

**SAN BENITO COUNTY
UNION ROAD BRIDGE AT THE SAN BENITO RIVER
SCOPE AND FEE FOR NEW CONTRACT**

SCOPE OF WORK TO FINISH CONSTRUCTION DOCUMENTS

The following Scope of Services to complete the Construction Documents for the project is based on certain assumptions as listed in blue below. Please also see additional assumptions indicated blue in the detailed scope summary below. Any deviation from these assumptions will be coordinated with the County and a revised scope and fee established as agreed upon.

Exclusions

- ✓ *See detailed scope below for additional exclusions*
- ✓ *Supplemental traffic studies and analyses*
- ✓ *Photometric analysis is not included.*
- ✓ *Right of way acquisition services are not included.*
- ✓ *Construction support services and preparation of as-built plans are not included.*
- ✓ *Community meetings and public outreach are not included.*
- ✓ *Vegetation removal and bird nest deterrence services are not included.*

Assumptions

- ✓ *See detailed scope below for additional assumptions*
- ✓ *Rock Slope Protection will be used for bank protection.*
- ✓ *Final design will be completed in 2018.*

SCOPE OF SERVICES

Biggs Cardosa Associates' approach for Union Road Bridge Replacement Project is as follows:

0	Project Management and Local Program Compliance
Phase I:	Preliminary Engineering and Reports
Phase II:	Final Design
Phase III:	Construction Services: Bidding Support <i>Construction Support (NIC)</i>

0. PROJECT MANAGEMENT

(BCA, DHA)

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.

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 Consultant 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 Consultant's work with the County's work. Close and archive the project records at the end of the project.

Local Program Compliance: The Biggs Cardosa Associates team will prepare all of the required local programs forms, including the scope/cost/schedule change, request for right of way authorization, right of way certification, construction authorization request and project closeout forms.

Project Re-Initiation: Upon receipt of Notice to Proceed, a project meeting will be held to review the project scope, the project approach, the goals and the schedule. Items to be addressed include a review of the key issues associated with completion of the project, a discussion of strategy for management of these issues, review of environmental approvals status, and review of the right-of-way acquisition status.

Coordination Meetings: To facilitate comprehensive input from the County during the critical design periods, the Consultant's Project Manager and selected Team Members will attend coordination meetings with the County staff members.

Design Review Meetings: The Consultant's Project Manager and selected Team Members will attend design review meetings with County staff which will be scheduled to coincide with the completion of the preliminary design and final design phases.

Extended Project Duration:

(Design Team)

Due to the contract lapse the project has been stalled for approximately 3 years. Scope includes additional time for the design team to become re-familiarized with the project and coordinate with each other about the work remaining to be completed. This work would include determining the project status when it was stopped, assessing outstanding design and coordination issues, assessing updated design and other requirements, reviewing previous plans, details and reports, etc.

1. PHASE I: ENGINEERING AND REPORTS

1.1 GEOTECHNICAL INVESTIGATION

(Parikh)

Bridge Foundation Report:

Update Final Foundation Report: The draft final foundation report prepared in 2011 will be updated based on the AASHTO Bridge Design Specifications 6th Edition with California Amendments, and the Caltrans Seismic Design Criteria version 1.7. We will review and update the geotechnical design criteria against these current applicable standards and will review and update the foundation recommendations based on the updated foundation design information.

Log of Test Borings: Using the bridge General Plan as a base map, boring log sheets will be updated for the plan set.

Special Provisions Consultation and Review: Review and consultation will be provided for the geotechnically related project special provisions.

Ongoing Design Consultation and Review: Design review and consultation will be provided through final design.

Deliverables: Final Foundation Report
LOTB plan sheets

1.2 HYDRAULICS INVESTIGATION

(Avila)

Update Final Hydraulics Report: Update the 2011 draft final hydrology, hydraulics and scour report as needed per current design criteria. The Final Hydraulic Report (Design Hydraulic Study Report) will follow the Caltrans Final Hydraulic Report Format in Memos to Designers 16-1 and be prepared in accordance with the Caltrans Local Assistance Program Guidelines.

Update Scour Estimate: Update the scour analysis using the 5th edition (2012) of the FHWA publication HEC-18. Update report to include Scour Data Table per the new MTD 16-1.

Update Bank Protection Design: Estimate rock size using the HDM 870 criteria and compare to the California Bank and Shore Protection Manual to see if updates to the rock size/configuration should be included.

Ongoing Design Consultation and Review: Design review and consultation will be provided through final design.

Assumptions:

- ✓ *The Location Hydraulic Study / Floodplain Evaluation Report has been completed and will not require modification.*

Deliverables: Final Hydraulic Study Report (Pdf format)

1.3 ENVIRONMENTAL DOCUMENTS

(BCA, BKF, David J. Powers, H.T. Harvey)

Permits:

It is anticipated that the proposed project will require regulatory approvals from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB) and California Department of Fish and Game (CDFG). H.T. Harvey & Associates' (HTH) staff will prepare the necessary permit applications for submittal to the resource agencies. It is anticipated that the following permits will be necessary:

- Section 404 Permit (USACE)
- Section 401 Certification (CCRWQCB)
- Streambed Alteration Agreement (CDFW)

The first-review administrative draft permit packages will be submitted for review and comment. After incorporation of any changes, the packages will be submitted to the resource agencies. Throughout the permit process, staff will maintain regular contact with regulatory staff in order to identify any concerns that need to be addressed prior to the issuance of permits. This task includes time to conduct an informal conference/consultation with USFWS staff regarding special status species.

Services also include quantity calculations for fill and structures within the floodplain, a dewatering plan, and detailed cross sections of the area to be dewatered.

Incidental Take Permit for California Tiger Salamander: Prepare a California Endangered Species Act (CESA) Section 2081 Incidental Take Permit (ITP) application requesting take approval for the California tiger salamander (*Ambystoma californiense*) at the project site. This permit application will include a description of the project, the biology of the California tiger salamander, the potential for occurrence of the salamander at the project site, the potential impacts of the project on the species, and avoidance, minimization and compensatory mitigation measures proposed to offset project impacts.

The scope for this task includes preparation of a draft of the 2081 application and two rounds of revisions based on comments from the project team. It also includes time for coordination with the California Department of Fish and Wildlife (CDFW) following submittal of the 2081 application, and to coordinate with the County, CDFW and others as necessary regarding the application.

USACE – Wetland Delineation Report: U.S. Army Corps of Engineers (USACE) requires that a formal Wetland Delineation Report be submitted to support the permit materials. In past years this has not been required for sites that do not support wetlands, but it is now required for all sites. It is assumed that a site visit will not be required.

LSAA Updates for ITP: Ongoing coordination with California Department of Fish and Wildlife (CDFW) to update and finalize the project Lake and Streambed Alteration Agreement. An LSAA was issued for the project in December 2013, but this included provisions to avoid take of the California tiger salamander that would have made the project impossible to build. Due to the subsequent application for an Incidental Take Permit, the LSAA must be updated to remove the avoidance provisions.

Assumptions:

- ✓ *It is our understanding that land for compensatory mitigation for impacts to the tiger salamander has been set up by the County for this project and other projects.*
- ✓ *This scope assumes that CDFW will find the site acceptable for compensatory mitigation of potential impacts to California tiger salamander habitat, or that on-site mitigation will be feasible.*
- ✓ *This scope includes time for a moderate level of coordination between HTH and CDFW but does not include the cost of investigating other potential mitigation sites or of designing and implementing on-site habitat restoration for the California tiger salamander.*
- ✓ *Permit fees are not included in the attached fee for services.*

Deliverables: USACE, CCRWQCB , CDFW and Incidental Take Permits
USACE Wetland Delineation Report

1.4 WATER LINE RELOCATION (DHA)

The existing 20-inch water line that crosses Union Road at San Benito Street will need to be relocated during construction. A draft water line relocation plan will be provided for review by the Water District and the County, and the approved plan incorporated into the final plan set. The project estimate will be updated accordingly.

1.5 UTILITY COORDINATION (DHA)

As required in Chapter 13 of the Caltrans, Right of Way Manual, the Consultant will resend the Letters to Owners Requesting Positive Location (Utility “B Letters and Plans”), which identifies claim of liability from the potentially affected agencies. Coordination for any relocation and will be provided at this time. The Utility Agency Coordination Log will be updated as necessary.

2. PHASE II: FINAL DESIGN

CONSTRUCTION DOCUMENTS

Construction Documents will be prepared by BCA’s team. The Construction Documents package will include specifications and construction plans and will conform to the County's and Caltrans' Standards with Federal requirements. Final design calculations and a construction cost estimate for the bridge will also be prepared and submitted for County staff review. BCA will coordinate and incorporate utility agencies future needs in the bridge. The Consultant will design all channel transitions or alterations that may be required, as well as all street transitions to the bridge.

Bridge Design Criteria: Bridge Design: Final bridge design will be performed in accordance with AASHTO LRFD Bridge Design Specification 6th Edition with California Amendments, 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 Caltrans Seismic Design Criteria version 1.7

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.

Utility Relocation: Consultant will provide communication and coordination with the utility companies during the preliminary and final design process. We will coordinate the relocation and protection of the existing utilities for the project based on the information obtained from the County and various affected utilities. BCA's 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.

Mitigation Planting Design: Based on the Riparian Mitigation Report, mitigation planting design will be included in the plans, specifications and estimate. Mitigation planting will include native riparian planting design of impacted bank slopes, and will be performed in accordance with County and Caltrans Standards. Other environmental mitigation requirements will also be included in the specifications and estimate.

Assumption:

- ✓ *Because the updated permits have not been obtained, any significant alteration to the project's mitigation approach may require revisions to the existing mitigation planting design scope of work.*
- ✓ *This scope also assumes that all riparian mitigation sites will be located onsite, that the County will be responsible for acquiring any additional property needed to accommodate the mitigation plants, that the contractor will be responsible for providing plant material for the project, and that water for the plants will be supplied to the irrigation system via a standpipe point of connection.*
- ✓ *It is assumed the following are not included in this scope of work: detailed surveys for special status plant or animal species, wetland delineation or identification of other regulated habitats.*

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. Two submittals will be made during the preparation of the Construction Documents as follows: When documents are 95% complete and 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.

Specifications (Special Provisions): Technical Specifications will be updated based on the Caltrans Standard Specifications 2015, and the Caltrans Standard Special Provisions 2015. Per the County's request, the complete special provisions document will be coordinated and assembled, including incorporation of the environmental and wildlife protection provisions, County boilerplate provisions, bid forms, FHWA provisions, , and Caltrans provisions for Divisions I and II.

Assumption:

- ✓ *It is assumed that the County boilerplate provisions, bid forms, and FHWA provisions will be provided by the County, and will already have been edited by the County for the project and for Caltrans 2015 Standards and current FHWA standards, will not require editing by the Consultant and will be ready for incorporation into the specifications document "as is".*

2.1 REASSESSMENT AND RESUBMITTAL OF 95% PS&E PER NEW STANDARDS (BCA, DHA, Hexagon, H.T. Harvey)

Revised Design Codes: Since the original 95% PS&E was submitted in February 2014, the bridge design codes have been revised, as have the Caltrans Standard Specifications, Plans and Special Provisions. Because of this, the 95% PS&E will be revisited, updated and resubmitted.

Supplemental 95% Design Calculations: As noted above, the design calculations will be reviewed and updated for conformance with the revised design criteria in AASHTO LRFD 6th Edition with California Amendments, and with Caltrans Seismic Design Criteria Version 1.7. As noted below, supplemental design calculations will be subjected to an independent check and revised as required prior to submittal.

Update 95% Design Plans: Plans will be updated to reflect any changes required by the updated design calculations. Updated plans will be independently checked, revised as required, and submitted to the County, utility companies and other agencies for final review and comment. Agencies will thoroughly review the details of the project and provide the design team with review comments. The Consultant will work with the County and other agencies to resolve any conflicts between the comments of different reviewers.

Update 95% Technical Special Provisions: The technical special provisions will be updated to the 2015 Caltrans Standard Special Provisions. The special provisions will be independently checked, revised as required, and included in the 95% submittal to the County. Please see the Specifications paragraph above for discussion of the Consultant and County roles in compiling the complete special provisions document.

Update 95% Opinion of Probable Construction Costs: The Opinion of Probable Construction Costs will be updated to 2015 standards and cost levels for use in the Bid Documents. Standard County and/or Caltrans items will be used.

Independent Quality Assurance Review: An internal quality assurance review of the updated plans, specifications, and estimate will be conducted per the updated design criteria noted above. The Consultant'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 will include a red, green and yellow check of the structural calculations and plans.

Response to Comments Memorandum: If the County has comments on the previous 95% Design submittal, responses to these comments will be incorporated into the Updated 95% Design submittal, and a memo with "response to comments" will be provided.

Assumptions:

- ✓ *County will provide comments on the plans, specifications and Opinion of Probable Construction Costs in the form of one, consolidated set of markups and or written comments.*
- ✓ *Independent design check will be a red-yellow-green check of the 95% revisions only. Should an independent review of the complete construction documents, rather than the document updates, and/or independent check calculations be required, these may be provided as additional services.*
- ✓ *All revegetation sites will be in the locations previously identified in the May 2013 plans and that these sites are still suitable for the desired revegetation.*

Updated 95% Deliverables:

- 4 – 95% Plan Sets (11" x 17" plots)
- 1 – 95% Plan Set (Pdf format)
- 1 – 95% Opinion of Probable Construction Cost (Pdf format)
- 1 – 95% Project Technical Specifications (Pdf format)

1 – Response to Comments Memo (Pdf format)

2.2 FINAL DESIGN SUBMITTAL (100% PS&E)

(BCA, DHA, Hexagon, H.T. Harvey)

100% Final Plans: After agency review of the Checked Design Submittal (95%), we will 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.

100% Opinion of Probable Construction Costs: The Opinion of Probable Construction Costs will be finalized. Standard County and/or Caltrans items will be used.

Response to Comments Memorandum: Response to Comments: Prepare and submit a memo with “response to comments” received from the Checked Design Submittal.

Bid Documents: After County review of the 100% Final Submittal, incorporate any minor final revisions and prepare 6 sets of Completed Contract Documents in accordance with the County’s instructions. Submit final bid documents for signature.

Assumption:

- ✓ *County will provide comments on the plans, specifications and Opinion of Probable Construction Costs in the form of one, consolidated set of markups and or written comments.*

100% Deliverables:

- 4 – 100% Plan Sets (11” x 17” plots)
- 1 – Final Opinion of Probable Construction Cost (Pdf format)
- 1 – 100% Project Technical Specifications (Pdf format)
- 1 – Response to 95% Comments Memo (Pdf format)

Bid Set Deliverables:

- 4 – Bid Plan Sets (11” x 17” plots, signed)
- 1 – Bid Plan Set (Pdf format, signed)
- 1 – Final Opinion of Probable Construction Cost (Pdf format)
- 1 – Bid Set Project Technical Specifications (Pdf format)
- 1 – CD of Final Project Documents

2.3 RIGHT-OF-WAY ENGINEERING SERVICES

(RJA)

The Consultant will provide engineering support services for the right-of-way acquisition process. 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.

Coordination: Consultant will assist the County in the coordination of items related to the project processing, coordination of Right of Way appraisals and exhibits, and coordination of property title questions for “triangular” remnant parcel, as well as the Bianchi-Ridgefield parcels and the Agredano parcel.

Assumption:

- ✓ *12 hours of labor are assumed to be sufficient to complete the coordination work.*

Plats and Legal Descriptions for use in Right-of-Way and Easement Acquisitions: Amendment #2 scope for the Union Road Bridge provided exhibits for assessment and acquisition of temporary construction easements and roadway right-of-way for up to seven (7) parcels, and a total of 28 exhibits. During the course of the project, it was determined a total of eight (8) parcels are being affected. Additionally, in order to more clearly delineate proposed easements and right-of-way, each exhibit has been separated into multiple sheets for the

acquisition process. Scope and fee for this item now includes up to a total of forty-five (45) exhibits over the eight (8) affected parcels for the County to use in right-of-way and easement acquisition and construction staging easement areas.

Exclusions:

- ✓ *Plats and legal descriptions beyond those noted above.*
- ✓ *Processing of the recording of documents after Agency approval.*
- ✓ *Provision of preliminary or final title reports.*
- ✓ *Assistance with any property, right-of-way, or easement acquisition.*
- ✓ *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.*

2.4 UTILITY COORDINATION: OWNER AND/OR UTILITY AGREEMENT (DHA)

As required in Chapter 13 of the Caltrans, Right of Way Manual, the Consultant will send 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 will be performed at this time. The Utility Agency Coordination Log will be updated as necessary.

2.5 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (DHA)

A Risk Level I Storm Water Pollution Prevention Plan (SWPPP) will be prepared, which will be in effect for the duration of the project. This will include the design and implementation of sediment and erosion control best management practices (BMPs) as well as Stormwater Post Construction Requirements (PCRs). Stormwater PCRs include calculations to determine pervious and impervious surfaces before and after construction and the design of post construction BMPs. Consultant will file the Notice of Intent (NOI) through the State Water Board’s Storm Water Multiple Application and Report Tracking System (SMARTS) and upload the necessary Permit Registration Documents (PRDs) in order to obtain a Waste Discharge Identification Number (WDID) number. PRDs include the Risk Level I SWPPP, the Risk Determination Spreadsheet, and post construction calculations and BMPs. The Risk Determination Spreadsheet and Post Construction Requirements are included in the SWPPP but are also uploaded into SMARTS separately.

2.6 RESIDENT ENGINEER’S PENDING FILE (BCA, DHA)

The Resident Engineer’s Pending File will be prepared per the OSFP Information and Procedures Guide, including the following items:

- Quantity summary sheets for excavation, backfill, concrete, reinforcing, piles and miscellaneous metal
- Joint movements calculations
- Notes on special details, and special construction sequences or requirements, as needed
- Final foundation report
- Final hydraulics report
- As-built plans for existing bridge
- 4-Scale deck contour plots

2.7 CONSTRUCTION CROSS SECTIONS AND SLOPE STAKING NOTES (DHA)

Construction cross sections and slope staking notes for earthwork will be provided at 25-foot intervals, with additional locations as required due to constraints or roadway features. Information provided on

the cross-sections will include alignment (stationing), finish grade, sub-grade, original ground, existing and proposed edge of pavement, hinge point, catch point and right-of-way.

3. PHASE III: CONSTRUCTION

3.1 BIDDING PERIOD SERVICES

(BCA, DHA, Hexagon, H.T. Harvey)

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 BCA 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.

OPTIONAL TASK 3.2 - CONSTRUCTION SUPPORT AND STRUCTURAL OBSERVATION (NIC) **(DHA, BCA, HT Harvey, Hexagon, Parikh)**

Construction Support Services may be added to the scope of work at the County's request, and would include the following:

- *Attend preconstruction meeting*
- *Review shop drawings and submittals*
- *Answer clarification questions pertaining to the plans and special provisions, if needed.*
- *Perform structural observation for critical portions of the work*
- *Attend periodic field visits, as required, to assist in the resolution of construction issues.*
- *Review contractor RFI's (Request for Information) and provide written response.*
- *Review construction inspection reports prepared by the Resident Engineer.*
- *Prepare record drawings and provide hard copies to the County. The basis of the revisions shown on the record plans will be a red mark construction set of plans provided by the project Resident Engineer. These construction red mark plans shall show all revisions that were made during construction.*

OPTIONAL TASK 3.3 - BIRD NEST DETERRENCE SERVICES (NIC)

(HT Harvey)

The bird nest deterrence services for the project will need to start in January of the first year of construction and carry on until the construction contractor is established on site and is starting the pile driving or other similar, noisy work. It may also be required for the start of the second year of construction, depending on the level of construction activity, disturbance and noise that continues on the site through the first winter. The work involved is described in detail below. Please note that the scope of services provides for bird nest deterrence services being provided from January through July – if project construction reaches its peak level of disturbance prior to the end of July, nest surveying and deterrence activities can be scaled back.

The intended approach to the bird nest deterrence work is to make it part of the bridge construction work and have the construction contractor perform this work as part of the construction scope. In order for this to be feasible, the County would need to execute a contract with the construction contractor by November of the fall before the construction start, to provide sufficient time for scheduling, approval of submittals, coordination with the County, preconstruction surveys, training and mobilization for bird nest deterrence work by the beginning of January.

The optional bird nest deterrence scope is described below and an optional fee for these services is included in the fee breakdown, should the County require that these services be started prior to the execution of the contract with the construction contractor. It was our understanding from prior discussions with the County,

that Caltrans had approved this approach of having the County start the bird nest deterrence work in 2015, when it was thought construction would start that Spring but the construction contract would not be executed before January.

Site Vegetation Removal: Brush clearing and tree removal services within the temporary and permanent impact areas designated in the attached map (Attachment A) are not included in this proposal. It is assumed that the County will be completing this work.

Services are included for outlining the brush and tree removal area on site, ESA fencing for river access points, as well as an onsite biologist to conduct pre-vegetation removal surveys of special status animals and provide worker training and monitoring of vegetation removal activities. Please see below for further details.

Approval of Biologists' Qualifications: Per the requirements of the Biological Opinion (BO) and Natural Environment Study (NES), a summary of the qualifications of each biologist who will be proposed to conduct activities required by the Project's BO will be prepared. At least 30 days prior to the onset of any construction related activities at the site, such as the vegetation clearing, the names and credentials of biologists who would conduct activities pursuant to the USFWS BO will be submitted to the USFWS for approval.

Worker Environmental Awareness Program Training: Per the requirements of the BO and NES a Worker Environmental Awareness Program (WEAP) will be prepared and presented to vegetation-clearing crews and contractors prior to the initiation of any Project activities at the site. The training will include a brief review of listed species and other sensitive species/resources that may exist in the Project area. It will include the life history of each species, field identification, habitat requirements, locations of sensitive biological resources, and a description of the legal status and protection under the Federal Endangered Species Act and California Endangered Species Act for each species. The training will include materials concerning the following topics: sensitive resources, resource avoidance, permit conditions, and possible consequences for violations of State or Federal environmental laws. The training will cover the Project's conservation measures, environmental permits, and regulatory compliance requirements. It will include printed material and an oral training session by a qualified biologist.

Following the initial training session, additional training will be conducted as needed (e.g., as additional personnel begin to work on vegetation-clearing activities for the Project). The budget for this task includes the development of printed training materials and the initial presentation to Project personnel. All subsequent training will be given by the biological monitor already present on the site during vegetation-clearing activities and thus the cost of providing subsequent training is included in the costs associated with the monitoring of vegetation removal.

A record of all personnel trained during the Project will be maintained, and this record will be made available to the County and relevant agencies for compliance verification.

Pre-Activity Surveys: A qualified biologist will conduct pre-activity surveys for special-status animals in accordance with the requirements of the Natural Environment Study (NES), biological opinion (BO), and incidental take permit (ITP). Pre-activity/pre-construction surveys for the California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), western pond turtle (*Actinemys marmorata*), horned lizard (*Phrynosoma coronatum*), and San Joaquin whipsnake (*Coluber flagellum ruddocki*) will be conducted by a qualified biologist within 48 hours of the scheduled start of vegetation-clearing activities.

In addition, a qualified biologist will conduct a pre-activity survey for San Joaquin kit fox (*Vulpes macrotis mutica*) dens no less than 14 days and no more than 30 days prior to the beginning of any vegetation-clearing activities that include ground disturbance, and will conduct a pre-construction survey for American badger (*Taxidea taxus*) dens within 2 weeks prior to the start of any such vegetation-clearing activities.

Further, a wildlife ecologist will conduct pre-activity clearance surveys for burrowing owls (*Athene cunicularia*) based on the California Department of Fish and Wildlife's (CDFW's) 2012 Staff Report on Burrowing Owl

Mitigation. During the initial site visit, which shall be conducted no more than 30 days prior to any soil-altering activity or development within the Project site, a wildlife ecologist will survey the entire Project site and (to the extent that access allows) the area within 500 feet of the site for burrowing owl habitat (i.e., ground squirrel [*Spermophilus beecheyi*] burrows). If no burrows suitable for use by burrowing owls are present, no additional surveys will be required. However, if suitable burrows are determined to be present, a wildlife ecologist will visit the site an additional three times to investigate each burrow for signs of owl use and to determine whether owls are present in areas where they could be affected by the proposed activities. The final site visit shall take place no more than 24 hours prior to the start of construction.

Within one day following the completion of each pre-activity survey, a letter report documenting the survey findings will be prepared.

Monitoring of Vegetation Clearing: A qualified biologist will be present during all vegetation-clearing activities. The biological monitor will ensure compliance with all biological resources-related conditions of the BO and ITP. The construction monitor will maintain a daily log describing construction activities, sensitive species observed, animal relocations, and any injury or mortality of animals that occurs during construction.

Bat Exclusion and Installation of Bird Exclusion Netting: Bats should be excluded after the maternity season (i.e., after 31 August) or after the winter season (i.e., after 15 February) and before the maternity season (i.e., before 15 March). Thus, bats will be evicted in early-mid February immediately prior to the installation of bird exclusion netting. An exit count will be made to determine the number of bats in the bridge before demolition occurs.

Bats using the existing bridge as a day roost will be evicted, and access to the crevices used will be blocked to prevent the establishment of a maternity roost. Bats will be evicted by installing one-way doors and/or filling the voids where bats roost. Bats will be evicted under the direction of a bat biologist.

Bird exclusion netting will be installed on the existing bridge to prevent active bird nests from becoming established. The underside of the bridge has “girder recesses” allowing for multiple locations throughout the underside of the bridge to be suitable for birds such as cliff swallows (*Petrochelidon pyrrhonota*) to build mud nests. Because of this, the bridge will require a perimeter cable and attachments to hold netting flush against the ceiling keeping bats and birds from entering the recesses for nesting or roosting. The netting’s mesh will be ½ inch or smaller to prevent bats from accessing the bridge. The bridge also has pipelines on both sides that carry across the bridge and cause difficulty in keeping swallows from using the 90-degree angle at each side under the railing. This will require separate netting on the underside span ceilings and bridge overhangs. This will also require that the seven piers be addressed at the 90-degree angles that are created.

Single lane closure will be required during installation of the netting. The entire installation would never block both lanes, and work can be accomplished at night with one lane closed at a time over the course of two weeks. After the netting has been installed, weekly inspections will be conducted throughout the nesting bird season to check the integrity of the exclusion netting, and biologists conducting the nest deterrence and monitoring will check the netting whenever on-site.

Installation and Monitoring of Artificial Bat Roost: Per the requirements of the NES, a bat biologist will coordinate and complete the construction of a freestanding bat condominium (bat condo) adjacent to the existing bridge. The bat condo will be approximately 4 feet x 4 feet x 6 feet with at least 10 vertical feet between the ground surface and the bottom of the roost. In accordance with the Project’s NES, the bat biologist will monitor the bat condo for up to three years following completion of the Project. Monitoring will cease prior to Year-3 if it is determined that the condo has been occupied by at least 50 percent of the number of bats observed during pre-demolition summer-time surveys.

The biologist will conduct temperature monitoring during the first year following installation of the bat condo, including up to three site visits (midsummer for the maternity season, fall, and winter) to download the temperature data. During the site visits, the bat biologist will visually assess bat occupancy of the condo. The

biologist will analyze the temperature data and prepare a brief tech memo summarizing the results of the monitoring at the end of Year-1. The tech memo will compare the average measured temperatures in the condo (as a function of daytime, nighttime, and season) to the suitable temperature range for bat use (85–105 degrees Fahrenheit). The tech memo will include recommendations to modify the condominium, if needed, to optimize the internal temperature of the condo for bat use. In Year-2 and Year-3, the bat biologist will conduct one site visit during the maternity season to visually assess bat occupancy at the bat condo.

Nesting Bird Surveys and Deterrence: To prevent Project impacts on nesting birds, and to prevent the presence of nesting birds from constraining the Project, an initial nesting bird survey will be conducted, followed by monitoring and deterrence from 1 February through 1 August. Site monitors (qualified biologists) will search all vegetation within the work area and a protective buffer zone (300 feet for raptors and 100 feet for other nesting birds, where access allows), including trees (both the foliage and cavities), shrubbery and hedges, and ground cover, for active nests. Monitors will also check the integrity of the exclusion netting on the bridge, visually scanning for gaps or holes that require repair to maintain its efficacy. The biologists will observe birds present in both the work areas and surrounding buffers to detect behavior indicative of nesting and follow birds to find nest starts. Monitors will use long poles with scrapers and hooks, ladders, and adaptive measures to find and remove nest starts and discourage nesting. Notably, a few of the tall trees within the survey area are more than 25 feet tall (i.e., beyond the reach of a ground-based monitor with a telescoping pole). Nest starts located high in trees cannot be reached with poles and ladders from the ground and would necessitate a hydraulic lift to manually remove nest starts. A 10 percent contingency has been included in the budget to allow for hiring a hydraulic lift and deterrence technician to account for the possibility that a nest is found in a tall tree that cannot be reached with a ladder and telescoping pole. Because active nests (i.e., a nest with at least one egg) cannot be disturbed per California Fish and Game Code regulations, if any active nests are observed, buffers zones (typically 300 feet for raptors and 100 feet for other species) or other measures to avoid impacts on the nest will be established via coordination with the County. However, the deterrence efforts are aimed at minimizing the potential for such nests to become established.

The level of effort needed to adequately survey the Project site is expected to vary throughout the nesting season in accordance with the level of nesting activity displayed by birds in the area. It is estimated that one site monitor will be required 3 days/week in February, 3.5 days/week in March, 4 days/week in April and May, 3.5 days/week in June, and 3 days/week in July to adequately cover the work area and adjacent buffer areas, for a total of 91 eight-hour workdays. The frequency of monitoring is determined in part by the amount of time necessary for birds to construct a nest and lay an egg. Although for most birds, this process takes more than two days, it has been observed on other projects that birds have been able to build a nest and lay an egg in less than two days, thus necessitating the frequency of visits proposed. At a lower survey frequency, the risk of establishment of an active nest would increase. Nevertheless, the effort will be scaled to the nesting effort observed in the field, so that if it is determined that nesting effort is lower than anticipated (e.g., due to the combination of vegetation removal, netting, and deterrence efforts), the frequency of site visits or the time spent in the field by the biologists will be reduced.

If Project construction reaches its peak level of disturbance prior to 1 August, surveying and deterrence activities can be scaled back, as it is our opinion that no buffer should be required around new nests established at this point as long as the nest and its substrate are not physically disturbed and as long as construction activities do not increase in intensity (e.g., with a significant increase in noise or human/equipment activity) or occur closer to the nest after the nest has been established. By moving into areas with a certain level of existing activity and disturbance, the birds will have demonstrated their tolerance of such activities. Thus, continuing the same level (or a reduced level) of activity should not cause the abandonment of the nest. Concurrence has been obtained from CDFW on this approach for similar projects.

Assumption:

- ✓ For the sake of providing a cost estimate for this task, we have assumed that deterrence may be needed through August 1, but it is likely that the contractor will be out on the site in April/May and that

peak levels of disturbance will be reached before August 1, shortening the period during which deterrence activities are needed and reducing the actual budget needs.

Monthly reports documenting all of the findings discussed in the initial survey report, as well as the monitoring efforts, will be provided. These reports will include the dates and locations of monitoring and deterrence efforts, as well as descriptions of any deterrence measures that were implemented for nesting birds. 2 hours have been budgeted for coordination with the CDFW regarding site-specific issues such as reduced buffers, should the need arise.

Close coordination with the design team, the County, the County's construction manager and the bridge replacement contractor will be provided as needed to ensure that the deterrence efforts are as efficient and cost-effective as possible, and that information regarding any netting repair work or active nests is conveyed to the appropriate parties in a timely manner.

Environmental Site Management and Coordination for Bird Nest Deterrence: Given the numerous biological resources permits, avoidance and minimization measures, and mitigation measures for the Project, it is anticipated that environmental site management and coordination for bird nest deterrence, and possibly meetings with the design team and others (possibly including the County and its construction manager and contractors) to discuss the Project, will be required. A limited amount of time for this coordination, and attendance at up to two meetings has been included in the budget. If more extensive coordination or attendance at additional meetings is required, these may be provided as additional services.

Bird Nest Deterrence Assumptions and Exclusions:

- ✓ Vegetation clearing services are not included. It is assumed these would be provided by the County.
- ✓ It is assumed that the vegetation-clearing activities, and therefore the biological monitor, will take a maximum of 10 days. If the biological monitor is required for more than 10 days due to an extended period of vegetation-clearing activities, these services may be provided at additional cost.
- ✓ It is assumed that once the County has hired a contractor for the bridge construction work, the responsibility for biological resources-related mitigation measures will become the responsibility of the contractor, and it is assumed that this will occur no later than 1 August. Therefore, pre-construction surveys and monitoring related to bridge demolition and construction activities are not included in this scope of work. A proposal for these services may be provided at the County's or the contractor's request.
- ✓ Nesting bird surveys and deterrence services will be provided for the period of 1 February through 1 August.
- ✓ Weekly inspections of the bird exclusion netting will be provided from the date of installation through 1 August. In addition, biologists will check the netting each day they are on the Project site to perform other tasks.
- ✓ It is assumed that the County will assist in expediting encroachment permits for the roadway use during installation of the netting on the bridge.
- ✓ Costs for traffic control and roadway safety during lane closure are included.

Please refer to the following page for our hours and fee proposal for this project.

ATTACHMENT A
Scope of Services

BACKGROUND INFORMATION:

The Federal Highway Administration (FHWA) has approved replacement of Union Road Bridge at San Benito River crossing as a result of severe erosion surrounding the bridge footing called "scour condition". On December 11, 2006, the Board of Supervisors approved replacement of the Union Road Bridge pursuant to staff's report explaining the scour critical condition. As part of the procedure and following a comprehensive selection process mandated by the Caltrans Local Assistance Procedure Manual, County Staff selected Biggs Cardosa Associates Inc. (CONTRACTOR) to provide engineering, design and environmental services for the project. The following is a summary of Contractor's contracts and contract amendments with the county:

Original Contract	-	12/16/2008 to 6/30/2011	-	\$1,279,000.00
Amendment #1	-	06/22/2010 to 6/30/2011	-	\$ 374,760.00
Amendment #2	-	06/07/2011 to 6/30/2013	-	\$ 0:00
Amendment #3	-	08/02/2011 to 6/30/2013	-	\$ 728,330.00
Amendment #4	-	08/21/2012 to 6/30/2013	-	\$ 309,800.00
Amendment #5	-	01/22/2013 to 6/30/2015	-	\$ 130,000.00
Total (Orig. to Amendment #5)	-		-	\$2,821,890.00

The project had experience delays due to unforeseen circumstances encountered along the way in the design process which necessitates additional scope of services by the CONTRACTOR. The additional scope of services were necessary and inevitable for the project and were approved by Caltrans.

Amendment #6 had been prepared but had not been processed, hence, the following Scope of Services of this New Contract covers the scope of services listed in the proposed amendment #6 plus the remaining services necessary to bring the project to completion.

SCOPE OF SERVICES:

1.0 Work performed outside of contract amount and while Contractor were assisting the County with obtaining approval from Caltrans for additional design and environmental services. This work has not been billed to the County due to the County's request that Contractor stop invoicing in July 2014:

1.1 Additional PG&E Gas Line Coordination, Design of Supports for Large Seismic Movements:

Additional management, coordination and plan review required for design of gas line and required supports for the portion of gas line to be carried on the bridge structure. Preparation for and participation in additional design and coordination meetings with PG&E, in-depth discussions and verification of understanding of the complex bridge seismic movements, and discussions about various potential approaches to design of the gas line, casing, and the casing supports. Additional casing support detailing required for sliding supports that accommodate casing movement, and additional research required to assist PG&E with construction specifications for materials needed in the sliding supports.

1.2 Additional Environmental Services:

1.21 Incidental Take Permit for California Tiger Salamander

Preparation of a California Endangered Species Act (CESA) Section 2081 Incidental Take Permit (ITP) application requesting take approval for the California tiger salamander (*Ambystoma californiense*) at the project site. This permit application includes a description of the project, the biology of the California tiger salamander, the potential for occurrence of the salamander at the project site, the potential impacts of the project on the species, and avoidance, minimization and compensatory mitigation measures proposed to offset project impacts. Work also included coordination with the design team, the County and the California Department of Fish and Wildlife (CDFW), as well as incorporating revisions based on design team and CDFW comments.

1.22 Additional Permit Processing with Central Coast Regional Water Quality Control Board (CCRWQCB)

1.221 The Central Coast Regional Water Quality Control Board (CCRWQCB) implemented new storm water discharge requirements that were not in place when the original contract was scoped. As of July 12, 2013 the CCRWQCB requires projects that create 5,000 square feet or greater of new/replaced net impervious area to submit a Storm Water Control Plan to obtain coverage under the General Permit for discharges of storm water associated with construction activities (CCRWQCB Resolution R3-2013-0032, July 12, 2013).

1.222 To comply with the new regulations, performed additional project site storm water runoff calculations required by the CCRWQCB, as well as additional detailed analysis of bridge deck runoff and deck drainage detailing, prepared the Storm Water Control Plan and implemented storm water solutions for the project, such as vegetative swales to capture and treat all runoff

from the bridge and roadway. Modified existing grading and drainage sheets to account for the above grading changes, and prepared additional plan sheets for storm water treatment.

1.223 Also provided coordination and assistance in responding to extensive comments from the Central Coast Regional Water quality Control Board (CCRWQCB) regarding the storm water runoff calculations, the drainage treatment areas, construction equipment and practices, as well as their requests for various quantities calculations and other inquiries required for permit to be finalized.

1.23 *Additional Permit Processing with USACE and CDFW*

1.231 Additional permit processing work, coordination with agencies and answering questions.

1.232 U.S. Army Corps of Engineers (USACE) requires that a formal Wetland Delineation Report be submitted to support the permit materials. In past years this has not been required for sites that do not support wetlands, so this constitutes a new permitting requirement that was not included in the previous scope for the project.

1.233 Ongoing coordination with California Department of Fish and Wildlife (CDFW) to update and finalize the project Lake and Streambed Alteration Agreement (LSAA). An LSAA was issued for the project in December 2013, but this included provisions to avoid take of the California tiger salamander that would have made the project impossible to build. Due to the subsequent application for an Incidental Take Permit, the LSAA must be updated to remove the avoidance provisions.

1.24 *Management and Coordination of the Additional Permitting Process*

Due the additional permitting requirements noted above, and the ongoing complexity of the biological issues at the site, a variety of project management and coordination activities were required, including meetings and coordination with the involved agencies, the County and the project design team, as well as review and coordination of responses to comments, tracking and review of edits to the environmental permit application documents, scheduling, etc. Also included multiple coordination and strategy meetings with the County to discuss the Incidental Take Permit, the required mitigation and associated issues, and strategies for resolving them.

1.3 *Additional Right-of-Way Engineering Services*

1.31 Coordination

Assisted the County in the coordination of items related to the project processing, coordination of Right of Way appraisals and exhibits, and coordination and research for property title questions about "triangular" remnant parcel.

1.32 Additional Plats and Legal Descriptions for Right-of-Way and Easement Acquisition

Current scope provided exhibits for assessment and acquisition of temporary construction easements and roadway right-of-way for up to seven parcels, and a total of twenty-eight exhibits. During the course of the project, it was determined a total of eight parcels are being affected. Additionally, in order to more clearly delineate proposed easements and right-of-way for the appraiser, each exhibit had to be separated into multiple sheets, for a total of forty-five exhibits over the eight affected parcels for the County to use in right-of-way and easement acquisition, and construction staging easement areas.

1.4 Additional Design Coordination with Caltrans:

Due to the additional fault rupture design requirements from Caltrans, additional design calculations and detailing beyond what were originally anticipated were required. The process for obtaining Caltrans approval for the design also involved more coordination meetings and responses to more Caltrans comments than originally estimated in Contract #1 and its Amendments.

1.5 Additional Funding Application and Approval Work:

Assisted the County with funding and scope change applications to Caltrans and the coordination required for obtaining approvals in 2009, 2011 and 2014. The 2011 application included five rounds of revision with Caltrans, plus an additional two rounds of revision with the Federal Highway Administration over a course of four months. The 2014 application included eight rounds of revision with Caltrans over a course of nine months. These additional rounds of revision were well beyond what was expected.

1.6 Additional Project Management and Administrative Services:

Due to the extended duration of the project from 8/2013 to the present (33 months), additional general project management and administrative services have been provided. These include coordination of the right-of-way acquisition process, answering County and other Agency questions, answering appraiser

questions, scheduling, and additional coordination meetings with the design team and the County.

Status: Completed all of the above tasks (1) but have not invoiced the County per County's request to wait until approval of funding.

2.0 Work to Be Performed: New tasks, 100% construction documents and bidding:

2.1 *Additional Project Management and Administration:*

Additional project management, administration and coordination services will be required to complete the final design process, to advertise and bid out the project, and to bring the project to construction. These services include contract management, scheduling, coordination of the design team and the County and other Agencies, monitoring of the design, meetings with the design team, and meetings with the County.

2.2 *Additional Budget to Complete Construction Documents, and Provide Bidding Support:*

Because the 95% design was submitted in August 2012, additional work will be required for the design team to re-familiarize themselves with the project, the remaining design and coordination issues, and to complete the design work needed to produce Final Construction Documents. Bidding support services will also be provided, including answering questions, providing consultation and interpretation of the construction documents, attendance at a pre-bid meeting, assisting the County with preparation of addenda to the PS&E as needed during the advertisement period, and bid analysis if requested.

2.3 *Design of Water Line Relocation at San Benito Street Retaining Wall:*

During final design, it was determined that the existing 20-inch water line crossing Union Road at San Benito Street will need to be relocated during construction. A 95% level relocation plan will be provided to the Water District for review, and then Water District comments will be incorporated and a final relocation plan included in the final plan set.

2.4 *Completion of the Incidental Take Permit for the California Tiger Salamander:*

The Incidental Take Permit is complete, but will not be issued until proof of mitigation can be provided by the County. Additional coordination and management is required to complete the proof of mitigation and obtain the permit. Currently there are no approved mitigation banks with ready-to-purchase mitigation credits available to the project now, although we are aware of at least one mitigation bank working its way through the approval process now. The project must either purchase credits at an approved bank, or provide a letter of credit for the agreed-upon amount for this permit to be formally issued.

2.5 *Bird Nest Deterrence Services:*

2.51 *Site Vegetation Removal*

2.511 Brush clearing and tree removal services within the temporary and permanent impact areas designated in the attached map (Attachment B) are not included in this proposal. It is assumed that the County will be completing this work.

2.512 Services are included for outlining the brush and tree removal area on site, ESA fencing for river access points, as well as an onsite biologist to conduct pre-vegetation removal surveys of special status animals and provide worker training and monitoring of vegetation removal activities. Please see below for further details.

2.6 *Approval of Biologists' Qualifications*

Per the requirements of the Biological Opinion (BO) and Natural Environment Study (NES), a summary of the qualifications of each biologist who will be proposed to conduct activities required by the Project's BO will be prepared. At least 30 days prior to the onset of any construction related activities at the site, such as the vegetation clearing, the names and credentials of biologists who would conduct activities pursuant to the USFWS BO will be submitted to the USFWS for approval.

2.7 *Worker Environmental Awareness Program Training*

2.71 Per the requirements of the BO and NES a Worker Environmental Awareness Program (WEAP) will be prepared and presented to vegetation-clearing crews and contractors prior to the initiation of any Project activities at the site. The training will include a brief review of listed species and other sensitive species/resources that may exist in the Project area. It will include the life history of each species, field identification, habitat requirements, locations of sensitive biological

resources, and a description of the legal status and protection under the Federal Endangered Species Act and California Endangered Species Act for each species. The training will include materials concerning the following topics: sensitive resources, resource avoidance, permit conditions, and possible consequences for violations of State or Federal environmental laws. The training will cover the Project's conservation measures, environmental permits, and regulatory compliance requirements. It will include printed material and an oral training session by a qualified biologist.

2.72 Following the initial training session, additional training will be conducted as needed (e.g., as additional personnel begin to work on vegetation-clearing activities for the Project). The budget for this task includes the development of printed training materials and the initial presentation to Project personnel. All subsequent training will be given by the biological monitor already present on the site during vegetation-clearing activities and thus the cost of providing subsequent training is included in the costs associated with the monitoring of vegetation removal.

2.73 A record of all personnel trained during the Project will be maintained, and this record will be made available to the County and relevant agencies for compliance verification.

2.8 *Pre-Activity Surveys*

2.81 A qualified biologist will conduct pre-activity surveys for special-status animals in accordance with the requirements of the Natural Environment Study (NES), biological opinion (BO), and incidental take permit (ITP). Pre-activity/pre-construction surveys for the California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), western pond turtle (*Actinemys marmorata*), horned lizard (*Phrynosoma coronatum*), and San Joaquin whipsnake (*Coluber flagellum ruddocki*) will be conducted by a qualified biologist within 48 hours of the scheduled start of vegetation-clearing activities.

2.82 In addition, a qualified biologist will conduct a pre-activity survey for San Joaquin kit fox (*Vulpes macrotis mutica*) dens no less than 14 days and no more than 30 days prior to the beginning of any vegetation-clearing activities that include ground disturbance, and will conduct a pre-construction survey for American badger (*Taxidea taxus*) dens within 2 weeks prior to the start of any such vegetation-clearing activities.

2.83 Further, a wildlife ecologist will conduct pre-activity clearance surveys for burrowing owls based on the California Department of Fish and Wildlife's (CDFW's) 2012 Staff Report on Burrowing Owl Mitigation. During the initial site visit, which shall be conducted no more than 30 days prior to any soil-altering activity or development within the Project site, a wildlife ecologist will survey the entire Project site and (to the extent that access allows) the area within 500 feet of the site for burrowing owl habitat (i.e., ground squirrel [*Spermophilus beecheyi*] burrows). If no burrows suitable for use by burrowing owls are present, no additional surveys will be required. However, if suitable burrows are determined to be present, a wildlife ecologist will visit the site an additional three times to investigate each burrow for signs of owl use and to determine whether owls are present in areas where they could be affected by the proposed activities. The final site visit shall take place no more than 24 hours prior to the start of construction.

2.84 Within one day following the completion of each pre-activity survey, a letter report documenting the survey findings will be prepared.

2.9 *Monitoring of Vegetation Clearing*

A qualified biologist will be present during all vegetation-clearing activities. The biological monitor will ensure compliance with all biological resources-related conditions of the BO and ITP. The construction monitor will maintain a daily log describing construction activities, sensitive species observed, animal relocations, and any injury or mortality of animals that occurs during construction.

2.10 *Bat Exclusion and Installation of Bird Exclusion Netting*

2.101 Bats should be excluded after the maternity season (i.e., after 31 August) or after the winter season (i.e., after 15 February) and before the maternity season (i.e., before 15 March). Thus, bats will be evicted in early-mid February immediately prior to the installation of bird exclusion netting. An exit count will be made to determine the number of bats in the bridge before demolition occurs.

2.102 Bats using the existing bridge as a day roost will be evicted, and access to the crevices used will be blocked to prevent the establishment of a maternity roost. Bats will be evicted by installing one-way doors and/or filling the voids where bats roost. Bats will be evicted under the direction of a bat biologist.

2.103 Bird exclusion netting will be installed on the existing bridge to prevent active bird nests from becoming established. The underside of the bridge has "girder recesses" allowing for multiple locations throughout the underside of the bridge to be suitable for birds such as cliff swallows (*Petrochelidon pyrrhonota*) to build mud nests. Because of this, the bridge will require a perimeter cable and attachments to hold netting flush against the ceiling keeping bats and birds from entering the recesses for nesting or roosting. The netting's mesh will be ½ inch or smaller to prevent bats from accessing the bridge. The bridge also has pipelines on both sides that carry across the bridge and cause difficulty in keeping swallows from using the 90-degree angle at each side under the railing. This will require separate netting on the underside span ceilings and bridge overhangs. This will also require that the seven piers be addressed at the 90-degree angles that are created.

2.104 Single lane closure will be required during installation of the netting. The entire installation would never block both lanes, and work can be accomplished at night with one lane closed at a time over the course of two weeks. After the netting has been installed, weekly inspections will be conducted throughout the nesting bird season to check the integrity of the exclusion netting, and biologists conducting the nest deterrence and monitoring will check the netting whenever on-site.

2.11 *Installation and Monitoring of Artificial Bat Roost*

2.111 Per the requirements of the NES, a bat biologist will coordinate and complete the construction of a freestanding bat condominium (bat condo) adjacent to the existing bridge. The bat condo will be approximately 4 feet x 4 feet x 6 feet with at least 10 vertical feet between the ground surface and the bottom of the roost. In accordance with the Project's NES, the bat biologist will monitor the bat condo for up to three years following completion of the Project. Monitoring will cease prior to Year-3 if it is determined that the condo has been occupied by at least 50 percent of the number of bats observed during pre-demolition summer-time surveys.

2.112 The biologist will conduct temperature monitoring during the first year following installation of the bat condo, including up to three site visits (midsummer for the maternity season, fall, and winter) to download the temperature data. During the site visits, the bat biologist will visually assess bat occupancy of the condo. The biologist will analyze the temperature data and prepare a brief tech memo summarizing the results of the monitoring at the end of Year-1. The tech memo will compare the average measured temperatures in the condo (as a function of daytime,

nighttime, and season) to the suitable temperature range for bat use (85-105 degrees Fahrenheit). The tech memo will include recommendations to modify the condominium, if needed, to optimize the internal temperature of the condo for bat use. In Year-2 and Year-3, the bat biologist will conduct one site visit during the maternity season to visually assess bat occupancy at the bat condo.

2.12 Nesting Bird Surveys and Deterrence

2.121 To prevent Project impacts on nesting birds, and to prevent the presence of nesting birds from constraining the Project, an initial nesting bird survey will be conducted, followed by monitoring and deterrence from 1 February through 1 August. Site monitors (qualified biologists) will search all vegetation within the work area and a protective buffer zone (300 feet for raptors and 100 feet for other nesting birds, where access allows), including trees (both the foliage and cavities), shrubbery and hedges, and ground cover, for active nests. Monitors will also check the integrity of the exclusion netting on the bridge, visually scanning for gaps or holes that require repair to maintain its efficacy. The biologists will observe birds present in both the work areas and surrounding buffers to detect behavior indicative of nesting and follow birds to find nest starts. Monitors will use long poles with scrapers and hooks, ladders, and adaptive measures to find and remove nest starts and discourage nesting. Notably, a few of the tall trees within the survey area are more than 25 feet tall (i.e., beyond the reach of a ground-based monitor with a telescoping pole). Nest starts located high in trees cannot be reached with poles and ladders from the ground and would necessitate a hydraulic lift to manually remove nest starts. A 10 percent contingency has been included in the budget to allow for hiring a hydraulic lift and deterrence technician to account for the possibility that a nest is found in a tall tree that cannot be reached with a ladder and telescoping pole. Because active nests (i.e., a nest with at least one egg) cannot be disturbed per California Fish and Game Code regulations, if any active nests are observed, buffers zones (typically 300 feet for raptors and 100 feet for other species) or other measures to avoid impacts on the nest will be established via coordination with the County. However, the deterrence efforts are aimed at minimizing the potential for such nests to become established.

2.122 The level of effort needed to adequately survey the Project site is expected to vary throughout the nesting season in accordance with the level of nesting activity displayed by birds in the area. It is estimated that one site monitor will be required 3 days/week in February, 3.5 days/week in March, 4 days/week in April and May, 3.5 days/week in

June, and 3 days/week in July to adequately cover the work area and adjacent buffer areas, for a total of 91 eight-hour workdays. The frequency of monitoring is determined in part by the amount of time necessary for birds to construct a nest and lay an egg. Although for most birds, this process takes more than two days, it has been observed on other projects that birds have been able to build a nest and lay an egg in less than two days, thus necessitating the frequency of visits proposed. At a lower survey frequency, the risk of establishment of an active nest would increase. Nevertheless, the effort will be scaled to the nesting effort observed in the field, so that if it is determined that nesting effort is lower than anticipated (e.g., due to the combination of vegetation removal, netting, and deterrence efforts), the frequency of site visits or the time spent in the field by the biologists will be reduced.

2.123 If Project construction reaches its peak level of disturbance prior to 1 August, surveying and deterrence activities can be scaled back, as it is our opinion that no buffer should be required around new nests established at this point as long as the nest and its substrate are not physically disturbed and as long as construction activities do not increase in intensity (e.g., with a significant increase in noise or human/equipment activity) or occur closer to the nest after the nest has been established. By moving into areas with a certain level of existing activity and disturbance, the birds will have demonstrated their tolerance of such activities. Thus, continuing the same level (or a reduced level) of activity should not cause the abandonment of the nest. Concurrence has been obtained from CDFW on this approach for similar projects.

2.124 Monthly reports documenting all of the findings discussed in the initial survey report, as well as the monitoring efforts, will be provided. These reports will include the dates and locations of monitoring and deterrence efforts, as well as descriptions of any deterrence measures that were implemented for nesting birds. 2 hours have been budgeted for coordination with the CDFW regarding site-specific issues such as reduced buffers, should the need arise.

2.125 Close coordination with the design team, the County, the County's construction manager and the bridge replacement contractor will be provided as needed to ensure that the deterrence efforts are as efficient and cost-effective as possible, and that information regarding any netting repair work or active nests is conveyed to the appropriate parties in a timely manner.

2.13 *Environmental Site Management and Coordination for Bird Nest Deterrence*

Given the numerous biological resources permits, avoidance and minimization measures, and mitigation measures for the Project, it is anticipated that environmental site management and coordination for bird nest deterrence, and possibly meetings with the design team and others (possibly including the County and its construction manager and contractors) to discuss the Project, will be required. A limited amount of time for this coordination, and attendance at up to two meetings has been included in the budget. If more extensive coordination or attendance at additional meetings is required, these may be provided as additional services.

2.14 *Bird Nest Deterrence Assumptions and Exclusions*

2.141 It is assumed that once the County has hired a contractor for the bridge construction work, the responsibility for biological resources-related mitigation measures will become the responsibility of the contractor, and it is assumed that this will occur no later than 1 August. Therefore, pre-construction surveys and monitoring related to bridge demolition and construction activities are not included in this scope of work. A proposal for these services may be provided at the County's or the contractor's request.

2.142 Nesting bird surveys and deterrence services will be provided for the period of 1 February through 1 August.

2.143 Weekly inspections of the bird exclusion netting will be provided from the date of installation through 1 August. In addition, biologists will check the netting each day they are on the Project site to perform other tasks.

2.144 It is assumed that the biological monitor for the vegetation-clearing activities will be required for a maximum of 10 days.

2.145 It is assumed that the vegetation-clearing activities, and therefore the biological monitor, will take a maximum of 10 days. If the biological monitor is required for more than 10 days due to an extended period of vegetation-clearing activities, these services may be provided at additional cost.

2.146 It is assumed that the County will assist in expediting encroachment permits for the roadway use during installation of the netting on the bridge.

2.147 Costs for traffic control and roadway safety during lane closure are included.

END OF ATTACHMENT A.