

**Meeting of the Central Valley Flood Protection Board
August 30, 2019**

Permit Staff Report

**Yolo County Parks and Resources Department
Knights Landing Boat Launch Project, Yolo County**

1.0 – ITEM

Consider approval of Permit No. 18598. (Attachment A)

2.0 - APPLICANT

Yolo County Parks and Resources Department (County)

3.0 – PROJECT LOCATION

The project is located in the town of Knights Landing, adjacent to Highway 45 at the existing Knights Landing River Access and Boat Launch Facility.
(Sycamore Slough, Yolo County, Attachment B)

4.0 – PROJECT DESCRIPTION

The County proposes to construct improvements to the existing Knights Landing River Access and Boat Launch Facility (Attachment C). The project consists of:

- Removing wooden pilings and concrete debris from the Sycamore Slough channel;
- Removing a sidewalk section next to the existing boat launch ramp and replacing with precast concrete panels;
- Removing and replacing the existing boat dock;
- Constructing a vault restroom, facility sign, information kiosk, and fee collection facility;
- Resurfacing the existing parking lot;

- Removing vegetation, planting new vegetation and placing irrigation lines; Placing riprap along the bank;
- Additional improvements to the facility include two new light and electrical poles, security cameras, a water well and utility hookups.

5.0 – AUTHORITY OF THE BOARD

California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710

California Code of Regulations, Title 23, Division 1 (Title 23):

- § 6, Need for a Permit
- § 13.3, Consent Calendar
- § 112, Streams Regulated and Nonpermissible Work Periods
- § 113, Dwelling and Structures Within an Adopted Plan of Flood Control
- § 121, Erosion Control
- § 123, Pipelines, Conduits, and Utility Lines
- § 127, Boating Facilities
- § 129, Water, Oil, and Gas Wells
- § 131, Vegetation

6.0 - PROJECT ANALYSIS

The proposed project includes multiple improvements to the existing Knights Landing River Access and Boat Launch Facility (Facility) which is located in the town of Knights Landing, at the confluence of Sycamore Slough and Colusa Basin Drainage Canal with the Sacramento River. There are two related encroachment permits that were issued by the Reclamation Board, now Central Valley Flood Protection Board, for the Facility. Permit No. 2565 was issued in 1957 to the Department of Fish and Game to construct a boat launching ramp. Permit No. 12791 was issued in October 1979 to the Yolo County Planning Department. This permit authorized the widening and lengthening of the existing boat launching ramp and constructing other various improvements. The Facility is one of three public river access points along the Sacramento River managed by Yolo County.

The proposed work consists of:

1. Removing the boarding float and guide piles for the existing floating dock from the channel.
2. Removing concrete slab debris from the north bank of Sycamore Slough (below the ordinary high-water mark) near the existing boat launch.
3. Constructing additions to the existing boat launch ramp that includes a two-lane concrete boat launch ramp that will utilize much of the existing ramp. A 6-foot-wide by 200-foot-long section of sidewalk on the eastern side of the ramp will first be sawcut and then removed. The ramp will then be widened by 8-feet by placing ten (10) 5-foot by 8-foot by 8-inch reinforced precast V-groove concrete slabs.
4. Removing the existing 6-foot by 90-foot floating boat dock, a 4-foot by 12-foot gangway, and an 8-foot by 60-foot boarding float.
5. Installing an 8-foot wide fiberglass floating boat dock that will be centered on the ramp to allow for the docking of boats on either side. The floating boat dock will be secured by a metal cable that will be anchored to the bottom of Sycamore Slough.
6. Constructing improved restroom facilities to include a permanent waste vault for the park host site and fully contained men and women's restrooms. The restroom vault will be constructed near the waterside entrance to the Facility and will be more than 10 feet away from the levee toe.
7. Installing a fee collection facility (pay station). The existing Iron Ranger self-payment box will be replaced with an automated pay station. The automated pay station is removable and will be taken off site prior to forecasted high water events.
8. Constructing a sign and information kiosk. A new sign and an interpretive kiosk will be constructed adjacent to the public restroom.
9. Parking lot improvements to include re-paving (chip seal), striping, and new curbing.
10. Placing bank stabilization. The channel banks on the north side of Sycamore Slough will be stabilized with rock slope protection to reduce wake damage to the stream banks. The slopes of the bank will be further stabilized through the

planting of native vegetation, which will also have the objective of enhancing wildlife habitat along the shore of Sycamore Slough.

11. Updating the existing host reception/operations pad with utility hookups; electrical, phone, potable water. A new water well will be drilled next to the pad.
12. Security cameras and lights will be placed on existing and new poles. Two new electrical poles will be constructed within the project site. Locations are shown in the submitted plan drawings.

All proposed work will be in compliance with Title 23 standards.

6.1 – Hydraulic Analysis

The proposed gangway and float are designed to be pulled up onto the bank by hand and can be removed when water elevations are expected to be higher. Under normal conditions, the locking system will allow it to raise up and down to follow the water level. The County will monitor the water level on a regular basis via the National Weather Service Advanced Hydrologic Prediction Service and the California Nevada River Forecast Center websites. The County will pull the dock and gangway up and close the Facility entrance gate if needed. County staff will detach the cables and manually remove the dock and gangway from the ramp and will transport them off site and close the entrance gate when water levels near 26 feet at the gauge.

Multiple hydraulic blockage cross section calculations were performed to assess the potential hydraulic impacts to Sycamore Slough and the Sacramento River due to the proposed project (Attachment D). The calculation that produced the highest blockage was the cross section that included the riprap and the proposed restroom facility. The calculation resulted in a floodway blockage of approximately 0.975%. Hydraulic impacts that result in less than 1% blockage are considered negligible per the U.S. Army Corps of Engineers (USACE) hydraulic analysis criteria. Therefore, further hydraulic analysis was not required.

6.2 – Geotechnical Analysis

The proposed structures are located on a raised bank area and are more than 10 feet from the waterside levee toe. Therefore, a geotechnical analysis was not required.

7.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies, are shown below:

- The local maintaining agency for the project area is the Sacramento River West Side Levee District (NA0016). They endorsed the application on October 25, 2017, with conditions. All applicable conditions have been incorporated into the permit.
- The USACE 33 U.S.C. 408 approval letter has been received for this application. The USACE Sacramento District Engineer approves the request to alter the Federal flood risk reduction project, subject to conditions. The letter is incorporated into the permit as Exhibit A.

8.0 – CEQA ANALYSIS

The Board, as a responsible agency under CEQA, has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) (SCH No. 2017092057, April 2018), and the Mitigation Monitoring and Reporting Program (MMRP) for the Knights Landing Boat Launch Improvement Project, prepared by the lead agency, Yolo County. These documents, including project design, may be viewed or downloaded from the Board's website at <http://cvfpb.ca.gov/event/august-2019-regular-business-meeting/> under a link for this agenda item. The documents are also available for review in hard copy at the Board and the County offices.

The County determined that the Knights Landing Boat Launch Improvement Project would not have a significant effect on the environment and filed a Notice of Determination with the State Clearinghouse and the Yolo County Clerk on April 24, 2018. The County made revisions to the project and/or incorporated mandatory mitigation measures into the project plans to avoid impacts or to mitigate such impacts to a point where no significant adverse impacts will occur. These mitigation measures are included in the County's IS/MND and address impacts to biological resources and cultural resources. The mitigation measures are further described in the County's adopted IS/MND.

The Board, as a responsible agency, is responsible for mitigating and avoiding only the direct and indirect environmental effects of those parts of the project which it decides to

carry out, finance, or approve (CEQA Guidelines § 15096(g); Public Resources Code § 21002.1(d)). The Board's responsibility under CEQA is limited to imposing conditions or mitigation related to effects on the State Plan of Flood Control.

In accordance with CEQA Guidelines § 15096, Board staff independently reviewed the County's IS/MND, and finds the environmental documents prepared by the lead agency adequately address hydrology impacts, including potential flood risk, for the Board's approval of Permit No. 18598 to authorize work to construct improvements to the existing Knights Landing River Access and Boat Launch Facility which is within the Board's responsibility as it relates to effects on the State's flood control system.

In accordance with CEQA Guidelines § 15096(f) and (g), staff recommends that the Board make responsible agency findings that approval of Permit No. 18598 would not result in any significant adverse impacts related to flood risk. The project will not adversely impact the State Plan of Flood Control; therefore, no additional mitigation measures within the Board's jurisdiction are required.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of the Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Suite 170, Sacramento, California 95821.

9.0 – CA WATER CODE SECTION 8610.5 AND OTHER CONSIDERATIONS

California Water Code Section 8610.5 (c) provides that the Board shall consider all the following matters, if applicable:

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management.

Staff requests that the Board consider this staff report any attachments or references and any evidence submitted to it prior to or during the hearing.

2. The best available science that relate to the scientific issues presented by the executive officer, legal counsel, the Department of Water Resources or other parties that raise credible scientific issues.

The accepted industry standards of hydrology and hydraulics for the work proposed under this permit as regulated by Title 23 have been applied to the

review of this permit. As such, the project was reviewed using the USACE 1957 Design Water Surface Elevation (DWSE). The hydraulic blockage analysis at the DWSE indicates that the proposed estimated blockage is less than 1% of the cross-sectional area of the channel at the design flood elevation and therefore is not considered significant.

3. Effects of the decision on facilities of the State Plan of Flood Control (SPFC).

The approval of this application will improve the existing permitted public facility which is adjacent to SPFC levees. The proposal's hydraulic blockage is considered insignificant and the proposed bathroom structure is located a sufficient distance away from the levee. Therefore, the proposed project is expected to result in no adverse effect on any SPFC facilities.

4. Effects of reasonably projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed.

The proposed structures will be properly anchored to prevent flotation into the floodway during periods of high water and can be removed from the floodway by the County staff when deemed necessary. Therefore, there are no expected adverse effects to the proposed project from reasonably projected future events.

10.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt:

- The CEQA findings: The Board, acting as a responsible agency under CEQA, has independently reviewed and considered the environmental documents prepared for the project. Approving Permit No. 18598 would not result in any significant adverse impacts related to flood risk and no additional mitigation measures within the Board's jurisdiction are required; and,

Approve:

- Encroachment Permit No. 18598 in substantially the form provided in attachment A;

Direct:

- The Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination pursuant to CEQA with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

- A. Draft Permit No. 18598
- B. Location Maps and Photos
- C. Project Drawings
- D. Hydraulic Profile Information

Reviewers:

Design Review:	Justin Logan, Permitting Section Staff
Environmental Review:	Itzia Rivera, Senior Environmental Scientist
Document Review:	Gary Lemon, P.E., Permitting Section Chief
	Michael C. Wright, P.E., Chief Engineer
Legal Review:	Sarah Backus, Staff Counsel

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18598 EO

This Permit is issued to:

Yolo County Parks and Resources Department
120 W Main Street
Woodland, California 95695

To remove wooden pilings and concrete debris from the Sycamore Slough channel; to remove and replace a 6- by 200-foot wide sidewalk section next to the existing boat launch ramp with 5- by 8-foot precast concrete panels; to remove and replace a 6- by 90-foot floating boat dock with a 4- by 12-foot gangway and 8- by 60-foot boating float anchored by a metal cable; to construct a vault restroom, facility sign, information kiosk, fee collection facility, light and electrical poles, security cameras, water well and utility hookups; to resurface the existing parking lot, place riprap, remove vegetation and plant new vegetation, and place irrigation lines along the left (west) bank levee of Sycamore Slough as part of the Knight's Landing Boat Launch Facility.

The project is located in Knights Landing adjacent to Highway 45 at the Knights Landing Boat Launch Facility, at 38.80174°N 121.72341°W, Sacramento River West Side Levee District, Sycamore Slough, Yolo County.

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18598 EO

LIABILITY AND INDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold harmless the Central Valley Flood Protection Board (Board) and the State of California, including its agencies or departments thereof, including but not limited to, any and all boards, commissions, officers, agents, employees, and representatives (Indemnities), against any and all claims, liabilities, charges, losses, expenses, and costs including the State's attorneys' fees (Liabilities), that may arise from, or by reason of: (1) any action or inaction by the Indemnities in connection with the issuance or denial of any permit, lease, or other entitlement; (2) as a result of approvals or authorizations given by the Board to the permittee pursuant to, or as a result of, permittee's permit application; (3) provisions of the issued permit or lease, provisions of CEQA, an environmental document certified or adopted by the Board related to the permit application, or any other regulations, requirements, or programs by the State, except for any such Liabilities caused solely by the gross negligence or intentional acts of the State or its officers, agents, and employees.

FOURTEEN: Permittee shall reimburse the Board in full for all reasonable costs and attorneys' fees, including, but not limited to, those charged to it by the California Office of Attorney General, that the Board incurs in connection with the defense of any action brought against the Board challenging this

permit or any other matter related to this permit or the work performed by the State in its issuance of this permit. In addition, the permittee shall reimburse the Board for any court costs and reasonable attorneys' fees that the Board/Indemnities may be required by a court to pay as a result of such action. The permittee may participate in the defense of the action, but its participation shall not relieve it of its obligations under the conditions of this permit.

FIFTEEN: The Board, Department of Water Resources, and Sacramento River West Side Levee District (NA0016) shall not be held liable for any damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

AGENCY CONDITIONS

SIXTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications dated October 18, 2018 except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Board.

SEVENTEEN: In the event that levee or bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

EIGHTEEN: The permittee shall be responsible for the repair of any damages to the channel, banks, floodway, or other flood control facilities due to construction, operation, or maintenance of the proposed project.

NINETEEN: The permittee shall comply with all conditions set forth in the letter from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated August 20, 2019, which is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY: The permittee agrees to notify new property/encroachment owner(s) that they are required to submit a permit Name Change request form to the Board upon completion of the sale. The new owner(s) will be required to comply with all permit conditions. Name Change forms are available at <http://cvfpb.ca.gov/>

TWENTY-ONE: The Board reserves the right to add additional, or modify existing, conditions when there is a change in ownership and/or maintenance responsibility of the work authorized under this permit.

TWENTY-TWO: The proposed floating facilities shall be properly anchored to prevent detachment from the anchoring system during periods of high water.

TWENTY-THREE: The proposed building shall be properly anchored to prevent floatation into the floodway in the event of high water.

TWENTY-FOUR: Any additional encroachment(s) on the levee section or waterward berm shall require an approved permit from the Board prior to the commencement of work and shall be in

compliance with the Board's regulations (California Code of Regulations, Title 23, Division 1).

PRE-CONSTRUCTION

TWENTY-FIVE: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609 to schedule a preconstruction conference with the inspector that is assigned to your project. Failure to do so at least 10 working days prior to start of work may result in a delay of the project.

CONSTRUCTION

TWENTY-SIX: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Board. Failure to submit a Time Variance Request to the Board at least 10 working days prior to November 1 may result in a delay of the project.

TWENTY-SEVEN: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-EIGHT: Revetment shall be uniformly placed and properly transitioned into the bank, levee slope, or adjacent revetment and in a manner which avoids segregation.

TWENTY-NINE: The following gradations for quarry stone are recommended:

Stone Size	Percent Passing
15 inches;	100
8 inches;	80-95
6 inches;	45-80
4 inches;	15-45
2 inches;	0-15

POST-CONSTRUCTION

THIRTY: All debris generated by this project shall be properly disposed of outside the Sycamore Slough Floodway and off all Project Works and project right-of-way.

THIRTY-ONE: The Sycamore Slough Floodway shall be restored to at least the condition that existed prior to commencement of work.

OPERATIONS AND MAINTENANCE

THIRTY-TWO: After each period of high water, debris that accumulates at the site shall be completely removed from Sycamore Slough Floodway and off all Project Works and project right-of-way.

THIRTY-THREE: The permittee shall be responsible for removing all boats or other objects moored to the dock upon receiving notification to do so from the Board, Department of Water Resources, or any other federal, State, or local agency having applicable authority.

THIRTY-FOUR: The permittee shall maintain the permitted encroachment(s) and the Project Works within the utilized area in the manner required and as requested by the authorized representative of the Board, Department of Water Resources, Sacramento River West Side Levee District (NA0016), or any other agency responsible for maintenance and shall, at all times, allow officials from these agencies to access the levee, levee slope, and any adjacent areas as necessary for flood control.

PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL

THIRTY-FIVE: The permitted encroachment(s) shall not interfere with the operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) within 30-days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply, the Board, or a designated agency or company authorized by the Board, may modify or remove the encroachment(s) at the permittee's expense.

THIRTY-SIX: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the project is not maintained or is damaged by any cause. The permittee shall remove the encroachment(s) within 30-days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply the Board will remove the encroachment(s) at the permittee's expense.

END OF CONDITIONS



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

Exhibit A

408 Permission Section (18598)

AUG 20 2019

Ms. Leslie M. Gallagher
Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 170
Sacramento, CA 95821

Dear Ms. Gallagher:

We have reviewed permit application number 18598 submitted by Yolo County Parks and Resources Department to alter the Sacramento River Flood Control Project authorized by the Flood Control Act of March 1, 1917, Public Law 367, Sixty Fourth Congress. These plans include removing wooden pilings and concrete debris from the Sycamore Slough channel; removing and replacing a 6- by 200-foot wide sidewalk section next to the existing boat launch ramp with 5- by 8-foot precast concrete panels; removing and replacing a 6- by 90-foot floating boat dock with a 4- by 12-foot gangway and 8- by 60-foot boating float anchored by a metal cable; constructing a vault restroom, facility sign, information kiosk, fee collection facility, light and electrical poles, security cameras, water well and utility hookups; resurfacing the existing parking lot, placing riprap, removing vegetation and planting new vegetation, and placing irrigation lines along the left (west) bank levee of Sycamore Slough as part of the Knight's Landing Boat Launch Facility. The project site is located at 38.80174°N, 121.72341°W NAD83 within Yolo County, CA.

The Sacramento District (Corps) has reviewed this application and determined that the alteration will not be injurious to the public interest and will not impair the usefulness of the project works. Pursuant to Section 14 of the Rivers and Harbors Act of 1899, 33 USC § 408 (Section 408), the District Engineering Division Chief approves the request to alter the Federal flood risk reduction project subject to the following conditions:

Engineering Conditions:

- a. That the alteration must not interfere with the integrity or hydraulic capacity of the flood risk management project; easement access; or maintenance, inspection, and flood fighting procedures.

- b. That construction or other work in the floodway cannot take place during the flood season unless approved in writing by the Central Valley Flood Protection Board (CVFPB).
- c. That no temporary staging, stockpiles of materials, temporary buildings, or equipment can remain on the levee or in the floodway during flood season unless approved in writing by the CVFPB.
- d. That construction or other work must be coordinated with other work in the area.
- e. That excavations and drilling must meet federal, state, and local criteria, Corps standards, and Office of Safety and Occupational Health standards.
- f. That the requester is responsible for removal and disposal of trees or brush cleared during construction. The removal and disposal must be to areas outside the limits of the federal project easement.
- g. That the requester is responsible for protecting the levee from being damaged by construction vehicles, equipment, construction activities, and storage of materials.
- h. That all structures, facilities, related equipment and other appurtenances must be properly anchored to prevent flotation within the floodway in the event of high water.
- i. That all companies/agencies whose existing utilities are located in the intended construction area(s) must be contacted to determine whether those utilities need to be relocated or modified to accommodate the proposed alteration, or whether they would pose any hazards to alteration construction workers or equipment.
- j. That appropriate property rights must be acquired as needed for construction, operation, and maintenance of the alteration as well as operation and maintenance of the levee and channel. An approval under Section 408 does not grant property rights or exclusive privileges.
- k. That areas disturbed during construction or other work associated with an alteration must be restored to pre-construction conditions once the work is complete.

Environmental Conditions:

- l. That if you discover any previously unknown historic properties (36 CFR § 800.13) while accomplishing the activity authorized by this Section 408 permission, you shall immediately notify the Corps of what you have found. The Corps will initiate any necessary Federal and State coordination to ensure continued compliance with the National Historic Preservation Act.
- m. That to ensure your project complies with Section 401 of the Clean Water Act, you shall implement all of the conditions identified in the Clean Water Act Section 401 Technically Conditioned Water Quality Certification and Order (WDID#5A57CR00091A1) dated November 6, 2018.
- n. To ensure your project complies with the Federal Endangered Species Act, you shall implement all of the conservation measures identified in the enclosed U.S. Fish and Wildlife Service (USFWS) letter of concurrence (08ESMF00-2014-I-0549-1, dated August 26, 2014; Enclosure 1), as amended by the enclosed USFWS letter dated March 14, 2019 (08ESMF00-2014-I-0549-2; Enclosure 2), and National Marine Fisheries Service (NMFS) letter of concurrence (WCR-2014-00166, dated July 23, 2014; Enclosure 3), as amended by the enclosed NMFS letter dated March 8, 2019 (WCR-2019-11597; Enclosure 4). If you are unable to implement any of the proposed measures, you must immediately notify the Corps, prior to initiating the work, so the Corps may reinstate consultation as appropriate, in accordance with the Federal Endangered Species Act.
- o. That as stated in the State Historic Preservation Officer letter of concurrence (COE_2019_0626_001, dated June 19, 2019), you shall grant site access to the United Auburn Indian Community of the Auburn Rancheria for the purposes of tribal monitoring.

The following conditions are standard terms and conditions per Appendix K of EC 1165-2-220:

LIMITS OF THE AUTHORIZATION

- p. This permission only authorizes you, the requester, to undertake the activity described herein under the authority provided in Section 14 of the Rivers and Harbors Act of 1899, as amended (33 USC § 408). This permission does not obviate the need to obtain other federal, state, or local authorizations required by law. This permission does not grant any property rights or exclusive privileges, and you must have appropriate real estate instruments in place prior to construction and/or installation.

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- q. The time limit for completing the work authorized ends on September 1, 2024. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
- r. Without prior written approval of the USACE, you must neither transfer nor assign this permission nor sublet the premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this permission. Failure to comply with this condition will constitute noncompliance for which the permission may be revoked immediately by USACE.
- s. The requester understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration of the work herein authorized, or if, in the opinion of the Secretary of the Army or an authorized representative, said work will cause unreasonable conditions and/or obstruction of USACE project authorized design, the requester will be required upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim can be made against the United States on account of any such removal or alteration.

INDEMNIFICATION AND HOLD HARMLESS

- t. The United States will in no case be liable for:
 - i. any damage or injury to the structures or work authorized by this permission that may be caused or result from future operations undertaken by the United States, and no claim or right to compensation will accrue from any damage; or
 - ii. damage claims associated with any future modification, suspension, or revocation of this permission.
- u. The United States will not be responsible for damages or injuries which may arise from or be incident to the construction, maintenance, and use of the project requested by you, nor for damages to the property or injuries to your officers, agents, servants, or employees, or others who may be on your premises or project work areas or the federal project(s) rights-of-way. By accepting this permission, you hereby agree to fully defend, **indemnify**, and **hold harmless** the United States and USACE from any and all such claims, subject to any limitations in law.

- v. Any damage to the water resources development project or other portions of any federal project(s) resulting from your activities must be repaired at your expense.

REEVALUATION OF PERMISSION

- w. The determination that the activity authorized by this permission would not impair the usefulness of the federal project and would not be injurious to the public interest was made in reliance on the information you provided.
- x. This office, at its sole discretion, may reevaluate its decision to issue this permission at any time circumstances warrant, which may result in a determination that it is appropriate or necessary to modify or revoke this permission. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - i. you fail to comply with the terms and conditions of this permission;
 - ii. the information provided in support of your application for permission proves to have been inaccurate or incomplete; or
 - iii. significant new information surfaces which this office did not consider in reaching the original decision that the activity would not impair the usefulness of the water resources development project and would not be injurious to the public interest.

CONDUCT OF WORK UNDER THIS PERMISSION

- y. You are responsible for implementing any requirements for mitigation, reasonable and prudent alternatives, or other conditions or requirements imposed as a result of environmental compliance.
- z. Work/usage allowed under this permission must proceed in a manner that avoids interference with the inspection, operation, and maintenance of the federal project.
- aa. In the event of any deficiency in the design or construction of the requested activity, you are solely responsible for taking remedial action to correct the deficiency.
- bb. The right is reserved to the USACE to enter upon the premises at any time and for any purpose necessary or convenient in connection with government purposes, to make inspections, to operate and/or to make any other use of the

lands as may be necessary in connection with government purposes, and you will have no claim for damages on account thereof against the United States or any officer, agent or employee thereof.

- cc. You must provide copies of pertinent design, construction, and/or usage submittals/documents. USACE may request that survey and photographic documentation of the alteration work and the impacted project area be provided before, during, and after construction and/or installation.
- dd. You may be required to perform an inspection of the federal project with the USACE, prior to your use of the structure, to document existing conditions.
- ee. USACE shall not be responsible for the technical sufficiency of the alteration design nor for the construction and/or installation work.

A Section 10 and/or Section 404 permit application SPK-2009-01634 is in process for this work. The Section 10 and/or Section 404 must be issued prior to commencement of work affecting waters of the United States. This Section 408 letter of permission does not serve as authorization for any work that affects navigable capacity of waters of the United States or that involves the discharge of dredge or fill material into waters of the United States.

A Copy of this letter is being furnished to Mr. Don Rasmussen, Chief, Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite 200, Sacramento, CA 95821. For any questions regarding this permission, please contact Kimberlee Leonard at (916) 557-7183.

Sincerely,



Rick L. Poeppelman, P.E.
Chief, Engineering Division
Levee Safety Officer

Enclosures



In Reply Refer to:
08ESMF00-
2014-I-0549-1

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846



Exhibit A

AUG 26 2014

Mr. Marc A. Fugler
Senior Project Manager, California South Branch
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814

Subject: Informal Consultation on the Knights Landing Boat Launch Facility Project, Yolo County, California (Corps File Number SPK-2009-01634)

Dear Mr. Fugler:

This letter is in response to the U.S. Army Corps of Engineers' (Corps) June 5, 2014, request for initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Knights Landing Boat Launch Facility Project (proposed project) in Yolo County, California. Your request, which included the May 19, 2014, *Knights Landing River Access Boat Launching Facility Renovation, Yolo County Biological Assessment* (biological assessment) prepared by A.A. Rich and Associates (consultant), was received by the Service on June 9, 2014. On an August 30, 2014, telephone call, the Service requested additional information in order for consultation to be initiated. Your August 19, 2014, revised initiation letter, including the additional information requested, was received in our office August 20, 2014. The biological assessment presents an evaluation of the proposed project's effects on species federally-listed under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq.) (Act).

The federal action we are consulting on is the issuance of a Department of the Army permit by the Corps to the County of Yolo (applicant) for work associated with the renovation of the existing Knights Landing Boat Launch Facility (facility). This response is provided under the authority of the Act, and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Pursuant to 50 CFR 402.12(j), you submitted the biological assessment for our review and requested our concurrence with the findings presented therein, while also concurrently initiating informal consultation pursuant to 50 CFR 402.13(a). The findings presented in the biological assessment conclude that the proposed project may affect, but is not likely to adversely affect the federally-listed as threatened giant garter snake (*Thamnophis gigas*) (snake) and delta smelt (*Hypomesus transpacificus*) (smelt). The proposed project is not within designated or proposed critical habitat for any federally-listed species.

AUG 28 2014

Enclosure 1

Mr. Marc A. Fugler

Exhibit A

In considering your request, we-based our evaluation of the biological assessment's findings on the following: 1) your June 5, 2014, letter initiating informal consultation; 2) the May 19, 2014, biological assessment received by the Service on June 9, 2014; 3) the August 13, 2014, telephone call between representatives of the Service, the Corps, the applicant, and the consultant; 4) the August 19, 2014, revised initiation letter, including additional information prepared by the applicant; 5) email correspondence between the Service, the Corps, the applicant, and the consultant; and 6) additional information available to the Service.

The applicant proposes to renovate the existing facility in order to improve safety and protect the banks surrounding the facility from boat wake erosion. The facility is located at Sycamore Slough, approximately 455 feet from its confluence with the Sacramento River. The proposed project involves the following components:

1. The existing 6-foot by 90-foot floating dock will be replaced with a new 4.5-foot by 12-foot gangway and 8-foot by 60-foot floating dock with a pulley system to allow staff to bring the float in during flood events;
2. The current 6-foot wide by 200-foot long boat ramp will be widened by 2 feet on the northern side and the adjacent sidewalk will be replaced with reinforced concrete over an aggregate base;
3. Remnant pilings from an old Southern Pacific Railroad trestle across Sycamore Slough will be removed. The pilings will be cut at the mud line with an underwater cutter held in place by a crane. No digging or dredging will occur. Wooden pilings that anchor the existing floating dock above the ordinary high water mark (OHWM) will also be removed and filled with concrete and aggregate base;
4. A total length of 35 linear feet of the stream bank along Sycamore Slough will be stabilized just above the OHWM. The undercut upper stream bank will be set back from the water edge and revegetated with willows and other native plants. The lower portion of the stream bank that approaches the OHWM will be stabilized with rip-rap;
5. The existing parking lot will be enlarged by approximately 1,000 square feet, repaved with a new layer of asphalt, re-curbed, and re-striped. An automatic pay station, monument sign, informational kiosk, surveillance camera, handicap-accessible fishing platform, and fish cleaning station will be installed;
6. A new permanent vaulted restroom will be constructed, including a holding tank directly below; and
7. Utility connections (electrical, phone, and potable water) will be installed to provide utilities to a park host.

In addition to implementing standard Best Management Practices (BMPs), the applicant has proposed the following avoidance and minimization measures in order to prevent any adverse effects to the snake or the smelt:

- In-water work and work along the banks will be conducted between June 15 and October 1;

Mr. Marc A. Fugler

- Prior to initiating any in-water work, an exclusion fence will be installed along both sides of the boat launch access. The fence will be constructed with non-climb material (e.g., silt fence) to provide an additional barrier to detour snakes from entering the work area. Placement and installation will be supervised by a qualified biologist. The exclusion area will be flagged as a Sensitive Resource Area;
- A Service-approved biological monitor will be on-site each day of in-water construction. The biologist will conduct a daily morning pre-construction survey of the project site. Any wildlife observed in the project area will be allowed to relocate prior to the initiation of construction;
- Clearing will be confined to the minimal area necessary to facilitate construction activities;
- Snake habitat within or adjacent to the project area will be flagged and designated as Environmentally Sensitive Areas and will be avoided by all construction personnel;
- To minimize habitat disturbance, movement of heavy equipment will be confined to existing roadways and paved surfaces;
- Construction personnel will receive Service-approved worker environmental awareness training that will instruct workers to recognize the snake and its habitats;
- All construction debris and stockpiled materials will be removed when construction is completed;
- After construction is completed, the area will be re-graded to pre-existing contour or a contour that would improve restoration potential of the site;
- Erosion control and bank stabilization measures will exclude the use of coir netting to avoid entrapment of snakes;
- Noise control measures will be implemented; and
- A Service-approved fisheries biologist will monitor daily construction-related activities during any in-water work or work adjacent to the slough and provide assistance, as needed, to protect sensitive fish species.

Giant Garter Snake

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the snake. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the known range of the snake, suitable habitat for the snake is present in the action area, and snakes may be present in the action area. Snakes are known to occur in the Colusa Basin Drainage Canal (Service 2012), which joins Sycamore Slough just upstream of the proposed project site. However, the Knights Landing outfall gates (referred to in the August 19, 2014, letter as "Sycamore Slough Dam"), located along the canal approximately 750 feet west of the proposed

Mr. Marc A. Fugler

Exhibit A

project, provide a barrier to snakes entering the lower portion of the canal and the proposed project area. Due to the outfall gates, the proximity to the Sacramento River (not considered suitable habitat for the snake), and the avoidance and minimization measures proposed by the applicant, the Service believes that potential effects from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation.

Delta Smelt

We also concur with your determination that the proposed project is not likely to adversely affect the smelt. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the known range of the smelt and smelt may be present in the action area. The proposed project is located at the northern extent of smelt habitat, and smelt are rarely found in the proposed project area outside of their spawning period. Due to the fact that in-water work will not occur during the smelt spawning period, the limited duration of construction activities, and the avoidance and minimization measures proposed by the applicant, the Service believes that potential effects from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation.

Therefore, unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed project, no further action pursuant to the Act is necessary.

If you have any questions regarding the proposed Knights Landing Boat Launch Facility Project, please contact Lily Douglas, Fish and Wildlife Biologist, or myself at (916) 414-6645.

Sincerely,



Kellie J. Berry
Chief, Sacramento Valley Division

cc:

Kim Squires, U.S. Fish and Wildlife Service, Sacramento, CA

Paul Hofmann, California Department of Fish and Wildlife, Rancho Cordova, CA

Mr. Marc A. Fugler

Exhibit A
5

LITERATURE CITED

- U.S. Fish and Wildlife Service (Service). 2012. Giant Garter Snake (*Thamnophis gigas*) 5-year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. June 2012. 62 pp.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846



In Reply Refer to:
08ESMF00-
2014-I-0549-2

MAR 14 2019

Mr. Peck Ha
Senior Project Manager
Regulatory Division, California Delta Section
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922

Subject: Informal Consultation on the Knights Landing Boat Launch Facility Project, Yolo County, California (Corps File Number SPK-2009-01634)

Dear Mr. Ha:

This letter is in response to the U.S. Army Corps of Engineers' (Corps) February 21, 2019, request to initiate a second informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Knights Landing Boat Launch Facility project (proposed project) in Yolo County, California. Your request was received by the Service on February 28, 2019. At issue are the proposed project's effects on the federally-threatened giant garter snake (*Thamnophis gigas*) (snake) and the federally-threatened Delta smelt (*Hypomesus transpacificus*) (smelt). This proposed project received previous concurrence from the Service on August 26, 2014, for a determination of "may affect, but is not likely to adversely affect" the snake and the smelt. The purpose of this consultation is to address changes to the project description that have been adopted by the applicant since 2014. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the issuance of a Rivers and Harbors Act Section 10 permit and a Clean Water Act Section 404 permit by the Corps to the Yolo County Parks Division (applicant) for work associated with the renovation of the existing Knights Landing Boat Launch Facility (facility). The proposed project is funded through a federal matching funds grant from the Service under the Sport Fish Restoration Act Boating Access program. Pursuant to 50 CFR 402.12(j), you submitted the May 19, 2014, *Knights Landing River Access Boat Launching Facility Renovation, Yolo County Biological Assessment* (biological assessment) prepared by A.A. Rich and Associates, and the February 11, 2019, *Addendum to the 2014 Biological Assessment Prepared by A.A. Rich and Associates for the Knights Landing River Access Boat Launching Facility Renovation Project* (addendum) prepared by Live Oak Associates, Inc. for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, but is not likely to adversely affect the snake or the smelt. The proposed project is not within designated or proposed critical habitat for any federally-listed species.

Enclosure 2

Mr. Peck Ha

Exhibit²A

In considering your request, we based our evaluation of your findings on the following: 1) your February 21, 2019, letter requesting initiation of informal consultation and the attached biological assessment and addendum; 2) the August 26, 2014, letter of concurrence (Service File Number 08ESMF00-2014-I-0549-1); 3) the August 18, 2014, *Knights Landing Boat Launch Improvement project (SPK-2009-01634) – Updated project description*; and 4) additional information available to the Service.

The applicant proposes to renovate the existing facility in order to improve safety and protect the banks surrounding the facility from boat wake erosion. The facility is located on the banks of the Sycamore Slough, approximately 455 feet from its confluence with the Sacramento River. The proposed project involves the following components:

- The existing 6-foot by 90-foot floating dock will be replaced with a new 4.5-foot by 12-foot gangway and 8-foot by 60-foot floating dock with a pulley system to allow staff to bring the floating dock in during flood events.
- The existing 6-foot by 200-foot sidewalk on the northern side of the ramp will be sawcut and removed. The current 36-foot wide by 200-foot long boat ramp and sidewalk will be widened by 2 feet past the extent of the old sidewalk on the northern side. The area that was the sidewalk and the 2-foot extension will be replaced with reinforced concrete over an aggregate base matching the height and slope of the existing ramp. A new 8-foot wide concrete sidewalk leading to the floating dock will be installed, centered over the existing ramp. The final extent of the ramp will be 38 feet by 200 feet.
- The wooden pilings that anchor the existing floating dock will be removed. The holes will be filled with concrete over an aggregate base.
- A total length of 35 linear feet of the stream bank along Sycamore Slough will be stabilized above and below the ordinary high water mark. The undercut upper stream bank will be set back from the water edge and revegetated with willows (*Salix* spp.) and other native plants. The lower portion of the stream bank that approaches the ordinary high water mark and all areas below the ordinary high water mark will be stabilized with rip-rap.
- A new permanent vaulted restroom will be constructed, which includes a holding tank directly below the restroom.
- An electrical connection will be installed at the location of a concrete pad intended for the future Park Host. A sewer connection for the Park Host will tie into the permanent restroom vault. A potable water well will be drilled between the parking lot and the future camp host site.
- The existing parking lot will be enlarged by approximately 1,000 square feet; and a new layer of chip-seal will be applied, the parking lot will be re-curbed, and the pavement will be re-stripped. An automatic pay station, a monument sign, an informational kiosk, a surveillance camera, and a handicap-accessible fishing platform will be installed.

Mr. Peck Ha

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Exhibit A

In addition to implementing standard Best Management Practices (BMPs), the applicant has proposed the following avoidance and minimization measures in order to prevent any adverse effects to the snake or the smelt:

1. In-water work and work along the banks will be conducted between August 1 and October 15.
2. Construction personnel will receive Service-approved worker environmental awareness training that will instruct workers to recognize locally-occurring federally-listed species and their habitats, and will provide information on the conservation measures adopted by the applicant to ensure that these species are not adversely affected by the project.
3. An agency-approved Storm Water Pollution Plan, including BMPs and an agency-approved Sediment and Erosion Control Plan will be designed and implemented.
4. BMPs will be inspected no less than weekly during dry weather and immediately prior to, during, and after storm events. BMP deficiencies shall be corrected at once.
5. Ongoing BMP maintenance shall be performed as required to ensure BMPs remain effective.
6. Erosion control and bank stabilization measures will exclude the use of coir netting to avoid entrapment of snakes.
7. Throughout the site, care will be taken in the prevention of pollutants and other discharges associated with the construction process from entering the storm water system or the river or slough.
8. All equipment will be fueled away from the water. The applicant will develop and implement a spill prevention, control, and counter-measure plan to minimize the potential for and effects from spills or leakage of hazardous, toxic, or petroleum substances during repair and construction activities. Hazardous spill response materials will be kept on site, and all construction workers will be trained in the implementation of hazardous spill counter-measures.
9. Storm drain inlet protections, fiber rolls, and stabilized construction exits will be installed and maintained during in-water work.
10. Silt curtains or turbidity barriers shall be installed and maintained during the entire waterside construction process. The curtain shall extend from boom to bottom substrate in the water surrounding the project area. The curtain shall be placed no more than 15 feet outside the work area footprint. The silt curtain shall be removed upon completion of all in-water construction.
11. Turbidity plumes generated by construction activity shall be monitored continuously by the contractor. All turbidity generated by these construction activities shall be contained within the confines of the silt curtain. If visible turbidity is observed outside of the perimeter of the curtain, the contractor shall immediately suspend operation in the affected area until compliance with this condition is resumed. For the purpose of monitoring, turbidity shall be defined as any change in the ambient condition of the clarity of the water column within the Sycamore Slough to the naked eye.

Mr. Peck Ha

Exhibit⁴A

12. Prior to initiating any in-water work, an exclusion fence will be installed along both sides of the boat launch access. The fence will be constructed with non-climb material (e.g., silt fence) to provide an additional barrier to detour snakes from entering the work area. Placement and installation will be supervised by a qualified biologist. The exclusion area will be flagged as a Sensitive Resource Area.
13. Installed rip-rap below the ordinary high water mark should be of a size that minimizes space in which predatory fish could hide. Rock diameters of 10 inches or less of D50 size are recommended for below the water surface.
14. An interpretive sign shall be installed at the information kiosk that addresses fish species occurring in the area, and California and federal endangered species concerns.
15. A qualified biologist will monitor the site every day that work is being performed in the aquatic environment of Sycamore Slough. The biologist will conduct a daily morning preconstruction survey of the project site, and will allow any listed species observed on the site to move out of the site prior to the start of the day's work. The biologist will also
 - a) check all water pollution control measures to ensure that they are being implemented properly;
 - b) examine fencing installed to keep listed species out of the work area to ensure that it is functioning properly; and
 - c) examine the site for listed species that may place themselves at harm by entering the work area.
 Should water pollution control measures not be implemented as required, or the fencing not be functioning properly, the biologist will notify the contractor to ensure that remedial measures are implemented.
16. Any listed species that may enter work areas of the project site will be allowed to passively leave the work area after all construction activities have been halted.

Giant Garter Snake

After reviewing all of the available information, we concur with your determination that the proposed project is not likely to adversely affect the snake. The proposed project reached the 'may affect' level, and the subsequent requirement for a biologist assessment, due to the fact that the proposed project occurs within the known range of the snake, suitable habitat for the snake is present in the action area, and snakes may be present in the action area. Snakes are known to occur in the Colusa Basin Drainage Canal (Service 2017), which joins Sycamore Slough just upstream of the proposed project. However, the Knights Landing outfall gates, located along the canal approximately 750 feet west of the proposed project, provide a barrier to snakes entering the lower portion of the canal and the proposed project. Due to the outfall gates, the proximity to the Sacramento River (not considered suitable habitat for the snake), and the avoidance and minimization measures proposed by the applicant, the Service believes that potential effects from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation.

Delta Smelt

We also concur with your determination that the proposed project is not likely to adversely affect the smelt. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the known range of the smelt, and the smelt may be present in the action area. The proposed project is located at the

Mr. Peck Ha

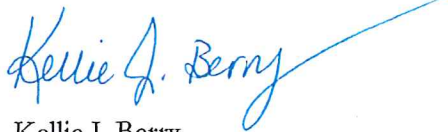
5
Exhibit A

northern extent of smelt habitat, and the smelt is rarely found in the action area outside of their spawning period. Due to the fact that in-water work will not occur during the smelt spawning period, the limited duration of construction activities, and the avoidance and minimization measures proposed by the applicant, the Service believes that potential effects from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation.

This concludes the Service's review of the proposed Knights Landing Boat Launch Facility project. No further action pursuant to the Act is necessary unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered; the action is subsequently modified in a manner that causes an effect to federally-listed species or critical habitat that was not considered in this determination; or a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding the Knights Landing Boat Launch Facility project in Yolo County, please contact Sam Sosa, Fish and Wildlife Biologist (samuel_sosa@fws.gov), or myself at the letterhead address, (916) 414-6631, or by email (kellie_berry@fws.gov).

Sincerely,



Kellie J. Berry
Chief, Sacramento Valley Division

cc:

Kim Squires, U.S. Fish and Wildlife Service, Sacramento, California
Jeff Anderson, County of Yolo, Woodland, California
Wendy Fisher, Live Oak Associates, Inc., Oakhurst, California
Kevin Lee, U.S. Army Corps of Engineers, Sacramento, California

Mr. Peck Ha

Exhibit A

LITERATURE CITED

[Service] U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. Vii + 71 pp.

200901634

Exhibit A



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814-4700

JUL 23 2014

In response refer to: WCR-2014-00166

Nancy Haley
Chief, California North Branch
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922



Re: Endangered Species Act Section 7(a)(2) Concurrence Letter, Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response, and Fish and Wildlife Coordination Act Recommendations for the Knights Landing River Access Boat Launching Facility Renovation

Dear Ms. Haley:

This is in response to your letter of June 10, 2014, requesting the initiation of consultation under section 7 of the Endangered Species Act (ESA) from NOAA's National Marine Fisheries Service (NMFS) that the U.S. Army Corps of Engineers (Corps) Knight's Landing Boat Dock Project (Project) (SPK-2009-01634), located on the Sacramento River in Yolo County, California, may affect federally listed endangered Sacramento River winter-run Chinook salmon evolutionarily significant unit (ESU) (*Oncorhynchus tshawytscha*), threatened Central Valley (CV) spring-run Chinook salmon ESU (*O. tshawytscha*), threatened California CV (CCV) steelhead distinct population segment (DPS) (*O. mykiss*), threatened Southern DPS of North American green sturgeon (*Acipenser medirostris*) and their respective designated critical habitats in accordance with section 7 (a)(2) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*). The Corps has also determined that this Project may adversely affect essential fish habitat (EFH) for Pacific salmon, pursuant to section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). NMFS also reviewed the proposed action for potential effects on EFH designated under the MSA, including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking at <https://pcts.nmfs.noaa.gov>. A complete record of this consultation is on file at the California Central Valley Office of NMFS.



Enclosure 3

Proposed Action and Action Area

Purpose of the Project

The purpose/goal of the Project is to improve the Knights Landing Boat Access/Launch (KLBL) so that boats can be moored more safely and efficiently.

The following problems are occurring with the existing KLBL:

- (1) One boat can take up the entire boat launch and, thereby, prevent others from using the launch;
- (2) Moving the current boarding flat in and out creates a dangerous situation for the parks maintenance crew;
- (3) Boat wakes are responsible for bank erosion that occurs at the ordinary high water mark (OHWM); and,
- (4) Contaminated run-off water flows from the existing parking lot into Sycamore Slough.

With the KLBL improvements, the objectives are to: (1) improve the safety of the boat launch; and (2) protect the native environment along the water's edge from the boat wake erosion. It is anticipated that the Project will make substantial improvements to the KLBL.

Project Location

The KLBL is located in Yolo County, at Sycamore Slough which is a tributary to the Sacramento River. Sycamore Slough is approximately 10 miles north of Woodland and 1/4 mile west of the community of Knights Landing, along State Route 45 in the Northeast Quadrant of Yolo County. The KLBL is owned by the California Department of Fish and Wildlife (CDFW) and managed by Yolo County through a long-term lease agreement with the Wildlife Conservation Board.

The Project boat launch on Sycamore Slough lies approximately 455 ft. upstream of the confluence with the Sacramento River. Although mostly paved, the park where KLBL occurs, is surrounded by a narrow band of valley foothill riparian habitat (CDFG 2006). Surrounding land use is predominately agricultural production and the small community of Knights Landing is located immediately south of the Project site, south of Sycamore Slough. Immediately west of the project site is a small oxbow that is also surrounded by riparian vegetation.

Action Area

The regulations governing consultations under the ESA define *action area* as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). For the purposes of this consultation, the action area includes the proposed boat ramp footprint in the Sycamore Slough and the area surrounding the construction zone for the new boat ramp including the following boundary: (1) up to 50 feet (ft.) upland from the Sycamore Slough bank where the new boat ramp is being installed, including the staging areas; (2) the Sycamore Slough extending to 500 ft. downstream of the end of the boat ramp construction area; and (3) 50 ft. on the lateral line extending into the Slough from the new floating boat ramp placement area.

The action area is upstream, in a slow water slough area, of waterways where Sacramento River winter-run Chinook salmon, CV spring-run Chinook salmon, CCV steelhead, and Southern DPS of North American green sturgeon are found at various life stages, and includes waters that have been designated as their critical habitats. Listed salmonids have the greatest potential to occur in the action area primarily between November and June, based on the timing of adult and juvenile migrations in and through the waterways of the Sacramento River. Adult green sturgeon migrate out of the Sacramento River, after spawning in the upper Sacramento River, and are found in the Sacramento-San Joaquin Delta and the Pacific Ocean during June through October. Juvenile green sturgeon presence is presumed to be year-round within the Sacramento River, which is adjacent to the action area, but it is not clear if green sturgeon utilize the slough, as these fish have never been documented in the slough area.

Project Description

The Project includes the following activities:

- (1) Reconfiguring and enhancing the current floating dock;
- (2) Improving the boat ramp launch;
- (3) Reducing the length of the existing wooden pilings/piers in Sycamore Slough;
- (4) Stabilizing the stream bank to minimize bank erosion;
- (5) Rehabilitating and reconfiguring the parking lot;
- (6) Constructing a permanent vaulted restroom building and site amenities; and
- (7) Installing utility connections (electrical, phone, potable water) for the Park Host.

The details of these activities include:

(1) Reconfigure and Enhance Current Floating Dock

The current floating dock (6 ft. x 90 ft. long, including the gangway) would be replaced with an 8 ft. x 60 ft. floating dock and 4.5 ft. x 12 ft. gangway. New boarding floats will also be installed to the middle of the ramp (approximately 15 ft. upstream of its current location), so there would be two lanes and a safe place for people to stand in the middle of the ramp. In addition, a pulley system will be installed to attach to the ramp and, thus, be easier and safer for park staff to bring in the float during flood events.

(2) Improve Boat Ramp Launch

The current boat ramp and sidewalk (6 ft. wide by 200 ft. long) would be updated. The overall footprint of the existing boat ramp would expand 2 ft. on the northern most side. To accommodate traffic wheel loads, the existing six-foot-wide sidewalk on the northernmost side of the ramp would be replaced with reinforced concrete over an aggregate base. The thickness of the concrete and aggregate base would each be six inches. The dock will be attached to three steel 12 inch pipe piles that will be placed in Sycamore Slough to anchor it in place. A barge mounted padded pile driver will be used to install the piles. Total onsite construction will take approximately two days. A total of 0.5 yards of dirt will be removed from the top of the levee for the landing. The landing location is above the OHWM for Sycamore Slough.

(3) Reduce the Length of Existing Wooden Pilings/Piers

Two sets of pilings/piers would be removed from the water. First, remnant pilings from a Southern Pacific Railroad trestle would be removed. The trestle crosses Sycamore Slough southwest of the slough's confluence with the Sacramento River and south of the boat ramp area. In order for Yolo County to obtain a lease extension on the site, the State Lands Commission would require that the train trestle pilings be cut at the mud line with an underwater cutter, while a crane holds them in place. Once cut, each piece of piling would be lifted out of the water by the crane and transported to an approved site (Santos, 2010). No digging or dredging would occur. There are also wooden pilings on the northern side of the boat ramp would be completely removed and filled with concrete and aggregate base.

(4) Stabilize Stream Bank to Minimize Bank Erosion

The stream banks along Sycamore Slough are lined with exotic plants and are highly eroded from the boat wakes. Efforts would be made to stabilize the stream bank just above the OHWM. The undercut upper stream bank would be set back from the water edge and re-vegetated, including monitoring of plantings success in the spring of 2015, with willows and other native plants. All soil that is "set back" from the edge (to prevent the overhanging edges) would be removed from the site and disposed of at the local disposal site. The lower portion of the stream bank that approaches the OHWM would be stabilized with rip-rap, as approved by the Department of Boating and Waterways.

(5) Rehabilitate and Reconfigure the Parking Lot

The existing parking lot would be enlarged by approximately 1,000 square feet, re-paved with a new layer of asphalt, and re-curbed and re-striped

Fish Species that Inhabit the Waters in the Vicinity of the Project Area

Fish species information has been gathered from several studies at the Knights landing sampling site on the Sacramento River. A wide variety of fish species inhabit the waters adjacent to the Project area. Both fish species and fish abundance are dependent upon season and other environmental factors. Listed fish do not inhabit Sycamore Slough during the summer months of July-September when the in-water portion of the Project would be completed. Sycamore Slough offers warm water fish habitat during the summer months, and temperatures are above 70° Fahrenheit (F). CV Chinook salmon, CCV steelhead and green sturgeon would not utilize Sycamore Slough during the summer months, because the temperatures in the slough are above their physiological limits for fecundity, feeding, and rearing.

Proposed Conservation Measures

To avoid direct and indirect impacts to listed fish, conservation measures from the applicant are being proposed. Impacts to the listed fish species will be avoided by implementation of the following measures:

- (1) The construction window for any in-water work or, work that could affect conditions in Sycamore Slough, would be August 1-October 15;
- (2) To prevent the entry of pollutants into Sycamore Slough and storm drains during construction-related activities, an agency-approved Storm Water Pollution Prevent Plan (SWPPP), including Best Management Practices (BMP's) and an agency-approved Sediment and Erosion Control Plan, will be implemented;
- (3) Some BMP's that should be implemented include the following:
 - Storing of fuels, lubricants, and chemicals away from the stream channel;
 - Fueling and equipment maintenance performed away from stream channel;
 - Storing and covering all materials used in construction process, if those materials are on-site;
 - Collecting and disposing of any debris in the construction process in an agency-approved manner; and
 - Fencing (silt) in the appropriate locations;
- (4) Re-vegetation of the area adjacent to the landing area will be placed by October 15. Plantings of native species will use a secondary erosion protection method such as straw mulch, soil binder or erosion control blankets/mats;
- (5) A watering and vegetation monitoring schedule, with monitoring occurring during spring of 2015 to ensure a 70 percent or greater planting success occurs;
- (6) The amount of disturbed area will be minimized by reducing the amount of material moved or impacted, as well as, the amount of material stockpiled to reduce any erosion potential into the riparian areas; and
- (7) The upper portion of the stream bank above the OHWM will be restored at a 60:40 rip rap to soil mix, and covered with 1 foot of soil. The soil cover will allow for replanting of the top of the bank.

Endangered Species Act Section 7 Consultation

In order for NMFS to consider a project as not likely to adversely affect the listed species, any effects upon the listed species must be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur.

Effects of the Project

The in-water activities associated with installation of a new boat ramp on the Sacramento River are expected to result in some beneficial effects to salmonids and green sturgeon, namely,

reduced bank erosion, increased shade, and reduction in boat wakes due to better traffic patterns for boats leaving the Sycamore Slough area.

Because the Sacramento River, in the area of Knight's Landing, serves as a migratory pathway for adult and juvenile salmonids and green sturgeon, activities will be conducted to reduce potential effects to listed fish. The summer in-water work window of August 1-October 15, is the period of time when populations of listed fish are lowest in the Sacramento River adjacent to Sycamore Slough. Sycamore Slough offers warm water fish habitat during the summer months when the Project would be constructed. Chinook salmon, steelhead and green sturgeon would not likely inhabit Sycamore Slough during the summer months in part because all but juvenile green sturgeon would have migrated through the area during the construction work window, and because the temperatures in the slough are above the physiological range for survival (average daily temperatures are above 70°F, during the time that the Project will be constructed). However, because Sycamore Slough is adjacent to the Sacramento River, and listed fish species, namely green sturgeon juveniles, may temporarily visit the action area during the boat ramp replacement, they may be affected. Therefore, effects to listed fish species are discussed.

Water Quality

Project activities will create temporary and localized sediment plumes which could affect listed salmonids and green sturgeon. Increased levels of turbidity can affect listed species physiology through such physical mechanisms such as gill occlusion and/or through behavioral changes. The potential effect of construction activities on water quality is expected to be intermittent and temporary, returning rapidly to baseline conditions. As well, effects to water quality are expected to be localized within the slough channel. It is anticipated that listed fish species, if they are present, will avoid the localized areas where sediment plumes are generated during the boat ramp replacement. For the reasons stated above, any effects on listed fish species resulting from implementation of the Project are expected to be discountable and should not reach the level of take due to the extremely localized and temporary nature of those disturbances.

There is also the potential for increased hydrocarbons (e.g., fuel and oil) from spills to be released into the aquatic environment as a result of leaks and spills of the equipment used during Project activities that could float downstream into the Sacramento River. The Corp's applicant will ensure that all local, state, and federal regulations and environmental requirements shall be complied with. This includes obtaining and complying with the CDFW Streambed Alteration Agreement, Central Valley Regional Water Quality Control Board (RWQCB) Clean Water Act Section 401 Certification and Section 404 permit, and implementing the Storm-water Pollution Prevention Plan (SWPPP). Observation of water quality protective measures, and adherence to CDFW's permit restrictions and requirements, proposed as part of the Project description, will prevent these temporary and localized effects from occurring or reaching the point of significance.

Underwater Vibration

Additionally, noise and mechanical vibrations in the aquatic environment, resulting from the operation of the equipment used for the addition of the steel piles for the boat dock/ramp, may temporarily disrupt the migratory behavior of listed fish moving in and out of Sycamore Slough.

Direct effects associated with in-river installation of the steel piles for the cofferdam, include the production of sound pressure waves that create underwater noise and vibration, thereby temporarily altering in-river conditions. As described above, exposure of Sacramento winter-run Chinook salmon, CV spring-run Chinook salmon, CCV steelhead and green sturgeon to these potential direct effects of the action is expected to be low and not expected to result in harm to listed fish species. Upon the unlikely event that listed fish temporarily visit the Sycamore Slough action area, the expected pile driving acoustic levels will fall below the current sound criteria for sound exposure, because the Project's applicant will be using a padded drop hammer to drive the steel piles, which results in sound levels below: 174 dB peak and 158 dB [accumulated sound exposure levels (SEL)] (ICF Jones & Stokes and Illingworth and Rodkin, Inc, 2009). The sound exposure criteria were developed by the 2008 Fisheries Hydro-acoustics Working Group. A memo was developed from this group and was termed: *The Agreement in Principle for Interim Criteria for Injury to Fish from Pile Driving Activities*. The agreed upon criteria for sound pressure effects include limits on peak and SEL for listed fish. According to the criteria, sound pressure levels are not to exceed 206 decibels (dB) peak and 187 dB accumulated SEL. Fish under 2 grams are the exception to the above criteria. The sound pressure criteria for listed fish below 2 grams, is 183 dB. Because levels of noise during Project construction will not reach threshold sound exposure levels for listed fish for fish injury, the effects from underwater noise to listed fish from the Project are expected to be insignificant.

Effects on Critical Habitat

Approximately 0.12 acres of aquatic habitat in the Sycamore Slough will also be disturbed by the addition of the new boat ramp, affecting 544 square ft. of aquatic habitat. This area would potential provide future shade to listed fish species once the new floating dock is in place. The disturbance of 0.12 acres of habitat will be offset by re-vegetation of the area at a 3:1 ratio with native plant species.

Structures in the water in the proposed action area may impact rearing and migrating PCEs due to their propensity for harboring predators. Structures that are removed will allow fish to move through the Sycamore Slough during migration, without having as many predation possibilities. In addition, the 455 ft. of channel will open up, once the pilings are removed, creating an unobstructed channel for migration and rearing, in the months when listed fish may use the slough as a refugia.

Addition of Rip Rap and Bank Improvement Work

The stream banks along Sycamore Slough are lined with exotic plants and are highly eroded from the boat wakes. Efforts would be made to stabilize the stream bank just above the OHWM. The undercut upper stream bank would be set back from the water edge and re-vegetated with willows and other native plants. All soil that is "set back" from the edge (to prevent the overhanging edges) would be removed from the site and disposed of at the local disposal site. The lower portion of the stream bank that approaches the OHWM would be stabilized with rip-rap, as approved by the Department of Boating and Waterways. The combination of rip-rap and vegetation is expected to prevent erosion during normal high water flows. The total length of the stream bank stabilization would be 35 linear feet. It is expected that the stabilization of the bank would not involve discharges of dredged material and would not affect water flows or channel the stream in any way. These

changes should protect against wake erosion, as well as increase wildlife habitat. The addition of rip-rap will occur in a highly degraded area, and critical habitat will be improved through the restoration bank work done as part of the Project.

Conclusion

Based on our review of the material provided and the best scientific and commercial information currently available, NMFS concurs that the Project is not likely to adversely affect federally listed CV spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, CCV steelhead, and the Southern DPS of North American green sturgeon, or their designated critical habitats. NMFS reached this determination based in part on the incorporation of the following measures into the project description:

- (1) In-water construction activities will occur from August 1-October 15, when listed fish species will be at their lowest population levels in the action area;
- (2) Construction personnel will receive worker environmental awareness training. This training will ensure that any constructing personnel will adhere to the guidelines set forth as part of the Project description thereby helping to ensure that listed species are not likely to be adversely impacted;
- (3) The Corps will adhere to all the requirements outlined in the RWQCB Clean Water Act section 401 Water Quality Certification. These requirements will include measures to limit turbidity impacts associated with the proposed project. As described above, turbidity is not expected to exceed acceptable limits (the exceeding of which will require re-initiation); in the extremely unlikely event that turbidity exceeds acceptable limits, the Corps will cease construction and the RWQCB will be notified;
- (4) Erosion control best management practices and a SWPPP will be implemented to address and minimize water quality issues; and
- (5) Avoidance and minimization measures specifically implemented (addition of padded drop hammer method) to minimize sound pressure waves generated by installation of piles.

This concludes ESA section 7 consultation for the Proposed Action. This concurrence does not provide an incidental take statement pursuant to section 7(b)(4) and section 7(o)(2) of the ESA. Re-initiation of the consultation is required where discretionary Federal agency involvement or control over the Proposed Action has been retained (or is authorized by law), and if: (1) new information reveals effects of the Proposed Action that may affect listed species or critical habitat in a manner or to an extent not considered; (2) the Proposed Action is subsequently modified in a manner that causes adverse effects to listed species or critical habitat that were not considered; or (3) a new species is listed or critical habitat designated that may be affected by the Proposed Action. This concurrence does not address or provide incidental take exemption for the effects of water operations or water diversions.

Section 7(a) (1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. In order to fulfill the requirements of

section 7(a)(1), NMFS recommends the Corps coordinate with NMFS to develop measures that minimize the potential effects of water operations on salmon, steelhead, and green sturgeon, over which they have discretion. Such measures could include development and implementation of communications strategies and fish protection plans that may be necessary to ensure the survival of emigrating juvenile fish.

EFH Consultation

Under the MSA, this consultation is intended to promote the protection, conservation, and enhancement of EFH for Pacific salmon as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those water and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10), and "adverse effect" means any impact which reduces either the quality or quantity of EFH (50 CFR 600.910(a)). Adverse effects may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

NMFS determined that Proposed Action would adversely affect EFH due impacts to rearing and migration habitat. However, any disturbance due to the implementation of the Proposed Action will be temporary and localized. Any anticipated adverse effects will be minimal in scope compared to the overall surrounding available habitat and will be temporary in nature. Thus, no EFH conservation recommendations are necessary to avoid, minimize, or otherwise offset the adverse effects to EFH. Therefore, additional EFH conservation recommendations are not being provided at this time and written response as required under section 305(b)(4)(B) of the Magnuson-Stevens Act and Federal regulations (50 CFR 600.920(k)) will not be required. The Corps must reinstate EFH consultation with NMFS if the Proposed Action is substantially revised in a way that may adversely affect EFH. This concludes the MSA portion of this consultation.

Fish and Wildlife Coordination Act

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA provides the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA. Because the Project is designed to avoid environmental impacts to aquatic habitat within the action area, NMFS has no additional FWCA comments to provide at this time.

Section 7(a)(1) of the ESA directs the Corps to utilize their authorities to further the purposes of the ESA by carrying out conservation program for the benefit of threatened and endangered species.

Please direct questions regarding this letter to Gretchen Umlauf, California Central Valley Office, at (916) 930-5646 or via e-mail at Gretchen.Umlauf@noaa.gov.

Sincerely,



William W. Stelle, Jr.
Regional Administrator

cc: Copy to File ARN # 151422WCR2014SA00166

References

FHWG (Fisheries Hydroacoustic Working Group). 2008. Agreement in Principle for Interim Criteria for Injury to Fish From Pile Driving. Technical Memorandum. June 2008.

ICF Jones & Stokes, and Illingworth and Rodkin, Inc. 2009. Final Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. February 2009.

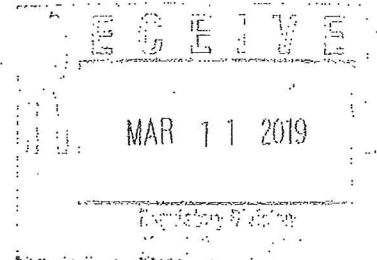


UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

Refer to NMFS No: WCR-2019-11597

March 8, 2019

Peck Ha
Senior Project Manager
CA Delta Section
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814



Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Knights Landing River Access Boat Launching Facility Renovation

Dear Mr. Ha:

This letter responds to your February 21, 2019 request for concurrence from NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and concurrence because it met our screening criteria and contained all required information on your proposed action and its potential effects to listed species and designated critical habitat.

We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and the materials you provided, we concur with your conclusions that the proposed action is not likely to adversely affect the NMFS ESA-listed species and/or designated critical habitat. It should be noted that while the project will occur adjacent to designated critical habitat present in the Sacramento River, the critical habitat does not extend into Sycamore Slough where the proposed work will involve activities below the ordinary high water mark.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through the NMFS' Public Consultation Tracking System. A complete record of this consultation is on file at the California Central Valley Office in Sacramento, California.

Reinitiation of consultation is required and shall be requested by the U.S. Army Corps of Engineers or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;



Enclosure 4

(2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action.

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. In this case, NMFS concluded the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action.

Please contact Ally Lane, in the NMFS California Central Valley Office, at Allison.Lane@noaa.gov, or (916) 930-5617 if you have any questions concerning this letter or if you require additional information.

Sincerely,



Amanda Cranford
Acting Sacramento River Basin Branch Chief

cc: To the file: 151422-WCR2019-SA00503

Mr. Jeff Anderson, Yolo County, jeff.anderson@yolocounty.org

Ms. Wendy Fisher, Live Oak Associates, Inc. wfisher@loainc.com

Mr. Kevin Lee, Flood Protection and Navigation, Kevin.C.Lee@usace.army.mil

Exhibit A

CERTIFICATION OF LEGAL REVIEW FOR THE
33 U.S.C. SECTION 408 LETTER OF PERMISSION FOR
CENTRAL VALLEY FLOOD PROTECTION BOARD
ENCROACHMENT PERMIT NO. 18598 TO MODIFY
THE SACRAMENTO RIVER FLOOD CONTROL PROJECT

The 33 U.S.C. Section 408 letter of permission, including the *Determination of Categorical Exclusion, 408 Permission (Permission No. 18598), Central Valley Flood Protection Board, for the Knights Landing Boat Dock Launch Facility, Yolo County, California*, approving Central Valley Flood Protection Board Encroachment Permit No. 18598 to alter the Sacramento River has been fully reviewed by the Office of Counsel, Sacramento District, U.S. Army Corps of Engineers and is approved as legally sufficient and policy compliant, with the exception of the real estate review and certification required in EC 1165-2-220, para. 11.e.



Al Faustino
District Counsel

8/12/2019
Date

Photo 1. Aerial View of Town of Knights Landing and Boat Launch Facility



Photo 2. Ex boarding float on Sycamore Slough



Photo 3. View of ex. parking lot












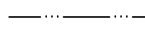

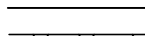

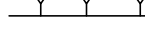

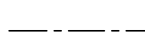

























Photo 4. View of Existing Launch Ramp



SAFETY
IS A PART OF
YOUR
CONTRACT

LEGEND:

EXISTING	PROPOSED	
— OHE —		OVERHEAD ELECTRICAL LINE
— SW —	— SW —	SANITARY SEWER & MANHOLE
— Z —	— Z —	IRRIGATION PIPELINE
— E —	— E —	ELECTRICAL LINE
— T —	— T —	TELEPHONE LINE
— TV —	— TV —	CABLE TELEVISION
		PG & E TRANSFORMER LOCATION
		STREET LIGHT & POLE
		UTILITY POLE W/ DOWN GUY & ANCHOR
		POWER POLE, TELEPHONE POLE, JOINT POLE
— HB —	— HB —	HEADER BOARD
— F —	— F —	FENCE
		VERTICAL CURB, GUTTER AND SIDEWALK W/DRIVEWAY
		CURB OR CURB & GUTTER
		FLOWLINE OF DITCH OR SWALE
		DIRECTION OF SURFACE DRAINAGE FLOW
		CUT OR FILL SLOPE
		RIGHT OF WAY OR PROPERTY LINE
		STREET CENTERLINE OR BASELINE
		SURVEY MONUMENT
		SIGN
		TREE
		TREE TO BE REMOVED
		GROUND SURFACE ELEVATION
		EDGE OF PAVEMENT
		DRAINAGE DITCH
		ANGLE POINT
		PILE
CALL OUT SHEET  DETAIL SHEET		

SHEET INDEX

C1	TITLE SHEET
C2–C2.1	GENERAL NOTES
C3	SITE PLAN
C3.1	STAGING PLAN
C4	EXISTING SITE AND DEMO PLAN
C5	DRAINAGE IMPROVEMENTS
C6	EMBANKMENT, PROTECTION, AND STABILIZATION
C7	GRADING PLAN
C8	CHIP SEAL & STRIPING PLAN
C9	SIDEWALK AND ACCESSIBILITY PLAN
C10	RAMP IMPROVEMENTS
C11–C11.1	RAMP DETAILS
C12	BOARDING FLOATS
C13	BOARDING FLOAT DETAILS
C14	GANGPLANK DETAILS
C15	PUBLIC RESTROOM AND PARK AMENITIES
C16	SITE PLUMBING & SEWER PLAN
C17	SIGNAGE PLAN
C18	SITE UTILITY PLAN
C19	WELL PLAN
L1.00	PLANTING PLAN
L2.00	IRRIGATION PLAN
L2.01	LANDSCAPE DOCUMENTATION PACKAGE
L3	LANDSCAPE DETAILS
L3.01	LANDSCAPE DETAILS

KNIGHTS LANDING BOAT LAUNCH FACILITY RENOVATION 100% DESIGN SUBMITTAL



LOCATION MAP

SCALE: N.T.S.



VICINITY MAP

SCALE: N.T.S.

SCOPE OF WORK

- PERFORM PARKING LOT REHABILITATION AND STRIPING
- PROVIDE AND INSTALL 8–FOOT CONCRETE LAUNCH RAMP WIDENING
- INSTALL PREFABRICATED RESTROOM BUILDING AND SITE AMENITIES
- PROVIDE AND INSTALL UPGRADED SITE UTILITIES
- PROVIDE AND INSTALL CAMP HOST UTILITY CONNECTIONS
- PROVIDE AND INSTALL CABLE GUIDED BOARDING FLOAT SYSTEM
- PROVIDE AND INSTALL EMBANKMENT STABILIZATION
- PROVIDE AND INSTALL LANDSCAPING

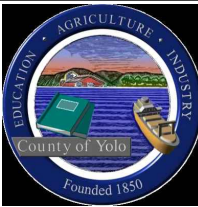
ADDITIONAL ASSOCIATED DRAWINGS BY OTHERS

1. PREFABRICATED RESTROOM BUILDING AND VAULT: YOLO COUNTY MASTERPLAN PERMIT #907–0008 AND PLAN CHECK #56058.
2. PREFABRICATED INFORMATIONAL KIOSK. YOLO COUNTY MASTERLAN PERMIT #908–0005 AND PLAN CHECK #-----

BENCHMARK:
NGS BENCHMARK F 859 RESET 1993. A 3–1/2” BRASS
DISC ON NORTHWEST END OF BRIDGE OVER SLOUGH.
ELEVATION = 46.63’
DATUM: NAVD 88.



APTIM ENVIRONMENTAL
& INFRASTRUCTURE, INC.



YOLO COUNTY GENERAL
SERVICES DEPARTMENT

REVISIONS

No.	Description	Date
A	60% SUBMITTAL	08/13/18
0	100% SUBMITTAL	09/21/18
1	GEN. REVISION	10/18/18

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CA LICENSE NO. C69183

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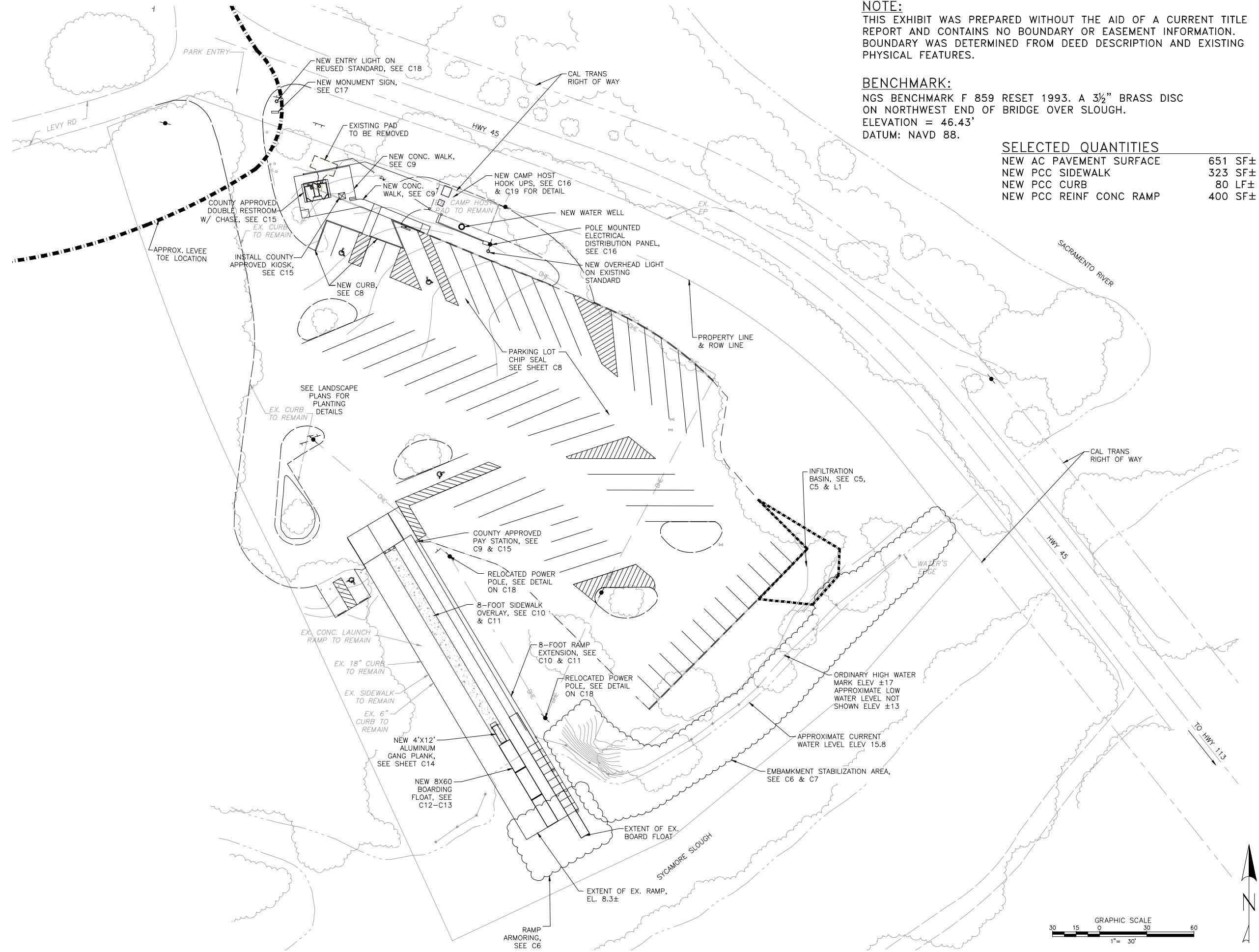
Document #

KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA

TITLE SHEET

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C1

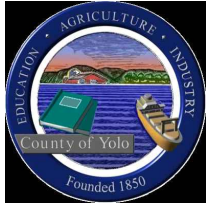


NOTE:
THIS EXHIBIT WAS PREPARED WITHOUT THE AID OF A CURRENT TITLE REPORT AND CONTAINS NO BOUNDARY OR EASEMENT INFORMATION. BOUNDARY WAS DETERMINED FROM DEED DESCRIPTION AND EXISTING PHYSICAL FEATURES.

BENCHMARK:
NGS BENCHMARK F 859 RESET 1993. A 3½” BRASS DISC ON NORTHWEST END OF BRIDGE OVER SLOUGH.
ELEVATION = 46.43’
DATUM: NAVD 88.

SELECTED QUANTITIES

NEW AC PAVEMENT SURFACE	651 SF±
NEW PCC SIDEWALK	323 SF±
NEW PCC CURB	80 LF±
NEW PCC REINF CONC RAMP	400 SF±



YOLO COUNTY GENERAL SERVICES DEPARTMENT

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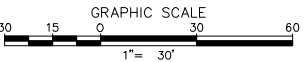
Document #

**KNIGHTS LANDING BOAT LAUNCH FACILITY
YOLO COUNTY, CALIFORNIA**

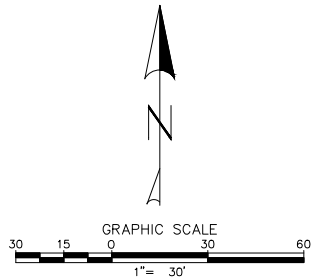
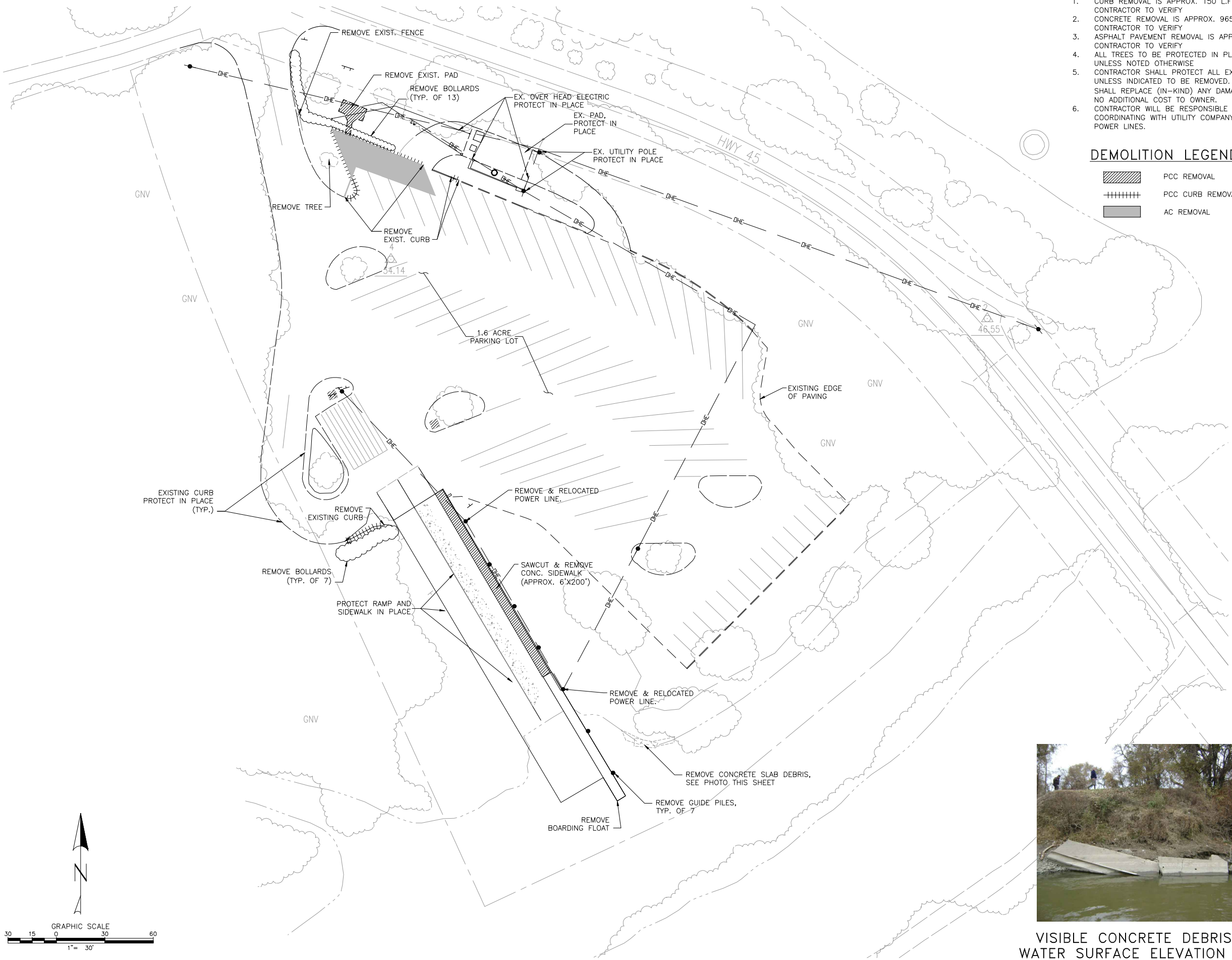
SITE PLAN

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C3



SAFETY
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DEMOLITION NOTES:

1. CURB REMOVAL IS APPROX. 150 L.F., CONTRACTOR TO VERIFY
2. CONCRETE REMOVAL IS APPROX. 965 SF., CONTRACTOR TO VERIFY
3. ASPHALT PAVEMENT REMOVAL IS APPROX. 975 SF., CONTRACTOR TO VERIFY
4. ALL TREES TO BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE
5. CONTRACTOR SHALL PROTECT ALL EXISTING CURBING UNLESS INDICATED TO BE REMOVED. CONTRACTOR SHALL REPLACE (IN-KIND) ANY DAMAGED CURBING AT NO ADDITIONAL COST TO OWNER.
6. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH UTILITY COMPANY TO RELOCATE POWER LINES.

DEMOLITION LEGEND

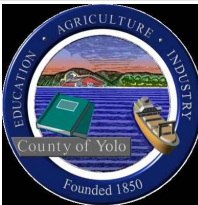
- PCC REMOVAL
- PCC CURB REMOVAL
- AC REMOVAL



VISIBLE CONCRETE DEBRIS WITH
WATER SURFACE ELEVATION AT ±15



**APTIM ENVIRONMENTAL
& INFRASTRUCTURE, INC.**



**YOLO COUNTY GENERAL
SERVICES DEPARTMENT**

REVISIONS

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1	GEN. REVISION	10/18/18

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**KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA**

**EXISTING SITE &
DEMO PLAN**

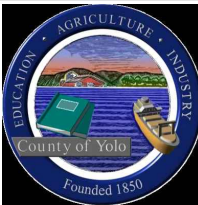
Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C4

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YOLO COUNTY GENERAL
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KNIGHTS LANDING
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FACILITY
YOLO COUNTY,
CALIFORNIA

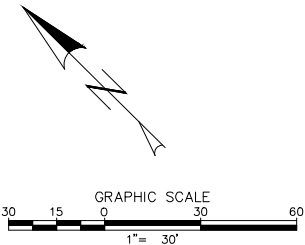
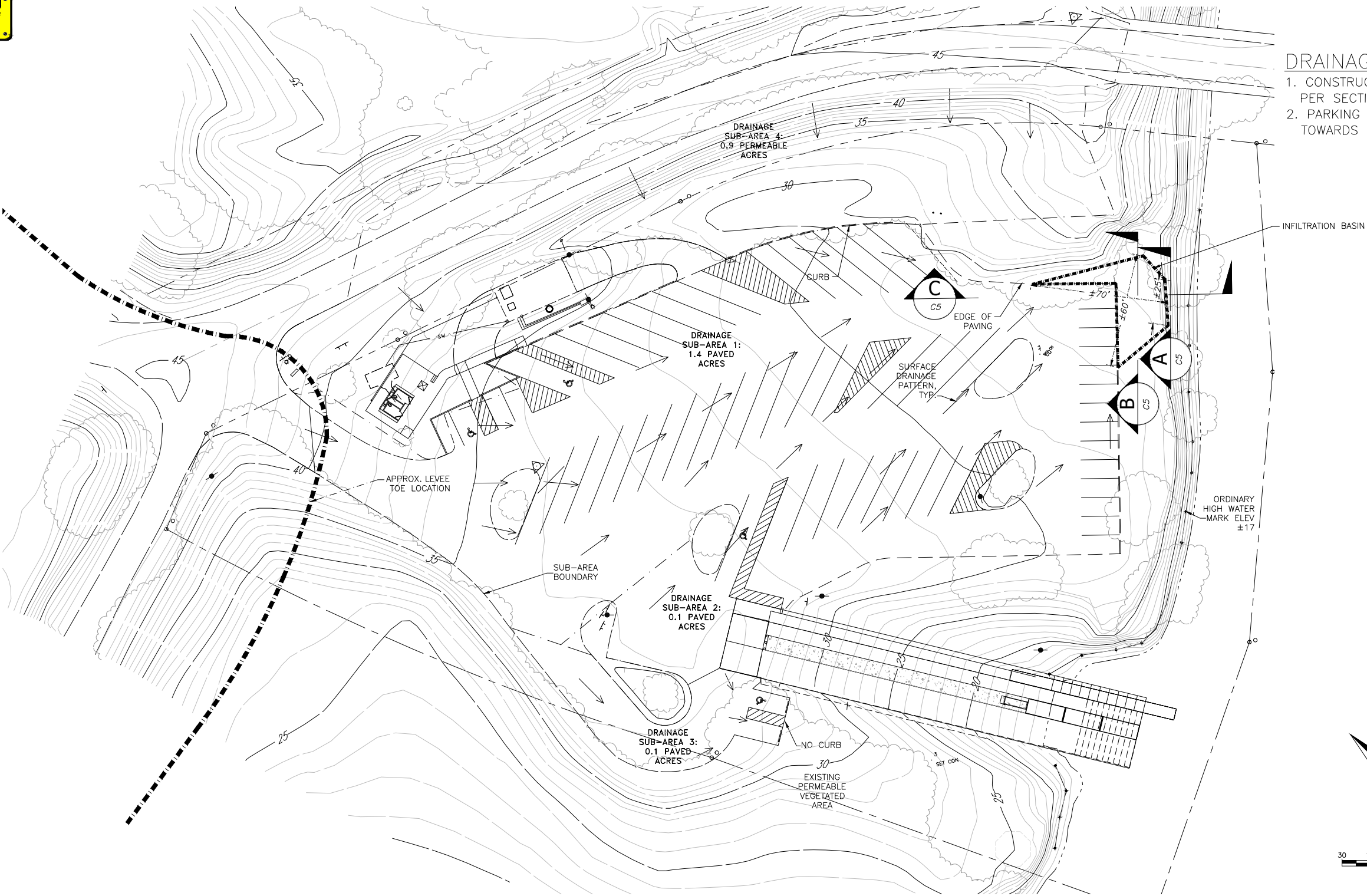
DRAINAGE
IMPROVEMENTS

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C5

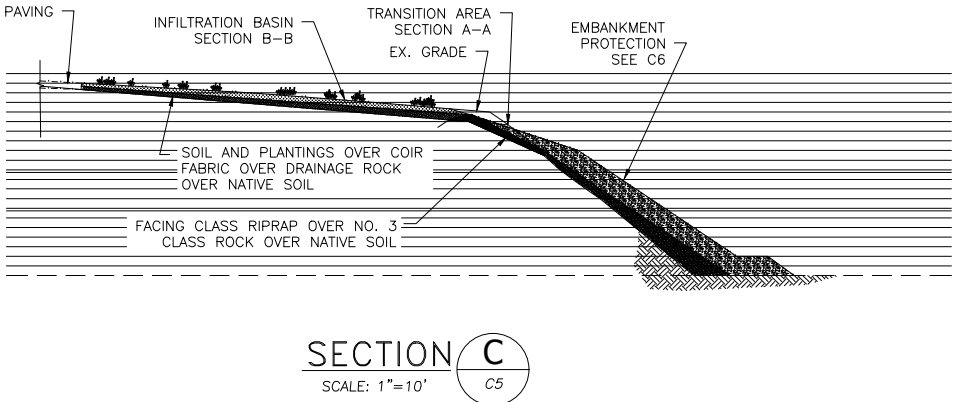
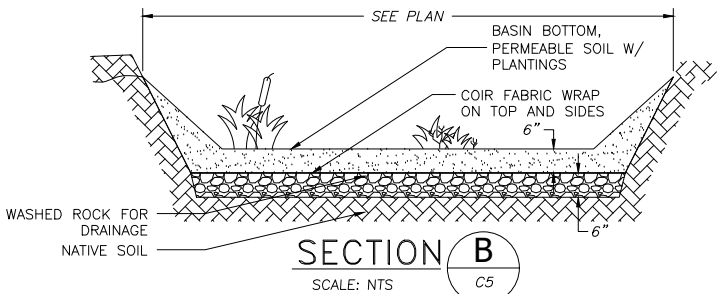
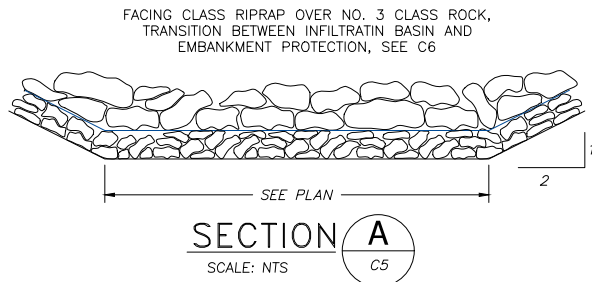
DRAINAGE NOTES:

1. CONSTRUCT RIPRAP, SLOPE PROTECTION PER SECTIONS A, B, C HEREON.
2. PARKING LOT RUNOFF TO BE DIRECTED TOWARDS INFILTRATION BASIN.

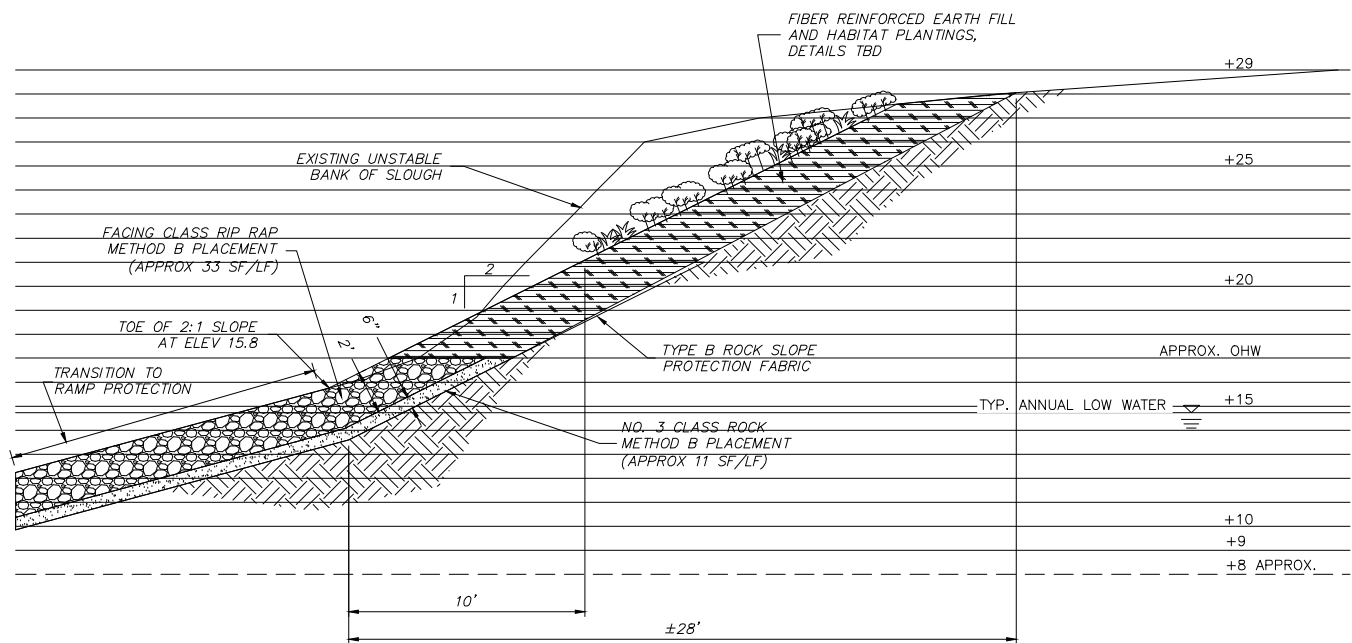


DRAINAGE PLAN

SCALE: 1"=30'



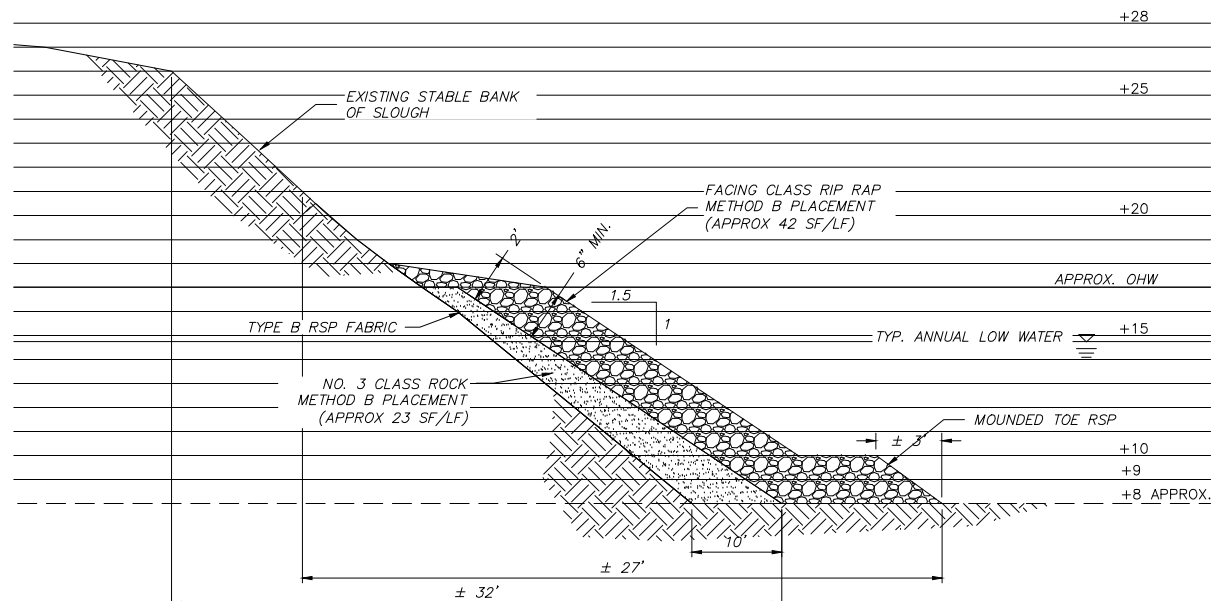
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A
C6

INTEGRATED EMBANKMENT PROTECTION (RESTORE UNSTABLE BANK)

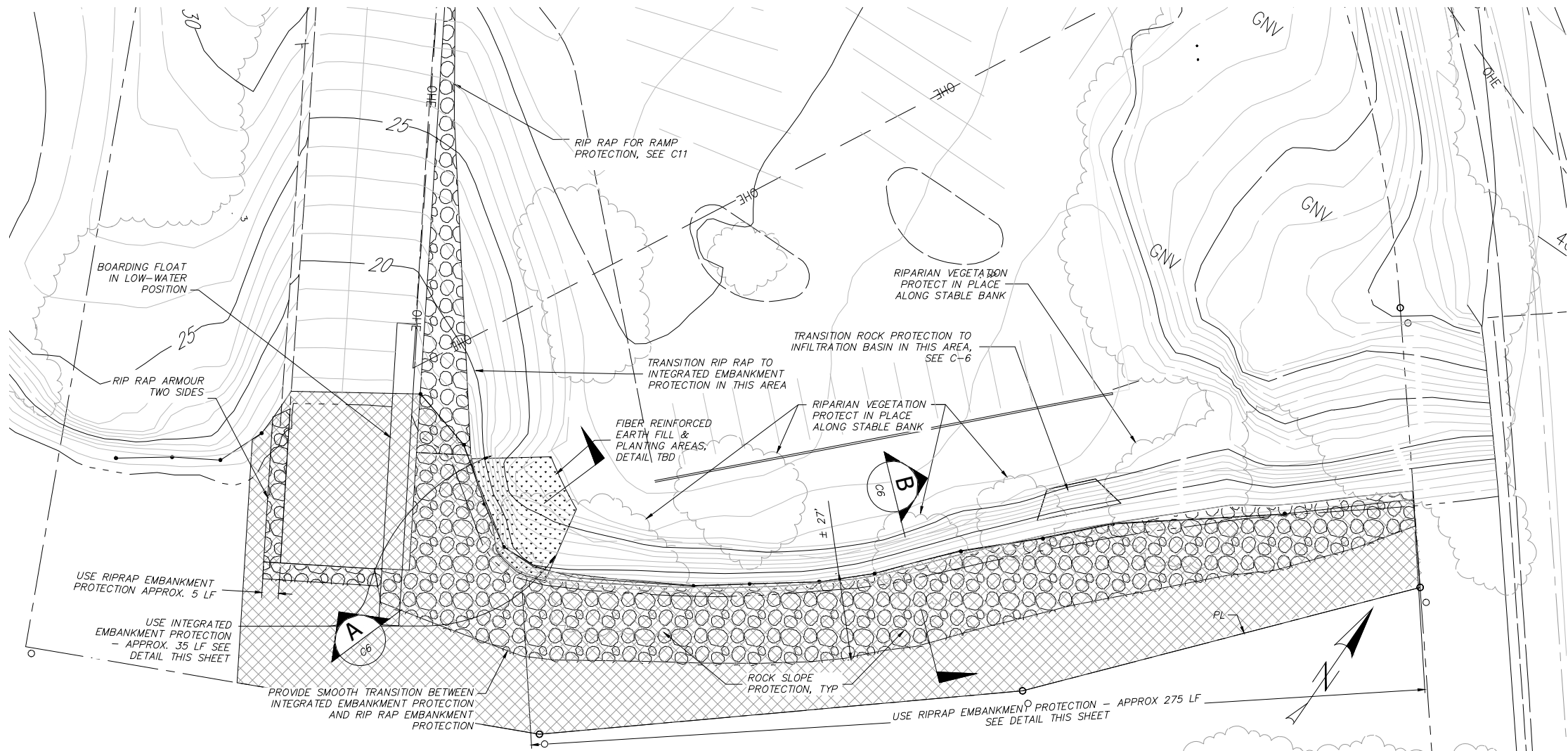
SCALE: 1"=4'



B
C6

RIP RAP EMBANKMENT PROTECTION (DOWNSLOPE OF STABLE BANK)

SCALE: 1"=4'



EMBANKMENT STABILIZATION AREA PLAN

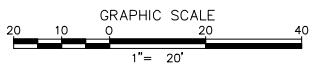
SCALE: 1"=20'

LEGEND:

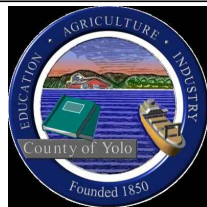
- FACING CLASS RIP RAP
- NO. 3 CLASS ROCK
- FIBER REINFORCED EARTH FILL, DETAILS TBD
- "WATERS OF THE US" ON PROJECT SITE 0.40 ACRES (AREA BETWEEN PROJECT LINE AND ORDINARY HIGH WATER ELEVATION +17 FT. CONTOUR)

NOTE:

PROJECT AREA = 3.97 ACRES
"WATERS OF THE US" ON PROJECT SITE 0.40 ACRES (AREA BETWEEN PROJECT LINE AND ORDINARY HIGH WATER ELEVATION +17 FT. CONTOUR)
ORDINARY HIGH WATER ELEVATION APPROX. +17 FT.
BOARDING FLOAT AREA ON "WATERS OF THE US" = 484 SQ. FT.
RAMP EXTENSION AREA ON "WATERS OF THE US" = 519 SQ. FT.
EMBANKMENT PROTECTION AREA ON "WATERS OF THE US" = 7,693 SQ. FT. (APPROX 289 CY OF FILL)
TOTAL AFFECTED AREA ON "WATERS OF THE US" = 10,719 SQ. FT. = .246 ACRES



**APTIM ENVIRONMENTAL
& INFRASTRUCTURE, INC.**



**YOLO COUNTY GENERAL
SERVICES DEPARTMENT**

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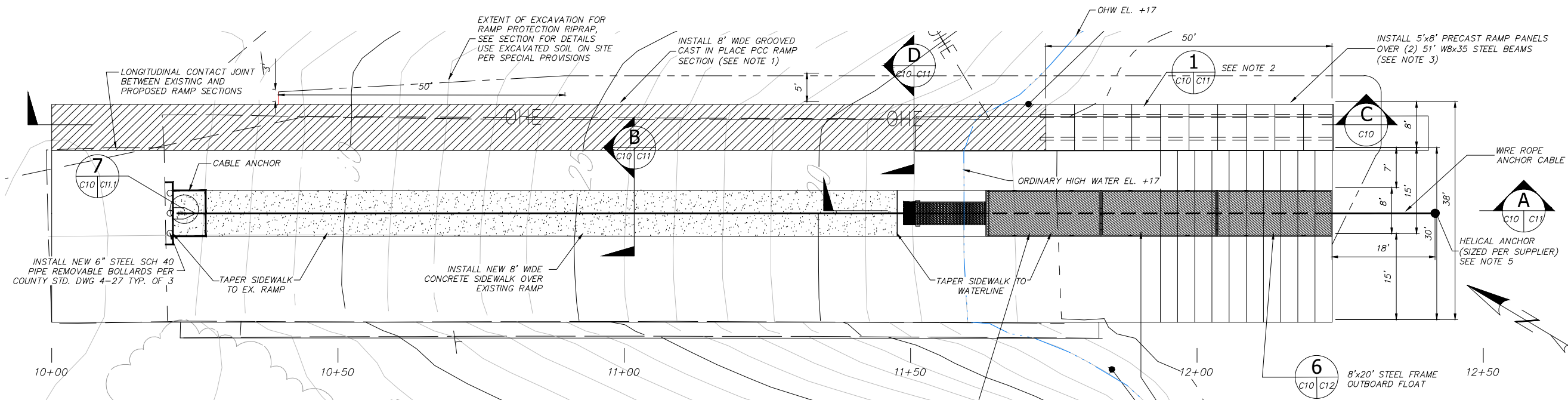
**KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA**

**EMBANKMENT,
PROTECTION &
STABILIZATION**

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 22, 2018

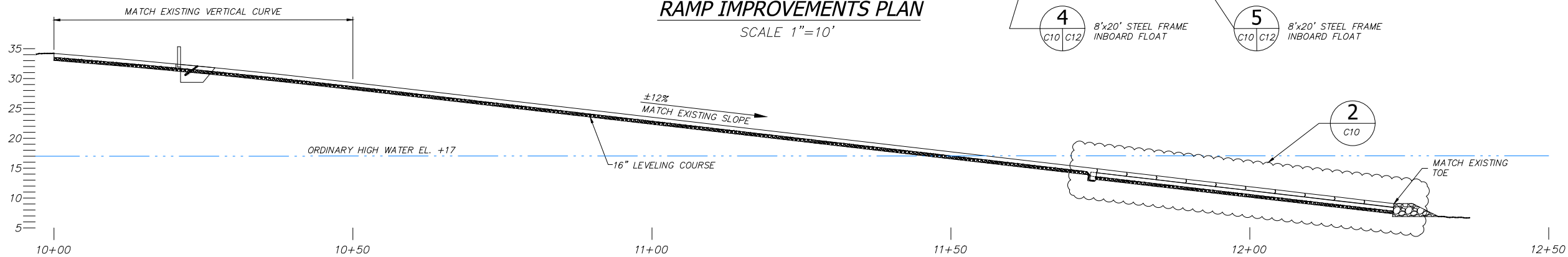
C6

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RAMP IMPROVEMENTS PLAN

SCALE 1"=10'

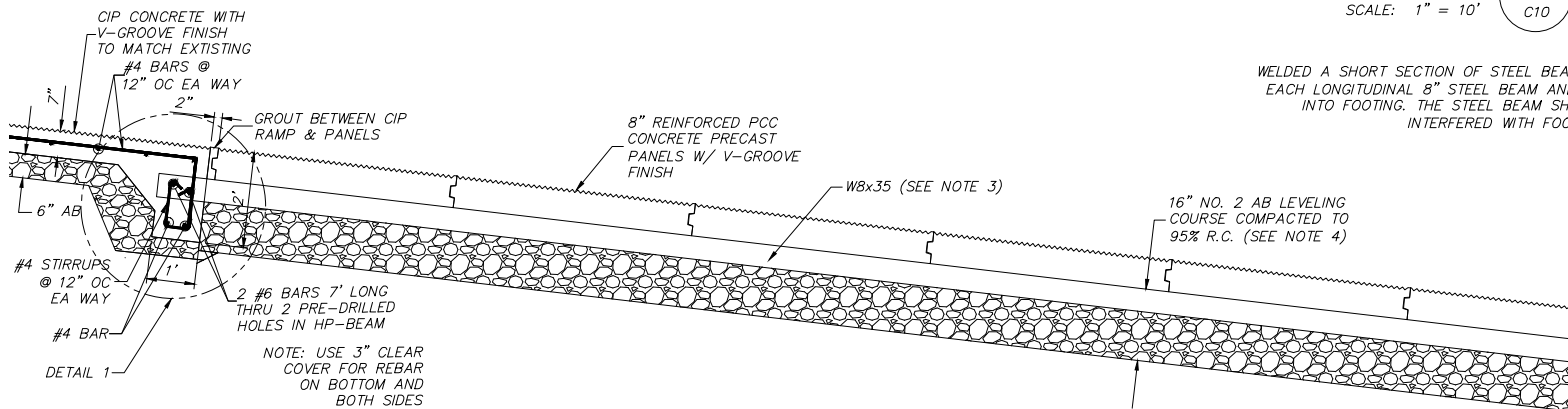
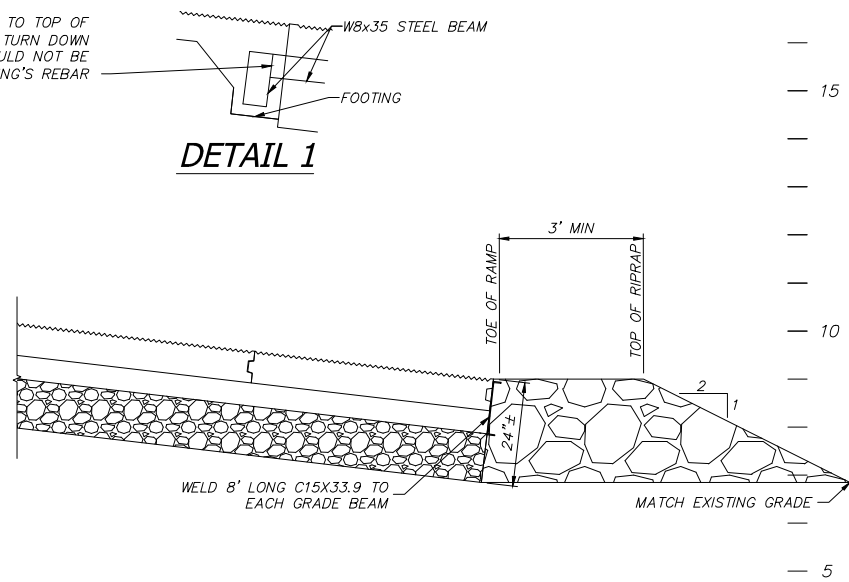


SECTION C

SCALE: 1" = 10'

WELDED A SHORT SECTION OF STEEL BEAM TO TOP OF EACH LONGITUDINAL 8" STEEL BEAM AND TURN DOWN INTO FOOTING. THE STEEL BEAM SHOULD NOT BE INTERFERED WITH FOOTING'S REBAR

DETAIL 1



NOTES FOR RAMP EXTENSION

- SEE STRUCTURAL NOTES ON C2 FOR RAMP MATERIAL AND INSTALLATION SPECIFICATIONS.
- TOP OF PRECAST PORTION IS APPROXIMATELY ALIGNED WITH ORDINARY HIGH WATER LEVEL. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO FINALIZE LENGTH OF PRECAST BASED ON HIS OWN MEANS AND METHODS.
- CONTRACTOR SHALL PROVIDE WHATEVER ADDITIONAL FALSEWORK OR SHORING OF BEAMS TO ASSURE TOP OF PRECAST PLANK ELEVATION MEET DESIGN CRITERIA.
- AT CONTRACTOR'S OPTION, TREMIE-PLACED CONCRETE CAN BE USED IN LIEU OF AGG. BASE UNDER AND AROUND CONCRETE PLANKS AND FALSEWORK, IN WHICH CASE CONTRACTOR SHALL PROVIDE WEEP HOLES AND OTHER MEANS AND METHODS TO ASSURE THE ELIMINATION OF VOIDS UNDER PLANKS.
- HELICAL ANCHORS SHALL BE COMMERCIAL-OFF-THE-SHELF (COTS), HOT-DIP GALVANIZED.

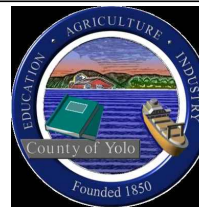
PRECAST RAMP EXTENSION DETAIL

SCALE: 1" = 2'

C10



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YOLO COUNTY GENERAL SERVICES DEPARTMENT

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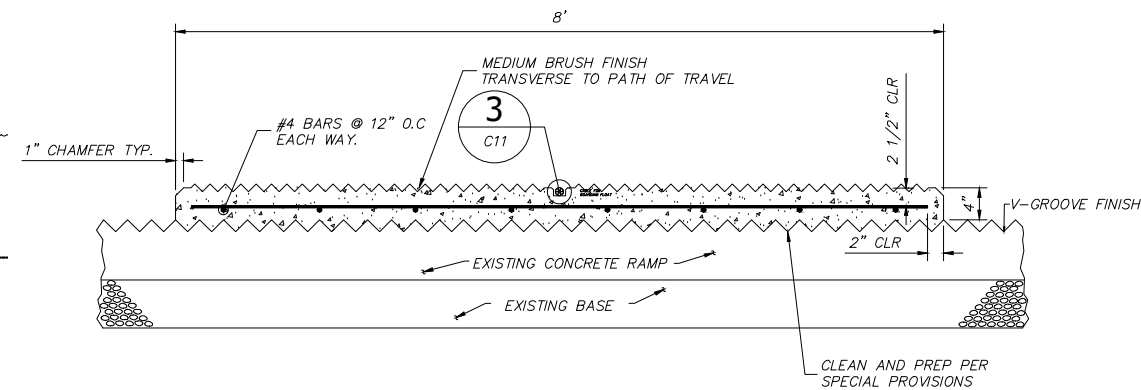
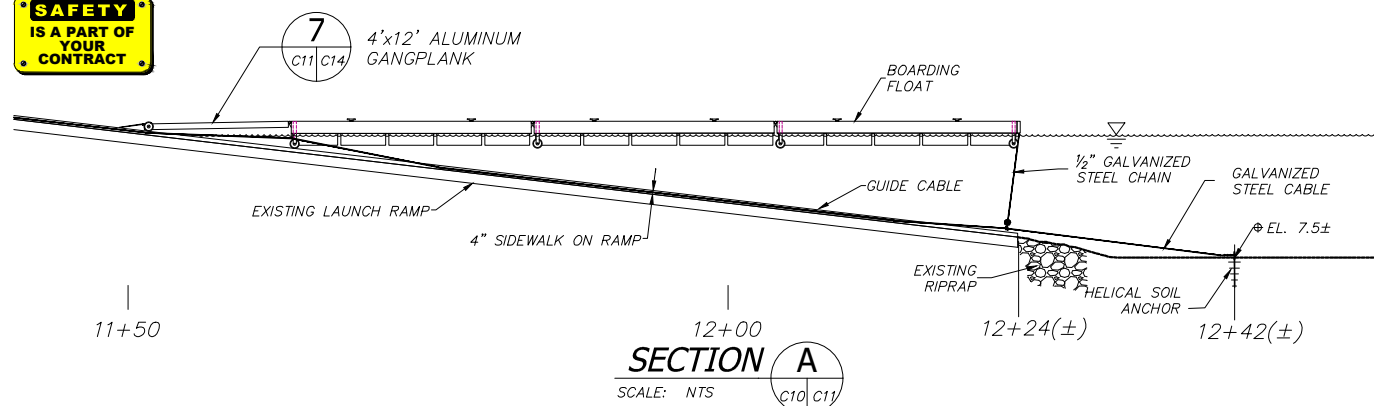
Document #

**KNIGHTS LANDING BOAT LAUNCH FACILITY
YOLO COUNTY, CALIFORNIA**

RAMP IMPROVEMENTS

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

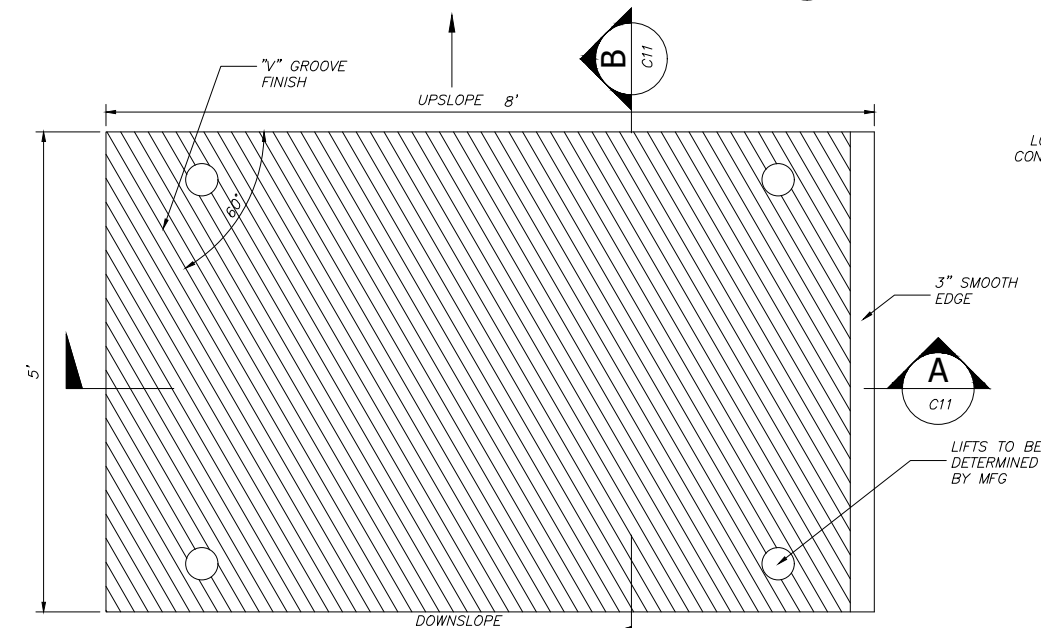
C10



SIDEWALK ON RAMP SECTION

SCALE: 1" = 1'

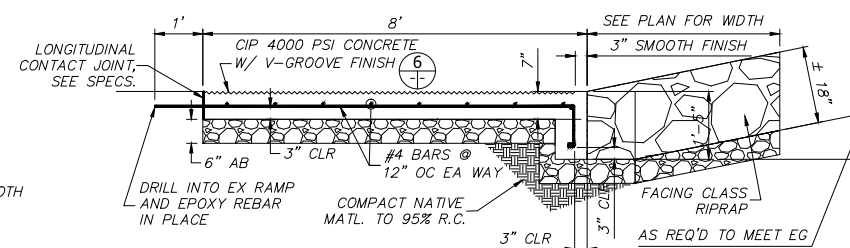
C10	C11,
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PRECAST PANEL

SCALE: 1" = 1'

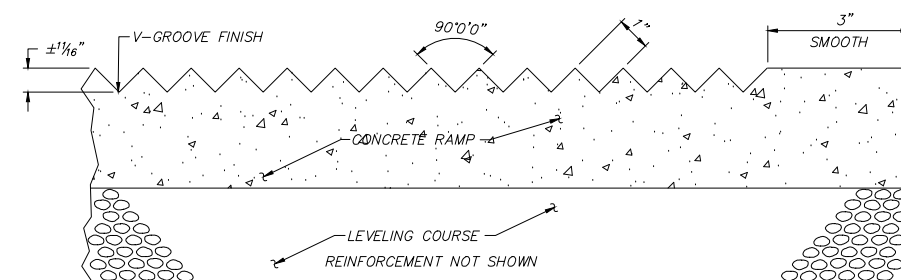
C10	C11
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SECTION

SCALE: 1" = 2'

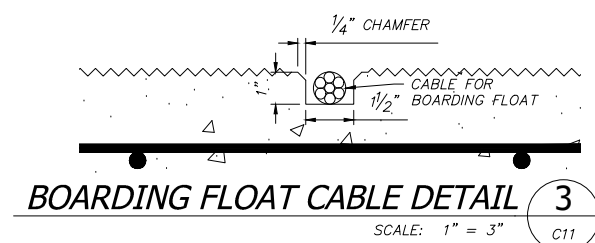
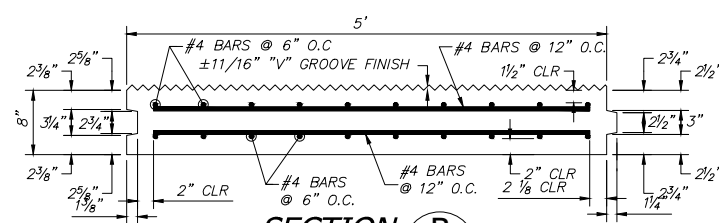
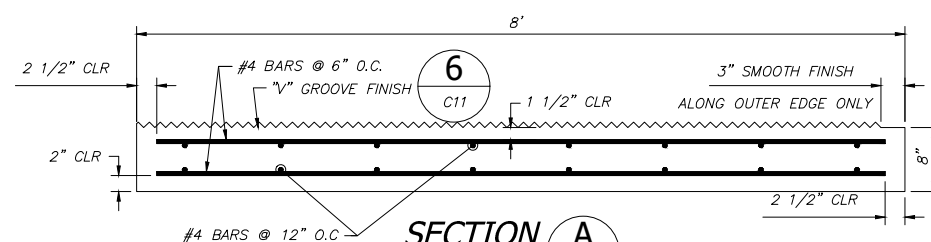
C10	C11
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SURFACE FINISH DETAIL

SCALE: 1" = 6'

C11



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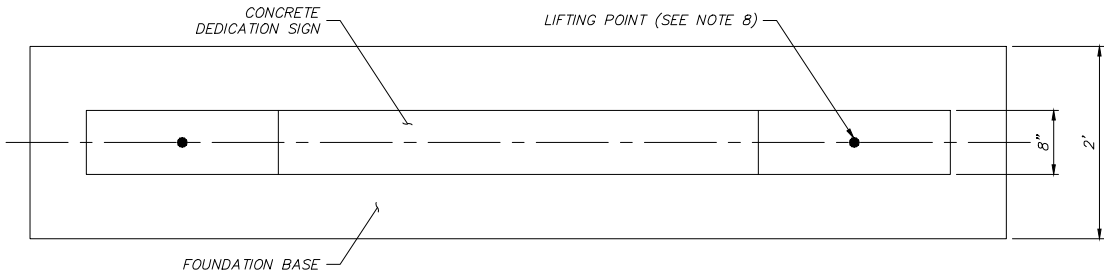
KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA

RAMP
DETAILS
(1 OF 2)

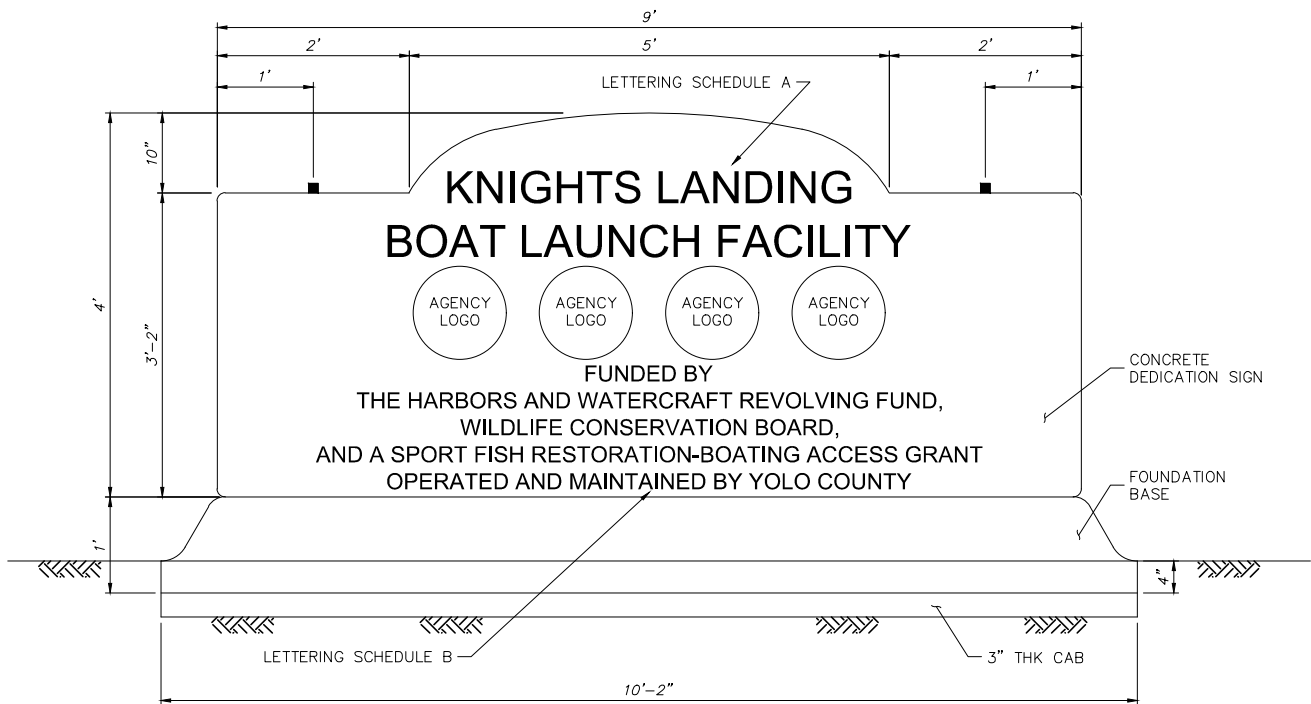
Project number	63123588
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C11

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PLAN VIEW



FRONT VIEW

CONCRETE DEDICATION SIGN

SCALE: 1" = 1'

COLOR SCHEDULE:

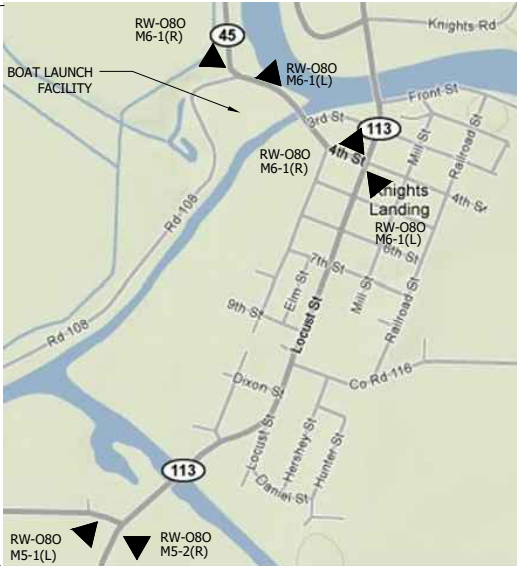
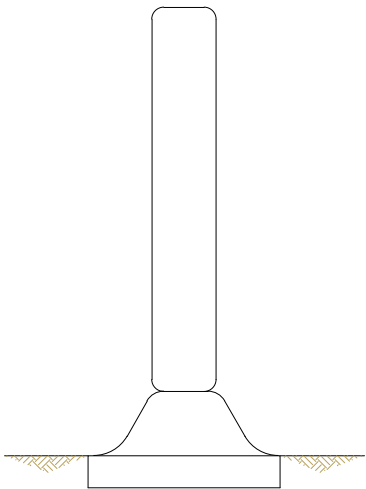
SIGN SURFACE	TAN ACID STAIN
LETTERING	AZURE BLUE
LOGOS	MATCH AS APPROPRIATE

LETTERING SCHEDULE:

A	NAME OF FACILITY	4"	ARIAL UPPER CASE ONLY
B	ACKNOWLEDGMENTS	2"	

DEDICATION SIGN NOTES:

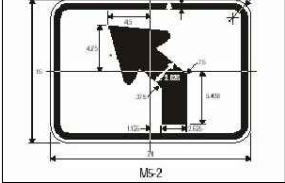
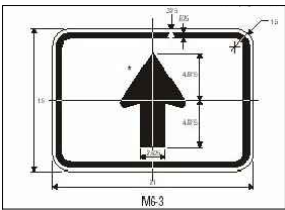
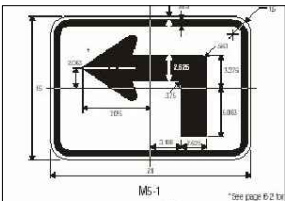
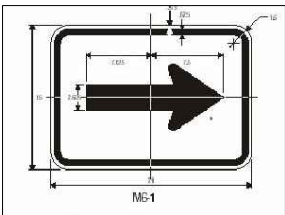
- LOGOS TO BE CAST IN FULL RELIEF AND PAINTED TO MATCH APPROPRIATE COLORS.
- LETTERS TO BE CAST IN 1/2" DEPTH AND PAINTED PER SPECIFICATIONS.
- SIGN TO BE FINISHED WITH MINIMUM (3) COATS OF ANTI GRAFFITI COATING.
- ALL AREAS OF SIGN TO BE SMOOTH FINISH WITH ALL CORNERS AND EDGES FULLY ROUNDED (RADIUS = 3 INCHES TYP).
- ALL WORDING IS PRELIMINARY, DEPENDANT UPON FINAL APPROVAL.
- CONCRETE MIX DESIGN SHALL BE PER THE SPECIFICATIONS.
- SIGN SHALL BE REINFORCED WITH #4 REBAR GRID TO BE APPROVED BY COUNTY DIRECTOR.
- SIGN AND BASE TO BE COVERED BY A (2) YEAR MANUFACTURER'S WARRANTY AGAINST MANUFACTURER'S DEFECTS.
- LIFTING POINT SHALL BE MODEL CX-51 OPEN COIL INSERT 1 1/4"x9 1/2" STAINLESS STEEL, AS MANUFACTURED BY MEADOW BURKE AT (800)804-6565, OR APPROVED EQUAL.
- SEE SITE PLAN FOR INSTALLATION LOCATION



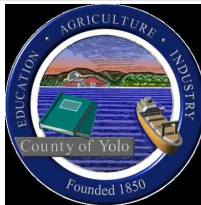
DIRECTIONAL SIGNAGE PROGRAM

SCALE: NTS

INSTALL INDICATED SIGN(S) PER YOLO COUNTY STANDARD DRAWING #4-28



APTIM ENVIRONMENTAL
& INFRASTRUCTURE, INC.



YOLO COUNTY GENERAL
SERVICES DEPARTMENT

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0	100% SUBMITTAL	09/21/18
1	GEN. REVISION	10/18/18

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FOR REVIEW ONLY

JEFFREY NEIL HILLSON
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ONE HALF SIZE

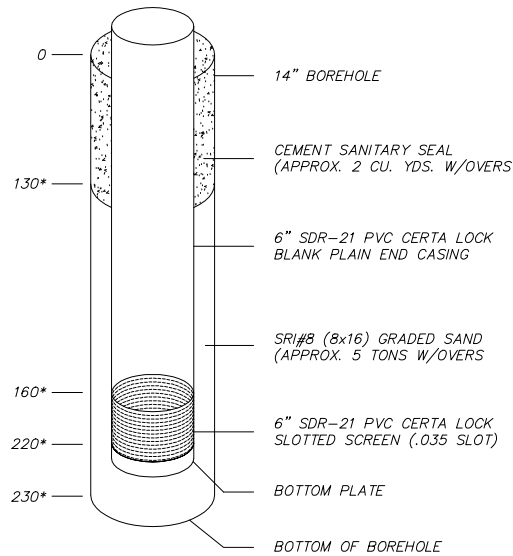
Document #

KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA

SIGNAGE PLAN

Project number	631235888
Date	Sept. 11, 2018
Designed by	RRE
Drawn by	TRS
Checked by	GJL
Plot Date	October 18, 2018

C17



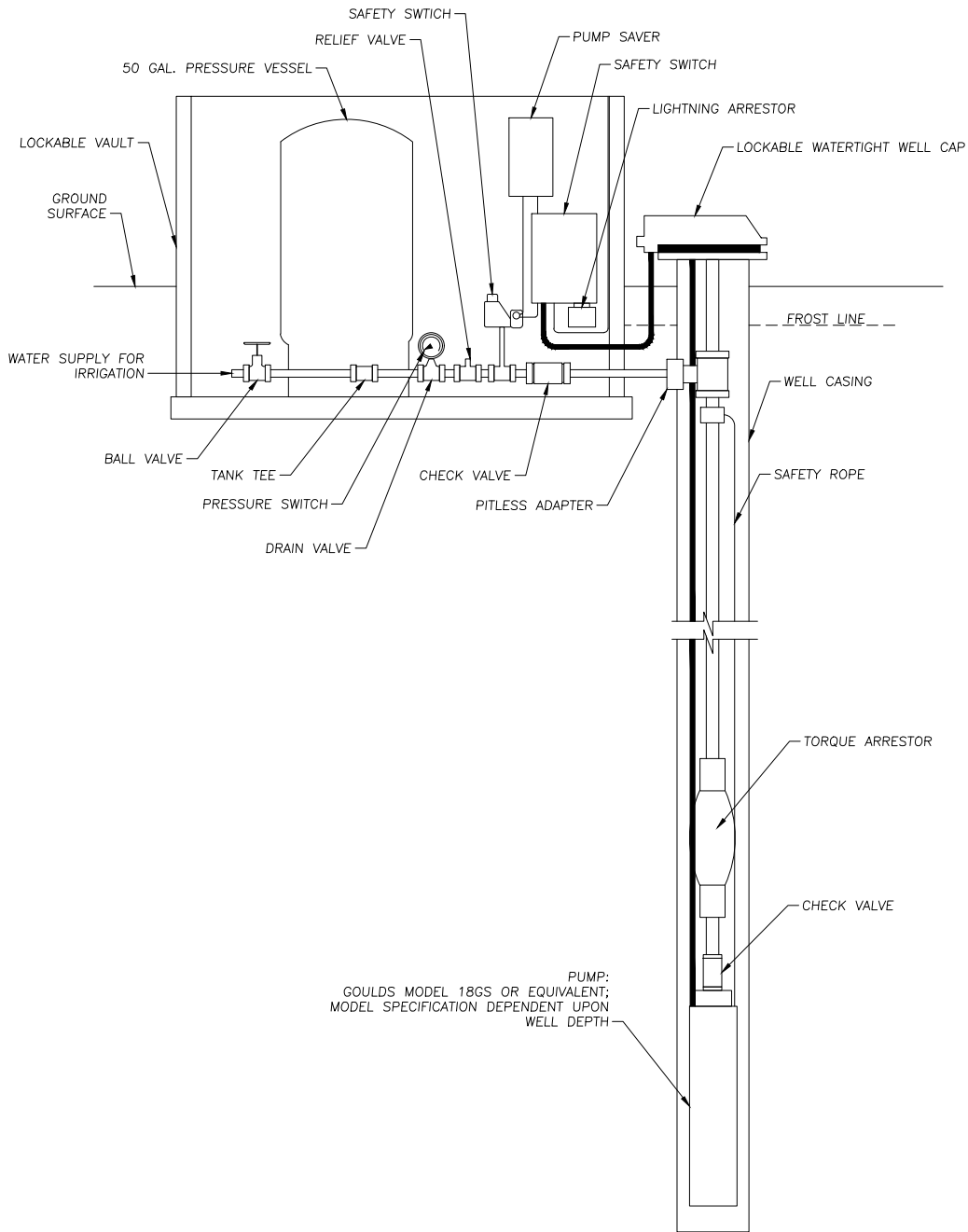
MATERIALS SUMMARY

6" SDR-21 PVC CERTA LOCK BLANK	160'
6" SDR-21 PVC CERTA LOCK SCREEN	60'
SRI#8 (8x16) GRADED SAND PACK	100'
CEMENT SANITARY SEAL	130

WELL PROFILE

SCALE: NTS

* APPROXIMATE DEPTHS TO BE DETERMINED IN THE FIELD BY THE DRILLING SUBCONTRACTOR BASED UPON A YIELDING, POTABLE WATER SOURCE.

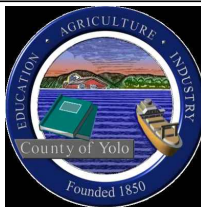


WELL PUMP AND PRESSURE TANK DIAGRAM

SCALE: NTS



APTIM ENVIRONMENTAL & INFRASTRUCTURE, INC.



YOLO COUNTY GENERAL SERVICES DEPARTMENT

REVISIONS

No.	Description	Date
A	60% SUBMITTAL	08/13/18
0	100% SUBMITTAL	09/21/18
1	GEN. REVISION	10/18/18

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Document #

KNIGHTS LANDING
BOAT LAUNCH
FACILITY
YOLO COUNTY,
CALIFORNIA

WELL PLAN

Project number	631235888
Date	October 5, 2018
Designed by	TA
Drawn by	TRS
Checked by	TA
Plot Date	October 5, 2018

C19

PLANTING NOTES

- MULCH:** INSTALL A UNIFORM 3 INCH COVERING OF MULCH, IN ALL PLANTING AREAS, PER SPECS.
- EXISTING PLANT MATERIAL:** PROTECT ALL EXISTING PLANT MATERIAL TO REMAIN. CONTRACTOR TO REPAIR ANY DAMAGES INCURRED AS A DIRECT RESULT OF THIS CONTRACT TO THE OWNER'S SATISFACTION AT NO ADDITIONAL COST.
- NATIVE SEED MIX:** CONTRACTOR SHALL HYDROSSED ALL DISTURBED SOIL RESULTING FROM GRADING AND OTHER CONSTRUCTION OPERATIONS. HATCHES SHOWN ON PLANS INDICATE MINIMUM AMOUNTS. CONTRACTOR TO SEED ALL DISTURBED SOILS AS PART OF CONSTRUCTION.
- CLEAR AND GRUB:** CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING VEGETATION, UNLESS OTHERWISE INDICATED, AS REQUIRED FOR THE IRRIGATION, AND PLANTING AREAS ONLY. LIMITS OF CLEARING SHALL BE REVIEWED WITH OWNER PRIOR TO COMMENCEMENT OF WORK. STRIP ALL ORGANIC MATTER TO A SUFFICIENT DEPTH TO COMPLETELY REMOVE SUCH MATERIAL. REFER TO CIVIL'S DEMOLITION PLAN FOR TREE REMOVAL.

PLANTING LEGEND

- ⊙ EXISTING TREE TO REMAIN
- PROPERTY LINE
- MULCH LIMITS

I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN.

Benjamin W. Woodside BENJAMIN W. WOODSIDE

PLANT SCHEDULE

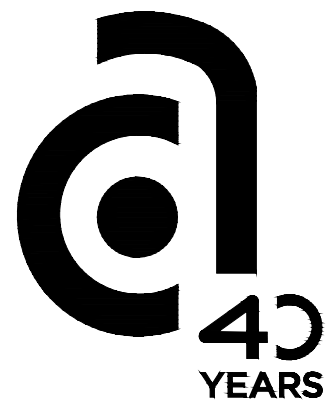
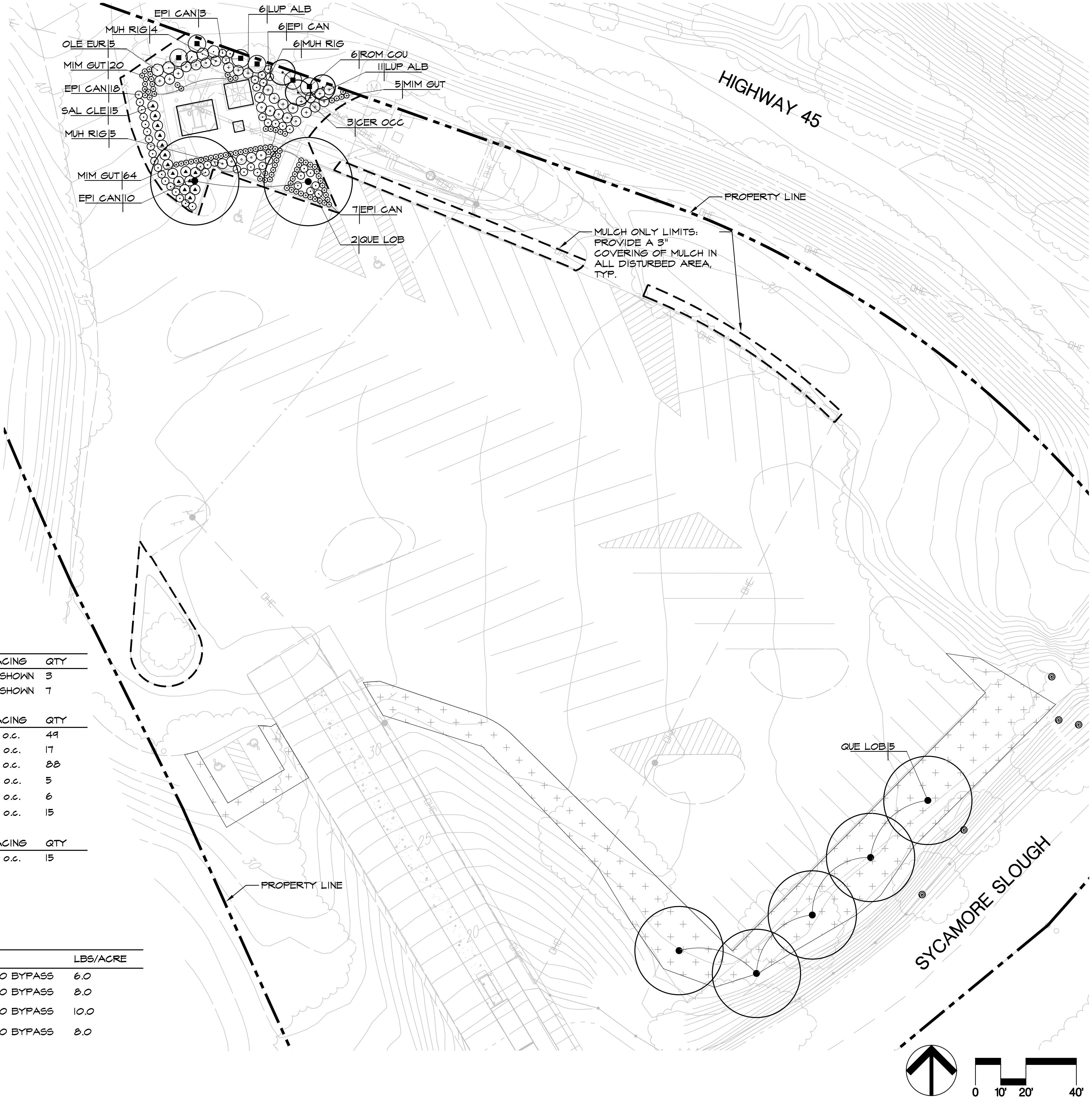
TREES	BOTANICAL NAME / COMMON NAME	SIZE	WATER USE	SPACING	QTY
CER OCC	CERCIS OCCIDENTALIS / WESTERN REDBUD	15 GAL	L	AS SHOWN	3
QUE LOB	QUERCUS LOBATA / VALLEY OAK	15 GAL	L	AS SHOWN	7

SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	WATER USE	SPACING	QTY
EPI CAN	EPILOBIUM CANUM / HUMMINGBIRD TRUMPET	1 GAL	L	36" o.c.	49
LUP ALB	LUPINUS ALBIFRONS / BUSH LUPINE	1 GAL	L	48" o.c.	17
MIM GUT	MIMULUS GUTTATUS / SEEP MONKEYFLOWER	1 GAL	L	24" o.c.	88
OLE EUR	OLEA EUROPAEA 'LITTLE OLLIE' TM / LITTLE OLLIE OLIVE	1 GAL	L	60" o.c.	5
ROM COU	ROMNEYA COULTERI / MATILJA POPPY	1 GAL	L	84" o.c.	6
SAL CLE	SALVIA CLEVELANDII 'WINIFRED GILLMAN' / CLEVELAND SAGE	1 GAL	L	48" o.c.	15

GRASSES	BOTANICAL NAME / COMMON NAME	SIZE	WATER USE	SPACING	QTY
MUH RIG	MUHLBERGIA RIGENS / DEER GRASS	1 GAL	L	48" o.c.	15

NATIVE SEED MIX

	BOTANICAL NAME / COMMON NAME	ECOTYPE/ ORIGIN	LBS/ACRE
	ELYMUS GLAUCUS / BLUE WILDRYE	YOLO COUNTY: YOLO BYPASS	8.0
	HORDEUM BRACHYANTHERUM / MEADOW BARLEY	YOLO COUNTY: YOLO BYPASS	8.0
	ELYMUS TRITICOIDES / CREEPING WILDRYE	YOLO COUNTY: YOLO BYPASS	10.0
	ELMUS TRACHYCALUS / SLENDER WHEATGRASS	YOLO COUNTY: YOLO BYPASS	8.0

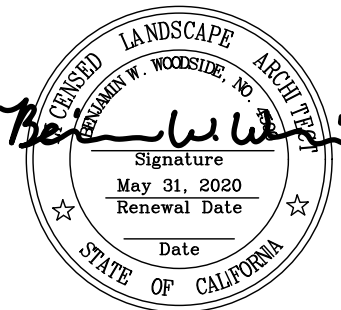


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Revisions

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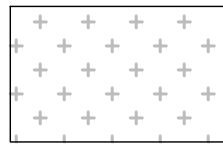


PLANTING PLAN
KNIGHTS LANDING BOAT LAUNCH FACILITY
YOLO COUNTY, CA

Date	10/11/2018
Scale	AS SHOWN
Drawn By	AH/CR
Checked	BW
Project No.	18041
Cadd File	

Sheet No.
L1.00
of 5

IRRIGATION SCHEDULE



POINT-SOURCE EMITTER AREA HUNTER HE-40-B. INSTALL 2 DRIP EMITTERS PER PLANT AND CONNECT TO PLD BLANK TUBING WITH 1/4" LINE.

○

POINT SOURCE DRIP EMITTER HE-40-B. INSTALL 3 DRIP EMITTERS PER TREE AND CONNECT TO PLD BLANK TUBING WITH 1/4" LINE.

☒

DRIP CONTROL ZONE KIT, HUNTER ICZ-101-25
1" ICV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.

⊕

REMOTE CONTROL VALVE, HUNTER ICV-G (WITH PRESSURE REGULATOR), SIZE PER PLANS

☑

QUICK COUPLER VALVE, HUNTER HQ-44LRC YELLOW RUBBER LOCKING COVER

☒

GATE VALVE NIBCO T-113, SIZE PER PLANS

Ⓜ

MASTER VALVE, HUNTER ICV-G-DC 1-1/2", NORMALLY OPEN

☐

CONTROLLER, HUNTER IC-1200, 12 STATION CONTROLLER, OUTDOOR MODEL, METAL PEDESTAL. COMMERCIAL USE. WITH ONE ICM-600 MODULE INCLUDED. CONTACT DON FRANKLIN AT HUNTER FOR ADDITIONAL INFORMATION AT 916-899-4437

FS

FLOW SENSOR HUNTER HFS-150, 1-1/2" SCHEDULE 40 SENSOR BODY, 24 VAC, 2 AMP.

BP

CUSTOMFLOW BOOSTER PACKAGE 9.7CALLAO6132018-1/2VFD BOOSTER PUMP WITH 1/2HP 3-PH, 56 FRAME, 3450RPM, ODP PUMP MOTOR. WITH BRONZE IMPELLER RATED FOR 9.7 GPM AT 25-PSI + PUMP LOSSES. CONTACT MIKE PARILO FOR ADDITIONAL INFORMATION AT 1-888-774-7867

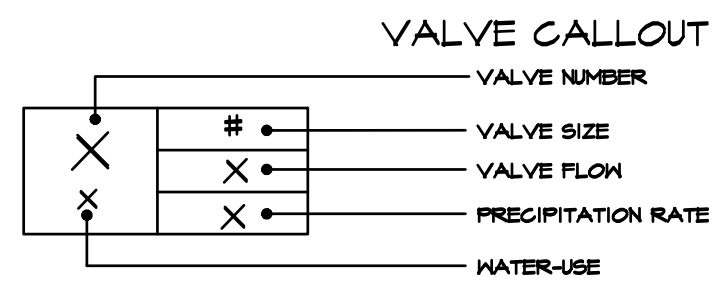
----- DISTRIBUTION TUBING, POLYETHYLENE 1/4" SIZE

----- IRRIGATION LATERAL LINE, PVC CLASS 200 SDR 21, SIZE PER PLAN

----- IRRIGATION MAINLINE, PVC SCHEDULE 40, 1 1/2" SIZE

===== PIPE SLEEVE, CPVC SCHEDULE 40

----- PROPERTY LINE



1	1"
LOW	0.99
	2.02 in/h
2	1"
LOW	-
	0 in/h

REFER TO CIVIL PLANS FOR IRRIGATION POINT OF CONNECTION

ELECTRICAL POINT OF CONNECTION PER ELECTRICAL PLANS. RUN 2 CONDUITS TO BOOSTER PUMP AND CONTROLLER

HIGHWAY 45

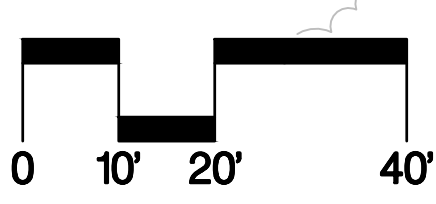
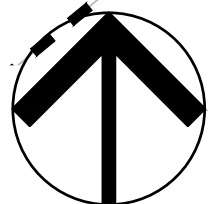
PROPERTY LINE

PROPERTY LINE

TEMPORARY IRRIGATION FOR PLANT ESTABLISHMENT

3	1"
LOW	1
	2.02 in/h

SYCAMORE SLOUGH



IRRIGATION NOTES

1. **SPECIFICATIONS:** SEE IRRIGATION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. **VERIFICATION:** SYSTEM DESIGN IS BASED ON (30) P.S.I. AND (10) G.P.M. AVAILABLE AT DISCHARGE OUTLET OF METER OR OTHER POINT OF CONNECTION. CONTRACTOR SHALL VERIFY SAME AND NOTIFY LANDSCAPE ARCHITECT IF SUCH DATA ADVERSELY AFFECTS THE OPERATION OF THE SYSTEM. SUCH NOTICE SHALL BE MADE IN WRITING AND PRIOR TO COMMENCING ANY IRRIGATION WORK.

3. **UTILITIES:** CONTRACTOR SHALL VERIFY LOCATION OF ALL ON-SITE UTILITIES. RESTORATION OF DAMAGED UTILITIES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

4. **SCHEMATIC:** SYSTEM FEATURES ARE SHOWN SCHEMATICALLY FOR GRAPHIC CLARITY. INSTALL ALL PIPING AND VALVES IN COMMON TRENCHES WHERE FEASIBLE AND INSIDE PLANTING AREAS WHENEVER POSSIBLE. ALL VALVES SHALL BE LOCATED IN GROUND COVER OR SHRUB AREAS WHENEVER POSSIBLE.

5. **CODES:** IRRIGATION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL CODES AND MANUFACTURER'S SPECIFICATIONS. NOTIFY LANDSCAPE ARCHITECT BY TELEPHONE AND IN WRITING OF ANY CONFLICTS PRIOR TO INSTALLATION.

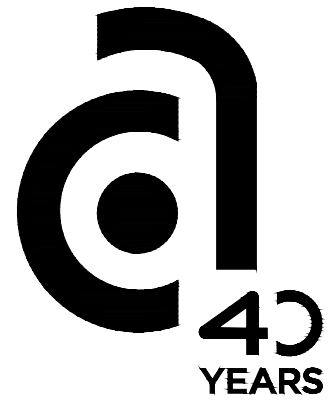
6. **SLEEVEING:** CONTRACTOR SHALL ADEQUATELY SIZE ALL SLEEVES SHOWN ON PLAN. SLEEVES SHALL BE INSTALLED AT THE NECESSARY DEPTHS PRIOR TO PAVEMENT CONSTRUCTION. SLEEVEING SHALL EXTEND 1'-0" FROM EDGE OF PAVEMENT INTO LAWN OR PLANTING AREA, AND SHALL HAVE ENDS CLEARLY MARKED ABOVE GRADE.

7. **BACKFLOW DEVICES:** LOCATE ALL BACKFLOW DEVICES IN SHRUB OR GROUND COVER AREAS. DEVICES SHALL BE LOCATED WITHIN SHRUB PLANTING AREAS AND IN AN INCONSPICUOUS LOCATION APPROVED PRIOR TO INSTALLATION BY THE LANDSCAPE ARCHITECT.

8. **QUICK COUPLING VALVES:** INSTALL ON TRIPLE SWING JOINT. LOCATE 12" AWAY FROM EDGE OF WALKS, WALLS, CURBS, AND HEADERBOARDS WITHIN PLANTING AREAS. PROVIDE OWNER WITH ONE OPERATING KEY, TWO SETS OF LOCKING COVER KEYS, AND ONE SWIVEL HOSE ELL.

9. **CONTROLLER:** INSTALL CONTROLLER PER MANUFACTURER SPECIFICATIONS. ALL ABOVE-GRADE CONDUIT EITHER 24V. OR 110V. SHALL BE RIGID STEEL AND SECURELY FASTENED TO STRUCTURE AND TO CONTROLLER.

10. **FLUSH VALVE:** INSTALL FLUSH VALVE AT ALL STATIONS, PER DETAIL 7/L3.01.



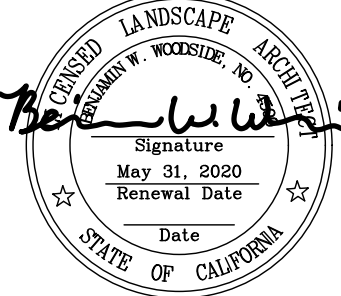
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Revisions

NO.	DESCRIPTION

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IRRIGATION PLAN
KNIGHTS LANDING BOAT LAUNCH FACILITY
YOLO COUNTY, CA


Date	10/11/2018
Scale	AS SHOWN
Drawn By	AH/CR
Checked	BW
Project No.	18041
Cadd File	

Sheet No.
L2.00
of 5



Calculation Cover Sheet

CLIENT: Yolo County PROJECT NAME: Knight's Landing		PAGE COUNT SUMMARY		CALC BODY LAST PAGE #		
CALCULATION TITLE: Channel Blockage Screening		TOTAL CALC BODY : 3 PAGES TOTAL ATTACH. :14 PAGES TOTAL PAGES :17		17		
CALCULATION NUMBER						
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.		
631235888	- 001	- CV	- CL	- 01001		
Company Job No.: 63125888				Page: 1		
Description: Blockage Screening Calculation						
Prepared By: RRE		Date: 08-21-2018		Checked By: Date: 08-21-2018		
Revision History						
REV NO.	REV DATE	PREPARER PRINTED NAME, SIGNATURE & DATE	REVIEWER / CHECKER PRINTED NAME, SIGNATURE & DATE	REVISION DESCRIPTION (See Project EDMS Plan for requirements.) (Add additional pages and reference them as needed.)	CONFIRMATION REQUIRED	
					YES	NO
A	08-21-2018	Ryan Erickson 08-21-2018		Blockage Screening Calculation		X

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	-	01001
Company Job No.: 631235888					Page:
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018	Checked By:	Date: 08-21-2018	

Calculation Table of Contents

Calculation Title	Channel Blockage Screening Calculation
Calculation Number	631235888-001-CV-CL-01001
Project Name/Number	Knight's Landing


Table of Contents

Page Numbers

Calculation Cover Sheet	1
Calculation Table of Contents.....	2
Calculation Body	3

Attachments

	Number of Pages	Last Page Number
A – New Dock vs Existing Dock: Blockage Calculation	4	7
B- Blockage at Section B	2	9
C – Rip Rap Blockage at Section C	2	11
D- Plan and Critical Cross Sections	3	12
E- Proposed Dock Drawings and Existing Dock Information	4	16

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	-	01001
Company Job No.: 631235888					Page:
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018		Checked By:	Date: 08-21-2018

Calculation Body

Objective

The objective of this calculation is to determine the total amount of blockage screening within the Sycamore Slough's cross section due to the proposed boat launch renovations.

Methodology

The total amount of blockage within the channel is composed of three types of obstructions. The first obstruction type is defined as the physical objects that restrict the channel flow. If the object's draft cannot be determined, it is assumed that 75% of the object's full height is used when calculating the screen area. The steel frame floating dock and mooring buoy are examples of physical obstructions.

The next type of obstruction is defined as debris build-up. The amount of possible debris that can build up around the objects within the channel section must be accounted for in the blockage screening calculation. It is assumed debris build up will extend 2' below any floating object within the channel's cross section.

This calculation shows the comparison of blockage produced from the proposed dock and the existing dock at the site. The physical blockage and debris build up is evaluated for each section in Attachment A.

The third type of blockage is defined as any riprap that is placed above the channel's existing grade. The proposed riprap has a cross sectional area of 40ft², which can be seen in cross sections B and C.

Attachment B includes the blockage from the restroom building and riprap section. Attachment C shows the percentage of blockage at Cross Section B, which is only due to the riprap.

Assumptions


1. 75% of the object's full height is used to determine the object blockage.
2. Debris blockage is assumed to extend 2 feet below the floating object and spreads across the object's entire length.

Reference

1. Knight's Landing Boat Launch Facility Renovation Drawings.
2. USACE Blockage Screening Calculation Guidelines.
3. Channel Cross Sections in Attachment D.


Conclusion

The proposed steel frame float will produce 36% less blockage screening than the existing dock at the site. The blockage at Cross Section B (Restroom building and riprap section) produces a 0.975% blockage of the design discharge, which satisfies the 1% criteria. Moreover, the proposed riprap blockage at Cross Section C will be 0.47% of the design discharge.

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888					Page: 4
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018	Checked By:		Date: 08-21-2018

Attachment A:

New Dock vs Existing Dock Blockage Calculation

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888				Page: 5	
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018		Checked By: Date: 08-21-2018	

Proposed Dock Blockage

A.) Physical Blockage

Floating Dock	
Length (ft)	60
Full Depth (ft)	2.5
75% Depth (ft)	1.875
Physical Blockage (ft ²)	112.5

Mooring Buoy	
Diameter (in)	12
Area (ft ²)	0.785
.75 % Area	0.6

Total Amount of Physical Blockage: 113.1 ft²

B.) Debris Blockage

Debris Blockage	
Depth Below Dock (ft):	2
Length (ft):	60
Area (ft ²):	120

Total amount of Blockage Screening (ft²) : 233.1

$$113.1 + 120 = 233.1 \text{ ft}^2$$



CHANNEL BLOCKAGE SCREENING

PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.
631235888	- 001	- CV	- CL	01001
Company Job No.: 631235888				Page: 6
Description: Channel Blockage				
Prepared By: RRE		Date: 08-21-2018	Checked By:	Date: 08-21-2018

Existing Dock Blockage

A.) Physical Blockage

Floating Dock	
Length (ft)	89
Full Depth (ft)	2.58
75% Depth (ft)	1.9375
Physical Blockage (ft ²)	172.44

Piles		
	Pile 1	Pile 2
Diameter (ft)	1	1
Length (depth from mudline to water surface)	6	2
Area (ft ²)	6	2

Total Area (ft²): 8

Total Physical Blockage (ft²) : 180.44


B.) Debris Blockage

Debris Blockage from Dock	
Length	89
Depth	2
Area	178

Debris Blockage from Piles	
Width (2* pile diameter)	2
Depth (ft)	2
Number of Piles	2
Area (ft ²)	8

Total Debris Blockage (ft²) : 186

Total amount of Blockage Screening (ft²) : 366.44


		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888				Page: 7	
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018		Checked By: Date: 08-21-2018	

Comparison

New Dock (ft²) : 233


Existing Dock (ft²) : 366

**36% Drop in the amount of Blockage from Existing
Dock Blockage to Proposed Dock Blockage**

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888					Page: 8
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018	Checked By:		Date: 08-21-2018

Attachment B:

Blockage at Section B

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888					Page: 9
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018		Checked By: Date: 08-21-2018	

Blockage at Cross Section B


Riprap Cross Sectional Area (ft²)= 39.4

Restroom Building	
Finished Slab EL:	37.5
Design Water EL:	41.84
Height of Blockage (ft):	3.6
Width of Building (ft):	12
Area (ft ²)	43.2

Total Blockage (ft²)= 82.6

Channel Cross Sectional Area (Section B) at Flood Stage Water Level El. 41.84 = **8,470.2ft²**

Percentage of Blockage at Cross Section B: 0.975%

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888					Page: 10
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018		Checked By: Date: 08-21-2018	

Attachment C:


Blockage at Cross Section C (due to Riprap)

Blockage at Cross Section C

Rip Rap Cross Sectional Area: 40 ft²

Estimated Channel Cross Sectional Area (ft²) at
Flood Stage Water Level El. 41.84 = 8,470.2ft²

Blockage Percentage= 0.47%

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888				Page: 10	
Description: Channel Blockage					
Prepared By: RRE		Date: 08-21-2018	Checked By:	Date: 08-21-2018	

Attachment D:

Site Plan and Critical Cross Sections

DRAWING NUMBER
631235888-D1

APPROVED BY

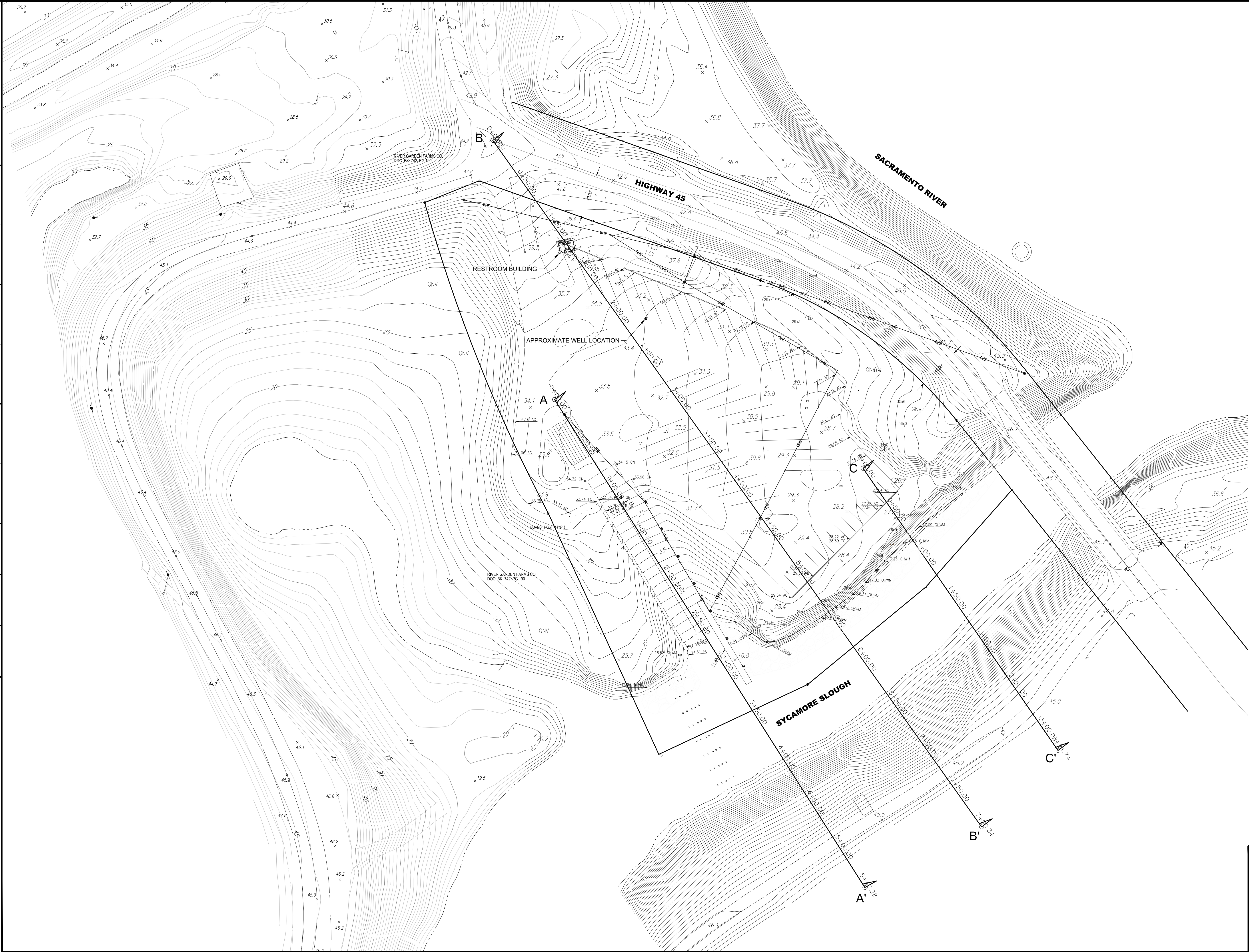
CHECKED BY

DRAWN BY
SCHAEFFER 8-8-18

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SAC

X-REF

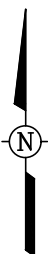
IMAGE



NOTES:
THIS EXHIBIT WAS PREPARED WITHOUT THE AID OF A CURRENT TITLE REPORT AND CONTAINS NO EASEMENT INFORMATION. BOUNDARY WAS DETERMINED FROM DEED DESCRIPTION AND EXISTING PHYSICAL FEATURES.

BENCHMARK: NGS BENCHMARK F 859 RESET 1993, A 3 1/2" BRASS DISC ON NORTHWEST END OF BRIDGE OVER SLOUGH. ELEVATION= 46.43'. DATUM= NAVD 88.

CN ... CONCRETE
AC ... ASPHALTIC CONCRETE
FC ... FACE OF CURB
TC ... TOP OF CURB
TFW ... TOP FACE OF WALK
OHWM ... ORDINARY HIGH WATER MARK
OHE ... OVERHEAD ELECTRIC



SCALE
0 40 80 FEET



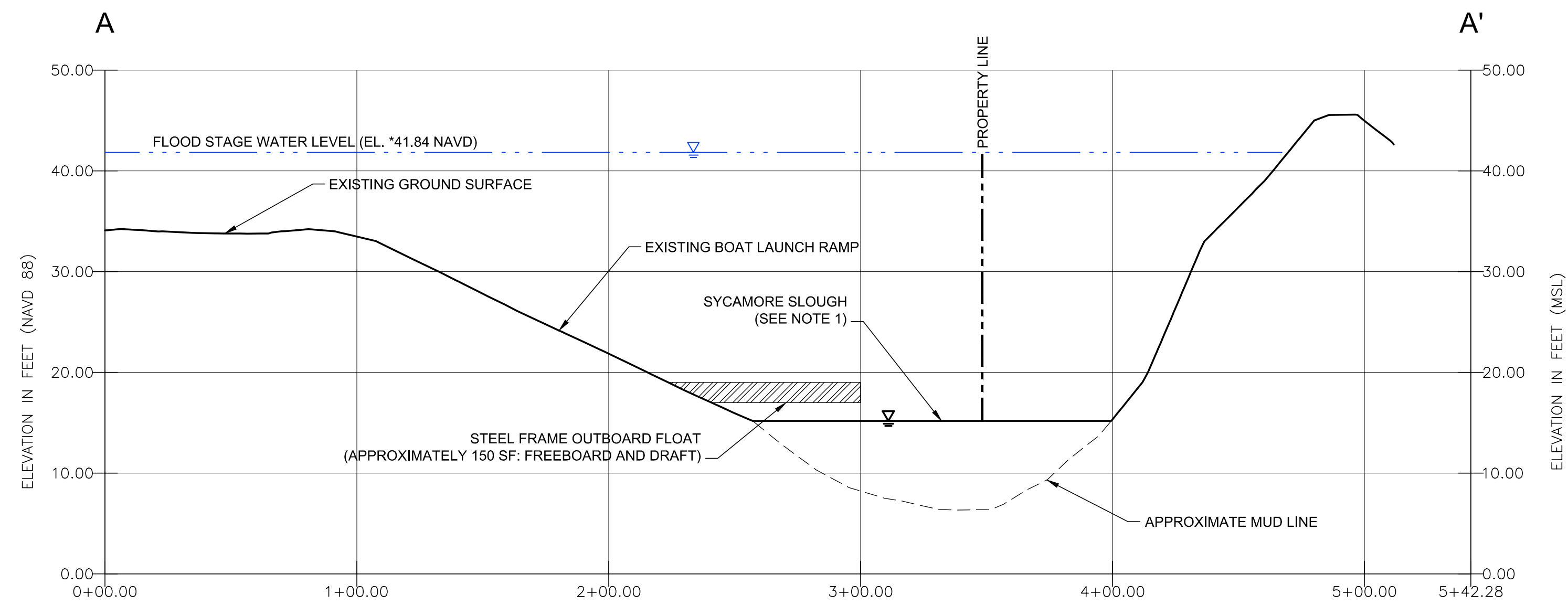
APTIM
180 PROMENADE CIRCLE, SUITE 320
SACRAMENTO, CALIFORNIA

FIGURE

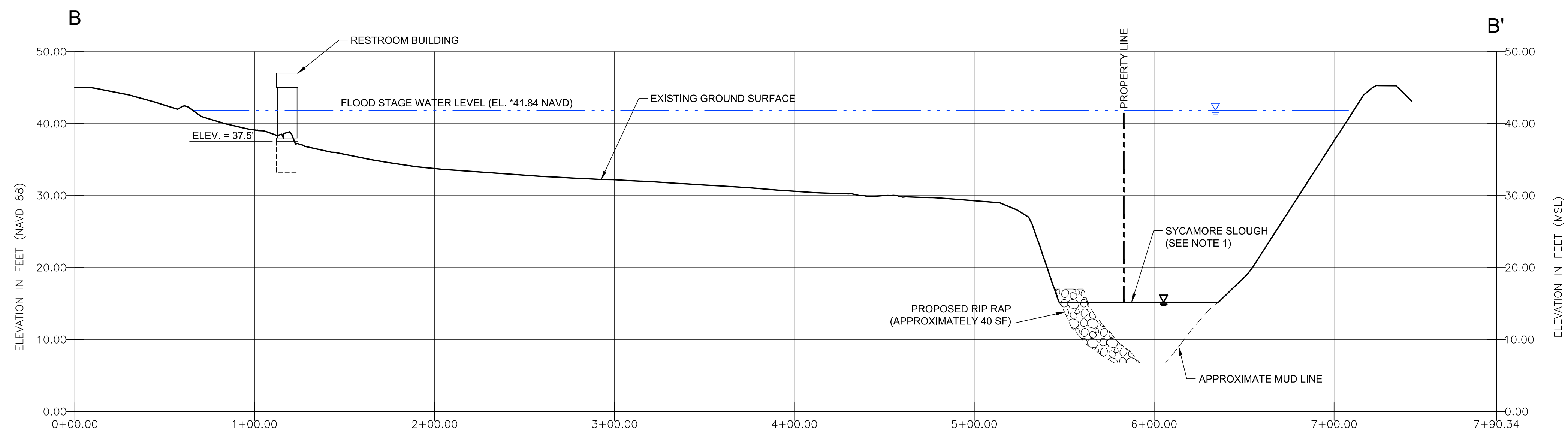
PLAN

KNIGHTS LANDING BOAT LAUNCH FACILITY
KNIGHTS LANDING, YOLO COUNTY, CALIFORNIA

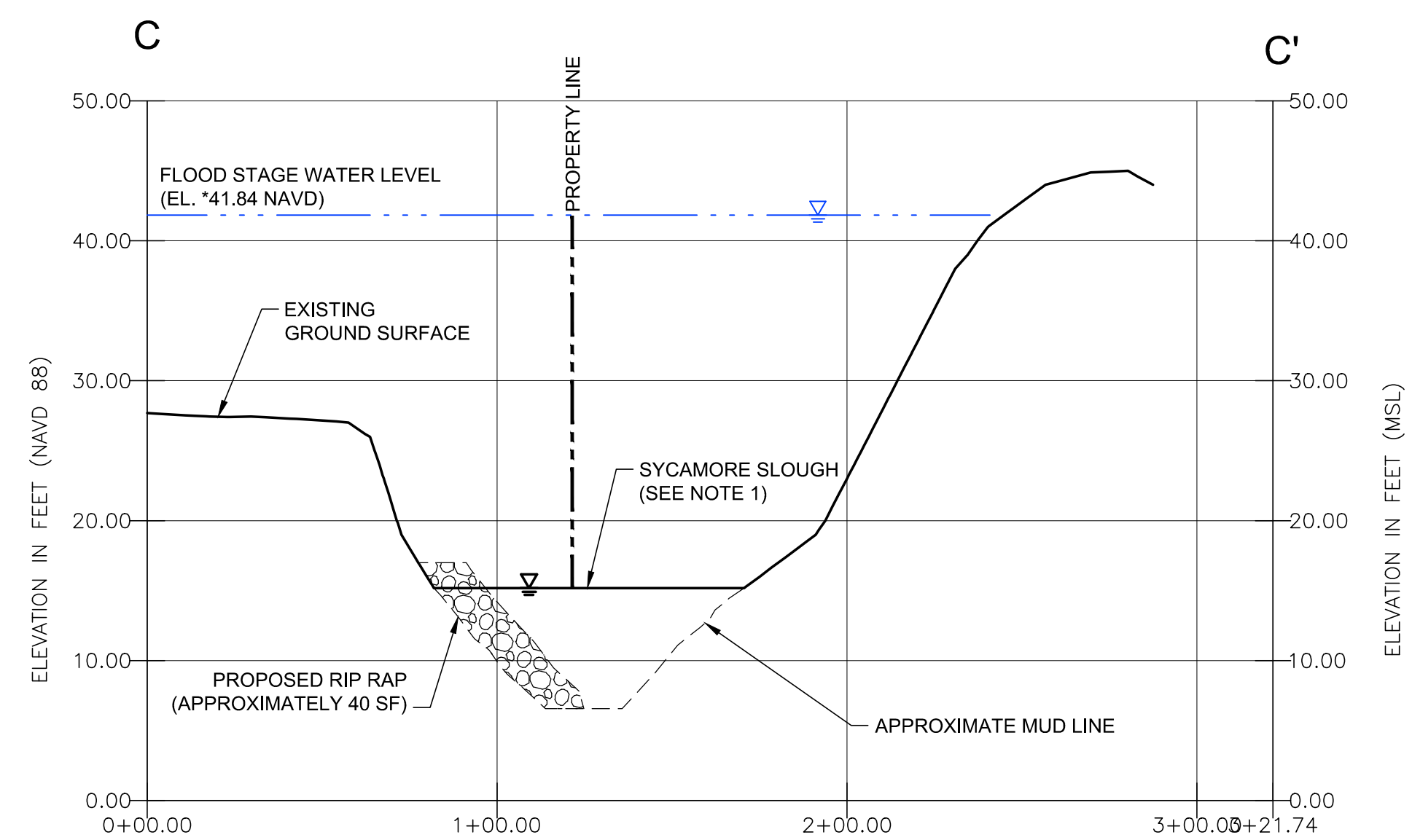
IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	SAC	SCHAEFFER	8-13-18	---	631235888-D1



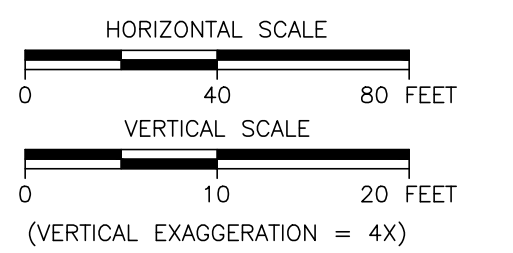
PROFILE A-A'




PROFILE B-B'



PROFILE C-C'



NOTES:
1. ORDINARY HIGH WATER MARK ELEVATION PER TOPOGRAPHIC SURVEY BY MORROW SURVEYING (DATED MARCH 2018).




APTIM
180 PROMENADE CIRCLE, SUITE 320
SACRAMENTO, CALIFORNIA

FIGURE

PROFILES

KNIGHTS LANDING BOAT LAUNCH FACILITY
KNIGHTS LANDING, YOLO COUNTY, CALIFORNIA

		CHANNEL BLOCKAGE SCREENING			
PROJECT NO.	FEATURE NUMBER	DISCIPLINE CODE	DOCUMENT TYPE	SEQUENCE NO.	
631235888	- 001	- CV	- CL	01001	
Company Job No.: 631235888					Page: 12
Description: Channel Blockage					
Prepared By: RRE		Date: 08-07-2018	Checked By:		Date: 08-07-2018

Attachment E:

Proposed Dock Drawings and Existing Dock
Information



Field Activity Daily Log Continuation Sheet

DATE			
NO.			
SHEET		OF	

Project Name: **Existing Dock Information**

Project No.

Field Activity Subject:

Description of Daily Activities and Events:

