&T Distribution Cable, MCI, QWEST Communications, and others.
   1.4. Prepare and issue minutes for each meeting.
   1.5. Provide base map information to all utility companies at each submittal phase.
   1.6. Obtain clearance letters and provide copies of documentation to the CRRMA at the Final submittal phase. Utilities can request that their new service lines be included as part of the bid package provided that the utility company signs an agreement with the CRRMA and funding is provided.

[END OF EXHIBIT]

Exhibit C
Work Schedule

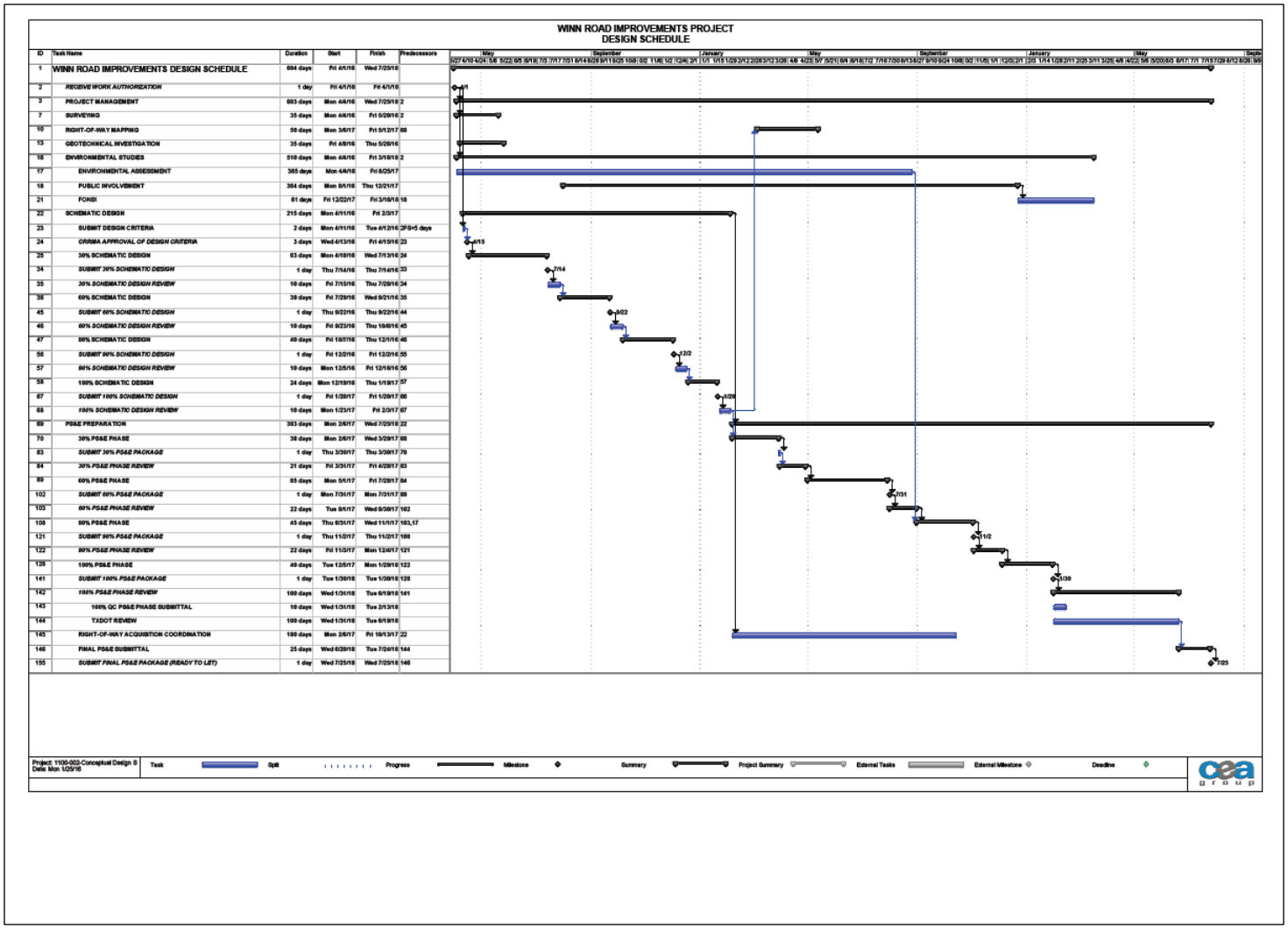

EXHIBIT D
FEE SCHEDULE
(Final Cost Proposal)

This attachment provides the basis of payment and fee schedule**. The basis of payment for this contract is indicated by an "X" in the applicable box.** The basis shall be supported by the Final Cost Proposal (FCP) shown below. If more than one basis of payment is used, each one must be supported by a separate FCP.

"X"	Basis	
____	Lump Sum	The lump sum shall be equal to the maximum amount payable. The lump sum includes all direct and indirect costs and fixed fee. The Engineer shall be paid pro rata based on the percentage of work completed. For payment the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or other evidence of cost.
____	Unit Cost	The unit cost(s) for each type of unit and number of units are shown in the FCP. The unit cost includes all direct and indirect costs and fixed fee. The Engineer shall be paid based on the type and number of units fully completed and the respective unit cost. For payment, the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or any other cost data. The FCP may include special items, such as equipment which are not included in the unit costs. Documentation of these special costs may be required. The maximum amount payable equals the total of all units times their respective unit cost plus any special direct items shown.
__X__	Specified Rate Basis	The specified rates for each type of labor are shown in the FCP below. The FCP may include special items, such as equipment which are not included in the specified rates. Payment shall be based on the actual hours worked multiplied by the specified rate for each type of labor plus other agreed to special direct cost items. The specified rate includes direct labor and indirect cost and fixed fee. The CRRMA may request documentation of reimbursable direct costs including hours worked. Documentation of special item costs may be required. The specified rate is not subject to audit.
____	Cost Plus Fixed Fee	Payment shall be based on direct and indirect costs incurred plus a pro rata share of the fixed fee based on the ratio of labor and overhead cost incurred to total estimated labor and overhead cost in the FCP or the percentage of work completed. The invoice must itemize labor rates, hours worked, other direct costs and indirect costs. The Engineer may be required to provide documentation of hours worked and any eligible direct costs claimed. The overhead rate charged is subject to audit and adjustment to actual rates incurred. The FCP below shows the hourly rates for labor, other direct expenses including but not limited to travel and allowable materials, overhead rate and the fixed fee. __A. Actual Cost Plus Fixed Fee - Actual wages are paid (no minimum, no maximum. This option does not apply to Indefinite Deliverable Contracts.) __B. Range of Cost Plus Fixed Fee – Actual wages must be within the allowable range shown on the Final Cost Proposal.

EXHIBIT D
FEE SCHEDULE

Final Cost Proposal (FCP) Supporting Basis of Payment

* The **MAXIMUM AMOUNT PAYABLE** is $1,631,937.30

* Maximum amount payable must be negotiated for each work authorization.

The maximum amount payable is based on the following data and calculations:

CEA Group

Winn Road Improvements

Company	Fee
CEA Group	$1,195,588.80
Kimley Horn & Associates	$110,936.93
Frank X. Spencer & Associates	$100,654.37
AMEC Foster Wheeler	$27,534.70
Lisa McNelis Landscape Architect	$15,788.30
Cox Mclain Environmental Consulting	$142,770.20
Altura Solutions	$7,341.00
Blanton & Associates	$31,323.00
[Firm Name, S8]	$0.00
Total	**$1,631,937.30**