# FEDERAL EMERGENCY MANAGEMENT AGENCY PAYMENT INFORMATION FORM

Community Name: SAN JOAQUIN AREA FLOOD CONTROL AGENCY								
Project Identifier: SMITH CANAL CLOSURE DEVICE								
THIS FORM MUST BE MAILED, ALO	THIS FORM MUST BE MAILED, ALONG WITH THE APPROPRIATE FEE, TO THE ADDRESS BELOW OR FAXED TO THE FAX NUMBER BELOW.							
Type of Request:								
	MT-1 application MT-2 application	FEMA Fee Charge System Administrator P.O. Box 22787 Alexandria, VA 22304 FAX (703) 317-3076						
	EDR application	FEMA Project Library 847 South Pickett St. Alexandria, VA 22304 FAX (703) 212-4090						
Request No.:	(if known)		Amount: <u>N/a</u>					
☐ INITIAL FEE* ☐ FINAL FE	FEE BALANCE**	MASTER CARD VISA [	CHECK MONEY ORDER					
*Note: Check only for EDR and/or Alluv **Note: Check only if submitting a correct								
COMPLETE THIS SECTION ONLY IF I	PAYING BY CREDIT CARD							
	CARD NUMBER		EXP. DATE					
1 2 3 4 5 6 7	9 10 11	12 13 14 15 16	Month Year					
 Date	<b>,</b>	Signature						
NAME (AS IT APPEARS ON CARD): _ (please print or type)		-						
ADDRESS: (for your credit card receipt-please print or type)	<u> </u>	-						
DAYTIME PHONE:								

## U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY OVERVIEW & CONCURRENCE FORM

O.M.B No. 1660-0016 Expires: 12/31/2010

#### PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. Please do not send your completed survey to the above address.

#### A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):						
☐ CLOMR:	A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).					
☐ LOMR:	A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72)					

#### **B. OVERVIEW**

1. The NFIP map p									
Community No.	Community Na	me			State	Map No.	Panel No.	Effective Date	
Ex: 480301	City of Katy				TX	480301	0005D	02/08/83	
480287	Harris County				TX	48201C	0220G	09/28/90	
060299	SAN JOAQUIN	COUNTY			CA	06077C	0455F	10/16/09	
060302	CITY OF STO	CKTON			CA	06077C	0455F	10/16/09	
a. Flooding Source: San Joaquin River     b. Types of Flooding: ☑ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)     ☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)									
3. Project Name/Id	3. Project Name/Identifier: SMITH CANAL CLOSURE DEVICE								
4. FEMA zone desi	gnations affected	d: A (choices: A, AH, AO, A1	I-A30, A	99, AE, AR, V,	V1-V30, \	/E, B, C, D, X)			
5. Basis for Reque	st and Type of R	evision:							
a. The basis f	or this revision re	equest is (check all that apply)	)						
🛭 Physica	l Change	☐ Improved Methodology/Data		Regulatory Floodway Revision		☐ Base Map Changes			
☐ Coastal	Analysis	☐ Hydraulic Analysis		☐ Hydrologic Analy			☐ Corrections		
☐ Weir-Da	m Changes	□ Levee Certification		Alluvial Fa	an Analysis		☐ Natural Changes		
☐ New To <sub>l</sub>	pographic Data	☐ Other (Attach Description	n)						
Note: A ph	otograph and na	rrative description of the area	of conc	ern is not requi	red, but is	very helpful d	uring review.		
b. The area of revis	sion encompasse	es the following structures (ch	eck all th	hat apply)					
Structures:	Structures:		⊠ Lev	evee/Floodwall		Bridge/Culvert	ert		
		☐ Dam	☐ Fill		☐ Other (Attach Descr		Description)		

Has the review fee for the appropriate request category be	een included?		Yes	Fee amo	ount: \$		
		☑ No, Attach Explanation					
Please see the DHS-FEMA Web site at http://www.fem	na.gov/plan/preve	nt/fhm/frm_fees.	shtm for Fee Am	ounts and	d Exemptions.		
	D. SIGN						
All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.							
Name: JAMES B. GIOTTONINI, EXECUTIVE DIRECTOR	₹	Company: SAN	JOAQUIN AREA	FLOOD C	ONTROL AGENCY		
Mailing Address: 22 E. WEBER AVENUE, RM 301		Daytime Telepho	one No.: 209-937-	7900	Fax No.: 209-937-7115		
STOCKTON CA 95202			jim.giottonini@ci.	stockton.c	a.us		
Signature of Requester (required):	Diott.	-	Date: 3/	24/1	σ		
As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.							
Community Official's Name and Title: MICHAEL NIBLOC DIRECTOR	EVELOPMENT	Community Name: CITY OF STOCKTON					
Mailing Address:		Daytime Telephone No.: 209-937-8444 Fax No.: 209-937-8893					
345 N. EL DORADO STREET STOCKTON CA 95202		E-Mail Address: mike.niblock@ci.stockton.ca.us					
Community Official's Signature (required):	Bibbak	Date: 3 - 23 - 10			10		
CERTIFICATION BY REGISTE	RED PROFESSION	ONAL ENGINEE	R AND/OR LA	ND SUR\	/EYOR		
This certification is to be signed and sealed by a licensed elevation information data, hydrologic and hydraulic analy described in the MT-2 Forms Instructions. All documents any false statement may be punishable by fine or imprisor	land surveyor, regises, and any other sessions	stered professional supporting informater rt of this request a	engineer, or archion as per NFIP recorrect to the b	nitect author egulations est of my l	orized by law to certify paragraph 65.2(b) and as		
Certifier's Name: FINBARR J. O'REGAN		License No.: C5	7527	Expira	ation Date: 12/31/2011		
Company Name: PETERSON BRUSTAD INC.		Telephone No.:	209-323-9864	Fax N	Fax No.: 209-939-9029		
Signature: Tokege				Date:	3/23/10		
Ensure the forms that are appropriate to your revision	request are inclu	ded in your subm	ittal.	_			
Form Name and (Number)	Required if			4	OED PROFES		
Riverine Hydrology and Hydraulics Form (Form 2) New or revised discharges or water-surface elevations							
	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam						
☐ Coastal Analysis Form (Form 4)	New or revised coa	astal elevations			1 S C C C C C C C C C C C C C C C C C C		
☐ Coastal Structures Form (Form 5)	Addition/revision o	of coastal structure			Geal Antional ALIFORNIA		
Alluvial Fan Flooding Form (Form 6) Flood control measures on alluvial fans							

Has the review fee for the appropriate request category be	en included?		] Yes	Fee amo	unt: \$	
		×	No, Attach Expla	anation		
Please see the DHS-FEMA Web site at http://www.fema	a.gov/plan/preve	nt/fhm/frm_fees.s	shtm for Fee Amo	ounts and	d Exemptions.	
	D. SIGNA	ATURE				
All documents submitted in support of this request are correfine or imprisonment under Title 18 of the United States Co		iy knowledge. I un	derstand that any	false state	ement may be punishable by	
Name: JAMES B. GIOTTONINI, EXECUTIVE DIRECTOR		Company: SAN	JOAQUIN AREA F	LOOD C	ONTROL AGENCY	
Mailing Address:		Daytime Telepho	ne No.: 209-937-7	900	Fax No.: 209-937-7115	
22 E. WEBER AVENUE, RM 301 STOCKTON CA 95202		E-Mail Address:	jim.giottonini@ci.s	tockton.c	a.us	
Signature of Requester (required): Qc 3. /	Sott		Date: 3/	24/	0	
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Community Official's Name and Title: MARK W. CONNEL MANAGER	LY, ENGINEERING	3 SERVICES	Community Name: SAN JOAQUIN COUNTY			
Mailing Address:  1810 EAST HAZELTON AVENUE		Daytime Telephone No.: 209-953-7617 Fax No.: 209-468-2		Fax No.: 209-468-2999		
STOCKTON CA 95205		E-Mail Address:	mconnelly@sjgov	.org		
Community Official's Signature (required):	W. Conne	My Date: 3/24/10				
This certification is to be signed and sealed by a licensed leevation information data, hydrologic and hydraulic analysidescribed in the MT-2 Forms Instructions. All documents search	CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR  This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.					
Certifier's Name: FINBARR J. O'REGAN		License No.: C5	7527	Expira	ation Date: 12/31/2011	
Company Name: PETERSON BRUSTAD INC.		Telephone No.:	209-323-9864	Fax N	Fax No.: 209-939-9029	
Signature: Ander T. Oko				Date:	3/23/10	
Ensure the forms that are appropriate to your revision	request are inclu	ded in your subm	ittal.			
	Required if				OED PROFESSION	
Riverine Hydrology and Hydraulics Form (Form 2) New or revised discharges or water-surface elevations					SE SANTING THE SERVICE OF THE SERVIC	
Riverine Structures Form (Form 3)  Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam  C 57527  Exp. 237					Fyn 12 2	
☐ Coastal Analysis Form (Form 4)	New or revised coa	astal elevations		1	CIVII *	
☐ Coastal Structures Form (Form 5)	Addition/revision o	f coastal structure			Seal (Optional)	
Alluvial Fan Flooding Form (Form 6)	Flood control meas	sures on alluvial fa	ns			

Has the review fee for the appropriate request category been	included?		] Yes Fe	e amo	unt: \$	
		Þ	No, Attach Explana	ation		
Please see the DHS-FEMA Web site at http://www.fema.g	gov/plan/prever	nt/fhm/frm_fees.	shtm for Fee Amour	nts and	d Exemptions.	
110000000000000000000000000000000000000	D. SIGNA					
this request are correct			deretand that any fak	oo etate	amont may be nunishable by	
All documents submitted in support of this request are correct fine or imprisonment under Title 18 of the United States Code,	, Section 1001.	y knowledge. Tuli	derstand that any rais	St Stan	ement may be punionable by	
Name: CHRISTOPHER NEUDECK, DISTRICT ENGINEER		Company: RECL	AMATION DISTRICT	Г 1614		
Mailing Address:		Daytime Telepho	ne No.: 209-946-026	8	Fax No.: 209-946-0296	
711 N. PERSHING AVENUE STOCKTON CA 95202			cneudeck@ksninc.co	om		
Signature of Requester (required): Chustopher	H. Me	wak	Date: 3/2	3/	110	
As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.						
Community Official's Name and Title: SEE PREVIOUS PAGE	ES		Community Name:			
Mailing Address:		Daytime Telepho	ne No.:		Fax No.:	
		E-Mail Address:				
Community Official's Signature (required):			Date:			
This certification is to be signed and sealed by a licensed land elevation information data, hydrologic and hydraulic analysis, described in the MT-2 Forms Instructions. All documents sub	CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR  This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.					
Certifier's Name: FINBARR J. O'REGAN		License No.: C5	7527	Expira	ation Date: 12/31/2011	
Company Name: PETERSON BRUSTAD INC.		Telephone No.:	209-323-9864	Fax No.: 209-939-9029		
Signature: Oke				Date:	3/23/10	
Ensure the forms that are appropriate to your revision red	quest are inclu	ded in your subm	ittal.			
Form Name and (Number)	equired if				PROFESSIONAL	
☐ Riverine Hydrology and Hydraulics Form (Form 2) Ne	ew or revised dis	scharges or water-s	surface elevations		PARJ. OREGIE	
☐ Riverine Structures Form (Form 3)  Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam  Compared to the compared to t					C 57527	
☐ Coastal Analysis Form (Form 4)	ew or revised coa	astal elevations		1	A COUNTY OF THE PARTY OF THE PA	
☐ Coastal Structures Form (Form 5) Ad	ddition/revision o	of coastal structure			Sear (Optional)	
☐ Alluvial Fan Flooding Form (Form 6) Flood control measures on alluvial fans						

Has the review fee for the appropriate request category been included?	? [	☐ Yes Fe	ee amount: \$				
*		☑ No, Attach Explana	ation				
Please see the DHS-FEMA Web site at http://www.fema.gov/plan/	/prevent/fhm/frm_fees.	shtm for Fee Amour	nts and Exemptions.				
	SIGNATURE						
All documents submitted in support of this request are correct to the be	est of my knowledge. Lui	nderstand that any fal-	se statement may be punishable by				
fine or imprisonment under Title 18 of the United States Code, Section	fine or imprisonment under Title 18 of the United States Code, Section 1001.						
Name: THOMAS ROSTEN, DISTRICT ENGINEER	Company: REC	LAMATION DISTRICT					
Mailing Address:	Daytime Telepho	one No.: 209-466-140	08 Fax No.: 209 466-8965				
221 TUXEDO COURT, #E STOCKTON, CA 95204	E-Mail Address:						
Signature of Requester (required): Thomas Roston		Date: 24 March 2010					
		e have received and re	eviewed this Letter of Map Revision				
As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.							
Community Official's Name and Title: SEE PREVIOUS PAGES		Community Name:					
Mailing Address:	Daytime Telepho	Daytime Telephone No.: Fax No.:					
	E-Mail Address:						
Community Official's Signature (required):		Date:					
CERTIFICATION BY REGISTERED PROF	ESSIONAL ENGINER	R AND/OR LAND	SURVEYOR				
This certification is to be signed and sealed by a licensed land surveyor elevation information data, hydrologic and hydraulic analysis, and any described in the MT-2 Forms Instructions. All documents submitted in any false statement may be punishable by fine or imprisonment under	or, registered professiona other supporting informa support of this request a	I engineer, or archited tion as per NFIP regul re correct to the best	ct authorized by law to certify lations paragraph 65.2(b) and as of my knowledge. I understand that				
Certifier's Name: FINBARR J. O'REGAN	License No.: C5	57527	Expiration Date: 12/31/2011				
Company Name: PETERSON BRUSTAD INC.	Telephone No.:	209-323-9864	Fax No.: 209-939-9029				
Signature: Token			Date: 8 23 10				
Ensure the forms that are appropriate to your revision request are	e included in your subn	nittal.					
Form Name and (Number) Required if	<u>f</u>		PROFESS/ON				
☐ Riverine Hydrology and Hydraulics Form (Form 2) New or revis	sed discharges or water-	surface elevations	ARA. OR PRO				
☐ Riverine Structures Form (Form 3)  Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam  C 57527  Exp 12301							
☐ Coastal Analysis Form (Form 4) New or revis	sed coastal elevations		COM *				
☐ Coastal Structures Form (Form 5) Addition/rev	vision of coastal structure		Seat 10 ptionati				
☐ Alluvial Fan Flooding Form (Form 6) Flood control measures on alluvial fans							

#### U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

**RIVERINE STRUCTURES FORM** 

O.M.B No. 1660-0016 Expires: 12/31/2010

#### **PAPERWORK REDUCTION ACT**

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. Please do not send your completed survey to the above address.

Flooding Source: San Joaquin River		
Note: Fill out one form for each flooding source studied		 

#### A GENERAL

			A. GENERAL					
Comp	ChannelizationBridge/CulvertDam/BasinLevee/Floodwall	complete Section C complete Section D complete Section E						
	Sediment Transportcomplete Section F (if required)							
Descr	iption Of Structure							
1.	Name of Structure: S	mith Canal Closure Device	& Dad's Point Levee					
	Type (check one):	☐ Channelization	☐ Bridge/Culvert	Levee/Floodwall	☐ Dam/Basin			
	Location of Structure:	Stockton, CA						
	Downstream Limit/Cros	ss Section: 27+00						
	Upstream Limit/Cross	Section: 00+81						
2.	Name of Structure:							
	Type (check one):	☐ Channelization	☐ Bridge/Culvert	☐ Levee/Floodwall	☐ Dam/Basin			
	Location of Structure:							
	Downstream Limit/Cros	ss Section:						
	Upstream Limit/Cross	Section:						
,	Name of Structure:							
3.	Type (check one)	☐ Channelization	☐ Bridge/Culvert	Levee/Floodwall	☐ Dam/Basin			
	Location of Structure:	Orial melization	Bridge/ outvert		_ Banii Badiii			
	Downstream Limit/Cros	es Saction:						
	Upstream Limit/Cross							
	Opstream Limit Gross	occion.						
NOT	E: For more structu	res, attach additional pa	ges as needed.					

### **B. CHANNELIZATION** Flooding Source: N/A Name of Structure: **Accessory Structures** The channelization includes (check one): Levees [Attach Section E (Levee/Floodwall)] Drop structures Transitions in cross sectional geometry ☐ Superelevated sections Debris basin/detention basin [Attach Section D (Dam/Basin)] Energy dissipator Other (Describe): 2. **Drawing Checklist** Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions. **Hydraulic Considerations** The channel was designed to carry (cfs) and/or the -year flood. The design elevation in the channel is based on (check one): ☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel. ☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions Other locations (specify): 4. Sediment Transport Considerations If No, then attach your explanation for why sediment transport was not considered. C. BRIDGE/CULVERT

Floo	ooding Source: N/A					
Nan	me of Structure:					
	1. This revision reflects (check one):					
	<ul> <li>□ Bridge/culvert not modeled in the FIS</li> <li>□ Modified bridge/culvert previously modeled in the FIS</li> <li>□ Revised analysis of bridge/culvert previously modeled in the FIS</li> </ul>					
	2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.					
3.	Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):					
	□ Dimensions (height, width, span, radius, length)       □ Erosion Protection         □ Shape (culverts only)       □ Low Chord Elevations – Upstream and Downstream         □ Beveling or Rounding       □ Structure Invert Elevations – Upstream and Downstream         □ Wing Wall Angle       □ Stream Invert Elevations – Upstream and Downstream         □ Skew Angle       □ Cross-Section Locations         □ Distances Between Cross Sections					
4.	Sediment Transport Considerations					
	Was sediment transport considered?					

#### D. DAM/BASIN

Floo	Flooding Source: N/A							
Nan	ne of Structure:							
1.	This request is for (check one):							
2.	The dam was designed by (check one):   Federal agency   State agency   Local government agency   Private organization							
	Name of the agency or organization:							
3.	The Dam was permitted as (check one):							
	a.							
	Provide the permit or identification number (ID) for the dam and the appropriate permitting agency or organization							
	Permit or ID number Permitting Agency or Organization							
	b.							
	Provided related drawings, specification and supporting design information.							
4.	Does the project involve revised hydrology? ☐ Yes ☐ No							
	If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).							
	Was the dam/basin designed using critical duration storm?							
	Yes, provide supporting documentation with your completed Form 2.							
	No, provide a written explanation and justification for not using the critical duration storm.							
5.	Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No							
	If yes, then fill out Section F (Sediment Transport).  If No, then attach your explanation for why debris/sediment analysis was not considered.							
6.	Does the Base Flood Elevation behind the dam or downstream of the dam change?							
	Yes No If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.							
	Stillwater Elevation Behind the Dam							
	FREQUENCY (% annual chance) FIS REVISED							
	10-year (10%) 50-year (2%) 100-year (1%) 500-year (0.2%) Normal Pool Elevation							
7.	Please attach a copy of the formal Operation and Maintenance Plan							

#### E. LEVEE/FLOODWALL

1.	Sys	stem Elements			
	a.	This Levee/Floodwall analysis is based on (check one):			
		□ upgrading of an existing levee/floodwall system     □ a newly constructed levee/floodwall system     □ reanalysis of an existing levee/floodwall system			
	b.	Levee elements and locations are (check one):			
			Station 9+60 to 18+75 Station 18+75 to 27+00 Station 00+81 to 09+60		
	c.	Structural Type (check one):			
		<ul> <li>☐ monolithic cast-in place reinforced concrete</li> <li>☐ reinforced concrete masonry block</li> <li>☑ sheet piling</li> <li>☐ Other (describe):</li> </ul>			
	d.	Has this levee/floodwall system been certified by a Federal agence	y to provide protection from the base flood	?	
		☐ Yes   ☑ No			
		If Yes, by which agency?			
	e.	Attach certified drawings containing the following information (indicates)	cate drawing sheet numbers):		
		1. Plan of the levee embankment and floodwall structures.	Sheet Numbers: V003		
		<ol> <li>A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system.</li> </ol>	Sheet Numbers: C101-105, C401-404		
		<ol> <li>A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure.</li> </ol>	Sheet Numbers: S401-403		
		4. A layout detail for the embankment protection measures.	Sheet Numbers: N/A		
		<ol><li>Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations.</li></ol>	Sheet Numbers: C101-5, C401-4, S40	1-3	
2.	Fre	eeboard			
	a.	The minimum freeboard provided above the BFE is:			
		Riverine			
		<ul><li>3.0 feet or more at the downstream end and throughout</li><li>3.5 feet or more at the upstream end</li><li>4.0 feet within 100 feet upstream of all structures and/or constrict</li></ul>	ions	⊠ Yes □ Yes □ Yes	☐ No ☐ No ☐ No
		Coastal			
	1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater).				□No
				☐ Yes	
		2.0 feet above the 1%-annual-chance stillwater surge elevation		☐ Yes	□ No

E. LEVEE/FLOODWALL (CONTINUED) Freeboard (continued) Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations. If No is answered to any of the above, please attach an explanation. ☐ Yes 🛛 No b. Is there an indication from historical records that ice-jamming can affect the BFE? If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists. Closures □ exists does not exist a. Openings through the levee system (check one): If opening exists, list all closures: Type of Closure Device Highest Elevation for Left or Right Bank Opening Type Channel Station Opening Invert FLOODGATE **FLOODGATE** RIGHT -9.85 06+00 (Extend table on an added sheet as needed and reference) Note: Geotechnical and geologic data In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.) **Embankment Protection** a. The maximum levee slope landside is: 1H: 1V b. The maximum levee slope floodside is: 1H: 1V The range of velocities along the levee during the base flood is: (min.) to (max.) d. Embankment material is protected by (describe what kind): Native veg and scattered rip rap & concrete debris Tractive stress Riprap Design Parameters (check one): Velocity Attach references Stone Riprap Curve or Depth of Flow Velocity Reach Sideslope Toedown Straight Depth Dea

		1				D100	D50	THICKHESS	
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								
(Exten	d table on an adde	d sheet as need	ded and refere	ence each en	try)				

		E. LI	EVEE/FLOODWALL	(CONTII	NUED)	
4.	Em	bankment Protection (continued)				
	f.	Is a bedding/filter analysis and design attached	l? ☐ Yes ☒ No			
	g.	Describe the analysis used for other kinds of pr	analysis used for other kinds of protection used (include copies of the design analysis):			
5.	<u>Em</u>	Attach engineering analysis to support constru	action plans.			
	a.	Identify locations and describe the basis for set 16+50	election of critical location	n for ana	lysis:	
		☑ Overall height: Sta. 16+50; height 19 ft.				
		Sta. 16+50, depth 22 to 34 ft				
		strength $\phi$ = 24-26 degrees, c = 100-200 p	psf			
		slope: SS = 1 (h) to 1 (v)				
			Repeat as needed on an added sheet for additional locations)			
	b.	• •	ded on an added sheet for additional locations) ment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):		etc.):	
	-		<b>0,</b>			,
Circular Arc  c. Summary of stability analysis results:						
	···	out in the state of the state o				
C	Case	Loading Conditions	Criti	cal Safety	y Factor	Criteria (Min.)
	1	End of construction	N/A			1.3
	II _	Sudden drawdown	1.4	<u></u>		1.0
	Ш	Critical flood stage				1.4
	IV	Steady seepage at flood stage	1.33 to 1.48			1.4
	VI	Earthquake (Case I)	quake (Case I) 1.16 to 1.43 1.0			
(Reference: USACE EM-1110-2-1913 Table 6-1)						
	d. Was a seepage analysis for the embankment performed?					
		If Yes, describe methodology used: Finite Elem	nent Analysis	_	_	
	е.	Was a seepage analysis for the foundation per	formed?	Yes	□ No	
f. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No						

g. Were seepage exit gradients checked for piping potential?

Attach engineering analysis to support construction plans.

h. The duration of the base flood hydrograph against the embankment is N/A hours.

6. Floodwall And Foundation Stability FOR DUAL SH				HEET PILE WALL S	STRUCTURE		
a. Describe analysis submittal based on Code (check			k one):				
1	☐ UBC (1988)	or 🛛	Other (specify):	EM 1110-2-2503			
	Stability analysis	submitted provid	es for:				
		⊠ Sliding	If not, explain	):			
	Loading included	_					
∠ Lateral earth @ P <sub>A</sub> = 36.6 psf; P <sub>p</sub> = 200 psf							
·		ope @ N/A,		psf			
	☐ Wind @ P <sub>w</sub> =		337.433	<b>,</b>			
			M Farth	quake @ P <sub>eq</sub> = 0.13 %	λα.		
;	Seepage (Up				'oy		
		nance significant					
☐ 1%-annual-chance significant wave period: N/A							
<ul> <li>d. Summary of Stability Analysis Results: Factors of Itemize for each range in site layout dimension are</li> </ul>							
	Itemize for each	range in site layo	out dimension a	nd loading condition li	mitation for each res	pective reach.	
Loadin	ng Condition	Criteria	(Min)	Sta	То	Sta	То
Loaum	ig Condition	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & W	/ind	1.5	1.5	00+81	05+45	06+05	07+95
Dead & Soil 1.5 1.5			00+81	05+45	06+05	07+95	
Dead, Soil, Flood, & Impact		1.25	1.5	00+81	05+45	06+05	07+95
Dead, Soil, & Seismic or 1.1 1.3			00+81	05+45	06+05	07+95	
Overtopping Flood (Ref: FEMA 114 Sept 1986; USACE E				M 1110-2 <del>-2503</del> ) 2503	3]		
(Note: Extend table on an added sheet				as needed and refere	ence)		
e. Foundation bearing strength for each soil type:							
Bearing Pressure				Sustained	Load (psf)	Short Ter	rm Load (psf)
Computed design maximum				9	87	SATISFIED BY RO	OTATIONAL NG OVERTOPPING
Maximum	allowable			13	340	FLOOD EVENT L	
f.	Foundation scou	r protection □ is	, 🛛 is not provi	ded. If provided, attac	ch explanation and su	pporting documentation	n:
	Attach engineerin	•			,		
	, maon ongmoenn	.g anai,510 to 50p					

7.	<u>Set</u>	Settlement FOR DUAL SHEET PILE WALL STRUCTURE						
	a.	Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin?						
	b.	The computed range of settlement is ft. to ft.						
	c.	Settlement of the levee crest is determined to be primarily from :						
		<ul> <li>☐ Foundation consolidation</li> <li>☐ Embankment compression</li> <li>☑ Other (Describe): Weight of fill between sheet piles may consolidate the silt layer below and is dependent on the extent to which dredging of the silt is specified.</li> </ul>						
	d.	Differential settlement of floodwalls $\square$ has $\boxtimes$ has not been accommodated in the structural design and construction.						
		Attach engineering analysis to support construction plans.						
8.	Inte	orior Drainage						
	a.	Specify size of each interior watershed:						
		Draining to pressure conduit: acres Draining to ponding area: acres						
	b.	Relationships Established						
		Ponding elevation vs. storage						
	c.	The river flow duration curve is enclosed: ☐ Yes ☒ No						
	d.	Specify the discharge capacity of the head pressure conduit: cfs						
	e.	. Which flooding conditions were analyzed?						
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm (River Watershed)</li> <li>Historical ponding probability</li> <li>Coastal wave overtopping</li> <li>Yes</li> <li>No</li> <li>No</li> </ul>						
		If No for any of the above, attach explanation.						
	f.	Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. $\square$ Yes $\boxtimes$ No						
		If No, attach explanation.						
	g.	The rate of seepage through the levee system for the base flood is cfs						
	h.	The length of levee system used to drive this seepage rate in item g: ft.						

6. Floodwall And Foundation Stability FOR SIN				FOR S	INGLE SHEET PILE	E WALL		
a. Describe analysis submittal based on Code (check								
		☐ UBC (1988)			EM 1110-2-2504			
ı	b.	Stability analysis						
	•	□ Overturning     □ O		If not, explain	:			*
<ul> <li>✓ Lateral earth @ P<sub>A</sub> = 33.0 psf; P<sub>p</sub> = 360 psf</li> <li>✓ Surcharge Slape @ M. surface 300 psf</li> </ul>					nef			
⊠ Surcharge-Slope @ , ⊠ surface 300 p             □				∆ Sunace 300	ρδί			
☐ Wind @ P <sub>w</sub> = N/A psf				<i>i</i>				
		☐ Seepage (Up			quake @ P <sub>eq</sub> = 0.13 %	⁄og		
☐ 1%-annual-chance significant wave height: N//								
☐ 1%-annual-chance significant wave period: N/A								
(	d.	Summary of Sta						
		Itemize for each	range in site lay	out dimension ar	nd loading condition li	mitation for each resp	ective reach.	
			Criteria	ı (Min)	Sta	То	Sta	То
Loading Condition Overturn Sliding			Sliding	Overturn	Sliding	Overturn	Sliding	
Dead	& V	Vind	1.5	1.5 N/A	07+95	09+05	18+75	27+00
Dead & Soil 1.5 1.5 N/A			07+95	09+05	18+75	27+00		
Dead, Soil, Flood, & Impact		1.5	1.5 N/A	07+95	09+05	18+75	27+00	
Dead, Soil, & Seismic 1.25 1.5 N/A			07+95	09+05	18+75	27+00		
Overtopping Flood 1.1 (Ref: FEMA 114 Sept 1986; USACE EM			M 1110-2- <del>2502</del> ) 2504					
(Note: Extend table on an added sheet			as needed and refere	ence)				
e. Foundation bearing strength for each soil type:				each soil type:				
		Bearin	g Pressure		Sustained	Load (psf)	Short Ter	m Load (psf)
Comp	ute	d design maximur	n		N	/A		N/A
Maxim	nun	n allowable			N	/A		N/A
f. Foundation scour protection ☐ is, ☒ is not provided.  Attach engineering analysis to support construction pla						th explanation and sup	pporting documentatio	n:

7.	<u>Sett</u>	FOR SINGLE SHEET PILE WALL						
	a.	a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin? ☐ Yes ☒ No						
	b. The computed range of settlement is ft. to ft.							
	c.	Settlement of the levee crest is determined to be primarily from :						
	<ul> <li>☐ Foundation consolidation</li> <li>☐ Embankment compression</li> <li>☑ Other (Describe): NOT LIKELY TO EFFECT SHEET PILE DESIGN</li> </ul>							
	d.	Differential settlement of floodwalls   has   has   has the has not been accommodated in the structural design and construction.						
		Attach engineering analysis to support construction plans.						
8.	Inte	erior Drainage						
	a.	Specify size of each interior watershed:						
	Draining to pressure conduit: acres Draining to ponding area: acres							
	b.	Relationships Established						
		Ponding elevation vs. storage						
	C.	The river flow duration curve is enclosed:						
	d.	Specify the discharge capacity of the head pressure conduit: cfs						
	e.	Which flooding conditions were analyzed?						
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm (River Watershed)</li> <li>Historical ponding probability</li> <li>Coastal wave overlopping</li> </ul> Yes <ul> <li>No</li> <li>No</li> </ul>						
		If No for any of the above, attach explanation.						
	f.	. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ☐ Yes ☒ No						
		If No, attach explanation.						
	g.	The rate of seepage through the levee system for the base flood is cfs						
	h.	The length of levee system used to drive this seepage rate in item g: ft.						

Floodwall And Foundation Stability								
				RE				
Describe analysis submittal based on Code (check			k one):					
		☐ UBC (1988)	or 🛛	Other (specify):	: ASCE 7-05			
	b.	Stability analysis	submitted provid	les for:				
			1:					
c. Loading included in the analyses were:								
$\square$ Lateral earth @ P <sub>A</sub> = N/A psf; P <sub>p</sub> = N/A psf				$P_p = N/A psf$				
☐ Surcharge-Slope @ N/A, ☐ surface N/A psf			f					
☐ Wind @ P <sub>w</sub> = N/A psf						į		
☐ Seepage (Uplift); N/A			nquake @ P <sub>eq</sub> = 0.13 °	%g				
☐ 1%-annual-chance significant wave height: N/			'A ft.					
☐ 1%-annual-chance significant wave period: N/A			A sec.					
	d.	Summary of Sta	bility Analysis Re	esults: Factors	of Safety.			
					nd loading condition I	mitation for each resp	pective reach.	
			,		-	1		
ı	nad	ing Condition	Criteria	ı (Min)	Sta	То	Sta	То
			Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead	/ & b	Wind	1.5 .	1.5	5+45	6+05		
Dead	2 & t	Soil	1.5	1.5	5+45	6+05		
Dead, Soil, Flood, & 1.5 1.5 1.5 Impact		1.5	5+45	6+05				
Dead, Soil, & Seismic 1.3 1.3		5+45	6+05					
(Ref: FEMA 114 Sept 1986; USACE E			M-4110-2-2502) ΔS	CE 7-05 & EM 110	-2-2100			
(Note: Extend table on an added sheet					2 2100			
			as needed and refere	51100)				
e. Foundation bearing strength for each soil type:					T			
Bearing Pressure			Sustained	Load (psf)		n Load (psf)		
Com	pute	ed design maximur	<u>m</u>			I/A		I/A
Max	imur	n allowable				1/A	N	I/A
	f.	Foundation scou	r protection 🗌 is	, 🛛 is not provi	ded. If provided, atta	ch explanation and su	pporting documentation	:
		Attach engineerin	ng analysis to sup	port construction	on plans.			
		· · ·		<u></u>				

a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin?					
c. Settlement of the levee crest is determined to be primarily from:    Foundation consolidation     Embankment compression     Other (Describe): Steel piles (quantity = 72) with 4'0" thick concrete foundation and gate structure.   d. Differential settlement of floodwalls   has   has not been accommodated in the structural design and construction. Attach engineering analysis to support construction plans.    Interior Drainage     a. Specify size of each interior watershed:   Draining to pressure condulit: acres     Draining to ponding area: acres     Draining to ponding elevation vs. storage     Yes   No     Differential head vs. gravity flow   Yes   No     C. The river flow duration curve is enclosed:   Yes   No     d. Specify the discharge capacity of the head pressure conduit: cfs     e. Which flooding conditions were analyzed?     e. Gravity flow (Interior Watershed)   Yes   No     e. Gravity flow (Interior Watershed)   Yes   No     e. Common storm (River Watershed)   Yes   No     e. Common storm (River Watershed)   Yes   No     e. Constal wave overlopping   Yes   No     e. Coastal wave overlopping   Yes   No     e. Common storm (River Watershed)   Yes   No     e. Coastal wave overlopping   No     e. Coasta	ne				
Foundation consolidation   Embankment compression   Steel piles (quantity = 72) with 4'0" thick concrete foundation and gate structure.  d. Differential settlement of floodwalls   has   has not been accommodated in the structural design and construction. Attach engineering analysis to support construction plans.  8. Interior Drainage  a. Specify size of each interior watershed:     Draining to pressure conduit:					
Embankment compression					
Attach engineering analysis to support construction plans.  8. Interior Drainage  a. Specify size of each interior watershed:  Draining to pressure conduit: acres Draining to ponding area: acres  b. Relationships Established  Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow Ves No  c. The river flow duration curve is enclosed: Yes No  d. Specify the discharge capacity of the head pressure conduit: cfs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) • Common storm (River Watershed) • Historical ponding probability • Coastal wave overtopping Yes No					
8. Interior Drainage  a. Specify size of each interior watershed:  Draining to pressure conduit: acres Draining to ponding area: acres  b. Relationships Established  Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow Ves No  c. The river flow duration curve is enclosed: Yes No  d. Specify the discharge capacity of the head pressure conduit: cfs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) Yes No  • Common storm (River Watershed) Yes No  • Historical ponding probability Yes No  • Coastal wave overtopping Yes No					
a. Specify size of each interior watershed:  Draining to pressure conduit: acres Draining to ponding area: acres  b. Relationships Established  Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow C. The river flow duration curve is enclosed: Yes No  Specify the discharge capacity of the head pressure conduit: cfs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) Yes No  • Common storm (River Watershed) Yes No  • Historical ponding probability Yes No  • Coastal wave overtopping Yes No					
Draining to pressure conduit: acres Draining to ponding area: acres  b. Relationships Established  Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow  C. The river flow duration curve is enclosed: Yes No  d. Specify the discharge capacity of the head pressure conduit: ofs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) • Common storm (River Watershed) • Historical ponding probability • Coastal wave overtopping Yes No					
b. Relationships Established  Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow C. The river flow duration curve is enclosed:  Which flooding conditions were analyzed?  Gravity flow (Interior Watershed) Common storm (River Watershed) Historical ponding probability Coastal wave overtopping  Common storm (River Watershed) Coastal wave overtopping  Draining to ponding probability Pes No No No No No Ponding elevation vs. storage Ponding Pes No Pes No Ponding Pes No Pes No Ponding					
Ponding elevation vs. storage Ponding elevation vs. gravity flow Pyes No  c. The river flow duration curve is enclosed:  d. Specify the discharge capacity of the head pressure conduit:  e. Which flooding conditions were analyzed?  e. Gravity flow (Interior Watershed) Pyes No  Common storm (River Watershed) Pyes No  Historical ponding probability Pyes No  Coastal wave overtopping					
Ponding elevation vs. gravity flow Differential head vs. gravity flow C. The river flow duration curve is enclosed:  Which flooding capacity of the head pressure conduit:  E. Which flooding conditions were analyzed?  Gravity flow (Interior Watershed) Common storm (River Watershed) Historical ponding probability Coastal wave overtopping  Yes No N					
d. Specify the discharge capacity of the head pressure conduit:  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed)					
e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed)					
<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm (River Watershed)</li> <li>Historical ponding probability</li> <li>Coastal wave overtopping</li> <li>Yes □ No</li> <li>Yes □ No</li> <li>Yes □ No</li> <li>No</li> <li>Yes □ No</li> <li>No</li> </ul>					
<ul> <li>Common storm (River Watershed)</li> <li>Historical ponding probability</li> <li>Coastal wave overtopping</li> </ul> Yes <ul> <li>No</li> <li>Yes</li> <li>No</li> </ul>					
If No for any of the above, attach explanation.					
f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping a facilities to provide the established level of flood protection. $\square$ Yes $\square$ No	ınd outlet				
If No, attach explanation.					
g. The rate of seepage through the levee system for the base flood is cfs					
h. The length of levee system used to drive this seepage rate in item g: ft.					

E. LEVEE/FLOODWALL (CONTINUED) Interior Drainage (continued) ☑ Yes ☐ No Will pumping plants be used for interior drainage? If Yes, include the number of pumping plants: 9 For each pumping plant, list: Plant #2 Plant #1 SEE ATTACHED SHEETS The number of pumps The ponding storage capacity The maximum pumping rate The maximum pumping head The pumping starting elevation The pumping stopping elevation Is the discharge facility protected? Is there a flood warning plan? How much time is available between warning and flooding? ☐ Yes ☐ No Will the operation be automatic? ☐ Yes ☐ No If the pumps are electric, are there backup power sources? (Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105) Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding. Other Design Criteria a. The following items have been addressed as stated: Heave differential movement due to soils of high shrink/swell ☐ is ☒ is not a problem b. For each of these problems, state the basic facts and corrective action taken: Attach supporting documentation If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure? ☐ Yes 🖾 No Attach supporting documentation Sediment Transport Considerations: ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport). Was sediment transport considered? If No, then attach your explanation for why sediment transport was not considered.

8.	Inter	terior Drainage					
	a.	Specify size of each interior watershed: LOUIS PARK Draining to pressure conduit: 0 acres Draining to ponding area: 21.33 acres					
	b.	Relationships Established					
		Ponding elevation vs. storage  Ponding elevation vs. gravity flow  Differential head vs. gravity flow  □ Y	es es	□ No □ No ☑ No			
	c.	The river flow duration curve is enclosed: ☐ Yes ☐ N	No				
	d.	Specify the discharge capacity of the head pressure conduit:	0 cfs				
e. Which flooding conditions were analyzed?							
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>	∕es ∕es	☐ No ☐ No ☑ No ☑ No			
Historical ponding was not analyzed because no records of historical ponding are available.  Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.							
	f.	Interior drainage has been analyzed based on joint probability facilities to provide the established level of flood protection.		and exterior flooding and the capacities of pumping and outlet $\hfill \square$ Yes $\hfill \boxtimes$ No			
	g.	The rate of seepage through the levee system for the base floor	od is N/A cfs	cfs.			
	h.	The length of levee system used to drive this seepage rate in it	tem g: N/A	A ft.			
	i.	Will pumping plants be used for interior drainage?  If Yes, include the number of pumping plants: For each pumping plant, list:	∕es	⊠ No			
Γho	numb	nber of pumps					
		ding storage capacity					
		ximum pumping rate					
Γhe	maxir	ximum pumping head					
The	he pumping start elevation						
Γhe	he pumping stop elevation						
s the	the discharge facility protected?						
s the	there a flood warning plan?						
	mucling?	ch time is available between warning and ?					
٧	Vill th	the pumps be automatic?		∐Yes ☐ No			
If	the p	e pumps are electric, are there backup power sources?		☐ Yes ☐ No			
(1	Refer	erence: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)					
		de a copy of supporting documentation of data and analysis. Pro terior watersheds that result in flooding.	vide a map	ap showing the flooded area and maximum ponding elevations for			

a. Specify size of each interior watershed: OCCIDENTAL AVENUE Draining to pressure conduit: 0 acres Draining to pressure conduit: 0 acres Draining to ponding area: 5.6 acres  b. Relationships Established Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow Differential head vs. gravity flow Differential head vs. gravity flow Offerential head vs. gravity flow C. The river flow duration curve is enclosed: Yes No  d. Specify the discharge capacity of the head pressure conduit: 0 cfs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) • Common storn Yes No • Historical Ponding • Coastal wave overtopping  Historical ponding was not analyzed because no records of historical ponding are available. Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.  f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and of facilities to provide the established level of flood protection.  g. The rate of seepage through the levee system for the base flood is N/A cfs.  h. The length of levee system used to drive this seepage rate in item g: N/A ft.  i. Will pumping plants be used for interior drainage? Yes No  If Yes, include the number of pumping plants: For each pumping plant, list:	
Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow Differential head vs. gravity flow  C. The river flow duration curve is enclosed:	
Ponding elevation vs. gravity flow	
d. Specify the discharge capacity of the head pressure conduit: 0 cfs  e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed)	
e. Which flooding conditions were analyzed?  • Gravity flow (Interior Watershed) • Common storm • Historical Ponding • Coastal Wave overtopping  Historical ponding was not analyzed because no records of historical ponding are available. Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.  f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and of facilities to provide the established level of flood protection.  G. The rate of seepage through the levee system for the base flood is N/A cfs.  h. The length of levee system used to drive this seepage rate in item g: N/A ft.  i. Will pumping plants be used for interior drainage?  Yes No  If Yes, include the number of pumping plants: For each pumping plant, list:	
<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> <li>Yes  No</li> </ul> Historical ponding was not analyzed because no records of historical ponding are available. Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area. f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and of facilities to provide the established level of flood protection. g. The rate of seepage through the levee system for the base flood is N/A cfs. h. The length of levee system used to drive this seepage rate in item g: N/A ft. <ul> <li>Will pumping plants be used for interior drainage?</li> <li>Yes No</li> </ul> If Yes, include the number of pumping plants: For each pumping plant, list:	
Common storm     Historical Ponding     Coastal wave overtopping     Historical ponding was not analyzed because no records of historical ponding are available. Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.  f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and of facilities to provide the established level of flood protection.	
Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.  f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and o facilities to provide the established level of flood protection. ☐ Yes ☒ No  g. The rate of seepage through the levee system for the base flood is N/A cfs.  h. The length of levee system used to drive this seepage rate in item g: N/A ft.  i. Will pumping plants be used for interior drainage? ☐ Yes ☒ No  If Yes, include the number of pumping plants: For each pumping plant, list:	
facilities to provide the established level of flood protection.	
<ul> <li>h. The length of levee system used to drive this seepage rate in item g: N/A ft.</li> <li>i. Will pumping plants be used for interior drainage? ☐ Yes ☒ No</li> <li>If Yes, include the number of pumping plants:</li> <li>For each pumping plant, list:</li> </ul>	utlet
i. Will pumping plants be used for interior drainage? ☐ Yes ☒ No  If Yes, include the number of pumping plants: For each pumping plant, list:	
If Yes, include the number of pumping plants: For each pumping plant, list:	
The number of pumps	
The ponding storage capacity	
The maximum pumping rate	
The maximum pumping head	
The pumping start elevation	
The pumping stop elevation	
Is the discharge facility protected?	
Is there a flood warning plan?	
How much time is available between warning and flooding?	
Will the pumps be automatic? ☐Yes ☐ No	
If the pumps are electric, are there backup power sources? ☐ Yes ☐ No	
(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)	
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevate all interior watersheds that result in flooding.	

8.	Inte	rior Drainage					
	a.	Specify size of each interior watershed: PINETREE DRIVE					
		Draining to pressure conduit: 0 acres Draining to ponding area: 7.78 acres					
	b.	Relationships Established					
		Ponding elevation vs. storage					
	C.	The river flow duration curve is enclosed: ☐ Yes      ☑ No					
	d.	Specify the discharge capacity of the head pressure conduit: 0 cfs					
	e.	Which flooding conditions were analyzed?					
		Gravity flow (Interior Watershed)     Common storm					
		Historical ponding was not analyzed because no records of historical ponding are available.  Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.					
	f.	Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection.					
	g.	The rate of seepage through the levee system for the base flood is N/A cfs.					
	h.	The length of levee system used to drive this seepage rate in item g: N/A ft.					
	i.	Will pumping plants be used for interior drainage? ☐ Yes					
		If Yes, include the number of pumping plants: For each pumping plant, list:					
	1						
		ber of pumps  ling storage capacity					
	•	mum pumping rate					
		mum pumping head					
		ping start elevation					
The	he pumping stop elevation						
s th	ne dis	charge facility protected?					
Is there a flood warning plan?							
	w muc	th time is available between warning and					
		ne pumps be automatic?					
!	If the	pumps are electric, are there backup power sources?					
(	(Refe	rence: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)					
		de a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for erior watersheds that result in flooding.					

8.	Inte	erior Drainage		<u></u>		
0.	inte					
	a.	Specify size of each interior watershed: KINGSLI	EY AVENUE			
		Draining to pressure conduit: 0 acres Draining to ponding area: 18.03 acres				
	b.	Relationships Established				
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow	⊠ Y ⊠ Y □ Y	es 🗌 No	0	
	C.	The river flow duration curve is enclosed: \( \sum Y \)	es 🖾 N	o		
d. Specify the discharge capacity of the head pressure conduit:				0 cfs		
	e.	Which flooding conditions were analyzed?				
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>	⊠ Y ⊠ Y □ Y	es No	lo lo	
		Historical ponding was not analyzed because no Coastal wave overtopping was not analyzed because	records of hist ause the area	orical ponding a analyzed is not a	are available. a coastal area.	
	f.	Interior drainage has been analyzed based on joi facilities to provide the established level of flood	int probability of protection.	of interior and ex	xterior flooding and the capacities of pumping and outlet res ⊠ No	
	g.	The rate of seepage through the levee system fo	r the base floo	d is N/A cfs.		
	h.	The length of levee system used to drive this see	epage rate in ite	em g: N/A ft.		
	j.	Will pumping plants be used for interior drainage	? 🔲 Y	'es ⊠ No	lo	
		If Yes, include the number of pumping plants: For each pumping plant, list:				
		nber of pumps				
	•	ding storage capacity				
		kimum pumping rate				
		kimum pumping head				
		nping start elevation				
	The pumping stop elevation					
		scharge facility protected?				
		a flood warning plan?			19-11	
	muc ding?	ch time is available between warning and ?				
١	∕Vill th	the pumps be automatic?		□Ye	es 🔲 No	
1	f the	e pumps are electric, are there backup power source	es?	☐ Ye	′es □ No	
(	Refe	erence: USACE EM-1110-2-3101, 3102, 3103, 3104	4, and 3105)			
l a	nclud all inte	ide a copy of supporting documentation of data and iterior watersheds that result in flooding.	analysis. Prov	vide a map show	wing the flooded area and maximum ponding elevations for	

8. Interior Drainage						
	a.	Specify size of each interior watershed: YO	SEMITE LAKE	E PUMP STATIO	ON	
		Draining to pressure conduit: 1,935.91 Draining to ponding area:	acres acres			
	b.	Relationships Established				
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ☑ No ☑ No	
	C.	The river flow duration curve is enclosed:	☐ Yes	⊠ No		
	d.	Specify the discharge capacity of the head	pressure cond	uit: 276.3 cfs	s	
	e.	Which flooding conditions were analyzed?				
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		☑ Yes ☑ Yes ☐ Yes ☐ Yes	□ No □ No ☑ No ☑ No	
		Historical ponding was not analyzed becau Coastal wave overtopping was not analyze				
	f.	Interior drainage has been analyzed based facilities to provide the established level of	on joint probal flood protection	bility of interior and	and exteri ☐ Yes	or flooding and the capacities of pumping and outlet ☑ No
g. The rate of seepage through the levee system for the base flood is N/A cfs.						
	h.	The length of levee system used to drive th	is seepage rat	e in item g: N/A	ft.	
	i.	Will pumping plants be used for interior dra	inage?	☐ No		
		If Yes, include the number of pumping plan For each pumping plant, list:	its:			
			YOSEMITE	LAKE PUMP S	TATION	
Γhe	numb	per of pumps	4			
Γhe	pondi	ing storage capacity	193 acre-fee	t temporary stre	eet pondin	ng storage available, 160.6 acre-feet used.
Γhe	maxir	mum pumping rate	124,000 GPI	M		
The	maxir	mum pumping head	13 FT	1.1.		
Γĥe	pump	oing start elevation	NOT AVAILA	ABLE		
The	pump	oing stop elevation	NOT AVAILA	ABLE		
s the discharge facility protected?			YES			
s there a flood warning plan?			NO			
	mucl	h time is available between warning and	N/A			
٧	Vill th	e pumps be automatic?			⊠Yes	□No
If the pumps are electric, are there backup power sources?				☐ Yes	□No	
(	Refer	rence: USACE EM-1110-2-3101, 3102, 3103	, 3104, and 31	05)		
		e a copy of supporting documentation of data erior watersheds that result in flooding.	a and analysis.	. Provide a mar	p showing	the flooded area and maximum ponding elevations for

8.	Inte	rior Drainage								
	a.	Specify size of each interior watershed: R	DE AVENUE	PUMP STATIO	N					
		Draining to pressure conduit: 167.1 Draining to ponding area:	acres acres							
	b.	Relationships Established								
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ☑ No ☑ No	•				
	c.	The river flow duration curve is enclosed:	☐ Yes	⊠ No						
	d.	Specify the discharge capacity of the head	pressure conc	duit: 14.5 cfs						
	e.	Which flooding conditions were analyzed?								
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		Yes     Yes	☐ No ☐ No ☑ No ☑ No					
		Historical ponding was not analyzed becau	use no records ed because the	of historical por area analyzed	nding are a is not a co	available. pastal area.				
	f.	Interior drainage has been analyzed based facilities to provide the established level of	d on joint proba flood protectio	ability of interior on.	and exteri	or flooding and the capacities of pumping and outlet ☑ No				
	g. The rate of seepage through the levee system			se flood is N/A o	fs.					
	h.	The length of levee system used to drive this seepage rate in item g: N/A ft.								
	i. Will pumping plants be used for interior drainage? ☐ Yes ☐ No									
		If Yes, include the number of pumping plant For each pumping plant, list:	nts:							
			RYDE AVE	NUE PUMP STA	ATION					
Γhe	numk	per of pumps	2	•						
Γhe	pond	ling storage capacity	16.7 acre-fe	et temporary st	reet pondii	ng storage available, 21.1 acre-feet needed.				
The	maxi	mum pumping rate	6,500 GPM							
The	maxi	mum pumping head	10 FT							
The	pump	ping start elevation	NOT AVAIL	ABLE	V07-5	·				
The	pump	ping stop elevation	NOT AVAIL	ABLE	1.					
s the	e disc	charge facility protected?	YES							
s there a flood warning plan?			NO	<u>.</u>						
	muc ing?	h time is available between warning and	N/A							
٧	Vill th	ne pumps be automatic?			⊠Yes	□No				
11	the	pumps are electric, are there backup power	sources?		☐ Yes	⊠ No				
(	Refe	rence: USACE EM-1110-2-3101, 3102, 310	3, 3104, and 31	105)						
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.										

8. Inte	terior Drainage								
a.	Specify size of each interior watershed: PL	YMOUTH RO/	AD PUMP STAT	ΓΙΟΝ					
	•	acres acres							
b.	Relationships Established								
	Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ⊠ No ⊠ No					
C.	The river flow duration curve is enclosed:	☐ Yes	⊠ No		· ·				
d.	Specify the discharge capacity of the head	pressure cond	luit: 32 cfs		l de la companya de				
e.	Which flooding conditions were analyzed?				1				
	<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		<ul><li>Yes</li><li>Yes</li><li>Yes</li><li>Yes</li></ul>	□ No □ No ☑ No ☑ No					
	Historical ponding was not analyzed because Coastal wave overtopping was not analyzed								
f.	Interior drainage has been analyzed based facilities to provide the established level of			and exterion	ior flooding and the capacities of pumping and outlet ☑ No				
g.	The rate of seepage through the levee syst	em for the bas	e flood is N/A c	fs.	!				
h.	The length of levee system used to drive th	iis seepage rat	te in item g: N/A	cft.	!				
i.	Will pumping plants be used for interior drain	inage?	⊠ Yes	□No	!				
	If Yes, include the number of pumping plant For each pumping plant, list:	ts:							
		PLYMOUTH	ROAD PUMP	STATION					
The numb	ber of pumps	3	_		///////////////////////////////////////				
	ling storage capacity			ponding s	storage available, 2.6 acre-feet used.				
The maxir	mum pumping rate	14,320 GPM							
	mum pumping head	7 FT							
	ping start elevation	NOT AVAILA							
	ping stop elevation	NOT AVAILA	ABLE						
	charge facility protected?	YES							
	a flood warning plan?	NO							
How mucl flooding?	ch time is available between warning and	N/A							
Will th	ne pumps be automatic?			⊠Yes	□No				
If the	pumps are electric, are there backup power s	sources?		☐ Yes	⊠ No				
(Refer	rence: USACE EM-1110-2-3101, 3102, 3103,	, 3104, and 31	05)		ı				
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.				showing	the flooded area and maximum ponding elevations for				

8.	Inte	erior Drainage				
	a.	Specify size of each interior watershed: Mo	OREING PUM	P STATION		
		Draining to pressure conduit: 35.92 Draining to ponding area:	acres			
	b.	Relationships Established				
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ☑ No ☑ No	
	C.	The river flow duration curve is enclosed:	☐ Yes	⊠ No		
	d.	Specify the discharge capacity of the head	J pressure cond	duit: 12.25 c	;fs	
	e.	Which flooding conditions were analyzed?	ı			
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		⊠ Yes ⊠ Yes □ Yes □ Yes	☐ No ☐ No ☑ No ☑ No	
		Historical ponding was not analyzed becau Coastal wave overtopping was not analyze				
	f.	Interior drainage has been analyzed based facilities to provide the established level of			r and exteri Yes	rior flooding and the capacities of pumping and outlet ☑ No
	g.	The rate of seepage through the levee sys	item for the bas	se flood is N/A	cfs.	
	h.	The length of levee system used to drive the	his seepage ra	ite in item g: N/.	A ft.	
	i.	Will pumping plants be used for interior dra	ainage?	⊠ Yes	☐ No	
		If Yes, include the number of pumping plar For each pumping plant, list:	nts:			
			MOREING F	PUMP STATIO	N	
The r	numb	per of pumps	2			
Γhe <b>r</b>	pondi	ing storage capacity	3.5 acre-fee	t temporary str	eet pondin	ng storage available, 1.2 acre-feet used.
The r	maxir	mum pumping rate	5,500 GPM			
Γhe r	maxir	mum pumping head	6 FT	•		
The p	pump	ping start elevation	NOT AVAILA	ABLE		
The p	pump	ping stop elevation	NOT AVAILA	ABLE		
s the	e disc	charge facility protected?	YES			4000
s the	ere a	flood warning plan?	NO			
low lood		h time is available between warning and	N/A			
V	− Vill the	e pumps be automatic?			⊠Yes	□ No
If	the p	pumps are electric, are there backup power s	sources?		☐ Yes	⊠ No
(F	₹efer	rence: USACE EM-1110-2-3101, 3102, 3103	3, 3104, and 31	(05)		
	Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.					

8.	Inte	erior Drainage					
	a.	Specify size of each interior watershed: BU	JENA VISTA N	ORTH PUMP (	STATION	1	
		Draining to pressure conduit: 121.63 Draining to ponding area:	acres acres				
	b.	Relationships Established				!	
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ☑ No ☑ No		
	C.	The river flow duration curve is enclosed:	Yes	⊠ No		!	
	d.	Specify the discharge capacity of the head	pressure conc	duit: 12.25 cf	fs	1	
	e.	Which flooding conditions were analyzed?				<b>!</b>	
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		Yes     Yes	□ No □ No ⊠ No ⊠ No		
		Historical ponding was not analyzed becau Coastal wave overtopping was not analyze					
	f.	Interior drainage has been analyzed based facilities to provide the established level of	I on joint proba flood protectic	bility of interior on.	and exteri	rior flooding and the capacities of pumping and outlet ☑ No	
	g.	The rate of seepage through the levee syst	tem for the bas	se flood is N/A	ofs.	<b>!</b>	
	h.	The length of levee system used to drive the	nis seepage ra'	te in item g: N//	A ft.		
	i.	Will pumping plants be used for interior dra	ainage?	⊠ Yes	☐ No	!	
		If Yes, include the number of pumping plan For each pumping plant, list:	its:				
			BUENA VIS	STA NORTH PU	MP STAT	ION	
he r	numb	ber of pumps	2				
he r	pondi	ling storage capacity	12 acre-feet	temporary stre	et ponding	g storage available, 10.6 acre-feet used.	
he r	maxir	mum pumping rate	5,500GPM				
he r	naxir	mum pumping head	7 FT				
		oing start elevation	NOT AVAILA				
		ping stop elevation	NOT AVAILA	ABLE			
		charge facility protected?	YES				
		flood warning plan?	NO				
	much	h time is available between warning and	N/A				
		ne pumps be automatic?			⊠Yes	□No	
lf	the	pumps are electric, are there backup power s	sources?		☐ Yes	⊠ No	
(F	Refer	rence: USACE EM-1110-2-3101, 3102, 3103	3, 3104, and 31	105)			
		Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.					

8.	Inte	erior Drainage								
	a.	Specify size of each interior watershed: LA	KE DRIVE PU	MP STATION						
		Draining to pressure conduit: 4.22 Draining to ponding area:	acres acres							
	b.	Relationships Established								
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No □ No □ No					
	C.	The river flow duration curve is enclosed:	☐ Yes	⊠ No						
	đ.	Specify the discharge capacity of the head	pressure cond	luit: 6 cfs						
	e.	Which flooding conditions were analyzed?								
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		Yes     Yes	☐ No ☐ No ☑ No ☑ No					
		Historical ponding was not analyzed because no records of historical ponding are available.  Coastal wave overtopping was not analyzed because the area analyzed is not a coastal area.								
	f.	Interior drainage has been analyzed based facilities to provide the established level of			and exteri ☐ Yes	ior flooding and the capacities of pumping and outlet ⊠ No				
	g. The rate of seepage through the levee system for			se flood is N/A	ofs.					
	h.	The length of levee system used to drive this seepage rate in item g: N/A ft.								
	i.	i. Will pumping plants be used for interior drainage?								
	If Yes, include the number of pumping plants: For each pumping plant, list:									
			LAKE DRIVE	E PUMP STATI	ON					
Γhe	numb	per of pumps	1							
Γhe	pond	ing storage capacity	0.6 acre-feet temporary street ponding storage available, 0.06 acre-feet used.							
Γhe	maxiı	mum pumping rate	2,700 GPM							
Γhe	maxiı	mum pumping head	6 FT							
Γhe	pump	oing start elevation	NOT AVAILA	ABLE						
Γhe	pump	oing stop elevation	NOT AVAILABLE							
s the	e disc	charge facility protected?	YES							
s there a flood warning plan?			NO							
	mucling?	h time is available between warning and	N/A							
٧	Vill th	e pumps be automatic?			⊠Yes	□No				
If	the p	pumps are electric, are there backup power	sources?		☐ Yes	⊠ No				
(1	Refer	rence: USACE EM-1110-2-3101, 3102, 3103	3, 3104, and 31	05)						
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding eleva all interior watersheds that result in flooding.				the flooded area and maximum ponding elevations for						

8. Interior Drainage					!	
a.	·•	Specify size of each interior watershed: G	ARDENA PUM	IP STATION		!
		Draining to pressure conduit: 54.66 Draining to ponding area:	acres acres			
b.		Relationships Established				!
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ☑ No ☑ No	
c.		The river flow duration curve is enclosed:	☐ Yes	⊠ No		!
d.		Specify the discharge capacity of the head	J pressure conc	duit: 12.5 cf	s	!
e.		Which flooding conditions were analyzed?	<i>t</i>			!
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		⊠ Yes ⊠ Yes □ Yes □ Yes	☐ No ☐ No ☑ No ☑ No	
		Historical ponding was not analyzed becau Coastal wave overtopping was not analyze				
f.		Interior drainage has been analyzed based facilities to provide the established level of			r and exteri ☐ Yes	rior flooding and the capacities of pumping and outlet ⊠ No
g.		The rate of seepage through the levee sys	stem for the bas	se flood is N/A	cfs.	'
h.		The length of levee system used to drive the	this seepage ra	ite in item g: N/	A ft.	
i.		Will pumping plants be used for interior dra	ainage?	⊠ Yes	□No	'
		If Yes, include the number of pumping plar For each pumping plant, list:	nts:			
	_		GARDENA	PUMP STATIO	)N	
The nur	mb	per of pumps	2			
		ing storage capacity	.		eet pondin	ng storage available, 2.5 acre-feet used.
The max	xin	mum pumping rate	5,600 GPM			
		mum pumping head	8 FT			
		ping start elevation	NOT AVAILA			
•		ping stop elevation	NOT AVAILA	ABLE		
		charge facility protected?	YES			
		flood warning plan?	NO			
How mu flooding		h time is available between warning and	N/A			
Will	the	e pumps be automatic?			⊠Yes	□No
If th€	e r	pumps are electric, are there backup power	sources?		☐ Yes	⊠ No
(Ref	fer	rence: USACE EM-1110-2-3101, 3102, 3103	3, 3104, and 31	105)		
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.						

8.	Into	erior Drainage				
ο.	HIC				- TION	
	a.	Specify size of each interior watershed: FRA	ANKLIN AVEN	IUE PUMP STA	ATION	
			acres acres			
	b.	Relationships Established				
		Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		⊠ Yes □ Yes □ Yes	□ No ⊠ No ⊠ No	
	c.	The river flow duration curve is enclosed:	☐ Yes	⊠ No		
	d.	Specify the discharge capacity of the head	pressure cond	Juit: 34 cfs		
	e.	Which flooding conditions were analyzed?				
		<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		⊠ Yes ⊠ Yes □ Yes □ Yes	☐ No ☐ No ☑ No ☑ No	
		Historical ponding was not analyzed because Coastal wave overtopping was not analyzed	se no records d because the	of historical por area analyzed	nding are a is not a co	available. oastal area.
	f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection.					or flooding and the capacities of pumping and outlet ⊠ No
	g.	The rate of seepage through the levee syst	tem for the bas	se flood is N/A o	ofs.	
	h.	The length of levee system used to drive th	nis seepage ra	te in item g: N/F	A ft.	
	i.	Will pumping plants be used for interior dra	ainage?	Yes	☐ No	
		If Yes, include the number of pumping plan For each pumping plant, list:	ıts:			
	—		FRANKLIN	AVENUE PUMF	OITATS 9	N
The	numt	ber of pumps	2			
The	pond	ling storage capacity	42 acre-feet	t temporary stre	et ponding	g storage available, 41 acre-feet used.
he	maxi	imum pumping rate	15,260 GPM	V		
The	maxi	imum pumping head	10 FT			
The	pumŗ	ping start elevation	NOT AVAIL	.ABLE	44-77	
The	pumr	ping stop elevation	NOT AVAIL	ABLE		
s th	e disc	charge facility protected?	YES			
s th	ere a	a flood warning plan?	NO			
	mucl	ch time is available between warning and	N/A			
V	∕Vill th	ne pumps be automatic?			⊠Yes	□ No
K	f the	pumps are electric, are there backup power s	sources?		☐ Yes	⊠ No
(	Refe	rence: USACE EM-1110-2-3101, 3102, 3103	3, 3104, and 3°	105)		
lı E	Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.					

8. <u>Inte</u>	Interior Drainage							
a.	Specify size of each interior watershed: BU	JENA VISTA S	OUTH PUMP S	TATION				
	Draining to pressure conduit: 477.47 Draining to ponding area:	acres acres						
b.	Relationships Established							
	Ponding elevation vs. storage Ponding elevation vs. gravity flow Differential head vs. gravity flow		Yes     Yes	□ No ⊠ No ⊠ No				
c.	The river flow duration curve is enclosed:	☐ Yes	⊠ No					
d.	Specify the discharge capacity of the head	pressure cond	luit: 86.7 cfs					
e.	Which flooding conditions were analyzed?							
	<ul> <li>Gravity flow (Interior Watershed)</li> <li>Common storm</li> <li>Historical Ponding</li> <li>Coastal wave overtopping</li> </ul>		⊠ Yes ⊠ Yes □ Yes □ Yes	□ No □ No ☑ No ☑ No				
	Historical ponding was not analyzed becau Coastal wave overtopping was not analyze	use no records ed because the	of historical por area analyzed	nding are a is not a co	available. pastal area.			
f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and facilities to provide the established level of flood protection.					or flooding and the capacities of pumping and outlet ☑ No			
g. The rate of seepage through the levee system for the base flood is N/A cfs.								
h. The length of levee system used to drive this seepage rate in item g: N/A ft.								
i.	Will pumping plants be used for interior drainage?   ☑ Yes □ No							
	If Yes, include the number of pumping plant For each pumping plant, list:	nts:						
<del></del>		BUENA VIS	TA SOUTH PU	MP STATI	ON			
The num	ber of pumps	3						
The pond	ding storage capacity	47 acre-feet	temporary stre	et ponding	storage available, 36.4 acre-feet used.			
	imum pumping rate	38,900 GPN	1					
The max	imum pumping head	7 FT						
The pum	ping start elevation	NOT AVAIL	ABLE	· · · · · · · · · · · · · · · · · · ·				
	ping stop elevation	NOT AVAIL	ABLE					
	scharge facility protected?	YES						
is there a	a flood warning plan?	NO						
How mu	ch time is available between warning and	N/A						
Will t	he pumps be automatic?			⊠Yes	□No			
If the	pumps are electric, are there backup power	sources?		☐ Yes	□No			
(Refe	erence: USACE EM-1110-2-3101, 3102, 310	3, 3104, and 3°	105)					
Inclu all in	Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.							

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F. SEDIMENT TRANSPORT
Flooding Source: N/A
Name of Structure:
If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:
Sediment load associated with the base flood discharge: Volume acre-feet
Debris load associated with the base flood discharge: Volume acre-feet
Sediment transport rate (percent concentration by volume)
Method used to estimate sediment transport:
Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.
Method used to estimate scour and/or deposition:
Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:  Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.
If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.