

**Meeting of the Central Valley Flood Protection Board**

**March 29, 2019**

**Permit Staff Report**

**Department of Water Resources**

**Eastside Bypass Improvements Project, San Joaquin River, Merced County**

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**1.0 – ITEM**

Consider approval of Permit No. 19307 (Attachment A).

**2.0 – APPLICANT**

Department of Water Resources (DWR).

**3.0 – PROJECT LOCATION**

The project is located between the Cities of Merced and Los Banos in Merced County on the Eastside Bypass just east of the San Joaquin River, approximately 15 miles southwest from the City of Merced. (Attachment B)

**4.0 – EXISTING FLOOD CONTROL FEATURES**

The Eastside and Mariposa Bypasses are flood control channels that convey flood flows and reduce flooding to surrounding lands. The portion of the Eastside Bypass within the project area is called the Middle Eastside Bypass, which begins at the Sand Slough Control Structure and ends at the Eastside Bypass Control Structure. Flood flows reaching the Sand Slough Control Structure are diverted to the Eastside Bypass via the Sand Slough Control Structure. Currently, all irrigation flows in the San Joaquin River are diverted at Sack Dam to the Arroyo Canal. No irrigation flows enter the Eastside Bypass.

Other than some ponding in low-lying areas, the bypasses generally remain dry until they are required to convey high flows during the flood season, although they carry agricultural tail-water during July through October that the Merced National Wildlife Refuge (MNWR) may divert at its weirs. The flood season for the Lower San Joaquin Levee District (LSJLD) typically lasts from November 1 to July 15 of each water year,

with rainfall contributing to high flows during the early part of the flood season, and snowmelt contributing to flows at the later part of the flood season.

## **5.0 – PROJECT DESCRIPTION**

To reinforce approximately 2 miles of levee with cutoff walls along the existing right (east) bank levee in the Eastside Bypass to improve levee stability and reduce seepage. Existing system features including five (5) 24-inch diameter culvert drains and one (1) 36-inch diameter irrigation canal will be replaced in-kind as part of system maintenance due to the cutoff wall installation.

## **6.0 – 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
- § 107 – Permitted Uses in Designated Floodways
- § 112 – Streams Regulated and Nonpermissible Work Periods
- § 120 – Levees
- § 122 – Irrigation and Drainage Ditches, Tile Drains, and Septic Systems
- § 123 – Pipelines, Conduits, and Utility Lines

## **7.0 – PROJECT ANALYSIS**

The Eastside Bypass includes project levees that were constructed as part of the Lower San Joaquin River Flood Control Project (LSJRFCP) or Lower San Joaquin River and Tributaries Project. The LSJLD is responsible for operation and maintenance (O&M) of project levees within the project area. The LSJRFCP Operation and Maintenance Manual provides guidance for project levee O&M. Channel design capacity was originally authorized as the amount of water that can pass through a given reach with a

levee freeboard of 4 feet. Design capacities are generally considered to be safe carrying capacities, though some flood damages to adjacent land can occur even within design flows. These damages can occur because of levee under-seepage, through-seepage, and backwater effects on local storm drainage systems. Subsidence and sediment accumulation can decrease channel capacities, increasing these damages. The Middle Eastside Bypass and Lower Eastside Bypass are bypasses within the project area. The design capacities for the Middle Eastside Bypass and Lower Eastside Bypass within the project area are currently 16,500 cfs, and 8,000 cfs respectively.

Levees in the project area were constructed in the early 1960s. Based upon available information, levee construction was as follows: an inspection trench at least 12 feet wide was excavated to variable depths beneath the levee and centered along the waterside hinge point; prior to levee construction, the foundation was stripped to a depth of at least 0.2 feet; where the levee construction crossed drainage channels, the foundation was stripped to variable depths; and Eastside Bypass channel excavation spoils were used to construct the levees. Levee heights within this project area are about 10-14 feet above the landside toe elevation. Crest widths are 10-12 feet, the landside slopes range from about 2 horizontal to 1 vertical (H:V) and 3H:1V and the waterside slopes range from approximately 2H:1V to 4H:1V. The levees in the project area were raised 2-3 feet in 2000 by DWR as part of the Central Valley Reclamation Board's project to mitigate impacts of regional subsidence.

For this proposed project, a total of approximately 2 miles of levees within three segments of a 3-mile reach (Reach O) of the existing east levee in the Eastside Bypass between Sand Slough and the Mariposa Bypass would be improved to meet levee seepage and stability criteria. The three levee improvement segments (Reach O-1, Reach O-3, and Reach O-4) are shown in (Attachment C) with levee improvements described below.

There are a total of 6 system feature culverts/pipes that penetrate the levee and will be replaced with the same size culverts/pipes. These existing system features are being replaced due to the slurry cutoff wall improvements. The permitted encroachment includes the cutoff wall, as the pipe replacements fall under operation and maintenance. The existing pipes are corrugated metal and will be replaced with reinforced concrete pipe. These features for Reach O-1, O-3 (O-3A and O-3B), and O-4 are identified in (Attachment C).

Proposed construction activities within the flood channel are anticipated to take place primarily between April 1 and November 15. Flood season along the Eastside Bypass is from November 1 through July 15. Any work during the flood season would need to be

approved by the Central Valley Flood Protection Board (CVFPB) through a Time Variance Request. Completion of construction of the levee improvements, such as re-grading the levee crown and other activities outside of the flood channel may continue until the end of the year. The construction start date depends on water elevations and permit requirements. Project construction of the levee improvements would likely occur in one construction season in 2019. Specific construction periods would be determined in concert with National Marine Fisheries Service, United States Fish and Wildlife Service, and the California Department of Fish and Wildlife to minimize impacts to special-status species.

The One Pass Trench (OPT) Method or the Open Trench Method would be used to construct soilbentonite cutoff walls through the center of the levees for Reaches O-1, O-3, and O-4. The assumed average height above natural grade for levees is 13 feet, with a 3:1 waterside slope, 2:1 landside slope, and 12-inch crown width. The existing levee would be typically degraded by either 2 feet or by one-third of the levee height to create a working platform, depending on the construction method. The OPT Method requires a 20-foot-wide working platform and the Open Trench Method requires a 40-foot-wide working platform. Prior to degrading the levee, grass would be stripped down from the levee slopes within the improvement area and gravel on the levee crown would be salvaged to the extent possible and stockpiled in staging areas.

Degraded material deemed suitable would be blended with borrow pit material and stockpiled adjacent to the levee in an approximate 24-foot-wide corridor for reuse to reconstruct the top third of the levee after the cutoff wall is placed. The portion of degraded material deemed unsuitable would be separately stockpiled adjacent to the levee and would be used to fill in the borrow pit area or spoiled within the area in coordination with the landowner.

After the working surface has been excavated and prepared, the starter trench would be excavated to the required depths shown on the final design plans for each levee segment. Depending on the construction method, up to 50% of the cutoff wall trench cut soil would be stockpiled in the staging area and later blended with bentonite inside the trench to create the slurry. The starter trench would be backfilled with suitable compacted levee fill material and then an excavator would be used to construct slurry cutoff walls with depths ranging from approximately 23-32 feet and a consistent wall thickness of about 36 inches. A settlement plate and temporary soil cap may be installed depending on final design plans. The settlement plate would be removed upon approval, and suitable material would be exposed to a trench depth of 1 foot below the working surface. Upon adequate curing of cutoff walls, the trench excavation would be filled to elevations established as part of the final design.



Proper moisture-conditioned embankment materials would be placed in accordance with accepted levee construction standards for material type, lift thickness, and compaction to restore levee height and crown. Embankment material would be meeting requirements of the specifications for levee fill. Each lift would be moisture-conditioned and compacted to the specified density using suitable tamping foot compactors.

The levee degrade, and crown reconstruction would include a homogeneous section of suitable low permeability material. Suitability of material would be determined during final design. After the levee is reconstructed, aggregate base or asphalt concrete would be placed on the levee crown patrol road to match preconstruction conditions, and the levee slopes would be seeded and/or planted with approved vegetation. Currently, no asphalt concrete paving of levee crowns is envisioned except for localized areas where reconstruction of short paved ramps from the levee crown to a major road crossing would be needed. (Attachment D - Project Plans and Sections)

## **7.1 – Hydraulic Analysis**

The channel capacity within the project area will not be changed as a result of the proposed levee improvements as the purpose of the proposed Project is to address through and under seepage. Other than some ponding in low-lying areas, the bypass generally remains dry until high flows are conveyed during the flood season. Additionally, the MNWR may divert agricultural tail-water to the bypass during the months of July through October. Levee improvements would include reinforcing approximately 1,500 linear feet of levee in Reach O-1, 5,900 linear feet of levee in Reach O-3, and 2,600 linear feet of levee in Reach O-4 with cutoff walls. Sand or gravelly soils of higher permeability in the levee or levee foundation can transmit water via seepage during high-water stages. Cutoff walls are designed to reduce levee through-seepage and underseepage by providing a lens of low-permeability material through the higher permeability materials in the levee and levee foundation to essentially cut off the flow. Cutoff walls would be installed to depths sufficient to minimize seepage through the levee and/or beneath it to meet or exceed USACE levee design criteria. For cutoff walls designed to block through-seepage, the intent is to construct a wall deep enough to block flow through the levee and alter the flow path of seepage to reduce landside impacts. Cutoff walls for underseepage are generally installed to depths that would tie into existing lower permeability soil layers in the levee foundation below the permeable material. The depths for cutoff walls necessary to limit underseepage and through-seepage at the design water surface elevation to gradients specified by USACE are determined by geotechnical modeling and analyses. For the

proposed levee improvements, the top portion of the existing levee would be degraded, a bentonite cutoff wall up to approximately 32-feet deep would be placed in the middle of the levee crown for improved stability, and then the top portion of the existing levee would be reconstructed using select levee fill material. The levee improvements proposed in this permit are focused on addressing seepage concerns, therefore staff has determined that there are no anticipated adverse impacts including hydraulic impacts to the SPFC as a result of the project. A conceptual design schematic of a cutoff wall installed along the levee centerline is shown in (Attachment E).

## **7.2 – Geotechnical Analysis**

The Eastside Bypass between Sand Slough and the Mariposa Bypass has been identified by the San Joaquin River Restoration Program (SJRRP) as the most limiting channel reach with regards to levee seepage and stability. Geotechnical analysis has further shown that the uppermost 3 miles of the right bank of the reach Reach O is the critical segment of the reach that will limit the release of Restoration Flows within the next 10-20 years. DWR's Division of Flood Management performed geotechnical evaluations in the reach and identified three segments of the approximately 3-mile levee segment that need improvements. "Then-existing" channel capacity for the Middle Eastside Bypass is approximately 580 cfs. "Then-existing" channel capacity is the channel capacity that corresponds to flows that would not significantly increase flood risk from Restoration Flows, based on the current levee evaluations. As part of the SJRRP, improvements in the Middle Eastside Bypass would increase capacities for Restoration Flows, but the reach's overall design flood capacity will not be increased.

Based on boring data, foundation soils in Reach O generally consist of 1-20 feet of lean clay or silty clay with varying amounts of sand. The clay is underlain by layers of clayey sand, silty sand, or poorly graded sand. The thickness of the sand layer is about 2-10 feet. The foundation clay soils are generally classified as low to medium plasticity and stiff to hard consistency.

## **8.0 – AGENCY COMMENTS AND ENDORSEMENTS**

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

- During the LSJLD's July 10, 2018 Board meeting, no objection to the Reach O Levee Improvements Project were made. The LSJLD provided a letter on

September 11, 2018 that stated the adoption of Resolution 678-18 confirming no objection to the disclosed project (Attachment F).

- A non-fed determination from USACE has been received for this application. The USACE Sacramento District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project. (Attachment G)

## **9.0 – CEQA ANALYSIS**

Staff has prepared the following California Environmental Quality Act (CEQA) determination:

The Board, as a responsible agency under CEQA, has reviewed the San Joaquin River Restoration Program - Eastside Bypass Improvements Project, Initial Study/Mitigated Negative Declaration (IS/MND) (SCH Number: 2017121026, December 2017) and Mitigation Plan prepared by the lead agency, DWR. These documents, including project design, may be viewed or downloaded from the CVFPB website at:

<http://cvfpb.ca.gov/event/February-2019-regular-business-meeting/> under the link for this agenda item. These documents are also available for review in hard copy at the Board and DWR offices.

DWR, as the lead agency determined that the project would not have a significant effect on the environment and filed a Notice of Determination on May 3, 2018 with the State Clearinghouse. Staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's IS/MND and address impacts to air quality, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, paleontological resources, and recreation. The mitigation measures are further described in the adopted IS/MND.

In accordance with CEQA Guidelines Section 15096(e), staff independently reviewed the County's IS/MND, and finds these environmental documents prepared by the lead agency adequately address hydrology impacts, including potential flood risk, within the Board's jurisdiction. 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)). In accordance with CEQA Guidelines Section 15096(f) and (g), staff recommends the Board make responsible agency findings that approval of Permit No. 19307 would not have a significant adverse impact and 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.

### **10.0 – CALIFORNIA WATER CODE SECTION 8610.5 CONSIDERATIONS**

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:

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

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 for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on facilities of the State Plan of Flood Control (SPFC), and consistency of the proposed project with the Central Valley Flood Protection Plan Update (CVFPP) as adopted by Board Resolution 2017-10 on August 25, 2017.

The proposed project includes the reinforcement of approximately 2 miles of levee with a slurry cutoff wall along the existing right (east) bank levee in the Eastside Bypass which will improve levee stability and reduce seepage. In addition to the cutoff wall, five existing corrugated metal drainage pipes will be replaced with reinforced concrete drainage pipes as part of maintenance to existing system features. Construction of the slurry cutoff wall and replacing the aging drainage pipes will be an improvement to the existing SPFC facility and is consistent with the CVFPP because the project improves flood risk management and improves operations and maintenance by reducing the amount of levee seepage.

4. 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 result in no change to the hydrology and hydraulics. Therefore, it is expected that there will be no effects on the reasonable projected future events due to the proposed project.

## **11.0 – STAFF RECOMMENDATION**

### **Adopt:**

- CEQA findings: The Board, acting as a responsible agency under CEQA, has independently reviewed and considered the environmental documents prepared for the project. Approving the Permit 19307 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:**

- Draft Encroachment Permit No. 19307 in substantially the form provided in Attachment A.

### **Direct:**

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

## **12.0 – LIST OF ATTACHMENTS**

- A. Draft Permit No. 19307
- B. Location Maps and Photos
- C. Project Reach Locations
- D. Project Plans and Sections
- E. Slurry Cutoff Wall Detail
- F. LSJLD No Objection Letter for the Project
- G. USACE Non-Fed Determination Email

Design Review:	Greg Harvey, P.E., Acting Chief, Plan Implementation and Compliance Branch
Environmental Review:	James Herota, Senior Environmental Scientist
Document Review:	Gary W. Lemon, P.E., Permitting Section Chief Michael C. Wright, P.E., Acting Chief Engineer
Legal Review:	Jit Dua, General Counsel

**DRAFT**

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

**PERMIT NO. 19307 BD****This Permit is issued to:**

California Department of Water Resources (DWR)  
3374 East Shields Avenue  
Fresno, California 93726

To reinforce approximately 2 miles of levee with cutoff walls along the existing right (east) bank levee in the Eastside Bypass to improve levee stability and reduce seepage. Existing system features including five (5) 24 inch diameter culvert drains and one (1) 36 inch diameter irrigation canal will be replaced in-kind as part of system maintenance due to the cutoff wall installation.

The project is located between the Cities of Merced and Los Banos just east of the San Joaquin River, approximately 15 miles southwest from the City of Merced, at 37.20480°N 120.69700°W, Lower San Joaquin Levee District, Eastside Bypass, Merced 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. 19307 BD**

### **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 or 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 and the Lower San Joaquin Levee District 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 February 4, 2019 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: Permittee shall pay to the Board, an inspection fee(s) to cover inspection cost(s), including staff and/or consultant time and expenses, for any inspections before, during, post-construction, and regularly thereafter as deemed necessary by the Board.

EIGHTEEN: Correspondence was received from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated October 23, 2018, signifying that the District Engineer has no comments or recommendations regarding flood control because the proposed project does not affect a federally constructed project.

NINETEEN: 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.

## **PRE-CONSTRUCTION**

TWENTY: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard, 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-ONE: No construction work of any kind shall be done during the flood season from November 1 to July 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-TWO: Cleared trees and brush shall be properly removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to July 15.

TWENTY-THREE: Concrete pipes shall be precast reinforced pipe meeting ASTM Specification C76-90 with reinforced concrete collars at all joints within the levee section and 10 feet landward and waterward of the levee toes.

TWENTY-FOUR: Precast reinforced-concrete pipe or box culvert joints shall be encased in reinforced concrete at least 6 inches thick and cast against firm undisturbed earth.

TWENTY-FIVE: Precast reinforced-concrete pipe or concrete cylinder pipe installed below the design flood plane shall be encased below the springline in concrete cast against firm undisturbed earth.

TWENTY-SIX: The pipes shall be placed in the center of an open trench 2 feet wider than the diameter of the pipe or 2 times the diameter, whichever is greater.

TWENTY-SEVEN: The pipes shall be placed in an open cut with side slopes of 1 horizontal to 1 vertical or flatter.

TWENTY-EIGHT: The pipes shall be installed through the levee section at a right angle to the centerline of the levee.

TWENTY-NINE: Backfill material for excavations within the levee section and within 10 feet of the levee toes shall be placed in 4- to 6-inch layers, moisture conditioned above optimum moisture content, and compacted to a minimum of 90 percent relative compaction as measured by the current ASTM D1557 standard.

THIRTY: A flap gate shall be installed on the waterward end of the pipe.

THIRTY-ONE: In the event that the potential inundation areas on the landside of the levee behind the replaced irrigation pipes are ever developed, a positive-closure device that is readily accessible during periods of high water shall be installed on the waterward side of the levee.

## **POST-CONSTRUCTION**

THIRTY-TWO: All debris generated by this project shall be properly disposed of outside the Eastside Bypass and project right-of-way.

THIRTY-THREE: The project site shall be restored to at least the condition that existed prior to commencement of work.

THIRTY-FOUR: Upon completion of the project, the permittee shall submit as-constructed drawings to the Board: 3310 El Camino Avenue, Suite 170, Sacramento, California 95821.

THIRTY-FIVE: The pipelines shall be tested and confirmed free of leaks by X-ray, pressure tests, or other approved methods during construction or any time after construction upon request by the Board.

THIRTY-SIX: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the levee.

THIRTY-SEVEN: In the event existing rock revetment on the levee slope is disturbed or displaced during construction, it shall be restored to its preconstruction condition.

THIRTY-EIGHT: The permittee shall replant or reseed the levee slopes to restore sod, grass, or other non-woody ground covers if damaged during project work.

## **OPERATIONS AND MAINTENANCE**

THIRTY-NINE: After each period of high water, debris that accumulates at the site shall be completely removed from the Eastside Bypass by the Lower San Joaquin Levee District.

FORTY: The Lower San Joaquin Levee District 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, 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.

FORTY-ONE: The Department of Water Resources shall be responsible for the repair of any damages to the project levee, channel, banks, floodway, or other flood control facilities due to construction. The Lower San Joaquin Levee District is responsible for operation and maintenance of the proposed project.

FORTY-TWO: The permitted encroachment(s) shall not interfere with 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) under direction of the Board. If the permittee does not comply, the Board may modify or remove the encroachment(s) at the permittee's expense.

## **PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL**

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

FORTY-FOUR: 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.

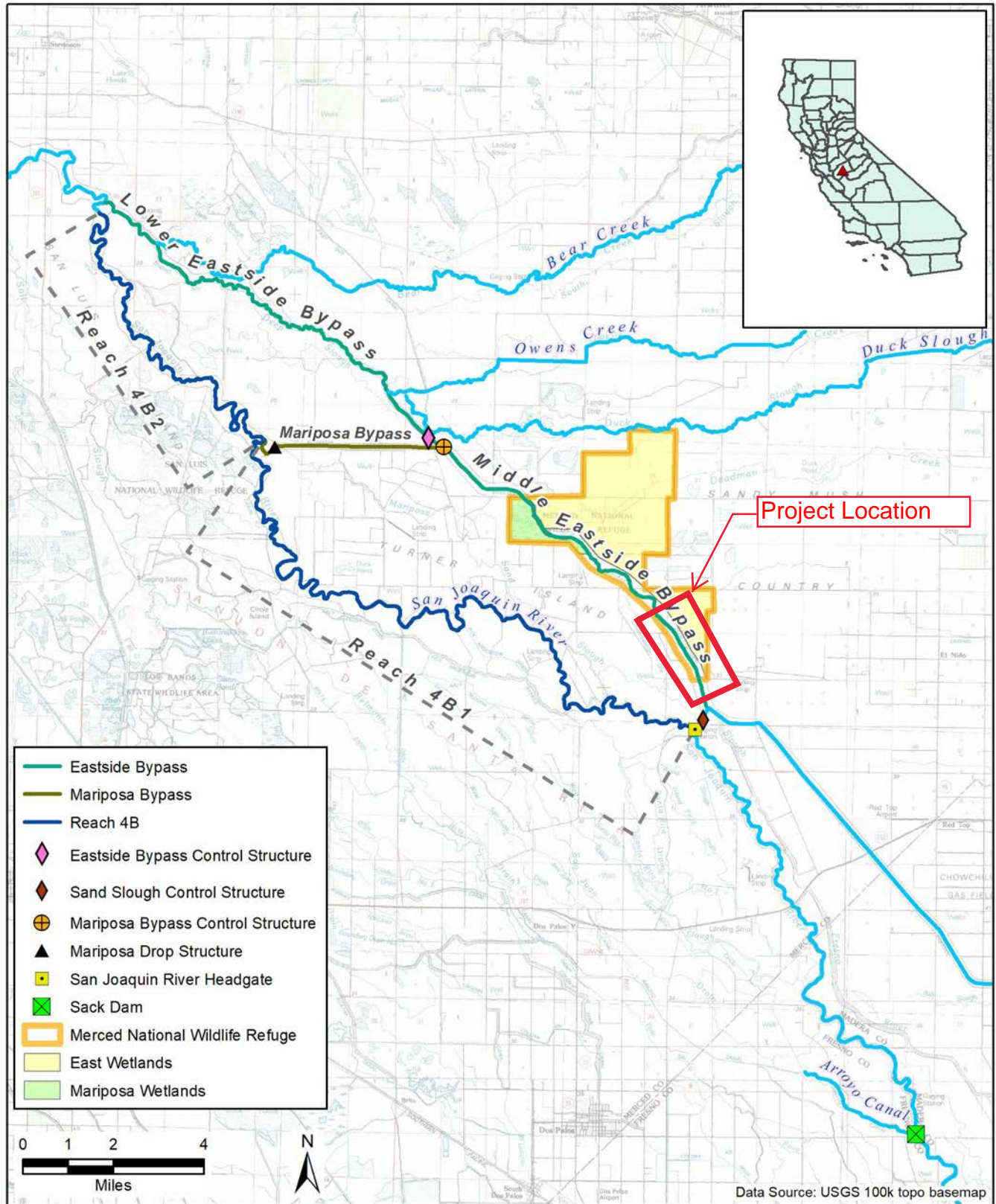




Project Location



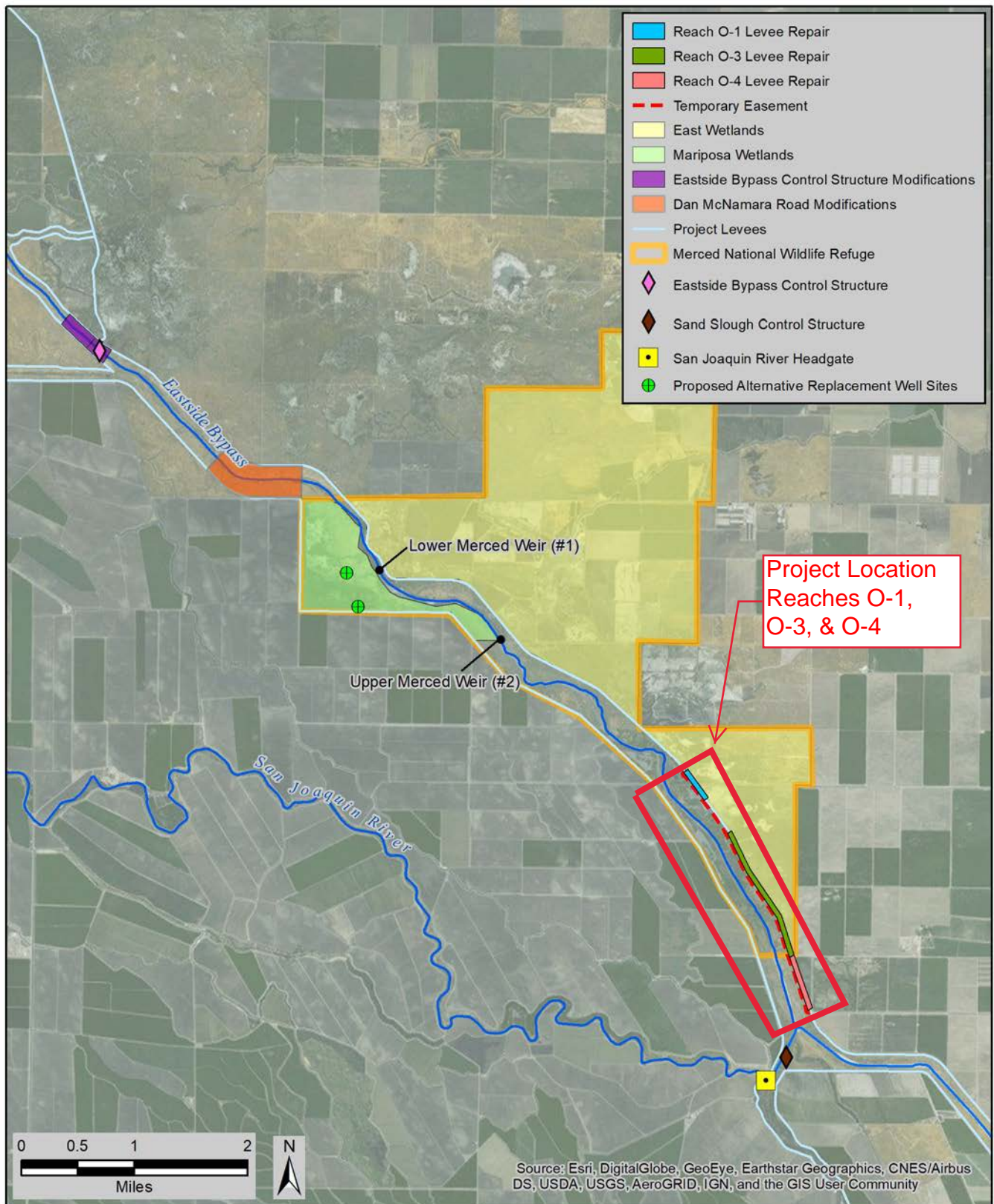
Figure 1. Project Location



Z:\Projects\1611277\_Flood\1702\1611277\_1702\_G002\_Eastside\_Bypass\_Project\_Area\_Figure\_1-1.mxd  
14Sep2017 SC

Source: GEI Consultants, Inc., 2017

**Figure 2. Proposed Eastside Bypass Improvements Project Location**



Z:\Projects\1611277\_Flood\1702\1611277\_1702\_G003\_Eastside\_Bypass\_Project\_Features\_Figure\_1-2.mxd  
11OCT2017 SC

Source: California Department of Water Resources 2017, adapted by GEI Consultants, Inc., 2017



## 9. Photographs

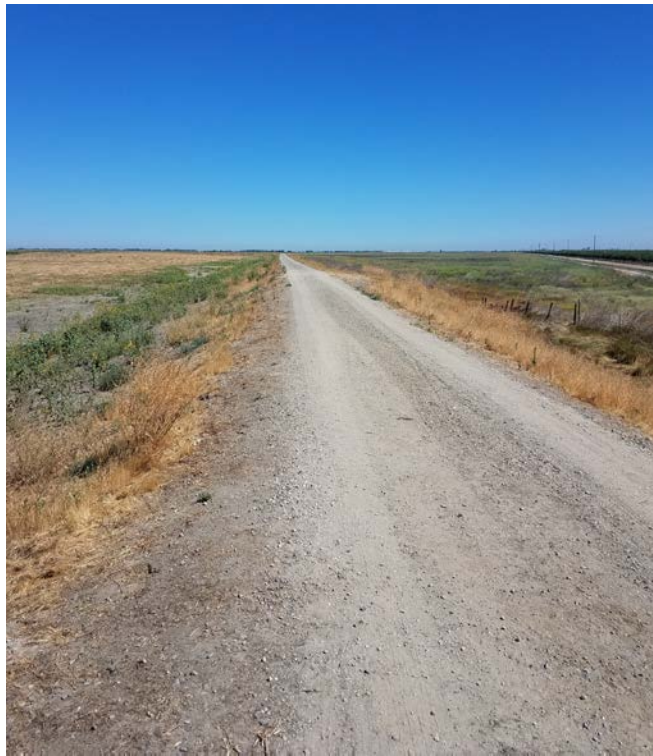
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**Photo 1:** Potential access route (left) and Lonetree Irrigation District irrigation canal (center) penetrating the existing Eastside Bypass levee.  
Source: California Department of Water Resources 2018

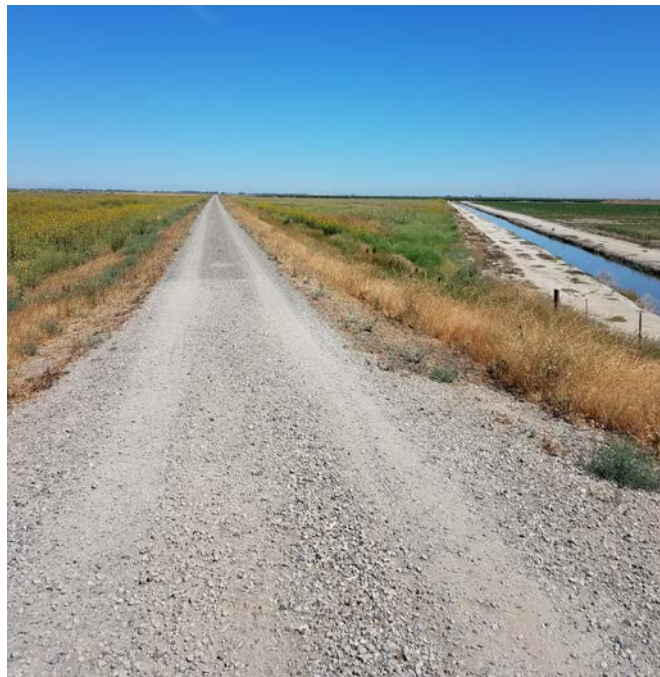


**Photo 2:** Reach O-1 levee and 24-inch culvert penetration on inside toe of levee, looking downstream.  
Source: California Department of Water Resources 2018



**Photo 3:** Reach O-3 Levee with Merced Wildlife Refuge to the right, looking downstream.

Source: California Department of Water Resources 2018

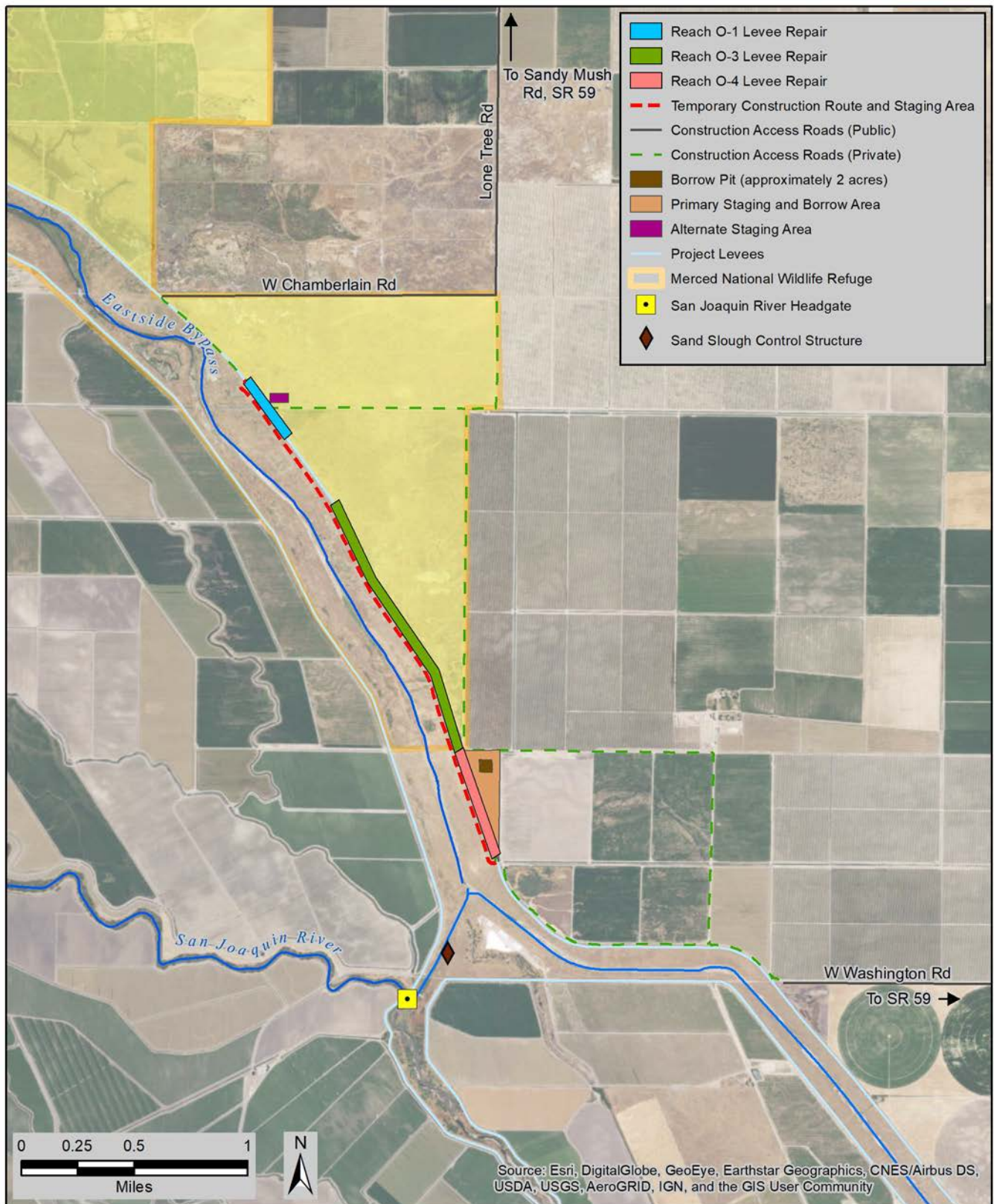


**Photo 4:** Reach O-4 Levee with primary staging and borrow area to the right, looking downstream.

Source: California Department of Water Resources 2018



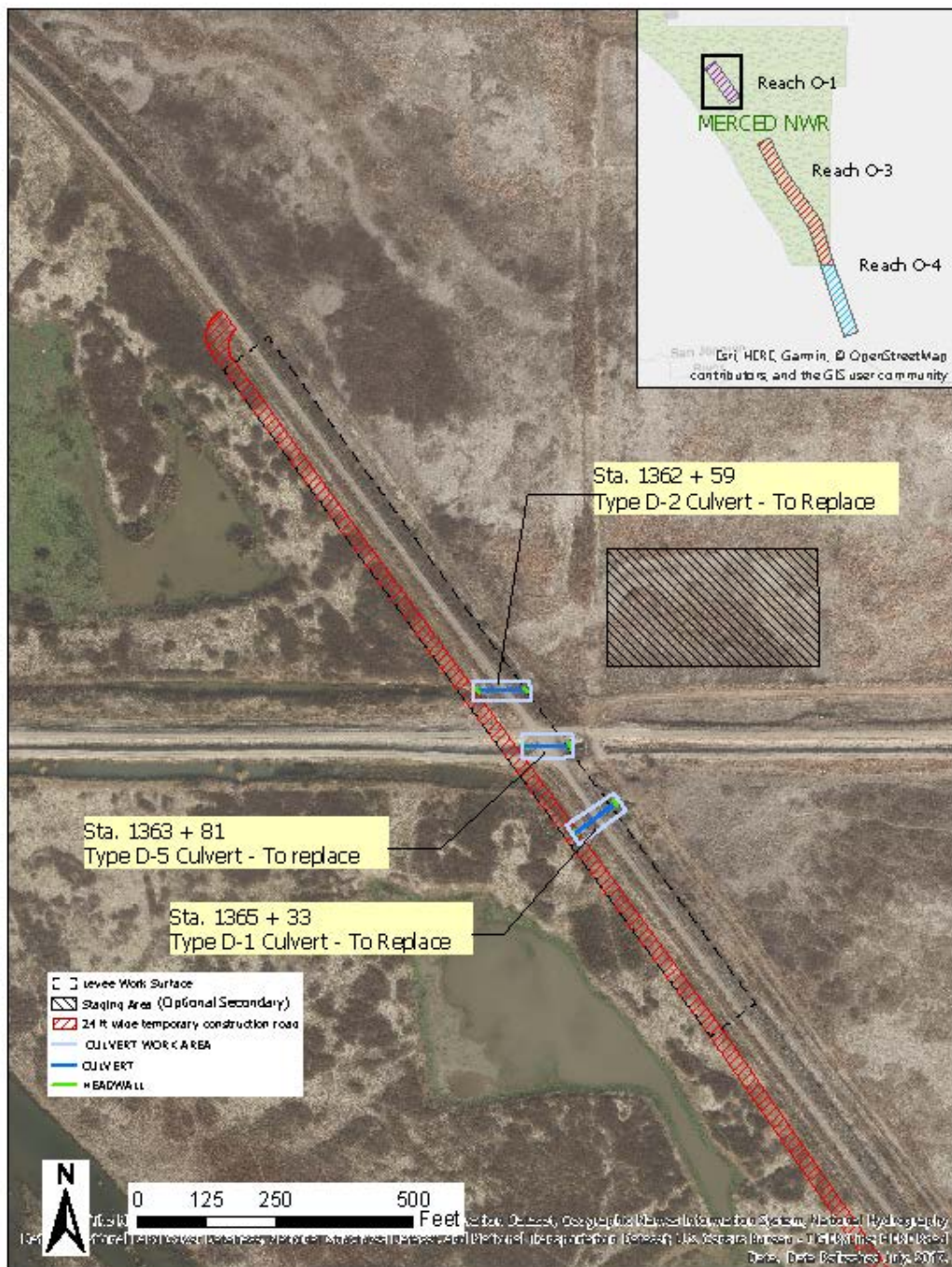
**Figure 3. Levee Improvement Segments**



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14Sep2017 SC

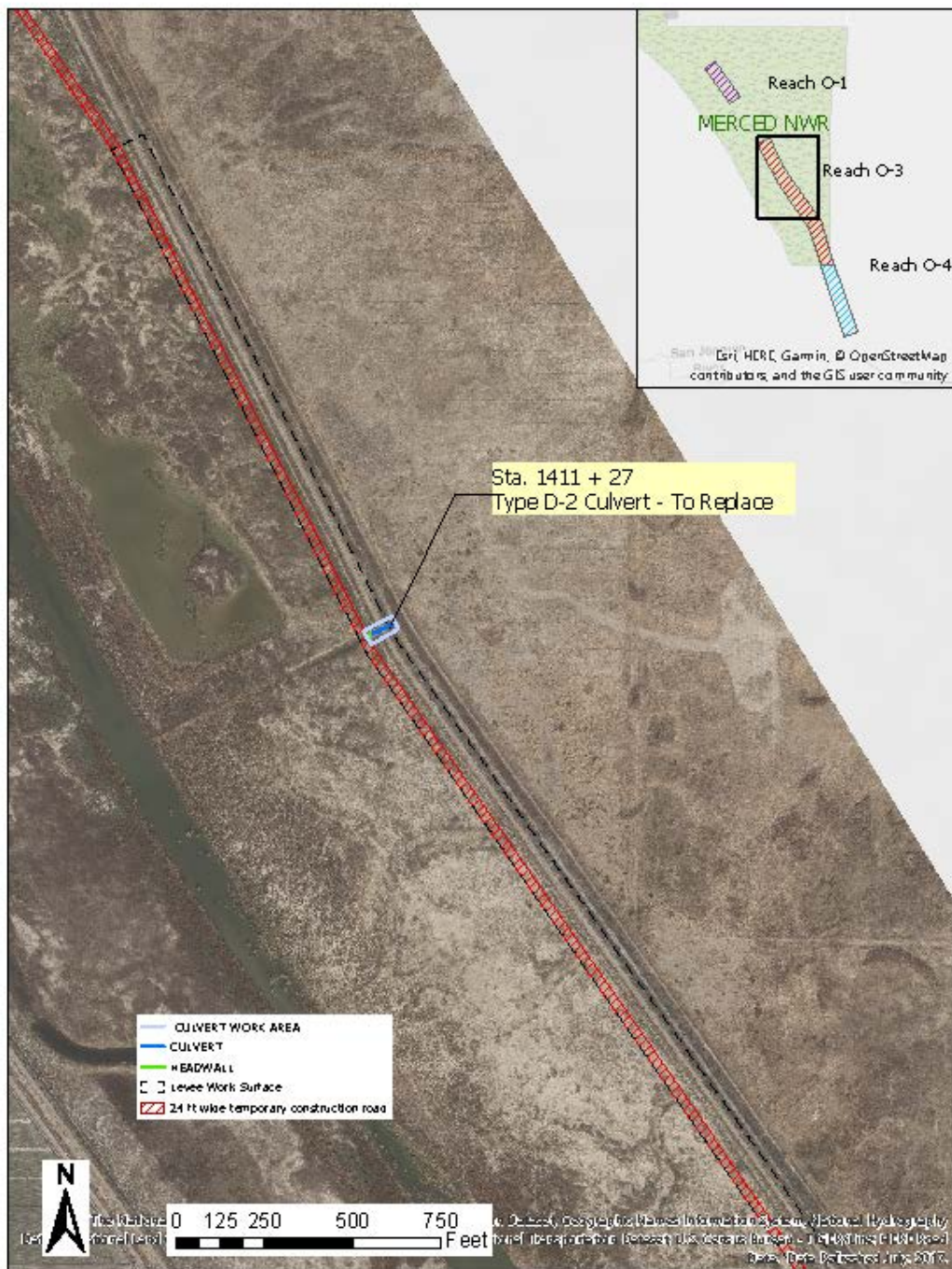
Source: California Department of Water Resources, 2017, adapted by GEI Consultants, Inc., 2017

**Figure 5. Reach O-1 Existing Infrastructure for Replacement or Protection**

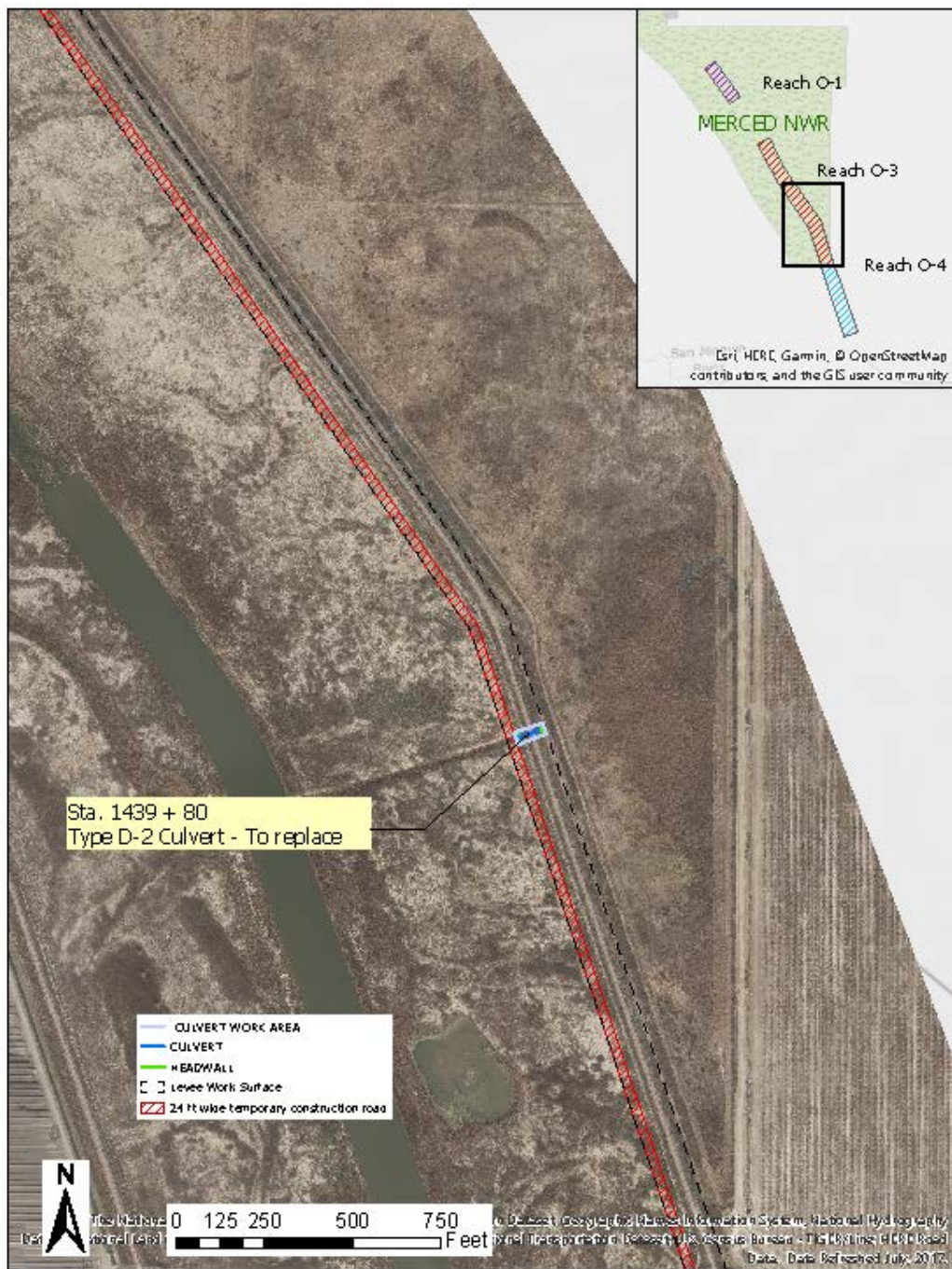




**Figure 6. Reach O-3A Existing Infrastructure for Replacement or Protection**

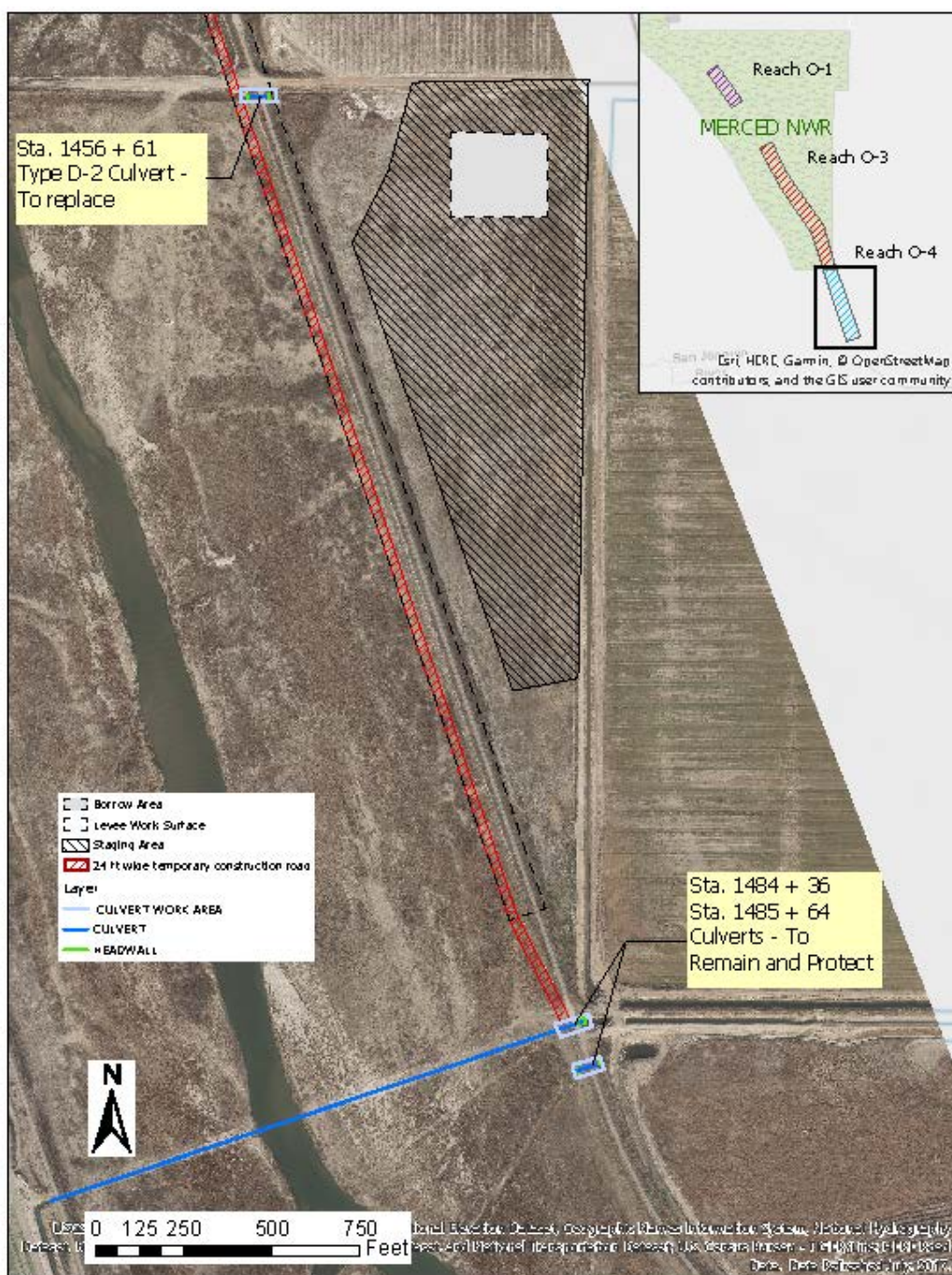


**Figure 7. Reach O-3B Existing Infrastructure for Replacement or Protection**





**Figure 8. Reach O-4 Existing Infrastructure for Replacement or Protection**



The details of the replacement and existing infrastructure are also shown in **Attachment C**, Drawings C-501 through C-506. Other existing infrastructure that is within the overall footprint and construction route are identified in the figures above and will be temporarily protected during construction.

Detailed drawings and a typical construction sequence for levee cutoff wall construction are included in the 60 percent design drawings in **Attachment C**.

## Attachment D



This map illustrates the San Joaquin River and its tributaries, including the Merced River, Bear Creek, Owens Creek, Chowchilla River, and Fresno River. Key cities and towns shown are Livingston, Atwater, Merced, Gustine, Los Banos, and Dos Palos. The map also depicts the San Luis Reservoir and the Merced River Bypass. A north arrow is located in the top right corner.

### AREA MAP

REV.	DESCRIPTION	SUB.	APP.
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ACTING CHIEF, DIVISION OF ENGINEERING, REG C.E. No. XXXXX

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
XX-XX	001	X	G-101

D	SHEET NO.		DRAWING NO.	DRAWING TITLE			
					ABBREVIATIONS		
	1	G-001	TITLE SHEET AND VICINITY MAP		CLSM	CONTROLLED LOW STRENGTH MATERIAL	
	2	G-002	LIST OF DRAWINGS		CMP	CORRUGATED METAL PIPE	
	3	G-003	CONCRETE NOTES AND STANDARD DETAILS		SB	SOIL BENTONITE	
	4	G-004	SITE PLAN		DWG	DRAWING	
					STA	STATION	
					ELEV, EL	ELEVATION	
					CL	CENTERLINE	
					NAVD	NORTH AMERICAN VERTICAL DATUM	
C					NAD	NORTH AMERICAN DATUM	
					MIN	MINIMUM	
					OPT	ONE PASS TRENCH	
					TEMP	TEMPORARY	
					AB	AGGREGATE BASE	
					NTS	NOT TO SCALE	
					TYP	TYPICAL	
					DIA	DIAMETER	
					OD	OUTSIDE DIAMETER	
					SYM	SYMBOL	
B					EW	EAST-WEST	
					GALV	GALVANIZED	
					O.C.	ON CENTER	
					E.F.	EACH FACE	
					E.F.E.W.	EACH FACE EACH WAY	
A							

STATE OF CALIFORNIA CALIFORNIA NATURAL RESOURCES AGENCY DEPARTMENT OF WATER RESOURCES DIVISION OF ENGINEERING STATE WATER FACILITIES			
			
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REG. C.E. No. 60261			
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LEVEE IMPROVEMENTS STA 1354+00 TO STA 1481+00 GENERAL			
LIST OF DRAWINGS			
SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
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DESIGNED:  
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EC-CF No. 60284

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FLOOD CONTROL PROJECT

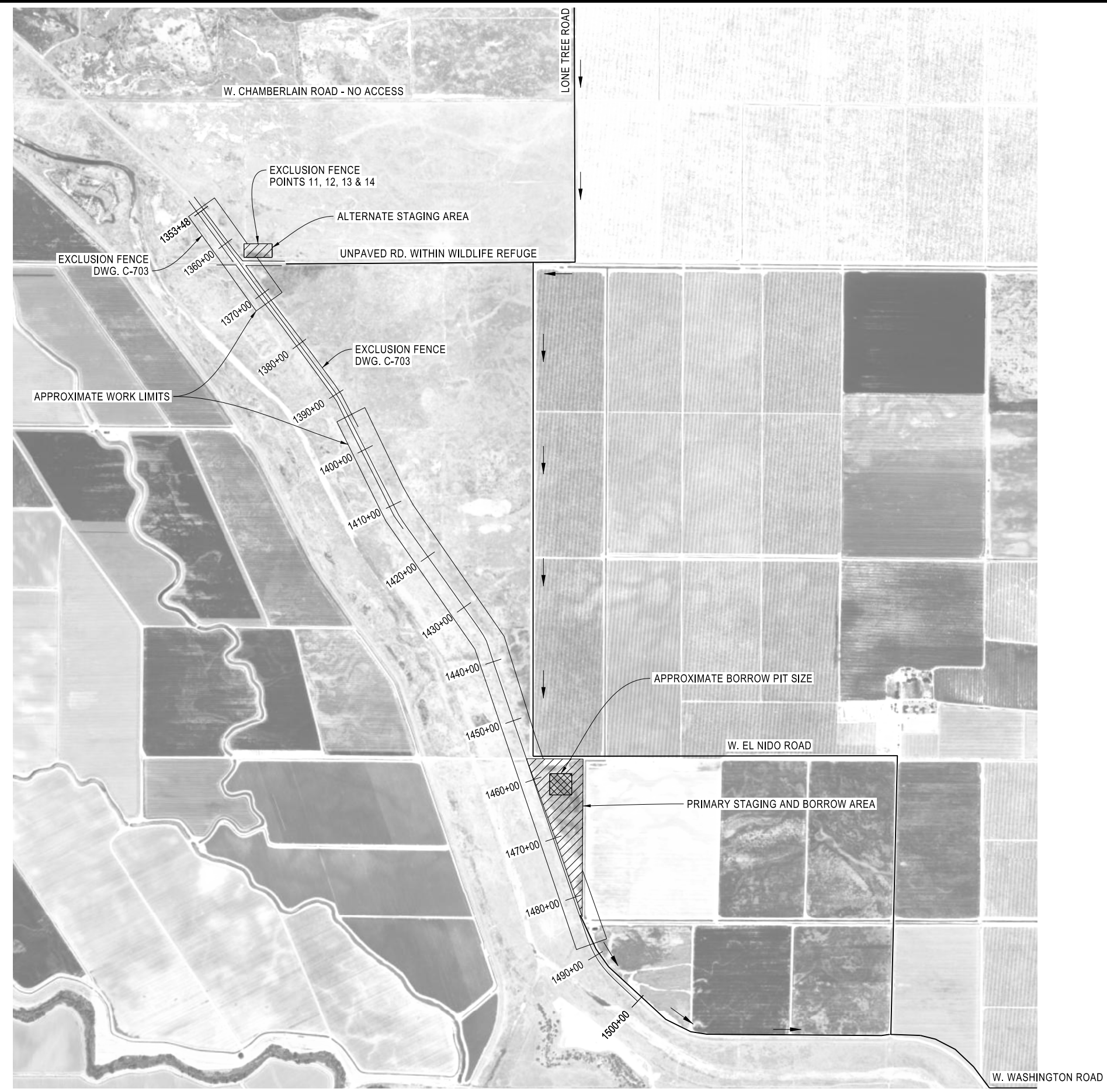
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## LEVEE IMPROVEMENTS STA 1354+00 TO STA 1481+00

GENERAL

SITE PLAN

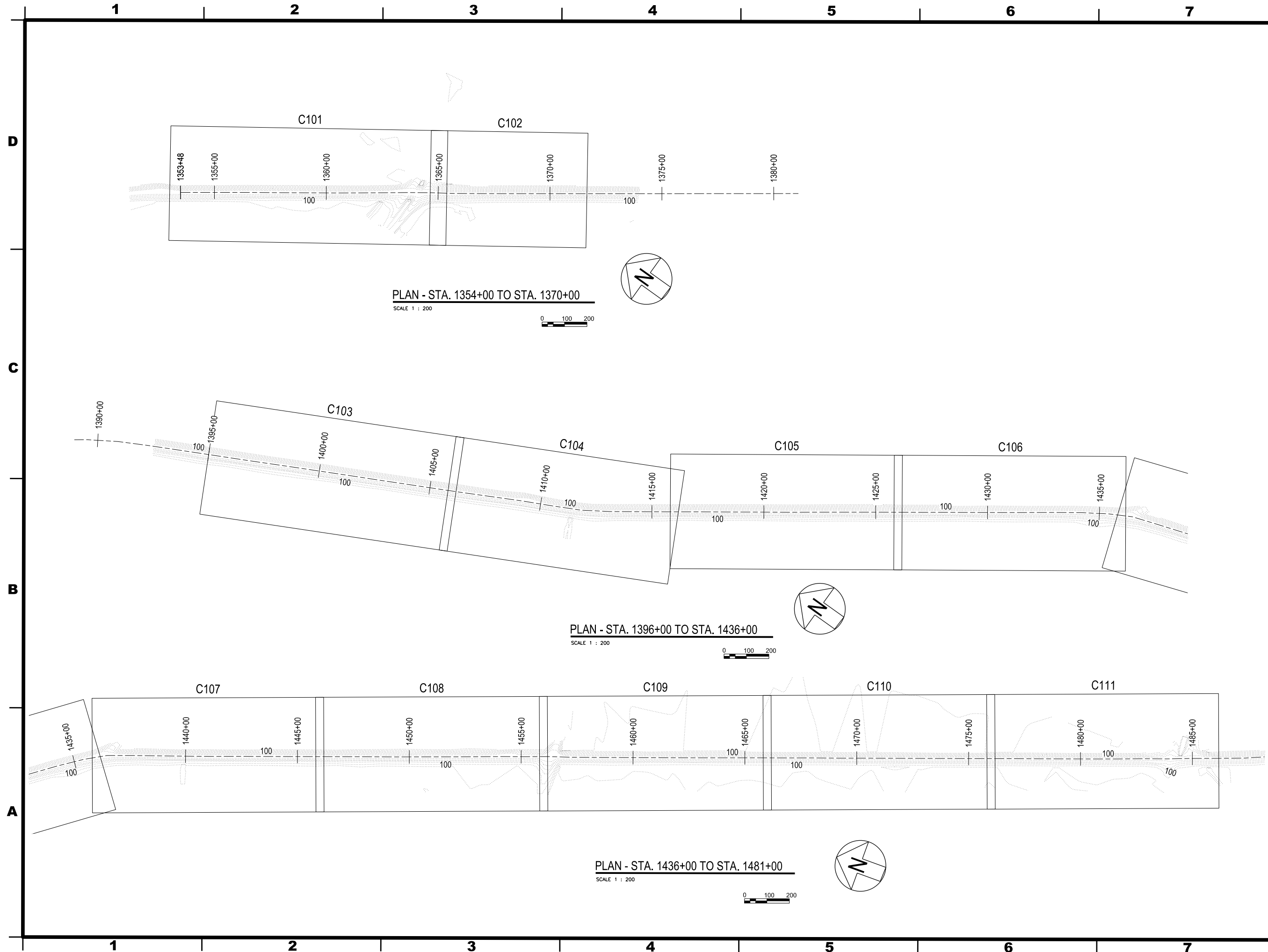
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### PLAN - HAUL ROUTE


SCALE 1 : 900





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DIVISION OF ENGINEERING  
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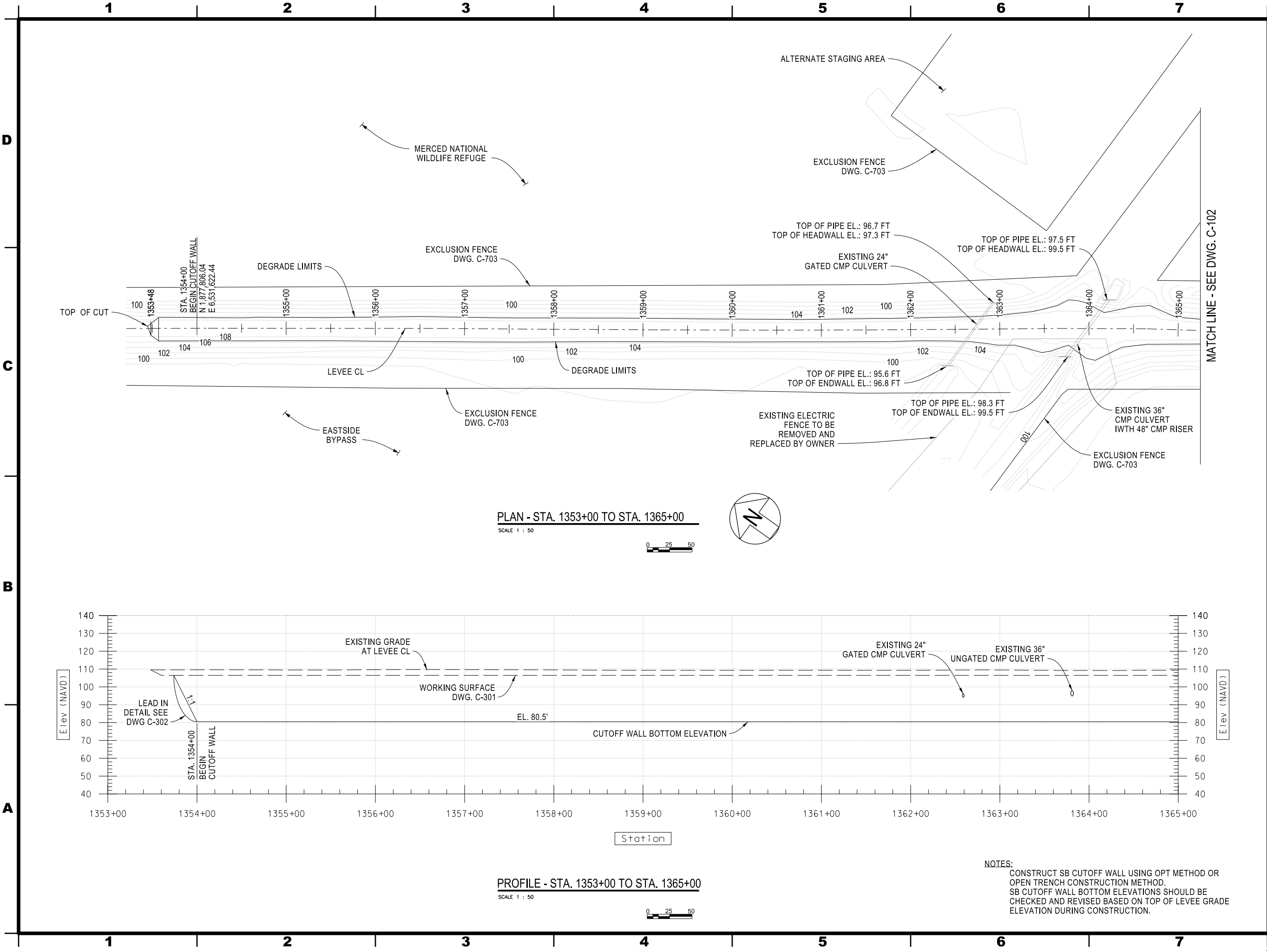
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FLOOD CONTROL PROJECT

EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
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## PLAN AND PROFILE PLATE INDEX

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
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FLOOD CONTROL PROJECT

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STA 1354+00 TO STA 1365+00

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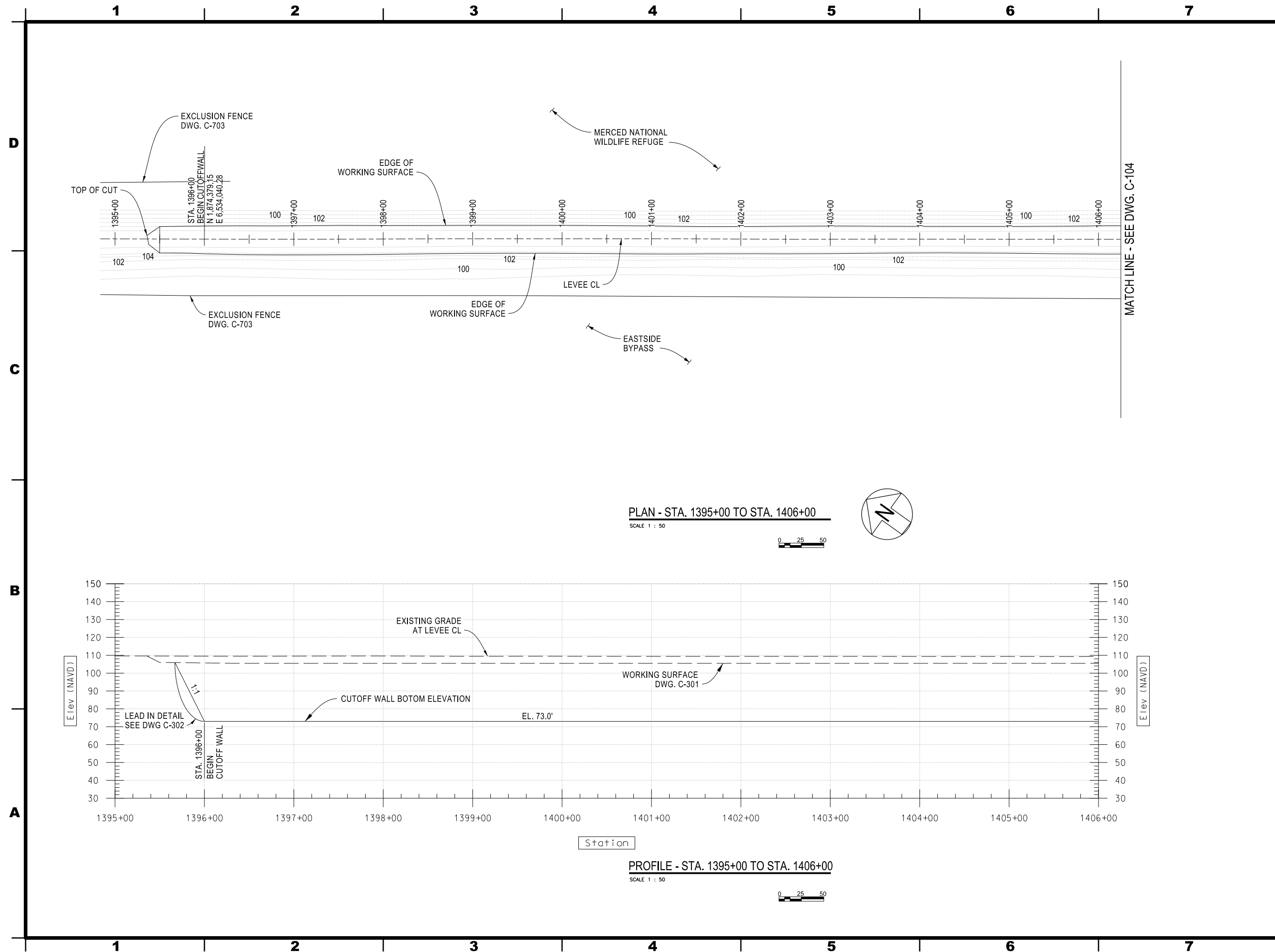
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PLAN AND PROFILE  
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SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	007		C-102

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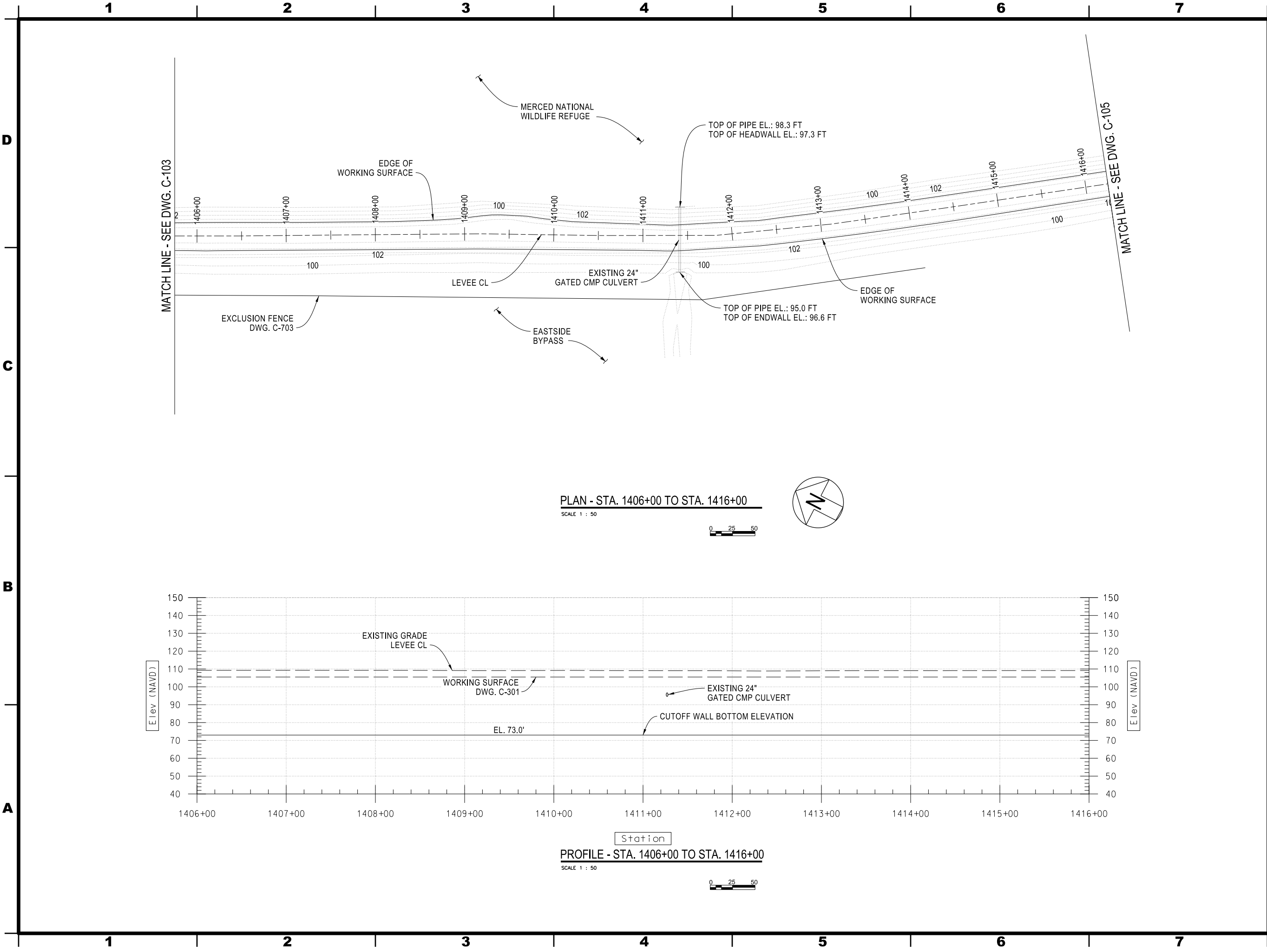
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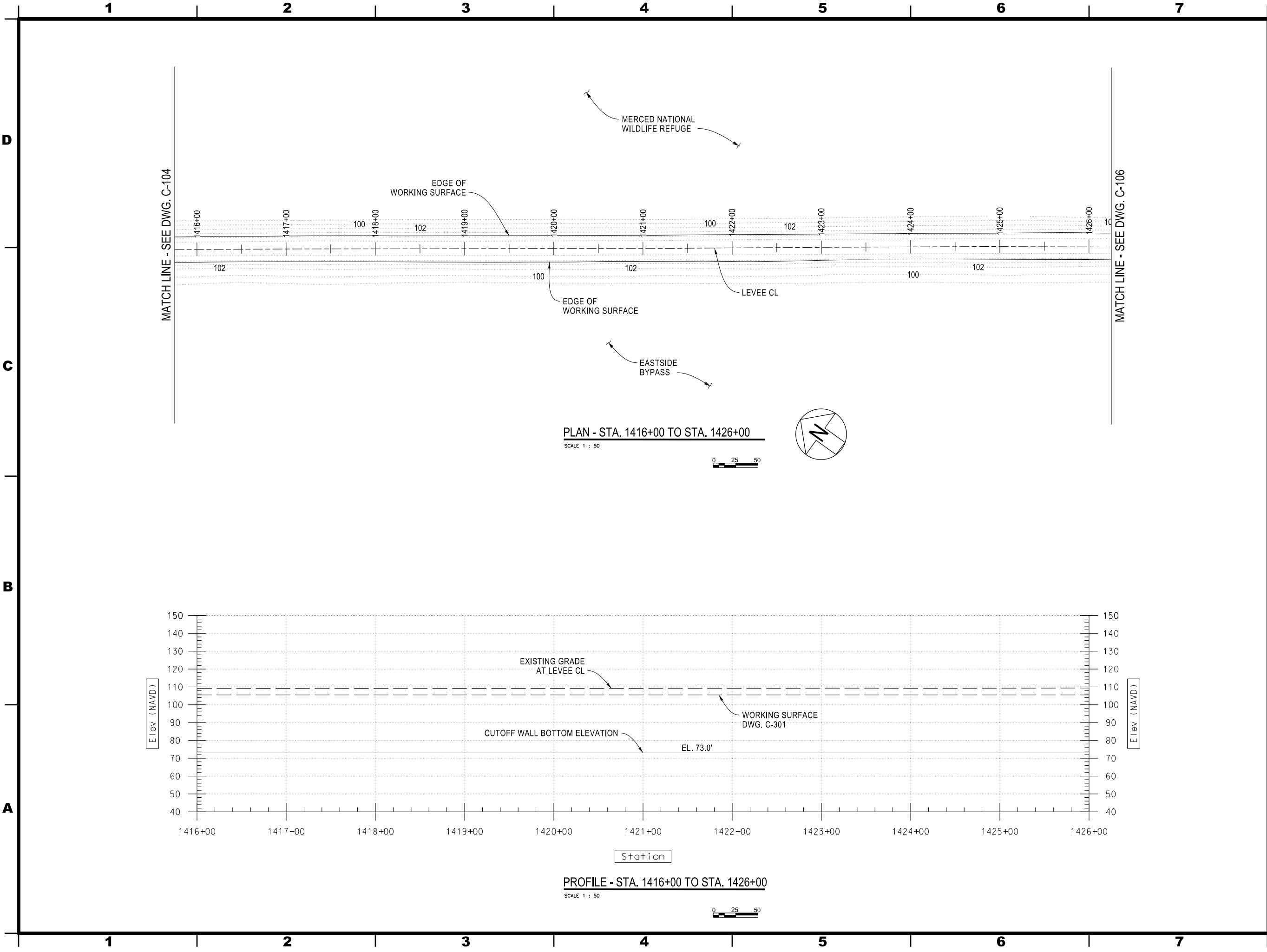
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DRAWN: ISMAEL ECHEVERRIA	REVIEWED: ROBERT F. BLACK REG. C.E. No. 60261
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PLAN AND PROFILE  
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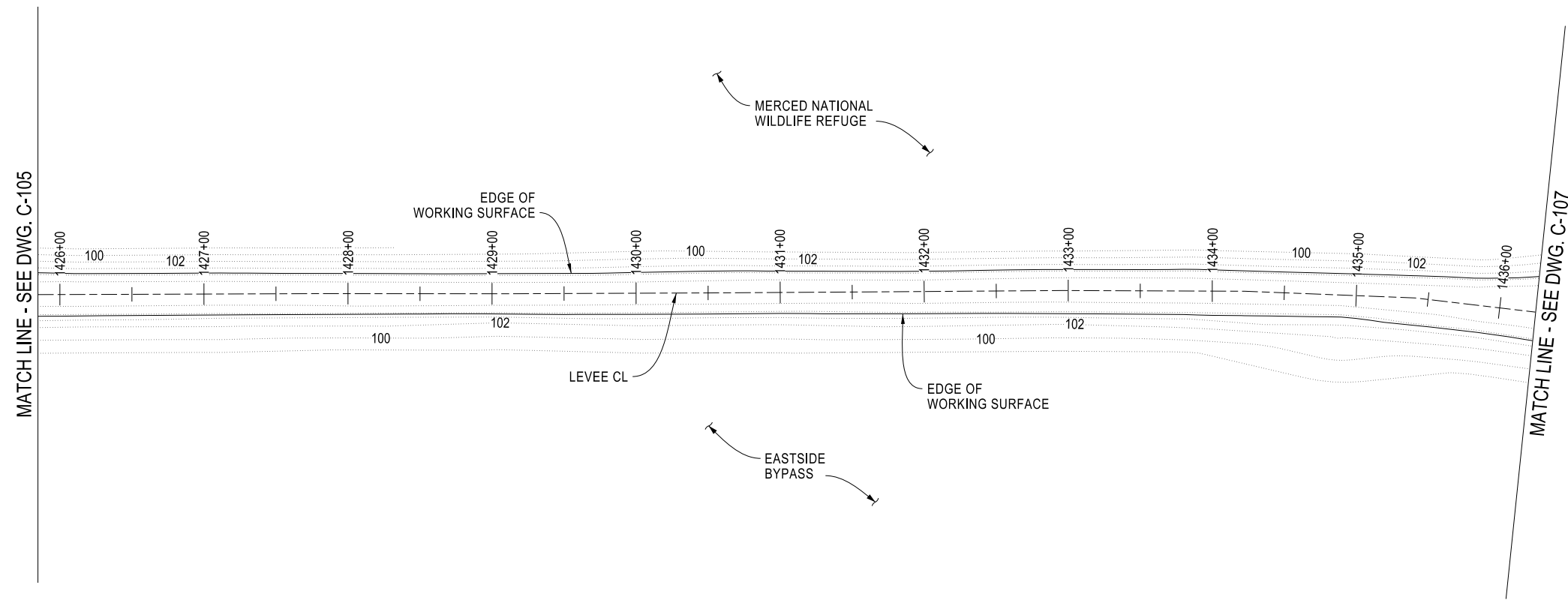
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FLOOD CONTROL PROJECT

EASTSIDE BYPASS

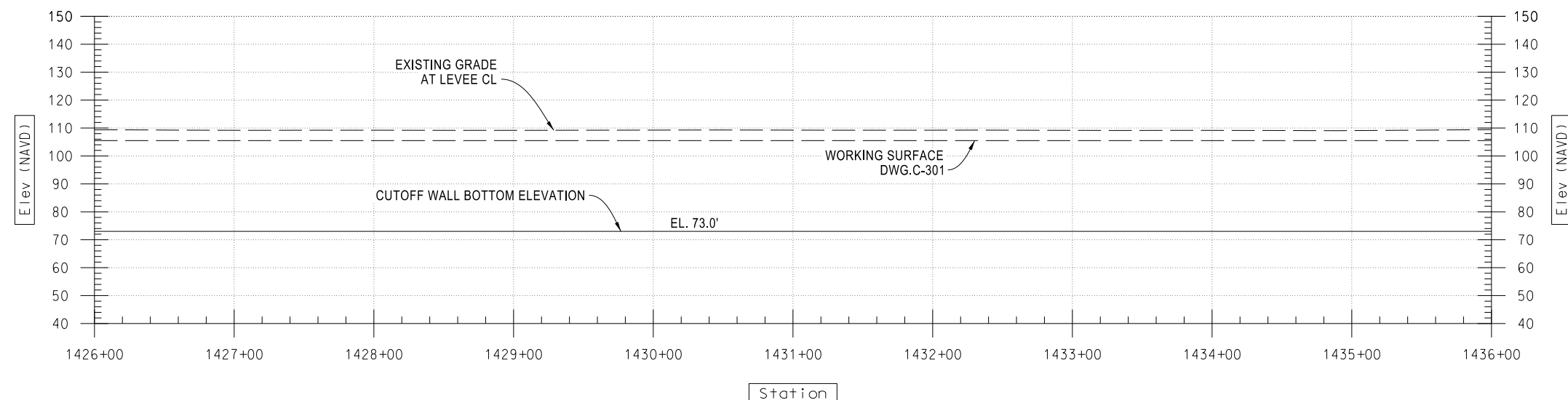
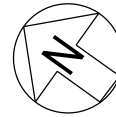
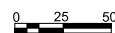
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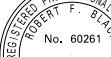


PROFILE - STA. 1426+00 TO STA. 1436+00





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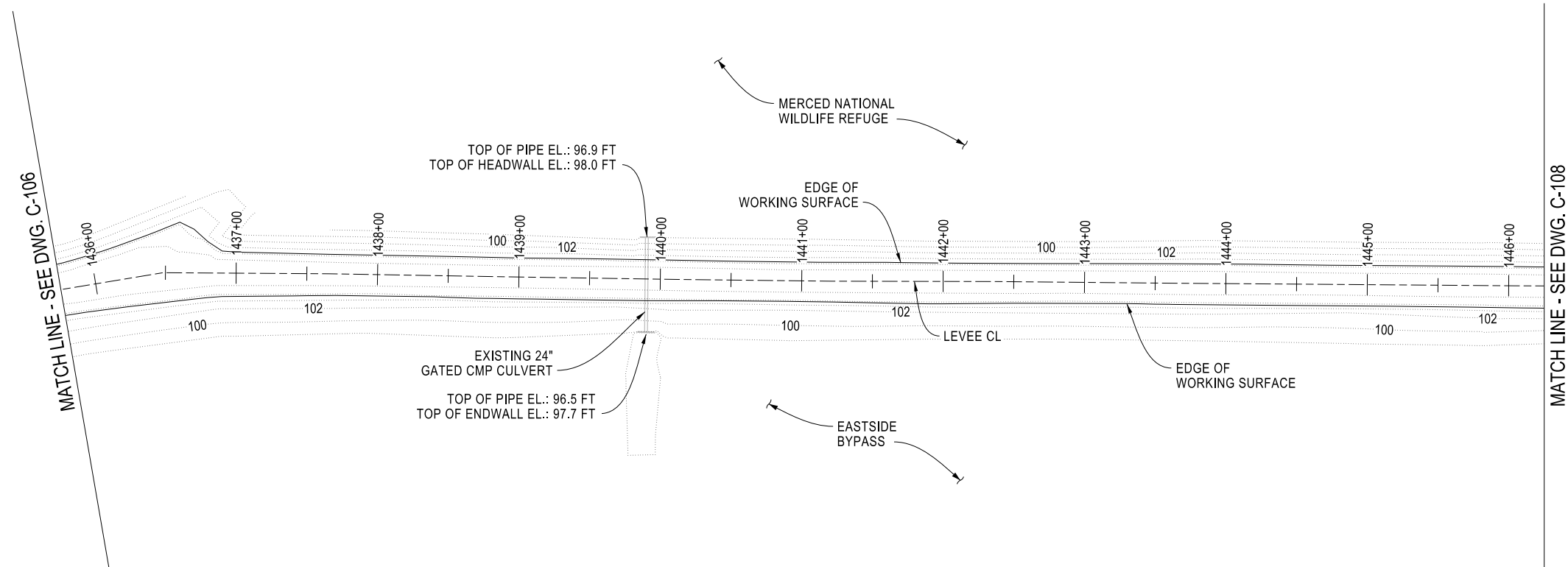
LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

EASTSIDE BYPASS

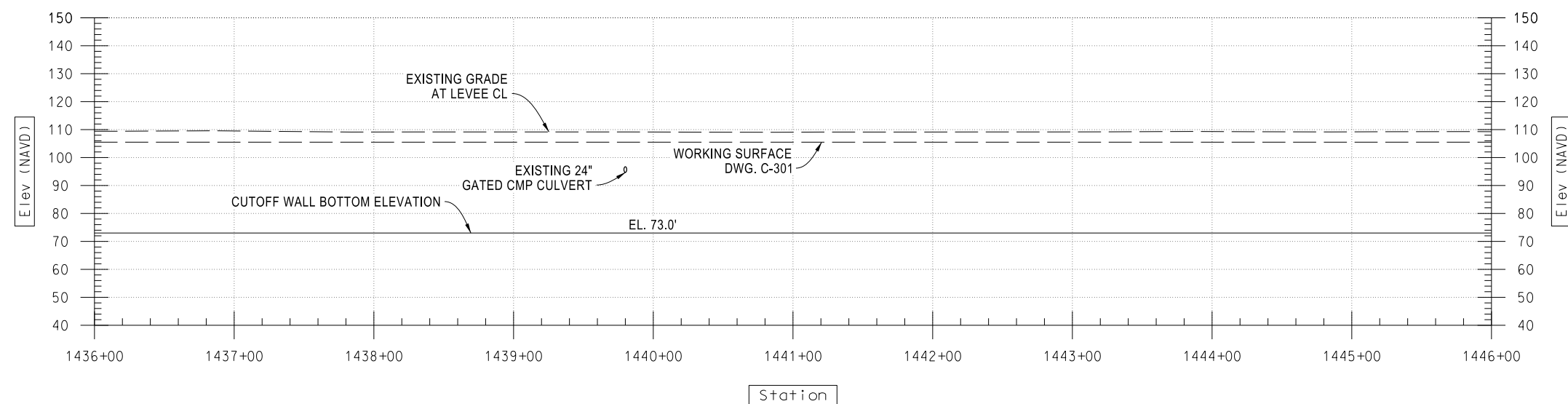
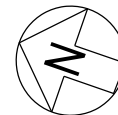
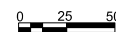
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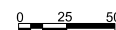
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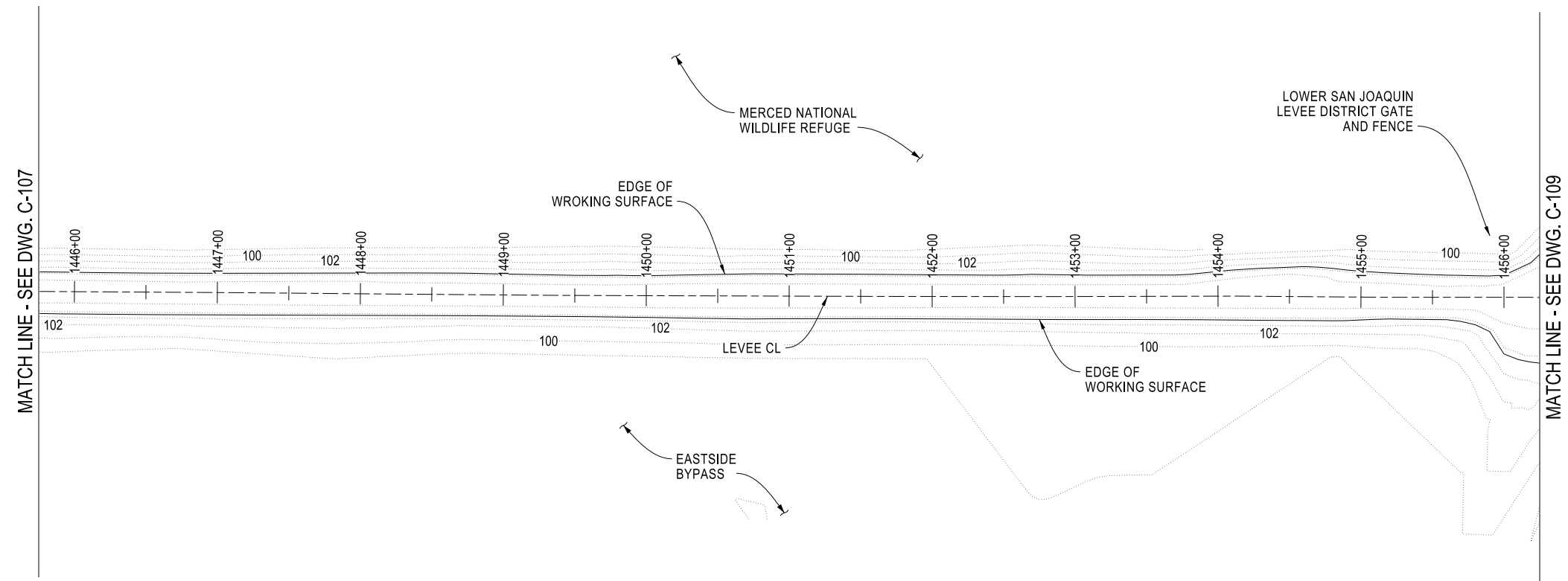
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FLOOD CONTROL PROJECT

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LEVEE IMPROVEMENTS  
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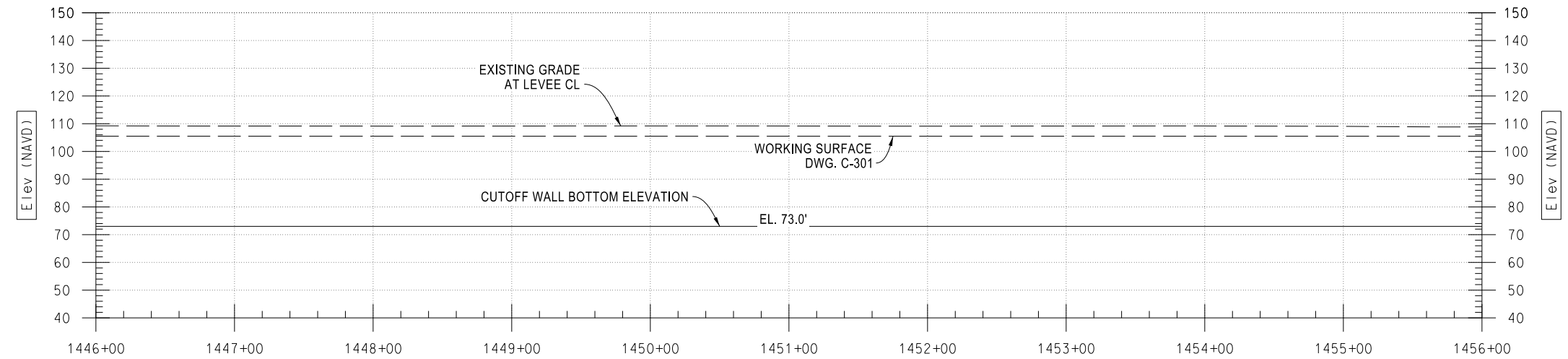
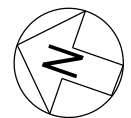
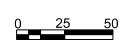
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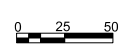
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Station


**PROFILE - STA. 1446+00 TO STA. 1456+00**

SCALE 1" = 50'



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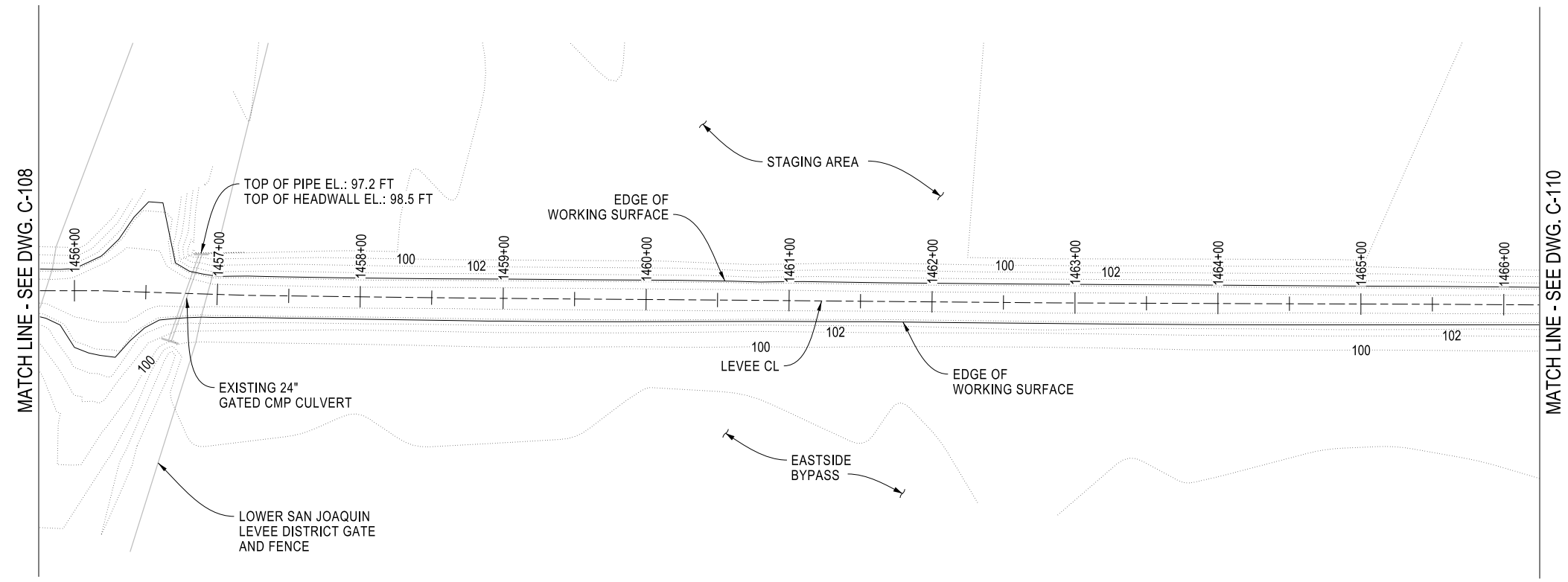
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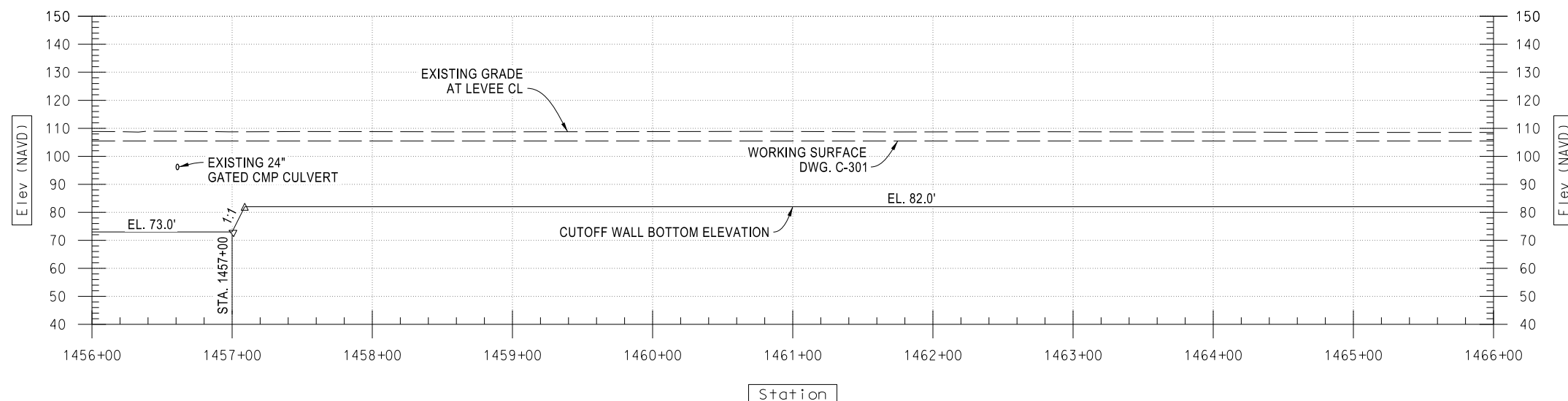
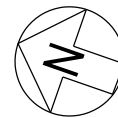
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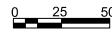
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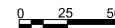
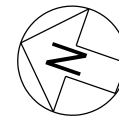
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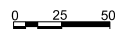
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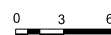
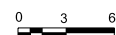




SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	015		C-110



SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	016		C-111



- 1: OPT CONSTRUCTION METHOD MAY BE USED FOR ALL LEVEE REACHES.
- 2: CUTOFF WALL BACKFILL SHALL BE SB FOR OPEN TRENCH AND OPT METHODS OF CONSTRUCTION.
- 3: THE CUTOFF TRENCH AND THE TEMPORARY SOIL CAP SHALL BE CENTERED ON THE CUTOFF WALL. THE CUTOFF WALL ALIGNMENT SHALL BE ALLOWED TO BE OFF-CENTER UP TO 3 FEET ON THE WATERSIDE AND UP TO 1 FOOT ON THE LANDSIDE.

CHECKED:  
ISMAEL ECHEVERR

REVIEWED:  
ROBERT F. BLACK  
REG. C.E. No. 60261

REG. C.E. No. 60261

APPROVAL REC

APPROVAL RECOMMENDED:      DATE:

CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001

CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001

APPROVED:

DATE: \_\_\_\_\_

CHIEF, GEOTECH. &amp; ENGR. SERVICES BRANCH, REG. C.E. No. 52754

## ACT SAFELY

EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00

## TYPICAL LEVEE SECTIONS

SPEC. NO.

SHEET NO.

REVISION
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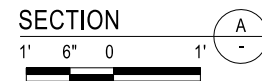
DRAWING NO.

017

C-301



- 1: SETTLEMENT PLATE SHALL BE CONSTRUCTED OF 3/4" PLYWOOD (EXTERIOR) COATED WITH WATERPROOF SEALANT.
- 2: SETTLEMENT PLATE INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.



REVIEWED:  
ROBERT F. BLACK  
REG. C.E. No. 60261

APPROVAL RECOM

APPROVAL RECOMMENDED:      DATE:

CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, GEOTECH. &amp; ENGR. SERVICES BRANCH, REG. C.E. No. 52754

## ACT SAFELY

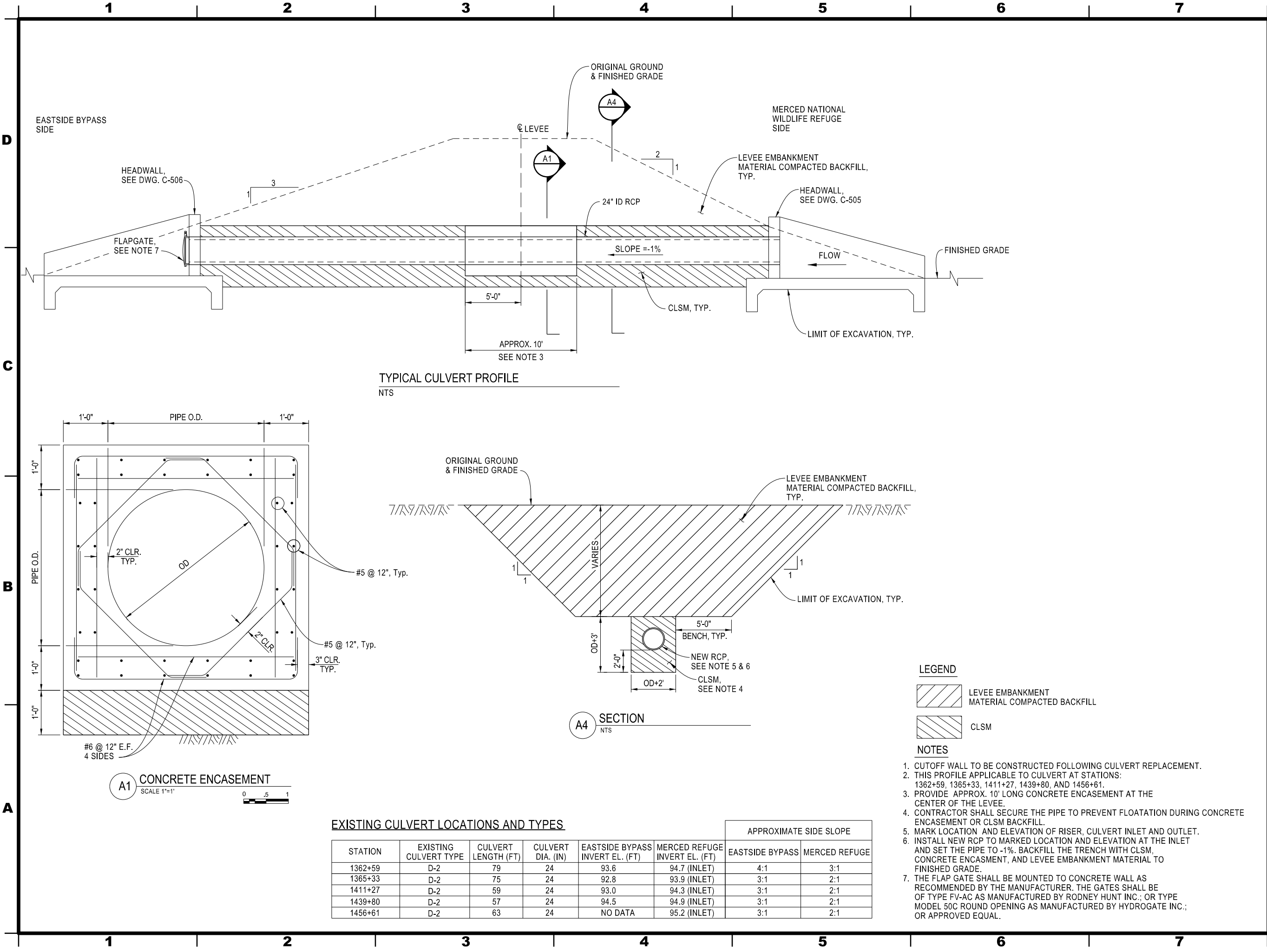
LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00

## TYPICAL LEVEE DETAILS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	018		C-302



TYPICAL CULVERT PROFILE  
NTS

A4 SECTION  
NTS

LEGEND

- LEVEE EMBANKMENT MATERIAL COMPACTED BACKFILL
- CLSM

NOTES

- CUTOFF WALL TO BE CONSTRUCTED FOLLOWING CULVERT REPLACEMENT.
- THIS PROFILE APPLICABLE TO CULVERT AT STATIONS: 1362+59, 1365+33, 1411+27, 1439+80, AND 1456+61.
- PROVIDE APPROX. 10' LONG CONCRETE ENCASEMENT AT THE CENTER OF THE LEVEE.
- CONTRACTOR SHALL SECURE THE PIPE TO PREVENT FLOATATION DURING CONCRETE ENCASEMENT OR CLSM BACKFILL.
- MARK LOCATION AND ELEVATION OF RISER, CULVERT INLET AND OUTLET.
- INSTALL NEW RCP TO MARKED LOCATION AND ELEVATION AT THE INLET AND SET THE PIPE TO -1%. BACKFILL THE TRENCH WITH CLSM, CONCRETE ENCASMENT, AND LEVEE EMBANKMENT MATERIAL TO FINISHED GRADE.
- THE FLAP GATE SHALL BE MOUNTED TO CONCRETE WALL AS RECOMMENDED BY THE MANUFACTURER. THE GATES SHALL BE OF TYPE FV-AC AS MANUFACTURED BY RODNEY HUNT INC.; OR TYPE MODEL 50C ROUND OPENING AS MANUFACTURED BY HYDROGATE INC.; OR APPROVED EQUAL.

EXISTING CULVERT LOCATIONS AND TYPES

STATION	EXISTING CULVERT TYPE	CULVERT LENGTH (FT)	CULVERT DIA. (IN)	EASTSIDE BYPASS INVERT EL. (FT)	MERCED REFUGE INVERT EL. (FT)	APPROXIMATE SIDE SLOPE	
						EASTSIDE BYPASS	MERCED REFUGE
1362+59	D-2	79	24	93.6	94.7 (INLET)	4:1	3:1
1365+33	D-2	75	24	92.8	93.9 (INLET)	3:1	2:1
1411+27	D-2	59	24	93.0	94.3 (INLET)	3:1	2:1
1439+80	D-2	57	24	94.5	94.9 (INLET)	3:1	2:1
1456+61	D-2	63	24	NO DATA	95.2 (INLET)	3:1	2:1



REV.	DESCRIPTION	SUB.	APP.
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DESIGNED: KHAI NGUYEN REG. C.E. No. 76572	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: KHAI NGUYEN REG. C.E. No. 76572	REVIEWED: VU Q. THAI REG. C.E. No. 60133

SUBMITTED:
REG. C.E. No. 60133

APPROVAL RECOMMENDED: DATE:

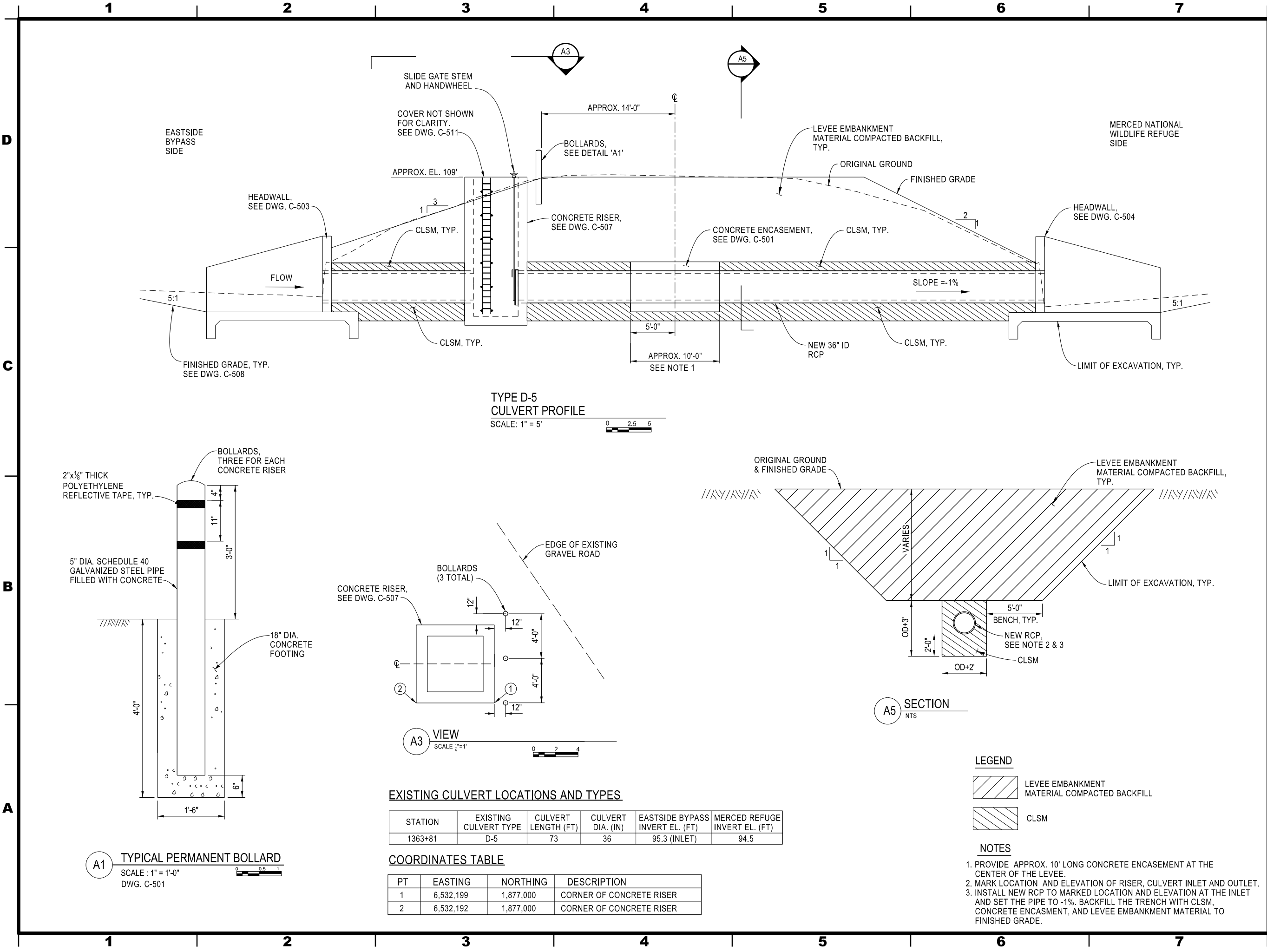
APPROVED: DATE:

THINK SAFETY -  
ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT  
  
EASTSIDE BYPASS  
  
LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00  
24" DIAMETER CULVERT  
TYPICAL CULVERT REMOVE  
AND REPLACE  
PROFILE AND SECTIONS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	019		C-501





REV.	DESCRIPTION	SUB.	APP.

DESIGNED:  
KHOI NGUYEN  
REG. C.E. No. 76572

CHECKED:  
VU Q. THAI  
REG. C.E. No. 60133

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KHOI NGUYEN  
REG. C.E. No. 76572

REVIEWED:  
VU Q. THAI  
REG. C.E. No. 60133

SUBMITTED:

REG. C.E. No. 60133

APPROVAL RECOMMENDED:      DATE:

APPROVED:      DATE:

THINK SAFETY -  
ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

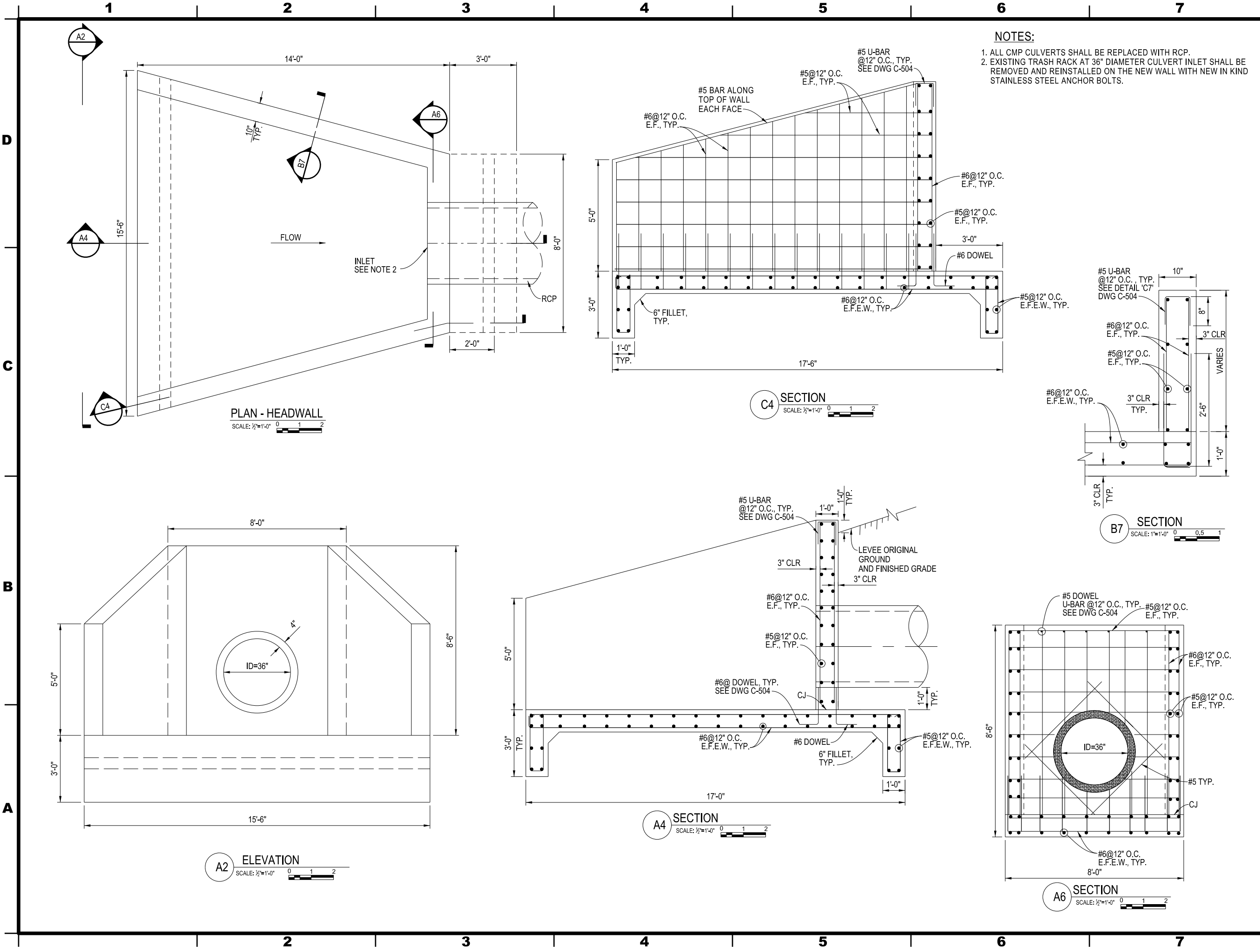
EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00

36" DIAMETER CULVERT  
TYPICAL CULVERT REMOVE  
AND REPLACE

PROFILE, SECTION, VIEW AND DETAIL

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	020		C-502



STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES

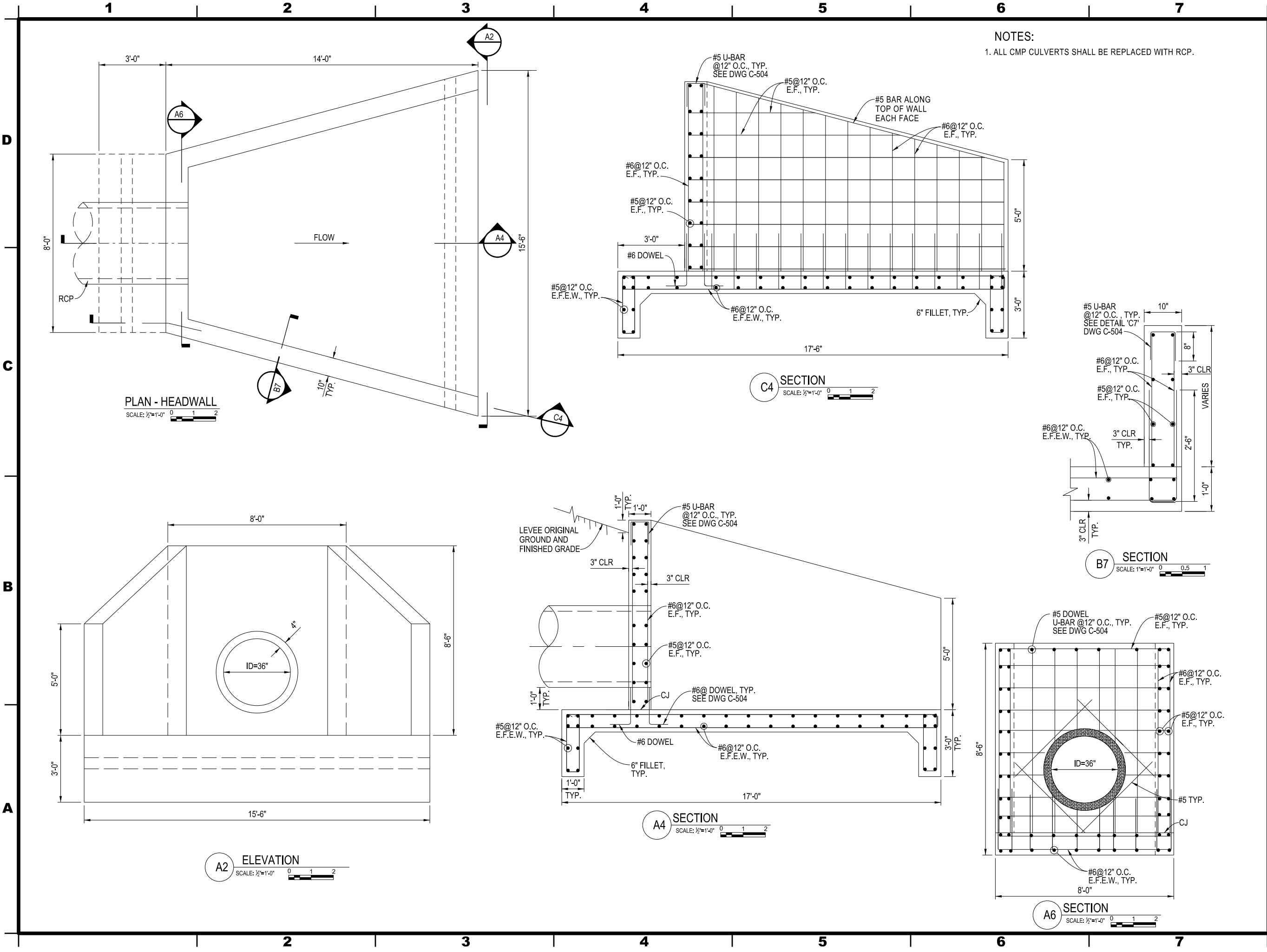


REV.	DESCRIPTION	SUB.	APP.
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DESIGNED: DAGNACHEW A. FANTA REG. C.E. No. 72540	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: DAGNACHEW A. FANTA REG. C.E. No. 72540	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED: VU Q. THAI REG. C.E. No. 60133	

APPROVAL RECOMMENDED: DATE:	
CHIEF, CIVIL II SECTION, REG. C.E. No. 50709	
APPROVED: DATE:	
CHIEF, CIVIL ENGR BRANCH, REG. C.E. No. 62340	

<b>THINK SAFETY - ACT SAFELY</b>			
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT  EASTSIDE BYPASS  LEVEE IMPROVEMENTS STA 1345+00 TO STA 1485+00  36" DIA. CULVERT INLET STRUCTURE  PLAN, ELEVATION, SECTIONS, DETAILS			
SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	021		C-503



NOTES:  
1. ALL CMP CULVERTS SHALL BE REPLACED WITH RCP.

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CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES



REV.	DESCRIPTION	SUB.	APP.
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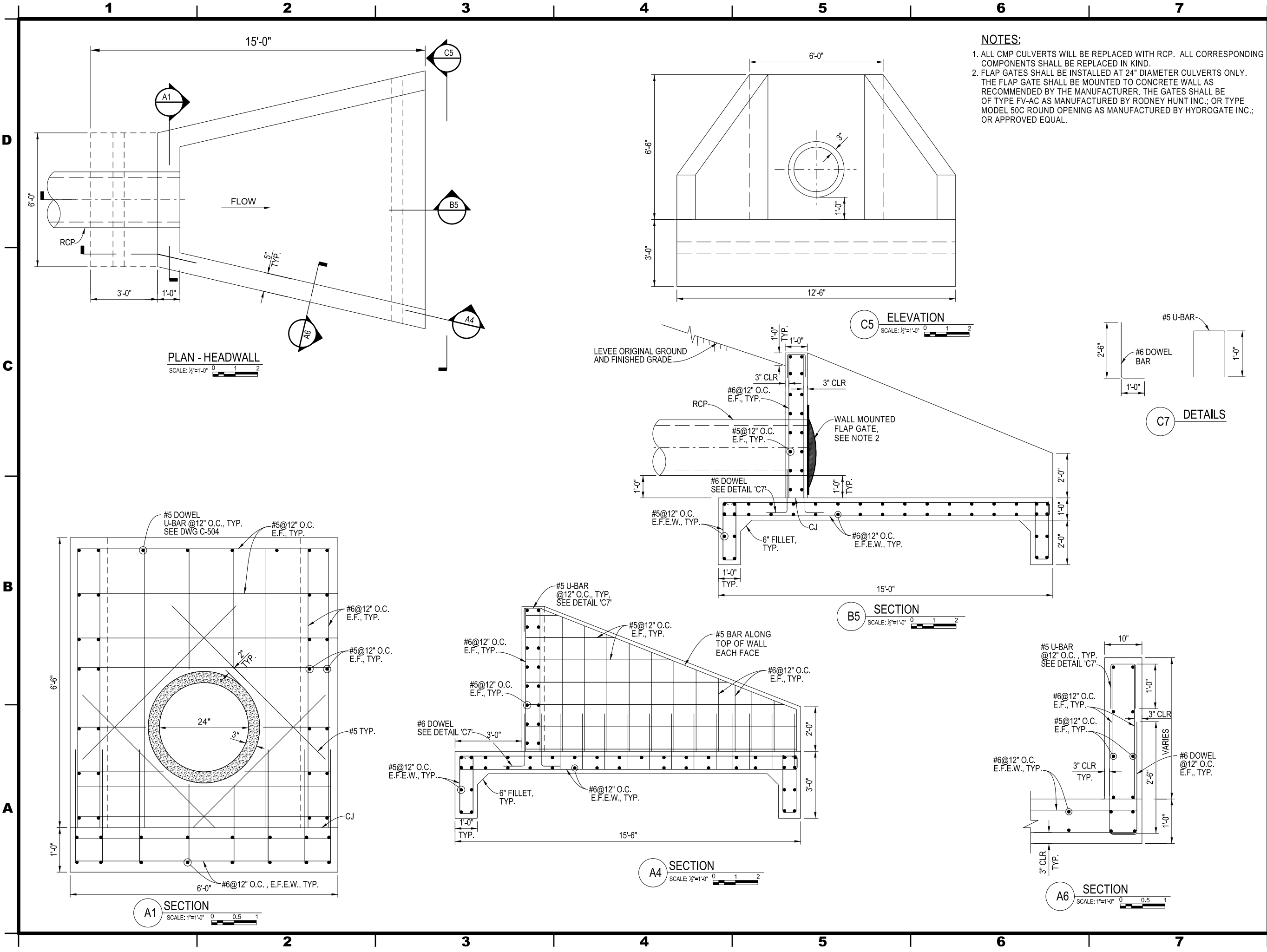
DESIGNED: DAGNACHEW A. FANTA REG. C.E. No. 72540	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: DAGNACHEW A. FANTA REG. C.E. No. 72540	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED: VU Q. THAI REG. C.E. No. 60133	

APPROVAL RECOMMENDED:	DATE:
CHIEF, CIVIL II SECTION, REG. C.E. No. 50709	
APPROVED:	DATE:
CHIEF, CIVIL ENGR BRANCH, REG. C.E. No. 62340	

THINK SAFETY - ACT SAFELY			
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT			
EASTSIDE BYPASS			
LEVEE IMPROVEMENTS STA 1345+00 TO STA 1485+00			
36" DIA. CULVERT OUTLET STRUCTURE			
PLAN, ELEVATION, SECTIONS, DETAILS			
SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	022		C-504







- NOTES:**
1. ALL CMP CULVERTS WILL BE REPLACED WITH RCP. ALL CORRESPONDING COMPONENTS SHALL BE REPLACED IN KIND.
  2. FLAP GATES SHALL BE INSTALLED AT 24" DIAMETER CULVERTS ONLY. THE FLAP GATE SHALL BE MOUNTED TO CONCRETE WALL AS RECOMMENDED BY THE MANUFACTURER. THE GATES SHALL BE OF TYPE FV-AC AS MANUFACTURED BY RODNEY HUNT INC.; OR TYPE MODEL 50C ROUND OPENING AS MANUFACTURED BY HYDROGATE INC.; OR APPROVED EQUAL.

STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES

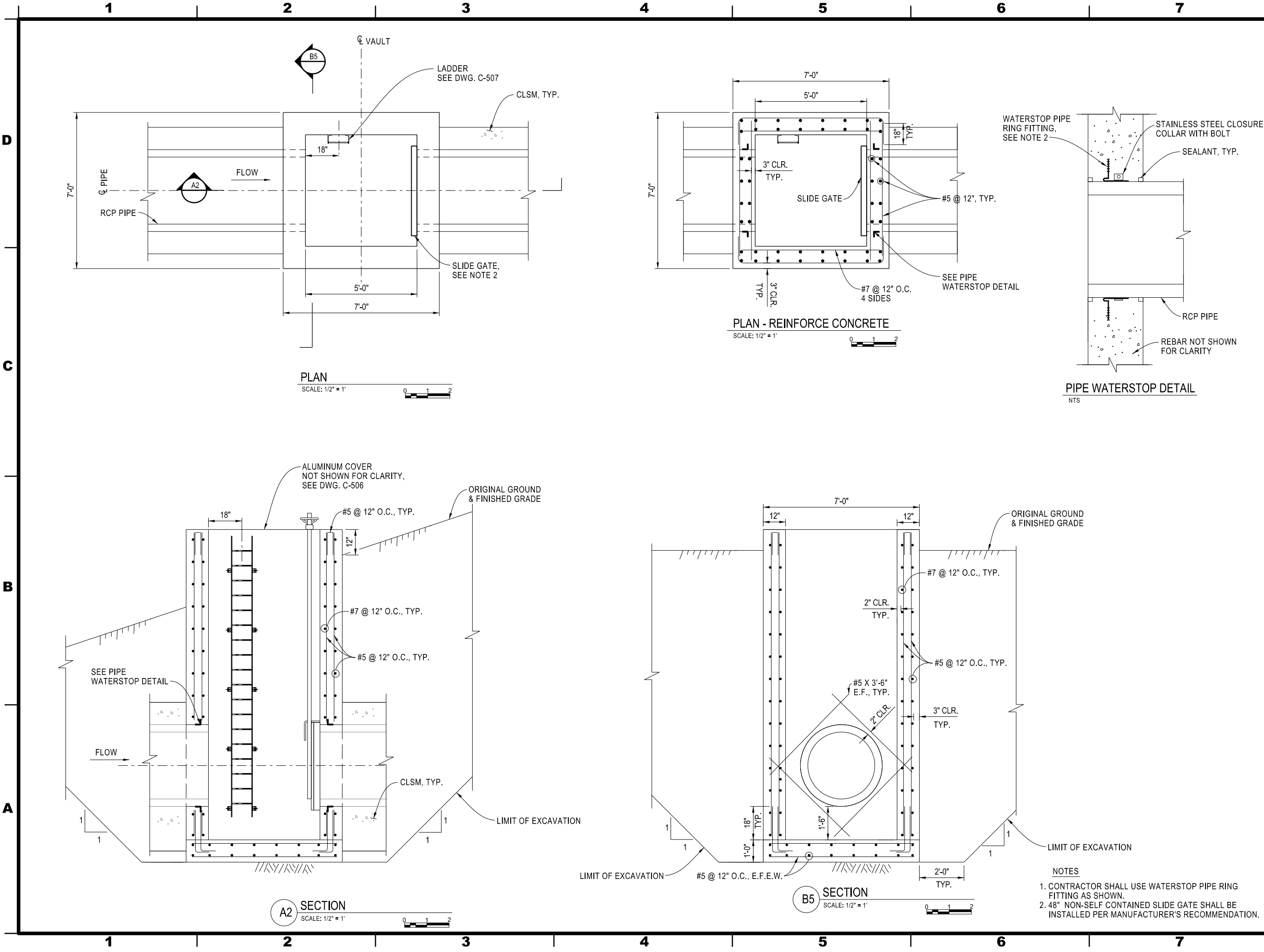


REV.	DESCRIPTION	SUB.	APP.
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DESIGNED: DAGNACHEW A. FANTA REG. C.E. No. 72540	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: DAGNACHEW A. FANTA REG. C.E. No. 72540	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED: VU Q. THAI REG. C.E. No. 60133	

APPROVAL RECOMMENDED:	DATE:
CHIEF, CIVIL II SECTION, REG. C.E. No. 50709	
APPROVED:	DATE:
CHIEF, CIVIL ENGR BRANCH, REG. C.E. No. 62340	

<b>THINK SAFETY - ACT SAFELY</b>			
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT  EASTSIDE BYPASS			
LEVEE IMPROVEMENTS STA 1345+00 TO STA 1485+00			
24" DIA. CULVERT OUTLET STRUCTURE			
PLAN, ELEVATION, SECTIONS, DETAILS			
SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	024		C-506



REV.	DESCRIPTION	SUB.	APP.

DESIGNED: KHOI NGUYEN REG. C.E. No. 76572	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: KHOI NGUYEN REG. C.E. No. 76572	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED:	
REG. C.E. No. 60133	
APPROVAL RECOMMENDED:      DATE:	
APPROVED:      DATE:	

**THINK SAFETY -  
ACT SAFELY**

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

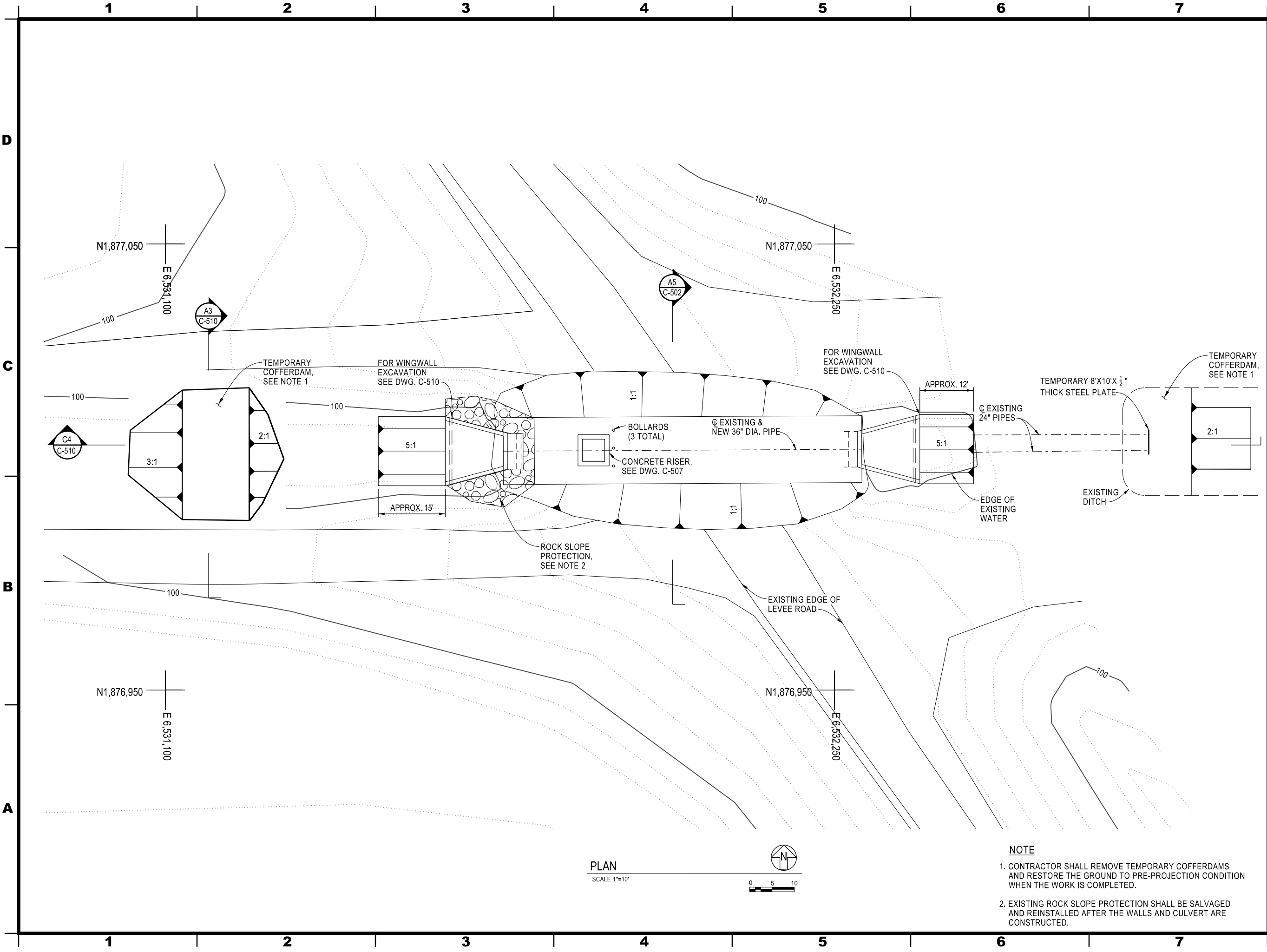
EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1345+00 TO STA 1485+00

**RISER UNIT DETAILS**

PLAN, AND SECTIONS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	025		C-507



STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES

REV.	DESCRIPTION	SUB.	APP.

DESIGNED:  
KHOI NGUYEN  
REG. C.E. No. 76572

CHECKED:  
VU Q. THAI  
REG. C.E. No. 60133

DRAWN:  
KHOI NGUYEN  
REG. C.E. No. 76572

REVIEWED:  
VU Q. THAI  
REG. C.E. No. 60133

SUBMITTED:

REG. C.E. No. 60133

APPROVAL RECOMMENDED:      DATE:

APPROVED:      DATE:

THINK SAFETY -  
ACT SAFELY

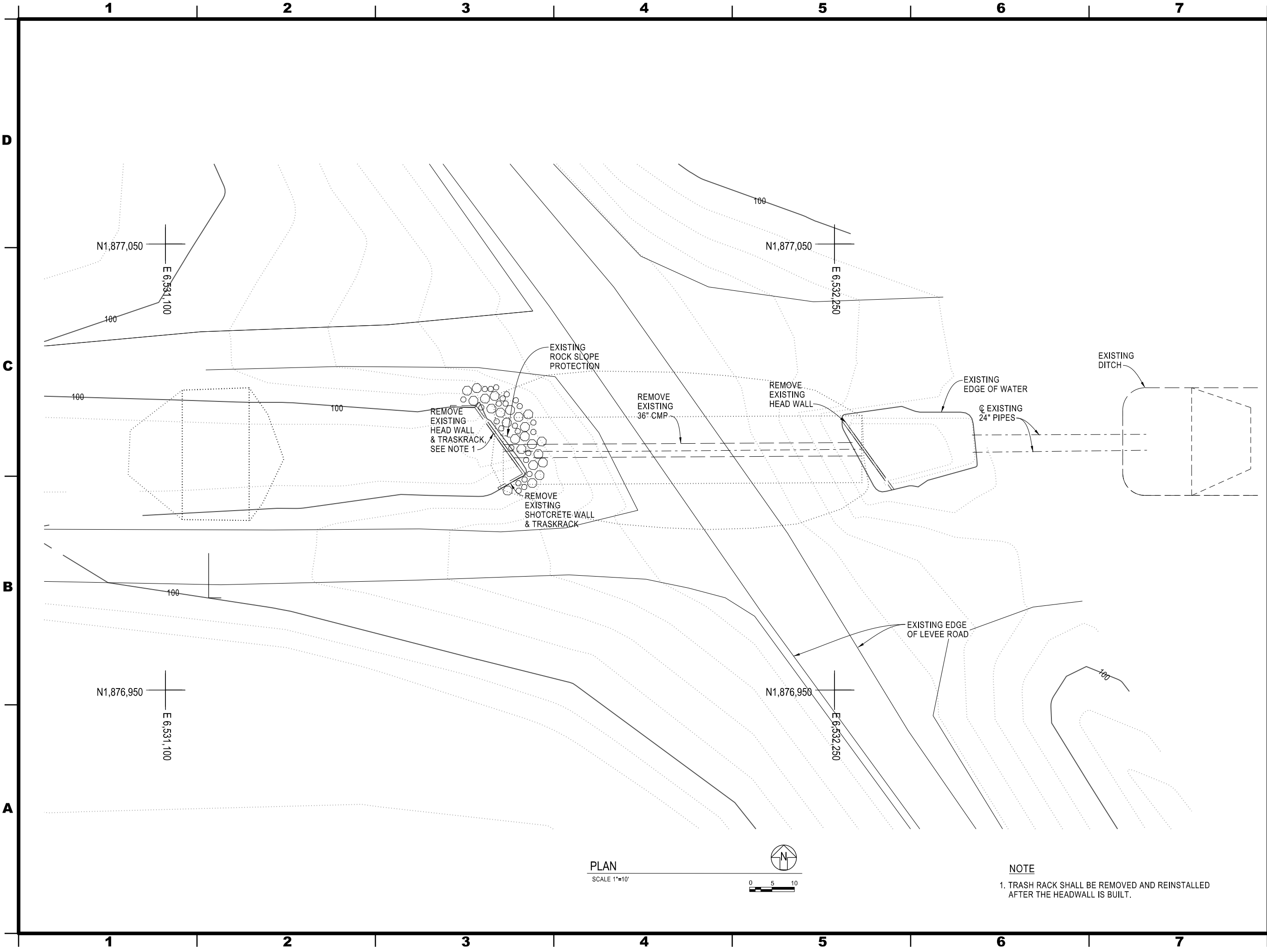
LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT  
EASTSIDE BYPASS  
LEVEE IMPROVEMENTS  
STA 1345+00 TO STA 1485+00  
36" DIAMETER CULVERT

TEMPORARY EXCAVATION  
PLAN


SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	026		C-508

Print: Styles 11x17.PEN  
Print: Color 11x17.tbl  
2/4/2019


8



STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES



REV.	DESCRIPTION	SUB.	APP.



DESIGNED:  
KHOI NGUYEN  
REG. C.E. No. 76572

CHECKED:  
VU Q. THAI  
REG. C.E. No. 60133

DRAWN:  
KHOI NGUYEN  
REG. C.E. No. 76572

REVIEWED:  
VU Q. THAI  
REG. C.E. No. 60133

SUBMITTED:

REG. C.E. No. 60133

APPROVAL RECOMMENDED:      DATE:

APPROVED:      DATE:

THINK SAFETY -  
ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1345+00 TO STA 1485+00

36" DIAMETER CULVERT  
EXISTING CONDITION

PLAN

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	027		C-509

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2/4/2019

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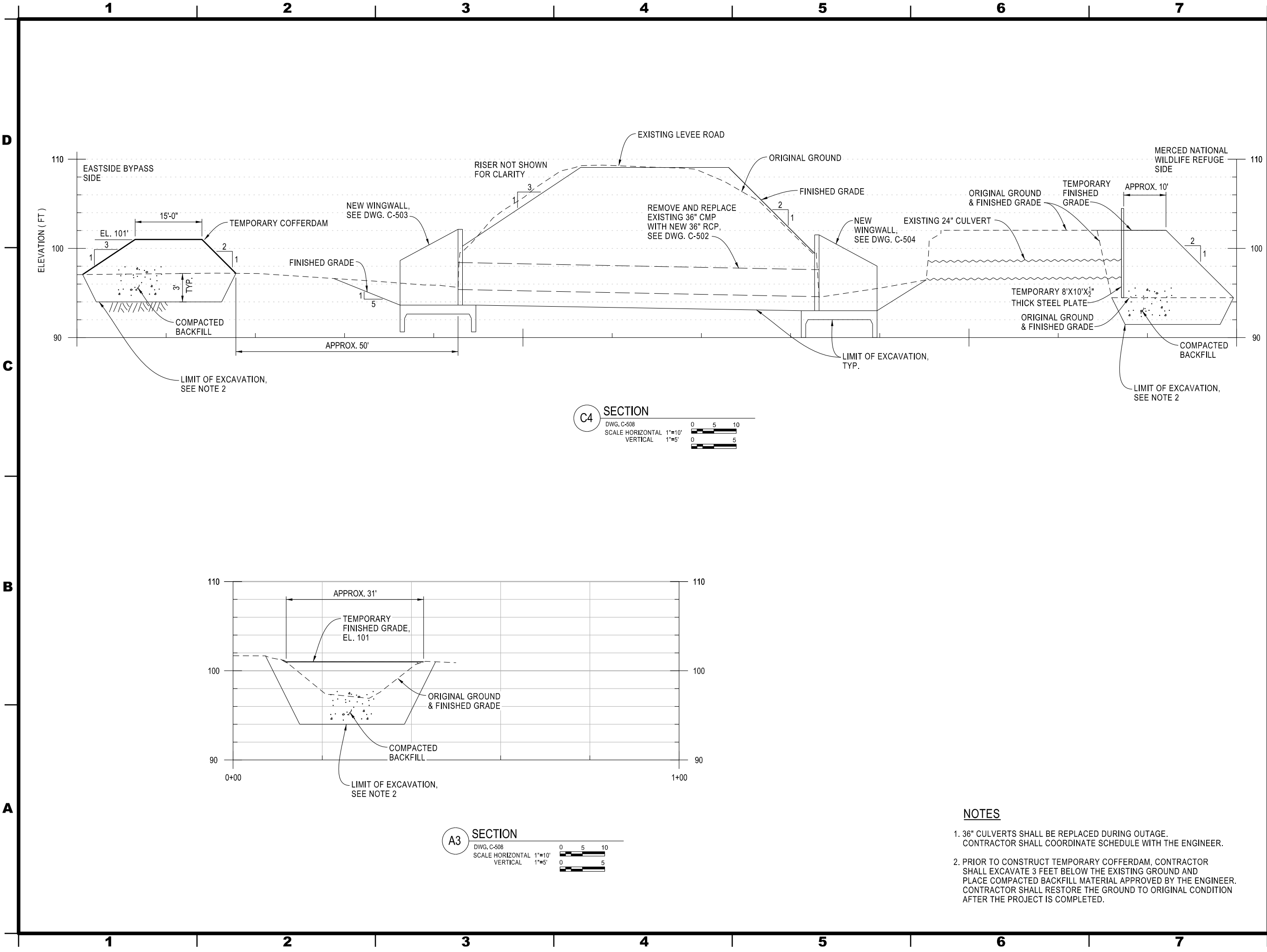
PLAN

SCALE 1"=10'

NOTE

1. TRASH RACK SHALL BE REMOVED AND REINSTALLED  
AFTER THE HEADWALL IS BUILT.





REV.	DESCRIPTION	SUB.	APP.

DESIGNED: KHOI NGUYEN REG. C.E. No. 76572	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: KHOI NGUYEN REG. C.E. No. 76572	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED:	
REG. C.E. No. 60133	
APPROVAL RECOMMENDED:      DATE:	
APPROVED:      DATE:	

THINK SAFETY -  
ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT  
  
EASTSIDE BYPASS  
  
LEVEE IMPROVEMENTS  
STA 1345+00 TO STA 1485+00  
36" DIAMETER CULVERT

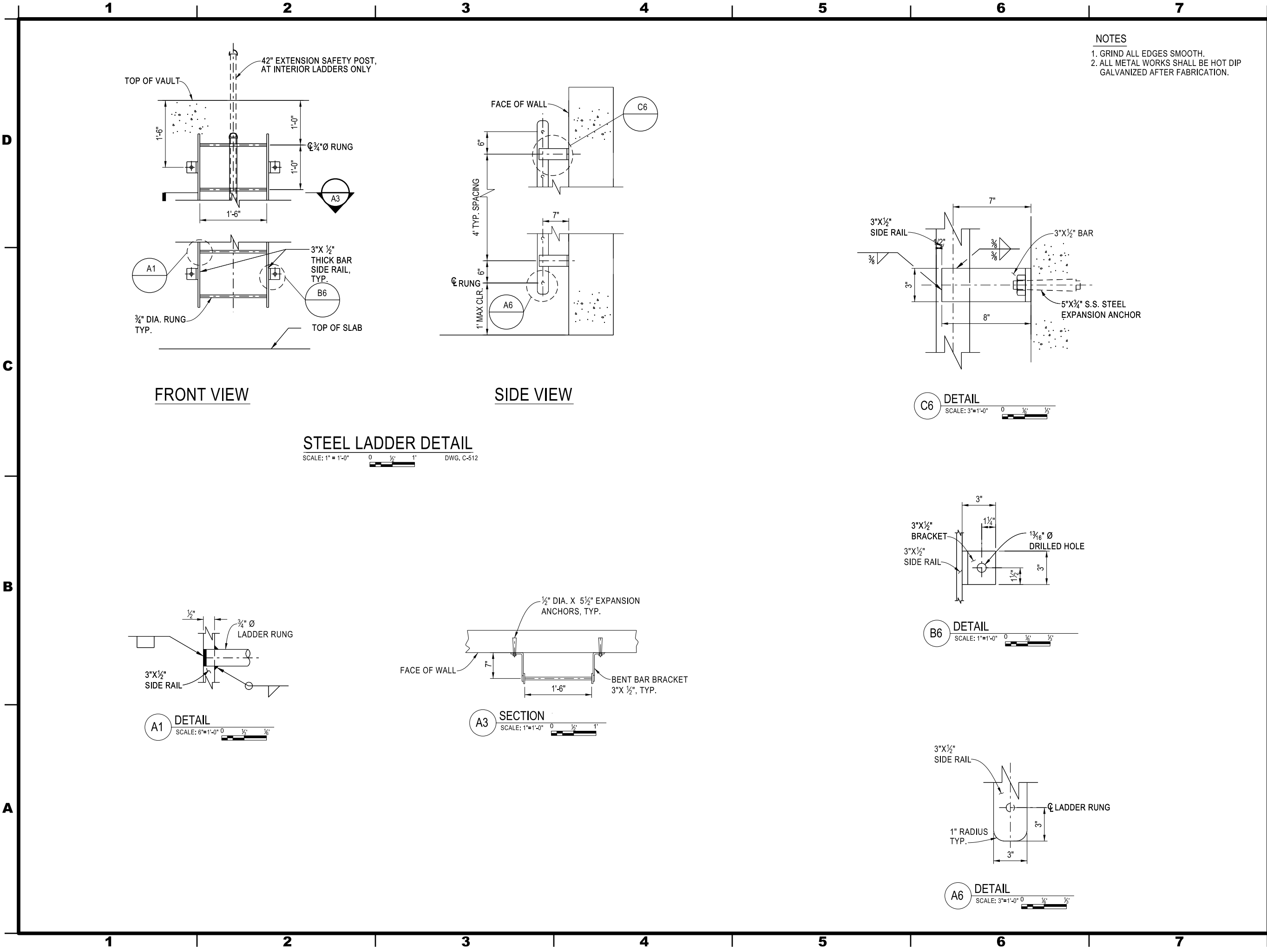
TEMPORARY EXCAVATION

SECTIONS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	028		C-510

- NOTES**
- 36" CULVERTS SHALL BE REPLACED DURING OUTAGE. CONTRACTOR SHALL COORDINATE SCHEDULE WITH THE ENGINEER.
  - PRIOR TO CONSTRUCT TEMPORARY COFFERDAM, CONTRACTOR SHALL EXCAVATE 3 FEET BELOW THE EXISTING GROUND AND PLACE COMPACTED BACKFILL MATERIAL APPROVED BY THE ENGINEER. CONTRACTOR SHALL RESTORE THE GROUND TO ORIGINAL CONDITION AFTER THE PROJECT IS COMPLETED.





- NOTES
1. GRIND ALL EDGES SMOOTH.
  2. ALL METAL WORKS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES



REV.	DESCRIPTION	SUB.	APP.
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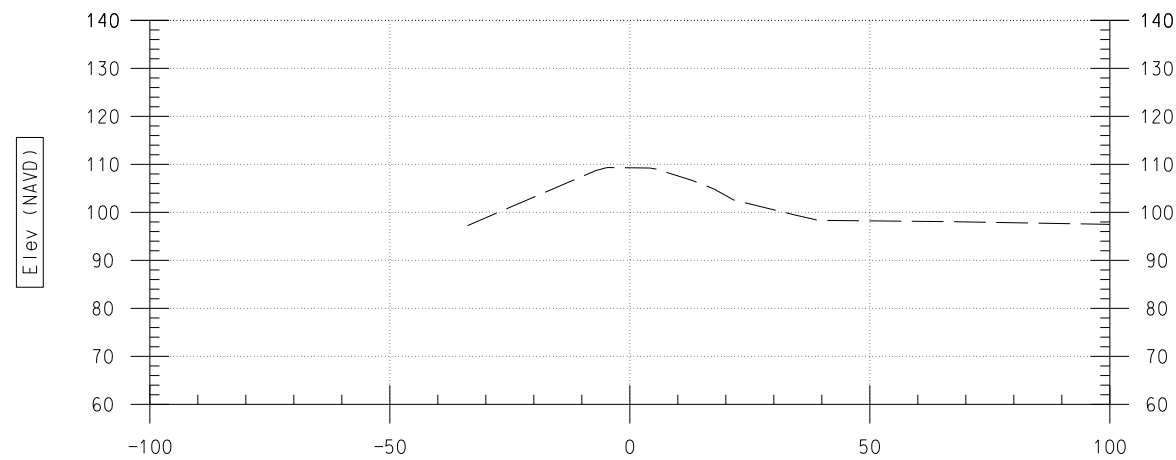
DESIGNED: DWR	CHECKED: VU Q. THAI REG. C.E. No. 60133
DRAWN: KHAI NGUYEN REG. C.E. No. 78572	REVIEWED: VU Q. THAI REG. C.E. No. 60133
SUBMITTED:	
REG. C.E. No. 60133	
APPROVAL RECOMMENDED: DATE:	
CHIEF, CIVIL II SECTION, REG. C.E. No. 50709	
APPROVED: DATE:	
CHIEF, CIVIL ENGR BRANCH, REG. C.E. No. 62340	

<b>THINK SAFETY - ACT SAFELY</b>			
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT			
EASTSIDE BYPASS			
LEVEE IMPROVEMENTS STA 1345+00 TO STA 1485+00			
<b>STEEL LADDER DETAIL VIEW, SECTIONS, AND DETAILS</b>			
SPEC. NO.	SHEET NO. 030	REVISION	DRAWING NO. C-512

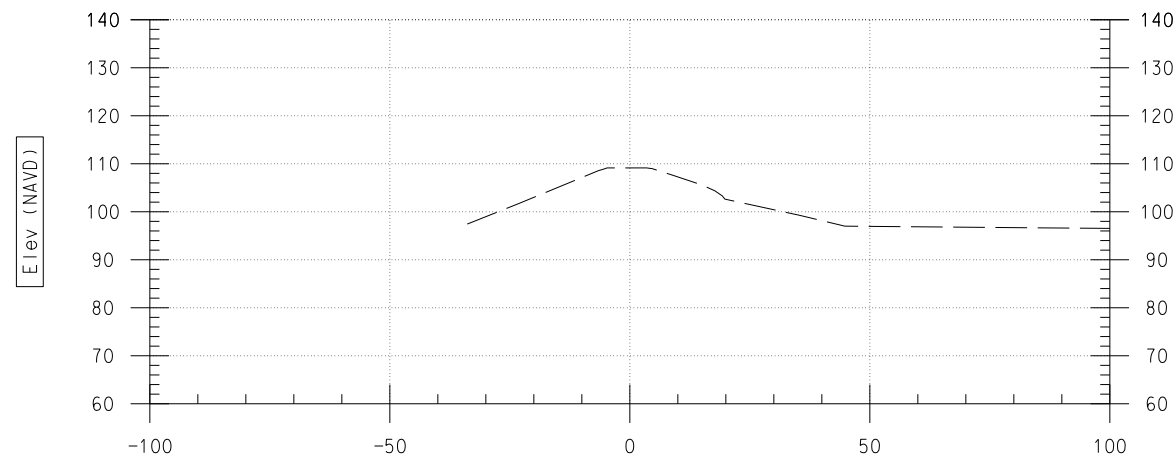
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**B**

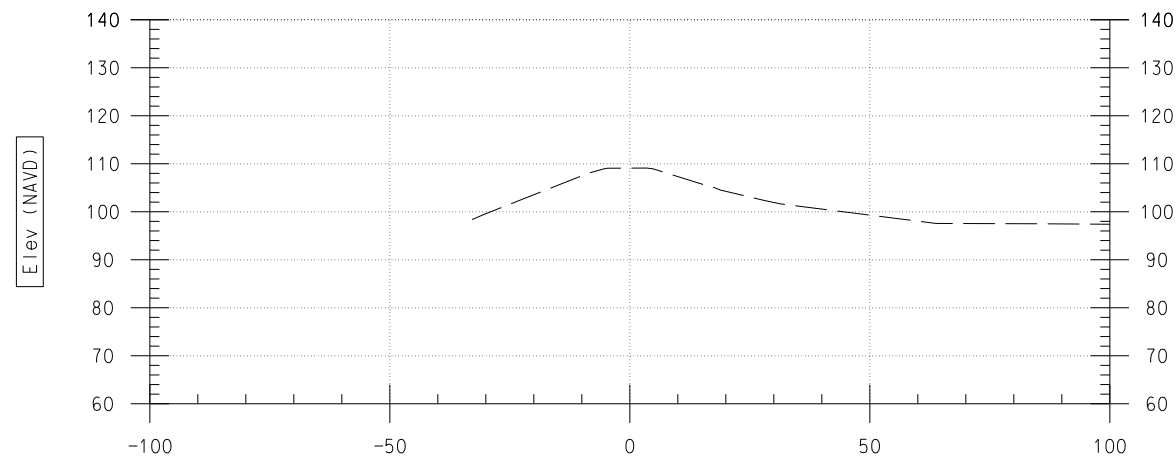
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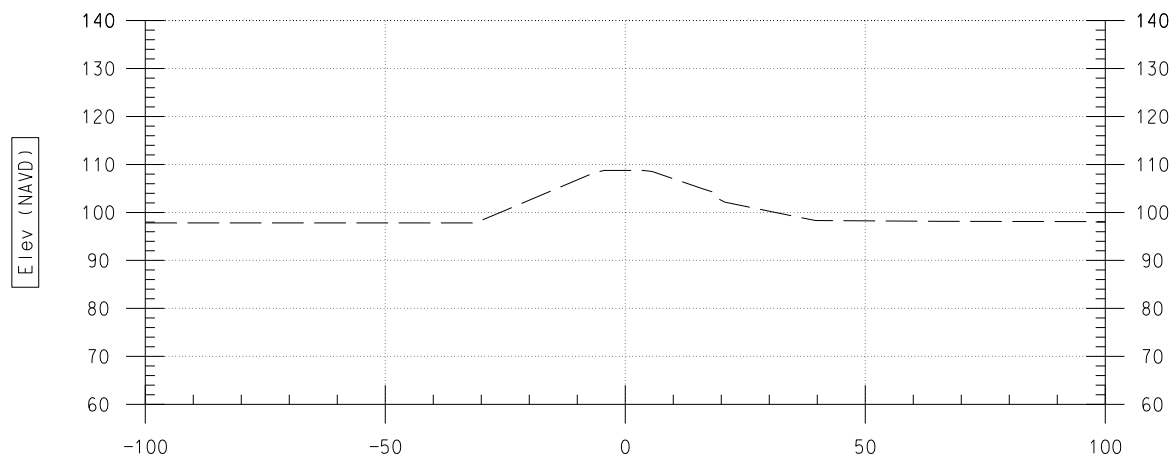
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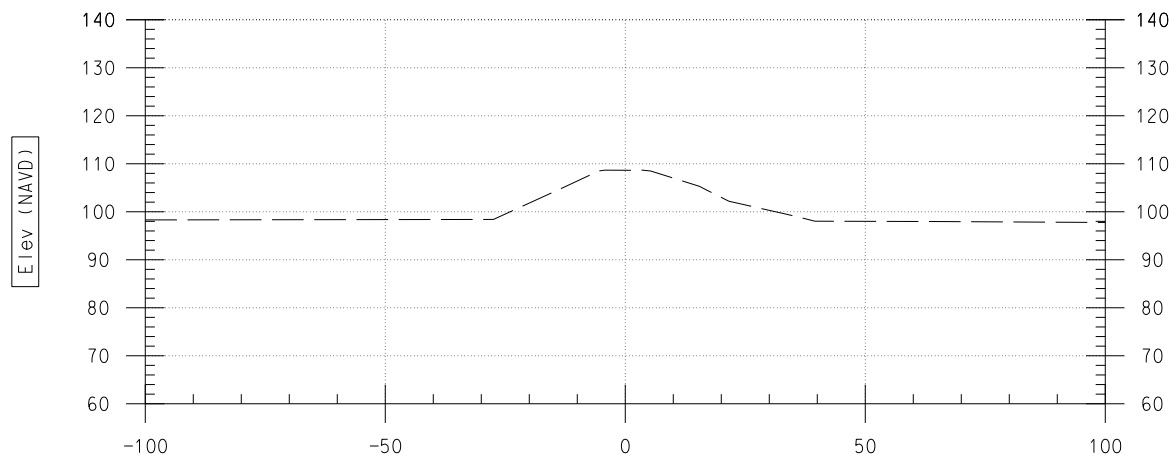
STATION 1415+00



STATION 1435+00



STATION 1463+00



STATION 1473+00

NOTES:

- 1: ALL SURVEY DATA COLLECTED IN 2017.

[illegible]

REV.	DESCRIPTION	SUB.	APP.
------	-------------	------	------



DESIGNED: ANDREA G. JENSEN REG. C.E. No. 85568	CHECKED: ISMAEL ECHEVERRIA
DRAWN: ANDREA G. JENSEN REG. C.E. No. 85568	REVIEWED: ROBERT F. BLACK REG. C.E. No. 60261

SUBMITTED:

APPROVAL RECOMMENDED:      DATE:

CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, GEOTECH. &amp; ENGR. SERVICES BRANCH, REG. C.E. No. 52754

**THINK SAFETY -**

## ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT

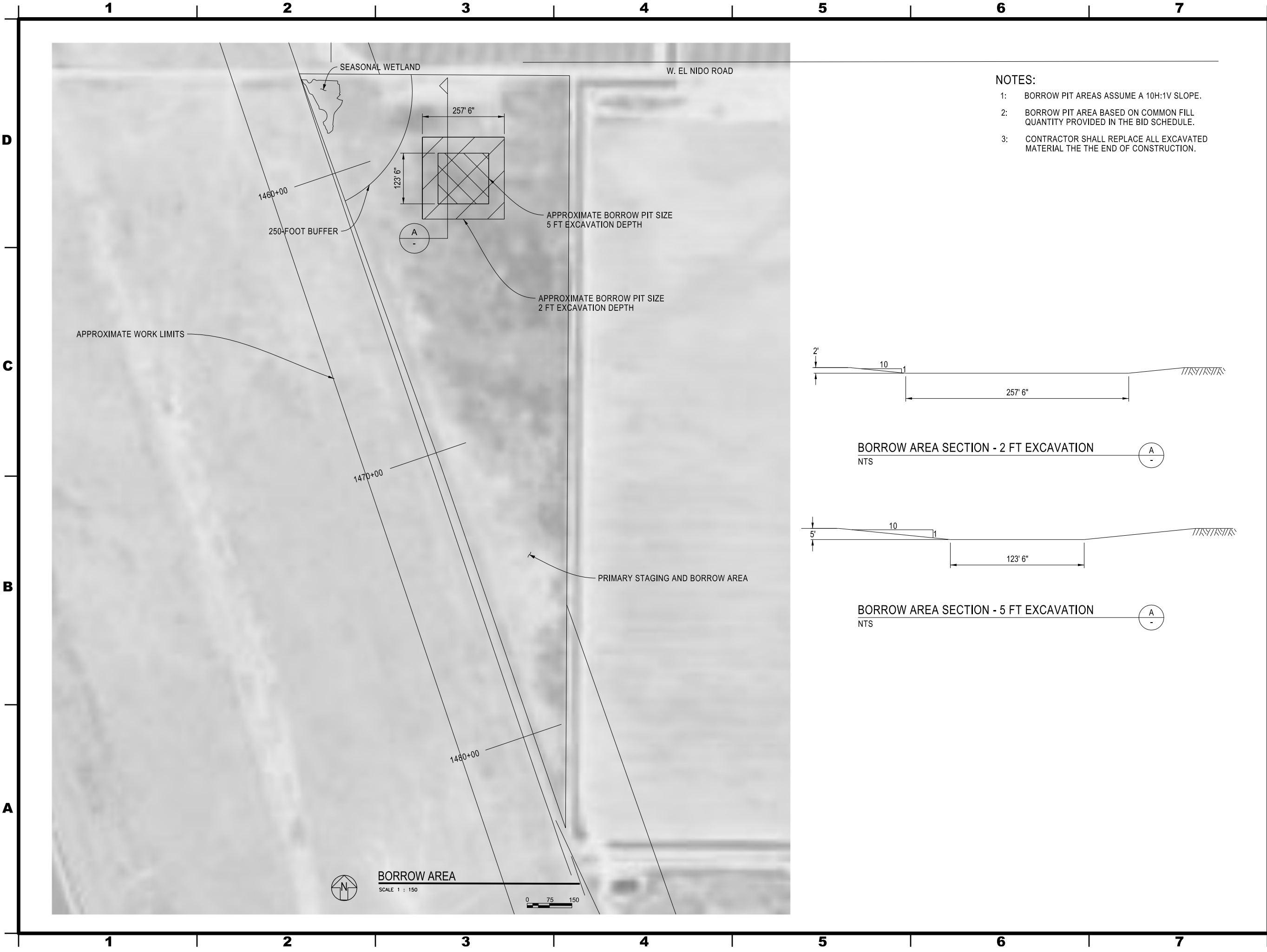
EASTSIDE BYPASS

LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00

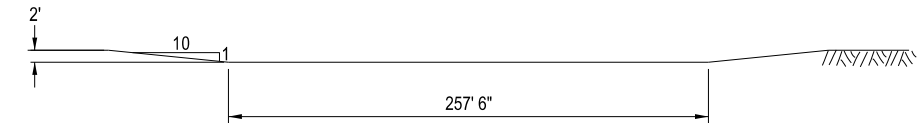
## LEVEE CROSS SECTIONS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	031		C-601

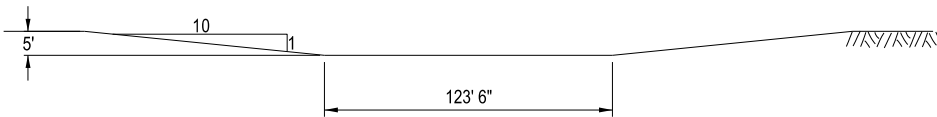




- NOTES:
- 1: BORROW PIT AREAS ASSUME A 10H:1V SLOPE.
  - 2: BORROW PIT AREA BASED ON COMMON FILL QUANTITY PROVIDED IN THE BID SCHEDULE.
  - 3: CONTRACTOR SHALL REPLACE ALL EXCAVATED MATERIAL THE THE END OF CONSTRUCTION.



BORROW AREA SECTION - 2 FT EXCAVATION  
NTS



BORROW AREA SECTION - 5 FT EXCAVATION  
NTS

STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES

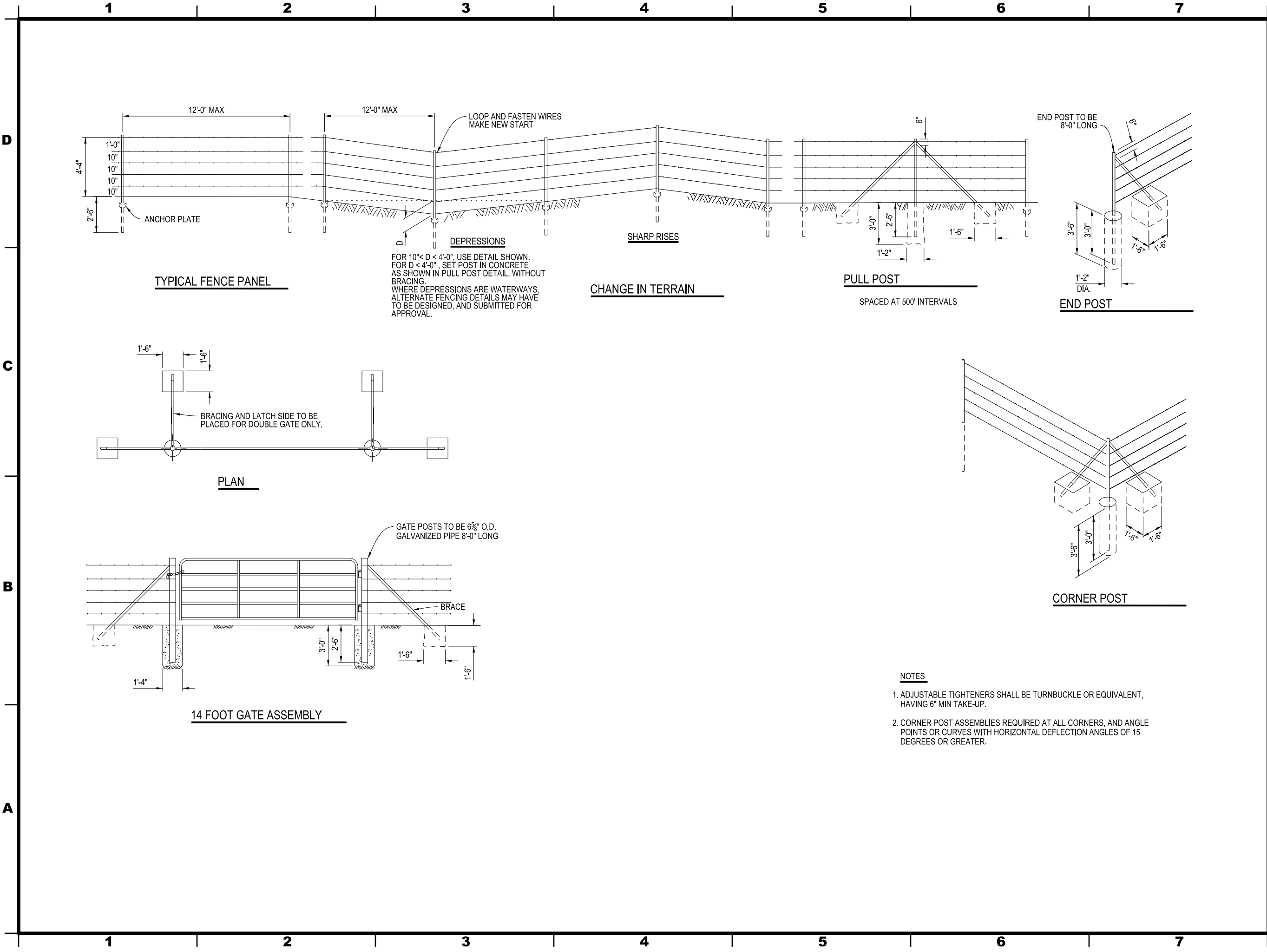


REV.	DESCRIPTION	SUB.	APP.
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DESIGNED: ANDREA G. JENSEN REG. C.E. No. 85568	CHECKED: ISMAEL ECHEVERRIA
DRAWN: ANDREA G. JENSEN REG. C.E. No. 85568	REVIEWED: ROBERT F. BLACK REG. C.E. No. 60261
SUBMITTED: REG. C.E. No. 60261	

APPROVAL RECOMMENDED:	DATE:
CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001	
APPROVED:	DATE:
CHIEF, GEOTECH. & ENGR. SERVICES BRANCH, REG. C.E. No. 52754	

THINK SAFETY - ACT SAFELY			
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT  EASTSIDE BYPASS  LEVEE IMPROVEMENTS STA 1354+00 TO STA 1481+00			
BORROW AREA			
SPEC. NO.	SHEET NO. 032	REVISION	DRAWING NO. C-701



STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF ENGINEERING  
STATE WATER FACILITIES

REV.	DESCRIPTION	SUB.	APP.

DESIGNED:  
ISMAEL ECHEVERRIA

CHECKED:  
ANDREA G. JENSEN  
REG. C.E. No. 85668

DRAWN:  
ISMAEL ECHEVERRIA

REVIEWED:  
ROBERT F. BLACK  
REG. C.E. No. 60261

SUBMITTED:  
ROBERT F. BLACK  
REG. C.E. No. 60261

APPROVAL RECOMMENDED:      DATE:

CHIEF, DAMS AND CANALS SEC., REG. C.E. No. 65001

APPROVED:      DATE:

CHIEF, GEOTECH. & ENGR. SERVICES BRANCH, REG. C.E. No. 52754

THINK SAFETY -  
ACT SAFELY

LOWER SAN JOAQUIN RIVER  
FLOOD CONTROL PROJECT  
  
EASTSIDE BYPASS  
  
LEVEE IMPROVEMENTS  
STA 1354+00 TO STA 1481+00

FENCE AND GATE

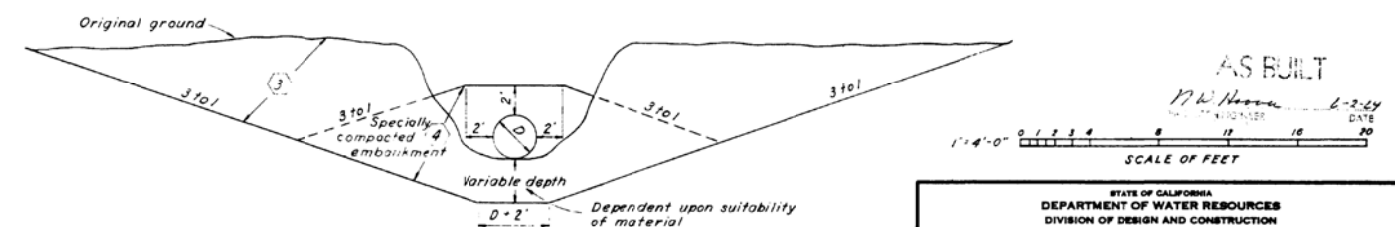
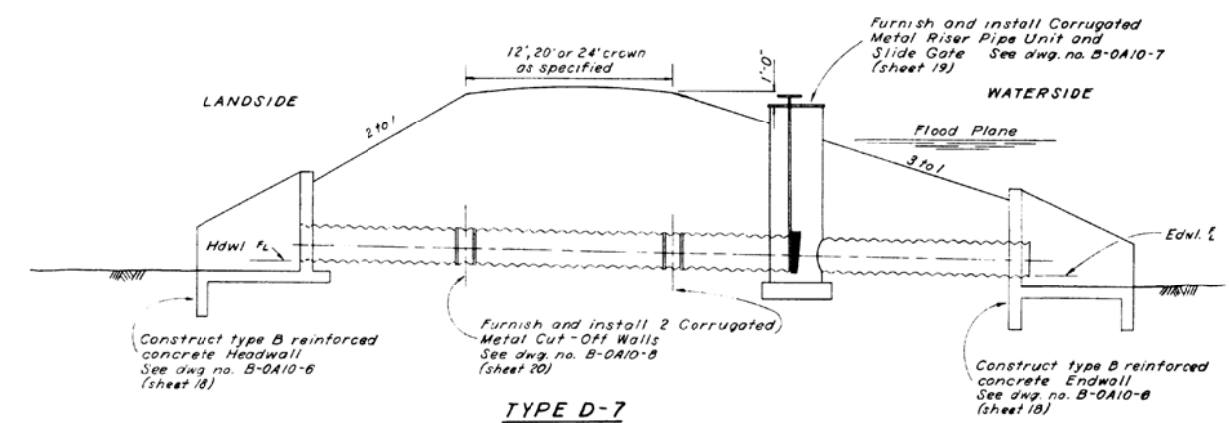
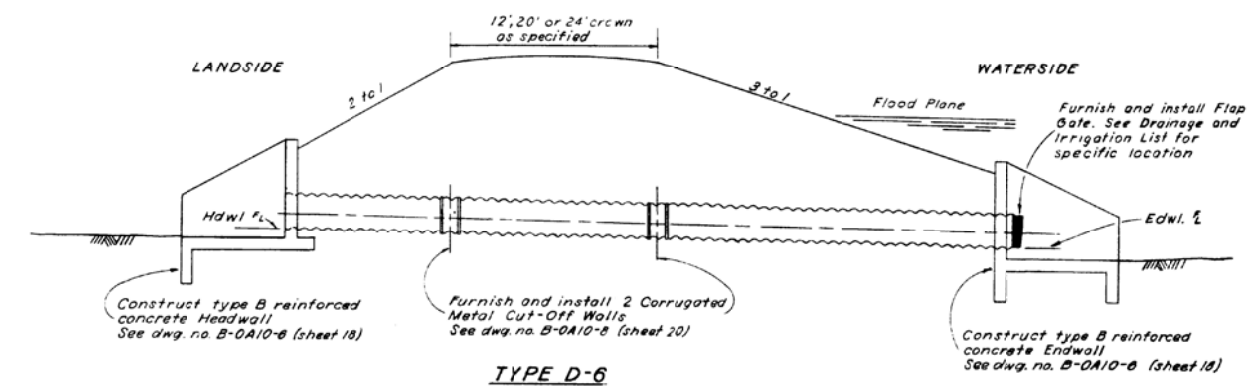
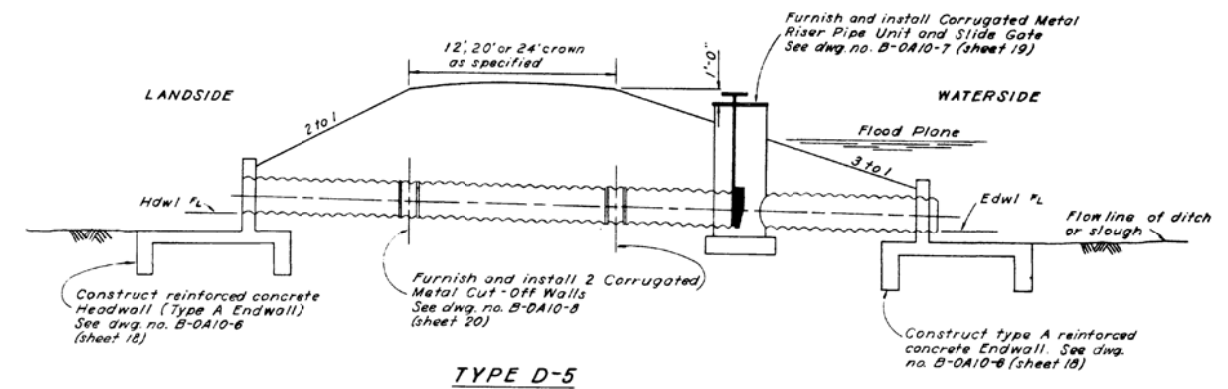
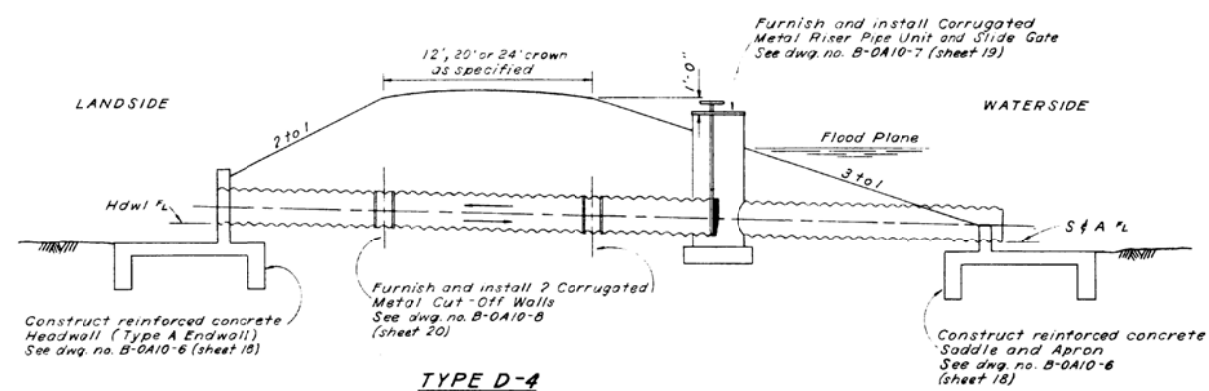
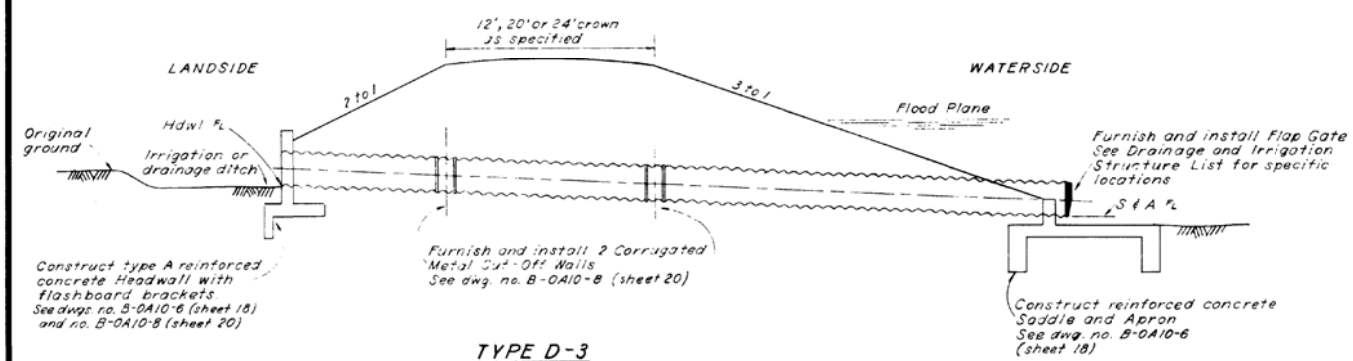
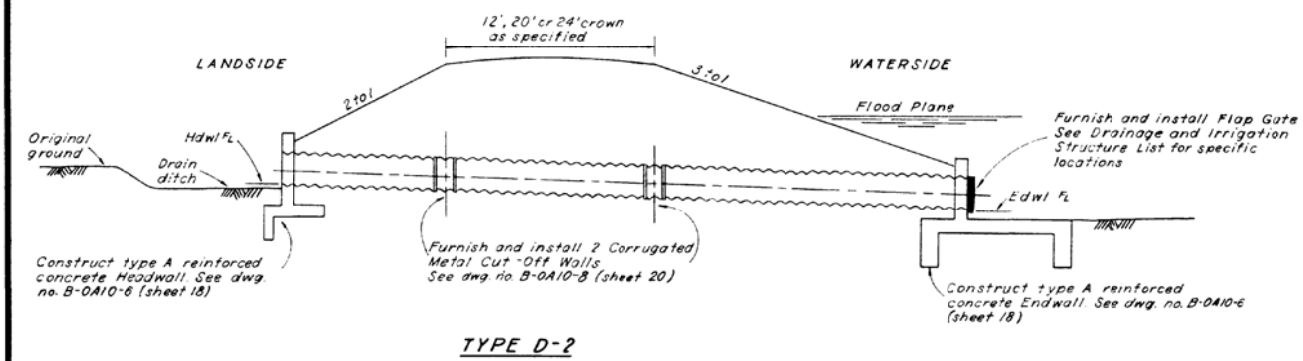
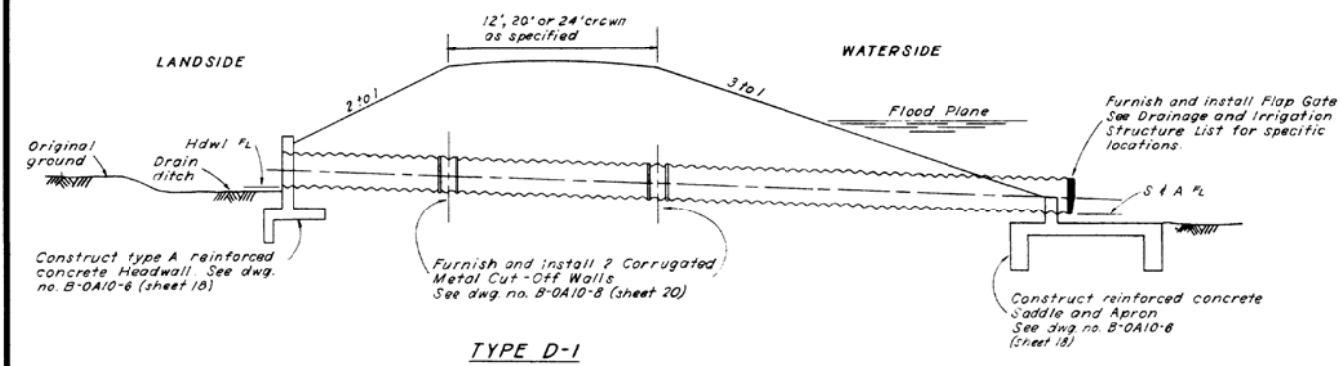
DETAILS

SPEC. NO.	SHEET NO.	REVISION	DRAWING NO.
	033		C-702

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2/4/2019

8





REFERENCE DRAWING,  
ORIGINAL SPEC. 61-01

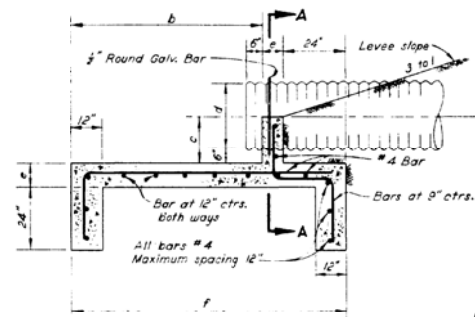
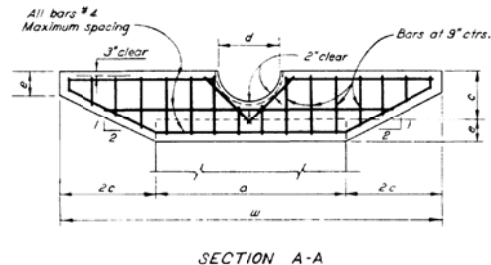
TYPICAL SECTION FOR  
IRRIGATION AND DRAINAGE PIPES

*Not to Scale*

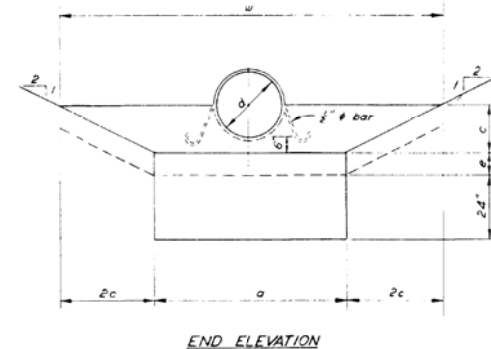
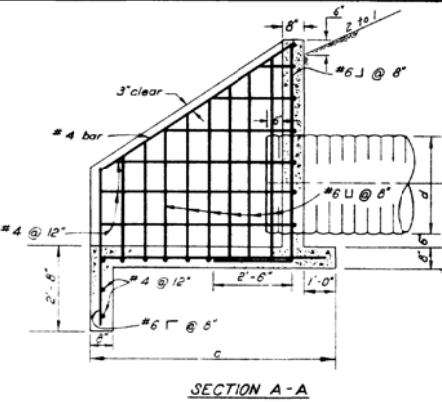
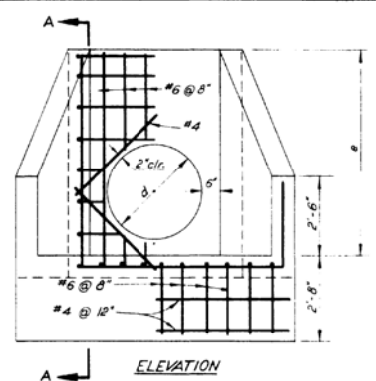
 Denotes contract pay items

REV.	DATE	DESCRIPTION	AMT.	

STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES DIVISION OF DESIGN AND CONSTRUCTION	
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT MOUTH OF BEAR CREEK TO INTERCHANGE AREA	
STANDARD DRAINAGE AND IRRIGATION STRUCTURES	
SUBMITTED: FITZ MORRIS	SUBMITTED BY: <i>John Kalahan</i> REGIONAL REGIONAL ENGINEER
DRAWN: LAY	APPROVAL SIGNATURE: <i>Donald R. Hagen</i>
REVIEWED: NONAKER	APPROVAL SIGNATURE: <i>Theresa Newman</i>
APPROVED: DATE: MAR. 7 1988	
DRAWING NO. B-0A10-5	



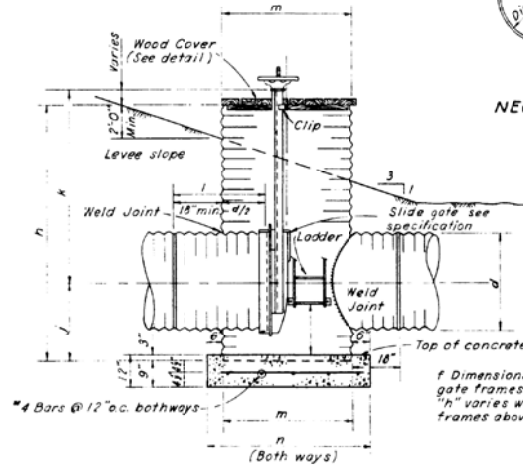
MINIMUM LIMITS OF SPECIALLY COMPACTED EMBANKMENT FOR PIPES THRU LEVEE



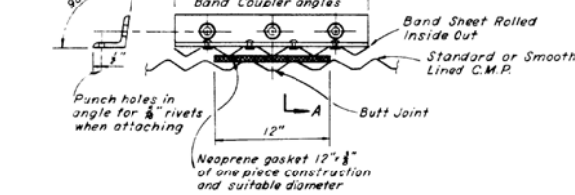
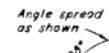
SYMBOL	d - PIPE DIAMETER
a	24"
b	30"
c	36"
d	48"
e	60"
f	72"
g	84"
h	96"
i	108"
j	120"
k	132"
l	144"
m	156"
n	168"
o	180"
p	192"
q	204"
r	216"
s	228"
t	240"
u	252"
v	264"
w	276"
x	288"
y	300"
z	312"
aa	324"
ab	336"
ac	348"
ad	360"
ae	372"
af	384"
ag	396"
ah	408"
ai	420"
aj	432"
ak	444"
al	456"
am	468"
an	480"
ao	492"
ap	504"
aq	516"
ar	528"
as	540"
at	552"
au	564"
av	576"
aw	588"
ax	600"
ay	612"
az	624"
ba	636"
bb	648"
bc	660"
bd	672"
be	684"
bf	696"
bg	708"
bh	720"
bi	732"
bj	744"
bk	756"
bl	768"
bm	780"
bn	792"
bo	804"
bp	816"
bq	828"
br	840"
bs	852"
bt	864"
bu	876"
bv	888"
bw	900"
bx	912"
by	924"
bz	936"
ca	948"
cb	960"
cc	972"
cd	984"
ce	996"
cf	1008"
cg	1020"
ch	1032"
ci	1044"
cj	1056"
ck	1068"
cl	1080"
cm	1092"
cn	1104"
co	1116"
cp	1128"
cq	1140"
cr	1152"
cs	1164"
ct	1176"
cu	1188"
cv	1200"
cw	1212"
cx	1224"
cy	1236"
cz	1248"
da	1260"
db	1272"
dc	1284"
dd	1296"
de	1308"
df	1320"
dg	1332"
dh	1344"
di	1356"
dj	1368"
dk	1380"
dl	1392"
dm	1404"
dn	1416"
do	1428"
dp	1440"
dq	1452"
dr	1464"
ds	1476"
dt	1488"
du	1500"
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dw	1524"
dx	1536"
dy	1548"
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en	1728"
eo	1740"
ep	1752"
eq	1764"
er	1776"
es	1788"
et	1800"
eu	1812"
ev	1824"
ew	1836"
ex	1848"
ey	1860"
ez	1872"
fa	1884"
fb	1896"
fc	1908"
fd	1920"
fe	1932"
ff	1944"
fg	1956"
fh	1968"
fi	1980"
fj	1992"
fk	2004"
fl	2016"
fm	2028"
fn	2040"
fo	2052"
fp	2064"
fq	2076"
fr	2088"
fs	2100"
ft	2112"
fu	2124"
fv	2136"
fw	2148"
fx	2160"
fy	2172"
fz	2184"
ga	2196"
gb	2208"
gc	2220"
gd	2232"
ge	2244"
gf	2256"
gg	2268"
gh	2280"
gi	2292"
gj	2304"
gk	2316"
gl	2328"
gm	2340"
gn	2352"
go	2364"
gp	2376"
gq	2388"
gr	2400"
gs	2412"
gt	2424"
gu	2436"
gv	2448"
gw	2460"
gx	2472"
gy	2484"
gz	2496"
ha	2508"
hb	2520"
hc	2532"
hd	2544"
he	2556"
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qf	5268"
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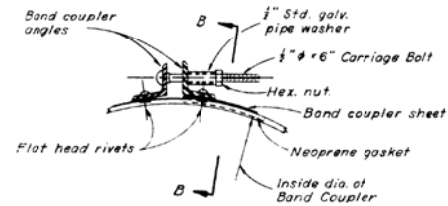
Gate frame to be minimum height req'd



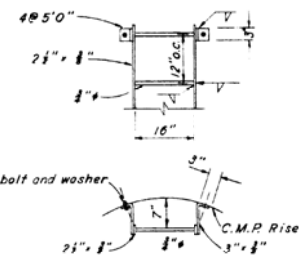
NEOPRENE GASKETS



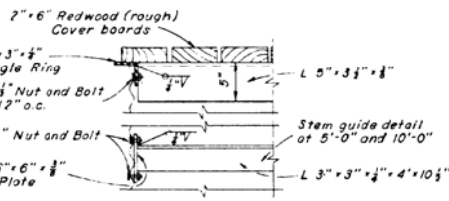
SECTION B-B  
Before tightening



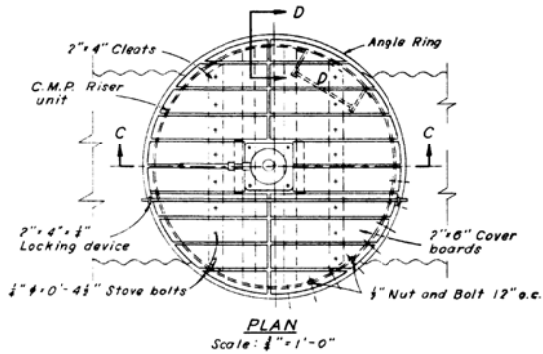
SECTION A-A  
After tightening  
BAND COUPLER DETAILS  
for installation in levees  
Not to Scale



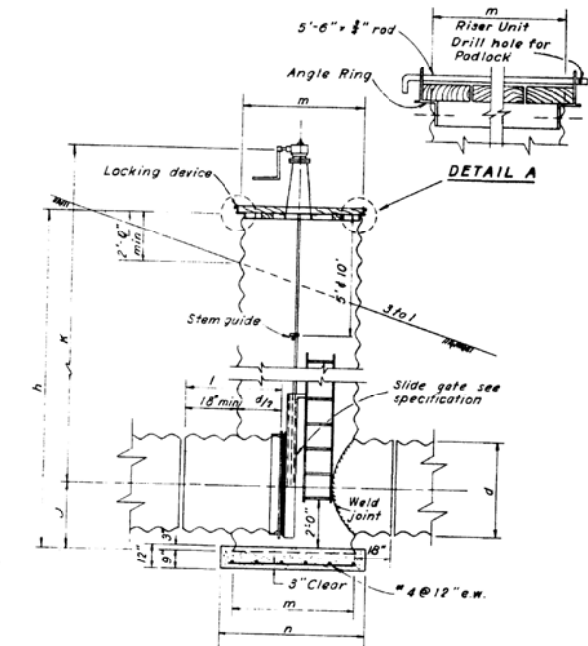
PREFABRICATED  
STEEL LADDER DETAIL  
Scale: 1/4" = 1'-0"



SECTION D-D  
Scale: 1/4" = 1'-0"



PLAN  
Scale: 1/4" = 1'-0"

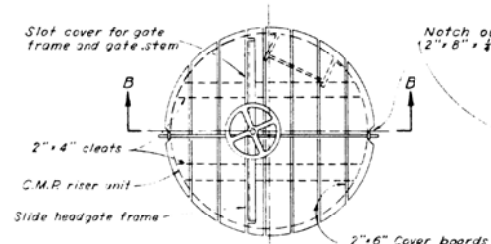


RISER UNIT  
Scale: 1/4" = 1'-0"

SYMBOL	d = Inlet pipe diameter
f h	24" 30" 36" 48"
j	5'-0" 6'-0" 8'-0" 10'-0"
k	1'-9" 2'-0" 2'-3" 2'-9"
l	4'-0" 5'-0" 6'-0" 8'-0"
m	2'-0" 2'-9" 3'-0" 4'-0"
n (dia.)	36" 42" 48" 60"
n (each way)	4'-0" 4'-6" 5'-0" 6'-0"
Reinf. Steel	20# 27# 30# 45#
Concrete %	0.6 0.8 1.0 1.4

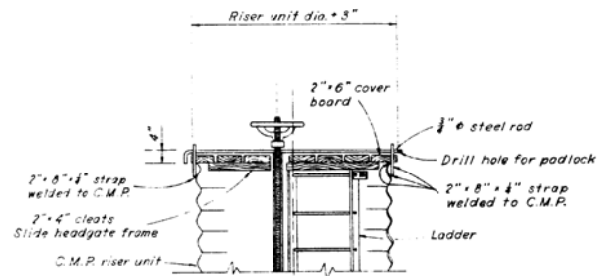
NOTE  
Riser pipe to be asbestos  
banded Corrugated metal of  
diameter specified, close  
riveted and asphalt  
dipped. Gage of metal for riser  
pipes is specified under bid  
item.  
Pipe stub diameter and  
gage to be same as pipe to  
which they connect.

RISER UNIT  
DIMENSIONS & QUANTITIES



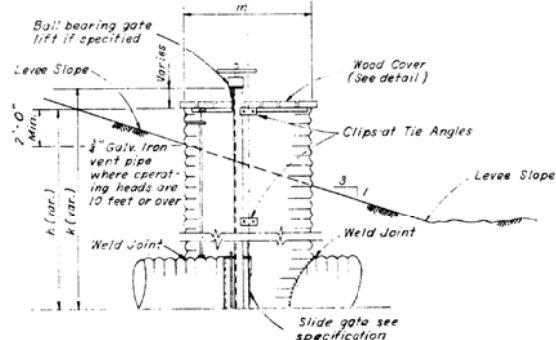
PLAN

LOCKING DEVICE  
STRAP DETAIL



SECTION B-B

RISER UNITS WITH HANDWHEEL  
TYPE LIFTING DEVICE



INSTALLATION FOR  
GATE FRAMES ABOVE MINIMUM HEIGHTS

NOTE  
Riser pipe to be asbestos banded  
Corrugated metal of diameter  
specified, close riveted  
and asphalt dipped. Gage of metal  
for riser pipes is specified under  
bid item.  
Pipe stub diameter and gage  
to be same as pipe to which  
they connect.

f Dimensions "h" and "k" are  
for gate frames of minimum  
heights. "h" varies with "k"  
for gate frames above  
minimum heights.

RISER UNITS WITH PEDESTAL  
TYPE LIFTING DEVICE

SYMBOL	d = Inlet pipe diameter
f h	24" 30" 36" 48"
j	5'-0" 6'-0" 8'-0" 10'-0"
k	1'-9" 2'-0" 2'-3" 2'-9"
l	4'-0" 5'-0" 6'-0" 8'-0"
m	2'-0" 2'-9" 3'-0" 4'-0"
n (dia.)	36" 42" 48" 60"
n (each way)	4'-0" 4'-6" 5'-0" 6'-0"
Reinf. Steel	20# 27# 30# 45#
Concrete %	0.6 0.8 1.0 1.4

RISER UNIT  
DIMENSIONS & QUANTITIES

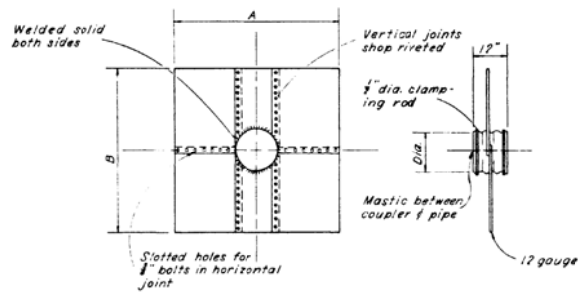


REFERENCE DRAWING,  
ORIGINAL SPEC. 61-01

AS BUILT

M.W. HARRIS  
PROJECT ENGINEER

STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES DIVISION OF DESIGN AND CONSTRUCTION	
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT MOUTH OF BEAR CREEK TO INTERCHANGE AREA	
STANDARD DRAINAGE AND IRRIGATION STRUCTURES	
DESIGNED BY PITZMORRIS	APPROVED BY DATE: 1967 7
CHECKED BY LAW	RELATIVE TO B-0A10-7
REVIEWED BY NONAKER	

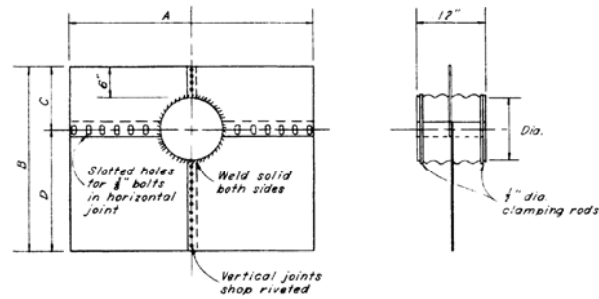


Note: When shoulder grade of levee is 3 feet or less above top of pipe use modified cut-off wall

Dia	A	B
24"	73 1/2"	73 1/2"
30"	78 1/2"	78"
36"	84 1/2"	84"
48"	97 1/2"	97 1/2"

DIMENSIONS

STANDARD CORRUGATED METAL CUT-OFF WALL  
(FOR C.M. PIPE)

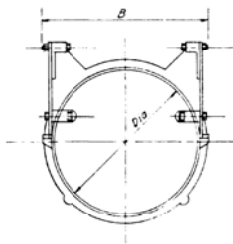


Dia	A	B	C	D
24"	4'-1 1/2"	3'-6"	1'-6"	2'-0"
30"	5'-0"	4'-6"	1'-9"	2'-9"
36"	5'-0"	4'-6"	2'-0"	2'-6"
48"	6'-0"	5'-6"	2'-6"	3'-0"

DIMENSIONS

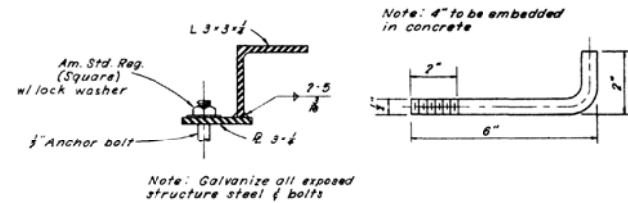
MODIFIED CORRUGATED METAL CUT-OFF WALL

Symbol	Dimensions in In.			
Diameter	24"	30"	36"	48"
A	2"	2 1/2"	2 1/2"	2 1/2"
B	29 1/2"	35 1/2"	42 1/2"	55 1/2"

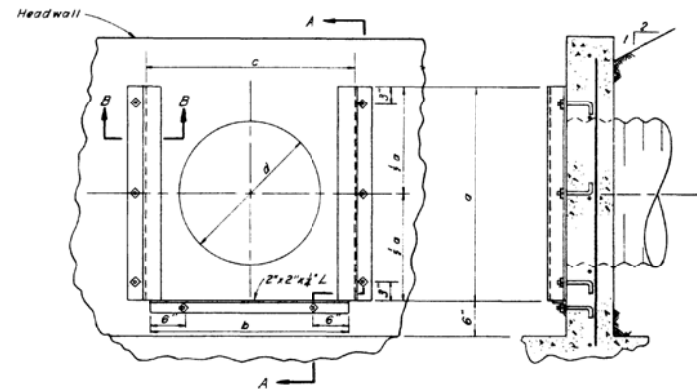


FLAP GATE ATTACHMENT DETAIL  
Note: Attach to pipe only  
Not to Scale

REFERENCE DRAWING,  
ORIGINAL SPEC. 61-01



SECTION B-B ANCHOR BOLT DETAIL



FRONT ELEVATION

SECTION A-A

DIMENSIONS		
Pipe Dia (d)	24"	48"
a	3'-0"	5'-0"
b	3'-0"	4'-6"
c	3'-2"	4'-8"

Flashboard Attachment Detail to be used in conjunction with Standard Headwall

FLASHBOARD ATTACHMENT

LIST OF MATERIALS	
Type A Headwall - 24" Dia. Pipe	Type B Headwall - 48" Dia. Pipe
2 ea. L 3'-3 1/2" x 3'-0"	2 ea. L 3'-3 1/2" x 5'-0"
2 ea. R 3'-4" x 3'-0"	2 ea. R 3'-4" x 5'-0"
1 ea. L 2'-2 1/2" x 3'-0"	1 ea. L 2'-2 1/2" x 4'-6"
8 ea. 1/2" x 6" Anchor Bolt W/ square nut and lock washer	8 ea. 1/2" x 6" Anchor Bolt W/ square nut and lock washer
2 ea. 2'-6" x 3'-0" Redwood Flashboards S2E	11 ea. 2'-6" x 4'-6" Redwood Flashboards S2E
	Type A Headwall - 48" R.C. Pipe
	4 ea. 3' x 3' x 1/2" x 5'-0" Angle
	4 ea. 3' x 1/2" x 5'-0" Plate
	2 ea. 2' x 2' x 1/2" x 4'-6" Angle
	16 ea. 1/2" x 6" Anchor bolt, nut & washer
	22 ea. 2' x 6" x 5'-3" Redwood S2E

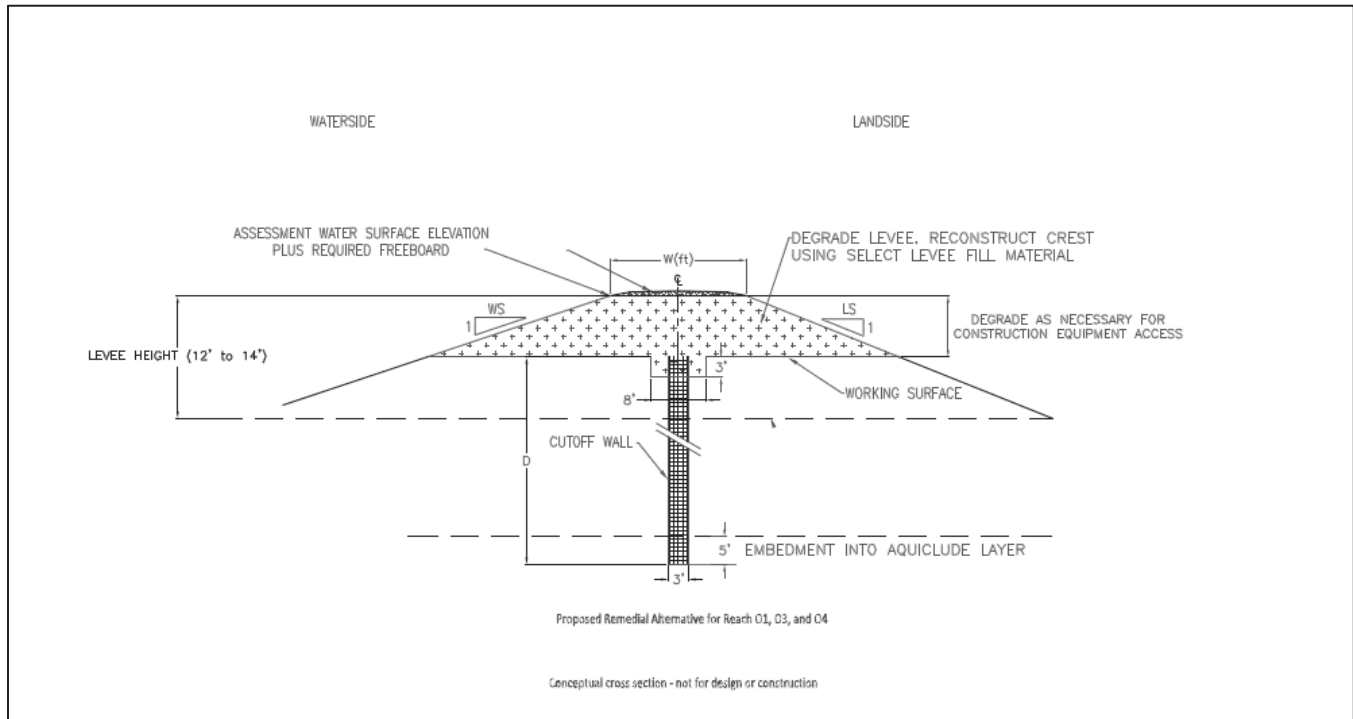
FLASHBOARD ATTACHMENT  
FOR TYPE A & TYPE B HEADWALL

AS BUILT

M. W. Shuman 6-2-48  
DATE

STATE OF CALIFORNIA DEPARTMENT OF WATER RESOURCES DIVISION OF DESIGN AND CONSTRUCTION	
LOWER SAN JOAQUIN RIVER FLOOD CONTROL PROJECT MOUTH OF BEAR CREEK TO INTERCHANGE AREA	
STANDARD DRAINAGE AND IRRIGATION STRUCTURE DETAILS	
DESIGNED BY PITZMORIS	APPROVED BY DATE
CHECKED BY LAW	DATE
REVIEWED BY NONAKER	DATE
B-0A10-8	

**Figure 4. Typical Levee Improvement Cross Section**



Source: California Department of Water Resources, 2017

There is a total of 6 culverts/pipes that penetrate the levees and will be replaced with the same size culverts/pipes. Some improvements, such as replacement of existing corrugated metal pipes with reinforced concrete pipe will be completed. These features for Reach O-1, O-3 (O-3A and O-3B), and O-4 are identified in **Attachment C**. The types of replacement are identified in the figures for each type of levee penetration.

**Lower San Joaquin Levee District**  
11704 West Henry Miller Avenue, Dos Palos, CA 93620  
Telephone: (209) 387-4545  
FAX: (209) 387-4237

Attachment F

*Directors*

**Roy Catania, Chairman**  
**George Park, Vice Ch.**  
**Sean Howard**  
**Robert D. Kelley, Jr.**  
**Aldo Sansoni**  
**Donald C. Skinner**  
**Case Vlot**

*Secretary-Manager*  
**Reggie N. Hill**

*Superintendent*  
**Darrell Chism**

September 11, 2018

Central Valley Flood Protection Board  
Encroachment Permit Section  
3310 El Camino Avenue, Room 151  
Sacramento, CA 95821

RE: Permit Application - Department of Water Resources

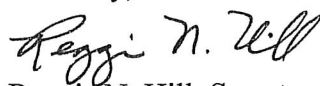
For your records, please find enclosed with this letter a copy of the Lower San Joaquin Levee District's (the "District") **Resolution No. 678-18**, adopted by the Board of Directors at a regular meeting held on July 10, 2018.

The purpose of this letter is to inform the Central Valley Flood Protection Board (the "Board") that the action by the District was merely a "no objection" to the Department of Water Resources' ("DWR") proposed slurry wall construction. However, this action does not transmit support for the DWR's actions in whole with regard to the San Joaquin River Restoration Program ("SJRRP") and certainly does not indicate that the District supports the SJRRP.

More specifically, the District is concerned about future proposed work by DWR, and others, as part of the SJRRP. The District disagrees with using these flood control facilities to maintain a "wet system" and there have already been ramifications to the District's ability to do maintenance because of the SJRRP creating a "wet system." Furthermore, the District requests that the Board not approve projects under the SJRRP in bulk, but that the Board require separate applications for such work and each be considered on an individual basis.

By a separate letter, the District will provide you with more detail about its concerns with the SJRRP actions that compromise the flood project's purpose, public safety.

Sincerely,



Reggie N. Hill, Secretary-Manager

cc Department of Water Resources



**LOWER SAN JOAQUIN LEVEE DISTRICT****RESOLUTION NO. 678-18**

**WHEREAS**, the Board of Directors of the Lower San Joaquin Levee District (the "Levee District") read the Central Valley Flood Protection Board permit application by the California Department of Water Resources, 3374 East Shields Avenue, Fresno, CA, regarding the proposal to install a slurry cutoff wall in the right levee of the Eastside Bypass, in Merced County, within the boundaries of the Levee District; for the purposes of addressing San Joaquin River Restoration Program fish flow seepage impacts on adjacent properties; and

**WHEREAS**, the proposed installation begins along the Eastside Bypass Levee Unit #5, at approximately Mile 15.5, and ends at Levee Unit #5 at approximately Mile 18.0; the installation will consist of constructing a slurry cutoff wall with depths ranging from approximately 23-32 feet and a consistent wall thickness of 3 feet, for an approximate total length of 10,000 linear feet; in Section 13, T.9 South, R. 12 East, Sections 18, 19, 29, 30, T. 9 South, R. 13 East, M.D.B.&M.; and

**WHEREAS**, the Levee District staff has reviewed the permit and stated no impacts to the operations and maintenance of the flood project will be affected by this particular installation, but this does not mean the Levee District's operation and maintenance are not impacted by the San Joaquin River Restoration Program as a whole; and

**WHEREAS**, this Board has reviewed and studied the information presented,

**NOW, THEREFORE, BE IT RESOLVED**, the Board of Directors of the Lower San Joaquin Levee District, by this Resolution, does hereby not object to the aforementioned application, but does require the following conditions: 1) applicant agrees to indemnify and hold the Levee District harmless of any liability relative to applicants operation of the installation or associated structures; 2) applicant acknowledges and recognizes the Levee District must maintain a functioning flood channel system for passage of flood water, and agrees that in the course of any access for their purposes shall not interfere with Levee District's ability to move water through its system; and 3) the aforementioned proposal be listed as a separate standalone application, not included in other proposed components of encroachment permit applications by the San Joaquin River Restoration Program,

**BE IT FURTHER RESOLVED**, notification of this action will be transmitted to the Central Valley Flood Protection Board and applicant.

**PASSED AND ADOPTED** by the Board of Directors of the Lower San Joaquin Levee District on the 10<sup>th</sup> day of July, 2018 by the following vote:

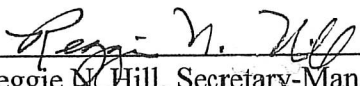
Ayes:	R. Catania, G. Park, R. D. Kelley, Jr., C. Vlot
Noes:	A. Sansoni
Abstain:	None
Absent:	S. Howard, D. C. Skinner

\*\*\*\*\*

## CERTIFICATION

Lower San Joaquin Levee District  
11704 W. Henry Miller Ave.  
Dos Palos, CA 93620  
September 11, 2018

I, REGGIE N. HILL, Secretary-Manager of the Lower San Joaquin Levee District, do hereby certify that the foregoing **RESOLUTION NO. 678-18** was adopted by the Board of Directors of the said District at the Regular Meeting of the Board, held in the office of the District, located at 11704 W. Henry Miller Avenue, Dos Palos, Merced County, California, on the 10th day of July, 2018, at the hour of 8:40 A.M., and do further certify that there was present at this meeting a quorum at all times, and that this Resolution has not been amended or rescinded, but remains in full force and effect.

  
\_\_\_\_\_  
Reggie N. Hill, Secretary-Manager  
LOWER SAN JOAQUIN LEVEE DISTRICT



**From:** [Larson, Ryan T CIV USARMY CESPCK \(USA\)](#)  
**To:** [Acosta, Alex@CVFPB](#); [Haston, Alexander@CVFPB](#); [Buckley, Andrea@CVFPB](#); [Biswas, Debabrata@CVFPB](#); [Kennedy, Doug@CVFPB](#); [Miao, Eric@CVFPB](#); [Gonzalez, Juan M CIV USARMY CESPCK \(US\)](#); [Harvey, Greg@CVFlood](#); [Negrete, Humberto@CVFPB](#); [Rivera, Itzia@CVFPB](#); [Herota, James@CVFPB](#); [Logan, Justin@CVFPB](#); [Leonard, Kimberlee K CIV \(US\)](#); [Lemon, Gary@CVFPB](#); [Meza, Mauricio@CVFPB](#); [Gill, Michael@CVFPB](#); [Wright, Michael@CVFPB](#); [Murakami, Robert H CIV USARMY CESPCK \(US\)](#); [Kibret, Natnael@CVFPB](#); ["Ruth.Darling@CVFlood.ca.gov"](#); [Vaughan, Eugene J CIV USARMY CESPCK \(US\)](#)  
**Subject:** 19307 (UNCLASSIFIED)  
**Date:** Thursday, March 28, 2019 10:48:17 AM

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CLASSIFICATION: UNCLASSIFIED

CVFPB staff,

19307 is to reinforce approximately 2 miles of levee with cutoff walls along the existing right (east) bank levee of the Eastside Bypass to improve levee stability and reduce seepage; to remove and replace in-kind five 24" culvert drains and the headworks of a 36" irrigation canal through the levee; and to construct an approximately 24 foot wide temporary road parallel to the levee within the channel along the waterside toe to stockpile degraded material and provide construction route access. The project is located between the Cities of Merced and Los Banos on the Eastside Bypass just east of the San Joaquin River at 37.1497N, 120.6011W NAD83 in Merced County CA.

The District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project. A Section 10 and/or Section 404 permit may be required. Please advise the applicant to contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Division, 1325 J Street, Room 1350, Sacramento, CA 95814, telephone (916) 557-5250.

Ryan Larson, P.E.  
Acting Chief, Levees and Channels Branch  
USACE-Sacramento  
916-557-7568  
[ryan.t.larson2@usace.army.mil](mailto:ryan.t.larson2@usace.army.mil)  
CLASSIFICATION: UNCLASSIFIED