AMENDMENT No. 4 TO AGREEMENT BY AND BETWEEN MONTEREY COUNTY WATER RESOURCES AGENCY & McMILLEN JACOBS ASSOCIATES

THIS AMENDMENT No. 4 is made to the PROFESSIONAL SERVICES AGREEMENT ("Agreement") for the provision of preliminary engineering and design services for the Interlake Tunnel and San Antonio Spillway Modification by and between **McMillen Jacobs Associates,** hereinafter "CONTRACTOR", and the Monterey County Water Resources Agency, a California flood control and water resources agency, hereinafter referred to as "Agency", dated March 16, 2017.

WHEREAS, the Agency and CONTRACTOR wish to modify and extend the term of this Agreement to March 16, 2022; and

WHEREAS, the overall budget for the Agreement after this Amendment No. 4 will remain the same as before this Amendment No. 4.

NOW THEREFORE, the Agency and CONTRACTOR hereby agree to amend the Agreement in the following manner:

Section 3.1 of the Agreement is amended to read as follows:

The term of this Agreement shall begin on March 16, 2017 by CONTRACTOR and Agency, and will terminate on March 16, 2022, unless earlier terminated as provided herein.

Section 4.7 of this Agreement is amended as follows:

Exhibit B-2 PAYMENT FOR SERVICES will supersede Exhibit B-1 and Exhibit B-1A PAYMENT FOR SERVCIES (as modified and amended by Amendment No. 2 to the agreement). A copy of Exhibit B-2 is attached to this Amendment No. 4.

Except as provided herein, all remaining terms, conditions and provisions of the Agreement are unchanged and unaffected by this AMENDMENT No. 4 and shall continue in full force and effect as set forth in the Agreement.

A copy of this AMENDMENT No. 4, shall be attached to the original Agreement dated March 16, 2017.

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IN WITNESS WHEREOF, the parties have executed this AMENDMENT No. 4 on the day and year written below.

MONTEREY COUNTY
WATER RESOURCES AGENCY

By: _____
General Manager

Dated: _____

Approved as to Fiscal Provisions:

_____
Deputy Auditor/Controller

Dated: _____

Approved as to Liability Provisions:

_____
Risk Management

Dated: _____

Approved as to Form:

_____
Deputy County Counsel

Dated: _____

CONTRACTOR

By: _____
Signature of Chair, President, or
Vice-President

_____
Printed Name and Title

Dated: _____

By: _____
(Signature of Secretary, Asst. Secretary, CFO,
Treasurer or Asst. Treasurer)*

_____
Printed Name and Title

Dated: _____

*INSTRUCTIONS: If CONTRACTOR is a corporation, including limited liability and non-profit corporations, the full legal name of the corporation shall be set forth above together with the signatures of two specified officers. If CONTRACTOR is a partnership, the name of the partnership shall be set forth above together with the signature of a partner who has authority to execute this Agreement on behalf of the partnership. If CONTRACTOR is contracting in an individual capacity, the individual shall set forth the name of the business, if any, and shall personally sign the Agreement.

ATTACHMENT:

EXHIBIT B-2 PAYMENT FOR SERVICES – (As modified and amended by Amendment No. 2 to the Agreement)

Project: **Interlake Tunnel Final Design**

Task	Description	Total Amount
1	**Project Management and Team Coordination**	
1.1	Prepare project work plan	$7,520
1.2	Establish and maintain budget and schedule control measures	$19,040
1.3	Develop & monthly design & bidding phase project schedule updates	$18,080
1.4	Develop planning level construction phase schedule	$15,120
1.5	Develop & monthly updates of project capital cost estimate	$34,440
1.6	Monthly progress reporting for schedule and budget	$23,040
1.7	Prepare / submit invoicing	$17,568
1.8	Develop / utilize project design file system for Project Team	$8,932
1.9	Develop / maintain design QC system	$17,200
1.10	Arrange / conduct team / onsite / online meetings (18)	$121,200
1.11	Workshop planning and presentations (see individual scope items)	
1.12	Participate in Project's executive leadership team weekly meetings	$58,240
Task 1: Project Management and Team Coordination		**$340,380**
2a	**Preliminary Engineering - Conceptual Design Review**	
2a.1	Preliminary Engineering Kickoff Meeting / Workshop	$16,741
2a.2	Review / Develop Comments and / or Alternatives to Hollenbeck TM	$18,904
2a.3	Present to MCWRA / Meeting	$8,893
2a.4	QA/QC	$3,840
Task 2a: Preliminary Engineering - Conceptual Design Review		**$57,470**
2b	**Preliminary Engineering - Site Survey**	
2b.1	Develop Site Survey Work Plan	$1,840
2b.2	Establish control, topo survey of tunnel alignment and I/O structs.	$71,354
2b.3	Assist MCWRA with ROW support	$11,736
2b.4	QA/QC	$1,472
Task 2b: Preliminary Engineering - Site Survey		**$0**
2c	**Preliminary Engineering - Geotechnical Investigation Program**	
2c.1	Develop Geotechnical Exploration, Testing, Reporting Plan	$16,440
2c.2	Meet with MCWRA, DSOD, FERC	$7,945
2c.3	Perform Geotechnical Field Exploration, Lab Testing, Report	$403,198

2c.4	Draft Geotechnical Data Report (GDR)	$37,056
2c.5	Final Geotechnical Data Report (GDR)	$13,982
2c.6	Draft Interpretive Baseline Report (GIR)	$24,096
2c.7	Final Geotechnical Interpretive Report (GIR)	$11,758
2c.8	QA/QC	$12,920
Task 2c: Preliminary Engineering - Geotechnical Investigation Program		**$527,395**
2d	**Preliminary Engineering - Design Criteria Memorandum**	
2d.1	Draft Design Criteria Memorandum	$24,615
2d.2	Review Meeting w/ MCWRA - Draft Memorandum Comments	$5,532
2d.3	Final Design Criteria Memorandum	$9,195
2d.4	QA/QC	$1,920
Task 2d: Preliminary Engineering - Design Criteria Memorandum		**$32,170**
2e	**Preliminary Engineering - Report (30% Design Level)**	
2e.1	Draft Preliminary Engineering Report	$66,188
2e.2	Review Meeting w/ MCWRA - Draft Preliminary Engineering Report	$8,432
2e.3	Final Preliminary Engineering Report	$58,034
2e.4	Identify and present to MCWRA recommendation for eqpt proc package	$6,800
2e.5	Hydraulic Analysis/ Reservoir Routing / Physical Model	
2e.6	QA/QC	$1,920
Task 2e: Preliminary Engineering - Report (30% Design Level)		**$141,374**
3	**Design-Build Documents (Incl PS&E)**	
3.1	50% Design-Build Documents (Incl PS&E)	$262,492
3.2	Review Meeting w/ MCWRA - 50% D-B Docs	$11,129
3.3	75% Design-Build Documents (Incl PS&E)	$216,192
3.4	Draft Geotechnical Baseline Report (GBR)	$15,233
3.5	Review Meeting w/ MCWRA - 75% D-B Docs	$10,084
3.6	100% Design-Build Documents (Incl PS&E)	$150,857
3.7	Final Geotechnical Baseline Report (GBR)	$9,188
3.8	Review Meeting w/ MCWRA - 100% D-B Docs)	$11,044
3.9	Final, Issue-For-Bid (RFP) Documents	$79,780
3.10	Hydraulic Analysis/ Reservoir Routing / Physical Model	$20,704
3.11	Support MCWRA in electrical utility applications for I/O facilities	$6,600
3.12	Coordinate w/ building & planning dept. Mont/SLO Counties plan check	$14,120
3.13	Provide prep of tech docs and operations to supt. Envir. Consultant	$14,584
3.14	QA/QC	$28,800
Task 3: Design-Build Documents		**$850,807**
4	**Engineer's Report**	
4.1	Draft Project Description	$18,458
4.2	Draft Assessment Methodology	$108,408
4.3	Review Meeting with MCWRA - Draft Engineer's Report	$4,845
4.4	Pre-Final Project Description	$16,137
4.5	Pre-Final Assessment Methodology	$9,588
4.6	Review Meeting with MCWRA - Final Engineer's Report	$4,845
4.7	Final Engineer's Report (Incl Project Description and Assess. Meth.)	$19,894

4.8	Assist MCWRA and Program Manager with Outreach Mtg. Exhibits	$9,664
4.9	QA/QC	$3,840
Task 4: Engineer's Report		**$195,679**
5	**Bidding Phase Services**	
5.1	Respond to technical questions	$12,992
5.2	Prepare addenda to RFP	$9,060
5.3	Assist MCWRA with proposal evaluations	$14,224
5.4	Pre-Bid Site Visit	$3,760
5.5	QA/QC	$3,840
Task 5: Bidding Phase Services		**$21,131**
6	**EIS Support**	
6.1	Kickoff Meeting	$5,640
6.2	Assist in Developing Project Description	$4,720
6.3	Prepare Engineering Support Documents for Alternatives	$30,448
6.4	Assist in Developing EIS Documents	$13,552
6.5	Review Draft EIS	$7,520
6.6	Coordination Meetings	$14,960
6.7	General EIS Support	$30,960
Task 6: EIS Support		**$60,747**
7	**General Engineering Support**	
7.1	Review and Analysis Groundwater Data	$4,124
7.2	Develop Alternative Gate Shaft Design	$58,440
7.3	Optimize Tunnel Design	$62,800
7.4	Optimize Intake Design	$63,380
Task 7: General Engineering Support		**$188,744**
Task 8: Additional Geotechnical Field Exploration and Testing		**$266,200**
TOTAL ALL TASKS		**$2,572,097**

OP	**Optional Tasks**	
OP.1	Right-of-Way (detailed exhibit development)	$92,000
OP.2	Physical Hydraulic Model of Energy Dissipation Structure	$110,000
OP.4	Reservoir Modeling for Prop 218 Benefit Assessment	$60,000
TOTAL OPTIONAL TASKS		**$152,000**

Project: **(Interlake Tunnel) San Antonio Spillway Final Design**

Task	Description	Total Amount
1	**Evaluate Spillway Alternatives**	
1.1	Data Collection and Review	$9,694
1.2	Prepare Geotech & Survey Workplans	$16,356
1.3	Field Workplan Review / Approval	$8,042
1.4	Survey / Mapping	$32,704
1.5	Geotechnical Investigation & Report	$167,628
1.6	Preliminary Gate Alternatives & Hydraulic Capacity	$25,000
1.7	PMF Routing Update	$16,064
1.8	Structural / Seismic Capacity of Training Walls	$17,128
1.9	Modification Alts - Conceptual Design & Cost Estimate	$40,368
1.1	Review Workshop with DSOD	$11,538
1.11	Draft Alternatives Technical Memorandum	$18,444
1.12	Review	$3,824
1.13	Finalize Alternative Technical Memorandum	$9,730
	REMAINING BUDGET (11/18/2020)[1]	**$127,819**
BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION		**$127,819**
Task 1: Evaluate Spillway Alternatives[1]		**~~$346,520~~ $218,701**
2	**Spillway Hydraulic Design**	
2.1	Draft Updated PMF Routing Technical Memorandum	$17,036
2.2	Review	$4,576
2.3	Final Updated PMF Routing Technical Memorandum	$7,600
2.4	Hydraulic Analysis	$34,520
2.7	Draft Hydraulic Design Technical Memorandum	$17,788
2.8	Review	$3,824
2.9	Final Hydraulic Design Technical Memorandum	$7,934
	REMAINING BUDGET (11/18/2020)	**$144,804**
BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION		**$144,804**
Task 2: Spillway Hydraulic Design[1]		**~~$362,970~~ $218,166**
3	**Embankment Stability Evaluation**	
3.1	Review / Update Prior Stability Analyses	$43,032
3.2	Draft Stability Analysis Technical Memorandum	$24,468
3.3	Review	$3,824
3.4	Final	$10,930
	REMAINING BUDGET (11/18/2020)	**$0**
Task 3: Embankment Stability Evaluation		**$82,254**
4	**Preliminary Design (30%)**	
4.1	30% Drawings and AACE Class 4 Cost Opinion	$85,260
4.1A	30% Electrical (McMillen Jacobs Assoc)	$50,000
4.2	Draft Design Criteria Technical Memorandum	$31,534
4.3	Review	$8,950
	REMAINING BUDGET (11/18/2020)	**$69,361**
BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION		**$69,361**

Task 4: Preliminary Design (30%)[1]		~~$175,744~~ $106,383
5	**Final Design**	
5.1	60% PS&E (AACE Class 3 Est; Outline Specs)	$77,708
5.2	Basis of Design Technical Memorandum (Engineer's Rept)	$35,100
5.3	60% Design Review	$9,500
5.4	90% PS&E (Updated AACE Class 3)	$81,356
5.5	Final Basis of Design Technical Memorandum (Engr's Rept)	$18,736
5.6	Draft Bid / Contract Documents	$38,764
5.8A	Final Electrical Design (McMillen Jacobs Associates)	$95,000
	REMAINING BUDGET (11/18/2020)	**$0**
Task 5: Final Design		**$428,436**
6	**DSOD Review & Approval**	
6.1	Preliminary Design Workshop & Response	$14,566
6.2	60% Design Workshop & Response	$14,566
6.3	90% Design Review Meeting & Response	$14,566
6.4	100% Review Meeting & Response	$14,566
	REMAINING BUDGET (11/18/2020)	**$39,142**
	BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION	**$39,142**
Task 6: DSOD Review & Approval[1]		~~$58,264~~ $19,122
7	**Not Defined**	
7.1		
Task 7: Not Defined		
8	**EIS Permitting Support**	
8.1	Project Description Assistance (80 hr allowance)	$16,072
8.2	Participate in Public Meetings (80 hr allowance)	$19,120
8.3	Construction Impact Support (80 hr allowance)	$16,072
	REMAINING BUDGET (11/18/2020)	**$51,264**
	BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION	**$51,264**
Task 8: EIS Permitting Support[1]		~~$51,264~~ $0
10	**Project Management**	
10.1	Project setup, work plan	$9,592
10.2	QA/QC, staffing, budget, schedule control	$40,864
10.3	Invoicing, cash flow, status reporting	$33,084
10.4	Project Meetings, management, coordination	$63,360
	REMAINING BUDGET (11/18/2020)	**$43,725**
	BUDGET TRANSFERRED TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION	**$15,839**
Task 10: Project Management[2]		~~$146,900~~ $131,061
Task 11: San Antonio Dam Subsurface Investigation		**$420,242**
12.1 Geotechnical Investigation		$262,165
12.2 Core Sampling and Investigation of Hardened Concrete		$186,064
Task 12: San Antonio Spillway Investigation		**$448,229**
	REMAINING BUDGET ALL TASKS	**$476,115**

TOTAL ALL TASKS	**$1,766,692**

1. BUDGET REMAINING TO BE TRANSFERRED TO THE TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION PROJECT. PROJECT TASK SCOPE AND BUDGET WILL BE REMOVED FROM THE CONTRACT.
2. TASK SCOPE WILL REMAIN THE SAME TO SUPPORT PROJECT MANAGEMENT ACTIVITIES FOR THE SAN ANTONIO SPILLWAY FINAL DESIGN PROJECT. BUDGET REMAINING AFTER THE BUDGET TRANSFER TO TASK 12: SAN ANTONIO SPILLWAY INVESTIGATION WILL BE $27,886.

November 13, 2020

Mr. John Hollenbeck
Hollenbeck Consulting
Via email: johnhollenbeckpe@gmail.com

Subject: San Antonio Dam Spillway
Re: Proposal for San Antonio Spillway Chute Investigation, Revision 03

Dear Mr. Hollenbeck:

McMillen Jacobs Associates (McMillen Jacobs) has prepared a scope of work and budget for the pre-design engineering investigation associated with the destructive and nondestructive assessment and test of the Monterey County Water Resources Agency (MCWRA) San Antonio Spillway chute. John Hollenbeck, P.E. prepared the Draft "Work Plan for Pre-Design Engineering Investigation Associated with Spillway Chute Feasibility Study" on May 11, 2020, referred to as the "Draft Work Plan" herein. The Draft Work Plan outlines the required tasks to collect relevant pre-design input on the spillway chute structural deficiencies. According to the Draft Work Plan, structural deficiencies identified in the spillway include the following:

- Concrete slab is suspected to have distress by chemical attack or aggregate reactivity. Water quality analyses of seepage water collected in the lateral drains show a high level of sulfate.
- The underdrain system's functionality to convey groundwater, including transverse drains parallel to the chute joints and vertical drains through the wall footings, are compromised due to sediment accumulation and clogging.

McMillen Jacobs' prepared a proposal on June 5, 2020 that included all of the proposed work tasks presented in the Draft Work Plan. Ron Drake/COWI, Program Manager, sent an email request on June 11, 2020 to refine our proposal to perform the concrete coring and engineering analysis (Task 2 of Hollenbeck's Draft Work Plan) as the first phase of this pre-design investigative work. This proposal includes a scope of work and budget for the concrete coring and engineering analysis (Task 2, of Hollenbeck's Draft Work Plan). A detailed summary of the budget estimate for engineering, laboratory work, and construction for the concrete coring work are provided as Appendices A and B to this document.

PROJECT UNDERSTANDING

McMillen Jacobs currently has a contract with MCWRA that includes a scope of work and budget to complete a San Antonio Dam spillway raise associated with the Interlake Tunnel Project. As part of this work, GEI conducted a total of four borings within and around the spillway approach channel (SA-1b,

and SA-2 through SA-4), just upstream of the ogee control structure (Figure 1); however, no borings were conducted within the spillway footprint.

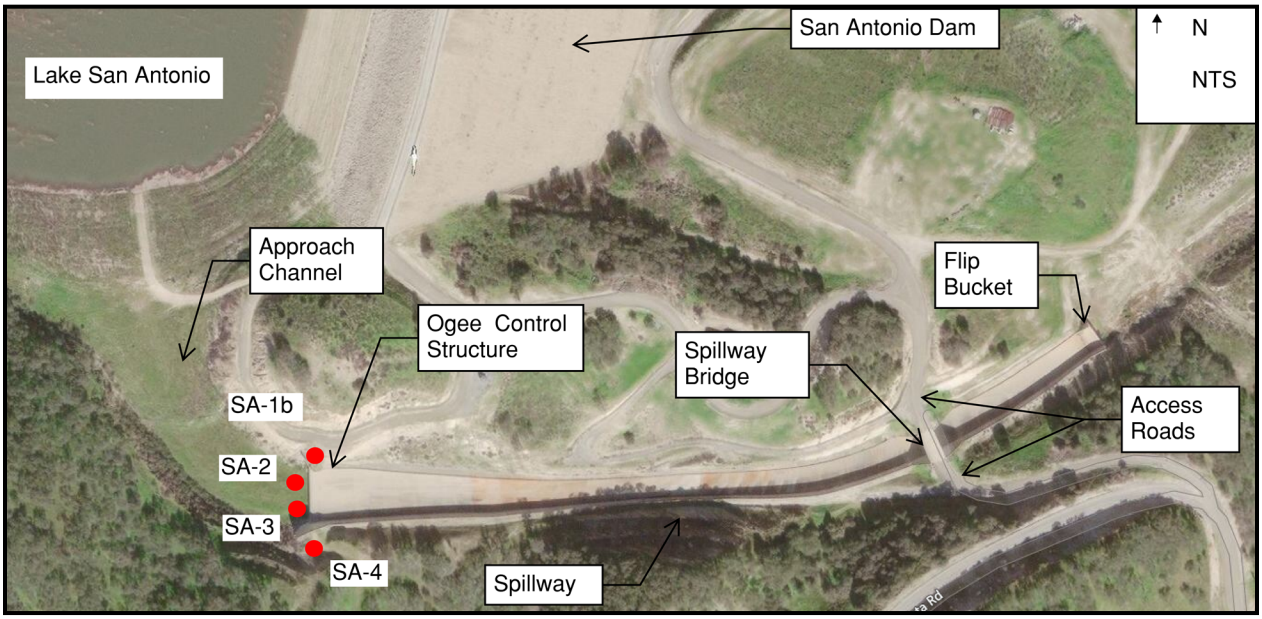


Figure 1: Plan View of Spillway Components

After the Oroville Dam spillway failure, DSOD subsequently required that a dam safety inspection of the San Antonio Dam spillway be completed. This inspection identified structural deficiencies in the existing spillway and several major modifications that would be required to meet DSOD's criteria. In a subsequent agreement with DSOD, MCWRA agreed to have the recommended spillway improvements constructed by 2024.

This scope of work follows the Task 2 of the Draft Work Plan developed by Hollenbeck to provide engineering, lab work, and construction support for the concrete coring work. In addition to the Draft Work Plan developed by Hollenbeck, DSOD has suggested that additional investigations be performed to evaluate the geotechnical and groundwater conditions underlying the spillway structure.

WORK TASK

The work task presented below includes the concrete coring and engineering analysis, a subsurface investigation program that includes geophysical surveys, geotechnical borings, hydraulic testing, laboratory testing, and standpipe piezometers to meet DSOD's request for additional subsurface investigations. Details of these scope items are presented in the following paragraphs.

Task 1 – Geotechnical Investigation

Investigation Task 1.1 – Geophysical Survey

This task includes a geophysical survey of the Spillway Chute using Ground Penetrating Radar (GPR) methods. The limits of the survey are indicated in attached Exhibits 1 through 4. This approach measures

the changes in the propagation of electromagnetic energy in the ground to produce an image of subsurface conditions. The GPR signal is reflected when the electrical properties of the subsurface changes. The GPR system uses a transmitting and receiving antenna to induce the signal and record the reflected data along pre-defined transects. The data can be viewed in real-time as the antenna is pulled across the spillway chute along pre-defined transect spacing. This type of survey is best suited for identifying near-surface voids, pipes, or other subsurface anomalies.

In general, the size of anomaly that can be detected is governed by the spacing of the transect. For the proposed GPR survey, a transect spacing of 2.5 feet conducted perpendicular to the spillway access has been selected to optimize the amount of survey coverage. These transects will then be tied together through a series of four longitudinal transects. The data collected from the transects are then digitally processed to produce 2-D and 3-D images of the subsurface.

The objective of this survey is to identify near-surface anomalies along the bedrock-concrete interface such as voids or loose material. These potential conditions could result from internal erosion of degraded rock or soil and subsequent ground loss through the spillway drains, expansion joints, or to a free face.

The geophysical surveys will be conducted by a team of one geophysicist from Collier Consulting (Collier) who will be assisted by a McMillen Jacobs geotechnical staff member. The work is anticipated to be conducted over five field days.

The resulting work product will consist of a series of geophysical profiles that illustrate the data in graphical form. A summary memorandum will describe the findings, observation of voids or anomalies, the methods used, and a description of survey activities. This work will be incorporated into a geotechnical data report as an appendix that will be prepared as part of the geotechnical investigation task (Investigation Task 1.3). The GPR summary memorandum will be submitted and presented to MCWRA via a conference call meeting. After MCWRA's review and approval of the report, meeting materials will be prepared documenting the findings and a conference call meeting will be scheduled with DSOD to discuss the findings.

Assumptions:

The following assumptions were made when developing the geophysical survey scope of work:

- The field survey transects will be performed over 5 days.
- Surveys will require suitable weather conditions. Surveys cannot be performed during inclement or winter weather conditions.
- There are no restrictions to spillway access while the surveys are being completed.
- Field crews will consist of one Collier geophysicist and one McMillen Jacobs geotechnical staff.
- The budget associated with this item does not include meeting or site/spillway specific training.
- Data positioning will be determined using a robotic total station.
- The meeting with MCWRA will be a conference call meeting.
- The meeting with DSOD will be a conference call meeting.

Submittals:

The following submittals will be provided to MCWRA as part of this work task:

- Graphical 2-D and 3-D survey results.
- A summary memorandum describing the findings, observation of voids or anomalies, the methods used, and a description of survey activities.

Investigation Task 1.2 – Spillway Reinforcing Locating Services

This task is comprised of a rebar location survey of the San Antonio concrete spillway. Subdynamic Locating Services will serve as a subcontractor for McMillen Jacobs and will complete the work.

Assumptions:

The following assumptions were made when developing the spillway reinforcing locating scope of work:

- Subdynamic will identify locatable rebar using a GPR Mini device.
- Locates will be made on the spillway surface in with paint, chalk, whiskers, or flags as appropriate.
- Locates will include up to 40 hours of on-site time and up to 5 hours of travel time over five days.

Submittals:

The following submittals will be provided to MCWRA as part of this work task:

- A service agreement including a brief description of the locating technician's findings.

Investigation Task 1.3 – Geotechnical Investigation

This task is comprised of a geotechnical investigation of the spillway chute. This work will include conducting geotechnical borings, performing in-situ hydrological testing, conducting geotechnical laboratory testing, and installing of standpipe piezometers within the footprint of the spillway chute. Specifically, this work would include the following:

- Conduct a literature review of available geologic, geotechnical, and spillway related construction documents.
- Prepare a Geotechnical Work Plan outlining the field methods, drilling hazards, field procedures, borehole completion details, safety measures, and contingency measures.
- Conduct a locates survey by calling the Underground Service Alert of Northern California (811) to identify underground utilities within the public right-of-way.
- Obtain a Monterey County Monitoring Well Permit for the six proposed piezometers.
- Conduct a driller required pre-walk site visit to plan crane access and drill rig mobilization into the spillway.
- Mobilization of field staff, equipment, and a drilling subcontractor.

- Advance six borings (SB-1 through SB-6) to a depth at which moderately weathered to fresh rock is encountered. For planning and budgeting purposes we have assumed an average depth of 30 feet below the existing grade; however, additional drilling rods will be provided to advance the holes to greater depths, if needed. Borings will be drilled using casing advance and/or HQ3 diamond core drilling methods using water or a combination of water and polymer emulsion as a drilling fluid. The six borings will generally be equally spaced along the spillway alignment at the approximate location shown in Exhibits 2 through 4. Borings will be located between the located slab reinforcing identified in Task 1.2. Where and when practical, the borings will be shifted to correspond with spillway excavation explorations to minimize the number of perforations within the existing concrete. The hole termination objective for each boring will be foundation rock that is fresh to moderately weathered. The borings are expected to occur over thirteen (13), 10-hour long days. Cuttings from the borings will be collected in drums such that they can be removed from the spillway and spread on the ground at an on-site location designated by MCWRA. It is assumed that water needed for drilling purposes will be provided by MCWRA at a source located within 1 mile of the drilling site. Packers, pumps, and materials will be kept on-hand to seal the hole if artesian conditions are encountered. This approach assumes that DSOD will allow the use of rotary drilling methods with drilling fluids (water and polymer emulsion). Modifications to this scope and budget will be required if these methods are not allowed.
- When soil or highly weathered rock is encountered, drillers will collect standard penetration tests or California Modified samples at 5-foot intervals for classification and laboratory testing.
- When rock is encountered, the boring will be advanced using diamond core HQ3. Continuous Rock core samples will be placed in boxes and stored at a designated area on-site for future evaluation.
- Conduct a total of six (6) water pressure test (lugeon testing) or falling head tests based on the condition of the soil and rock encountered. One test will be performed in each boring. In good rock conditions (RQD > 60), a five-stage water pressure test will be performed. Maximum injection pressures will be limited to roughly 1 psi per foot of ground cover. Where poor rock conditions or soil are encountered, a falling head test (or constant head test) will be performed. These tests will be conducted to evaluate the permeability of the underlying formation to support the design of spillway modifications.
- Install a total of Six (6) 1.5-inch groundwater piezometers to monitor groundwater following the completion of the borings. One piezometer will be installed in each boring. Each piezometer will include a 10-foot long 0.020-inch slotted screen. The screened zones of the piezometers will be backfilled with silica sand. The sand will be sealed with a 3- to 5-foot thick layer of hydrated bentonite pellets or chips. The piezometer casing will then be backfilled to 2 feet below the ground surface with a non-shrink Portland cement bentonite grout. The upper 2-feet of the piezometer backfill will include a stainless steel, flush mount monument which will be set in high strength, sulfate resistant, Portland cement mortar (Figure 2).
- Each boring and piezometer installation will be logged by a McMillen Jacobs geotechnical engineer or geologist. Logs will note relevant soil, rock, groundwater conditions observed in the recovered samples, as well as piezometer installation details.

- Demobilize field staff, equipment, and drilling subcontractor from the site upon the completion of drilling;
- Transport or ship selected soil and rock samples to a sub-contracted soil and/or rock testing laboratory for testing;
- Conduct laboratory testing on selected soil samples. Testing will be selected based on the conditions encountered; however, for budgeting purposes, the following tests have been assumed:
    - Ten (10) natural moisture content determinations (ASTM D2216)
    - Eight (8) combined sieve-hydrometer tests (ASTM D422)
    - Eight (8) plasticity limits determinations (ASTM D4318)
    - Six (6) Uniaxial Compressive strength determinations (ASTM D7012)
    - Six (6) corrosions tests comprised of:
        - Resistivity (ASTM G67)
        - Chloride (ASTM D4327)
        - Sulfate (ASTM D4327)
        - pH (ASTM G51)
        - Redox (ASTM G200)
        - Sulfide (Acetate Paper)
- Prepare a Geotechnical Data Report (GDR) presenting a summary of the literature review and the findings of the observed geologic conditions, geologic logs, and laboratory test results from the field explorations.

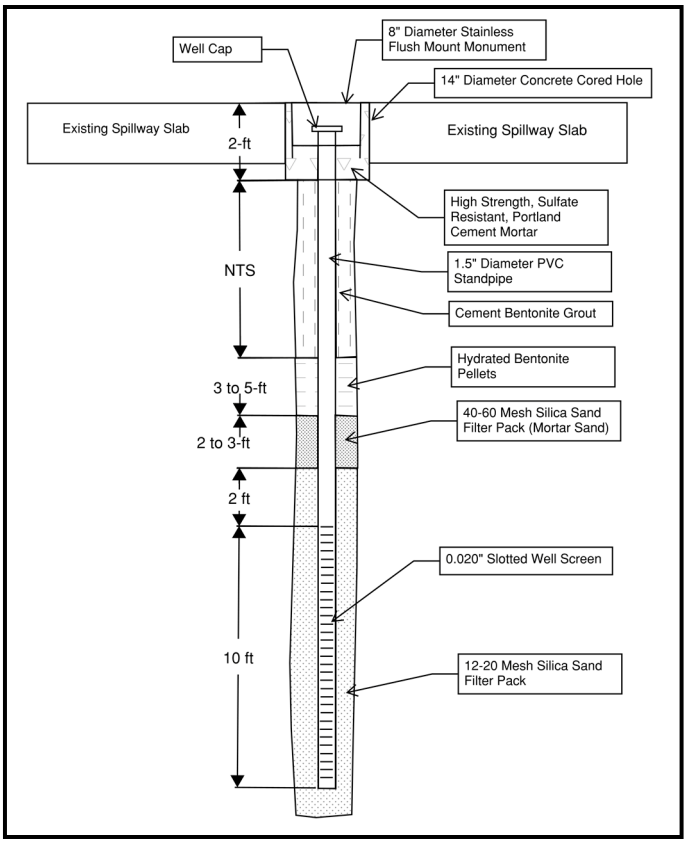


Figure 2: Schematic of Piezometer Installation

Assumptions:

The following assumptions were made when developing the geotechnical investigation scope of work:

- McMillen Jacobs will provide up to 3 working days' notice to DSOD before drilling occurs.
- Drilling and piezometer installation will take place over thirteen (13) days.
- Workdays will be 10 hours long.
- Drilling will be conducted using HQ3 (4-inch OD) or casing advance methods with HWT casing (4.5-inch OD). The resulting hole diameter is expected to be roughly 4.5 to 6-inches in diameter, depending on the quality of the rock encountered.
- Piezometers will be housed in an 8-inch diameter, flush mount monument comprised of 14-gauge stainless steel (CNI Manufacturing #SP7002SS Manhole, or equivalent).
- Drillers can mobilize their drill rig into the spillway using a 50-ton mobile crane from either the Ogee Control Structure, or one of the access roads adjacent to the spillway using established roadways. Therefore, no roadway work will be required.
- Once mobilized into the spillway, the drill rig may remain in the spillway until the scheduled completion of work.
- Water for drilling purposes can be obtained on site.
- Water used for Portland cement mortars used to set piezometer monuments will be from on-site potable sources.
- Drilling cuttings will be drummed at the drilling site for transport to MCWRA designated disposal area on-site where the drums will be emptied.
- No additional safety training will be required to perform work within the spillway.

Submittals:

The following submittals will be provided to MCWRA as part of this scope of work:

- Geotechnical Investigation Work Plan
- Draft and Final Geologic Data Report

Task 2 – Core Sampling and Investigation of Hardened Concrete

This task includes sampling the concrete spillway chute structure by taking core samples to evaluate the concrete strength and soundness. The investigation proposes cores will be taken from the numerous panels within the chute floor, and additional cores from the walls. The exact number of cores will be estimated after review of the GPR completed in Task 1.1 and the rebar locating services completed in Task 1.2. At a minimum, corings will be taken at the four geotechnical borings within the concrete portion of the spillway proposed in Task 1.3 (SB-2 through SB-5), plus one at the ogee crest and one at the downstream flip bucket. This will help to characterize foundation conditions for assessing the repair or replace options. The investigation work will include laboratory examination of the core samples. Jensen Hughes, Inc. will complete the laboratory examination under a subcontract as they have expertise in specialized testing of hardened concrete and forensic investigation of hardened concrete. Their analysis includes, but will not be limited to the following:

- Compressive and tensile strength in addition to unit weight of cores.
- Petrographic examination, in conjunction with hardened air-void analysis and scanning electron microscopy, providing information concerning: air content and distribution, estimated water/cement ratio, cracking, degree of hydration, aggregate type, composition and soundness, secondary deposits, binder type and paste content, and depth of carbonation.
- Petrographic services to identify causes of distress and deterioration in materials, as well as predict future performance of the materials to aid in the evaluation of a number of issues, which include, but are not limited to, surface scaling, aggregate pop outs, cement-aggregate reaction, discoloration/staining, chemical attack, and cause of cracking distress.
- Additional testing may be suggested by Jensen Hughes, the testing agency, to assist in determining life expectancy and mitigation measures especially in terms of existing and continued ASR deterioration. This testing is not included in this proposal and will only be suggested if previous findings indicate rehabilitation as an option.

A detailed report documenting the findings and observations of the core sampling field exploration and laboratory results will be prepared, submitted, and presented to MCWRA via a conference call meeting. After MCWRA's review and approval of the report, meeting materials will be prepared documenting the findings and a conference call meeting will be scheduled with DSOD to discuss the findings.

Engineering Assumptions:

The following assumptions were made when developing the engineering scope of work for Task 2:

- Corings will be 6-inches in diameter; however, the corings may be decreased to 4.5-inches in diameter to avoid rebar, if necessary.
- It is assumed that the 4 days will be required to complete the coring fieldwork.
- GPR results will be submitted to DSOD prior to commencing the coring effort.

- Rebar locating services will be completed prior to commencing the coring effort.
- McMillen Jacobs will provide up to 3 working days' notice to DSOD before coring occurs.
- Up to 38 cores in concrete slab and up to 8 cores in the concrete walls, without reinforcing steel, however, the exact number of cores will be estimated after completion and the analysis of the GPR.
- Up to 38 cores in concrete slab and up to 8 cores in the concrete walls will be obtained at the locations indicated. Concrete cores will be collected in accordance with ASTM C42, "Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete."
    - It is assumed that all cores will be adequate for analysis and testing. Core retrieval that results in samples that are not adequate for compression or tensile testing will be assumed adequate for petrographic analysis. Additional sample cores will not be taken unless directed by MCWRA or its representatives.
    - Jensen Hughes, the testing agency, in coordination will McMillen Jacobs will select 10 cores for petrographic testing, microscopy, and other ASTM tests indicated in Table 1 of the provided Draft Work Plan, see Attachment A.
    - The remaining 36 cores will be split evenly between compression and tension testing.
- A total of 12 foundation samples will be obtained in Task 2 and laboratory analysis completed to determine soluble sulfate content. Soluble sulfate testing is typically for soil material but will be adapted as necessary to the recovered foundation material.
- Concrete coring work and laboratory testing will be completed in accordance with Table 1 of the Draft Work Plan, see attachment A.
    - Additional non-standard testing may be requested by Jensen Hughes, the testing agency, to address the requirement of providing a "fact-based assessment of the structure's condition and life expectancy." These tests specifically relate to ASR and are utilized by DOTs to predict continued concrete performance for concrete impacted by ASR.
- The meeting with MCWRA will be a conference call meeting.
- The meeting with DSOD will be a conference call meeting.

Construction Assumptions

The following assumptions were made when developing the construction scope of work for Task 2:

- Concrete core drilling is anticipated to be performed by a local subcontractor. Core drills of 6-inch in diameter will be performed to the quantities stated in the bid schedule. It is anticipated that the concrete conditions are suitable to provide the complete and necessary core cylinders required. If additional core drilling must be performed to provide the desired number of cylinders for testing, due to breakage or other circumstances, the additional cores will be billed at the core and patching rates summarized in Table 1.
- Concrete core holes will be patched with a one-component repair mortar with properties similar to that of the existing concrete. No reinforcing steel treatment, installation, or modification work has been included in this scope of work.
- Cleanout and repair of core holes will be performed with compressed air; core hole surface will be roughened with a stiff wire brush, cleaned with compressed air and then saturated with water prior to patching. A curing compound will be applied over the exposed surface.
- For pricing purposes, wall cores have been assumed at 12-18 inches thick, and slab cores have been assumed at 18-20 inches thick.

Submittals:

The following submittals will be provided to MCWRA as part of this work task:

- Draft and Final Core Sampling Field and Laboratory Investigation Report.
- MCWRA Meeting Minutes.
- DSOD Meeting Materials.
- DSOD Meeting Minutes.

BUDGET ESTIMATE

McMillen Jacobs has prepared the below pricing to serve as a lump sum price to provide engineering and laboratory support and a unit priced proposal to perform the construction operations associated with the San Antonio Spillway Chute Pre-Design Investigation Project. In addition to the below pricing, McMillen Jacobs has provided unit rates for labor and equipment assets for hourly standby billing, for consideration of services and time required in addition to or outside of the scope of services stated in Table 1 below. Additional mobilizations for labor and equipment will be billed at actual costs plus markup.

Assumptions:

The following assumptions were made when developing the Construction pricing.

- After completion of Task 1.1, Geophysical Survey, the number of wall and slab cores estimated in Task 2.0 will be updated and therefore, the cost associated with the number of cores will be adjusted to reflect the exact number of cores.
- Wage rates are based upon California State Prevailing Wage Rates for Monterey County based on June 5, 2020 published rates. Future rates will be billed in accordance with updated wage rate increases.
- Sales taxes have been on materials only, based on a rate of 7.75% for the reported Monterey County tax rates.
- A Class B Construction Bond rate has been included in the cost of work.
- Per Diem for craft labor has been included per GSA rates for San Luis Obispo, California at a total of $124.00/Night for lodging and $71.00/day for meals and incidentals.
- The construction cost estimate includes 80 hours of a McMillen Jacobs Project Managers time. It is assumed this is sufficient time to perform all paperwork, procurements, pay applications, and associated project management duties associated with this work. Additional hours will be billed at actuals plus contractor's markup.
- No trips to the project site have been included for the Project Manager.
- The estimate includes no formal surveying. Repair locations will be based on field reference, measurements.
- An allowance of $500.00 has been included for erosion control BMP's and installation, however, no costs for the development of SWPPP plan or permit have been included.
- No fees have been included for permits.

Table 1 –Pricing for Pre-Design Investigation Services

Item No.	Description	Qty	Units	Unit Price	Total Price
Task 1: Geotechnical Investigation					
1.1	GEOPHYSICAL SURVEY	1	LS	$63,788.31	$63,788.31
1.2	SPILLWAY REINFORCING LOCATING SERVICES	1	LS	$13,500.00	$13,500.00
1.3	GEOTECHNICAL INVESTIGATION	1	LS	$184,876.26	$184,876.26
Task 2: Core Sampling and Investigation of Hardened Concrete					
50	ENGINEERING & CONCRETE FIELD TESTING	1	LS	$101,147.18	$101,147.18
100	GENERAL REQUIREMENTS	1	LS	$38,657.66	$38,657.66
2050	MOBILIZATION & PREPARATORY WORK	1	LS	$9,524.80	$9,524.80
2100	WALL CORES – 6” DIAMETER	8	EA	$416.82	$3,334.56
2200	GROUT PATCHING OF CONCRETE CORES	8	EA	$549.76	$4,398.08
2500	SLAB CORES – 6” DIAMETER	38	EA	$416.81	$15,838.78
2700	GROUT PATCHING OF SLAB CORES	38	EA	$346.40	$13,163.20
				Total Base Bid	**$448,228.83**

SCHEDULE

We anticipate that work tasks outlined within this letter proposal will be completed within the following schedule with an assumed notice to proceed date of October 26, 2020. Major milestones are summarized below.

- Task 1.1 – Geophysical Survey (5 weeks) — Oct 26 through Nov 27, 2020
- Task 1.2 – Spillway Rebar Location Services (1 week) — Jan 18 through Jan 22, 2021
- Task 1.3 – Geotechnical Investigation Plan (2 weeks) — Nov 30 through Dec 18, 2020
- Permits and Planning (2 weeks) — January 4 through January 15, 2021
- Driller Site Walk (1 Week) — Jan 18 through Jan 22, 2021
- Drilling and Piezo Installation (5 weeks) — Jan 25 through Feb 26, 2021
- Logs and Laboratory Testing (3 weeks) — March 1 through Mar 19, 2021
- Draft GDR (2 weeks) — March 22 through April 2, 2021
- Task 2 – Core Sampling Field Work — Jan 25 through Jan 29, 2021
- Task 2 – Submit Draft Core Sampling Inv Report — April 2, 2021
- Task 2 – MCWRA Review Meeting — April 20, 2021
- Task 2 – Submit Final Core Sampling Inv Report — May 7, 2021
- Task 2 – DSOD Review Meeting — May 25, 2021

We appreciate the opportunity to continue to work with MCWRA on the San Antonio Dam Spillway Chute Investigation Project. If you have any questions or need additional information, please contact me at (208) 342-4214.

Sincerely,

Morton D. McMillen, P.E.
Executive Vice President

Jodi Burns
Project Manager

Curtis Neibaur
Lead Estimator

cc: Mara McMillen
President, McMillen, LLC

Mark Merklein
Lead Structural Engineer

Paul Richards, PE
Lead Geotechnical Engineer

File

Appendix A
Detailed Engineering and Field-Testing Budget

Monterey County Water Resources Agency, San Antonio Spillway Chute Investigation Budget

Staff	McMillen (QC)	Burns (PM)	Bowen (Structural QC)	Merklein (Structural Lead)	Richards (Lead Geotech)	Burdalski (Staff Geotech)	Jensen Hughes	Wood (Sr. Cadd)	(Adm.)									Total	
Rates	$ 254.40	$ 174.00	$ 185.50	$ 243.80	$ 185.50	$ 121.90	$ 285.00	$ 138.86	$ 120.00	Hours	Total Labor	Airfare	Hotel / Car	Rental/Milage	Meals	Permits	Subcontractor	Total Expenses	TOTAL
Task 1: Geotechnical Borings	**8**	**26**	**-**	**4**	**104**	**371**	**-**	**32**	**20**	**-**	**$ 78,895**	**$ 2,000**	**$ 4,350**	**$ 3,360**	**$ 1,595**	**$ 1,789**	**$ 170,176**	**$ 183,270**	**$ 262,165**
1.1 Geophysical Survey					2	66		16	6		$ 11,358	$ 500	$ 900	$ 720	$ 385		$ 43,918.75	$ 46,424	$ 57,782
Agency Review Meeting	2	8		2	2	2					$ 3,003							$ -	$ 3,003
DSOD Review Meeting	2	8		2	2	2					$ 3,003							$ -	$ 3,003
1.2 Spillway Reinforcing Locating Services											$ -						$ 13,500.00	$ 13,500	$ 13,500
1.3 Geotechnical Investigation											$ -							$ -	$ -
Permitts, Planning, and Document Review					12	32			4		$ 6,607					$ 1,789		$ 1,789	$ 8,396
Geotechnical Exploration Plan	2	4			8	30			2		$ 6,586							$ -	$ 6,586
Driller Prewalk Site Visit					20				2		$ 3,950	$ 500	$ 150	$ 240	$ 110			$ 1,000	$ 4,950
Drilling and Piezometer Installation (13 Days on-site)					40	159					$ 26,802	$ 1,000	$ 3,300	$ 2,400	$ 1,100		$ 106,911	$ 114,711	$ 141,513
Logs and Laboratory Samples					6	30					$ 4,770						$ 5,846.00	$ 5,846	$ 10,616
Geotechnical Data Report	2	6			12	50		16	6		$ 12,816							$ -	$ 12,816
Task 2: Coring and Laboratory Testing	**14**	**70**	**9**	**92**			**16**	**18**	**4**	**223**	**$ 47,380**	**$ 900**	**$ 2,238**	**$ -**	**$ 959**	**$ -**	**$ 49,670**	**$ 53,767**	**$ 101,147**
Progress Reports and Invoicing		8							4	12	$ 1,872							$ -	$ 1,872
Field Investigation (4.5 days)		36		36			16			88	$ 19,601	$ 900.00	$ 2,238.00		$ 959.00			$ 4,097	$ 23,698
Field Packing and Delivery of Cylinders											$ -						$ 2,500.00	$ 2,500	$ 2,500
Laboratory Testing 46 Concrete Cores, 18 Compressive and 18 Tensile Strength Tests, Petrogrpahic Examinmation (10 Samples), Foundation Samples (12), Groundwater Samples (12), and Lead Materials Engineering Site Visit										-	$ -						$ 47,170.00	$ 47,170	$ 47,170
Preparation of Report	8	8	8	48	12			16		100	$ 21,061							$ -	$ 21,061
Agency Review Meeting	2	8		2							$ 2,388								$ 2,388
Adjudication of Comments	2	2	1	4	2			2			$ 2,666								$ 2,666
DSOD Review Meeting	2	8		2							$ 2,388							$ -	$ 2,388
Total Hours	**22**	**96**	**9**	**96**	**104**	**371**	**16**	**50**	**24**	**223**									
Total Budget	**$ 5,596.80**	**$ 16,704.00**	**$ 1,669.50**	**$ 23,404.80**	**$ 19,292.00**	**$ 45,224.90**	**$ 4,560.00**	**$ 6,943.00**	**$ 2,880.00**		**$ 126,275.00**	**$ 2,900**	**$ 6,588**	**$ 3,360**	**$ 2,554**	**$ 1,789**	**$ 219,846**	**$ 237,037**	**$ 363,312**

Appendix B
Detailed Construction Budget

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid# / Client# / Bid Description	Quantity	Unit	Manhours	Direct Labor	Perm Matl	Constr Matl	Equip-ment	Sub-Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	Balanced Bid Total	Balanced Bid Unit Price	Bid Price	Bid Total
100 GENERAL REQUIREMENTS	1.00	LS	220 220.00	18,026		12,206	2,229		32,461	410	32,871	32,871.06	5,787 17.6 %	38,658	38,657.66	38,657.66	38,657.66
2000 SCOPE ITEM 2: CONCRETE CORING	46.00	EA															
2050 MOBILIZATION & PREPARATORY WO	1.00	LS	32 32.00	3,334		500	764	3,400	7,998	101	8,099	8,099.05	1,426 17.6 %	9,525	9,524.80	9,524.80	9,524.80
2100 WALL CORES (12" to 18")	8.00	EA						2,800	2,800	35	2,835	354.42	499 17.6 %	3,335	416.82	416.82	3,334.56
2200 GROUT PATCHING OF CONCRETE COR	8.00	EA	24 3.00	2,500		620	573		3,693	47	3,740	467.47	658 17.6 %	4,398	549.76	549.76	4,398.08
2500 SLAB CORES (18" to 20")	38.00	EA						13,300	13,300	168	13,468	354.42	2,371 17.6 %	15,839	416.81	416.81	15,838.78
2700 GROUT PATCHING OF SLAB CORES	38.00	EA	80 2.11	8,335		808	1,910		11,053	140	11,193	294.55	1,970 17.6 %	13,163	346.40	346.40	13,163.20
Totals:			356	32,195		14,133	5,476	19,500	71,305	900	72,206		12,711	84,917			84,917.08

Code between Balanced Bid & Bid Price: U=Unbalanced, F=Frozen, C=Closing Biditem (item to absorb unbalancing differences).
[bracketed numbers represent adjusted quantities]
** in front of the Biditem indicates a Non-Additive item

Markup % is shown as a percentage of cost

Bond from Summary Table		900	
OVERHEAD	7.0000 % of TC		4,991
PROFIT	10.0000 % of ++		7,719
Markup on Resource Costs			
MARKUP TOTALS ====>			12,711 <= Subtotal

********* TOTAL	JOB ======>	356	32,195		14,133	5,476	19,500	71,305	900	72,206		12,711	84,917			84,917.08

ESTIMATE SUMMARY - COSTS & BID PRICES

Bid#	Client# / Bid Description	Quantity	Unit / Manhours	Direct Labor	Perm Matl	Constr Matl	Equip-ment	Sub-Contr	Direct Total	Indirect Charge	Total Cost	Total Cost Unit Price	Markup	------Balanced Bid------ Total	Unit Price	Bid Price	Bid Total

Spread Indirects On TOTAL COST Spread Markups On TOTAL COST Spread Addons&Bonds On TOTAL COST

Bond Calculations
Selected Bond Table: CC Description: California Class

	Contract Amount	Rate per 1000	Bond Amount
First:	$ 500,000	10.61	$ 900.97
Next:	$ 2,000,000	10.61	$ 0.00
Next:	$ 2,500,000	10.61	$ 0.00
Next:	$ 2,500,000	9.05	$ 0.00
Next:	$ 2,500,000	8.28	$ 0.00
Remainder:		7.52	$ 0.00
		Subtotal:	$ 900.97
Time Threshold 1:	24	**Extended Time Rate 1:** 1.0000 %	$ 0.00
Time Threshold 2:	0	**Extended Time Rate 2:** 0.0000 %	$ 0.00
Length of Job:	24	**Total Bond Amount:**	$ 900.97

-----Estimate Notes-----
Bid Date: Owner: Engineering Firm:
Estimator in Charge: CWN

Desired Bid (if specified)= 0.00 Sort: Hold Acct: N Subitem: N NonAdd: N
Last Summary on 06/18/2020 at 4:19 PM.
Last Spread on 06/18/2020 at 4:19 PM.

Appendix C
Exhibits 1 Through 4
Exploration Plans

Minor hairline cracking common

Failed repair where approach wall meets next wall at CJ along both sides of spillway

Vent

1½" - ½" vertical offset at CJ 11 up / 12 down

Exposed aggregate, pervasive alligator cracks coincident with iron staining

1 2 3 4 5 6 7 8 9 10 11 12 13 14

SB-1

Vent

¾" vertical offset at CJ 5 up / 6 down

Limits of GPR Survey

Pervasive iron staining emanating from 11 / 12 C.J.

1' diameter asbestos pipe

Detailed log shown in Figure 1

SB-1 Approximate Boring Location

Crack, Typically ≥ ⅛":

Previous Repair:

Delaminated Area:

Previous Repair that is delaminated:

Spall, depth typically ≤ ½" unless otherwise noted:

Construction Joint (approximately located): 19

Strike & Dip / Bedding: 45°

Notes:

1.) Aerial photo basemap provided by MCWRA
2.) As built drawing provided did not include complete detail of construction joint locations. Accordingly, locations presented here should be considered approximate/schematic.
3.) Location of observations should be considered approximate, no observations presented here were surveyed.
4.) Construction joints between wall panels are not shown except where observations are noted.

50 25 0
Feet

N W E S

San Antonio Spillway Inspection
Monterey County

Monterey County Water Resources Agency

GEI Consultants

FIELD OBSERVATIONS

MAY 2018

EXHIBIT 1

12-JUN-2017 Z:\Projects\1701742_MJA_InterlakeTunnel\SpillwayNaci_fieldmap.mxd CGS

Continued: Exposed aggregate, pervasive alligator cracks; 3/16" - ¼" deep typical

Vegetation and Debris

Crack 1" wide, ½" deep

6" Diameter Core Sample

Popout

14 15 16 17 18 19 20 21 22

SB-2

SB-3

Limits of GPR Survey

Significant white precipitate build-up at wall CJ

1½" deep

1' x 2.5' x 1" deep

1' Drain, 1' up from base of wall

Earthen Berm

~3' CMP discharging into spillway

SB-1 Approximate Boring Location

Crack, Typically ≥ ⅛":

Previous Repair:

Delaminated Area:

Previous Repair that is delaminated:

Spall, depth typically ≤ ½" unless otherwise noted:

Construction Joint (approximately located): 19

Strike & Dip / Bedding: 45°

Notes:

1.) Aerial photo basemap provided by MCWRA
2.) As built drawing provided did not include complete detail of construction joint locations. Accordingly, locations presented here should be considered approximate/schematic.
3.) Location of observations should be considered approximate, no observations presented here were surveyed.
4.) Construction joints between wall panels are not shown except where observations are noted.

50 25 0

Feet

N W E S

San Antonio Spillway Inspection
Monterey County

Monterey County Water Resources Agency

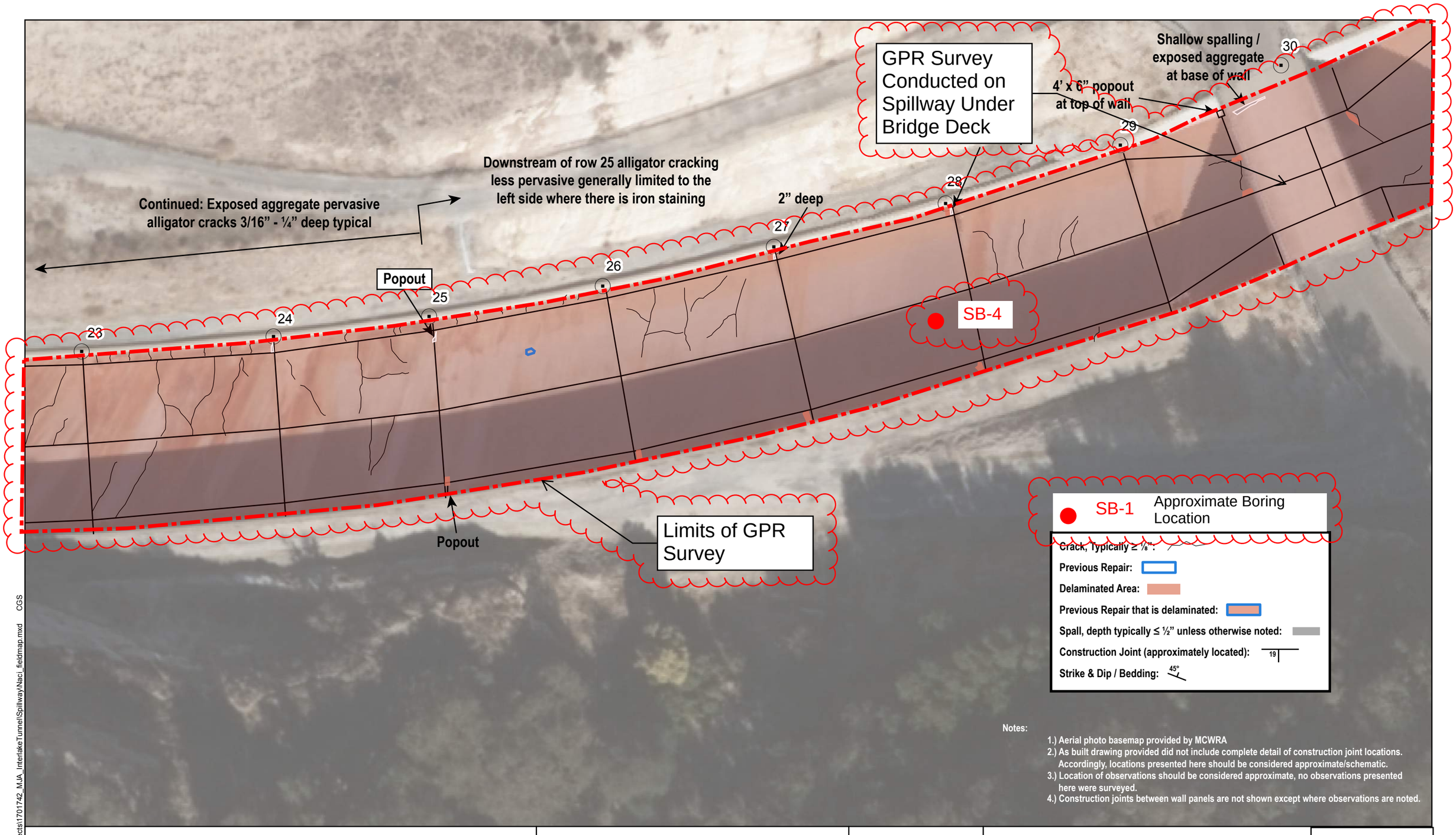
GEI Consultants

FIELD OBSERVATIONS

MAY 2018

EXHIBIT 2

12-JUN-2017 Z:\Projects\1701742_MJA_InterlakeTunnel\SpillwayNaci_fieldmap.mxd CGS



SB-1 Approximate Boring Location

Crack, Typically ≥ ⅛":

Previous Repair:

Delaminated Area:

Previous Repair that is delaminated:

Spall, depth typically ≤ ½" unless otherwise noted:

Construction Joint (approximately located): 19

Strike & Dip / Bedding: 45°

Notes:

1.) Aerial photo basemap provided by MCWRA
2.) As built drawing provided did not include complete detail of construction joint locations. Accordingly, locations presented here should be considered approximate/schematic.
3.) Location of observations should be considered approximate, no observations presented here were surveyed.
4.) Construction joints between wall panels are not shown except where observations are noted.

50 25 0
Feet

N W E S

San Antonio Spillway Inspection
Monterey County

Monterey County Water Resources Agency

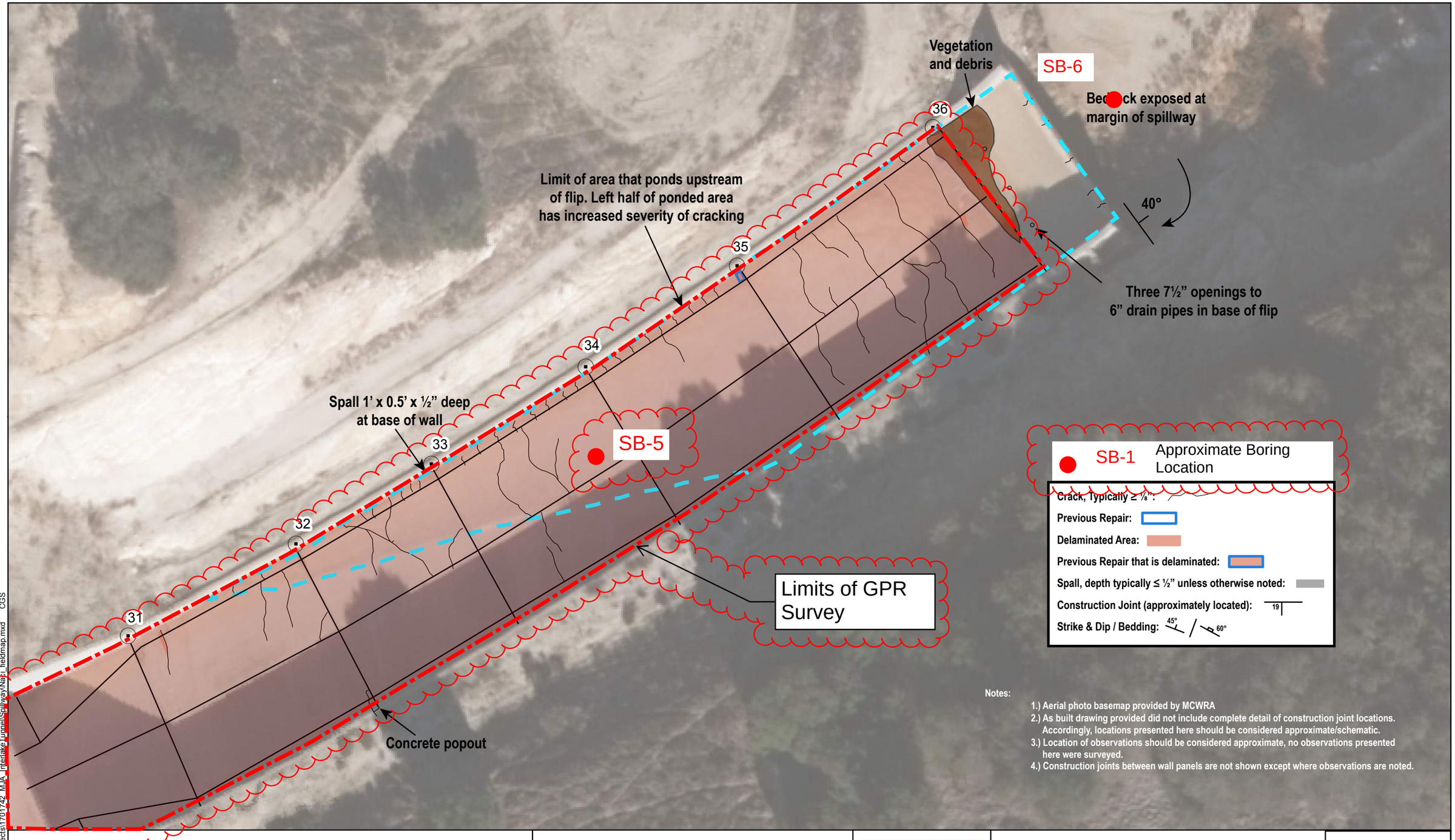
GEI Consultants

FIELD OBSERVATIONS

MAY 2018

EXHIBIT 3

12-JUN-2017 Z:\Projects\1701742_MJA_InterlakeTunnelSpillway\Naci_fieldmap.mxd CGS



Notes:

1.) Aerial photo basemap provided by MCWRA
2.) As built drawing provided did not include complete detail of construction joint locations. Accordingly, locations presented here should be considered approximate/schematic.
3.) Location of observations should be considered approximate, no observations presented here were surveyed.
4.) Construction joints between wall panels are not shown except where observations are noted.

50 25 0
Feet

N W E S

12-JUN-2017 Z:\Projects\1701742_MJA_IntakeTunnelSpillway\Nad_fieldmap.mxd CGS

San Antonio Spillway Inspection
Monterey County

Monterey County Water Resources Agency

GEI Consultants

FIELD OBSERVATIONS

MAY 2018

EXHIBIT 4