Meeting of the Central Valley Flood Protection Board
May 8, 2015

Staff Report

Sacramento Area Flood Control Agency (SAFCA)
Sacramento River East Levee – Reach 19A, Sacramento County

1.0 – ITEM

Consider Central Valley Flood Protection Board (Board) approval to place fill and complete various construction activities along the landside of the Sacramento River east levee (Attachment A) through Resolution 2015-06 (Attachment B), which approves draft Permit No. 19004 (Attachment C).

2.0 – APPLICANT

Sacramento Area Flood Control Agency (SAFCA)

3.0 – PROJECT LOCATION

The project is located along Garden Highway, immediately southeast of Interstate 80, along the landside of the left (east) bank of the Sacramento River in Sacramento County (Attachment A). The Sacramento River east levee (SREL) protects the urban area within the Natomas Basin.

4.0 – PROJECT DESCRIPTION

SAFCA is proposing to place approximately 60,000 cubic yards (CY) of fill material (sourced from the American River floodplain at River Mile 0.5 - Permit No. 19005 BD approved in March 2015) along the landside levee toe, replace a paved access ramp, remove an existing concrete lined irrigation canal at the landside toe of levee, remove three paved access ramps, remove trees and brush within the project limits, and re-vegetate the disturbed project area with native grass following fill placement.

5.0 – AUTHORITY OF THE BOARD

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

Title 23:

- § 6 – Need for a Permit
- § 112 – Streams Regulated and Nonpermissible Work Periods
- § 116 – Borrow and Excavation Activities – Land and Channel
- § 120 – Levees
- § 121 – Erosion Control
- § 131 – Vegetation

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

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

- The U.S. Army Corps of Engineers (USACE) decision letter was received on April XX, 2015 and indicated that the USACE District Engineer has no objection to the project, subject to conditions. This letter has been incorporated into the permit as Exhibit A.

- Reclamation District 1000 (RD 1000) adopted Resolution 2010-02 and conditionally endorsed this project on January 8, 2010 (Attachment D). Board staff has incorporated the intent of all nine of RD 1000's conditions into the draft permit.

7.0 – PROJECT ANALYSIS

7.1 – Project Construction Details

The fill will be placed along the landside of the SREL from approximately Station 857 to 869. The fill is trapezoidal in plan view, tapering from approximately 1,000 feet along the toe of the existing levee to roughly 500 feet at the landward limit. The top of the fill will be roughly four (4) to eight (8) feet above the existing ground (Attachment E).

The plans are based on placement of 60,000 CY of fill. The eastern extent may be adjusted to account for a lower excavation yield from the River Mile 0.5 site and the height of the fill could be greater if there is excess yield from the River Mile 0.5 excavation.

A 30-foot-wide asphalt access ramp will be replaced on top of the embankment centered approximately at SREL Station 862+80 to provide access from Garden

Highway. This is the current location of an emergency vehicle access ramp and it will also provide access to the adjacent City of Sacramento property. The ramp from Garden Highway will split creating a 20-foot-wide secondary access to Wheelhouse Avenue.

Two other existing ramps will be removed and combined with the replacement ramp; trees and brush within the construction limits will be removed; existing poles and overhead utility lines will be preserved in place; and a pipe gate will be installed to restrict access from Garden Highway to the Wheelhouse Avenue access ramp to emergency and operations and maintenance vehicles.

Assuming approximately 60 days of material hauling at approximately 1,000 cubic yards of material per day via haul trucks and an assumed 12 CY capacity per truck, then the transportation of material would require 100 round-trip truck trips per day. The material would be placed along the landside toe of the Reach 19A levee and construction of the proposed fill would require two to three pieces of heavy construction equipment to be operating on-site on a given day.

7.2 – Hydraulic Summary

No hydraulic analysis is required for this project as the proposed construction is on the landside of the project levee and no work is proposed that will affect the waterside of the adjacent levee or the Sacramento River floodway.

7.3 – Geotechnical Summary

Board staff agrees with the technical evaluations performed by SAFCA which indicate that the proposed project and fill placement will not cause adverse geotechnical impacts to the Sacramento River east levee (Attachment F).

7.4 –Real Estate Considerations

SAFCA, RD 1000 and the City of Sacramento own the lands on and adjacent to the project footprint, and therefore no additional lands are being acquired for this project.

8.0 – CEQA ANALYSIS

Board staff has prepared the following CEQA analysis:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft Environmental Impact Statement /Draft Environmental Impact Report (DEIS/DEIR) (SCH No. 2009112025, July 2010), FEIS/EIR (SCH No. 2009112025,

October 2010), and the Mitigation Monitoring and Reporting Program (MMRP) for the Natomas Levee Improvement Program, Phase 4b Landside Improvements Project (incorporated herein by reference and available at the Central Valley Flood Protection Board or SAFCA offices).

SAFCA, as the lead agency, determined that the project would have a significant effect on the environment November 12, 2010 and adopted Resolution No. 2010-145 (including Statement of Facts, Findings, Impacts and Mitigation Measures, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program). The Notice of Determination was filed with the State Clearinghouse on November 15, 2010. These documents including project design and Resolution No. 2010-145 may be viewed or downloaded from the Central Valley Flood Protection Board website at http://www.cvfpb.ca.gov/meetings/2015/04-24-2015.cfm under a link for this agenda item.

8.1 – Impacts that can be Mitigated

The significant impacts and the mitigation measures to reduce them to less than significant are adopted in SAFCA Resolution No. 2010-145, dated November 12, 2010 (which includes a Statement of Facts, Findings, Impacts and Mitigation Measures, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program). Many of the significant impacts associated with the Phase 4b Landside Improvements Project, which includes the seepage berm at Reach 19A, are reduced to a less-than-significant level by mitigation measures identified in the MMRP and have been incorporated into the project for mitigating impacts to transportation.

Based on its independent review of the DEIR/FEIR and SAFCA Resolution No. 2010-145, the Board finds that for each of these significant impacts, changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the EIR. Moreover, such changes or alterations are within the responsibility and jurisdiction of another public agency, SAFCA, and such changes have been adopted by that agency.

8.2 – Significant Unavoidable Adverse Impacts of the Project

The following impacts of the proposed project remain significant following adoption and implementation of the mitigation measures described in the EIR:

- Agricultural Resources - The project would convert Important Farmland from agricultural production to nonagricultural uses and temporary and permanent cancellation of lands under Williamson Act contracts;

- Land Use – The project would be potentially inconsistent with the Airport Master Plan, Airport Comprehensive Land Use Plan, Airport Wildlife Hazard Management Plans, American River Parkway Plan and Wild and Scenic Rivers Act;

- Biological Resources - Loss of woodland habitats (short-term [10–15 years] would result until replacement plantings mature) and impacts on Swainson's hawk and other special-status birds. Loss or disruption to existing wildlife corridors;

- Cultural Resources - Potential damage or disturbance to known prehistoric resources or previously undiscovered cultural resources, including human remains, from ground-disturbance or other construction-related activities;

- Transportation - The project will result in temporary increase in traffic on local roadways. Residents and businesses would experience temporary disruption due to road closures, detours, construction, and boat launch facility temporary closure;

- Air Quality - The project would result in temporary construction related emissions of reactive organic gases, nitrogen oxides, and particulate matter;

- Noise - The project would result in temporary generation of temporary, short-term construction noise, exposure of sensitive receptors to excessive groundborne vibration and increased traffic noise from construction and hauling activities;

- Recreation - The project would result in both temporary and permanent impacts to a number of public and private recreational facilities adjacent to the project, including the proposed Natomas Levee Class I Bike Trail Project; and

- Visual Resources - The project would result in the alteration of scenic vistas, scenic resources, and existing visual character of the project area and new sources of light and glare (during construction).

The Board finds that none of the significant unavoidable adverse impacts of the project are within the Board's jurisdiction. The Board also finds that the specific economic, legal, social, technological or other benefits of the project outweigh the unavoidable adverse environmental effects, which are thus considered to be "acceptable."

8.3 – Statement of Overriding Considerations

SAFCA adopted Resolution No. 2010-145, including the Statement of Overriding Considerations. The Board concurs with this Statement.

The Board has independently considered the significant and unavoidable environmental impacts of the proposed project. The Board has also considered the benefits of the project, including increasing the level of flood protection and safety for the areas of Sacramento County and Sutter County encompassed within the Natomas Basin. The Board finds that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable adverse environmental effects of the project, and the adverse environmental effects are considered acceptable when these benefits of the project are considered.

The documents and other materials which constitute the record of the Central Valley Flood Board's proceedings in this matter are in the custody of Leslie Gallagher, Acting Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE SECTION 8610.5 CONSIDERATIONS

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

  The Board has considered all the evidence presented in this matter, including the application for Permit No. 19004, supporting technical documentation provided by SAFCA, as well as all evidence submitted up through the hearing on this matter.

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

  In making its findings, the Board has used the best available science relating to the issues presented by all parties. On the important issue of geotechnical impacts, SAFCA has had its geotechnical engineer evaluate the proposed fill and has determined that the project will not cause adverse geotechnical impacts to the

Sacramento River east levee. There are no hydraulic impacts associated with the fill on the landside of the levee.

- Effects of the decision on the facilities of the State Plan of Flood Control (SPFC), and consistency of the proposed project with the Central Valley Flood Protection Plan (CVFPP) as adopted by Board Resolution 2012-25 on June 29, 2012:

  The proposed project is expected to result in no adverse hydraulic or geotechnical impacts on the facilities of the SPFC and is consistent with the CVFPP and current Title 23 standards because the project is anticipated to produce no significant increases in water surface elevation, substantial increases in channel velocities, or adverse geotechnical impacts on SPFC facilities.

- Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

  The proposed project will not affect hydrology, climate, or development.

10.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt:

- Resolution 2015-06, which includes the CEQA findings and Findings of Fact;

Approve:

- Draft Encroachment Permit No. 19004, in substantially the form provided; and

Direct:

- the Executive officer to take the necessary actions to execute the permit and file a Notice of Determination with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

A – Project Maps

B – Draft Resolution No. 2015-06

C – Draft Permit No. 19004

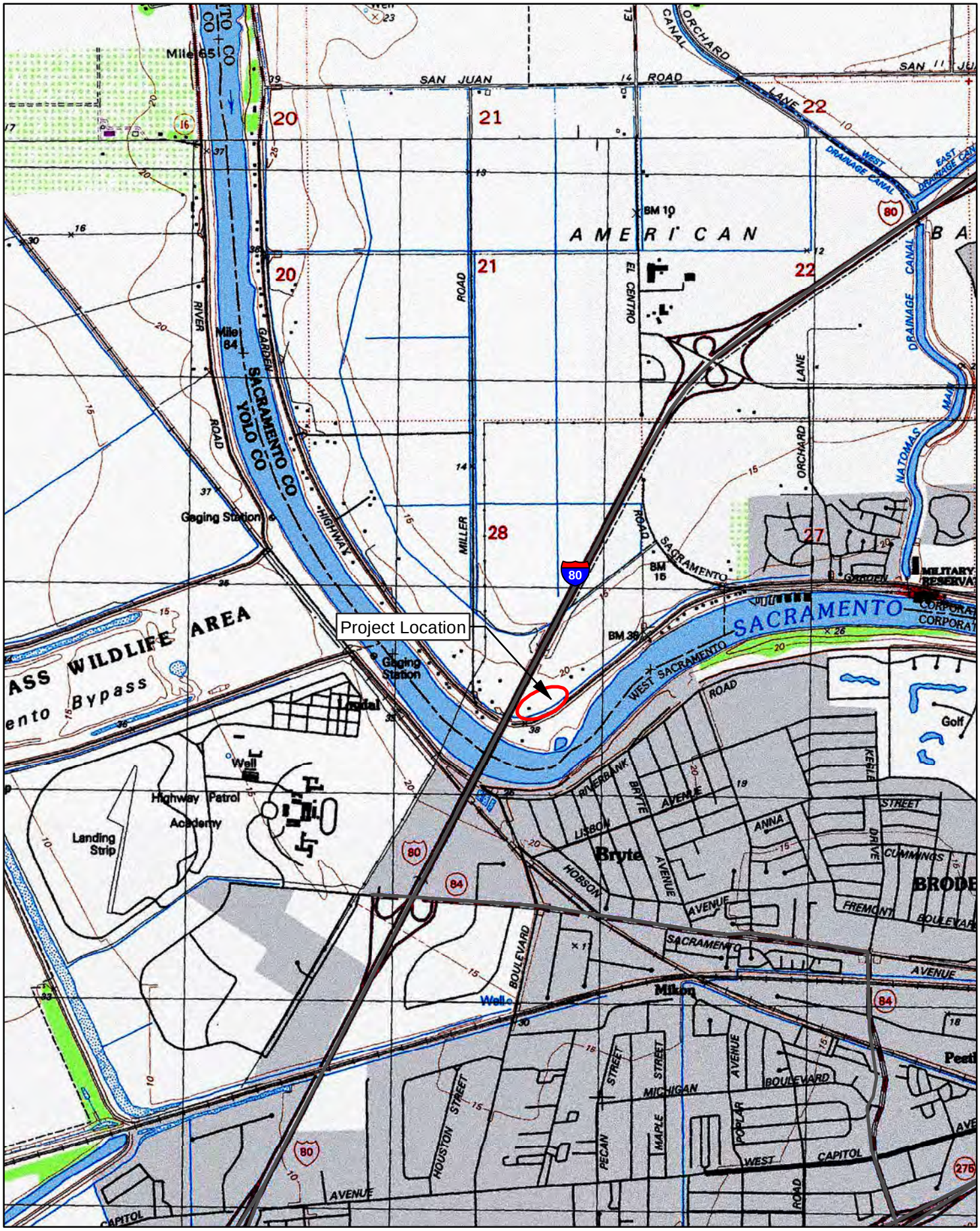
Exhibit A: USACE 408 Decision Letter

D – RD1000 Endorsement

E – Project Drawings

F – Fill Compatibility Technical Memorandum

Prepared By:	Nancy Moricz, PE, Senior Engineer, Planning Branch
Environmental Review:	Andrea Buckley, Senior Environmental Scientist (Specialist)
Staff Report Review:	Eric Butler, PE, Supervising Engineer, Projects & Environmental Branch Chief
	Len Marino, PE, Chief Engineer
	Nicole Rinke, Deputy Attorney General
	Leslie Gallagher, Acting Executive Officer



Source: USGS

Mead & Hunt

0 500 1,000 2,000 3,000 Feet

N

Project Vicinity Map

Placement of Fill in Reach 19A

October 2014

Photograph 1. Looking south along Garden Highway at Reach 19A site for placement of fill.

Photograph 2. Looking south from toe of levee at embankment site in Reach 19A.

Photograph 3. Looking north along Garden Highway at existing access driveway that connects to Wheelhouse Avenue.

Photograph 4. Looking east from existing access driveway that connects Garden Highway to Wheelhouse Avenue. New access driveway will be located approximately at this location.

STATE OF CALIFORNIA
THE RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD

DRAFT RESOLUTION NO. 2015-06

FINDINGS AND DECISION AUTHORIZING ISSUANCE OF
PERMIT NO. 19004

SACRAMENTO AREA FLOOD CONTROL AGENCY (SAFCA)
SACRAMENTO RIVER EAST LEVEE – REACH 19A
SACRAMENTO COUNTY

WHEREAS, SAFCA's Natomas Levees Improvement Program Landside Improvements Project ("NLIP Landside Improvements Project") consists of improvements to the levee system in the Natomas Basin and related landscape modifications and drainage and infrastructure improvements to reduce the risk of flooding in a significant portion of the Sacramento metropolitan area, thereby implementing a portion of the flood control program analyzed at the program level in the Environmental Impact Report on Local Funding Mechanisms for Comprehensive Flood Control Improvements for the Sacramento Area (State Clearinghouse No. 2006072098) ("Local Funding EIR"); and

WHEREAS, the Phase 4b Project would involve improvements to a portion of the Natomas Basin's perimeter levee system in Sutter and Sacramento Counties, California, and associated landscape and irrigation/drainage infrastructure modifications, with a focus on addressing underseepage, riverbank erosion, encroachment, and embankment stability deficiencies along the Sacramento River east levee south of Powerline Road, the American River north levee, the Natomas East Main Drainage Canal west levee, the Pleasant Grove Creek Canal west levee, and Natomas Cross Canal south levee; modifying existing pumping plants; relocating several irrigation and drainage canals and ditches including the West Drainage Canal and Riego Road Canal; excavating and reclaiming various borrow sites within the Natomas Basin; creating and managing wildlife habitat; and providing for construction of a bike trail atop the improved levees; and

WHEREAS, SAFCA desires the Phase 4b Project to provide at least 100-year flood protection as quickly as possible while laying the groundwork to achieve at least "200-year" flood protection over time; to use flood control projects in the vicinity of Sacramento International Airport to facilitate better management of airport lands that reduce hazards to aviation safety; and to use flood control projects to enhance habitat values by increasing the extent and connectivity of the lands in the Natomas Basin being managed to provide habitat for Giant Garter Snake, Swainson's Hawk, and other special-status species; and

WHEREAS, SAFCA as lead agency under the California Environmental Quality Act, Public Resources Code sections 21000 *et seq*. ("CEQA") prepared a Draft Environmental Impact Report (DEIR) (SCH No. 2009112025, July 2010), and Final Environmental Impact

Report (FEIR) (State Clearinghouse No. 2009112025, October 2010), and Mitigation Monitoring and Reporting Program (MMRP) for the NLIP Phase 4b Project (incorporated herein by reference and available at Board or SAFCA offices); and

WHEREAS, the Phase 4b EIS/EIR is tiered from the Local Funding EIR and the 2007 Landside EIR; and

WHEREAS, SAFCA has prepared a joint Environmental Impact Statement/Environmental Impact Report on the NLIP Phase 4b Landside Improvements Project (State Clearinghouse No. 2009112025) ("Phase 4b EIS/EIR"); and

WHEREAS, the Phase 4b Project is fully described in Chapter 2 of the July 2010 Draft EIS/EIR, as amended by the October 2010 Final EIS/EIR ("Final EIS/EIR" or "FEIS/FEIR"); and

WHEREAS, the Draft EIS/EIR describing the Phase 4b Project has been circulated for public review, comments have been received and responses issued, and a Final EIS/EIR has been prepared; and

WHEREAS, the SAFCA Board approved the NLIP Phase 4b Project (SAFCA Resolution 2010-145), the FEIR, and MMRP, and approved findings and a Statement of Overriding Considerations pursuant to the CEQA Guidelines (incorporated herein by reference), and filed a Notice of Determination with the State Clearinghouse on November 15, 2010; and

WHEREAS, a Record of Decision (ROD) was signed on May 18, 2011, by the USACE Assistant Secretary of the Army; and

WHEREAS, the Board, as a responsible agency, has independently reviewed the analyses in the NLIP Phase 4b Project Draft Environmental Impact Report (DEIR) (State Clearinghouse No. 2009112025, July 2010), the Final Environmental Impact Report (FEIR) (State Clearinghouse No. 2009112025, October 2010), and the Mitigation Monitoring and Reporting Plan (MMRP) submitted by SAFCA, and has reached its own conclusions regarding them; and

WHEREAS, the Board received the USACE Section 408 Decision letter to construct the proposed work to Reach 19A of the NLIP Phase 4b Project (Application No. 19004) on April XX, 2015; and

WHEREAS, Reclamation District 1000 conditionally endorsed the proposed work at Reach 19A of the NLIP Phase 4b Project (Application No. 19004) on November 26, 2014; and

WHEREAS, SAFCA submitted an application and supporting documentation to the Board on December 15, 2014 to construct the proposed work at Reach 19A; and

WHEREAS, Board staff completed a comprehensive technical review of SAFCA's proposed work to Reach 19A of the NLIP Phase 4b Project's permit application including 100 percent design plans and supporting documentation; and

WHEREAS, the SAFCA Reach 19A of the NLIP Phase 4b Project construction will:

- Place approximately 60,000 cubic yards of fill material (sourced from the American River floodplain at River Mile 0.5 – Permit No. 19005 BD) along the existing landside levee toe of the Sacramento River east levee;
- Replace a paved access ramp;
- Remove an existing concrete lined irrigation canal at the landside toe of the levee;
- Remove three paved access ramps;
- Remove trees and brush within the project limits; and
- Re-vegetate the disturbed project area with native grass following fill replacement; and

WHEREAS, the Board has considered Permit Application No. 19004 and has reviewed the Staff Report and Attachments, supporting documents, correspondence in its file, and the environmental documents prepared by the SAFCA.

NOW, THEREFORE, BE IT RESOLVED THAT,

Findings of Fact.

1. The Board hereby adopts as findings the facts set forth in the Staff Report.

2. The Board has reviewed all Attachments, Exhibits, Figures, and References listed in the Staff Report.

CEQA Findings.

3. The Board, as a responsible agency, has independently reviewed the analyses in the DEIS/DEIR (SCH No. SCH No. 2009112025, July 2010) and the FEIS/EIR (October 2010) which includes the Mitigation Monitoring and Reporting Program, and SAFCA Lead Agency findings, and has reached its own conclusions.

4. The Board, after consideration of the DEIS/DEIR (SCH No. SCH No. 2009091125, July 2010) and the FEIS/EIR (October 2010) on the Natomas Levee Improvement Program (NLIP), Phase 4b Landside Improvements Project, submitted by SAFCA, and the SAFCA Lead Agency findings, adopts the project description, analysis and findings which are relevant to the project.

5. **Findings regarding Significant Impacts**. Pursuant to CEQA Guidelines sections 15096(h) and 15091, the Board determines that the SAFCA findings, included in the Staff Report, and incorporated herein by reference, summarize the FEIS/EIR determinations regarding impacts of the NLIP Phase 4b Landside Improvements Project, before and after mitigation. Having reviewed the FEIS/EIR, the SAFCA findings, the Board makes its findings as follows:

a. **Findings Regarding Significant and Unavoidable Impacts.**

The Board finds that the NLIP Phase 4b Landside Improvements Project may have the following significant, unavoidable impacts, as more fully described in the SAFCA findings. Mitigation has been adopted for each of these impacts, although it does not reduce the impacts to less than significant. The impacts and mitigation measures are set forth in more detail in the SAFCA findings.

Agricultural Resources - The project would convert important farmland from agricultural production to nonagricultural uses, as well as temporary and permanent cancellation of lands under Williamson Act contracts.

Land Use - The project would be potentially inconsistent with the Airport Master Plan, Airport Comprehensive Land Use Plan, Airport Wildlife Hazard Management Plans, American River Parkway Plan and Wild and Scenic Rivers Act.

Biological Resources - The project would result in the loss of shaded riverine aquatic habitats and landside and waterside woodland habitats (short-term [10–15 years] would result until replacement plantings mature), as well as impacts on Swainson's hawk and other special-status birds. The project would also result in the disruption to and loss of existing wildlife corridors.

Cultural Resources - The project may result in potential damage or disturbance to known prehistoric resources or previously undiscovered cultural resources, including human remains, from ground-disturbance or other construction-related activities.

Transportation - The project will result in a temporary increase in traffic on local roadways. Residents and businesses would experience temporary disruption due to road closures, detours, construction, and boat launch facility temporary closure.

Air Quality - The project would result in temporary construction related emissions of reactive organic gases, nitrogen oxides, and particulate matter.

Noise - The project would result in generation of temporary, short-term construction noise, exposure of sensitive receptors to excessive groundborne vibration and increased traffic noise from construction and hauling activities.

Recreation - The project would result in both temporary and permanent impacts to a number of public and private recreational facilities adjacent to the project, including the proposed Natomas Levee Class I Bike Trail Project.

Visual Resources - The project would result in the alteration of scenic vistas, scenic resources, and existing visual character of the project area and new sources of light and glare (during construction).

Finding: The Board finds that changes or alterations have been required in, or incorporated into, the project which substantially lessen such impacts, as set forth more fully in the SAFCA findings, but that each of the above impacts remains significant after mitigation. Such mitigation measures are within the responsibility of another agency (SAFCA), and SAFCA should implement the described mitigation measures. Specific economic, legal, social, technological or other considerations, rendered infeasible mitigation or alternatives that would have reduced these impacts to less than significant.

b. Findings regarding Significant Impacts that can be Reduced to Less Than Significant.

The significant impacts and the mitigation measures to reduce them to less than significant are described in the FEIR and in SAFCA's Resolution No. 2010-145, dated November 12, 2010. This Resolution includes a Statement of Facts, Findings, Impacts and Mitigation Measures, Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Program. Based on its independent review of the FEIR and SAFCA Resolution No. 2010-145, the Board finds that for each of the significant impacts described, changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the FEIR. Moreover, such changes or alterations are within the responsibility and jurisdiction of another public agency (SAFCA) and such changes have been adopted by that agency. It is hereby determined that the impacts addressed by these mitigation measures will be mitigated to a less-than-significant level or avoided by incorporation of these mitigation measures into the project.

As a responsible agency pursuant to CEQA, the Board has responsibility for mitigating or avoiding only the direct or indirect environmental effects of those parts of the Project which it decides to carry out, finance, or approve. The Board confirms that it has reviewed the MMRP, and confirmed that SAFCA has adopted and committed to implementation of the measures identified therein. The Board agrees with the analysis in the MMRP and confirms that there are no feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment. None of the mitigation measures in the MMRP require implementation by the Board directly, although continued implementation of the MMRP shall be made a condition of issuance of the Permit. However, the measures in the MMRP may be modified to accommodate changed circumstances or new information not triggering the need for subsequent or supplemental analysis under CEQA Guidelines sections 15062 or 15063.

6. **Statement of Overriding Considerations.** Pursuant to CEQA Guidelines sections 15096(h) and 15093, the Board has balanced the economic, social, technological and other benefits of the Project described in Permit Application No. 19004, against its significant and unavoidable impacts, listed in paragraph 5(a) above, and finds that the benefits of the Project outweigh these impacts and they may, therefore, be considered "acceptable".

The Boards finds that there is an immediate need to protect the people and property at risk in the project area. The Natomas Basin floodplain is occupied by over 83,000 residents and $10 billion in damageable property. The area is presently vulnerable to flooding in a less than 100-year flood event along the Sacramento River or American River. The Natomas Basin is a deep floodplain and depending on the circumstances, flood depths in the Natomas Basin could reach life-threatening levels. The disruption in transportation that would result from a major flood would affect the Sacramento International Airport, interstate and state highways, and rail service.

The health and safety benefits of the project, which would significantly reduce the risk of an uncontrolled flood in the Natomas Basin that would result in a catastrophic loss of property and threat to residents of the area, outweigh the remaining unavoidable environmental impacts.

Custodian of Record. The custodian of the CEQA record for the Board is its Acting Executive Officer, Leslie Gallagher, at the Board offices at 3310 El Camino Avenue, Room 151, Sacramento, California 95821. These documents may be viewed or downloaded from the Board website at http://cvfpb.ca.gov/meetings/2015/04-24-2015.cfm on the April 24, 2015 Board meeting page. The documents are also available for review in hard copy at the Board and SAFCA offices.

Considerations pursuant to Water Code Section 8610.5

7. **Evidence Admitted into the Record**. The Board has considered all the evidence presented in this matter, including the application for Permit No. 19004, supporting technical documentation provided by SAFCA, as well as all evidence submitted up through Central Valley Flood Protection Board meeting on April 24, 2015 on this matter.

   The custodian of the file is Acting Executive Officer Leslie Gallagher at the Central Valley Flood Protection Board, 3310 El Camino Avenue, Room 151, Sacramento, California 95821.

8. **Best Available Science**. In making its findings, the Board has used the best available science relating to the issues presented by all parties. On the important issue of geotechnical impacts, SAFCA has had its geotechnical engineer evaluate the proposed fill and has determined that the project will not cause adverse geotechnical impacts to the Sacramento River east levee. There are no hydraulic impacts associated with the fill on the landside of the levee.

9. **Effects on State Plan of Flood Control**. The proposed project is expected to result in no adverse hydraulic or geotechnical impacts on the facilities of the SPFC and is consistent with the Central Valley Flood Protection Plan and current Title 23 standards because the project is anticipated to produce no significant increases in water surface elevation, substantial increases in channel velocities, or adverse geotechnical impacts on SPFC facilities.

10. **Effects of Reasonably Projected Future Events**. The proposed project will not affect hydrology, climate, or development.

Other Findings/Conclusions regarding Issuance of the Permit.

11. Based on the foregoing the Board finds that the proposed design for Permit No. 19004 to complete the proposed work in Reach 19A of the NLIP Phase 4b Project:
    - are consistent with the adopted 2012 Central Valley Flood Protection Plan,
    - will not be injurious to the public interest, and
    - will not impair the usefulness of the Sacramento River Flood Control Project.

12. This resolution shall constitute the written decision of the Board in the matter of Permit No. 19004.

Approval of Encroachment Permit No. 19004.

13. The Board adopts Resolution 2015-06 (including CEQA findings and Water Code 8610.5 considerations), and

14. Based on the foregoing, the Board hereby approves issuance of Permit No. 19004 in substantially the form provided in the Staff Report, and

15. The Board delegate's authority to the Executive Officer to make non-substantive changes to the draft permit as needed to incorporate additional design changes submitted by SAFCA and coordinate with the USACE on the possible changes. Should substantive changes to the draft permit be required, Board staff will bring the permit back to the Board at a future meeting to seek approval for substantive changes, and

16. The Board directs the Executive Officer to take the necessary actions to prepare and execute Permit No. 19004 and all related documents and to prepare and file a Notice of Determination under CEQA with the State Clearinghouse for the proposed work to Reach 19A of the NLIP Phase 4b Project, and

PASSED AND ADOPTED by vote of the Board on _____, 2015

_____	_____
William H. Edgar	Jane Dolan
President	Secretary

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 19004 BD

This Permit is issued to:

Sacramento Area Flood Control Agency (SAFCA)
1007 7th Street, 7th Floor
Sacramento, California 95814

To place approximately 60,000 cubic yards (CY) of fill material (sourced from the American River floodplain at River Mile 0.5 - Permit No. 19005 BD) along the landside levee toe, replace a paved access ramp, remove an existing concrete lined irrigation canal at the landside toe of levee, remove three paved access ramps, remove trees and brush within the project limits, and re-vegetate the disturbed project area with native grass following fill placement.

The project is located along Garden Highway, immediately southeast of Interstate 80, along the landside of the left (east) bank of the Sacramento River. (Section 28, T9N, R4E, MDB&M, Reclamation District 1000, Sacramento River, Sacramento 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. 19004 BD

LIABILITY AND IMDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board (Board) and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State") and Reclamation District No. 1000 (RD 1000), safe and harmless, of and from all claims and damages related to the Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FOURTEEN: The permittee is responsible for all liability and shall defend, indemnify, and hold the Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State") and RD 1000, safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The Board, Department of Water Resources (DWR), and RD 1000 shall not be held liable for damages to the permitted project resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

SIXTEEN: If the permittee does not comply with the conditions of the permit and enforcement by the Board is required, the permittee shall be responsible for bearing all costs associated with the enforcement action, including reasonable attorney's fees. Permittee acknowledges that State law allows the imposition of fines in enforcement matters.

AGENCY CONDITIONS

SEVENTEEN: The permittee shall comply with all conditions set forth in the letter from the U.S. Army Corps of Engineers (USACE) District Engineer dated April XX, 2015, which is attached to this permit as Exhibit A and is incorporated by reference.

EIGHTEEN: The permittee agrees to incur all costs for compliance with local, State, and Federal permitting. If any conditions issued by other agencies conflict with any of the conditions of this permit, then the permittee shall resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

NINETEEN: In the event of an emergency, the permittee shall immediately restore the levee and access to the satisfaction of the Board, USACE, DWR, and RD 1000.

TWENTY: The permittee shall provide access control gates on the proposed ramp to the satisfaction of the Board, DWR, and RD 1000.

REAL ESTATE

TWENTY-ONE: If the construction project extends onto land owned in fee and/or easement by the Sacramento and San Joaquin Drainage District acting by and through the Board, the permittee shall secure an easement, license, or temporary entry permit from the Board prior to commencement of work. Contact Tom O'neil at (916) 653-7654.

PRE-CONSTRUCTION

TWENTY-TWO: The permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 20 working days prior to start of work may result in delay of the project.

TWENTY-THREE: The permittee shall provide construction supervision and inspection services acceptable to the Board.

TWENTY-FOUR: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions, of the existing site conditions. The photo record shall be certified (signed and stamped) by a licensed land surveyor or licensed civil engineer registered in the State of California and submitted to the Board within 30 days of beginning the project.

CONSTRUCTION

TWENTY-FIVE: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit (stated in the permit description), shall be done in the area without prior approval of the Board.

TWENTY-SIX: All addenda or other changes made to the submitted documents by the permittee after issuance of this permit shall be submitted to the Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include supplemental plans, specifications, and supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers and / or the local maintaining agency when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) calendar days. Upon approval of the submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

TWENTY-SEVEN: 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.

TWENTY-EIGHT: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15 and shall be removed after completion of the project.

TWENTY-NINE: The stability of the Sacramento River east levee shall be maintained at all times during construction.

THIRTY: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY-ONE: Backfill material for excavations shall be placed in four (4) to six (6) inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

THIRTY-TWO: All fill materials shall be placed in four (4) to six (6) inch layers and compacted to a relative compaction of not less than 90 percent per ASTM D 1557-91 or 97 percent per ASTM D 698-91 above optimum moisture content. Fill material within two feet of the bridge shall be compacted by appropriate hand operated compaction equipment. Field density tests shall be taken by a certified soils laboratory to verify compaction of the fill placed.

THIRTY-THREE: A restricted access gate shall be provided at ramp locations to prevent unauthorized vehicular access to the levee crown roadway.

THIRTY-FOUR: Any lock on the gate must be accessible to maintenance and inspection personnel and must not be casehardened.

THIRTY-FIVE: Keys shall be provided to the Board, DWR, and RD 1000 for all locks on gates

providing access to the floodway, levee ramp, levee toe, and along the levee crown.

THIRTY-SIX: The access ramps shall be surfaced with a minimum of 4 inches of compacted, Class 2, aggregate base (Caltrans Specification 26-1.02A) or equivalent.

THIRTY-SEVEN: Aggregate base material shall be compacted to a relative compaction of not less than 95 percent per ASTM Method D1557-91, with a moisture content sufficient to obtain the required compaction.

THIRTY-EIGHT: Temporary access ramps and/or roads shall be removed from the floodway during flood season from November 1 through April 15, and after completion of the project.

THIRTY-NINE: All debris generated by this project shall be disposed of outside the floodway.

FORTY: Any damage to the levee crown roadway or access ramps that will be utilized for access for this project shall be promptly repaired to the condition that existed prior to this project.

FORTY-ONE: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

VEGETATION / ENVIRONMENTAL MITIGATION

FORTY-TWO: The permittee will be responsible for securing any necessary permits incidental to habitat manipulation and restoration work completed in the flood control project, and will provide any biological surveying, monitoring, and reporting needed to satisfy those permits.

FORTY-THREE: Cleared trees and brush (or pruning therefrom) 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 1st to April 15th.

FORTY-FOUR: If any feature of the project adversely impacts the successful execution, functioning, maintenance, or operation of the American River Floodway or facilities of the Sacramento River Flood Control Project, the permittee must either remove or alter the feature, or mitigate for the adverse impact of the feature at the permittee's expense after approval of the proposed mitigations by the Board. If the permittee does not comply, the Board may modify or remove the feature at the permittee's expense.

POST-CONSTRUCTION

FORTY-FIVE: Within 120 days of completion of the project, the permittee shall submit to the Board and RD 1000 a copy of as-built drawings and a certification report, stamped and signed by a licensed civil engineer registered in the State of California, certifying the work was performed and inspected in accordance with the Board permit conditions and submitted drawings and specifications.

OPERATIONS AND MAINTENANCE

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

FORTY-SEVEN: The permittee shall maintain the permitted project within the utilized area in the manner required and as requested by the authorized representative of the Board, DWR, RD 1000, or any other agency responsible for maintenance.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

FORTY-EIGHT: If the project land is to be sold, the transfer of interest shall not occur without written notification to the Board, and the permit with all conditions shall be transferred to the new owner. The permittee is required to notify the prospective new owner of the need to apply for a name change permit from the Board.

FORTY-NINE: If the project, or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Board, at the permittee's cost and expense.

FIFTY: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted project) if 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 damaged by any cause. If the permittee does not comply, the Board may remove the permitted project at the permittee's expense.

END OF CONDITIONS

State of California | DEPARTMENT OF WATER RESOURCES
CENTRAL VALLEY FLOOD PROTECTION BOARD | California Natural Resources Agency

APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT

Application No. _____
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

See Attached Project Description.

2. Project
Location: Sacramento River south of I-80 County, in Section 28
Township: 09N (N) (S), Range: 04E (E) (W), M. D. B. & M.
Latitude: 38.60 Longitude: -121.5451
Stream : Sacramento River , Levee : East Levee Designated Floodway: Sacramento River
APN: 274-0220-047; 274-0660-059; 274-0220-017

3. Sacramento Area Flood Control Agency (Name of Applicant / Land Owner) of 1007 7th Street, 7th Floor (Address)
Sacramento (City) CA (State) 95814 (Zip Code) 916-874-7606 (Telephone Number)
bassettj@SacCounty.net (E-mail)

4. Marieke Armstrong (Name of Applicant's Representative) of Mead & Hunt, Inc. (Company)
Sacramento (City) CA (State) 95834 (Zip Code) 916-993-4627 (Telephone Number)
marieke.armstrong@meadhunt.com (E-mail)

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of Reclamation District No.1000 (Name of LMA) approve this plan, subject to the following conditions:

☐ Conditions listed on back of this form ☒ Conditions Attached ☐ No Conditions

Trustee 11/26/2014 Date Trustee Date

Not Required by Resolution 2010-02 adopted by the Board of Trustees of Reclamation District No. 1000 January 8, 2010

Trustee Date Trustee Date

RD1000

RECLAMATION
DISTRICT 1000

Permit Conditions

Permit Application No. 18159-8
Location: Sacramento River (East Levee) COE Designated Reach 19A (RM 62.6L)
Applicant: Sacramento Area Flood Control Agency (SAFCA)
Description: Construct seepage berm and access ramp replacement

CONDITIONS:

1. Maintenance of all encroaching structures, facilities, vegetation or any other items or matters approved under this permit shall remain the responsibility of the Permittee until accepted by the District for operations and maintenance.

2. Permittee shall obtain all necessary permits and regulatory approvals for the proposed work.

3. Permittee shall coordinate with the District in the preparation of the final project plans and specifications and with any modifications thereto. District shall review and approve final plans and specifications prior to construction and shall also review and approve all proposed modifications to the approved project plans and specifications prior to their construction. Field fitting improvements including providing positive drainage away from the levee slope and access ramp shall be approved by the District in the field.

4. Permitte shall provide access control gates on the proposed ramp to the satisfaction of the District.

5. Permittee hereby agree(s) to indemnify and hold and save the District and its employees harmless from any damage, costs or liability, including all costs of defense, which may arise as result of the exercise of this Permit

6. Work on the levee or within the Sacramento River shall be done outside of the flood season (November 1 to April 15) unless otherwise approved by the Central Valley Flood Protection Board and the District.

7. Permittee shall acquire necessary right of way for the improvements and convey said rights to the District for operation and maintenance of the flood control features the District is to operate and maintain to the satisfaction of the District.

1633 GARDEN HIGHWAY
SACRAMENTO, CA 95833
916-922-1449

8. Permittee shall restore the levee, access roads, gates, fences and other associated flood control facilities to the satisfaction of the District upon completion of the work.

9. In event of an emergency, Permittee shall immediately restore the levee and access to the satisfaction of the District.

Resolution No. 2010-02

WHEREAS, Reclamation District No. 1000 (District) operates and maintains levees under the authority of the California Central Valley Flood Protection Board (CCVFPB)and the California Water Code; and

WHEREAS, the CCVFPB and Title 23 of the California Water Code require any encroachment on or adjacent to the levee or within the designated floodway have an encroachment permit be issued by the CCVFPB with appropriate conditions to insure they do not impede or impair the operations and maintenance of the flood control system; and

WHEREAS, such permit applications are reviewed and endorsed by the local maintaining agency responsible for the operations and maintenance of the levee system where the encroachment is proposed and allows for conditions to be included in the permits to address issues including, but not limited to, operations, maintenance, public safety and flood emergency response; and

WHEREAS, endorsement of the permit applications for levees surrounding the Natomas basin are the purview of the District and various actions through the years by past District Boards have granted authority to the General Manager to endorse permit applications; and

WHEREAS, the Board desires to enumerate a clear policy on how future permit applications are to be reviewed and endorsed by the District

NOW, THEREFORE BE IT RESOLVED:

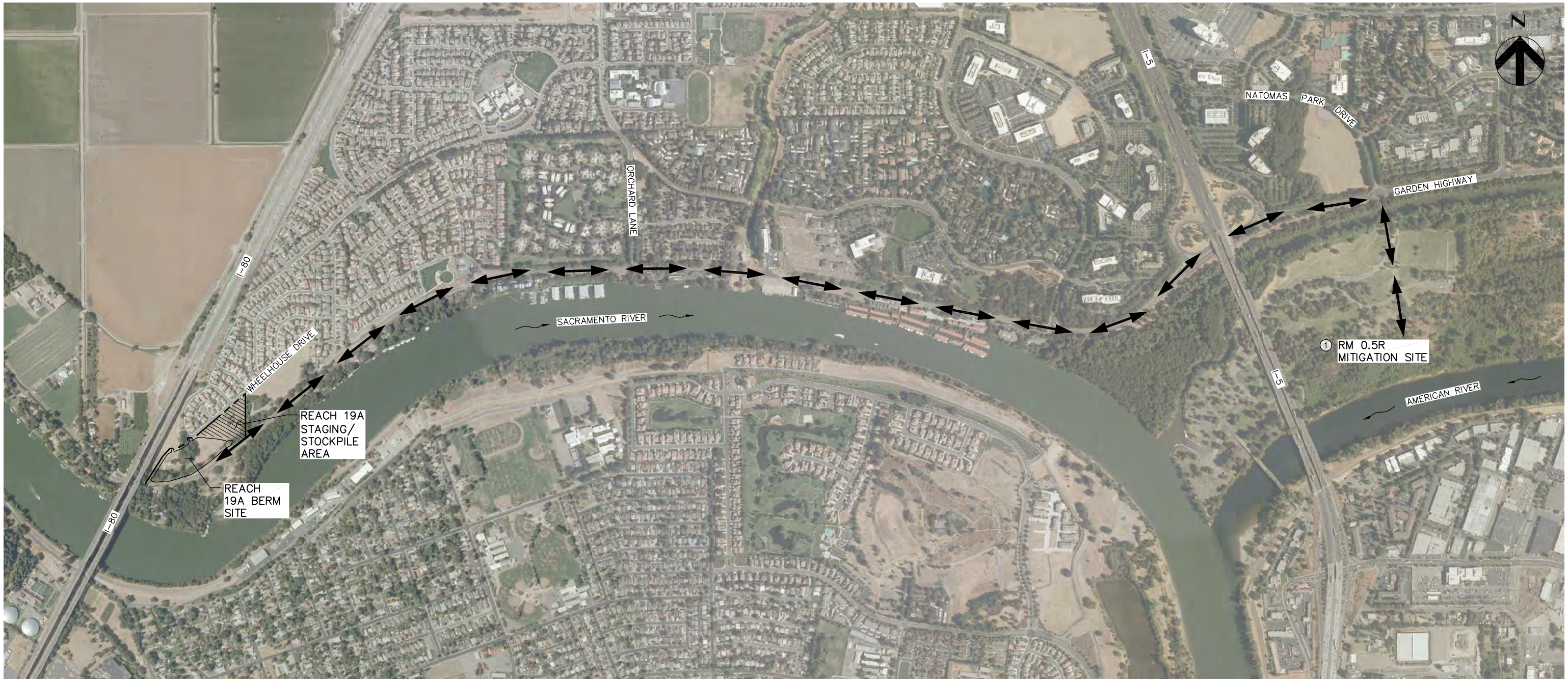
The Reclamation District No. 1000 Board of Trustees desires to delegate their authority to endorse encroachment permit applications to the District General Manager for routine encroachments and those which do not involve District policy issues. A determination as to which permits will be endorsed by the General Manager shall be left to his or her judgment, provided however, that all such endorsements shall be presented to the Board of Trustees at the next scheduled Board meeting.

Those permit applications which are not routine in nature, present policy issues or are likely to be controversial shall be brought to the Board for consideration and action at which time the Board may delegate signature authority to the General Manager if approved. This will include all permit applications where the General Manager is recommending denial to the California Central Valley Flood Protection Board.

CERTIFICATION

I, Terrie Figueroa, Secretary of Reclamation District No, 1000, hereby certify that the foregoing Resolution 2010-02 was duly adopted by the Board of Trustees of Reclamation District No, 1000 at a regular meeting held January 8, 2010 and made a part of the minutes thereof.

Terrie Figueroa
District Secretary



NOTES:

1. ACCESS TO THE RM 0.5R MITIGATION SITE AND REACH 19A BERM SITE SHALL ONLY BE FROM GARDEN HIGHWAY

500 250 0 500 1000

SCALE: 1"=500'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED

APPROVED

SAFCA

REACH 19A BERM SITE

HAUL ROUTE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. G-3
SHEET 3

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Attachment E - Project Drawings

CONSTRUCTION LIMIT SURVEY DATA					
START POINT	END POINT	DIRECTION	LENGTH	START POINT (N,E)	END POINT (N,E)
100	101	N32°40'33"E	332.76'	1980521.81, 6691285.25	1980801.90, 6691464.90
101	102	N42°55'02"E	106.34'	1980801.90, 6691464.90	1980879.78, 6691537.31
102	103	N85°54'16"E	77.92'	1980879.78, 6691537.31	1980885.35, 6691615.03
103	104	N60°56'16"E	108.11'	1980885.35, 6691615.03	1980937.86, 6691709.53
104	105	N13°30'10"E	53.56'	1980937.86, 6691709.53	1980989.94, 6691722.04
105	106	S87°19'04"E	50.69'	1980989.94, 6691722.04	1980987.57, 6691772.67
106	107	N54°55'45"E	52.93'	1980987.57, 6691772.67	1981017.98, 6691815.99
107	108	N49°21'46"E	647.94'	1981017.98, 6691815.99	1981439.97, 6692307.68
108	109	S84°39'71"E	438.65'	1981439.97, 6692307.68	1981001.32, 6692309.56

CONTROL LINE ALIGNMENT LINE TABLE				
LINE NO.	DIRECTION	LENGTH	START POINT (N,E)	END POINT (N,E)
L1	S87°03'00"E	22.00'	1980509.7403, 6691312.95	1980508.61, 6691334.92
L2	N60°59'48"E	1.15'	1980621.5245, 6691822.98	1980622.08, 6691823.98
L3	N52°56'53"E	52.61'	1980704.7043, 6691951.08	1980736.40, 6691993.06
L4	N50°46'34"E	1383.05'	1980895.5766, 6692195.79	1981770.15, 6693267.21

CONTROL LINE ALIGNMENT CURVE TABLE						
CURVE	PI STATION	RADIUS	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C2	860+03.41	910.00'	260.54'	507.50'	N76°58'23.98"E	500.95'
C3	863+27.51	1080.00'	75.98'	151.71'	N56°58'20.24"E	151.59'
C4	865+84.74	6800.00'	128.90'	257.76'	N51°51'43.30"E	257.75'

HORIZONTAL DATUM

THE HORIZONTAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

THE VERTICAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BEING BASED ON NGS VERTICAL CONTROL "G-858" IN THIS AREA.

100 50 0 100 200

SCALE: 1"=100'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED

APPROVED

SAFCA

REACH 19A BERM SITE

LEVEE CONTROL LINE ALIGNMENT PLAN AND CONSTRUCTION LIMIT SURVEY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. G-5
SHEET 5

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Attachment E - Project Drawings

NOTES:

1. EXISTING OVERHEAD POWER LINE, TELEPHONE LINE AND UTILITY POLES TO REMAIN. CONTRACTOR TO COORDINATE FILL PLACEMENT AROUND POLES WITH UTILITY OWNERS.
2. CONTRACTOR SHALL REMOVE ALL BRUSH, TREES, STUMPS AND ROOTS WITHIN THE CONSTRUCTION LIMITS AS SPECIFIED IN THE SPECIFICATIONS.
3. INSTALL TEMPORARY PROTECTIVE FENCING AROUND TREES TO BE PROTECTED AT CONSTRUCTION LIMIT. TREES TO BE PROTECTED WILL BE FLAGGED IN THE FIELD.

HORIZONTAL DATUM

THE HORIZONTAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

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50 25 0 50 100

SCALE: 1"=50'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED

APPROVED

SAFCA

REACH 19A BERM SITE

AERIAL PHOTO AND DEMOLITION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C-5
SHEET 10

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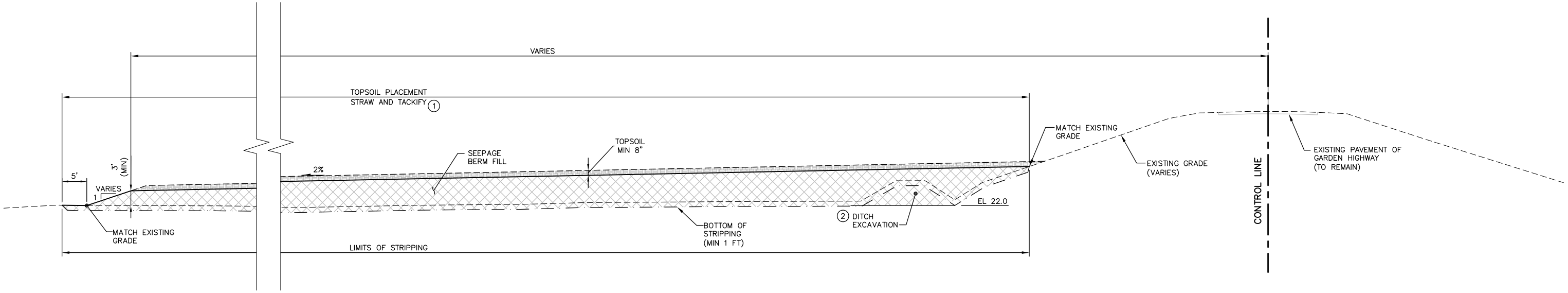
Attachment E - Project Drawings



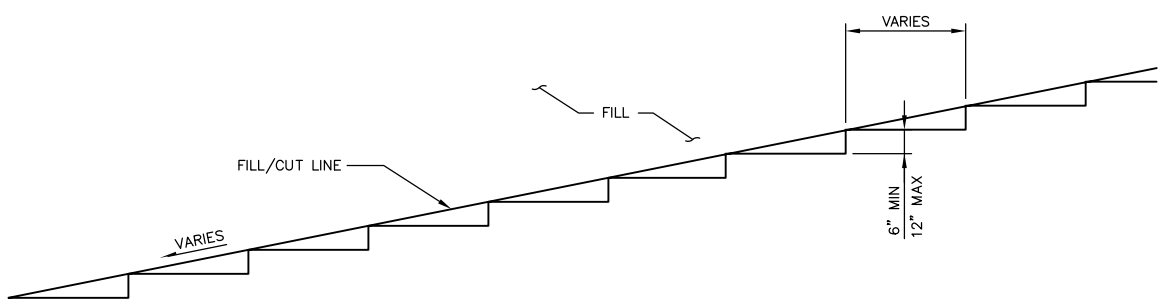
SEEPAGE BERM SECTION

SCALE: 1"=10'

NOTES:

(1) SEE SPECIFICATION 02932 FOR STRAW AND TACKIFY REQUIREMENTS.

(2) EXCAVATE LANDSIDE DITCH MINIMUM 1 FT (INCLUDING STRIPPING) ON LEVEE SLOPE AS SHOWN ON C–10 AND C–11 TO REMOVE UNSUITABLE MATERIALS AS NOTED IN THE SPECIFICATIONS.



TYPICAL BENCH FILL/CUT DETAIL

NTS

10 5 0 10 20

SCALE: 1"=10'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED

APPROVED

SAFCA

REACH 19A BERM SITE

TYPICAL SECTIONS AND DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C–6
SHEET 11

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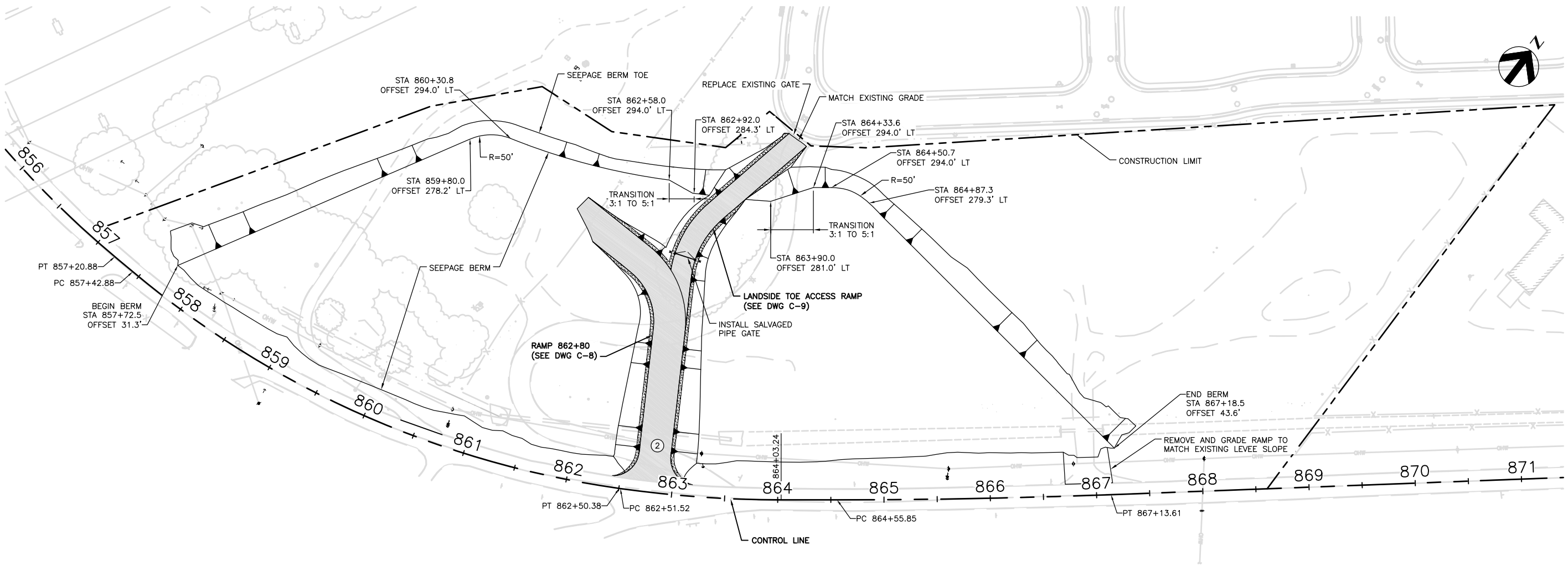
Attachment E - Project Drawings



HORIZONTAL DATUM

THE HORIZONTAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

THE VERTICAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BEING BASED ON NGS VERTICAL CONTROL "G-858" IN THIS AREA.

NOTES:

1. THE SEEPAGE BERM DESIGN IS NOT INTENDED TO PROVIDE A MINIMUM LEVEL OF FLOOD RISK REDUCTION BUT IS INTENDED TO BE INCORPORATED IN FUTURE PROJECTS THAT WILL BE BASED ON SUBSEQUENT ANALYSES SPECIFICALLY ADDRESSING PROPOSED FLOOD RISK REDUCTION MEASURES USING UPDATED GEOTECHNICAL INFORMATION.
2. PLACE SELECT FILL FOR FULL WIDTH OF RAMP. SEE SHEET C-8 AND C-9.

50 25 0 50 100

HORZ SCALE: 1"=50'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED

APPROVED

SAFCA

REACH 19A BERM SITE

SEEPAGE BERM
PLAN AND PROFILE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C-7
SHEET 12

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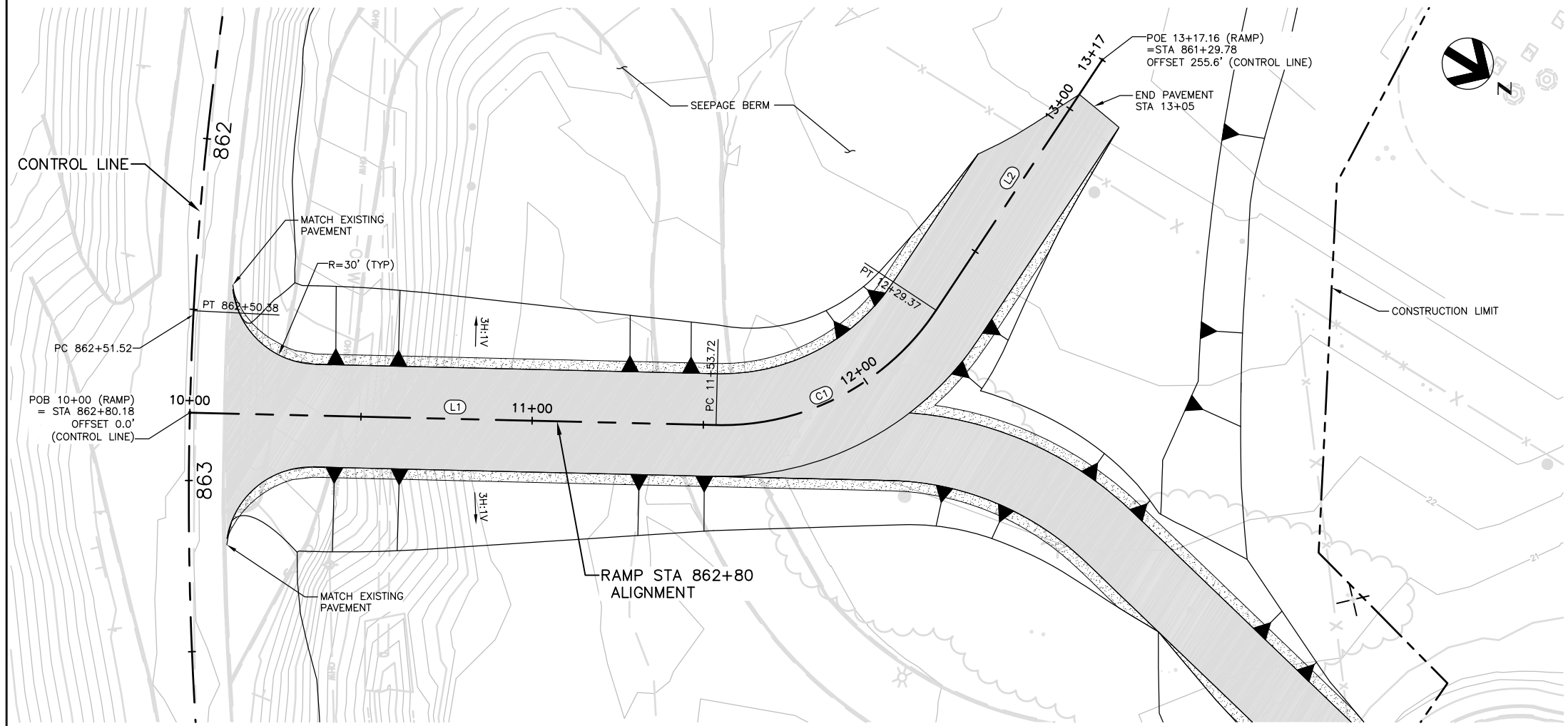
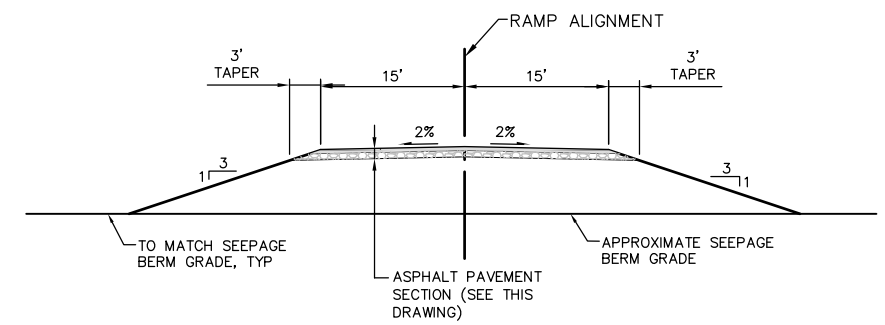
Attachment E - Project Drawings



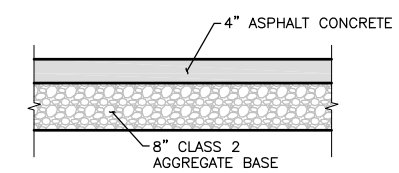
RAMP STA 863+00 ALIGNMENT LINE TABLE				
LINE NO.	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)
L1	153.72'	N30°31'25"W	1980636.3069, 6691848.86	1980768.73, 6691770.78
L2	87.80'	N88°18'40"W	1980805.6027, 6691708.39	1980808.19, 6691620.63

RAMP STA 863+00 ALIGNMENT CURVE TABLE							
CURVE NO.	PI STATION	Δ	RADIUS	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	11+95.12	122°12'45"	75.00'	41.39'	75.64	N59°25'02.62"W	72.48'



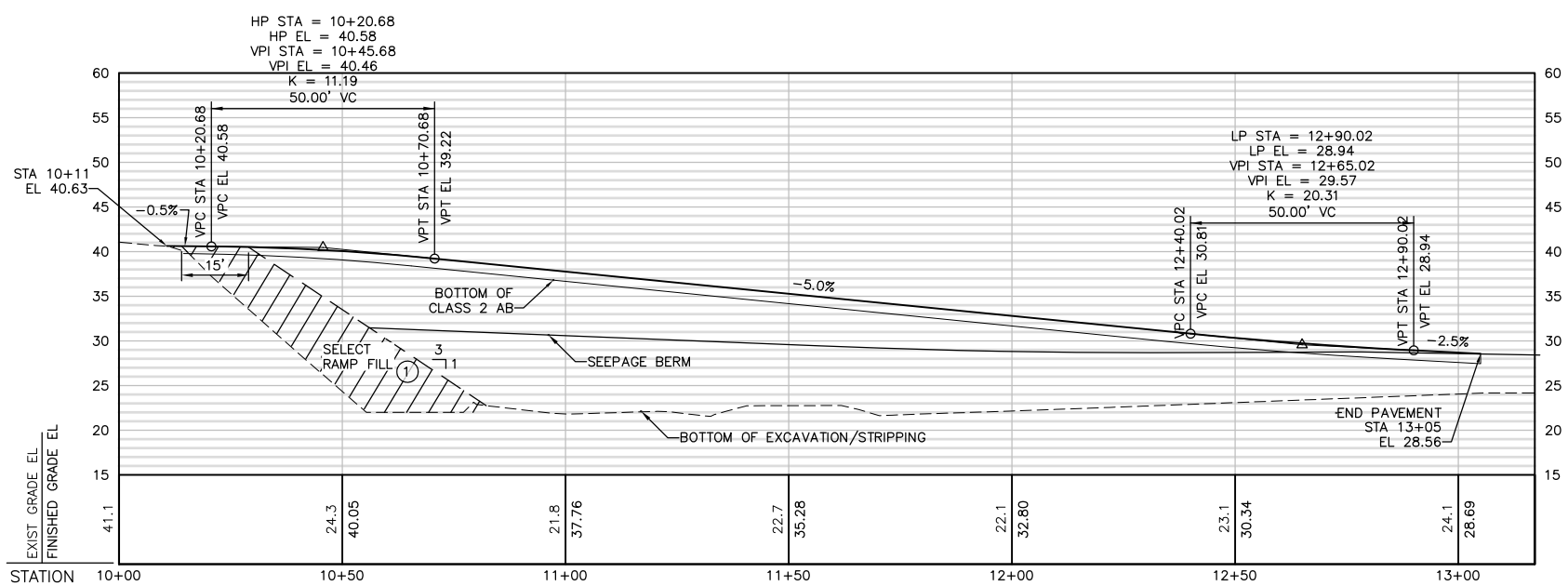
ACCESS RAMP TYPICAL SECTION

NTS



ASPHALT PAVEMENT SECTION

NTS



HORIZONTAL DATUM

THE HORIZONTAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

THE VERTICAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BEING BASED ON NGS VERTICAL CONTROL "G-858" IN THIS AREA.

NOTES:

1. PLACE SELECT FILL FOR FULL WIDTH OF RAMP. SEE SHEET C-8 AND C-9.

20 10 0 20 40
HORZ SCALE: 1"=20'

10 5 0 10 20
VERT SCALE: 1"=10'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED
APPROVED

SAFCA

REACH 19A BERM SITE

RAMP 862+80 PLAN AND PROFILE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C-8
SHEET 13

C:\pwworking\sacd\0411242\C-08.dwg, Layout1, 11/14/2014 4:27:05 PM
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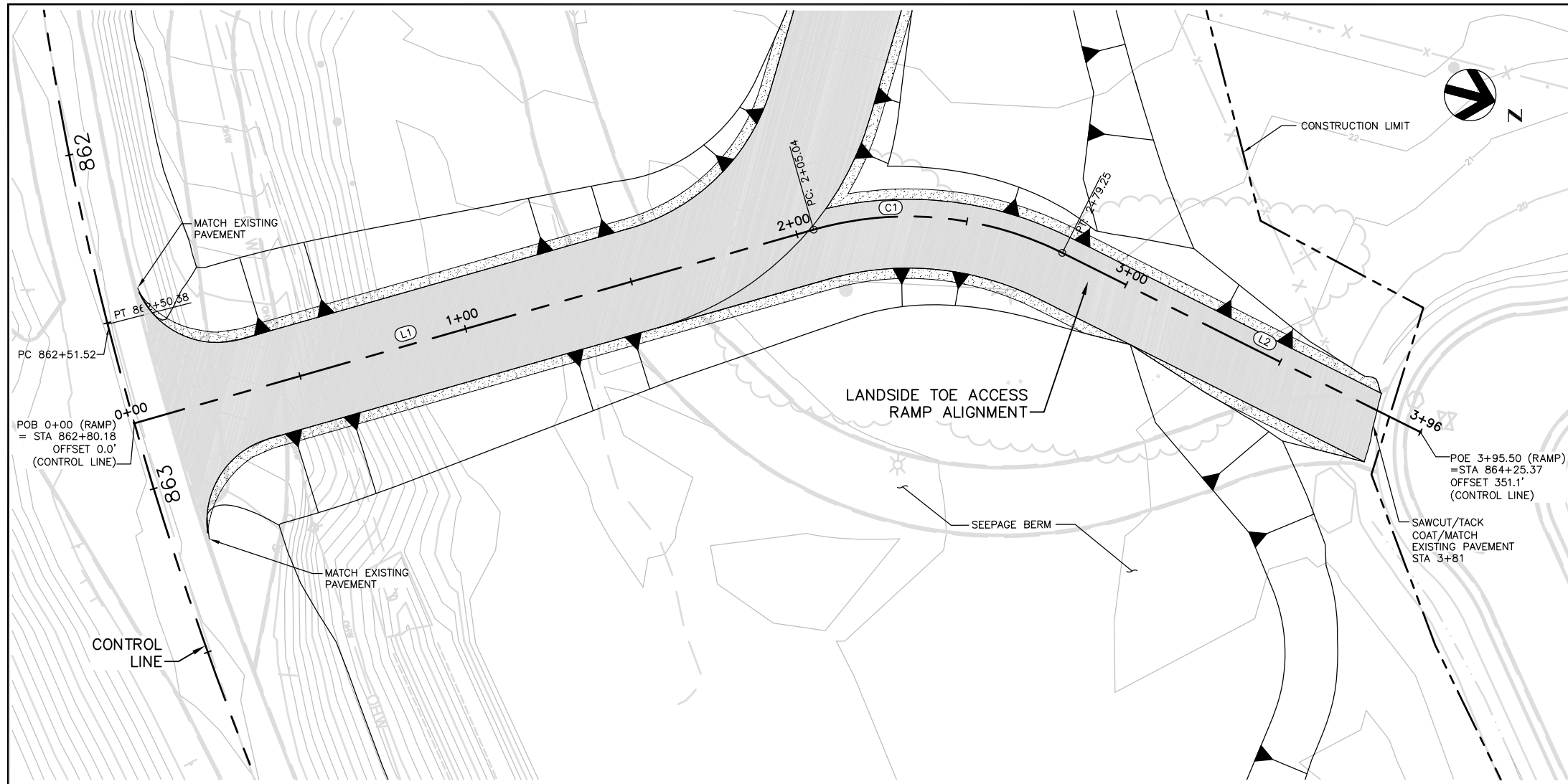
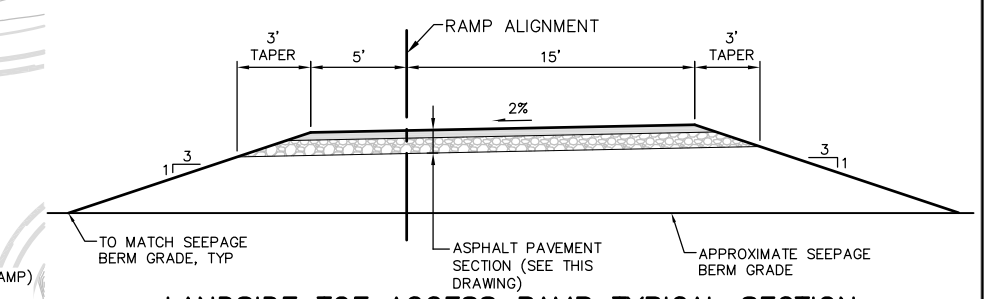
Attachment E - Project Drawings



LANDSIDE TOE ACCESS RAMP ALIGNMENT LINE TABLE				
LINE NO.	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)
L1	205.04'	N30°31'25"W	1980636.3069, 6691848.86	1980812.93, 6691744.72
L2	116.25'	N11°59'44"E	1980884.5094, 6691733.04	1980998.22, 6691757.20

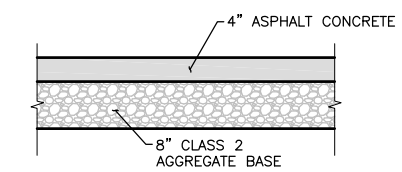
LANDSIDE TOE ACESS RAMP ALIGNMENT CURVE TABLE							
CURVE NO.	PI STATION	Δ	RADIUS	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	2+43.95	137°28'51"	100.00'	38.91'	74.21	N9°15'50.48"W	72.52'



LANDSIDE TOE ACCESS RAMP TYPICAL SECTION

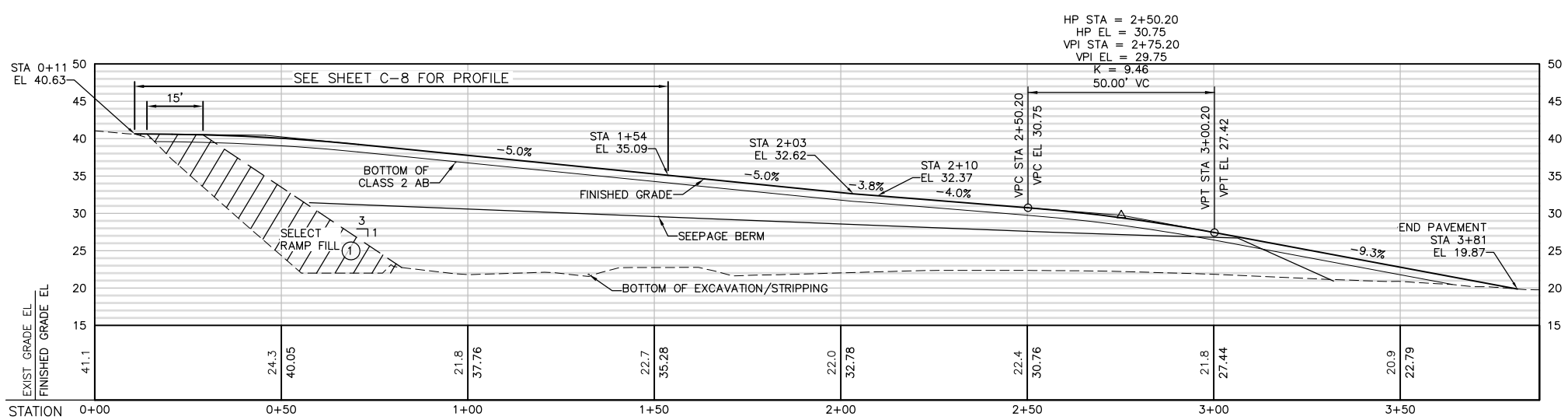
NTS

STA 2+05.04 TO 3+95.50



ASPHALT PAVEMENT SECTION

NTS



HORIZONTAL DATUM

THE HORIZONTAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

THE VERTICAL DATUM FOR THE REACH 19A BERM SITE IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BEING BASED ON NGS VERTICAL CONTROL "G-858" IN THIS AREA.

NOTES:

(1) PLACE SELECT FILL FOR FULL WIDTH OF RAMP. SEE SHEET C-8 AND C-9.

20 10 0 20 40
SCALE: 1"=20'

10 5 0 10 20
SCALE: 1"=10'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

SUBMITTED
APPROVED

SAFCA

REACH 19A BERM SITE

LANDSIDE TOE ACCESS RAMP PLAN AND PROFILE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C-9
SHEET 14

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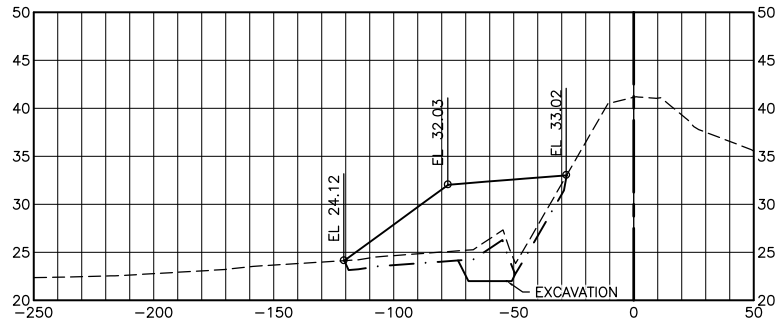
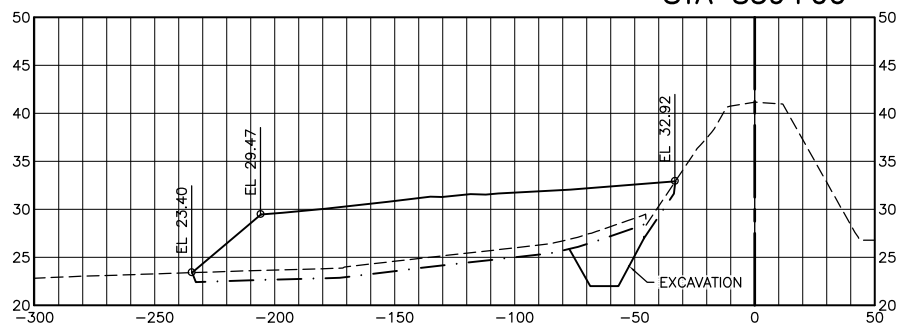
Attachment E - Project Drawings

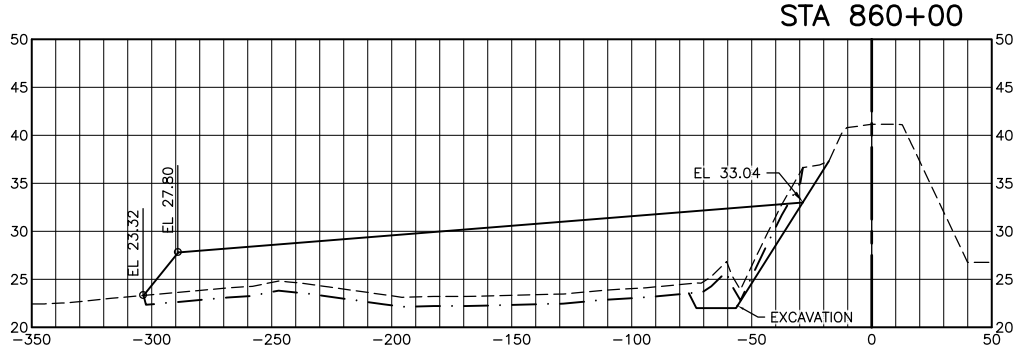
STA 858+00



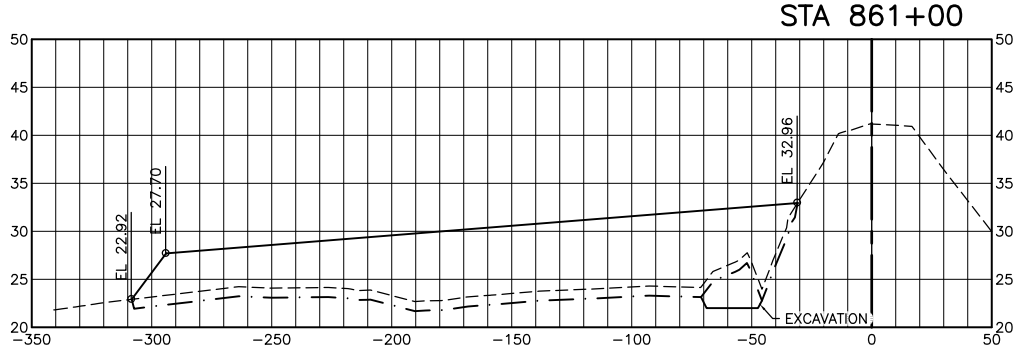
STA 859+00



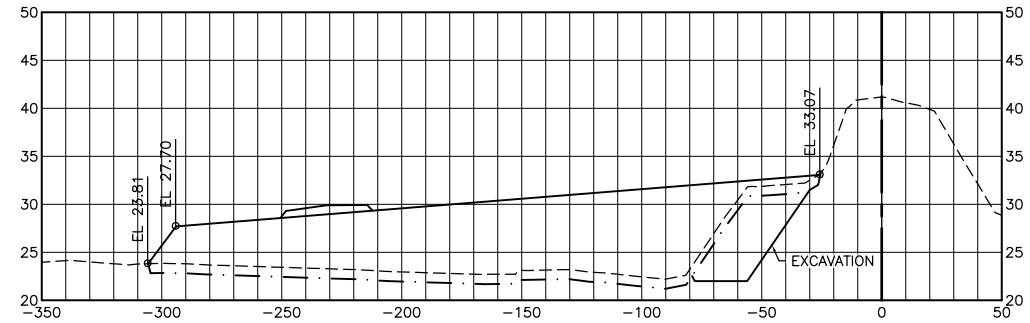
STA 860+00



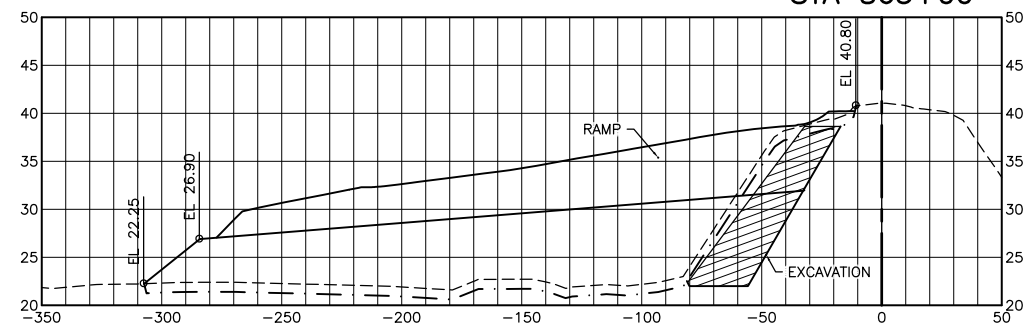
STA 861+00



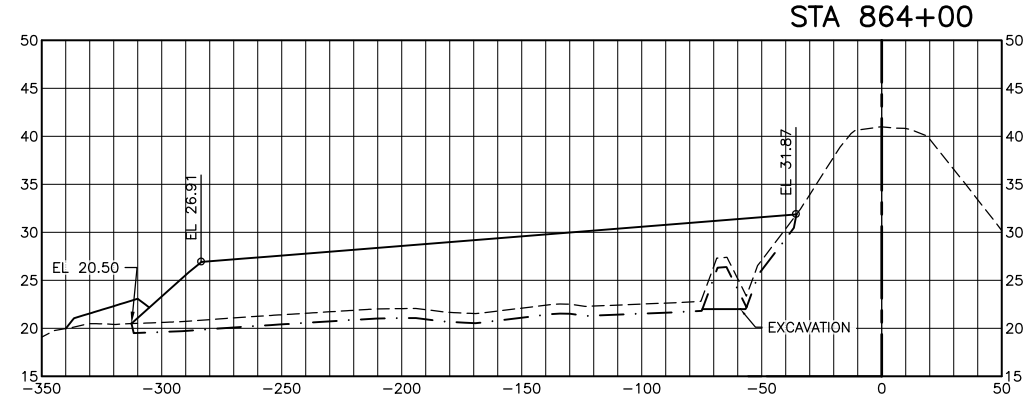
STA 862+00



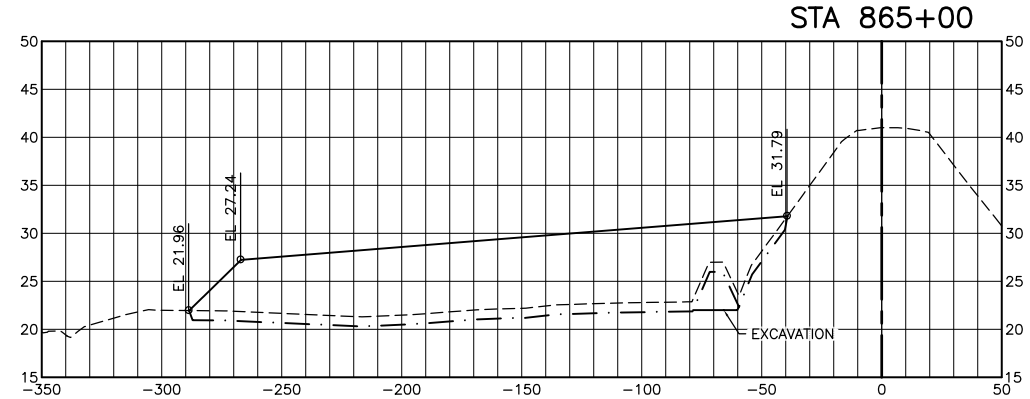
STA 863+00



STA 864+00



STA 865+00



LEGEND:

- EXISTING GRADE
- FINISHED GRADE
- STRIPPING SURFACE

NOTES:

1. REFER TO DRAWING C–6 FOR TYPICAL LEVEE SECTION AND DETAILS. REFER TO SHEETS C–8 AND C–9 FOR RAMP DETAILS.
2. STRIPPING AND EXCAVATION LINES DO NOT INCLUDE EXCAVATION RELATED TO CLEARING, GRUBBING OR DEMOLITION.
3. EXCAVATION IN LEVEE SLOPE SHALL BE NO STEEPER THAN 2H:1V.
4. FINISHED GRADE IS BEFORE TOPSOIL PLACEMENT.

40 20 0 40 80
HORIZ SCALE: 1"=40'

10 5 0 10 20
VERT SCALE: 1"=10'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

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REACH 19A BERM SITE

CROSS SECTIONS STA 858+00 TO 865+00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C–10
SHEET 15

C:\pwworking\sac\d0411242\C-10.dwg, Layout1, 11/14/2014 6:46:51 PM
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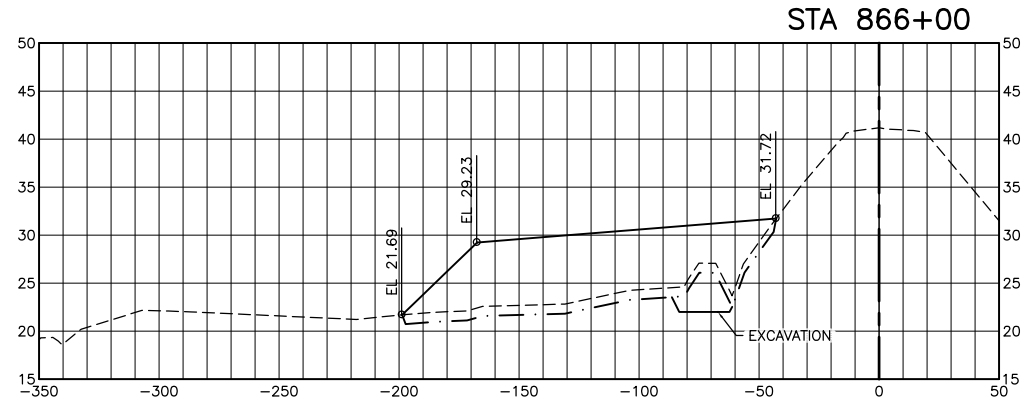
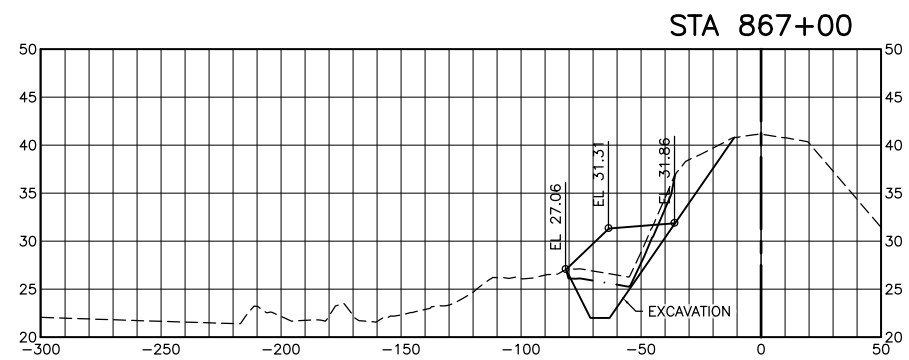
Attachment E - Project Drawings





LEGEND:

EXISTING GRADE

FINISHED GRADE

STRIPPING SURFACE

NOTES:

1. REFER TO DRAWING C-6 FOR TYPICAL LEVEE SECTION AND DETAILS. REFER TO SHEETS C-8 AND C-9 FOR RAMP DETAILS.
2. STRIPPING AND EXCAVATION LINES DO NOT INCLUDE EXCAVATION RELATED TO CLEARING, GRUBBING OR DEMOLITION.
3. EXCAVATION IN LEVEE SLOPE SHALL BE NO STEEPER THAN 2H:1V.
4. FINISHED GRADE IS BEFORE TOPSOIL PLACEMENT.

HORIZ SCALE: 1"=40'

VERT SCALE: 1"=10'

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: A. QUINTRALL
DRAWN BY: A. JACKSON
CHECKED BY: B. JOHNSON
IN CHARGE: C. KRIVANEC/J. MACK
DATE: 10/24/14

HDR Engineering Inc.
2365 Iron Point Rd. Suite 300
Folsom, CA 95630

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REACH 19A BERM SITE

CROSS SECTIONS STA 866+00 TO 867+00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

DRAWING NO. C-11

SHEET 16

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C:\pwworking\sac\d0411242\C-11.dwg - 10/22/2014 1:26 PM - opsolsen

Attachment E - Project Drawings

KLEINFELDER
Bright People. Right Solutions.

TECHNICAL MEMORANDUM

Date: April 8, 2015

To: Mr. John Bassett, PE
SAFCA
1007 7th Street, 7th Floor
Sacramento, California 95814

From: Rebecca Money, PE, GE, CFM
Tim Williams, PE, GE

Project: 94582 SREL4, Reach 19 (BF3034 DSGN)

Subject: Fill Compatibility
Seepage Berm Construction
SREL Reach 19A
Natomas Levee Improvement Project (NLIP)
Sacramento, California

This memorandum was prepared to confirm the compatibility of the existing levee fill to the proposed seepage berm construction along Reach 19A of the Sacramento River East Levee (SREL) in Sacramento, California. Construction plans prepared by Northwest Hydraulic Consultants (NHC) titled "Natomas Levee Improvement Project, American River RM 0.5R Mitigation Site Grading and SREL 19A Seepage Berm Construction Project," dated February 2015 were reviewed. It is our understanding this information will be used for inclusion in the Permit 19004 package to the CVFPB.

Background

Kleinfelder prepared a report entitled "Draft Alternatives Analysis Report, Sacramento River East Levee, SREL 4 (Reaches 16 through 20), Natomas Levee Improvement Program, Sacramento and Sutter Counties, California," dated November 6, 2009. This report was not finalized. However, the recommendations and information included within this report are considered applicable.

Site Conditions

Reach 19A encompasses the length of levee between Stations 857+00 and 875+00. A 30-foot deep SCB cutoff wall is present along this entire length, constructed in 1991 along the levee centerline. Residential properties are located as close as 250 feet from the existing levee toe. Levee fill within this reach consists predominately of poorly graded sand, silty sand, and some sandy silt, as shown on the Plan and Profile plates in the Draft Alternatives Analysis Report.

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The project plans indicate the seepage berm would be constructed between approximate Stations 857+00 and 868+50. The berm would be approximately 5 to 12 feet in thickness and extends approximately 100 to 250 feet wide. The plans also indicate the road ramps should be constructed using "Select Fill" and the seepage berm should be constructed using "Seepage Berm Fill." The specifications for these two material types were not provided in the project plans. However, you have indicated that the "Seepage Berm Fill" material type being excavated from the borrow source (American River RM 0.5R) will likely be silty sand and sandy silt and the "Select Fill" will be levee embankment fill that meets US Army Corps of Engineers specifications for the NLIP project.

Conclusions

Based on the information reviewed, the seepage berm would likely be considered an undrained berm without a drainage layer or filter interface between the levee embankment and fine grained blanket and the seepage berm. The presence of the shallow cutoff wall should intercept local through seepage. Therefore, it is Kleinfelder's opinion that the proposed seepage berm construction should not cause adverse impacts to the existing levee embankment.

Limitations

The memorandum is subject to the limitations contained in the referenced draft Alternatives Analysis report.

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