BARRY SGARRELLA, Chairman DAVID HUSTON, Trustee PRESTON GOOD, Trustee

RECLAMATION DISTRICT NO. 1601 TWITCHELL ISLAND BOARD OF TRUSTEES MEETING TUESDAY, MARCH 21, 2023 9:00 AM ENGINEER'S REPORT

LINDA CARTER, Secretary JESSE BARTON, Counsel CHRISTOPHER H, NEUDECK, Engineer RICK D. CARTER, Superintendent PERLA TZINTZUN-GARIBAY, Finance

L. AB 360 DELTA LEVEE SUBVENTIONS PROGRAM

A. Review timing of maintenance rock slope protection on the Districts levee between Levee Station 450+60 to 588+10 which will be the in the 1st two weeks of April.

EXHIBIT A: KSN Inc. Daily Field Report and Photos of RSP Installation EXHIBIT B: Plans of Erosion Repairs.

II. DELTA LEVEE SUBVENTIONS PROJECT -SPECIAL PROJECTS MUTI-BENEFIT PSP

A. Review concept Proposal Application and seek authority to submit Full Proposal provided DWR endorses the District's Concept Proposal.

EXHIBIT C: Concept Proposal Application submitted 2/24/23.

III. TIMES PROJECT

A. Review timing of providing civil and geotechnical services associated with the design of future levee improvements along Sevenmile Slough adjacent to the TIMES project.

EXHIBIT D: Email correspondence with DWR regarding approval of landowner for Geotechnical Explorations.

Exhibit A



Stephen K. Sinnock, P.E. Christopher H. Neudeck, P.E. Neal T. Colwell, P.E. Barry O'Regan, P.E.

FIELD REPORT

OWNER:

Reclamation District No. 1601

PROJECT:

Twitchell Island Erosion

Repair Project

CONTRACTOR: Dutra

CONTRACT NO.:

N/A

KSN JOB NO.:

1110-1050

DATE:

02/27/2023

Weather / Temperature:

Overcast & rainy w/sporadic breaks in the deluge / 39°F to 47°F / 20 MPH wind gusts

Location:

Twitchell Island along the San Joaquin River Between Sta. 450+60 and Sta. 588+10

Personnel on site:

Brian Holmberg (Dutra Super), 1 tug operator, 1 crane operator, 2 deck hands

Contractor work hours:

1000 to 1630

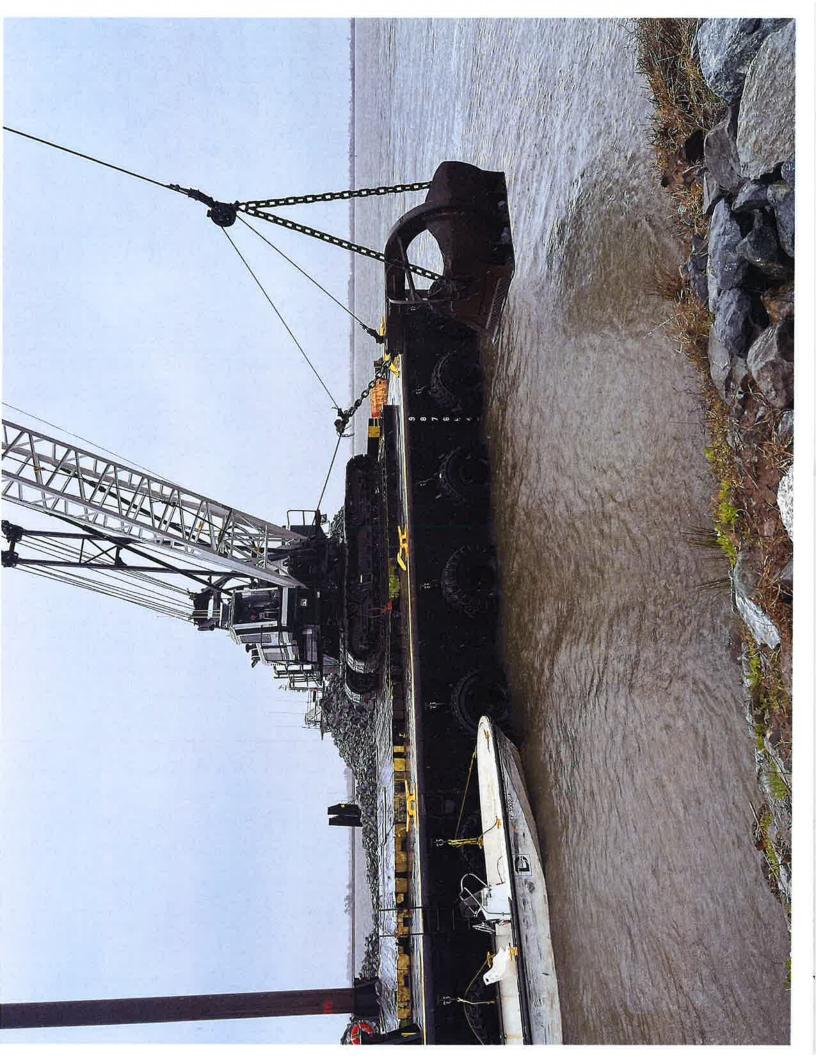
The following was noted:

- Equipment on site: TM20 Crane Barge w/88B Crane & 2-ton Clamshell Bucket, Denise Rock Barge, (1) Chevrolet 3500HD Pickup
- Brian, the Dutra Superintendent, arrived on site at around 10:30am when we proceeded to drive to Site 1 (sta. 588+00) to meet the TM20 Barge. At this point, Brian and I had already staked out sites 1-3 and we allowed the barge personnel to throw rock as soon as it stationed itself offshore. Following the completion of these sites, we drove to site 4 to meet the barge there. After the barge arrived at site 4, Brian and I took the skiff from Dutra and used it to stake out sites 4-10 along the setback levee while visually inspecting for any additional damage from the recent high water event. The barge began rock placement after we were safely aboard.

Prepared By: Aaron Lickingteller Additional Copies to: CHN, WLF

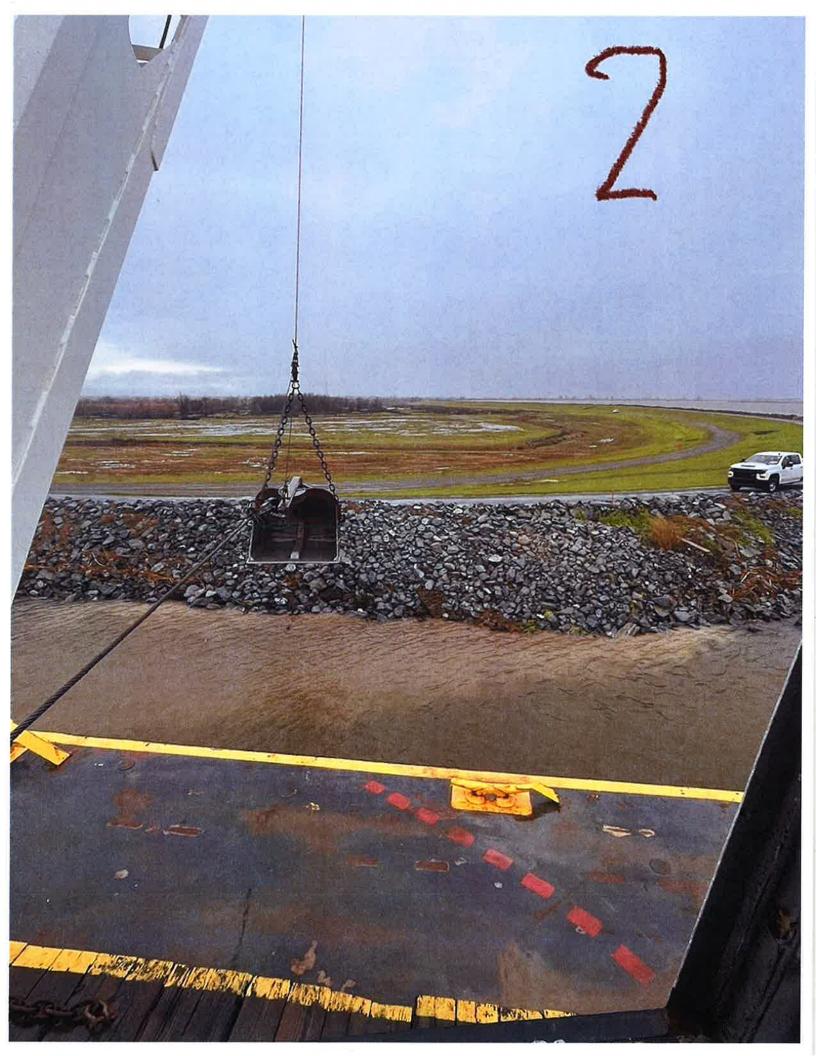


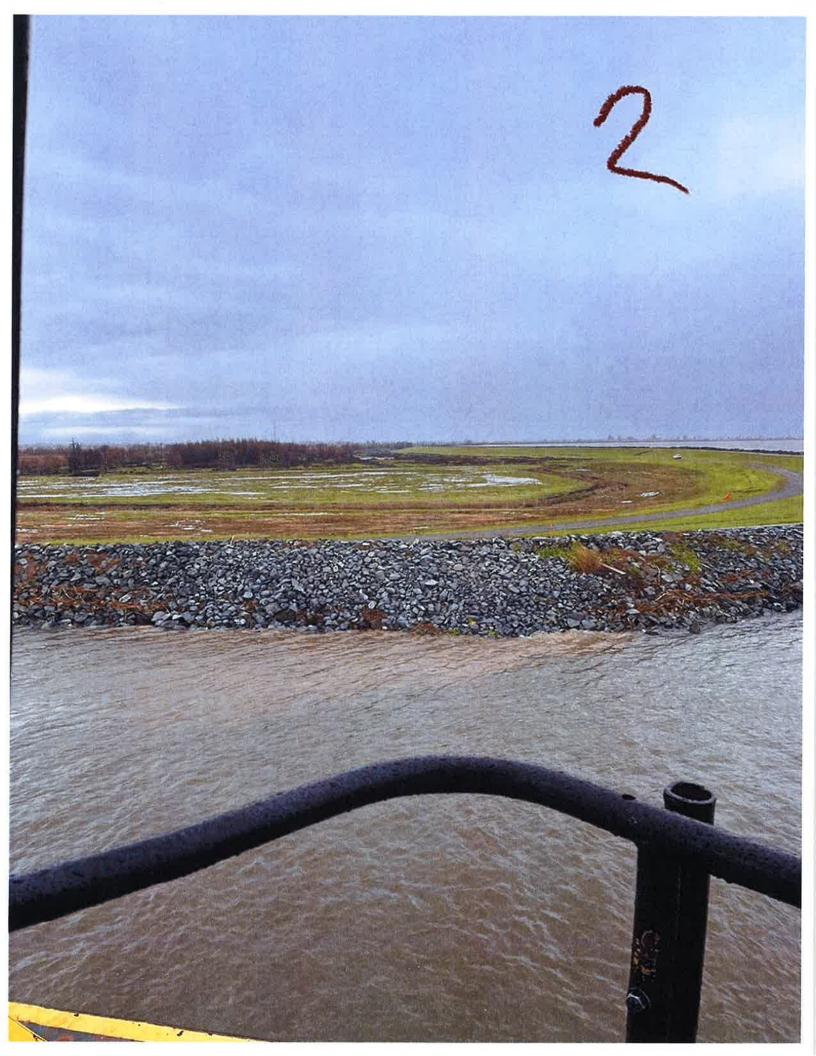


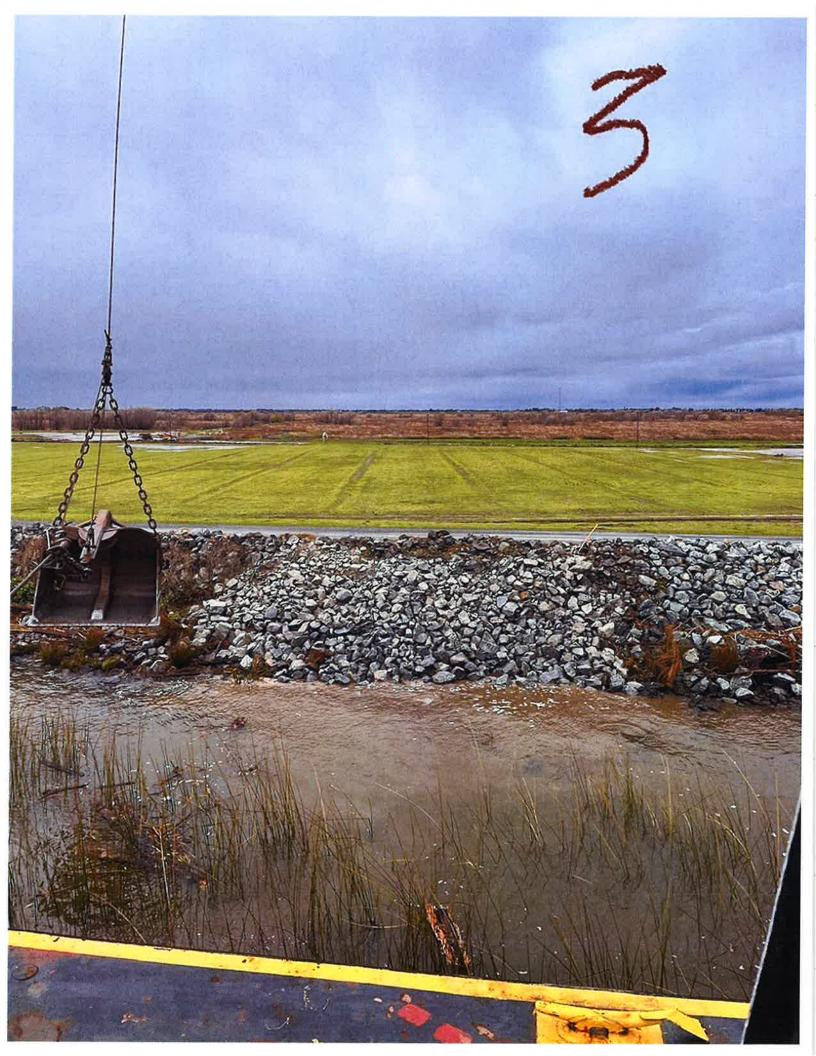


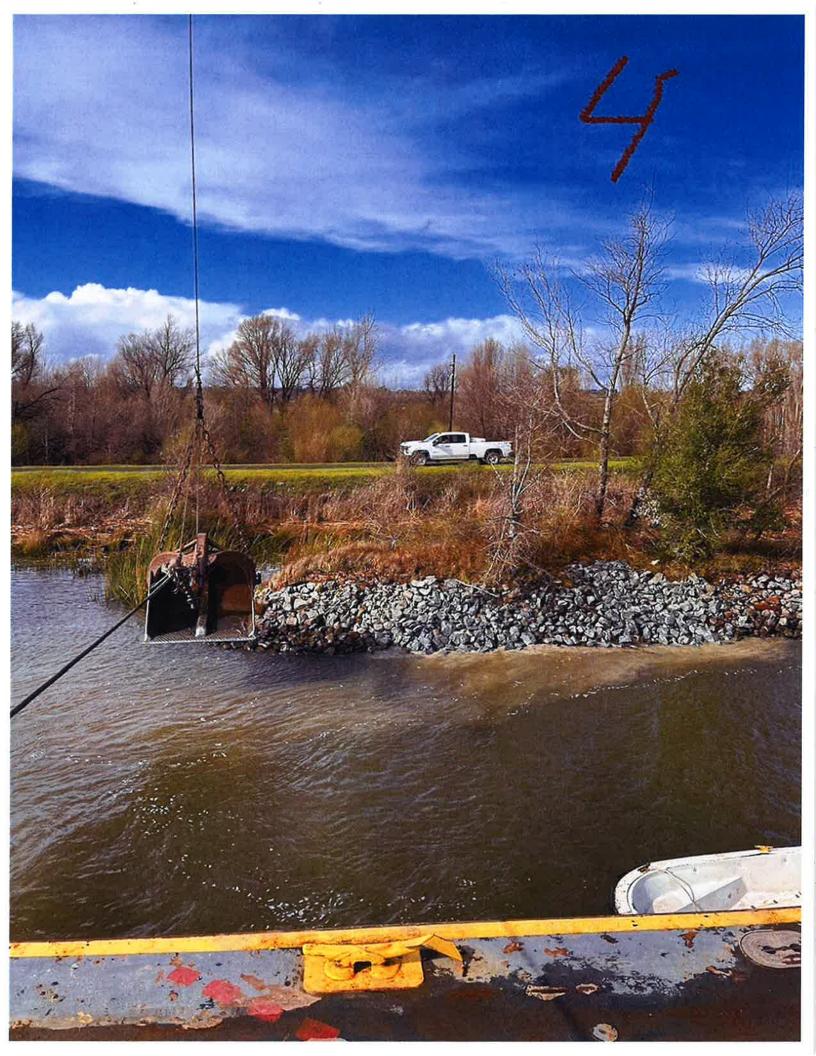


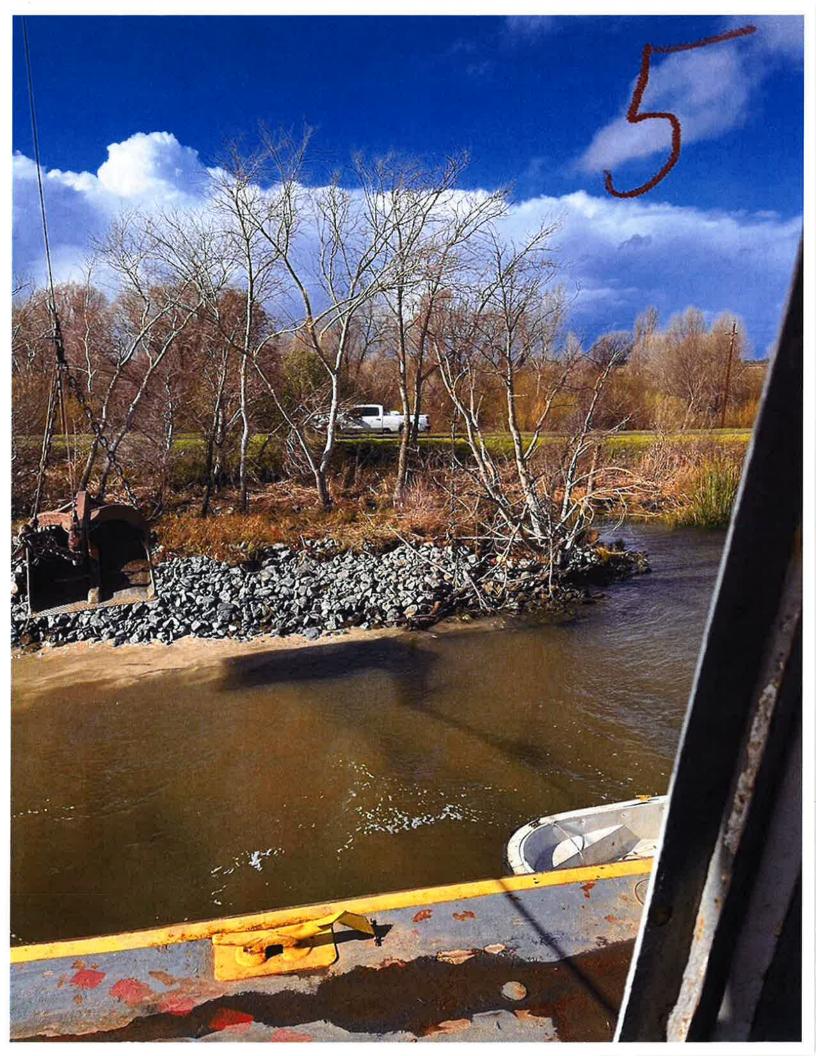


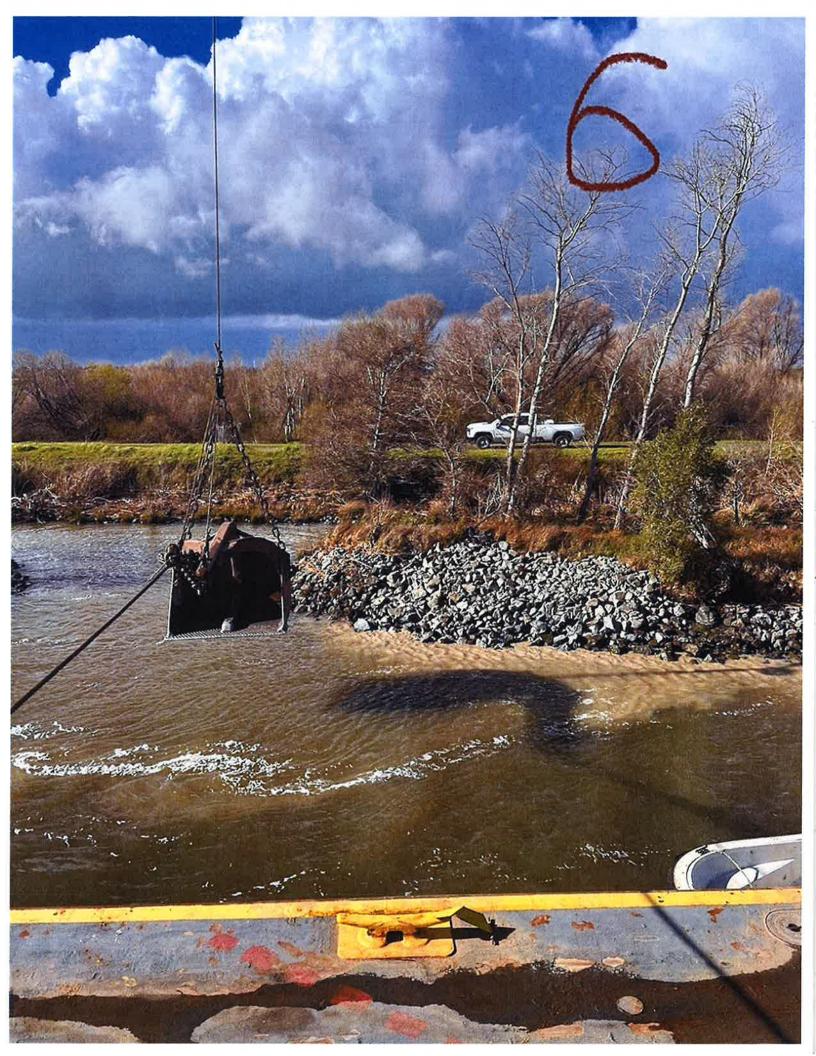


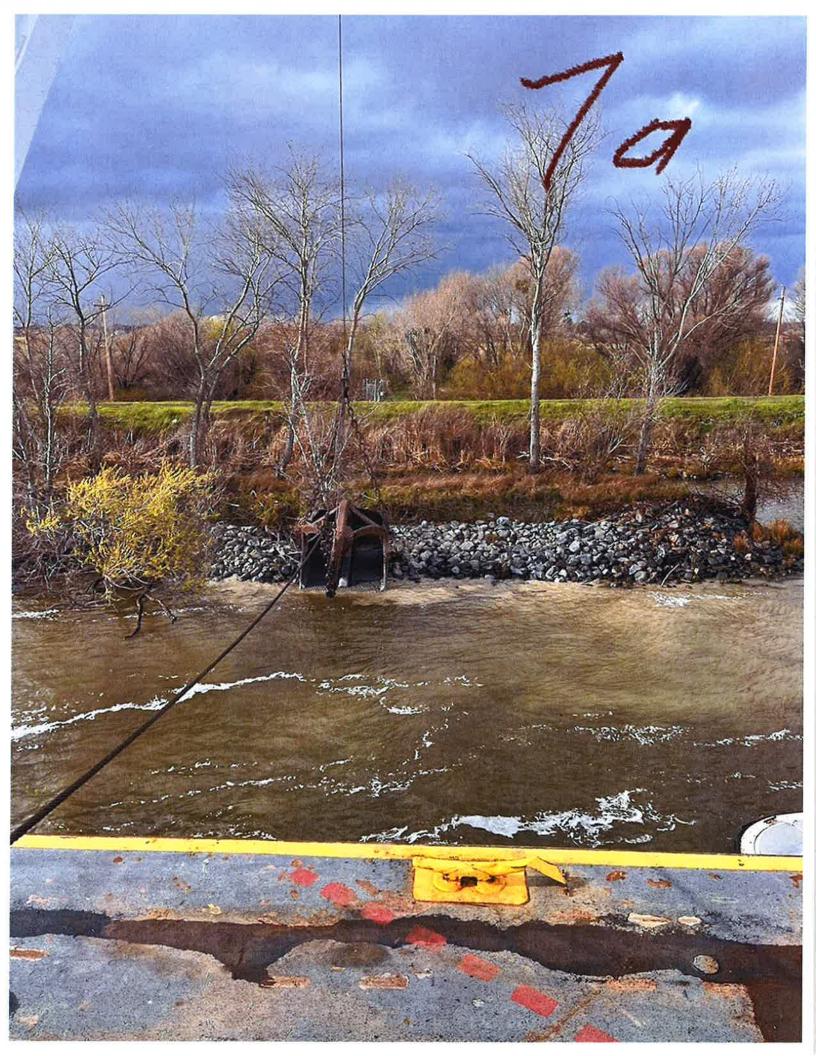


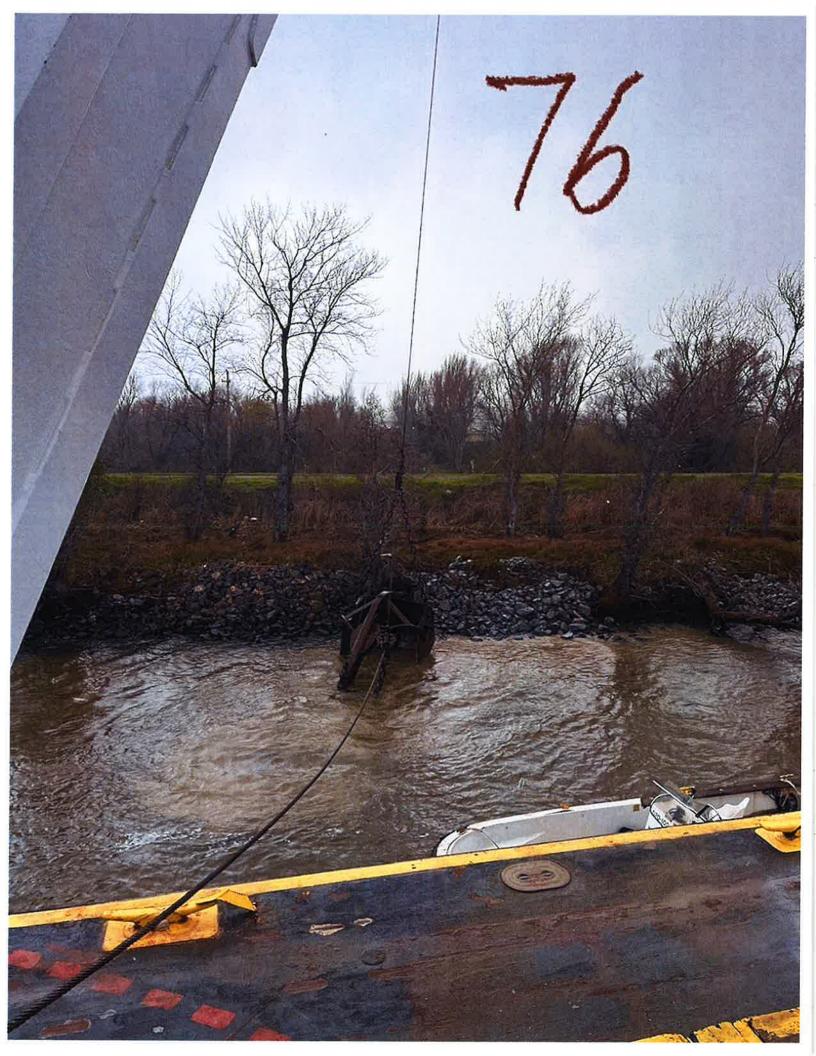


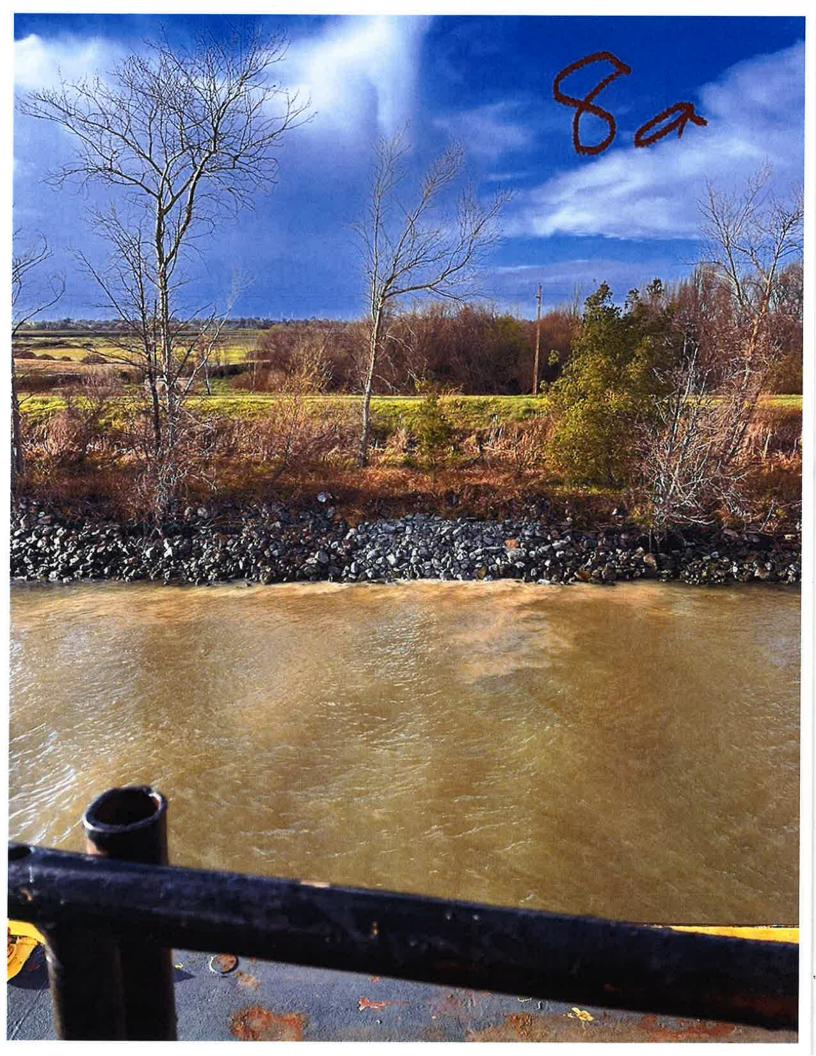


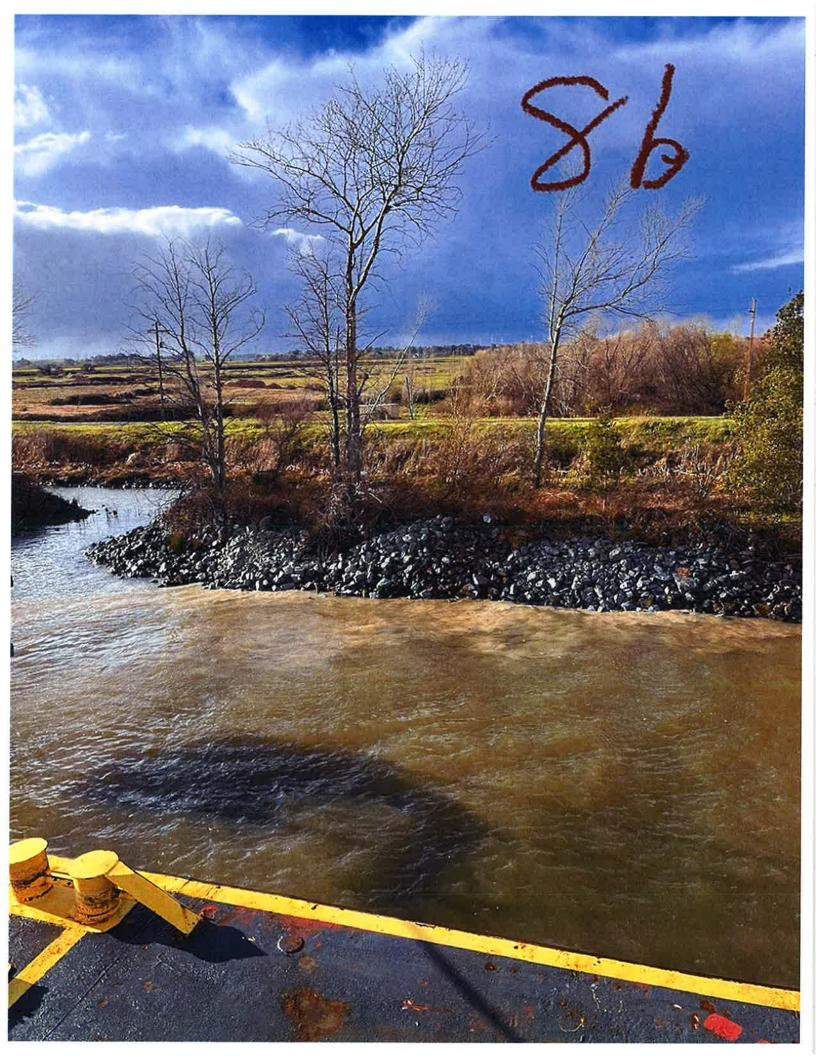




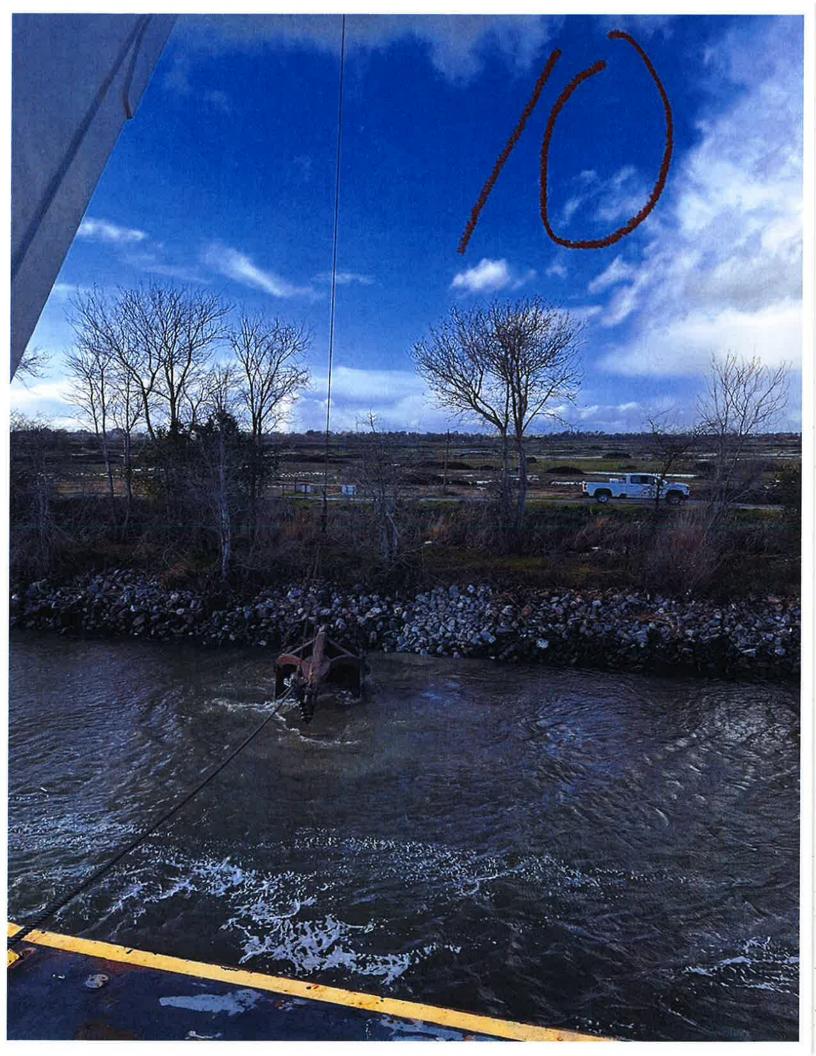












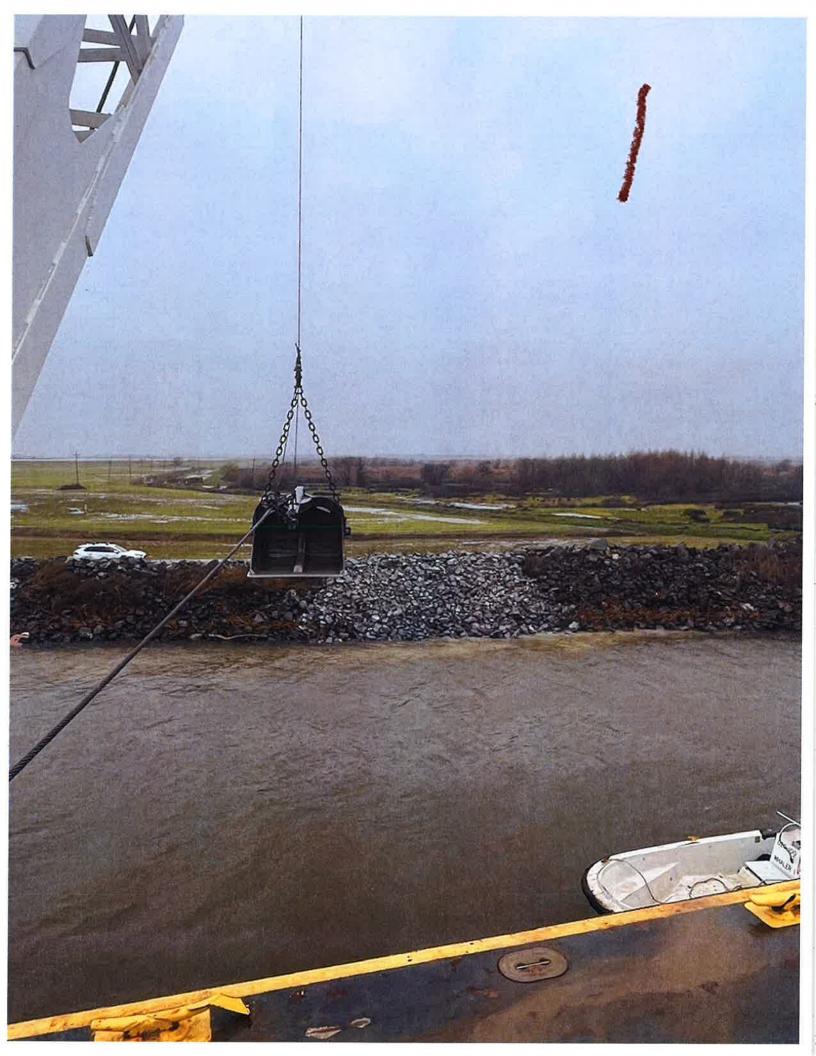


Exhibit B

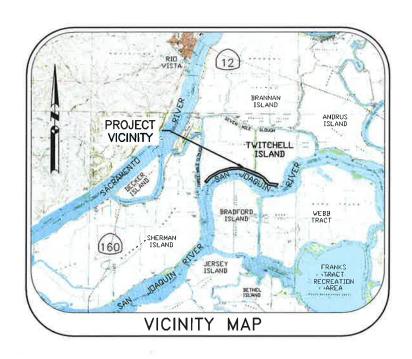
RECLAMATION DISTRICT NO. 1601

TWITCHELL ISLAND

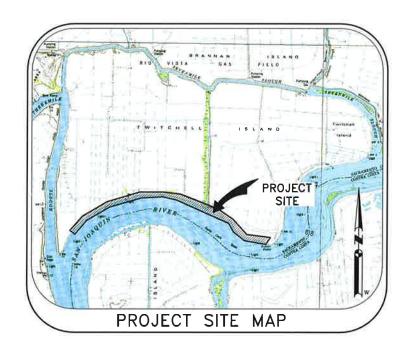
SACRAMENTO COUNTY, CALIFORNIA

2023 EROSION REPAIR PROJECT

BETWEEN STATION 450+60 - 588+10



	DWG NO.	SHEET NO.	DESCRIPTION	
	G-001	01	TITLE SHEET	
	G-002	02	NOTES AND DETAIL	
	CS-101	03	BASE MAP	
	CS-102	04	SITE MAP	
	C-301	05	SITE PHOTOS	
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12/5/2022	NO.	DESCRIPTION	DATE	APPR.	VERTICAL DATUM NAVD88	لىسلىسا



Stockton, CA 95203 West Sacramento, CA 95691

TWITCHELL ISLAND 2023 EROSION REPAIR PROJECT TITLE SHEET 916-403-5900

**RECLAMATION DISTRICT 1601** 

DECEMBER 2022 SHEET IDENTIFICATION G-001 SHEET 01 OF 05

- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT (209) 946-0268, A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE DISTRICT RESERVES THE RIGHT TO SUSPEND CONSTRUCTION AT ANY TIME IN THE EVENT OF EXTREME HIGH OR LOW TIDES. FLOOD EVENTS, OTHER CONDITIONS OR EMERGENCIES THAT MAY JEOPARDIZE THE INTEGRITY OF THE DISTRICT'S LEVEE AND ROAD
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS, AS REQUIRED FOR TRAFFIC CONTROL AND PUBLIC SAFETY DURING
- THE DISTRICT WILL FURNISH ALL RIGHT-OF-WAYS FOR ALL LEVEE ROADS UNDER THE DISTRICT'S JURISDICTION. THE CONTRACTOR WILL SECURE RIGHT-OF-WAYS FOR ALL OTHER AREAS NOT UNDER THE DISTRICT'S JURISDICTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING ACCESS ROADS ALONG THE DISTRICT LEVEE AT ALL TIMES DURING CONSTRUCTION, ANY DAMAGE TO THE LEVEE AND ACCESS RAMPS SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS
- IF DELIVERING MATERIAL OR EQUIPMENT BY TRUCK, ALL TRUCK TRAFFIC SHALL BE LIMITED TO THE DISTRICT/COUNTY LEVEE ROADS, UNLESS OTHERWISE APPROVED
- MAXIMUM SPEED LIMIT ON DISTRICT LEVEE ROADS IS 30 MPH, OR AS POSTED.
- THE ENGINEER WILL PROVIDE LOCATIONS OF THE DESIGNATED PROJECT REPAIR SITES WITH START AND STOP POINTS, AND WILL PROVIDE TEMPORARY BENCHMARKS IN THE VICINITY OF THE PROJECT SITES TO BE UTILIZED BY THE CONTRACTOR FOR SETTING ELEVATIONS
- 10, THE CONTRACTOR IS RESPONSIBLE FOR SETTING ALL CONSTRUCTION STAKING AND SURVEYING, AS MAY BE REQUIRED FOR CONSTRUCTION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, SETTING ANY ELEVATIONS AS REQUIRED THROUGHOUT THE PROJECT SITES.
- 11. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS: AND THAT THE APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL MORNING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DISTRICT AND THE DISTRICT'S ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DISTRICT OR THE ENGINEER
- 12. ANY DEFICIENCIES NOTED DURING INTERIM AND FINAL INSPECTIONS BY THE ENGINEER AND/OR DISTRICT, SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE BY THE DISTRICT. ANY ADDITIONAL COSTS AND EXPENSES FOR MOBILIZATION AND/OR DEMOBILIZATION, LABOR, EQUIPMENT AND OTHER ASSOCIATED COSTS REQUIRED TO CORRECT THE DEFICIENCIES NOTED, EXCEPT SPECIFIED MATERIAL(S), SHALL BE BORNE
- 13. THE CONTRACTOR SHALL NOT CLOSE ANY ROAD, STREET, OR HIGHWAY TO THE PUBLIC EXCEPT WITH THE PERMISSION OF THE ENGINEER AND THE PROPER GOVERNMENTAL AUTHORITY. TEMPORARY PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO ENSURE CONTINUOUS ACCESS TO PUBLIC AND PRIVATE DRIVEWAYS, AND PROPER FUNCTIONING OF SEWER INLETS, GUTTERS, CULVERTS, DRAINAGE AND IRRIGATION DITCHES, AND NATURAL
- 14. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTRACT THE ENGINEER AT (209) 946-0268 FOR SUCH FURTHER EXPLANATIONS AS MAY
- 16. THE INTENT OF THESE PLANS ARE TO SERVE AS A GUIDE AND TO PROVIDE THE CONTRACTOR WITH INFORMATION AND DETAILS NECESSARY TO CONSTRUCT THE PROJECT AND FURNISH THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PERFORM THE WORK IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE DISTRICT'S ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES AND AMBIGUITIES WHICH MAY EXIST IN THE PLANS OR SPECIFICATIONS. IF THE PLANS
  DESCRIBE PORTION OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS
  UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY
  MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
- 17. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.
- 18. ALL IMPROVEMENTS TO BE DONE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHENEVER IT APPEARS THERE IS A CHANGE IN SITE CONDITIONS OR AN ADJUSTMENT TO BE MADE IN WORK REQUIREMENTS.
- 20. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE SECURITY OF HIS PLANT AND EQUIPMENT. THE DISTRICT WILL NOT TAKE ANY RESPONSIBILITY FOR MISSING OR DAMAGED EQUIPMENT, TOOLS, OR PERSONAL BELONGINGS.

#### ENVIRONMENTAL NOTES:

THE CONTRACTOR SHALL MAINTAIN AIR POLLUTION CONTROLS BY NOT DISCHARGING SMOKE, DUST, OR ANY OTHER AIR CONTAMINANTS INTO THE ATMOSPHERE IN SUCH QUANTITY AS WILL VIOLATE THE REGULATIONS OF ANY LEGALLY CONSTITUTED AUTHORITY. HE SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING AND SPRINKLING WITH WATER, OR OTHER MEANS AS NECESSARY. THE USE OF WATER IN AN AMOUNT WHICH RESULTS IN MUD ON PUBLIC ROADS IS NOT ACCEPTABLE AS A SUBSTITUTE FOR SWEEPING OR OTHER

- THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION TO PROTECT STREAMS, WATERWAYS AND OTHER BODIES OF WATER FROM POLLUTION WITH FUELS, OIL, BITUMEN'S, CALCIUM CHLORIDE, AND OTHER HARMFUL MATERIALS AND SHALL CONDUCT AND SCHEDULE HIS OPERATIONS SO AS TO AVOID OR MINIMIZE MUDDYING AND SILTING OF SAID WATERS, CARE SHALL BE EXERCISED TO PRESERVE ROADSIDE VEGETATION BEYOND THE LIMITS OF
- THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE WORK SITE CONDITIONS CLEAN AND FREE FROM RUBBISH AND DEBRIS.

#### DUST AND MUD CONTROL:

- DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION AREAS, EMBANKMENT FILL AREAS, HAUL ROADS, OTHER ROADWAYS, AND OTHER USE AREAS WHERE DUST IS GENERATED WELL WATERED: AND DURING WET CONDITIONS, AREAS USED BY LOCAL TRAFFIC, FREE AND CLEAR FROM MUD.
- NON WORK DAYS: THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN AN PROJECT AREAS AND CONSTRUCTION ROADS WHICH ARE USED BY THE CONTRACTOR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL DEDICATE AT LEAST ONE (1) WATER TRUCK FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE FOR, BUT NOT LIMITED TO THE FOLLOWING AREAS:
- ACCESS AND HAUL ROADS
- EMBANKMENT FILL AREAS
- OTHER CONSTRUCTION USE AREAS
- WATER WILL BE MADE AVAILABLE FOR THE CONSTRUCTION OPERATIONS FROM THE DISTRICT FROM THE SURROUNDING WATERWAY. THE PUMPING FACILITY SHALL BE LOCATED IN AN AREA THAT WILL NOT CREATE A TRAFFIC OR MUD HAZARD ON THE LEVEE ROADS USED BY THE PUBLIC, LOCAL TRAFFIC, OR CONSTRUCTION ACTIVITIES.

#### **UTILITY NOTES:**

- THE APPROXIMATE LOCATION OF KNOWN UTILITIES, SUBMARINE CABLES SIPHONS, FERRY CABLES, DISCHARGE PIPES, ETC., MAYBE BE SHOWN ON THE PLANS FOR THE INFORMATION OF THE CONTRACTOR. THE DISTRICT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF THIS INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE ACTUAL LOCATION OF ALL UNDERGROUND, SURFACE, OVERHEAD, AND SUBMARINE IMPROVEMENTS, OR FACILITIES WHICH MAY BE SUBJECT TO DAMAGE BY REASON OF THE OFFERTIONS.
- 2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF WORK.
- HE SHALL BE RESPONSIBLE FOR THE LOCATION AND PRESERVATION OF ALL SUCH FACILITIES IN THE AREA OF CONSTRUCTION, AND SHALL NOTIFY UTILITIES TWENTY-FOUR (24) HOURS IN ADVANCE OF ANY CONSTRUCTION, (UNDERGROUND SERVICE ALERT (800) 642-2444)
- THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING IRRIGATION AND DRAINAGE FACILITIES INCLUDING, BUT NOT LIMITED TO, SIPHONS, DITCHES, CROSSINGS, DISTRIBUTION BOXES, SLIDE GATES, ETC., DURING THE TERM OF THE CONTRACT. THE EXISTING IRRIGATION AND DRAINAGE FACILITIES MUST REMAIN FULLY OPERATIONS DURING THE PERIOD OF

#### TRAFFIC CONTROL

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND AS DESCRIBED IN SPECIAL PROVISIONS, SECTION 1.12, "TRAFFIC CONTROL."

#### CLEANUP:

- THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE PREMISES OCCUPIED BY HIM IN A CLEAN AND ORDERLY CONDITION, DISPOSING OF REFUSE IN A
- THE CONTRACTOR, UPON COMPLETION OF ALL WORK, SHALL RESTORE ALL LEVEE AND ACCESS ROADS, HAUL ROADS, AND PROJECT SITES IN A MANNER SATISFACTORY TO THE ENGINEER AND LANDOWNER.

#### POWER LINES:

THE CONTRACTOR SHALL TAKE NOTE OF ANY POWER LINES WITHIN THE CONSTRUCTION ZONE. EXTREME CUATION IS ADVISED WHILE WORKING AROUND AND NEAR THESE LIVE LINES.

- 1. UNLESS OTHERWISE INDICATED, THE WORK AREAS SHALL BE CLEARED AND GRUBBED TO 20 FT. BEYOND THE DESIGN FILL SECTION.
- 2. USE CAUTION WHILE CLEARING AND GRUBBING AROUND POWER LINES & ANY BURIED
- ALL MATERIAL CLEARED AND REMOVED SHALL BECOME THE PROPERTY AND RESPONSIBILITY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL OFFSITE.

#### **CONSTRUCTION NOTES:**

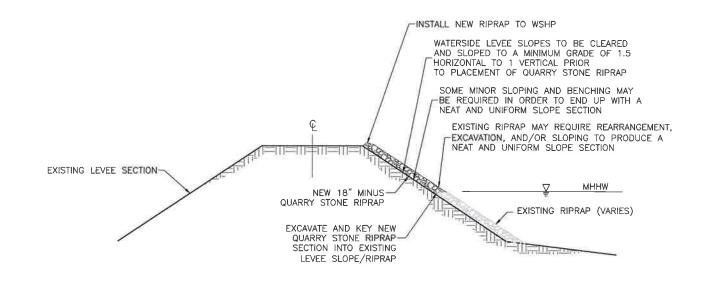
#### ACCESS ROADS:

THE CONTRACTOR SHALL IMPROVE AND MAINTAIN THE LOCAL ACCESS AND LEVEE ROADS AS MAY BE REQUIRED FOR TRANSPORTATION AND HAULING MATERIAL TO THE SITE.

- THE CONTRACTOR SHALL REVIEW THE ACCESS ROAD ROUTES AND DETERMINE THE LOCATION FOR ADDITIONAL TURNOUTS, RAMPS, ROAD DRAINAGE, ALIGNMENT, ETC, UPON COMPLETION OF THE PROJECT, SOME PORTIONS OF THE ACCESS ROADS MAY REQUIRE MINOR MODIFICATIONS AND ALTERATIONS. THE ACCESS ROADS WHICH REMAIN SHALL BE LEFT IN GOOD CONDITION FOR THE DISTRICT, FARMERS, AND OTHER LOCAL TRAFFIC.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAKING ANY NECESSARY IMPROVEMENTS, MODIFICATIONS, AND ALTERATIONS TO MEET HIS REQUIREMENTS AND FOR THE MAINTENANCE AND EXPENSE THEREOF
- 4. THE CONTRACTOR SHALL SECURE ALL OTHER ACCESS ROAD EASEMENTS AS MAY BE REQUIRED WITH THE INDIVIDUAL PROPERTY OWNERS FOR ALL NON-DISTRICT AND/OR PUBLIC ACCESS ROADS AND AS DESCRIBED IN SPECIAL PROVISIONS, SECTION 1.12, "TRAFFIC
- THE CONTRACTOR SHALL BE RESTRICTED TO THE USE OF HIGHWAY LEGAL SIZED TRUCKS AND TRAILERS AND OTHER EQUIPMENT OPERATIONS OVER THE DESIGNATED ROADS, UNLESS OTHERWISE APPROVED BY THE ROIGNEER.

CONTRACTOR IS RESPONSIBLE FOR THE OFFSITE DISPOSAL OF ALL REMOVED PIPE. DEBRIS, AND VEGETATION AT HIS EXPENSE UNLESS OTHERWISE NOTED ON PLAN

> SPECIAL NOTE: THE NOTES PLACED ON THIS PLAN SHEET ARE TO BE USED AS A GUIDE FOR VARIOUS TOPICS DESCRIBED, SPECIFIC DETAILS AND FURTHER EXPLANATIONS OF THE VARIOUS NOTES ARE DESCRIBED IN THE SPECIFICATIONS AND WITHIN THESE PLANS.



UBMITTAL Date

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KJELDSEN 711 N. Pershing Avenue Stockton, CA 95203 209-946-0268 NEUDECK 1550 Harbor Blvd., Suite 212 www.ksninc.com

209-946-0268

West Sacramento, CA 95691 916-403-5900

**RECLAMATION DISTRICT 1601** TWITCHELL ISLAND SACRAMENTO COUNTY, CA

2023 EROSION REPAIR PROJECT NOTES

DECEMBER 2022 SHEET IDENTIFICATION G-002 SHEET 02 OF 05 KSN PROJECT FILE NO 1110-1150



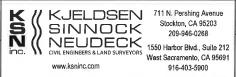




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RECLAMATION DISTRICT 1601 TWITCHELL ISLAND SACRAMENTO COUNTY, CA

2023 EROSION REPAIR PROJECT BASE MAP

DATE DECEMBER 2022
SHEET IDENTIFICATION
CS-101
SHEET 03 OF 05
KSN PROJECT FILE NO.
1110-1150



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KJELDSEN 711 N. Pershing Avenue Stockton, CA 95203 209-946-0268
NEUDECK 1550 Harbor Blvd., Suite 212 Wast Sarvaments CA 06604 www.ksninc.com

West Sacramento, CA 95691 916-403-5900

RECLAMATION DISTRICT 1601 TWITCHELL ISLAND SACRAMENTO COUNTY, CA

2023 EROSION REPAIR PROJECT SITE MAP

DATE DECEMBER 2022

SHEET IDENTIFICATION

CS-102
SHEET 04 OF 05
KSN PROJECT FILE NO. 1110-1150



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209-946-0268
1550 Harbor Blvd., Suite 212
West Sacramento, CA 95691
www.ksninc.com
1711 N. Pershing Avenue
Stockton, CA 95203
209-946-0268
1550 Harbor Blvd., Suite 212
West Sacramento, CA 95691
916-403-5900

RECLAMATION DISTRICT 1601 TWITCHELL ISLAND SACRAMENTO COUNTY, CA

2023 EROSION REPAIR PROJECT SITE PHOTOS

DATE DECEMBER 2022
SHEET IDENTIFICATION
C-301
SHEET 05 OF 05
KSN PROJECT FILE NO.
1110-1150

## Exhibit C

# Christopher H. Neudeck

Erik E. Almaas From:

Friday, February 24, 2023 12:58 PM Sent:

DeltaLeveesProgram@water.ca.gov

Andrea Lobato (andrea.lobato@water.ca.gov); Christopher H. Neudeck; Barry Sgarrella (barry@solagra.com)

RD 1601 Concept Proposal Application - San Joaquin River Setback Levee - Reach 6 230224_RD 1601_SJR Setback Levee_Reach 6_Concept Proposal.pdf

Attachments: **Subject:** 

ÿ ٦ö:

Levee Project. We are excited about this important project and look forward to the opportunity to submit a Full Application. Thank you for your consideration. On behalf of Reclamation District No. 1601, we are pleased to submit the attached Concept Proposal Application for Reach 6 of the San Joaquin River Setback

### Concept Proposal Application DELTA LEVEES SPECIAL FLOOD CONTROL PROJECTS

### **Project Information** Project Title: San Joaquin River Setback Levee Project Priority 1 - Reach 6 - Sta. 482+00 to Sta. 508+80 Project Location (Island/Tract, County): Twitchell Island, Sacramento County Applicant Information Name of LMA: Reclamation District No. 1601 Mailing Address: 2360 W. Twitchell Island Road Rio Vista, CA 94571 Person(s) Representing Organization: Barry Sgarrella Title, Telephone, Email address: President 415-720-5060 barry@solagra.com **Additional Contacts** Name: Christopher H. Neudeck, P.E.

#### Additional Contacts (cont.)

Organization:
Kjeldsen, Sinnock & Neudeck, Inc.
Title, Telephone, Email address:
District Engineer 209-946-0268 cneudeck@ksninc.com
Eligibility Information
Has a Five-Year Plan been completed for your District?  Yes No  What is the Anthropogenic Accommodation Space (AAS) of your District?
AAS ≈ (Surface Area of District) x (Average Depth below mean high water)
55,000

#### **Notes**

- The information provided on the following pages should provide a clear description of the proposed project, addressing the different criteria described in the PSP or Directed Action Request.
- Maps and photos may be included as attachments to this Concept Proposal.
   Please limit attachments to no more than 4 pages.

#### DSC DLIS Priority (Please limit response to 1 page)

The Delta Levees Investment Strategy (DLIS) is being developed by the Delta Stewardship Council and will include a Funding Priority List. Based on the preliminary draft Delta Levees Investment Priorities exhibit provided in Appendix 1 of this Projects Solicitation Package, Twitchell Island's DLIS prioritization is designated as "Very High."

#### External Financing (Please limit response to 1 page)

Multiple State and Federal Water Project Contractors have expressed support for multibenefit projects. The California Natural Resources Agency is aligned with and officially tracking the San Joaquin River Setback Levee Project as a part of the California EcoRestore, an initiative to coordinate and advance 30,000 acres of critical habitat restoration in the Sacramento – San Joaquin Delta.

Additional funding from the Sacramento San Joaquin River Delta Conservancy via its Prop 1 Ecosystem Restoration and Water Quality Grant Program has been applied for in the past. RD 1601 will continue to seek funding through the Delta Conservancy's grant program.

There have been limited discussions with other agencies regarding their partnering with RD 1601 to support the project. The specific agencies that RD 1601 will seek a partnership include, but are not limited to, the following: Contra Costa Water District, San Francisco Public Utilities Commission, East Bay Municipal Utility District, Alameda County Flood Control & Water Conservation District, Santa Clara Valley Water District, Metropolitan Water District of Southern California, and Alameda County Water District. These specific agencies provided a letter of support, dated January 4, 2012, to the State Resources Agency for projects of the type being solicited in this Project Solicitation Package. To date, no outside agencies have expressed specific support for this particular project.

#### General Elements (Please limit response to 2 pages)

The Twitchell Island levee system, and in particular the San Joaquin River levee reach, has a history of levee stability problems including settlement, movement, seepage, and slope failure. Deep organic soils and sands in conjunction with deep waterways and high winds common in the western Delta cause the San Joaquin River levee reach to be extremely vulnerable to erosion and failure, particularly when high winds coincide with high water events and direct significant wave energy at the levees. Winds in this region of the Delta predominantly blow southeast to northwest and can be powerful because of a relatively long fetch-exposure in the San Joaquin River. As a consequence, steep waterside slopes resulting from frequent wave-generated erosion are a general characteristic of the levee in the San Joaquin River reach. This is one of the state's more critical levees because Twitchell Island is within the area of the Delta where freshwater and salt water mix, and it is believed that even short-term flooding in this area could have a significant detrimental impact on water quality and could jeopardize the massive north-to-south water-transfer system.

The overall San Joaquin River Setback Levee Project is an approximately \$165 million endeavor that is anticipated to be constructed in multiple phases over the course of many years as funding becomes available. The environmental, permitting, and preliminary engineering components of the overall project have been completed. Reclamation District No. 1601 (RD 1601) is currently in the advantageous position of having a shovel-ready, multi-benefit project that will provide for the following primary objectives:

- to accomplish landside levee improvements that increase the levee's resistance to erosion, provide better overall levee stability, and provide additional freeboard (increased levee height) for an estimated wave run-up of 4.7 feet above the 100-year event water surface elevation.
- to provide channel margin habitat along this stretch of the San Joaquin River.

The specific work described within this Concept Proposal Application is for Priority 1 of the overall San Joaquin River Setback Levee Project which consists of Reach No. 6 from Sta. 482+00 to Sta. 508+80, as shown on Exhibit 1. The estimated project costs for Reach No. 6 is \$17 million.

Landside improvements will involve constructing a foundation berm and new setback levee behind and attached to the existing levee along the San Joaquin River on the south side of Twitchell Island. Waterside habitat improvements would create an assortment of channel margin habitats along the waterside of the San Joaquin River levee. The waterside of the existing levee along the San Joaquin River will be modified based on approximately five design options to create a mosaic of three different habitat types (tule marsh and mudflat; riparian forest and scrub; and upland scrub and grassland). A typical cross section is shown in Exhibit 2.

#### General Elements (continued)

An Environmental Impact Report has been completed for the overall project. Any short-term and construction-related impacts resulting from the project will be mitigated by purchasing credits. Long-term habitat enhancement and a potential programmatic waterside mitigation site will result from the channel margin habitat improvements included as part of this project.

Twitchell Island provides many unique benefits to the State of California and the public. The protection and preservation of water quality within the Delta, as well as water quality for the State and Federal Water Projects is a critical function of the RD 1601 levee by displacing water and thereby maintaining favorable freshwater gradients within the Delta.

Additionally, maintaining the current configuration of Delta levees and channels is critical to ensure Delta salinity standards are met and salt water intrusion from the Bay into the Delta does not occur. If the RD 1601 levee was breached, particularly during a storm or high water event, several adjacent islands would be threatened by seepage under the levee and higher wind fetch, which could cause additional levee failures. If multiple levees were to fail during dry conditions, water quality in the Delta could be greatly degraded by the transportation of tidal salt water through the major Delta channels where fresh and salt waters mix due to the effect of each island filling rapidly with water from the surrounding waterways. The Legislature's findings and declarations in Water Code Sections 12311, 12981 and 12982 provide the guidance that justifies and recognizes the importance of the Delta levee system, including RD 1601.

Reclamation District No. 1601 maintains over 14 miles of levees that protect over 3,600 acres of primarily agricultural land on Twitchell Island. The natural gas fields, agricultural production and private recreational facilities located on Twitchell Island provide a substantial economic base from which the public benefits in the form of jobs, tax revenues, and other economic benefits.

The protection of recreational aspects provided by Delta islands and levees include boating, fishing and hunting. Fishing occurs along the levee shoreline from boats, however public access is restricted on the island itself, including the levee system. All the waterways surrounding RD 1601 except Sevenmile Slough on the north side are navigable and used extensively by recreational boaters and by marine contractors that perform levee maintenance, flood fight response, and other construction activities. Owl Harbor is an active marina located on Twitchell Island. The boating interests provide a substantial economic benefit to the local and State economies. The Stockton Deep Water Channel, cut through the San Joaquin River along the south edge of Twitchell Island, is a significant commercial marine transportation route and critical to local commerce.

The RD 1601 levee and interior lands provides protection for valuable habitat essential for many threatened and endangered species including multiple mitigation sites and the future Twitchell Island Mitigation and Enhancement Site (TIMES). Land within the RD 1601 levees provides forage and cover for local and migratory populations of birds and terrestrial wildlife including many special status species. The levees also provide important waterside habitat and shoreline for various fisheries that includes several special status species. Flooding of Delta islands destroys habitat and kills most terrestrial species present and also strands fish and aquatic species.

#### Public Water Supply (Please limit response to 1 page)

The Twitchell Island levees provide a great public benefit by maintaining water quality and water supply reliability for cities and farms in the San Joaquin Valley, San Francisco Bay area, and Southern California. The Delta is the heart of the California State Water Project (SWP) and the Central Valley Project (CVP). These two massive north-to-south water delivery systems pump water southward for use in the San Joaquin Valley and elsewhere in central and southern California. The leveed tracts and islands protect water export facilities in the southern Delta from saltwater intrusion by displacing saline ocean water and maintaining favorable freshwater gradients.

The San Joaquin River levee reach on Twitchell Island is one of the more critical levees to the SWP and the CVP because the island is within the area of the Delta where freshwater and salt water mixes. The presence of the Eight Western Islands, which includes Twitchell Island, is believed to inhibit the inland migration of the salinity interface between the Bay and Delta. A levee breach would increase the rate and area of mixing and would allow the saline bay water to move further upstream. If Twitchell Island was to become permanently inundated with saline water, the water available to the massive pumping facilities of the SWP and the CVP near the Clifton Court Forebay could become too saline for its intended uses. Even short-term flooding in this area could have a significant detrimental impact on water quality and could jeopardize the massive north-to-south water-transfer system.

#### **Ecosystem Enhancement** (Please limit response to 1 page)

The overall San Joaquin River Setback Levee Habitat Project includes creating channel margin habitat along the waterside of the San Joaquin River levee reach of Twitchell Island that will provide nearly four miles of new "fish friendly" levees that will benefit native fish species by providing rearing and outmigration habitat for juvenile salmonids while decreasing habitat for predators of native fishes.

The proposed waterside habitat design is consistent with and takes direction from the guidance provided by the results of the Channel Margin Habitat Workshop held on November 6, 2013, and DWR's Delta Levees Program emphasis on creating fish friendly levees. The primary design objective is the creation of a diverse range of channel margin habitat structures and shaded riverine aquatic habitats, and their associated ecological functions and target species benefits. A secondary objective is creation of a continuous corridor of riparian and upland scrub habitats having a diversity of botanical species and canopy structure. To achieve these objectives, another essential objective is to design structures and habitats that can withstand the erosive forces of chronic ship/boat wakes and wind waves, and the occasional high energy storm waves, with minimal loss of substrate, soil and vegetation and the ability to recover from infrequent storm-related damage.

To achieve the project objectives, the project intends to utilize the following general design criteria:

- On the riverside, create wave-resistant banks using a combination of dense tule and willow thickets and low gradient beach slopes to attenuate wave energy, and hardpoint wave breaks and rock or biotechnical bank slope protection.
- Sculpt flat benches or beach slope surfaces at elevations within the locally appropriate tidal range that can support emergent marsh (tule) vegetation.
- Create tidal "sloughs" in the form of protected back channels that are submerged during high tides, but fully drain to an exposed bottom at mean lower low tide (MLLW). Complete drainage at MLLW is intended to discourage colonization by water hyacinth, and provide small areas of intertidal mudflat habitat.
- Provide sufficient soil depth and volume under tree-planting surfaces so that larger riparian
  tree species can grow to mature heights with a vigorous canopy, thereby optimizing canopy
  width and SRA habitat at water's edge.
- For riparian areas, shape variable height planting surfaces in relation to water levels, including low elevation benches that are partially inundated by higher tides.
- On soil surface slopes, slopes must be stable to prevent surface erosion, depending on exposure to wind wave energy.
- Minimize or protect trees from exposure to damage from beaver populations.
- In general, minimize linear shorelines and landform uniformity, and maximize vertical and horizontal variability in relation to tidal range and soil depth to shallow groundwater.

All design elements have been, and will continue to be, developed in cooperation with appropriate DWR staff to include diversity in structure, topography, vegetation and hydrology so that the maximum habitat benefits are achieved.

#### Levee System Integrity (Please limit response to 1 page)

The powerful winds that blow southeast to northwest in this region of the Delta can cause substantial waterside erosion and wave action, run-up, and overtopping along the San Joaquin River levee reach of Twitchell Island. These conditions, coupled with the steep waterside slope of the levee, increase the risk of erosion and potential for levee failure when high winds coincide with high water events. The proposed San Joaquin River Setback Levee Project will alleviate these risks by providing for a new setback levee behind and attached to the existing levee that will increase the levee's resistance to erosion, provide better overall levee stability, and increase the levee height to provide additional freeboard.

To provide a sound foundation for the new levee, consolidation, and thereby strengthening, of the deep peat soils on the landside of the existing levee is needed prior to construction of the new setback levee. A substantial berm placed on the landside of the existing levee will increase the peat foundation strength and provide stability for new levee embankment construction to allow landside crown widening and raising to be safely performed. Without berm placement and consolidation, fractures could develop in the peat under the weight of the new levee embankment and result in slip failure.

To consolidate the existing deep peat soils, the project will include establishing a minimum 8-foot-thick bern of appropriate foundation materials on the landside of the existing levee that will extend out beyond the current landside hinge point. Any existing toe ditches covered during construction of the foundation bern will be converted to toe drains constructed using gravel fill surrounding a perforated PVC pipe. To avoid potential foundation failure from the weight of the bern material on weak peat material, the construction of the berms will occur incrementally in maximum 3-foot lifts. Bern construction would be monitored, and new fill will only be placed on top of a previous lift when settlement rates indicate that consolidation is substantially completed.

The new setback levee would be constructed on top of the foundation toe berm immediately behind the existing levee with a levee crown elevation equal to the 100-year base flood elevation plus 4.7 foot estimated wave run-up plus 0.5' future consolidation. Upon completion, the new levee prism would have 2:1 waterside slopes, 3:1 landside slopes, and a minimum crown width of 20 feet. Like the berm, the levee embankment would be constructed in 3-foot lifts, and the previous lift would be allowed to settle until settlement rates indicate that consolidation is substantially completed. To reduce the risk of a major catastrophic waterside failure of the existing levee during construction due to existing steep waterside slopes, the landside of the existing levee crown would be extended landward prior to construction of the new setback levee, and the new setback levee would be keyed into this additional material.

A strip of buried, quarry stone riprap will be constructed along the new theoretical waterside slope of setback levee. This riprap will serve as the new permanent basis of erosion protection, and the existing remnant levee waterward will be considered sacrificial. It is within the remnant levee that the channel margin habitat aspects of the San Joaquin River Setback Levee Project will be constructed.

With the enhancement to erosion protection, levee stability, and freeboard, the improved Twitchell Island levee along the San Joaquin River will greatly increase the level of protection provided to life and property on the island, especially during high wind and/or high water events. The construction of the berm provides for a sound foundation that allows for future incremental levee height increases that easily incorporate projected rises in sea level as a result of climate change.

#### Climate Change Vulnerability and Adaptation Assessment (Please limit response to 1 page)

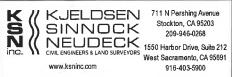
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	With the enhancement to erosion protection, levee stability, and freeboard, the improved Twitchell Island levee along the San Joaquin River will greatly increase the level of protection provided to life and property on the island, especially during high wind and/or high water events. The construction of the toe berm provides for a sound foundation that allows for future incremental levee height increases that would be able to keep up with projected rises in sea level as a result of climate change. The gradual waterside slopes that will be created will allow habitat features like emergent marsh vegetation and SRA to move up-slope with the rising average tide.

FILE SPEC: P:\1110_Twitchell_Island\0960_DWR 2018 Directed Action\08_Civil\400_Plans\020_CAD\Exhibits\Exh_Twitchell PSP_CC PLOT DATE: Sep 25, 2018 - 10:35am



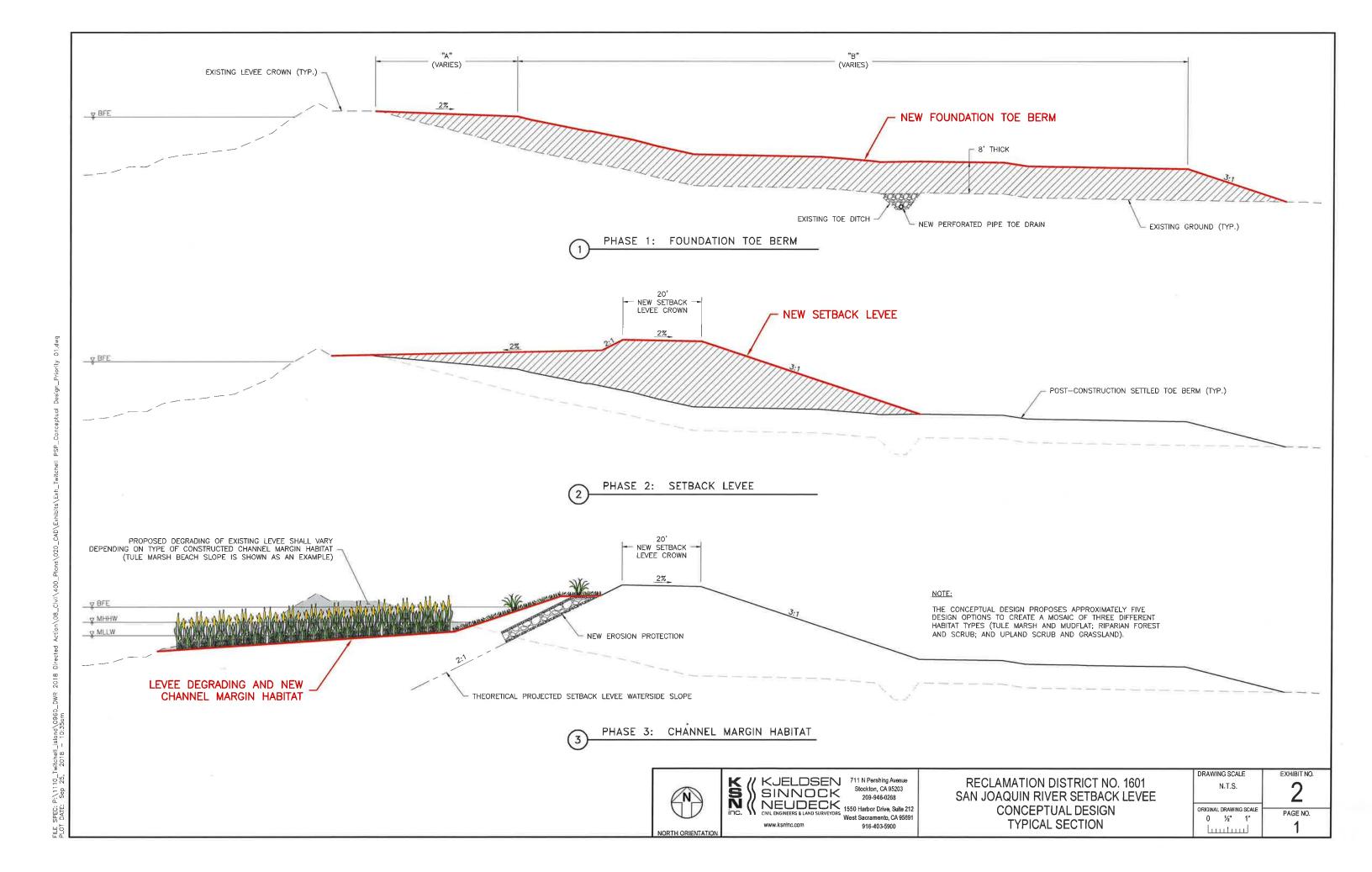
SAN JOAQUIN RIVER SETBACK LEVEE (REACH NO. 1 TO 9)
CHEVRON POINT DRYLAND LEVEE (REACH NO. 10)

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RECLAMATION DISTRICT NO. 1601 SAN JOAQUIN RIVER SETBACK LEVEE CONCEPTUAL DESIGN BASE MAP

DRAWING SCALE 1" = 800'	EXHIBIT NO.
ORIGINAL DRAWING SCALE 0 ½" 1"	PAGE NO.



## Exhibit D

# Christopher H. Neudeck

From: Sent:

**Subject:** 

Velazquez, Maribel@DWR <Maribel.Velazquez@water.ca.gov>

Monday, March 13, 2023 3:10 PM

Addendum No. 1 to the Delta Levees Special Flood Control Projects Program 2023 Project Solicitation Package for Multi-Benefit

Projects (PSP)

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear DLHAC;

Please see information below from the Delta Levees Program regarding Addendum No. 1 to the 2023 PSP and a link to where the public announcement and Addendum can be found.

Addendum 1 to the Delta Levees Special Flood Control Projects Program 2023 Project Solicitation Package for Multi-Benefit Projects The California Department of Water Resources (DWR) Delta Levees Special Flood Control Projects Section (Program) has released (PSP). The Program released the PSP on February 3, 2023. The deadline for Concept Proposal submittals was March 3, 2023. This first Addendum to the PSP is to extend the Full Application Submittal deadline to 60 days after successful applicants are invited by https://water.ca.gov/News/Public-Notices/2023/Mar-23/Addendum-1-to-Delta-Levees-Special-Flood-Control-Projects-Program-2023-Project-Solicitationletter to continue to the full application phase. A link to the public announcement and Addendum 1 can be found below:

Thank you.

# Maribel Velazquez

Division of Multi-Benefit Initiatives Delta Leeves Special Projects Program 715 P Street Sacramento, California 95814 (916) 902-7426

Maribel.velazquez@water.ca.gov

Any information shared or provided with this communication is meant for administrative purposes for the Delta Levees and Habitat Advisory Committee only and is not meant or intended to express the opinions or position of any individual agency or entity sharing or providing this information.