

Commitments as worded in the Biological Opinion (General)	Measures to be included in the Environmental Commitments (Detailed)	Items to include in the Specifications, Special Provisions, or Plans	Biologist/planner review notes
<p>The following general measures were included in the Biological Evaluation that was submitted to the US Fish and Wildlife Service and are included in the Biological Opinion.</p>	<p>The detailed measures below are sorted by location to show whether they apply throughout the project area, or in one of the other specific areas where construction will occur (i.e., staging areas, curve reconstruction areas, Tortilla Creek ford crossing, Mesquite Creek low-water crossing, or the rockfall mitigation area). These detailed mitigation measures will guide ADOT's implementation of the general measures that are listed in the Biological Opinion.</p>	<p>This column indicates where special notes should be made in the specifications, special provisions, or project plans.</p>	<p>This column contains reminders to the biologist/planner of items to verify before the project goes to bid.</p>
<p>APPLIES TO ALL WORK THROUGHOUT THE PROJECT AREA</p>			
<p>General/Coordination Commitments</p> <ul style="list-style-type: none"> The ADOT project manager will coordinate with the AGFD to confirm that bald eagle nesting locations are over 660 feet from project activities and over 2,600 feet from any project-related blasting. The ADOT project manager will coordinate with the AGFD to coordinate the timing of project construction with regard to bighorn sheep transplant activities in the area. 	<p><u>Design Responsibilities</u></p> <ul style="list-style-type: none"> The Arizona Department of Transportation project manager will contact the Arizona Department of Transportation Environmental Planning Planner (602.712.4232 or 602.712.7767) 30 (thirty) days prior to bid advertisement to verify that the environmental clearance is still valid. The Arizona Department of Transportation project manager will coordinate with the Arizona Game and Fish Department (James Driscoll, 602.789.3581) to confirm that bald eagle nesting locations are no closer 660 feet from project activities and no closer 2,600 feet from any project-related blasting. The Arizona Department of Transportation project manager will coordinate with the Arizona Game and Fish Department (Dustin Darveau, 480.324.3555) to coordinate the timing of project construction with regard to bighorn sheep transplant activities in the area. <p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> At least 21 (twenty-one) days prior to any ground disturbing activities, the Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) to arrange for a biologist to present an environmental awareness program to all personnel who will be onsite, including, but not limited to, Arizona Department of Transportation employees, contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain, at a minimum, information regarding wetlands, lowland leopard frog, Gila topminnow, Sonoran desert tortoise, big horn sheep, and herpetofauna, and procedures to be implemented in case a Sonoran desert tortoise is found within the project limits. The environmental awareness presentation will also identify the general measures that are to be implemented for the protection of snakes and other reptiles that may be encountered during construction. If any animals listed as threatened or endangered under the Endangered Species Act are found dead or injured within the project area, initial notification will be made to the US Fish and Wildlife Service's Law Enforcement Office within 3 (three) working days of the discovery. Written notification will be made within 5 (five) calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> At least 14 (fourteen) calendar days prior to the start of construction, the contractor shall obtain current fire restriction information from the Tonto National Forest representative (Terrin Lane, 623.512.7538) and shall follow standard fire prevention methods throughout construction. 	<ul style="list-style-type: none"> 106.01, 209 (furnish water) – specify no water from Tortilla or Mesquite creek per Forest email (sheets 60-61, 85) – check with C&S on wording See notes in blue added by Kris to the specs comments (“H8112 MBaker bio specs comments 20151223.pdf”) 	<p>Contract Specifications that will need to be reviewed to ensure that they match up with the biological mitigation measures:</p> <ul style="list-style-type: none"> 104.09, water quality 106.01, 209 (furnish water) – specify no water from Tortilla or Mesquite creek per Forest email (sheets 60-61, 85) 201: Clearing and Grubbing: tortoise monitoring for clearing/grubbing at curve reconstructions (no separate section for curves) 203: Earthwork – tortoise monitoring for shoulder buildup and compaction 416-6: Asphaltic concrete construction requirements - (controlling materials such as asphalt, chip seal, release agents for tires particularly at Tortilla and Mesquite crossings here in construction requirements (Sheet 119 of 60% specs) Item 805003 (seeding, section 3.02) –if mechanically tilling the shoulders, need tortoise monitoring; no tortoise monitor for hand tilling (sheet 196) Item 9240052 (ford details), Item 9240053 (monitoring during boulder removal work)
<p>Environmental Awareness</p> <ul style="list-style-type: none"> ADOT will arrange for preconstruction environmental awareness training for all ADOT and contractor personnel working at the site. The training will include information on wetlands, lowland leopard frog, Gila 	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> At least 21 (twenty-one) days prior to any ground disturbing activities, the Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) to arrange for a biologist to present an environmental awareness program to all personnel who will be onsite, including, but not limited to, Arizona Department of 		<p>Mod LSD design contract to cover preconstruction env awareness training and bio monitor for tortoise.</p> <p>Separate below the line cost for</p>

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<p>topminnow, Sonoran desert tortoise, bighorn sheep, and herpetofauna at a minimum.</p>	<p>Transportation employees, contractors, contractors' employees, supervisors, inspectors, and subcontractors. This program will contain, at a minimum, information regarding wetlands, lowland leopard frog, Gila topminnow, Sonoran desert tortoise, big horn sheep, and herpetofauna, and procedures to be implemented in case a Sonoran desert tortoise is found within the project limits. The environmental awareness presentation will also identify the general measures that are to be implemented for the protection of snakes and other reptiles that may be encountered during construction.</p> <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> No work shall begin prior to presentation of the environmental awareness program regarding wetlands, lowland leopard frog, Gila topminnow, Sonoran desert tortoise, big horn sheep, and herpetofauna to all personnel who will be on-site, including, but not limited to, Arizona Department of Transportation employees, contractors, contractors' employees, supervisors, inspectors, and subcontractors. 		<p>construction for the fish relocation and monitoring at the ford.</p>
<p>Work area</p> <ul style="list-style-type: none"> Construction activities will be restricted to designated work areas to minimize the area of disturbance. 	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and the Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer, the contractor, the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work areas. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> Construction impacts shall be confined to the minimum area necessary to complete the project. Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer, the contractor, the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work area. The contractor shall maintain all markings designating the allowed work area in good repair throughout construction. 	<p>Discussed on 12/22/15 – MBaker to get avoidance areas from LSD and propose best way to show on plans and in specs – maybe outline of allowed work area and language that the contractor must stay within the work areas shown on the plans and stay out of the avoidance areas on the sheets where those appear.</p> <p>US 60 project specs provided by MBaker look like a good starting point; will need to modify Contractor Use Sites section to clarify no veg removal, not sure that any other areas could be approved – see notes in blue as referenced above.</p> <p>Question for MBaker/C&S: In US 60 Section 201-3.01, should tortoise monitoring be included or kept as a separate mitigation measure?</p>	
<p>Scheduling</p>	<p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> Due to the presence of endangered fish species, work at the Tortilla Creek ford crossing and Mesquite Creek low-water crossing will be conducted during the months of April, May, and June, when surface flows are expected to be lowest. 		

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Water Withdrawal	<u>Contractor Responsibilities</u> <ul style="list-style-type: none"> No water shall be withdrawn for construction purposes from Tortilla Creek or Mesquite Creek due to limited flows and the presence of endangered fish. 		
Migratory Birds <ul style="list-style-type: none"> If vegetation clearing will occur during the migratory bird breeding season (March 1–August 31), the contractor shall avoid any active bird nests. If the active nests cannot be avoided, the contractor shall notify the Engineer to evaluate the situation. During the non-breeding season (September 1–February 28) vegetation removal is not subject to this restriction. If any active bird nests cannot be avoided by vegetation clearing activities, the Engineer will contact the Environmental Planning Biologist (602.622.9622 or 602.712.7767) to evaluate the situation. 	<u>ADOT Central District Responsibilities</u> <ul style="list-style-type: none"> If any active bird nests cannot be avoided by vegetation clearing activities, the Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) to evaluate the situation. <u>Contractor Responsibilities</u> <ul style="list-style-type: none"> If vegetation clearing will occur during the migratory bird breeding season (March 1–August 31), the contractor shall avoid any active bird nests. If the active nests cannot be avoided, the contractor shall notify the Engineer to evaluate the situation. During the non-breeding season (September 1–February 28) vegetation removal is not subject to this restriction. 		
Sonoran Desert Tortoise <ul style="list-style-type: none"> A biologist with experience handling Sonoran desert tortoises will monitor initial vegetation removal at each of the curve reconstruction locations and at the Tortilla Creek ford crossing. A biologist with experience handling Sonoran desert tortoises, locating tortoise burrows, and familiar with bighorn sheep hazing procedures will monitor the activities associated with removal of the rock spire at MP 212.70 to avoid or minimize impacts of the activity on wildlife in the area. If any desert tortoises are encountered in the project area, the contractor shall take any measures necessary to ensure that project activities will not harm or disturb any desert tortoise. The contractor shall notify the Engineer if a desert tortoise is encountered during construction. The contractor shall require all on-site workers to check under their parked vehicles and equipment prior to driving to make sure there isn't a tortoise sheltering underneath the vehicle or piece of equipment. If a desert tortoise is found sheltering underneath a parked vehicle or piece of equipment, the tortoise shall be allowed to move out from under the vehicle on its own or be relocated following the current guidelines for Sonoran desert tortoise handling before the vehicle can be moved. If any Sonoran desert tortoises are encountered during construction, the contractor shall adhere to the current handling guidelines for Sonoran desert tortoises. 	<u>ADOT Central District Responsibilities</u> <ul style="list-style-type: none"> If the contractor encounters any Sonoran desert tortoise during construction, the Engineer will report all encountered tortoises (live, injured, or dead) to the Arizona Department of Transportation Environmental Planning Biologist (email: jfife@azdot.gov) within 24 (twenty-four) hours of the encounter using the attached Arizona Department of Transportation Sonoran Desert Tortoise Observation Form. Photos should be taken of tortoises encountered and included in the report, if possible. <u>Contractor Responsibilities</u> <ul style="list-style-type: none"> If any desert tortoises are encountered in the project area, the contractor shall take any measures necessary to ensure that project activities will not harm or disturb any desert tortoise. The contractor shall notify the Engineer if a desert tortoise is encountered during construction. The contractor shall require all on-site workers to check under their parked vehicles and equipment prior to driving to make sure there isn't a tortoise sheltering underneath the vehicle or piece of equipment. If a desert tortoise is found sheltering underneath a parked vehicle or piece of equipment, the tortoise shall be allowed to move out from under the vehicle on its own or be relocated following the current guidelines for Sonoran desert tortoise handling before the vehicle can be moved. If any Sonoran desert tortoises are encountered during construction, the contractor shall adhere to the current handling guidelines for the Sonoran desert tortoise. 	<p>Add notes or numbers matching mitigation measures to overview map in plan set for curve reconstructions, Tortilla ford, rock spire removal mitigations</p> <p>Possible note for curves: Biological monitor qualified for tortoise handling must be present for vegetation clearing in this area. Monitoring contractor must be notified 10 business days ahead of work.</p> <p>Possible note for boulder area: Biological monitor qualified for tortoise handling must be present during rock removal in this area. Monitoring contractor must be notified 10 business days ahead of work.</p> <p>Possible note for ford: Biological monitor holding USFWS permit for Gila topminnow must be present for all work in surface water and within 25 feet of surface water at Tortilla Creek. Work must be completed during the months of April, May and June.</p>	<p>MBaker/C&S to determine whether these items will be included in the specs; biologist to verify before bid</p> <p>Section 201 – tortoise monitoring required for veg removal at curve reconstructions and Tortilla ford</p> <p>Section 203 – tortoise monitor needed for shoulder buildup and compaction</p> <p>Item 805003 – tortoise monitor required if shoulders will be mechanically tilled; no monitor required for hand tilling of shoulders.</p>

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<p>Water Quality – applies to all work</p> <ul style="list-style-type: none"> Measures will be implemented to prevent lubricants, hydraulic fluid, coolants, fuel and other construction-related materials and contaminants from entering any water body. Best management practices will be implemented to control erosion and prevent pollution related to construction activities. Erosion and pollution control measures will be installed and maintained per Clean Water Act permits under the guidance of the Arizona Department of Transportation Erosion and Pollution Control Manual to ensure that no foreign materials, such as pavement slurry from asphalt grinding equipment or chip seal materials, are sidecast, and to control and prevent sediments from entering aquatic systems. 	<p><u>Design Responsibilities</u></p> <ul style="list-style-type: none"> All disturbed soils not paved that will not be landscaped or otherwise permanently stabilized by construction will be seeded using species native to the project vicinity. <p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> All equipment will be fueled and maintained no closer than 200 feet from the nearest wetland, ditches, flowing or standing water, unless site specific review completed by the Engineer in coordination with the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) indicates that no impacts to the resource areas will result due to topography or other factors. The Engineer may allow exceptions to this requirement for large cranes, pile drivers, and drill rigs if they cannot be easily moved upon written request for such an exception with an acceptable fueling plan from the contractor. Temporary material storage piles consisting of erosive materials will be placed outside of any dry or flowing drainages unless site specific review completed by the Engineer in coordination with the Arizona Department of Transportation Environmental Planning Biologist indicates that topography or other factors would preclude runoff from entering waterbodies containing listed fish species. The contractor shall supply documentation of these factors in a request to the Engineer for this exception. <ul style="list-style-type: none"> Such temporary storage piles will be stabilized with plastic sheeting, straw bales, or other Best Management Practices, to prevent sediment delivery to these waterbodies. Material to be used within 12 (twelve) hours of deposition will not be considered a temporary material storage pile. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> All disturbed soils not paved that will not be landscaped or otherwise permanently stabilized by construction shall be seeded using species native to the project vicinity Temporary material storage piles consisting of erosive materials shall be placed outside of any dry or flowing drainage unless site specific review completed by the Engineer in coordination with the Arizona Department of Transportation Environmental Planning Biologist indicates that topography or other factors preclude runoff from entering waterbodies containing listed fish species. The contractor shall supply documentation of these factors in a request to the Engineer for this exception. <ul style="list-style-type: none"> Such temporary storage piles shall be stabilized with plastic sheeting, straw bales, or other Best Management Practices, to prevent sediment delivery to these waterbodies. Material to be used within 12 (twelve) hours of deposition shall not be considered a temporary material storage pile. All equipment shall be fueled and maintained no closer than 200 feet from the nearest wetland, ditches, flowing or standing water, unless site specific review completed by the Engineer in coordination with the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) indicates that no impacts to the resource areas will result due to topography or other factors. The Engineer may allow exceptions to this requirement for large cranes, pile drivers, and drill rigs if they cannot be easily moved upon written request for such an exception with an acceptable fueling plan from the contractor. 	<p>Things to add to 104.09(E) or contractor responsibilities general requirement:</p> <ul style="list-style-type: none"> Concrete, grout, cement mortar, solid and source site materials, and hazardous materials (including sealers and petroleum materials) shall be stored in staging areas and outside of any dry or flowing drainages. The contractor shall protect all inlets and catchments from stormwater runoff from fresh concrete, tackifier, paving, or paint striping in case inclement weather unexpectedly occurs. All excavated materials shall be removed to an upland location where they cannot enter the water body. Concrete truck chute cleanout areas shall be established to properly contain wet concrete and wash water and prevent it from entering wetlands or drainages. All discharge water created by construction (e.g. concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) shall be treated using the best available technology applicable to site conditions to remove debris, nutrients, sediments, petroleum products, metals and other pollutants likely to be present. Install and maintain erosion and pollution control measures per Clean Water Act permits under the guidance of the Arizona Department of Transportation Erosion and Pollution Control Manual to ensure that no foreign materials, such as pavement slurry from asphalt grinding equipment or chip seal materials, are sidecast, and to control and prevent sediments from entering aquatic systems. 	
<p>Invasive Species</p> <ul style="list-style-type: none"> All disturbed soils not paved that will not be landscaped or otherwise permanently stabilized by construction will be seeded using species native to the project vicinity. 	<p><u>Roadside Development Section Responsibilities</u></p> <ul style="list-style-type: none"> The Arizona Department of Transportation Roadside Development Section will provide special provisions for the control of noxious and invasive plant species during construction that may require treatment and control within the project limits. 	<p>Need to ensure that the N&I specifications reference the <i>Environmental Assessment for Management of Noxious Weeds and Hazardous Vegetation on Public Roads on</i></p>	

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<ul style="list-style-type: none"> Prior to the start of ground-disturbing activities, the contractor shall arrange for and perform the control of noxious and invasive species in the project area. Equipment will be cleaned prior to arriving on site and prior to leaving work sites where invasive or noxious species are present. Use of herbicides along SR 88 will comply with a Pesticide Use Proposal approved by the Tonto National Forest based on the terms of the <i>Environmental Assessment for Management of Noxious Weeds and Hazardous Vegetation on Public Roads on National Forest System Lands in Arizona</i> (2004). 	<p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> The contractor shall develop a Noxious and Invasive Plant Species Treatment and Control Plan in accordance with the requirements in the contract documents. Plants to be controlled shall include those listed in the State and Federal Noxious Weed lists, the State Invasive Species list and the List of Invasive Species on the Tonto National Forest in accordance with State and Federal Laws and Executive Orders. The plan and associated treatments shall include all areas within the project right of way and easements as shown on the project plans. The treatment and control plan shall be submitted to the Engineer for the Arizona Department of Transportation Construction Professional Landscape Architect for review and approval prior to implementation by the contractor. Prior to the start of ground-disturbing activities, the contractor shall arrange for and perform the control of noxious and invasive species in the project area. To prevent the introduction of invasive species seeds, all hauling and construction equipment shall be washed at the contractor’s storage facility. All vehicles and equipment shall be free of all attached soil, mud, vegetation and other debris prior to entering the construction site. To prevent invasive species seeds from leaving the site, the contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site. 	<p><i>National Forest System Lands in Arizona.</i></p>	
APPLIES SPECIFICALLY TO WORK IN STAGING AREAS			
<p>Staging Areas – forest requirement, no specific mitigation in the BE for FWS</p>	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> No vegetation removal will occur in the designated staging areas; only existing cleared areas will be used. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> No vegetation removal shall occur in the designated staging areas; only existing cleared areas will be used. 	<p>Project Plan and Specifications Note - State that no vegetation removal shall occur within the designated staging areas on the plan sheets and/or in the special provisions.</p>	
APPLIES SPECIFICALLY TO WORK AT THE ROCKFALL MITIGATION AREA			
<p>Tortoise, Bighorn (AGFD request)</p> <ul style="list-style-type: none"> A biologist with experience handling Sonoran desert tortoises, locating tortoise burrows, and familiar with bighorn sheep hazing procedures will monitor the activities associated with removal of the rock spire at MP 212.70 to avoid or minimize impacts of the activity on wildlife in the area. 	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> The Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) a minimum of 10 (ten) business days ahead of the rock spire removal to arrange for a qualified biologist to serve as a biological monitor during the rock spire removal for the protection of Sonoran desert tortoises and other herpetofauna in the area. If bighorn sheep are found to be present in the area at the time when blasting is to occur, the biologist will disperse the sheep away from the area using hazing techniques that are identified through coordination with the Arizona Game and Fish Department. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> The Contractor shall notify the Department at least 21 (twenty-one) days prior to beginning work in the rock spire removal area to arrange for a qualified biological monitor to be present. The contractor shall not begin ground disturbing work until receiving Engineer approval following an initial survey of the rock spire removal area for the presence of bighorn sheep or other sensitive species by the qualified biological monitor. The contractor will not conduct rock spire removal work unless a biological monitor qualified to handle Sonoran desert tortoises is present. 	<p>Note that bio monitor must be present for this work on the plans or in specs.</p>	<p>Review Item 9240053 – boulder removal to make sure no conflicts with bio monitor reqt.</p> <p>Include design cost mod for tortoise monitor.</p>

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APPLIES SPECIFICALLY TO WORK IN CURVE RECONSTRUCTION AREAS			
<p>Tortoise</p> <ul style="list-style-type: none"> A biologist with experience handling Sonoran desert tortoises will monitor initial vegetation removal at each of the curve reconstruction locations and at the Tortilla Creek ford crossing. 	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities, the Engineer, the contractor, the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work areas. The Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) a minimum of 10 (ten) business days ahead of each area of curve reconstruction work to arrange for a qualified biologist to monitor initial vegetation clearing activities for the protection of desert tortoises in that area. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities, the Engineer, the contractor, the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work area. The contractor shall not begin vegetation removal activities at any curve reconstruction area until receiving Engineer approval following an initial survey of the curve reconstruction area for the presence of Sonoran desert tortoises or other sensitive species by a qualified biological monitor. The contractor will not conduct initial vegetation removal work at any curve reconstruction area unless a biological monitor qualified to handle Sonoran desert tortoises is present. 	<p>Note that bio monitor must be present for initial vegetation clearing on the plan sheets/index sheet and/or specs for curve reconstruction areas.</p>	<p>Review Section 201 – clearing and grubbing – for any conflicts with bio monitoring reqt.</p> <p>Include in design cost mod for bio monitor.</p>
APPLIES SPECIFICALLY TO WORK AT THE TORTILLA CREEK FORD CROSSING			
<p>Water Quality – applies to Tortilla Ford only</p> <ul style="list-style-type: none"> A plan for managing temporary water diversion will be implemented during construction to protect sensitive aquatic resources and meet pollution and erosion control requirements. <p>Tortoise</p> <ul style="list-style-type: none"> A biologist with experience handling Sonoran desert tortoises will monitor initial vegetation removal at each of the curve reconstruction locations and at the Tortilla Creek ford crossing. <p>Gila Topminnow</p>	<p><u>ADOT Central District Responsibilities</u></p> <ul style="list-style-type: none"> Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer, the contractor, the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work areas. Work at the Tortilla Creek ford crossing and Mesquite Creek low-water crossing will be 	<p>Add below the line budget item for fish relocation/monitoring to construction budget. Amount TBD, likely 1-3 biologists full time for 1 month plus expenses.</p> <p>Project Plans and Note – Show work area and note that areas outside work area cannot be disturbed.</p> <p>Include in Item 9240052:</p> <ul style="list-style-type: none"> Work boundaries to be marked and approved by Engineer; Bio monitor required for initial 	

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<ul style="list-style-type: none"> Work at the Tortilla Creek ford crossing and Mesquite Creek low-water crossing will be conducted during the months of April, May, and June, when surface flows are expected to be lowest. Listed fish species and native frogs will be removed from the work area at the Tortilla Creek ford crossing prior to any in-water work activities. Fish exclusion activities will be performed under the direction of a biologist holding a permit for recovery of Gila topminnow and will be relocated per the Arizona Department of Transportation’s Fish Salvage Protocol and the detailed topminnow salvage plan. No work will be allowed in flowing surface water unless fish exclusion measures are being implemented. All concrete will be poured in the dry, or within confined waters not being discharged to surface waters, and will be sealed with a methacrylate sealer before contact with surface water is allowed. Water that is pumped from Tortilla Creek to dewater the ford reconstruction work area will be monitored and will not be discharged at turbidity levels greater than 10 percent above the background level, as measured within 100 feet of the ford crossing. Discharge of water back to the stream will occur in such a manner as not to cause erosion. The contractor will stop work immediately and inform the Engineer if surface flows enter the in-water work area at any time following the initial isolation or diversion activities. The Engineer will arrange for fish and native frog exclusion and relocation per the Arizona Department of Transportation’s Fish Salvage Protocol and the detailed topminnow salvage plan before allowing work to commence again. 	<p>conducted during the months of April, May, and/or June, when surface flows are expected to be lowest.</p> <ul style="list-style-type: none"> At least 21 (twenty-one) days prior to any ground disturbing activities at the Tortilla Creek ford crossing, the Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) to arrange for a biologist to prepare a detailed topminnow salvage plan based on current conditions in Tortilla Creek, the contractor’s Temporary Water Management Plan, and the Arizona Department of Transportation’s Fish Salvage Protocol. The US Fish and Wildlife Service’s Arizona Ecological Services Field Office will be notified 1–2 weeks before topminnow salvage activities begin. A Fish Salvage Report will be submitted within 2 (two) weeks of the completion of each salvage effort, and a Project Completion Report will be submitted within 60 (sixty) days of completion of all work at the Tortilla Creek ford crossing per the Fish Salvage Protocol. The Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) a minimum of 10 (ten) business days ahead of any work at the Tortilla Creek ford crossing to arrange for a qualified biologist with the necessary State and Federal permits to conduct preconstruction fish surveys and relocations. The fish surveys will extend 100 feet upstream and downstream of the ford crossing and low-water crossing, and will take place no more than 48 (forty-eight) hours prior to the start of construction at the ford crossing. If surface waters or surface flows are present in the work area at the Tortilla Creek ford, any listed fish or native frogs present within the work area will, under the authority of appropriate State and Federal permits, be removed and relocated to a location (or locations) per the Arizona Department of Transportation’s Fish Salvage Protocol and the detailed topminnow salvage plan. No work shall begin at the Tortilla Creek ford crossing prior to the completion of the preconstruction fish surveys, and relocations if necessary. The Engineer will provide notification to the contractor upon the completion of fish surveys, and relocation if necessary, at the ford crossing. The Engineer will contact the Arizona Department of Transportation Environmental Planning Biologist (602.622.9622 or 602.712.7767) following any flow event where water enters the work area in Tortilla Creek while reconstruction of the ford crossing is ongoing to determine whether additional fish exclusion and relocation activities may be required. The contractor shall stop work immediately and inform the Engineer if surface flows enter the in-water work area at the Tortilla Creek ford crossing any time following the initial survey and/or fish exclusion and relocation activities. The Engineer will arrange for fish and native frog exclusion and relocation per the Arizona Department of Transportation’s Fish Salvage Protocol and the detailed topminnow salvage plan before allowing work to commence again. <p><u>Contractor Responsibilities</u></p> <ul style="list-style-type: none"> Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer will ensure that the designated work area has been clearly marked. The contractor shall not conduct any activities outside of the designated work area without the approval of the Engineer and Arizona Department of Transportation Environmental Planning. Prior to commencement of ground-disturbing or clearing activities associated with curve reconstruction, staging areas, and the Tortilla Creek ford crossing, the Engineer, the contractor, 	<p>vegetation removal.</p> <ul style="list-style-type: none"> add requirement to use vegetable oil or other biodegradable, acceptable hydraulic fluid substitute to construction plans and special provision. Include requirement to use 2 hydrovac trucks and temporary containment to avoid sedimentation in downstream channel during cleanout of the existing culvert pipe; hand place grout at the downstream end of the pipe 24 hours prior to pumping grout into the culvert to minimize potential for spillage into the creek. Include requirement for contractor to develop and submit a Temporary Water Management Plan (i.e., a dewatering plan) to ADOT for review and approval – the following items should be called out for inclusion in the plan: <ul style="list-style-type: none"> The sequence and schedule for dewatering and re-watering Methods to isolate the work area from the active stream flow As applicable, methods to route and convey stream flow around or through the isolated work area As applicable, methods to de-water the isolated work area As applicable, methods to pump and treat water before it is discharged downstream Specifications for on-site backup materials and equipment Calculations of water pump capacity <p><u>Contractor mitigation measures moved into Tortilla Creek Ford Spec:</u></p> <ul style="list-style-type: none"> Work at the Tortilla Creek ford crossing and Mesquite Creek low-water crossing shall be conducted during the months of April, May, and/or June, when surface flows are expected to be lowest. 	

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	<p>the Arizona Department of Transportation Environmental Planning representative, and the Tonto National Forest representative (Terrin Lane, 623.512.7538) or his/her designee will walk the site and agree on the designated work area.</p> <ul style="list-style-type: none"> • The contractor shall install yellow rope at designated work areas for activities associated with the curve reconstruction, staging areas, and the Tortilla Creek ford crossing. • The contractor shall adhere to both the environmental and construction requirements for the Tortilla Creek Ford Crossing Repair listed under the project Special Provision Items 9240024 and 9240025. These Special Provision Items include environmental mitigation measures that are not subject to change without the approval from the Federal Highway Administration (FHWA) and ADOT Environmental Planning. 	<ul style="list-style-type: none"> • Contractor shall notify the Department a minimum of 21 (twenty-one) days prior to beginning work on the Tortilla Creek Ford to arrange for a fish/frog survey and to schedule a biological monitor to be present during work. No work shall begin at the Tortilla Creek ford crossing prior to the completion of the preconstruction fish surveys, and relocations if necessary. The Engineer will provide notification to the contractor upon the completion of preconstruction fish surveys, and relocation if necessary, at the ford crossing. • No work shall be allowed in flowing surface water unless fish exclusion measures are being implemented. • The contractor shall stop work immediately and inform the Engineer if surface flows enter the in-water work area at the Tortilla Creek ford crossing any time following the initial survey and/or fish exclusion and relocation activities. Work shall not commence until the Engineer has informed the contractor that fish and native frog exclusion and relocation activities per the Arizona Department of Transportation’s Fish Salvage Protocol and the detailed topminnow salvage plan have been completed. • All concrete shall be poured in the dry, or within confined waters not being discharged to surface waters, and shall be sealed with a methacrylate sealer before contact with surface water is allowed. • Water that is pumped from Tortilla Creek to dewater the ford reconstruction work area shall be monitored and treated to meet turbidity standards before being discharged to the stream channel. The turbidity standard is no more than 10 percent above the background reading (up to 100 feet upstream of the work area) as measured 100 feet downstream of the work area. • Discharge of water back to the stream 	

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		<p>shall occur in such a manner as not to cause erosion.</p> <ul style="list-style-type: none"> • The contractor shall stop work immediately and inform the Engineer if surface flows enter the in-water work area at any time following the initial isolation or diversion activities. The Engineer will arrange for fish and native frog exclusion and relocation per the Arizona Department of Transportation's Fish Salvage Protocol and the detailed topminnow salvage plan before allowing work to commence again. • The contractor shall develop a Temporary Water Management Plan and update the plan as necessary for their construction methods. The Plan must meet pollution and erosion control requirements for the project and shall include the components outlined in the project specifications, Item 9240052. • Equipment shall be checked daily for leaks and shall be well maintained to prevent lubricants and any other deleterious materials from entering surface waters. Prior to conducting work at the Tortilla Creek ford crossing, all equipment shall be free of any external petroleum products, hydraulic fluid, and coolants. Wash water shall not be discharged to any water body without pre-treatment. • The contractor shall not conduct vegetation removal work at the Tortilla Creek ford crossing area unless a biological monitor qualified to handle Sonoran desert tortoises is present. <p><u>Additional requirements for Temp Water Mngmt Plan:</u></p> <ul style="list-style-type: none"> • The contractor shall operate temporary water management to maintain a downstream water flow rate of at least 50 percent of the upstream water flow rate at all times. • If pumps are used, the contractor shall: <ul style="list-style-type: none"> ○ Operate the pumps as needed up to 24 hours a day during the diversion to 	

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		<p>prevent de-watering of the stream downstream of the diversion.</p> <ul style="list-style-type: none"> ○ Monitor pumps continuously when in operation ○ Keep a backup pump available in the event of failure of the primary pump ○ As feasible, maintain a negative pressure inside the isolated work area to contain turbidity ○ After completion of the work, if significant sediment has accumulated within the isolated work area, pump out the sediment and filter through existing vegetation or dispose. <ul style="list-style-type: none"> ● The contractor shall install, operate and maintain all water intake screens including pumps used to isolate the in-water work area according to the following: <ul style="list-style-type: none"> ○ Intakes will be screened and maintained by cleaning and repairing water intake screening as needed to maintain adequate flow and protection of aquatic life. When drawing or pumping water from any stream, protect fish by equipping intakes with screens that have a minimum 27 percent open area and mesh or woven wire screen openings shall be 3/32 inch or smaller in the narrowest direction. ● The contractor, in consultation with the biological monitor, shall identify the methods that will be used to monitor turbidity levels in Tortilla Creek and any waters that are discharged during construction work at the ford crossing. 	