

ATTACHMENT A

Scope of Services

PROJECT DESCRIPTION

The approach to this scope is based on simply replacing the bridge while matching its existing profile and length and maintaining the abutments in the channel. This will result in a roadway approach that transitions the paved roadbed from the existing narrow width of approximately 12-feet to approximately 30-feet based on industry standard practices for lane transitions. This will result in the least roadway improvements and simplest bridge replacement that is physically possible.

This bridge replacement assumes stage construction of the bridge to maintain a single lane access over the channel during construction. A one lane bridge will be constructed adjacent to the existing - either to the north or to the south. This will be determined at the onset of the design after coordination with the County and design team. Once the single lane bridge and roadway approaches are constructed, traffic will be shifted to the new single lane bridge and the existing bridge will be *removed*. Once the existing structure is removed, the new bridge will be widened to accommodate two lanes of traffic plus shoulders, and will incorporate Caltrans standard concrete barriers for safety. Once widened, the bridge will be opened for two way traffic.

The following Scope of Services is based on certain assumptions as listed below. As the project ensues, these assumptions will be verified and further discussed with the County to determine if a study phase is warranted to investigate corrective measures for roadway flooding. Any deviation from these assumptions will be coordinated with the County and a revised scope and fee established as agreed upon.

Exclusions

- Field Review support is not included.
- Assistance with Local Assistance Program compliance is not included.
- Mitigation planting and irrigation design services are not included.
- Right of way acquisition services are not included.
- A Phase I Initial Site Assessment is not included.
- Investigation of detours and/or low water crossings is not included.
- Investigation of potential borrow sites in the channel is not included.
- Slope staking notes, construction cross sections and construction staking not included
- Construction support services are not included.
- Design of any other type of bridge structure other than a simple span cast in place concrete slab bridge using the Caltrans tables is excluded.
- Community Meetings and public outreach.

Assumptions

- The bridge will be a single span, reinforced concrete slab bridge with diaphragm abutments and a maximum SJclan length of 40-feet.
- The existing roadway profile will be maintained, and will not be raised to avoid overtopping of the roadway.
- Only one alignment alternative will be considered - either a southerly or a northerly widening.
- Stage construction will be used, rather than a detour.
- Existing utilities will not require relocation.
- Length of roadway approach design will not be more than 200-feet either side of the bridge, with only a slight rise in profile to accommodate an increase in depth of bridge superstructure.
- The proposed bridge will not change the proposed water surface elevation, and will have no adverse impact on the upstream structures.
- The proposed bridge will allow the 100-year discharge to flow under the bridge with sufficient freeboard to allow drift passage, and the 50-year discharge does not overtop the roadway.
- It is assumed that the bridge will not cause a significant encroachment into the floodplain.
- Drainage systems are not required.
- Project impacts will not affect wetlands, and that a Wetlands Technical Assessment will not be required.
- It is assumed that special status species are not present in the project site area and that Biological Assessment of special status species will not be required.
- The County will prepare the boilerplate specifications and compile the technical specifications with the boilerplate.
- The project will be constructed as designed and as-built plans will not be necessary.

SCOPE OF SERVICES

CONTRACTOR'S approach for the Rosa Morada Bridge Replacement Project is as follows:

- Phase 0: Project Management Project
- Phase 1: Study and Definition
- Phase 2: Preliminary Engineering and Reports Final
- Phase 3: Design
- Phase 4: Construction Support Services

Phase O - PROJECT MANAGEMENT

Project Management includes the supervision and scheduling of project staff, review of work prepared by staff and subconsultants, project coordination, client liaison and the monitoring of the schedule and the budget. Also included in this Task is the preparation of project reports and attendance at meetings with the staff of San Benito County to receive input and discuss and review the project during its critical design periods.

- 0.1 Project Administration: Supervise, coordinate, and monitor design for conformance with Caltrans standards and policies. Prepare monthly progress reports and invoices. Make arrangements with and obtain permission from County for CONTRACTOR to work on the County road. Assist the County in obtaining permission to enter private property for environmental and engineering studies. Employ and monitor subconsultants. Coordinate CONTRACTOR's work with the County's work. Close and archive the project records at the end of the project.
- 0.2 Project Initiation: Upon receipt of Notice to Proceed, a project kick-off meeting will be held to finalize the project scope, the project approach, the goals and the schedule. Items to be addressed include a review of the key issues associated with the project, a description and clarification of the approach required to respond to these issues, a discussion of potential County, State, Federal and other permits which may be required for the project and the verification of the project milestone dates.
- 0.3 Coordination Meetings: To facilitate comprehensive input from the County during the critical design periods, the CONTRACTOR's Project Manager and selected Team Members will attend up to 2 coordination meetings with the County staff members.
- 0.4 Design Review Meetings: The CONTRACTOR's Project Manager and selected Team Members will attend 2 design review meetings with County staff which will be scheduled to coincide with the completion of the preliminary design and final design phases.

Phase 1 - PROJECT STUDY AND DEFINITION

The County will not require any Phase 1 - Project Study and Definition services be provided.

Phase 2 PRELIMINARY ENGINEERING AND REPORTS

2.1 DATA COLLECTION

The County will research records and supply the CONTRACTOR with copies of documents and plans of any future street or utility plans for review and incorporation into the bridge plans.

2.2 FIELD SURVEYS AND BASE MAP TOPOGRAPHY

- A. Right-of-Way/Control: CONTRACTOR shall establish project horizontal and vertical control, search for and locate existing controlling boundary monumentation and resolve project right-of-way based upon the record title information, with supporting documents supplied by the County and available public records. It is assumed the County will provide current preliminary title reports with exceptions packages and legal descriptions prior to commencement of work for this item.
- B. Aerial Photogrammetry: CONTRACTOR shall determine the limits and nature of the aerial photogrammetric work appropriate for the project. CONTRACTOR shall coordinate with the photogrammetrist for flight marker requirements and layout, time of flight(s) and schedule. This work also includes the digital mapping of the site at a scale of 1" = 40' with a 1-foot contour interval.
- C. Flight Marker Control: CONTRACTOR shall perform field surveys to set flight markers for aerial photogrammetry control. Flight markers will be field surveyed to tie to project horizontal and vertical control. Flight marker field survey will be reduced and coordinated geometry results will be supplied to the photogrammetrist.
- D. Supplemental/Topo Survey: CONTRACTOR shall provide supplemental ground survey and data reduction to augment aerial topography. CONTRACTOR shall provide field supplemental survey within the project boundary and office support to obtain horizontal and vertical locations of selected visible above-ground features, dip necessary manholes and storm inlets for location and elevation. CONTRACTOR shall provide location of existing water line and utility poles, and perform up to seven (7) cross-sections of the existing channel.

2.3 GEOTECHNICAL INVESTIGATION

Bridge Foundation Report:

- A. Research and Data Collection: Review of readily available geologic and soil literature in the vicinity of the site including review of as-built drawings and existing LOTS sheets, if any.
- B. Permits/USA Clearances: The CONTRACTOR shall comply with the County and other permit requirements. It is assumed that a no fee permit will be provided.

- C. Field Exploration: A field review will be performed. For the bridge structure, 2 borings up to 70' in depth will be drilled. Hollow stem auger or mud rotary drilling is proposed. These explorations will provide an evaluation of subsurface soils/rock conditions for the proposed structure. One to two bulk samples will be collected from the roadway subgrade to evaluate the R-value for pavement design.

The boring locations will depend upon the available access and the boring data from previous studies. The use of a truck mounted drill rig for drilling in the general area of the proposed abutment locations is anticipated. No traffic control is anticipated at this time. Subsurface soil conditions encountered in each test boring at the time of drilling will be continuously classified and logged. "Relatively undisturbed" and bulk samples of substrata will be obtained from test borings. The borings will be drilled and capped in accordance with the permit requirements.

In order to be cost effective any existing available borings/data for the structure will be used. Based on our research of the geologic maps and the as-built information, alluvial soils are expected at the site.

- D. Laboratory Testing: Laboratory tests shall be performed on representative soil samples or rock samples such as moisture density, unconfined compression, gradation analyses, R-value tests, corrosion tests and Plasticity Index, as necessary.
- E. Soils Analysis/Evaluation: Engineering analyses shall be performed and design recommendations developed for the proposed bridge foundations. Large diameter CIDH piles or driven piles are expected for the bridge supports.
- F. Prepare Draft Foundation Memo (Type Selection Letter): Preliminary recommendations for foundations shall be provided, as well as a Type Selection Memo with the LOTB for the structure. The geotechnical engineer shall attend a Type Selection Meeting, if needed.
- G. Prepare Final Foundation Report: A detailed foundation report shall be prepared, including design recommendations for foundation types, footing elevations, lateral design capacities and pile foundation or spread footing design recommendations. The report will also discuss seismic considerations, evaluate the liquefaction potential and comment on the site soil conditions from this standpoint. Information related to Caltrans Seismic Design Criteria (SOC v 1.5) shall be provided.
- H. Log of Test Borings: Using the bridge General Plan as a base map, boring log sheets shall be provided for the plan set.
- I. Ongoing Design Consultation and Review: Design review and consultation shall be provided through final design.

Deliverables: Preliminary Foundation Memo

2.4 PRELIMINARY RIGHT -OF-WAY

- A. Right-of-Way Acquisition Plats & Legal Descriptions: The CONTRACTOR shall prepare plats and accompanying legal descriptions for up to three (3) right-of-way acquisitions for the County to use in acquisition negotiations.

Please note that these services do not include services pertaining to right of way acquisition services such as assistance with property or easement acquisition, assistance with signatories, or preparation of deeds.

- B. Temporary Construction Easements Plats & Legal Descriptions: The CONTRACTOR shall prepare plats and accompanying legal descriptions for up to three (3) temporary construction easements for the County to use in negotiations.

Please note that these services do not include services pertaining to right of way acquisition services such as assistance with property or easement acquisition, assistance with signatories, or preparation of deeds.

Deliverables: Right of Way Acquisition Plats and Legal Descriptions
Temporary Construction Easements Plats and Legal Descriptions

2.5 HYDRAULICS ANALYSES

- A. Obtain and Review Project Documentation: CONTRACTOR shall obtain relevant project information, including but not limited to the following: Caltrans and San Benito County records for the existing bridge and adjacent bridges, such as supplemental bridge maintenance reports and historic hydraulic studies; Federal Emergency Management Agency (FEMA) floodplain information (if available).

Assumptions:

- The above reports information are public information and readily available.
 - The bridge maintenance records are readily available for use by the CONTRACTOR.
- B. Hydrologic Analysis: Peak discharges for the 50- and 100-year flood events shall be estimated using at least two commonly used methods as outlined in the Caltrans Local Assistance Program Manual.
- C. Hydraulic Analysis: Hydraulic parameters (water surface elevations and velocity) shall be obtained from the Army Corps of Engineers HEC-RAS (Hydraulic Engineering Center River Analysis System) model based on: 1)

Surveys obtained from the design team and 2) a reconnaissance level field investigation. The river reach will be described. Manning's "n" values for the channel and overbank shall be estimated from field investigation and engineering judgment. Models of existing conditions as well as up to four alternative bridge designs shall be developed and the results evaluated. The hydraulic variables (water surface elevation, velocity etc.) shall be determined for the design discharge, 50- and 100-year discharges estimated as part of the modeling work. Results from the Hydraulic Analysis shall be provided in both tabular as well as graphical output formats for the design team and the County.

- D. Hydraulic Criteria: Chapter 800 of the Caltrans Highway Design Manual (HOM) delineates the hydraulic design criteria for bridges. The basic rule for hydraulic design is that bridges should be designed to pass the Oso with sufficient freeboard and convey the Q_{100} without freeboard, exceptions may be granted if sufficient evidence is provided. The HOM notes that 2 feet of freeboard is often assumed for preliminary bridge designs but leaves the recommendation for freeboard to the judgment of the hydraulic engineer based primarily upon the debris anticipated at the bridge.
- D. Drift: The CONTRACTOR shall research bridge maintenance records for existing bridges upstream and downstream of the proposed bridge to determine if any maintenance challenges have occurred such as debris getting caught on the bridge piers. This helps to determine the necessary freeboard and span length, to minimize debris capture and therefore future maintenance.

Assumptions:

- The proposed bridge will allow the 100-year discharge to flow under the bridge with sufficient freeboard to allow drift passage.
- The 50-year discharge does not overtop the roadway.
- If a conditional letter of map revision (CLOMR) is required by the local agency due a change in water surface elevation cause by the new bridge, this would be considered extra work and a separate task order would be required.

- E. Scour Estimate: The CONTRACTOR shall review maintenance records for the existing and adjacent bridges over Arroyo Dos Picachos to determine if the stream has degraded over time. Contraction and abutment scour will be estimated using the methods described in the Federal Highway Administration (FHWA) Publication HEC-18, *Evaluating Scour at Bridges*.

Assumptions:

- Degradation estimates will be straight line extrapolation using best available data if no numeric sediment transport models are available.
- No bank protection will be required.
- The bridge will be a single span bridge with no pier scour estimate needed.

F. Location Hydraulic Study: Using the HEC-RAS output data, the CONTRACTOR shall complete a Location Hydraulic Study (Floodplain Evaluation Report) in accordance with 23 CFR 650.113. This report is generally included in the Environmental Document for the bridge.

Assumptions:

- The proposed bridge will not change the proposed water surface elevation and will have no adverse impact on the upstream structures.
- It is assumed that the bridge will not cause a significant encroachment into the floodplain. If a significant encroachment into the floodplain is found, a separate task order will be necessary.
- As part of the Location Hydraulic Study, the CONTRACTOR shall complete items 3, 4, 5, 7 and 9 of the Floodplain Evaluation Report.
- Survey information for adjacent buildings will be used to determine the potential impact of the bridge replacement on the adjacent insurable structures.
- It is assumed that no Conditional Letter of Map Revision (CLOMR) will be required. If a CLOMR is required, this would be considered extra work and a separate task order will be necessary.

Deliverables: Draft Hydraulic Study Report (one round of revisions assumed)
 Final Hydraulic Study Report, including Location Hydraulic Study

2.6 ENVIRONMENTAL DOCUMENTS

Coordination with Caltrans and NEPA Analysis

- A. Preparation of APE Map: The CONTRACTOR shall prepare the Area of Potential Effects (APE) Map and an initial project description for submittal to Caltrans. The CONTRACTOR shall coordinate the revision and approval of the APE map and project description by Caltrans staff.
- B. Draft NEPA Technical Studies: It is anticipated that Caltrans will require the completion of technical studies under NEPA to accompany the Categorical Exclusion. These studies will specifically comply with NEPA-related environmental processes, including the following: Section 106 of the National Historic Preservation Act, Endangered Species Act, Executive Order 11990 (Protection of Wetlands), and Executive Order

11988 (Floodplain Management). Based on the PES Form received from Caltrans and the County, it is currently expected that the following technical reports will be required for this project:

- Cultural Resources/Section 106 of the National Historic Preservation Act
- Biological Resources/Natural Environment Study
- Tree Survey
- Floodplain/Location Hydraulic Study

- C. Cultural Resources/Section 106: The CONTRACTOR shall prepare the cultural resource studies to comply with Section 106 of the *National Historic Preservation Act*. Compliance studies will consist of an *Archaeological Survey Report (ASR)* and a *Historic Properties Survey Report (HPSR)* of the Area of Potential Effects (APE) of the proposed bridge replacement. These reports will be prepared in the required Caltrans/FHWA formats to address the provisions of Section 106 of the National Historic Preservation Act.
- D. Biological Resources/Natural Environment Study: The CONTRACTOR shall prepare a Natural Environment Study (NES) for the project. The design team biologists will review the project preliminary design layouts for the replacement bridge, as well as other pertinent project materials. They will also conduct a data search on the nearest known locations of special status plant and animal species to the site. Existing sources of information will be reviewed, summarized, and cited as appropriate.

The design team biologists shall visit the project area and conduct reconnaissance level surveys. The biotic habitats of the project site shall be surveyed and delineated on a map of appropriate scale. Biotic habitats suitable for the occurrence of plant species of special status shall be identified, as well as those subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) and CDFG. Wildlife habitat values shall be determined based on the biotic habitat surveys. Habitats appropriate for wildlife species listed as threatened or endangered by the state or federal governments, and other species of special status shall be identified.

Following the field visits, the biologists shall conduct an impact analysis to determine which biological resources, if any, will be significantly impacted by the proposed project. The data collected from the above-mentioned tasks will be used as the basis for preparing an NES report per Caltrans guidelines. Graphics shall be produced to portray the habitat types of the site, impact areas, and, if appropriate, proposed mitigation sites. The NES

shall be submitted to the design team, the County, and Caltrans for review and comment.

- E. Tree Survey: The CONTRACTOR shall complete a tree survey within the project area. All trees with a diameter at breast height (dbh) of two (2) inches or greater at the project site shall be located by GPS, tagged, identified to species, and evaluated as to general health and condition. Following the completion of the tree survey, the CONTRACTOR shall produce a brief report of findings, including a summary table listing the relevant information (species, dbh, and condition) for the trees surveyed and a map of tree locations. An electronic file of tree locations shall also be provided.
- F. Submittal of NEPA Environmental Documentation: The CONTRACTOR shall compile and package the draft NEPA technical environmental studies for submittal to the design team and the County for review and comment. Upon approval by the County and the project team, these technical studies shall be submitted to Caltrans for review and comment.
- G. Revisions and Additional Coordination: This scope of work includes time for responding to one round of Caltrans comments and for revising the technical materials, if necessary. This scope also includes time for general coordination and correspondence with Caltrans staff, County staff, and the project team. It is anticipated that attendance at up to two (2) additional meetings with Caltrans and/or the project team may be necessary. The CONTRACTOR shall also draft the NEPA Cat Ex form for Caltrans, if requested.

Preparation of Draft Initial Study/Mitigated Negative Declaration for CEQA:

The CONTRACTOR shall prepare an Initial Study/Mitigated Negative Declaration (IS/MND), which will evaluate the proposed bridge replacement project. The IS shall describe the existing environmental setting and include the CEQA Checklist. An analysis of the potential impacts resulting from the proposed project shall be included in the IS. Mitigation measures shall be identified to reduce impacts to a less than significant level. (In the event that the Initial Study identifies significant impacts of the project that cannot be mitigated to a less than significant level, an EIR would be required. Preparation of an EIR is not included as part of this scope of work; however, an EIR could be prepared as an additional service upon written authorization.). Copies of the Administrative Draft IS shall be submitted to the County staff and CONTRACTOR staff for review and comment.

The IS/MND shall be consistent with the CEQA Guidelines as well as the County's Initial Study format and shall include the following sections and appropriate environmental analysis.

- A. Background and Project Description: The Initial Study will include relevant background information on the project site, and a general description of the proposed bridge improvements. Maps, tables, and appropriate graphics will be included to describe the characteristics of the project. The project description will also discuss the project objectives and will include a section describing the consistency of the project with relevant federal, state, and local plans.
- B. Environmental Setting: The Initial Study will include an overview of the environmental setting of the project site area, including a description of the existing and surrounding land uses, as well as the local geologic, drainage and flooding, hazardous materials, biological, cultural resource, and visual conditions.
- C. Environmental Checklist: The Initial Study will include the CEQA Environmental Checklist, as outlined in Appendix G of the CEQA Guidelines. The checklist will be used to identify potentially significant impacts resulting from development of the proposed project.
- D. Discussion of Significant Environmental Effects: The Initial Study will include a discussion of potentially significant environmental effects that will result from the proposed bridge replacement. While the Initial Study will address all issues in the checklist as necessary, it is presently anticipated that substantial discussion will be necessary in the areas of geology, hydrology and flooding, water quality, hazardous materials, biological resources, cultural resources, visual conditions and construction impacts.
- E. Geology and Soils: The Initial Study will address the potential geologic impacts from construction of the proposed bridge, based upon available geotechnical information provided by the design team. Mitigation measures will be identified to minimize potentially significant geologic impacts.
- F. Hydrology and Flooding: The Initial Study will describe the historical and existing hydrologic conditions in the project area, including the potential for flooding and scour, and will address the changes in hydrologic conditions resulting from the project, based upon the Location Hydraulic Study or other information provided by the County and the design team.
- G. Water Quality: Construction of the proposed bridge replacement could cause erosion and sedimentation into the Arroyo Dos Picachos channel. The potential project impacts to water quality will be described in the Initial Study based upon information provided by the County and/or the design

team. Mitigation measures will be identified for potentially significant water quality impacts, as necessary.

- H. Hazardous Materials: The Initial Study will describe the potential for existing hazardous materials contamination to be present in the project area, based upon the Phase I Environmental Site Assessment to be completed by the project team.
- I. Biological Resources: The Initial Study will describe the potential for the bridge replacement to result in impacts to biological resources present at the project site, based on the Natural Environment Study (NES) described above. The potential impacts of the project upon biological resources will be evaluated in the Initial Study. Mitigation measures will be identified to reduce or avoid significant impacts, as appropriate.
- J. Cultural Resources: The potential impacts of the project upon cultural resources which could be present at the site will be evaluated based on the Archaeological Survey Report and the Historic Property Survey Report prepared for the bridge site, as described above. Mitigation measures will be identified to reduce or avoid significant impacts, as appropriate.
- K. Visual Conditions: The Initial Study will describe the existing visual character of the project site area and the projected change in visual character resulting from replacement of the proposed bridge. Mitigation measures will be identified to reduce or avoid any significant visual impacts of the project.
- L. Construction Impacts: Potential construction impacts of the proposed project will be addressed in the Initial Study, including construction noise, traffic and air quality. The Initial Study will also address the potential for temporary impacts upon adjacent land uses resulting from construction of the proposed bridge improvements. Information on construction staging and scheduling will be provided by the design team. Mitigation measures will be identified to reduce or avoid potentially significant impacts.
- M. Other Issues: The Initial Study will also address the following issues as required by the CEQA Guidelines:

Air Quality	Public Services
Hazards	Recreation
Land Use and Planning	Transportation/Traffic
Mineral Resources	Utilities and Service Systems
Noise	Mandatory Findings of Significance

Preparation of the Draft Initial Study:

The Administrative Draft IS will be revised, based upon the comments received from the County and the design team. Upon approval by the County Staff, the document will constitute the Draft IS/MND and copies will be delivered to the County for public review and circulation, as required by CEQA. An electronic disk or email version of the Draft IS/MND will also be provided to the County and the design team.

Mitigated Negative Declaration and MMRP:

The CONTRACTOR shall prepare drafts of the Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program (MMRP) for the project, and will submit these to the County for review and comment. If requested by the County, the CONTRACTOR shall will revise these documents and re-submit them to the County staff for approval and signature.

Preparation of Final Initial Study

The CONTRACTOR shall respond to any substantive comments received on the Draft IS during the public review period, and will make any necessary changes to the Initial Study, based upon the comments received. Copies of the Final IS will be submitted to the County and the design team. An electronic disk or email version of the Final Initial Study/Mitigated Negative Declaration will also be provided to the County and the design team.

This scope of work includes approximately 12 hours to respond to written comments which may be received from the public and/or various governmental agencies as a result of circulation of the Initial Study.

In the event that substantial technical comments are received on the Initial Study, we would provide additional work to defend the IS/MND on a time and materials basis as an extra work item, upon County authorization.

Permits

It is anticipated that the proposed project will require regulatory approvals from the U.S. Army Corps of Engineers (USAGE), Regional Water Quality Control Board (RWQCB) and California Department of Fish and Game (CDFG). The CONTRACTOR shall prepare the necessary permit applications for submittal to the resource agencies. It is anticipated that the following permits will be necessary for this project:

- Section 404 Permit (USAGE)
- Section 401 Certification
(RWQCB)
- 1602 Streambed Alteration Agreement (CDFG)

The CONTRACTOR shall submit first-review administrative draft permit packages to the project team for review and comment. After incorporation of any changes, the packages will be submitted to the resource agencies. Throughout the permit process, the CONTRACTOR shall maintain regular contact with regulatory staff in order to identify any concerns that need to be addressed prior to the issuance of permits.

2.7 35% SUBMITTAL AND TYPE SELECTION REPORT

Upon completion of data gathering, investigation and analysis, a Type Selection Report will be prepared by the CONTRACTOR. The Report will summarize the findings and provide a conclusion, and will recommend the design and improvements for the project. Preliminary plans of all major features of the project shall be provided so that the County will have a clear understanding of the proposed improvements. A preliminary opinion of probable construction cost of the proposed improvements will be provided by the CONTRACTOR. A type selection meeting will be arranged if necessary.

- A. 35% Preliminary Plans: The Preliminary Design Phase is intended to allow the County, utility companies and other involved agencies to review and comment upon the basic design concepts early in the process. Plan development will be based upon the geometry developed in the Geometric Alignment Drawing. Preliminary Plans will be developed to establish fundamental elements of the design. The proposed plans for this preliminary submittal are as follows:

Title/Index Sheet
Typical Roadway Cross Sections
Preliminary Roadway Alignment Plans and Profiles
Traffic Handling/Stage Construction Plans
Bridge General Plan (Type Selection)

- B. 35% Preliminary Opinion of Probable Construction Cost: A Preliminary Opinion of Probable Construction Cost will be prepared based on items and quantities of work shown on the Preliminary Plans and other anticipated improvements. The opinion will be based upon current market unit costs, the magnitude of the quantities, our experience with similar local projects and the engineer's judgment.

Deliverables: Type Selection Report
35% Plan Set
35% Level Probable Opinion of Construction Cost
Preliminary Studies and Reports as noted above

2.8 UTILITY COORDINATION: UTILITY VER/FICATION REQUEST

As required in Chapter 13 of the Caltrans Right of Way Manual, the CONTRACTOR shall send a Letter to Owner Requesting Positive Location (Utility "B Letters and Plans"), which identifies claim of liability and cost for positive location of utilities from the potentially affected agencies. Coordination for any relocation will be provided at this time. The Utility Agency Coordination Log will be updated as necessary.

Deliverables: Letter to Owner Requesting Positive Location - "B Letters and Plans

Phase 3 FINAL DESIGN

3.1 CONSTRUCTION DOCUMENTS

Based on the approved Bridge Type Selection, Construction Documents shall be prepared by the design team. The Construction Documents package shall include specifications and construction plans and will conform to County's and Caltrans' Standards with Federal requirements.

Final design calculations shall be prepared for the bridge structure and submitted for County staff review. An opinion of probable construction cost of the project will also be provided. The CONTRACTOR shall coordinate and incorporate any utility agency's future needs, if any, in the bridge. The CONTRACTOR shall also design all street transitions to the bridge.

- A. Design Criteria: for Bridge Design: Final bridge design will be performed in accordance with Caltrans Bridge Design Specifications and other Caltrans Design Manuals. Design will be based on the "Load and Resistance Factor Design" method, with HL93 and permit truck design live loads. Seismic design will be performed in accordance with current Caltrans Seismic Design Criteria.
- B. Approach Roadway Design: The final approach roadway design will be performed in accordance with County Standards, AASHTO, Caltrans Highway Design Manual, and Caltrans Standard Specifications. Final grading and drainage details will be developed as well as new/existing roadway conformance details, as required. Cross sections will be developed on approximately 50-foot intervals.
- C. Utility Relocation: The CONTRACTOR shall provide communication and coordination with the utility companies during the preliminary and final design process. The CONTRACTOR shall coordinate the relocation and protection of the existing utilities for the project based on the information obtained from the County and various affected utilities. The design team

will also provide adequate openings for the utilities in the bridge. It will be the responsibility of each utility owner to provide a design of their facility.

- D. Environmental: Environmental mitigation requirements will be included in the specifications and estimates. It is assumed that only minor mitigation requirements will be needed for this project. Revegetation requirements, such as tree replanting ratios, will be identified during the environmental process by the design team. Bridge demolition, water pollution control measures, traffic detours, traffic handling plans, and project signing will be developed by the design team, as well as bridge and roadway embankment protection details. Note that mitigation planting and irrigation plans are not included in the scope. If it is determined that this level of mitigation is required for the project, these items may be added to the scope of work at the County's request.

- E. Plan Sheets and Details: The plan sheets will be prepared in AutoCAD. Plans will be prepared in English units and will be consistent with Caltrans Standard Plans. All plans will be signed by the civil engineer or structural engineer (registered in the State of California) in responsible charge of the design, in accordance with the Caltrans Local Programs Manual. Three submittals will be made during the preparation of the Construction Documents as follows: When the documents are 65% complete; when the documents are 95% complete; when the final documents are complete. Each submittal will incorporate the review comments from the previous submittal by the County staff as well as those of all other reviewing agencies.

3.2 -65% DESIGN SUBMITTAL (65% PS&E)

- A. 65% Complete Plans: Based on comments received from the 35% Design Submittal, the design will be advanced to the point that all major design issues and solutions are represented in the plan documents. Minor details may be missing from the plan set at this milestone, but all plan sheets will be included in this submittal package. The CONTRACTOR shall work with the County and other agencies to resolve any remaining conflicts between the comments of different reviewers. Upon comment resolution with County, no further changes will be anticipated thereafter and such comments or changes will be deferred until the next submittal or next appropriate meeting.

- B. 65% Complete Specifications: A draft of the technical specifications sections to be included for the final project specifications shall be identified with the submittal. The technical specifications will reference County or Caltrans standard specifications sections for the various items of work,

with specific consideration of measurement and payment provisions. County will be responsible for the completion of "boilerplate" general and standard provisions related to the contract.

- C. 65% Opinion of Probable Construction Cost: The Preliminary Opinion of Probable Construction Costs shall be updated to reflect the refinements from the Preliminary Design to the Unchecked Design Submittal.
- D. Response to Comments Memorandum: A memo with "response to comments" received from the Preliminary Design Submittal shall be provided.

65% Deliverables:

6 - 65% Plan Sets (11x17 plots)
6 - 65% Level Opinion of Probable Construction Cost
6 - 65% Complete Project Specifications
6 - Response to 35% Comments Memo

3.3 -95% DESIGN SUBMITTAL (95% PS&E)

- A. Quality Assurance Review: Conduct an internal quality assurance review of the plans, specifications, and estimate; concurrent with review of the 65% Submittal by the County and other agencies. The CONTRACTOR's quality assurance program provides for independent checking of individual tasks, as well as an independent review by experienced senior staff. The purpose of this review is to provide oversight to specific project details by professionals who are not closely involved in the design, and to review the constructability, cost-effectiveness and completeness of design features relative to the normal standard of professional care. ***This independent check shall include a red, green and yellow check of the structural calculations and plans.***
- B. 95% Complete Design Plans: Checked Plans shall be prepared and submitted to the County, utility companies and other agencies for final review and comment. Agencies shall thoroughly review the details of the project. The CONTRACTOR shall work with the County and other agencies to resolve any conflicts between the comments of different reviewers.
- C. 95% Complete Specifications: The technical specifications shall be updated using County and Caltrans Standard Specifications. The County will prepare boilerplate specifications and compile the technical specifications with the boilerplate.

Compilation of the technical specifications with the boilerplate specifications may be added to the scope of work at the County's request.

- D. 95 % Level Checked Opinion of Probable Construction Cost: The Opinion of Probable Construction Cost shall be updated for use in the Bid Documents using standard County and/or Caltrans items.
- E. Memorandum: Response to Comments: A memo with "response to comments" received from the 65% Design Submittal shall be provided.

95% Deliverables:

- 6 - 95% Plan Sets (11" x 17" plots)
- 6 - 95% Opinion of Probable Construction Cost
- 6 - 95% Project Specifications
- 6 - Response to 65% Comments Memo

3.4 UTILITY COORDINATION: OWNER AND/OR UTILITY AGREEMENT

As required in Chapter 13 of the Caltrans, Right of Way Manual, the CONTRACTOR shall send a Notice to Owner and/or Utility Agreement (Utility "C Letters and Plans") of which covers the positive location, relocation, removal, and abandonment of facilities and who is responsible for costs of relocation from the affected agencies. Incorporation of any relocation design plans, specifications, and estimate shall be performed at this time. The Utility Agency Coordination Log shall be updated as necessary.

It is assumed that the County will provide potholing services for utility location, as required.

3.5 FINAL DESIGN SUBMITTAL (100% PS&E)

- A. 100% Final Plans: After agency review of the Checked Design Submittal (95%), the CONTRACTOR shall prepare the Final Contract Documents in accordance with the County's instructions and provide the County and other agencies the opportunity to review the completed Bid Documents and direct minor revisions.
- B. Response to Comments Memorandum: A memo with "response to comments" received from the 95% Design Submittal shall be provided.
- C. Bid Documents: After County review of the 100% Final Submittal, any minor final revisions shall be incorporated and 6 sets of Completed Contract Documents prepared in accordance with the County's instructions. Final bid documents shall be submitted for signature.

100% Deliverables: 6 - Complete Bid Set Drawings - Signed and Dated (11"x
17" plots)

1 - CD archive of project electronic files

3.6 RIGHT-OF-WAY ACQUISITION SERVICES

The CONTRACTOR shall provide services noted above for the right-of-way acquisition. This may include the preparation of appraisal maps, right-of-way maps and legal descriptions, as necessary. The County or its agent will make contact with the property owners for the purpose of acquiring property rights to accommodate construction.

Phase 4 - CONSTRUCTION SUPPORT SERVICES

4.1 BIDDING PERIOD SERVICES

The County will advertise the project for bidding and distribute the plans to prospective bidders. The County's project coordinator will be the designated person to receive contractor inquiries. The design team will assist the County as requested during the bidding. The work may include answering questions, providing consultation and interpretation of the construction documents, and assisting the County in preparation of addenda to the PS&E during the advertisement period. Attending pre-bid meetings or bid opening and analysis of bids will also be provided, if requested.

END OF ATTACHMENT A.