

**American River Flood Control District  
Central Valley Flood Protection Board Permit Application  
Sump 159-1 Modifications (City of Sacramento)  
Staff Report**

**Discussion:**

The City of Sacramento submitted this encroachment permit application to modify facilities at their Sump 159 Pump Station. The work proposed is to remove and replace approximately 4 ft of one (1) 12" welded steel pipe at the pump outfall structure.

Sump 159 is located adjacent to the Arcade Creek South Levee and just west of the bike trail bridge crossing.

This modification is required to upgrade the pipe outfall system at the pump station. Recent work conducted by SAFCA under the North Area Streams Project replaced only the segments of pipe that crossed through the levee. This work will complete the upgrade to the facility by replacing the pipe outfall section and flap gate.

This modification will be a routine construction installation and does not present a considerable engineering challenge. It is not anticipated that this work will pose significant operations and maintenance impacts to the District.

**Recommendation:**

The General Manager recommends that the Board of Trustees endorse the CVFPB permit application.

**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.  
Sump 159 Modifications: Remove and replace approximately 4 ft of one (1) 12" welded steel pipe at the pump outfall structure.

2. Project  
Location: Sacramento County, in Section See Attachment A  
Township: See Attachment A (N) (S), Range: See Attachment A (E) (W), M. D. B. & M.  
Latitude: 38.62504 Longitude: -121.44762  
Stream: Arcade Creek, Levee: Left Bank Designated Floodway: Arcade Creek  
APN: See Attachment A

3. Raymond Kong, PE of 1395 35th Ave  
Name of Applicant / Land Owner Address  
Sacramento CA 95822 (916) 808-1435  
City State Zip Code Telephone Number  
RKong@cityofsacramento.org  
E-mail

4. Ashley Smith, PE of Peterson Brustad Inc.  
Name of Applicant's Representative Company  
Folsom CA 95630 (916) 608-2212 x 123  
City State Zip Code Telephone Number  
asmith@pbieng.com  
E-mail

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

We, the Trustees of American River Flood Control District approve this plan, subject to the following conditions:  
Name of LMA

Conditions listed on back of this form  Conditions Attached  No Conditions

\_\_\_\_\_  
Trustee Date Trustee Date  
\_\_\_\_\_  
Trustee Date Trustee Date



**Attachment A – Summary of Proposed Work**

**CITY OF SACRAMENTO PUMP OUTFALLS PROJECT:  
CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT**

**SUMMARY OF PROPOSED WORK**

September 15, 2020

**INTRODUCTION**

As mandated by the Sacramento Area Flood Control Agency (SAFCA) and the U.S. Army Corps of Engineers (USACE), sump station outfalls that penetrate and cross major levees are inspected on a 5-year cycle. The project entails the complete replacement of the pump discharge for three (3) drainage sump station facilities and partial replacement of the pump discharge pipe for five (5) drainage sump station facilities. The following information pertains to a partial replacement sump (Sump 159) that will need an updated Encroachment Permit from the CVFPB.

**APN Parcels**

Sump	Existing Permit #	APN
159	4417-1	263-0260-010-0000, 263-0010-016-0000

**ADJACENT PARCELS**

All of the parcels adjacent to the Sump to be modified are listed in the table presented below as provided by the Sacramento County Assessor's Office.

APN	Address	Owner	Owner Address	City	Zip
250-0270-009-0000	ALTOS AVE	CITY OF SACRAMENTO	915 I ST FL5	SACRAMENTO	95814
250-0270-012-0000	ALTOS AVE	UNION PACIFIC RAILROAD CO	1400 DOUGLAS ST 1640	OMAHA	68179
251-0291-011-0000	RIO LINDA BLVD	AMERICAN RIVER FLOOD CONTROL DIST	165 COMMERCE CIR UNIT D	SACRAMENTO	95815
251-0291-012-0000	3201 RIO LINDA BLVD	CONIGLIO 2007 REVOCABLE TRUST	3201 RIO LINDA BLVD	SACRAMENTO	95815
251-0291-018-0000	RIO LINDA BLVD	SACTO & SAN JOAQUIN DRAINAGE DIS	3310 EL CAMINO AVE	SACRAMENTO	95821
263-0010-015-0000	FAIRBANKS AVE	SACTO & SAN JOAQUIN DRAINAGE DIS	3310 EL CAMINO AVE	SACRAMENTO	95821

263-0041-019-0000	813 ARCADE BLVD	SHARON LEE NAYLOR	813 ARCADE BLVD	SACRAMENTO	95815
263-0046-001-0000	3148 ALTOS AVE	IVAN PARRA	3148 ALTOS AVE	SACRAMENTO	95815
263-0046-002-0000	808 ARCADE BLVD	RUBEN O LUA	808 ARCADE BLVD	SACRAMENTO	95815
263-0260-020-0000	TRACTION AVE	CITY OF SACRAMENTO	915 I ST FL5	SACRAMENTO	95814
265-0011-001-0000	3141 RIO LINDA BLVD	S M U D	PO BOX 15830	SACRAMENTO	95852
265-0011-002-0000	3139 RIO LINDA BLVD	JAMES RODARAKIS	205 ARCADE BLVD	SACRAMENTO	95815

### **TOWNSHIP AND RANGE INFORMATION**

Note that gaps exist in Townships and Ranges within the project area. Land not covered by T9N R5E has been in private ownership since before California joined the United States and therefore is not part of the Township and Range system, which was a survey of federal lands.

### **SITE PHOTOGRAPHS**

Attached to this Summary of Proposed Work are photographs showing levee and channel areas representative of proposed work sites.



Figure 1: Sump 159 looking North West





Figure 2: Landside slope near Sump 159





Figure 3: Siphon breaker vaults on levee crest near Sump 159



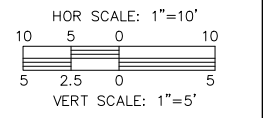
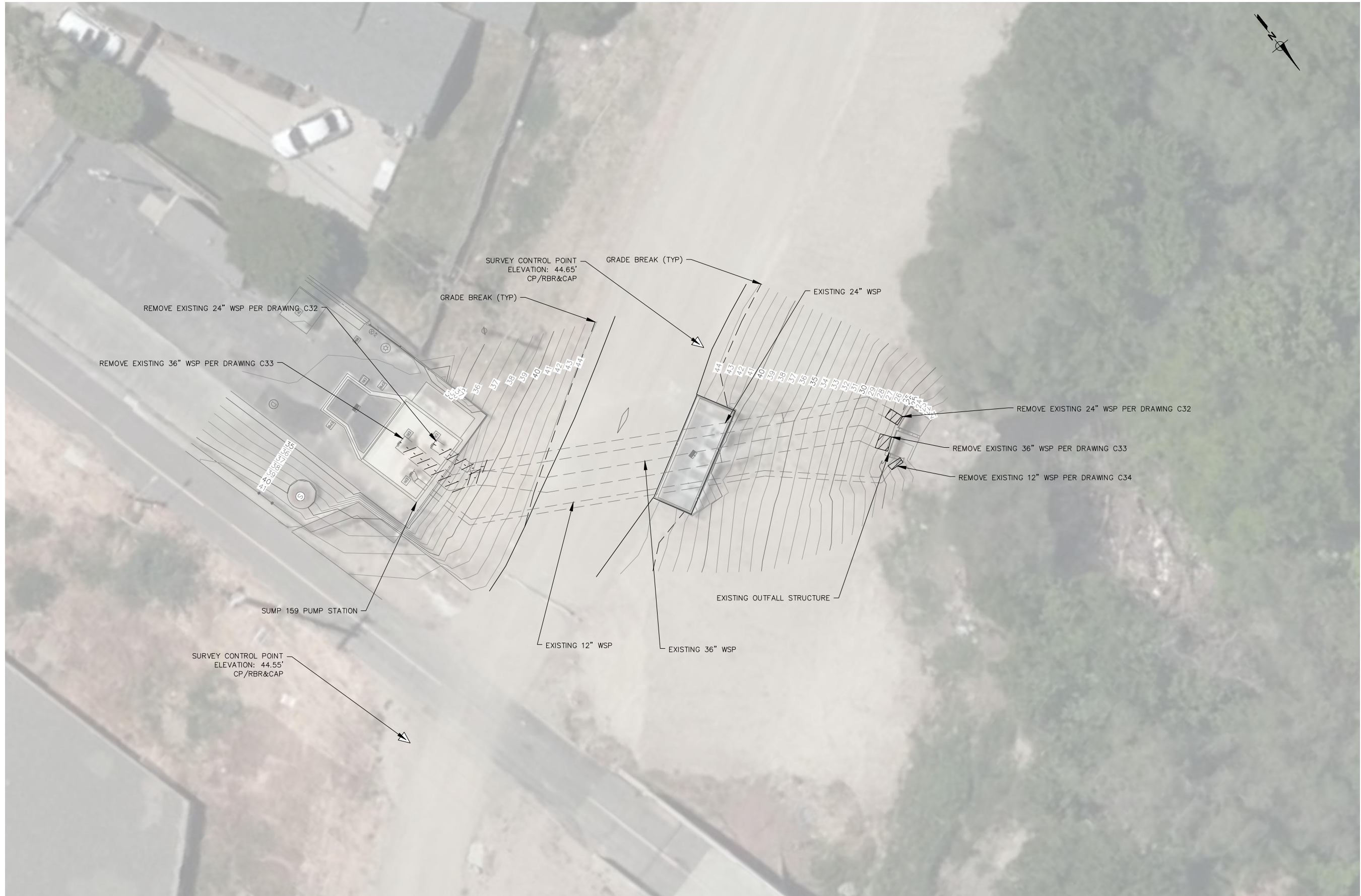


Figure 4: View looking southwest toward the Sump 159 outfall into Arcade Creek

**Attachment B – Plan Sheets**

*(Excerpt from larger plan set for Pump Outfalls Replacement Project – A)*





PN: W14130615

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

BENCH MARK	ELEV.	44.65
DESCRIPTION:	CP/RBR&CAP	

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V: V:	

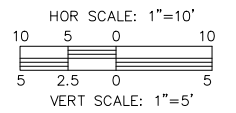
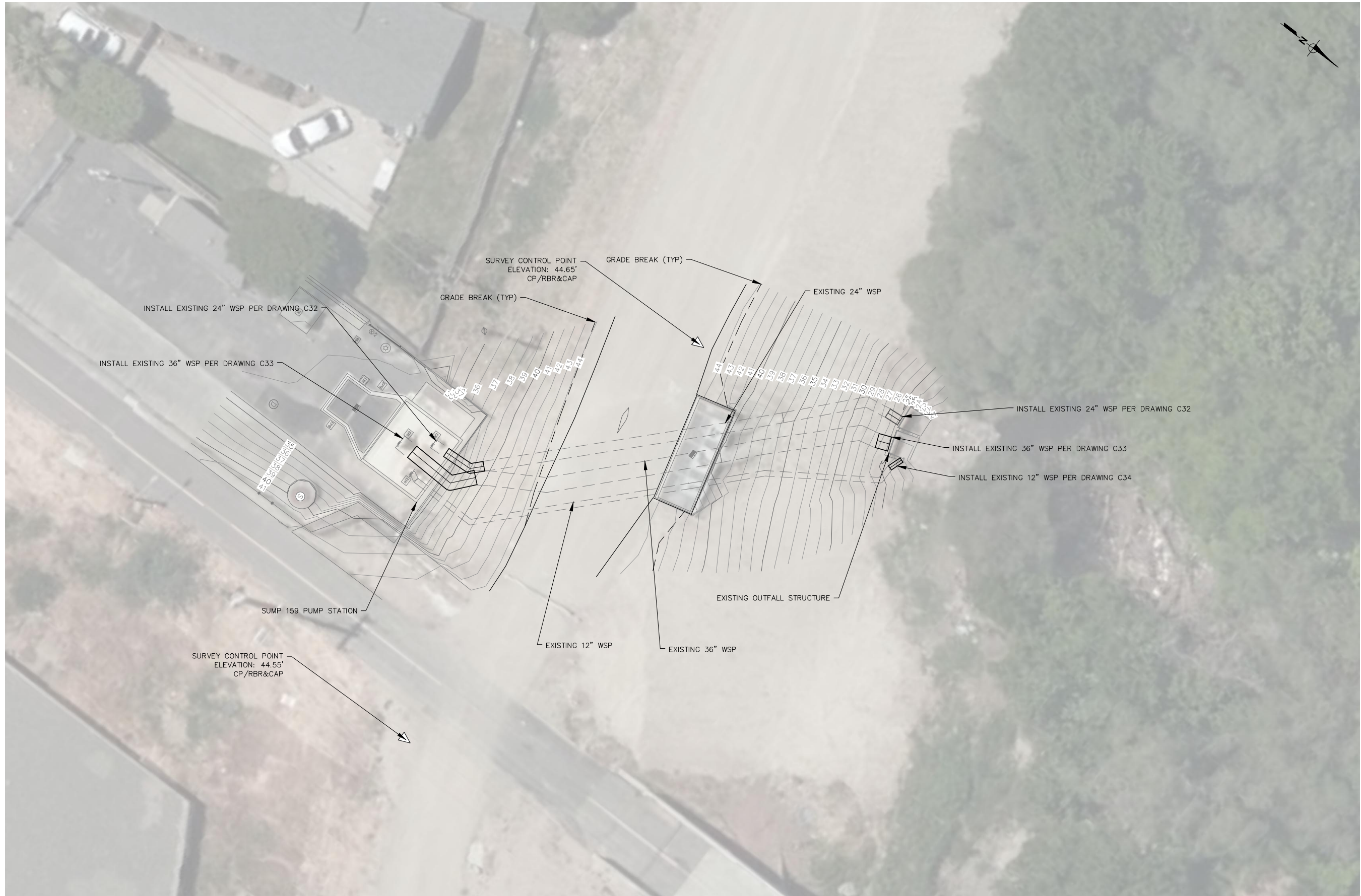
<b>CITY OF SACRAMENTO</b>			
<b>DEPARTMENT OF UTILITIES</b>			
DRAWN BY:	E. TUTEJA	DESIGNED BY:	B. JENSEN
DATE:	09/15/20	R.C.E. NO.:	C90949 DATE: 03/31/22
		CHECKED BY:	A. SMITH
		R.C.E. NO.:	C86512 DATE: 03/31/21



IMPROVEMENT PLANS FOR:  
**PUMP OUTFALLS REPLACEMENT PROJECT - A**  
**SUMP 159**  
**DEMO PLAN**

DWG. NO.	C30
SHEET	33
OF	47





PUMP OUTFALLS REPLACEMENT PROJECT  
PN: W14130615

PN: W14130615

PN: W14130615

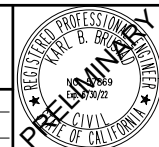
65% SUBMITTAL

REVISIONS			
NO.	DESCRIPTION	DATE	BY

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CP/RBR&CAP		

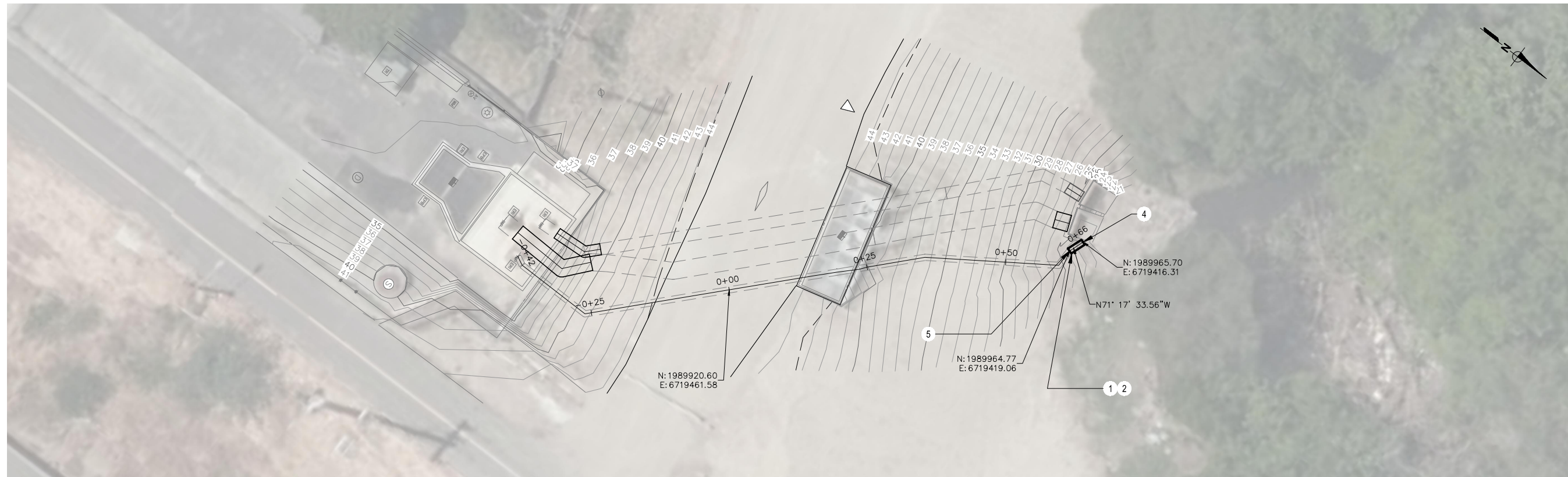
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SCALED DIMENSIONS	IF THIS DOES NOT
SCALE AT 1"	

<b>CITY OF SACRAMENTO</b>			
<b>DEPARTMENT OF UTILITIES</b>			
DRAWN BY:	E. TUTEJA	DESIGNED BY:	B. JENSEN
DATE:	09/15/20	R.C.E. NO.	C90949 DATE: 03/31/22
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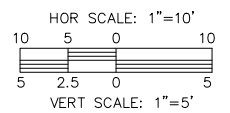
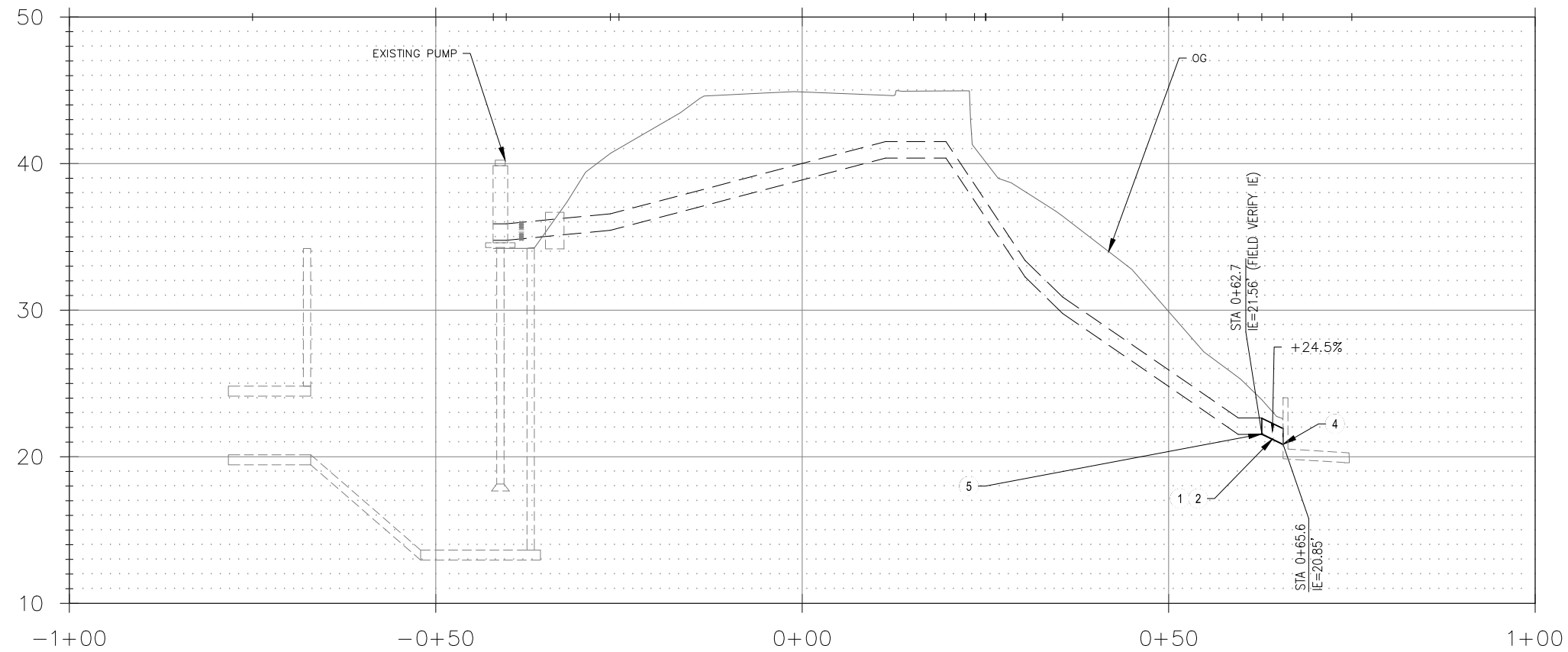


IMPROVEMENT PLANS FOR:  
**PUMP OUTFALLS REPLACEMENT PROJECT - A**  
**SUMP 159**  
**SITE PLAN**

DWG. NO.	C31
SHEET	34
OF	47
Page 13	



- NOTES:**
- 1 REMOVE AND DISPOSE OF EXISTING 12" WSP AND APPURTENANCES FROM STA 0+62.7 TO STA 0+65.6 PER DETAIL 2/C38
  - 2 INSTALL 12" WSP FROM STA 0+62.7 TO STA 0+65.6 PER DETAIL 3/C38
  - 3 CONNECT TO EXISTING STEEL COUPLING
  - 4 CONNECT TO EXISTING OUTFALL STRUCTURE PER DETAIL 1/C37
  - 5 CONNECT TO EXISTING PIPE PER DETAIL 3/C37
  - 6 REMOVE AND SALVAGE STEEL COUPLING
  - 7 LOCATION OF ALL EXISTING UTILITIES ARE APPROXIMATE IN PLAN AND PROFILE AND ARE BASED ON THE BEST AVAILABLE UTILITY MAPPING PROVIDED BY UTILITY OWNERS, THE CONTRACTOR IS RESPONSIBLE TO POTHOLE ALL EXISTING UTILITIES IN CONFLICT WITH THE PROJECT IN ADVANCE OF CONSTRUCTION TO DETERMINE ACTUAL DEPTH AND LOCATION. DAMAGE TO ANY EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR



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PN: W14130615

REVISIONS			
NO.	DESCRIPTION	DATE	BY

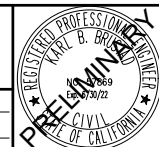
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FIELD BOOK	0000
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V: V:	

**CITY OF SACRAMENTO**  
**DEPARTMENT OF UTILITIES**

ON ORIGINAL SCALE DRAWING ADJUST SCALED DIMENSIONS IF THIS DOES NOT SCALE AT 1"

DRAWN BY: E. TUTEJA	DESIGNED BY: B. JENSEN	CHECKED BY: A. SMITH
DATE: 09/15/20	R.C.E. NO. C90949 DATE: 03/31/22	R.C.E. NO. C86512 DATE: 03/31/21

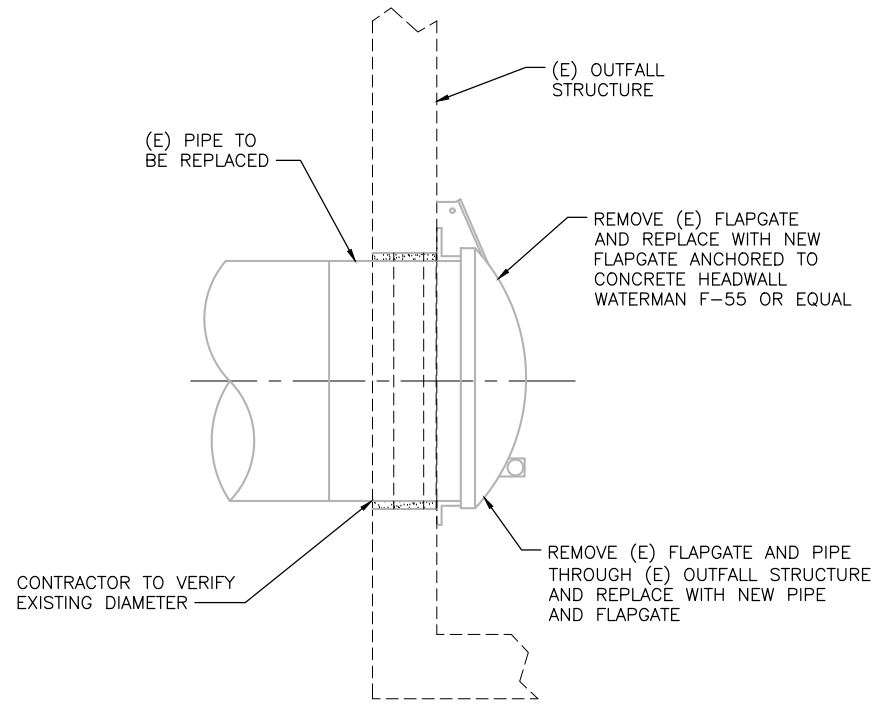


IMPROVEMENT PLANS FOR:  
**PUMP OUTFALLS REPLACEMENT PROJECT - A**  
**SUMP 159**  
**PLAN AND PROFILE 3 - 12" WSP**

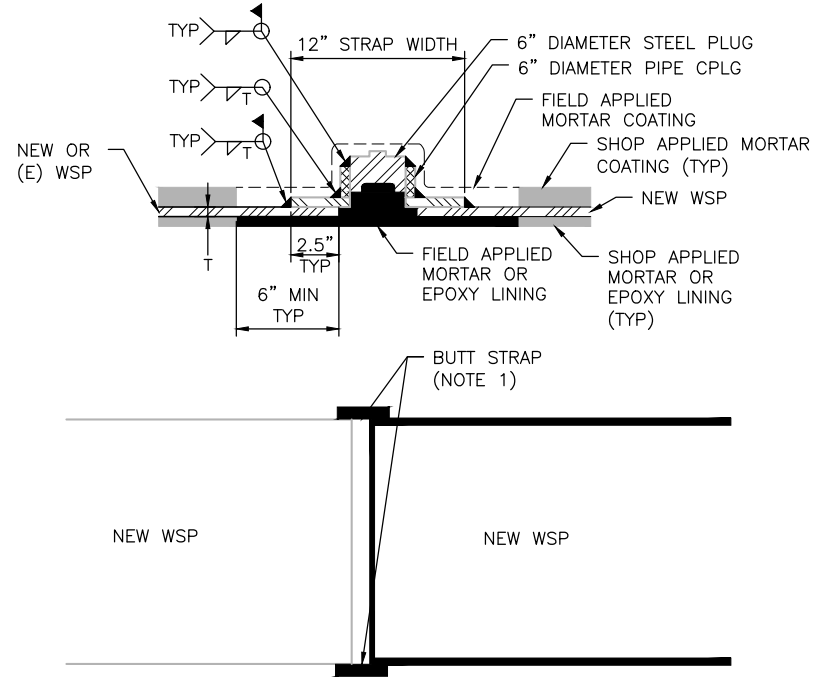
65% SUBMITTAL

DWG. NO.	C34
SHEET	37
OF	47



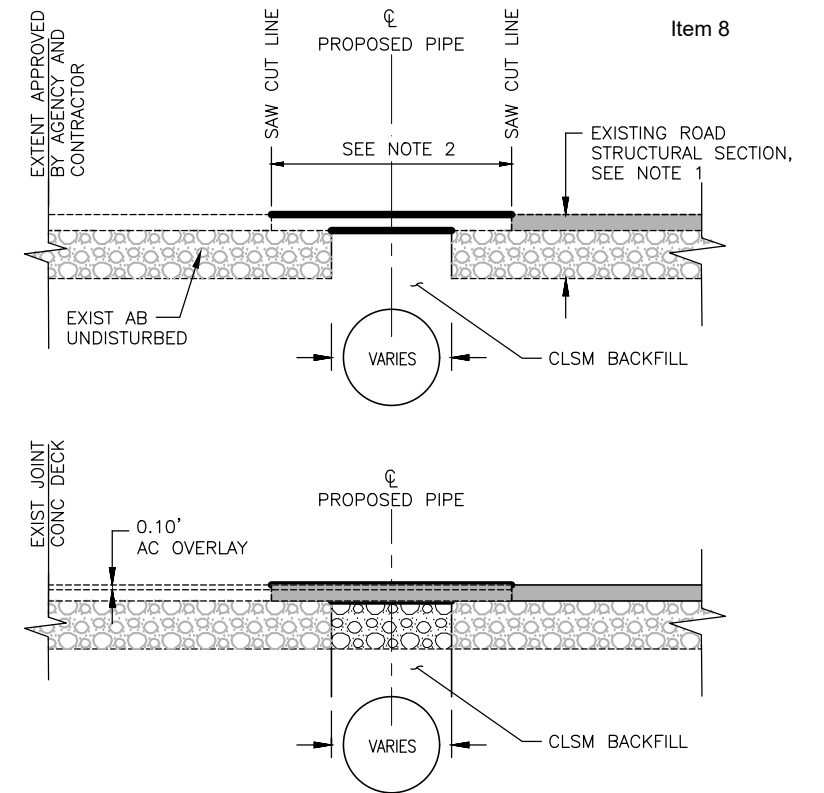


OUTFALL STRUCTURE CONNECTION DETAIL **1**  
NTS



NOTES:  
1. PROVIDE HAND HOLES AS NEEDED TO INSTALL FIELD LINING. WELD HAND HOLE CLOSED WHEN COMPLETE. HAND HOLES NOT REQUIRED AT OUTLETS IF ACCESSIBLE THROUGH FLAP GATE.

NEW OR EXISTING STEEL  
PIPE CONNECTION DETAIL **2**  
NTS



TRENCH SECTION AND SEQUENCING **3**  
NTS

NOTES:

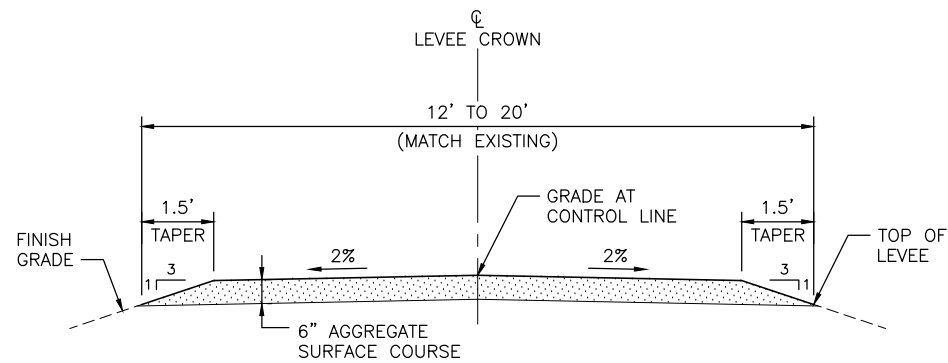
- CONTRACTOR SHALL REPLACE EXISTING PAVEMENT IN KIND. BASED ON LIMITED FIELD INVESTIGATIONS, EXISTING PAVEMENT SECTION ARE ASSUMED 2" AC ON 6" AB
- THE OWNER AND THE CONTRACTOR SHALL JOINTLY DETERMINE THE FINAL WIDTH AND LENGTH OF THE BIKE PATH CROSSING BASED ON FIELD CONDITIONS AND CONSTRUCTION PROCEDURES.
- CONTRACTOR SHALL REMOVE EXISTING BIKE PATH AS NEEDED TO CONSTRUCT PROPOSED PIPE. IMPACTED AREAS SHALL BE REPLACED IN ACCORDANCE WITH CITY OF SACRAMENTO STANDARD DETAIL T-21

CONSTRUCTION SEQUENCE:

- STEP 1: SAWCUT LIMITS 09F TRENCH EXCAVATION TO CLEAN CUT LIMITS. REMOVE EXISTING ASPHALT CONCRETE TO THE MIN EXTENT REQUIRED TO CONSTRUCT PROPOSED PIPE. PROPOSED PIPE SHALL BE CONSTRUCTED A MIN OF 2' FROM FG. TRENCH PLATES SHALL BE PROVIDED TO MAINTAIN ACCESS OVER CUTOFF WALL DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS.
- STEP 2: PLACE AB TO MATCH EXISTING THICKNESS. PLACE AC OVERLAY FROM EXTENT APPROVED BY AGENCY AND CONTRACTOR TO LIMITS OF SAWCUT. PROVIDE PAVEMENT MARKING AND STRIPING TO MATCH EXISTING.

LEGEND:

- |                                    |          |
|------------------------------------|----------|
| EXISTING                           | PROPOSED |
|                                    |          |
| GRIND AND OVERLAY ASPHALT CONCRETE |          |
|                                    |          |
| AGGREGATE BASE (AB)                |          |
|                                    |          |
| ASPHALT CONCRETE (AC)              |          |



CROWN SURFACING DETAIL **4**  
NTS

PN: W14130615

REVISIONS			
NO.	DESCRIPTION	DATE	BY

BENCH MARK	ELEV.
DESCRIPTION:	

FIELD BOOK	0000
SCALE:	1" = 1'
H:	
V:	

ON ORIGINAL SCALE DRAWING ADJUST SCALED DIMENSIONS IF THIS DOES NOT SCALE AT 1"

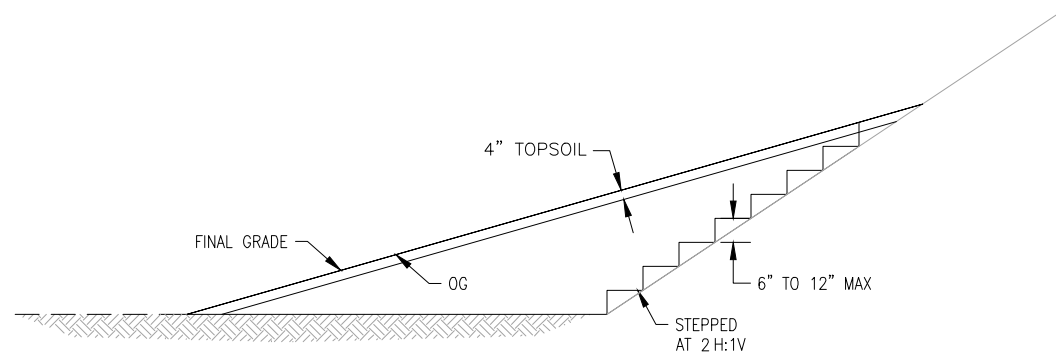
<b>CITY OF SACRAMENTO</b> DEPARTMENT OF UTILITIES			
DRAWN BY: E. TUTEJA	DESIGNED BY: B. JENSEN	CHECKED BY: A. SMITH	
DATE: 09/15/20	R.C.E. NO. C90949 DATE: 03/31/22	R.C.E. NO. C86512 DATE: 03/31/21	



IMPROVEMENT PLANS FOR:  
**PUMP OUTFALLS REPLACEMENT PROJECT - A**  
MISCELLANEOUS DETAILS I

65% SUBMITTAL

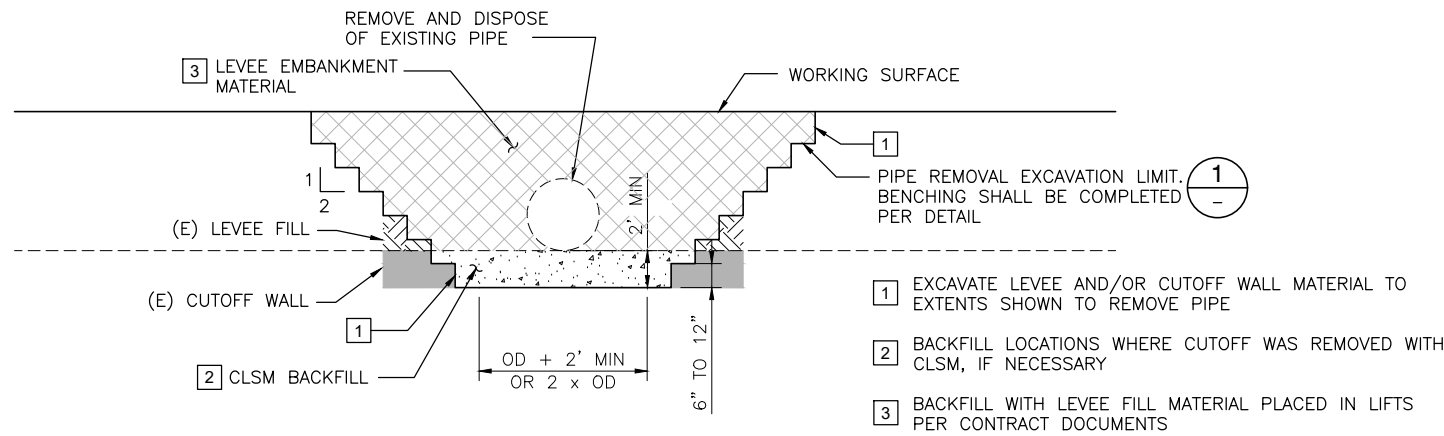
DWG. NO.	C37
SHEET	40
OF	47



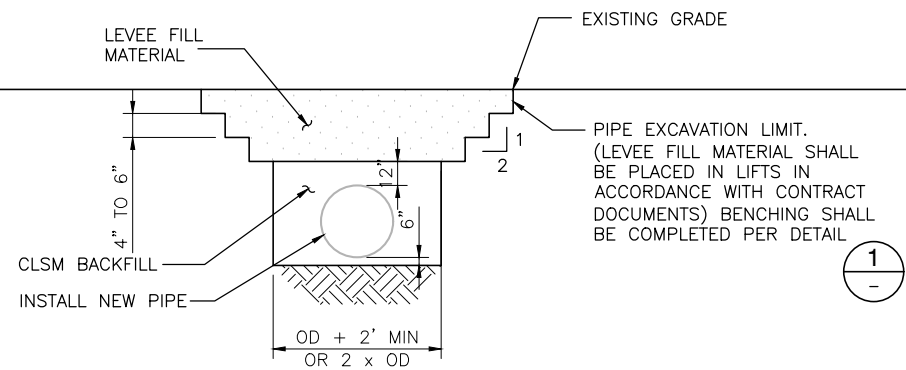
TYPICAL SLOPE BENCHING NOTES:

1. PLACE FILL IN HORIZONTAL LIFTS AGAINST VERTICAL FACES CUT INTO EXISTING LEVEE MATERIAL.
2. THE BOTTOM OF THE KEY TRENCH SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND RECOMPACTED TO 95% MAX DENSITY PER ASTM D698.

SLOPE BENCHING (LANDSIDE OR WATERSIDE) DETAIL **1**  
NTS



TYPICAL REMOVAL OF EXISTING PIPE DETAIL **2**  
NTS



INSTALLATION OF NEW PIPE DETAIL **3**  
NTS

PUMP OUTFALLS REPLACEMENT PROJECT  
PN: W14130615

PN: W14130615

REVISIONS			
NO.	DESCRIPTION	DATE	BY

BENCH MARK	ELEV.
DESCRIPTION:	

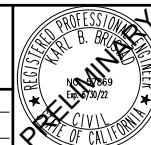
FIELD BOOK
0000
SCALE:
H:
V:

1"  
ON ORIGINAL SCALE DRAWING ADJUST SCALED DIMENSIONS IF THIS DOES NOT SCALE AT 1"

**CITY OF SACRAMENTO**  
**DEPARTMENT OF UTILITIES**

DESIGNED BY: B. JENSEN  
CHECKED BY: A. SMITH  
R.C.E. NO. C90949 DATE: 03/31/22  
R.C.E. NO. C86512 DATE: 03/31/21

DRAWN BY: E. TUTEJA  
DATE: 09/15/20



IMPROVEMENT PLANS FOR:  
**PUMP OUTFALLS REPLACEMENT PROJECT - A**  
**MISCELLANEOUS DETAILS II**

65% SUBMITTAL

DWG. NO.	SHEET
C38	41
	OF
	47

PN: W14130615



**Attachment C – Categorical Permission Checklist**

## Categorical Permission Alteration Description – 16. Pressurized Pipes

The categorical permission covers the installation, modification, and replacement of pressurized pipes that comply with certain terms and conditions. Particularly, all pressurized pipes must be designed and installed in accordance with current USACE standards. The total area of disturbance, including staging and access areas, must not exceed 5 acres. Pressurized pipes must also be designed to prevent, (1) flotation from uplift, (2) scour or erosion, (3) damage from debris on the waterside, particularly during flood flows, (4) leakage, (5) seepage along proposed pipes, (6) corrosion, and (7) damage from vehicular loads.

All new pressurized pipes should go up and over the levee DWSE. Pressurized pipes passing over or within the freeboard zone of a levee (i.e., above the levee DWSE), should be made of metal, preferably ductile iron or coated steel, suitable for use with flexible couplings.

Backfill under and around (to 1 foot over) the proposed pipe must be controlled low-strength material (CLSM). Pipes that pass above the DWSE must have 2 feet of cover (low permeability or CLSM) to prevent damage by vehicles and equipment. Cover material on the levee crown must be placed at a ratio of 10H:1V, in the upstream/downstream direction of the levee. Pipes on the sides of the levee should be covered with a minimum of 1 foot of low permeability material, compacted in 4- to 6-inch lifts or CLSM to protect them from debris during high water (waterside) or to keep them from interfering with or being damaged by operations or maintenance of the levee (landside). Fill must be free of deleterious materials and construction debris and placed in 4- to 6-inch-thick loose lifts and compacted to not less than 95% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D698 (USACE preferred method), or alternately, 90% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D1557. At the sponsor and levee maintaining agency's discretion, pipes on the levee slopes may be left exposed.

Only suitable material must be used as levee fill materials. Fill must be free from: roots and other organic matter, contaminated hazardous or toxic material, trash, debris, and frozen materials. Satisfactory fill material must have a plasticity index between 8 and 25, have a liquid limit less than 45, a minimum fines content of 20%, and 100% passing the 3-inch sieve.

Pressurized pipes terminating in the channel require a positive closure device on the waterside that is accessible from the levee crown. Pressurized pipes transporting product completely across or through the federal project easement require positive closure devices located landward of any levees and channel. The positive closure device shall be located within one mile on both sides of the federal project. If the invert of the pipe is over the levee crown, the combination of a pump station on the waterside and a siphon breaker is considered an appropriate means of closure. Pipes located within or beneath a levee must have watertight joints that can accommodate movements resulting from settlement.

All pressurized pipes that cross the levee foundation at a depth less than or equal to two times the height of the levee should be evaluated for uplift. Pipes crossing the surface of the levee must be designed to counteract buoyancy forces of an empty pipe, with water at the DWSE.

Pressurized pipelines running parallel to flood risk management projects should be located at least 15 feet beyond the levee toes. Pipe location and orientation must be clearly marked in the field so they can be easily identified for flood fighting crews.

If appropriate, the requester should prepare an excavation plan demonstrating the effects of excavation on the stability of the embankments.

The site layout should provide adequate access for maintenance vehicles to refill fuel tanks and service/replace pumps, generators, etc. Pressurized pipes must also allow easy access for rapid closure in the event of leakage or rupture.

No plastic pipes (HDPE, PVC, etc.) are allowed in the levee embankment or its foundation unless they are embedded in concrete.

If an electrochemical or chemical reaction between the substratum or groundwater and pipe materials is expected, the pipe and pipe couplings must be protected.

After installation of pressurized pipes, the requester must demonstrate 0% pipe leakage in pipes in the levee. Pipes must be pressure tested to industry standards. Pipes must be regularly inspected, including the interior, if possible, looking for signs of maintenance issues. If an inspection indicates corrosion, alignment sag or heave, or separation at joints, corrective action must be taken as soon as possible to avoid failure. Pipe valves must be periodically inspected and pressure tested to ensure that they are functioning properly. Pressure tests must show no significant loss in pressure. Leaks and other deficiencies must be addressed as soon as possible. All replacement parts must be of equivalent or better quality than those being replaced.

The preferred method for abandoning pipes that pass through or over a levee is complete removal. If removal is not feasible, the pipes and other structures may be filled with a cement/bentonite-based grout or flowable fill. The grout needs to be sufficiently fluid so that it can be pumped to completely fill the pipe leaving no voids.

### Categorical Permission Alteration Checklist – 16. Pressurized Pipes

*Note:* The following checklist is intended for planning purposes only, and includes information that USACE reviewers look for when considering a Section 408 request for pressurized pipes under the Categorical Permission. To be reviewed under the Categorical Permission, the proposed project must adhere to all requirements of the Categorical Permission, including the full alteration description (see previous page). The plans and narrative project description should reflect this information.

1.	<input type="checkbox"/> New Construction	<input checked="" type="checkbox"/> Replacement	<input type="checkbox"/> Modification	<input type="checkbox"/> Authorize Existing
2.	Maximum total area of disturbance is 5 acres:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ]			
	Comment: <u>Area of disturbance is 0.0002 acre.</u>			
3.	Pipes are designed to prevent flotation from uplift, scour or erosion, damage from debris on the waterside (particularly during flood flows), seepage along proposed pipes, corrosion, leakage, and damage from vehicular loads:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>Refer to detail 3 on sheet 41.</u>			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
4.	Backfill under and around (to 1 foot over) the proposed pipe must be controlled low-strength material (CLSM):	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>Refer to detail 3 on sheet 41</u>			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
5.	Pipes passing over the DWSE will have a minimum of 2 feet of cover (low permeability or CLSM):	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ]			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
6.	If material must be added to the levee crown, the added material must be sloped at a ratio of 10H:1V horizontal to vertical, in the upstream/downstream direction to prevent a “speed bump” effect and facilitate vehicle access:	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ]			
	Comment:			
7.	Fill will be compacted to at least 95% of maximum density as determined by ASTM D698, between -2 and +3% of optimum moisture content:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>Refer to Spec section 31 00 00 3.6B.</u>			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
8.	Satisfactory fill material must have a plasticity index between 8 and 25, have a liquid limit less than 45, a minimum fines content of 20%, and 100% passing the 3-inch sieve:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>Refer to Spec section 31 00 00 2.2A.</u>			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
9.	All fill will be free of organics or other inappropriate materials:	Yes <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	
	Reference: <u>Refer to Spec section 31 00 00 3.9.B.1.6.</u>			
	Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			



10.	Pipes terminating in the channel have a positive closure device on the waterside that is accessible from the levee crown:	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
11.	Pipes transporting product completely across the federal project have a positive closure devices located within 1 mile on both sides of the federal project:	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
12.	Pipes located within or beneath a levee have watertight joints that can accommodate movements resulting from settlement:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>Refer to detail 2 on Sheet 40</u> Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
13.	Pipes crossing the surface of the levee are designed to counteract buoyancy forces of an empty pipe, with water at the DWSE:	Yes <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	
	Reference: <u>Refer to detail 3 on sheet 41</u> Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
14.	Pipe location and orientation will be clearly marked in the field:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: <u>pipe location and orientation can be identified by vault structure and outfall location</u> Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
15.	Pipes will allow easy access for rapid closure:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: <u>Positive valve closures on the levee crest will ensure easy access for rapid closure.</u>			
16.	Plastic pipes within the levee embankment or its foundation are embedded in concrete:	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
17.	If a chemical or electrochemical reaction is expected, the pipe and pipe couplings must be protected:	Yes <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
18.	Any work within the levee embankment or foundation?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
19.	Any work ≤50 feet beneath the channel invert?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
20.	Hydraulic blockage calculation ≥1%?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			
21.	Hydraulic model used for hydraulic analysis?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
	Reference: [ Click to enter document source. Example – plan sheet (p. 4), specs, report. ] Comment: [ Click to enter rationale, explanation, unique situation, etc. ]			

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*Comment*

**CP Eligibility Review**

<u>Yes</u>	<u>No</u>	<u>Add'l. Info Requested</u>		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Environmental Reviewer: _____	Date: <small>Click date</small> _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Engineering Reviewer: _____	Date: <small>Click date</small> _____