RECLAMATION DISTRICT NO. 1614

AGENDA FOR REGULAR BOARD OF TRUSTEES MEETING
2:00 P.M., JANUARY 5, 2026

3121 WEST MARCH LANE, SUITE 100
STOCKTON, CA 95219

AGENDA

1. Call to Order/Roll Call.

2. **Public Comment**. The public may comment on any matter within the District's jurisdiction that is not on the agenda. Matters on the agenda may be commented on by the public when the matter is taken up. All comments are limited to 5 minutes for general public comment and per agenda item in accordance with Resolution 2014-06.

3. **Election of Officers**.

    a. President

    b. Vice-President

    c. Secretary

4. **Minutes**. Approval of Minutes of October 6, 2025 Regular Meeting and November 3, 2025 Regular Meeting.

5. **District Finances**. Presentation of Financial Status Reports. Discussion and possible action.

6. **Agency Reports**. Report on San Joaquin Area Flood Control Agency's Smith Canal Gate Structure Project.

    a. Discussion and Direction Regarding District Review of Smith Canal Gate Operations and Maintenance Manual.

7. **SJAFCA LOMR**. Discussion and direction regarding SJAFCA Letter of Map Revision:

    a. Interior Drainage Analysis

    b. Base Flood Elevation

8. **District Engineer Report**. Presentation of Engineer's Report. Discussion and possible action:

    I. LEVEE MAINTENANCE PROJECT – FY 2025-2026

This agenda shall be made available upon request in alternative formats to persons with a disability, as required by the Americans with Disabilities Act of 1990 (42 U.S.C. § 12132) and the Ralph M. Brown Act (California Government Code §54954.2). Persons requesting a disability related modification or accommodation in order to participate in the meeting should contact Rhonda Olmo at 209/948-8200 during regular business hours, at least forty-eight hours prior to the time of the meeting.

Materials related to an item on this Agenda submitted to the Trustees after distribution of the agenda packet are available for public inspection in the office of the District Secretary at Neumiller & Beardslee, 3121 West March Lane, Suite 100, Stockton, California during normal business hours. The agenda is also available on the Reclamation District website at: http://www.rd1614.com/

A. Currently budgeted work is for approximately 8 residential lots along Smith Canal and is estimated to cost approximately $400,000. Seek Authorization to seek bids upon completion of the final bid documents.

EXHIBIT A: Levee Maintenance Project FY 2025-2026 Phase I.

B. KSN Inc. conducted a field inspection of potential sites along the SJ River and met with SG&CC staff related to the available additional $600,000 of budgeted Rock Slope Protection. Survey work scheduled for 2nd week of January. Plans for Phase II will be developed thereafter for this marine contract.

II. PLAN REVIEW

A. Review Residential Plan submittal for 2141 Moreing Road.

a) 2141 Moreing Road
Patmon Company
Charles (Pat) Patmon
APN: 121-030-450-000
(209) 751-7346 Cell

Review of application for a single-family residence on an empty residential lot on 2141 Moreing Road. Pat Patmon intends to add engineered fill to bolster the levee and provide a location off the levee to install a swimming pool.

KSN Inc. has reviewed the plans, and Pat has incorporated the suggestions discussed to date but there are a few remaining conditions that KSN Inc suggests. 1) supplement the rock slope protection including elevation to the top of the slope. Once the residential home is built, access to the slope will become difficult to add or maintain additional rock. The additional Rock Slope Protection above the Base Flood Elevation on the slope will provide rock if the existing rock were to settle or slip. 2) require Patmon Company to horizontally bench the fill into the levee slope. 3) require Patmon Company to execute the application to install riprap and an easement for the District's access, repair, and maintenance of the levee on the subject property at 2141 Moreing Road.

Provided the Board of Trustees agrees with the above conditions, KSN Inc. recommends approval of this Single-Family Residence at 2141 Moreing Road.

EXHIBIT B: Plans for 2141 Moreing Road.

b) 3216 Moreing Court
Hayden and Amy Logan
APN: 121-100-620-000

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Review application for remodel of old Dr. William and Verni Collin's residence along the Smith Canal Levee. Aside from some room changes the new remodel stays within the original footprint of the Collins residence and is acceptable related to the District rules and regulations. The existing Rock Slope protection is in great shape recently placed by RD 1614.

EXHIBIT C: Plans for 3216 Moreing Court.

III. SJAFCA SMITH CANAL GATE

A. Review issue raised by Chairman Dominick Gulli (during public comment) regarding the Draft LOMR at the SJAFCA Board of Directors Meeting held on Thursday 11/13/25. The issue raised by Chair Gulli was related to the FLOODING SOURCES AND REVISED REACHES on Page 1 of 5 of the Letter of Map Revision Determination Document that overlooked areas south of Smith Canal, specifically RD 828, whereby it does not mention them in this section of the document. Darren Suen of SJAFCA spoke with the FEMA's consultant since the SJAFCA BOD Meeting regarding this matter. The consultant understood the issue but indicated that making any changes to the Draft documents could extend the effective date of the map currently set for February 9, 2026. It must be further understood regardless of this language the revised map is the operative document which is where a property owner can tell whether they are "in" or "out" of the Flood Plain.

9. **SGCC Easement**. Review Stockton Golf and Country Club Easement Agreement and Authorize District Official to sign.

10. **FEMA FOIA Request**. Report on status of FOIA Request made on behalf of District.

11. **FEMA Reimbursement**. Update regarding the FEMA reimbursement submitted for emergency flood costs.

12. **Superintendent's Report**. Presentation of Superintendent's Report; request for direction.

13. **Report on Meetings Attended**.

14. **Trustee Reports**. Discussion on Trustee Reports.

a. Discussion and possible action for the Stockton Golf and Country Club's plan to build a deck on the levee between the existing clubhouse and the San Joaquin river.

15. **District Calendar**.

a. Next Meeting – February 2, 2026.

16. **District Newsletter/Postcard**. Discussion and direction.

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17. **Items for Future Meetings**. Items for future meetings.

18. **Correspondence**. Discussion and direction.

19. **District Bills**. Motion to Approve of Bills.

20. **Closed Session**.

    a. CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

       Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Section 54956.9; two cases.

21. **Closed Session Report.**

22. **Adjournment**.

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AGENDA PACKET
RECLAMATION DISTRICT 1614
JANUARY 5, 2026

ITEM	COMMENTARY
1.	Self-explanatory.
2.	Self-explanatory.
3.	Please see attached.
4.	Please see attached.
5.	Please see attached.
6	Please see attached.
7.	Please see attached.
8.	Please see attached.
9.	Please see attached.
10.	Please see attached.
11.	Self-explanatory.
12.	Please see attached.
13.	Self-explanatory.
14.	Please see attached.
15.	Please see attached.
16.	Self-explanatory.
17.	Self-explanatory.
18.	Self-explanatory.
19.	Please see attached.
20.	Self-explanatory.
21.	Self-explanatory.
22.	Self-explanatory.

ITEM 3

B Y L A W S

for the government and control of

RECLAMATION DISTRICT NO. 1614,

in the County of San Joaquin, State of California

ARTICLE I.

POWERS

The powers of this District shall be vested in and exercised by a Board of Trustees.

ARTICLE II.

ELECTION OF TRUSTEES.

The Trustees shall be elected and serve as provided in Section 3491 of the Political Code of the State of California.

ARTICLE III.

ORGANIZATION

The Trustees must at the first regular meeting after their election organize as a Board of Trustees, elect one of its members President, another Vice-President, and choose a Secretary, all to hold office until their successors are elected or chosen and qualified.

ARTICLE IV.

VACANCIES.

Any vacancy in the Board of Trustees shall be filled as provided in Section 3941 of the Political Code of the State of California.

ARTICLE V.

RIGHTS AND DUTIES OF OFFICERS.

Sec. 1. The President shall preside over all meetings of the land owners and Board of Trustees; call special meetings of the land owners and Board of Trustees as he may deem proper;

supervise and control, subject to the direction of the Board of Trustees, all officers and employes of this District; and sign as President all instruments of writing executed by this District.

Sec. 2. The Vice-President shall in the absence or disability of the President exercise all rights and perform all duties of the President.

Sec. 3. The Secretary shall attend all meetings of the land owners and Board of Trustees and keep complete and accurate account of all receipts and expenditures of this District and submit a statement of such account to the Board of Trustees at each regular meeting and whenever demanded; keep the seal of this District; sign as Secretary and affix the seal to all instruments of writing executed by this District; and serve and cause to be published as required all necessary and proper notices.

ARTICLE VI.

RIGHTS, POWERS AND DUTIES OF BOARD OF TRUSTEES..

Sec. 1. The Board of Trustees shall have all the rights, powers and duties granted and imposed by Article II, Chapter I, Title VIII, Part III, of the Political Code of the State of California, and which shall include the following:

Sec. 2. To conduct, manage and control the affairs and execute the work necessary for reclamation of this District; to prescribe such rules and regulations, not inconsistent with law or these by-laws, for the management thereof and conduct of the land-owners therein, as they in their discretion deem proper and provide for the enforcement thereof; and that said Trustees as a body and individually, their agents and employes, may at all times go upon such reclamation work for the purpose of inspecting and maintaining the same and of seeing to it that these by-laws and the rules and regulations prescribed by this section are carried out.

Sec. 3. To incur liability in the name of this District as they in their discretion deem necessary and proper and extinguish such liability by warrants of this District.

Sec. 4. To appoint and remove at their pleasure all other officers, agents, employes and attorneys of this District, as they in their discretion deem necessary and proper and to prescribe their duties, fix their compensation and require from them security for faithful performance of their duties.

Sec. 5. To fix by resolution entered upon the minutes and keep an office , in or near this District, for the transaction of the business thereof, where the books, maps, papers, records, accounts and all other documents pertaining to the affairs of this District must be kept open to inspection at all times by the Board of Supervisors of San Joaquin County, California, and any and every person interested.

Sec. 6. To keep a complete and accurate account of all receipts, expenditures of this District and record of the minutes of all meetings of the land owners and Board of Trustees.

Sec. 7. To adopt and use on all instruments in writing a seal.

ARTICLE VII.

MEETINGS.

Sec. 1. A regular meeting of the land owners in this District shall be held at ten o'clock a.m. of the day and at the place directed for each election of Trustees, and notice of each regular meeting and the time and place thereof shall be served personally upon or mailed to the last known postoffice address of each land owner.

Sec. 2. A special meeting of the land owners of this District may be held at any time and place, in or near this District, upon the call of the President, or two (2) members of the Board of Trustees, or a majority of the land owners repre-

senting at least one-third (1/3) of the value of the real estate

assessment roll of San Joaquin County, California. Notice of each special meeting and the time and place thereof shall be signed by the person or persons calling therefor, and published for at least two (2) successive weeks in a newspaper of general circulation published in San Joaquin County, California, and served personally upon or mailed to the last known postoffice address of each land owner; said notice shall briefly state in substance the object of the special meeting. Every act which could be considered, acted upon and done at any regular meeting may with said notice thereof be done, considered and acted upon at any special meeting of the land owners.

Sec. 3. Regular meetings of the Board of Trustees shall be held at the place fixed as the office of this District, at such day and hour as the Board of Trustees may prescribe by resolution entered in the records of their proceedings; no notice of such meeting shall be required.

Sec. 4. Any meeting of the Trustees at which all the members of the board are present shall be deemed a regular meeting, at which any business may be transacted.

Sec. 5. A special meeting of the Board of Trustees may be held at any time and place upon the call of the President or two (2) members of the Board of Trustees, and notice of each special meeting and the time and place thereof shall be signed by the person or persons calling therefor and served personally upon each member of the Board of Trustees, other than the person or persons calling for the special meeting; said notice shall briefly state in substance the object of the special meeting. Every act which could be done, considered and acted upon at any regular meeting may be considered, acted upon and done at any special meeting of the Board of Trustees.

Sec. 6. A quorum for any land owners' meeting shall be persons owning or representing owners of one-half or more of the

the next preceding assessment roll of San Joaquin County, California.

Sec. 7. A quorum for any Board of Trustees' meeting shall be two (2) or more trustees.

Sec. 8. Each land owner at any meeting of the land owners and any election of Trustees in this District shall be entitled to vote and act in person or by proxy, provided such proxy is given to the husband, wife, or guardian of such land owner or to another land owner in this District and filed in writing with the Secretary of this District at least onehour before the time fixed for such meeting or election, and each land owner shall have the right in person or by proxy to cast one vote for each one dollar's worth of real estate owned by him, her or it in this District, the value thereof to be determined from the next preceding assessment roll of San Joaquin County, California.

Sec. 9. The affirmative vote for any proposition of more than one-half of any quorum at any land owners' meeting shall be valid as an act of said meeting and binding upon every land owner in this District.

Sec. 10. The affirmative vote for any proposition of two or more Trustees at any meeting of the Board of Trustees shall be valid as an act of said Board of Trustees and binding upon every Trustee and land owner in this District.

ARTICLE VIII.

CONTRACTS, BILLS AND WARRANTS.

Sec. 1. All contracts shall be in writing, executed in duplicate by this District through its President and Secretary; however, no contract shall be valid unless authorized by the Board of Trustees by resolution entered on the records thereof.

Sec. 2. All bills against this District shall, upon being signed in approval by all the Trustees, be paid by warrants drawn by this District upon the County Treasurer of San Joaquin

County, California, and approved by the Board of Supervisors of San Joaquin County, California.

Sec. 3. All warrants of this District shall be signed by two or more Trustees, and countersigned by the Secretary and consecutively numbered. No warrant shall be issued without an order of the Board of Trustees entered upon the records thereof, specifying the amount of the warrant, the name of the payee and on what account drawn.

ARTICLE IX.

FUNDS.

Sec. 1. The funds of this District can only be withdrawn upon warrants.

ARTICLE X.

No land owner in this District or none of his or her tenants, subtenants, laborers or servants shall be permitted to let hogs run at large and root on the levees or on any of the reclamation works of this District, and any land owner who shall either himself, or who shall allow or permit his tenants, subtenants, laborers or servants to run hogs at large on the said levees or reclamation works, or to cut, injure or destroy in any manner any of the said levees or reclamation works, shall be responsible for all damages which may be occasioned thereby to such levee or reclamation work; and the Trustees of this District shall have a lien on his or her lands in this District for any and all such damage from the time such damage may have been done, permitted to have been done, or occasioned, and proceedings for the recovery of such damage and the enforcement of the lien on said lands of such land owner for such damages shall at once be instituted by the Trustees in the mode and manner and in accordance with the provisions of Section 3490 of the Political Code of California.

ARTICLE XI.

AMENDMENT.

Sec. 1. These by-laws may be amended at any time in the same manner as adopted or at any regular or special meeting of land owners called and held for that purpose.

(SEAL) The foregoing by-laws are hereby made and adopted by the owners of the entire acreage of the lands embraced in the said Reclamation District No. 1614.

In Witness Whereof, the said owners of the entire acreage of the lands embraced in said Reclamation District No. 1614 have adopted and hereunto sign the said by-laws, this 19th day of February, A. D. 1915, as the by-laws of Reclamation District No. 1614. (SEAL)

NAMES	NUMBER OF ACRES
J. C. Smith Company By Mabel Y. Smith, Vice President By C. D. Smith, Secretary	994
Tuxedo Land Company By George Lyon, Vice President Wm. B. Pringle, Sec	506 MBP 607.95-

(SEAL) (SEAL)

STATE OF CALIFORNIA)
City and County of San Francisco) ss.

On this 23rd day of February in the year One Thousand Nine Hundred and Fifteen before me, WM.D.PAGE, a Notary Public in and for the said City and County, residing therein, duly commissioned and sworn, personally appeared George F. Lyon and Wm B. Pringle known to me to be the (SEAL) Vice president and secretary, respectively of Tuxedo Land Company the corporation described in and that executed the within instrument and also known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and they duly acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at my office in said City and County of San Francisco, the day and year in the Certificate first above written.

/s/ Wm D. Page
Notary Public in and for the said City and County of San Francisco, State of California

My commission expires February 7th, 1918

State of California)
) ss.
County of San Joaquin.)

On this Ninth day of March, A. D. 1915, before me, GERTRUDE ROWLAND, a Notary Public in and for the County of San Joaquin, State of California, residing therein and duly commissioned and qualified, personally appeared MABEL Y. SMITH and L. D. SMITH, known to me to be the Vice-President and Secretary, respectively, of J. C. SMITH COMPANY, the corporation described in and that executed the within instrument and also known to me to be the persons who executed the within instrument in behalf of the corporation therein named, and they duly acknowledged to me that such corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

/s/ Gertrude Rowland
Notary Public
In and for the County of San Joaquin
State of California.

2486

BY-LAWS

for the Government and

Control of

Reclamation District No. 1614, in the County of San Joaquin, State of California

COMPARED

RECORDED AT REQUEST OF

/s/ R. C. Minor

Mar 10 1915 at 44 min.

past 2 o'clock P. m. in

Book -------- Vol 3

of Swamp and Overflowed Lands

Page 111 San Joaquin County

Records.

Recorder

s/s John D. Finney

Deputy

Fees: $2.60

ITEM 4

DRAFT MINUTES OF REGULAR MEETING OF BOARD OF TRUSTEES
FOR RECLAMATION DISTRICT 1614
HELD TUESDAY, OCTOBER 6, 2025

The October Regular Meeting of the Board of Trustees of Reclamation District 1614 was held on Monday, October 6, 2025, at the hour of 2:00 p.m.

Roll Call of Board Members and Staff:
President Dominick Gulli, Trustee Kevin Kauffman, Attorney Andy Pinasco, Engineer Chris Neudeck, Secretary Rhonda Olmo

The following members of the public were present: Sarah Vigil (Port City Marketing), Chris Elias and Juan Niera (SJAFCA)

The following members were present telephonically: Darren Suen (SJAFCA)

Absent were: Trustee Chris Gaines, Superintendent Abel Palacio

Item 1. Call to Order/Roll Call. President Gulli called the meeting to order at 2:02 p.m.

Item 2. Public Comment. The public may comment on any matter within the District's jurisdiction that is not on the agenda. Matters on the agenda may be commented on by the public when the matter is taken up. All comments are limited to 5 minutes for general public comment and per agenda item in accordance with Resolution 2014-06.

No public comment.

Item 3. Minutes. Approval of Minutes of the September 2, 2025 regular meeting.

After review,

On a motion by Trustee Kauffman, seconded by President Gulli the Trustee's present voted unanimously to approve the September 2, 2025 regular meeting minutes by the following vote:

Ayes:	Kauffman, Gulli
Noes:	None
Abstain:	None
Absent:	Gaines

Item 4. District Finances. Presentation of Financial Status Reports. Discussion and possible action.

Rhonda Olmo provided a written and oral report on the District's revenues and expenditures. She reported that the District is at 25% for their Fiscal Year. She reported that Trustee Gaines' warrant will be voided today as he is absent. Also, the subventions and assessments will be updated on the financial report as there was an error, and the money was booked as being received twice.

After review,

On a motion by Trustee Kauffman , seconded by President Gulli, the Trustee's present voted unanimously to approve the Financial Report as amended by the following vote.

Ayes:	Kauffman, Gulli
Noes:	None
Abstain:	None
Absent:	Gaines

Item 5. Agency Reports. Report on San Joaquin Area Flood Control Agency's Smith Canal Gate Structure Project.

a. Discussion and Direction Regarding District Review of Smith Canal Gate Operations and Maintenance Manual.

Attorney Pinasco stated he spoke with Darren Suen at SJAFCA and Mr. Suen stated that once his Board approves the draft Operations and Maintenance Manual that he will forward a copy of it to the district for review. President Gulli directed staff to send a Public Records Request to FEMA requesting all documentation submitted to FEMA.

Mr. Suen joined the board meeting telephonically. He listed to the Boards concerns about the Operations and Maintenance Manual and said he would now provide the district a copy of what was submitted to FEMA.

Item 6. Audit.

a. Discussion and possible action to approve Draft Audit for Fiscal Year ending June 30, 2024.

Attorney Pinasco reviewed the draft Audit report with the Trustees. He stated that Croce, Sanguinetti, and Vander Veen (CSV) are providing the District with the highest level of assurance that all the Districts transactions for the June 30, 2024 year were done in accordance with government accounting as well as with all of the District's policies. This draft provides staff with the authority to reach back to CSV and say the Trustees have comments or no comment or no suggested modifications. Attorney Pinasco's recommendation was to approve the draft audit for the June 30, 2024 period.

After review,

On a motion by Trustee Kauffman , seconded by President Gulli, the Trustee's present voted unanimously to approve the draft audit for fiscal year ending June 30, 2024 by the following vote.

Ayes:	Kauffman, Gulli
Noes:	None
Abstain:	None
Absent:	Gaines

b. Review and approve standard representation letter from Croce, Sanguinetti, & Vander Veen for year ended June 30, 2024.

After review,

On a motion by Trustee Kauffman , seconded by President Gulli, the Trustee's present voted unanimously to approve the standard representation letter from Croce, Sanguinetti, & Vander Veen for fiscal year ending June 30, 2024 by the following vote.

Ayes:	Kauffman, Gulli
Noes:	None
Abstain:	None
Absent:	Gaines

Further discussion was held on auditing reporting requirements. The Trustees would like to discuss a 5-year audit period at their next Board meeting.

Item 7. <u>District Engineer Report</u>. Presentation of Engineer's Report. Discussion and possible action:

I. LEVEE MAINTENANCE PROJECT – FY 2024-2025

A. The contract issued to A&A Builders for final cleanup work along the SJ River has been completed.

EXHIBIT A: Field Photos of project.

II. LEVEE MAINTENANCE PROJECT – FY 2025-2026

A. Initial waterside inspection conducted on Smith Canal to identify potential erosion repair locations. Currently budgeted work is for approximately 8 lots estimated cost approximately $400,000.

B. Review with Board of Trustees additional areas of rock slope protection needed.

C. Review the status of progress on the development of plans and specifications for rock slope protection along Smith Canal Levees.

Chris Neudeck will meet with golf course personnel and bid in December to do the work in early spring.

III. SJAFCA SMITH CANAL GATE

A. Review SJAFCA's news release announcing that on September 23, the Federal Emergency Management Agency (FEMA) issued a revised Flood Insurance Rate Map for the Smith Tract area, which will eliminate flood insurance mandates and some building restrictions for approximately 5,000 properties. FEMA's map will become effective on February 9, 2026, following a mandatory 120-day protest period, provided no challenges are filed.

EXHIBIT B: SJAFCA'S 9/23/25 News release.

Mr. Darren Suen stated the news release was a win for everyone. President Gulli stated he felt slandered in the release. Trustee Kauffman also spoke to his displeasure of the news release. Mr. Suen stated nothing was intended for personal attack against President Gulli in the news release and

that it was just a historical accounting. Mr. Suen offered to meet with President Gulli at a later date to discuss this issue further. Mr. Suen left the meeting at 3:03 p.m. Mr. Elias and Mr. Niera left the meeting at 3:15p.m.

Mr. Neudeck mentioned that SJAFCA will be doing their operation and maintenance exercises this Thursday and the gate will be closed momentarily. This will take place between 1:45 p.m. – 2:15 p.m. Mr. Neudeck invited the Trustees to attend.

Item 8. SJAFCA LOMR. Discussion and possible action regarding Letter of Map Revision.

Pending. No action taken.

Item 9. Superintendent's Report. Presentation of Superintendent's Report; request for direction.

President Gulli read Abel Palacio's report to the Board. For a complete list of items please see Superintendent's Report in the Agenda packet.

Item 10. Report on Meetings Attended. President Gulli stated he attended the Public Town Hall with Jerry McNerney on October 3, 2025.

Item 11. Trustee Reports. Discussion and direction on Trustee Reports.

No report.

Item 12. District Calendar.

a. Next Meeting – November 3, 2025.

Item 13. Town Hall Meeting. Discussion and Direction. No discussion.

Item 14. District Newsletter/Postcard.

Direction was given to Sarah Vigil to prepare a draft for the Trustee's to review at their November meeting. The Board would like the winter postcard to go out after Thanksgiving.

Item 15. Items for Future Meetings. Items for future meetings.

- 5-year audit reporting.
- What documents to include on the website and on the agenda.
- Report from KSN on $15K cost for Five-Year Plan

Item 14. Correspondence. Discussion and direction. None

Item 15. District Bills. Motion to Approve of Bills.

After review,

On a motion by President Gulli, seconded by Trustee Kauffman, the Trustee's present voted to approve the September bills as presented by the following vote.

Ayes:	Kauffman, Gulli
Noes:	None
Abstain:	None
Absent:	Gaines

Item 16. <u>Closed Session</u>. - *3:48 p.m. – Attorney Pinasco reported the Board is going into Closed Session regarding item 16 (a).*

a. CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Section 54956.9; five cases.

Item 17. <u>Closed Session Report</u>. *4:06 p.m. – The Board reconvened from Closed Session. President Gulli and Trustee Kauffman were present in its entirety. Direction was given to staff to initiate litigation.*

Item 23. <u>Adjournment</u>. President Gulli adjourned the meeting at 4:06 p.m.

Respectfully submitted,

Rhonda L. Olmo
District Secretary

Reclamation District 1614
AMENDED September 2025 Bills

NAME	INVOICE #	AMOUNT	TOTAL $	WARRANT #	CHECK #	SUBVENTION FUND
Dominick Gulli - October 6, 2025 Mtg.		$100.00		6472		
			$100.00			
Kevin Kauffman - October 6, 2025 Mtg.		$50.00		6473		
			$50.00			
Christian Gaines - October 6, 2025 Mtg.		$50.00		6474		**THIS WARRANT WAS VOIDED**
Christian Gaines - August 11, 2025 Special Meeting		$50.00				
			$100.00			
Rhonda Olmo		$1,474.40		6475		
			$1,474.40			
Neumiller & Beardslee	355501	$5,699.92		6476		
			$5,699.92			
Kjeldsen, Sinnock & Neudeck, Inc.	41428	$1,387.50		6477		
	41429	$639.75				
	41430	$870.29				
	41431	$290.00				
	41432	$1,010.00				
	41433	$1,030.75				
	41434	$102.50				
			$5,330.79			
Delk Pest Control	286831	$220.00		6478		
			$220.00			

Reclamation District 1614
AMENDED September 2025 Bills

Holt Repair & Mfg Incorporated	13611	$3,243.55		6479		
			$3,243.55			
Department of Motor Vehicles biennial vessel renewal fee	CF 9326RZ	$20.00		6480		
			$20.00			
Dalek Lawn Care Service	236	$850.00		6481		
			$850.00			
California Central Valley Flood Control Association 2025 - 2026 Membership Dues	4237	$815.00		6482		
			$815.00			
A&A Developer's Inc. Levee Maint. Project 24/25 - Phase 2 - Post Construction Site Restoration Payment Application No. 1	12089	$177,697.50		6483		
			$177,697.50			
Abel Palacio -Septembr Payroll		$1,458.58			Direct Deposit	
			$1,458.58			
State of California Payroll Taxes - September		$42.62			online	
			$42.62			
Federal Government Payroll Taxes - September		$481.84			online	
			$481.84			
ADP - Period Ending 8/30/25		$138.86				
			$138.86			

Reclamation District 1614
AMENDED September 2025 Bills

Comcast		$150.56			online	
			$150.56			
T-Mobile - September		$83.89			online	
			$83.89			
PG&E		$1,983.54			online	
			$1,983.54			
State Compensation Fund	1002651212	$529.25				
			$529.25			
Visa		$204.90				
			$204.90			

WARRANT TOTAL:	**$195,601.16**
CHECKING TOTAL:	**$5,074.04**
TOTAL BILLS PAID	**$200,675.20**

DRAFT MINUTES OF REGULAR MEETING OF BOARD OF TRUSTEES
FOR RECLAMATION DISTRICT 1614
HELD MONDAY, NOVEMBER 3, 2025

The November Regular Meeting of the Board of Trustees of Reclamation District 1614 was held on Monday, November 3, 2025, at the hour of 2:00 p.m.

Roll Call of Board Members and Staff:
President Dominick Gulli, Trustee Kevin Kauffman, Trustee Chris Gaines, Attorney Andy Pinasco, Engineer Chris Neudeck, Attorney Tooba Naveed

The following members of the public were present: Sarah Vigil (Port City Marketing), Chris Elias (SJAFCA) and Juan Niera

The following were absent: Superintendent, Abel Palacio and Secretary, Rhonda Olmo

Item 1. Call to Order/Roll Call. President Gulli called the meeting to order at 2:00 p.m.

Item 2. Public Comment. The public may comment on any matter within the District's jurisdiction that is not on the agenda. Matters on the agenda may be commented on by the public when the matter is taken up. All comments are limited to 5 minutes for general public comment and per agenda item in accordance with Resolution 2014-06.

No public comment.

Item 3. District Finances. Presentation of Financial Status Reports. Discussion and possible action.

Andy Pinasco provided a written and oral report on the District's revenues and expenditures. He reported that the District is at 22% for their Fiscal Year.

After review,

On a motion by Trustee Kauffman, seconded by Trustee Gaines, the Trustees present voted unanimously to approve the Financial Report as amended by the following vote.

Ayes:	Kauffman, Gaines, Gulli
Noes:	None
Abstain:	None
Absent:	None

Item 4. Agency Reports. Report on San Joaquin Area Flood Control Agency's Smith Canal Gate Structure Project.

a. Discussion and Direction Regarding District Review of Smith Canal Gate Operations and Maintenance Manual.

The Board discussed water surface elevation in the Smith Canal and Trustee Gulli commented on the ability of the Smith Canal to retain the volume of water discharged into the Canal from stormwater pumps.

The Board discussed data provided by SJAFCA and requested Jordan Baldin of Ridgeline Engineering to review the data and provide comment. President Gulli noted that the Board did not receive everything submitted to SJAFCA. Attorney Pinasco stated he would verify that the Public Records Act request regarding FEMA was submitted by District Secretary Rhonda Olmo.

Chris Elias (SJAFCA) responded to questions from the Board regarding comments that were submitted to FEMA.

Item 5. <u>Audit</u>. Discussion and possible action to change audit period reporting.

Attorney Pinasco provided the Board with information regarding its requirements to conduct yearly audits. The Board elected to continue conducting yearly audits as opposed to every five years.

Item 6. <u>District Engineer Report</u>. Presentation of Engineer's Report. Discussion and possible action:

I. LEVEE MAINTENANCE PROJECT – FY 2024-2025

A. The contract issued to A&A Builders for final cleanup work along the SJ river has been completed and KSN Inc. recommends releasing of the withheld retention.

EXHIBIT A: Retention Release.

II. LEVEE MAINTENANCE PROJECT – FY 2025-2026

A. Currently budgeted work is for approximately 8 lots along Smith Canal and is estimated to cost approximately $400,000.

B. KSN Inc. to schedule inspection of potential sites along the SJ River and meeting with SG&CC staff for additional $600,000 of budgeted Rock Slope Protection work.

C. Review unhoused disturbance along the levee adjacent to the City of Stockton's Sewer Pump Station just west of the pedestrian bridge where the District place large boulders to discourage the unhoused from camping. KSN Inc. will factor repair and rock rearrangement and supplement to further discourage camping and digging into the District's levee.

EXHIBIT B: KSN Inc. field photos.

D. KSN is considering splitting the work along Smith Canal and the work along the SJ River into 2 contracts due to variety of expertise needed in each area.

III. FEMA – 4683 DR 2023 STORMS DISASTER ASSISTANCE

A. Review approved copy of Request for Reimbursement and/or Small Project Payment.

EXHIBIT C: Request for Reimbursement documents.

IV. SAN JOAQUIN COUNTY DELTA GRANT PHASE 3

A. Review of KSN Inc's invoicing for this subject DWR Grant to update the District's Emergency Operations Plan (EOP).

EXHIBIT D: KSN Inc. Invoicing summary

V. SJAFCA SMITH CANAL GATE - **<u>#1</u>**

A. Review SJAFCA's Post Card sent out recently announcing area removed from FEMA Special Flood Hazard Area on February 9, 2026.

EXHIBIT E: SJAFCA's Post Card on News release.

Engineer Chris Neudeck provided a press release to make the District aware of publications. Trustee Gulli asked if the LOMR Notice had been published in the Record and the Federal Register and was informed that the information had been posted since October 10, 2025.

Item 7. SJAFCA LOMR. Discussion and possible action regarding Letter of Map Revision.

Upon review of appendix A of the operations manual, Trustee Gulli requested that the flood base elevation (FBE) be set at a level of 10. Engineer Chris Neudeck commented that raising the elevation may not be necessary and recommended that the District maintain an FBE of 8. Trustee Gulli expressed his recommendation that the District should not accept the FBE of 8 as it effectively decertifies the levees. Trustee Gulli requested Jordan Baldwin at Ridgeline to review the basis upon which SJAFCA determined the FBE of 8.

The Board directed Jordan Baldwin at Ridgeline to review the interior drainage, the PBI hecraz model, bathometric information on the Canal, and to analyze the effects of rainfall events on the operation of the gate. The Board authorized Jordan Baldwin of Ridgeline to perform such work and not to exceed $20,000.00 in costs.

After review:

On a motion by President Gulli, seconded by Trustee Kauffman, the Trustees present voted unanimously to approve Ridgeline to review the interior drainage, PBI hecraz model, bathometric information on Canal, and analyze effects of rainfall events on the operation of the gate not to exceed $20K by the following vote.

Ayes:	Kauffman, Gaines, Gulli
Noes:	None
Abstain:	None
Absent:	None

Item 8. Superintendent's Report. Presentation of Superintendent's Report; request for direction.

No report provided.

Item 9. Report on Meetings Attended.

No report provided.

Item 10. Trustee Reports. Discussion and direction on Trustee Reports.

a. Encroachment Permit - Stockton Golf & Country Club Reimbursement Agreement.

Trustees reported that they have not heard any updates on this matter.

Item 11. District Calendar.

b. Next Meeting – December 1, 2025.

Item 12. District Newsletter/Postcard. Discussion and direction.

The Trustees are to provide direction to Port City Marketing to modify language regarding the rephrasing the term "protest" to "comment." The Board will send comments to Sarah and plan to finalize and mail the postcard at the next meeting.

Item 13. Items for Future Meetings. Items for future meetings.

No items were proposed.

Item 14. Correspondence. Discussion and direction.

No discussion on correspondence.

Item 15. District Bills. Motion to Approve of Bills.

After review,

On a motion by Trustee Kauffman, seconded by Trustee Gaines, the Trustees voted to approve the October bills as presented by the following vote.

Ayes:	Kauffman, Gulli, Gaines
Noes:	None
Abstain:	None
Absent:	None

Item 16. Closed Session.

Attorney Pinasco reported the Board is going into Closed Session regarding Items 16.a. and 16.b. at 4:15 pm

a. CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

   Initiation of litigation pursuant to paragraph (4) of subdivision (d) of Section 54956.9; five cases.

b. CONFERENCE WITH LEGAL COUNSEL – PROPERTY ACQUISITION OF ABANDONED LOT ON SMITH CANAL

   Address: 1848 W SOUTH TUXEDO AVE STOCKTON, CA
   APN: 123-202-11
   Agency Negotiator: Andy Pinasco, District Legal Counsel
   Negotiating Parties: Randall Sutphin
   Under Negotiation: Price and Terms of Payment

Item 17. Closed Session Report.

The Board directed Attorney Pinasco to proceed with a letter to the negotiating parties communicating an interest in purchase and to offer to cover the cost of an independent appraisal.

Item 18. Adjournment.

President Gulli adjourned the meeting at 4:32 p.m.

Respectfully submitted,

Rhonda L. Olmo
District Secretary

Reclamation District 1614
October 2025 Bills

NAME	INVOICE #	AMOUNT	TOTAL $	WARRANT #	CHECK #	SUBVENTION FUND
Dominick Gulli - November 3, 2025 Mtg.		$100.00		6484		
			$100.00			
Kevin Kauffman - November 3, 2025 Mtg.		$50.00		6485		
			$50.00			
Christian Gaines - November 3, 2025 Mtg.		$50.00		6486		
Christian Gaines - August 11, 2025 Special Meeting		$50.00				
			$100.00			
Rhonda Olmo		$1,427.84		6487		
			$1,427.84			
Neumiller & Beardslee	355763	$5,507.99		6488		
			$5,507.99			
Kjeldsen, Sinnock & Neudeck, Inc.	41683	$2,477.50		6489		
	41684	$500.75				
	41685	$155.00				
	41686	$2,518.75				
	41687	$232.00				
	41688	$1,043.60				
	41689	$2,815.25				
	41690	$4,764.19				
			$14,507.04			
Delk Pest Control	290172	$220.00		6490		
			$220.00			

Reclamation District 1614
October 2025 Bills

Croce, Sanguinetti, & Vander Veen	23631	$8,475.00		6491		
			$8,475.00			
Reclamation District 1608 Yearly Storage Fee	186-25/26	$250.00		6492		
			$250.00			
San Joaquin Area Flood Control Agency Assessments for FY 25/26	2025-10013	$41.82		6493		
			$41.82			
A&A Developer's Inc. Levee Maint. Project 24/25 - Phase 2 - Post Construction Site Restoration Payment Application No. 1 Retention Release	3492	$9,352.50		6494		
			$9,352.50			
The Dutra Group	2122418-01	$37,110.00		6495		
			$37,110.00			
Abel Palacio -October Payroll		$1,844.12			Direct Deposit	
			$1,844.12			
State of California Payroll Taxes - October		$57.35			online	
			$57.35			
Federal Government Payroll Taxes - October		$548.17			online	
			$548.17			
ADP - Period Ending 9/30/25		$138.86				
			$138.86			

Reclamation District 1614
October 2025 Bills

Comcast		$150.93			online	
			$150.93			
T-Mobile - September		$83.89			online	
			$83.89			
PG&E		$2,781.25			online	
			$2,781.25			
Visa		$1,206.84				
			$1,206.84			

WARRANT TOTAL:	**$77,142.19**
CHECKING TOTAL:	**$6,811.41**
TOTAL BILLS PAID	**$83,953.60**

ITEM 5

RECLAMATION DISTRICT 1614
FINANCIAL REPORT JANUARY MEETING 2026 MEETING
% OF FISCAL YEAR ELAPSED THROUGH END OF DECEMBER - 50%

	Budget Item	Budget Amount	Expended MTD	Expended YTD	% YTD
	GENERAL FUND				
	Administrative				
G1	Annual Audit	$ 8,000.00	$0.00	$8,475.00	105.94%
G2	Public Communication & Noticing	5,000.00	$0.00	$0.00	0.00%
G3	Election Expense	0.00	$0.00	$0.00	0.00%
G4	Superintendent	35,000.00	$2,411.62	$14,762.08	42.18%
G4a	Secretary	20,000.00	$1,924.48	$10,584.64	52.92%
G5	Workers' Compensation	3,000.00	$601.98	$1,131.23	37.71%
G6	Trustee Fees	4,000.00	$200.00	$1,100.00	27.50%
G7	County Assessment Administration	5,000.00	$0.00	$0.00	0.00%
G7A	General Assessment Administration (Engineers)	10,000.00	$147.50	$8,118.74	81.19%
G8	Office Supplies	1,500.00	$0.00	$442.00	29.47%
G9	Communication (phones, radios, etc.)	3,000.00	$244.51	$1,416.91	47.23%
G12	Education/Memberships	3,000.00	$0.00	$815.00	27.17%
G13	Non Management Staff	0.00	$0.00	$0.00	0.00%
G13A	LOMR	0.00	$0.00	$0.00	0.00%
	TOTAL	**$97,500.00**	**$5,530.09**	**$46,845.60**	**48.05%**
	Consultants				
G14	General Engineering	$ 50,000.00	$1,672.50	$15,980.65	31.96%
G15	General Legal	35,000.00	$7,946.18	$30,346.83	86.71%
	TOTAL	**$ 85,000.00**	**$9,618.68**	**$46,327.48**	**54.50%**
	Property & Equipment				
G16	Operation & Maintenance	$ 3,000.00	$0.00	$0.00	0.00%
G16A	District Vehicle Expenses	3,500.00	$1,112.55	$1,583.69	45.25%
G17	Acquisitions	0.00	$0.00	$0.00	0.00%
G18	Flood Fight Supplies	5,000.00	$0.00	$0.00	0.00%
	TOTAL	**$ 11,500.00**	**$1,112.55**	**$1,583.69**	**13.77%**
	Other				
G19	Insurance	$ 25,000.00	$0.00	$14,375.00	57.50%
	TOTAL	**$ 25,000.00**	**$0.00**	**$14,375.00**	**57.50%**
	TOTAL GENERAL FUND	**$ 219,000.00**	**$ 16,261.32**	**$ 109,131.77**	
	RECURRING EXPENSES				
	Levee				
L1	General Maintenance	$ 15,000.00	$180.00	5,094.57	33.96%
L2	Engineering	25,000.00	$1,080.64	8,491.49	33.97%
L3	Slope Protection and Levee Repair	1,100,000.00	$10,108.50	270,436.29	24.59%
L4	Specific Project Engineering	25,000.00	$1,127.50	1,127.50	4.51%
L5	2023 Storm Emergency	0.00	$812.00	3,712.00	0.00%
	TOTAL	**$ 1,165,000.00**	**$13,308.64**	**$288,049.85**	**24.73%**
	Drainage				
D1	Electricity	$ 35,000.00	$5,385.05	$17,085.23	48.81%
D2	Sump Clearing	15,000.00	$0.00	$2,707.00	18.05%
D3	Plant O&M	65,000.00	$5,775.00	$11,799.28	18.15%
D4	Pest Control	3,000.00	$313.80	$1,413.80	47.13%
D5	Engineering	10,000.00	$0.00	$0.00	0.00%
	TOTAL	**$ 128,000.00**	**$11,473.85**	**$33,005.31**	**25.79%**
	TOTAL RECURRING EXPENSES	**$ 1,293,000.00**	**$ 24,782.49**	**$ 321,055.16**	
	TOTAL EXPENSE BUDGET	**$ 1,512,000.00**	**$ 41,043.81**	**$ 430,186.93**	

INCOME

Anticipated				
Assessment - Existing	$ 350,000.00	$0.00	$16,689.70	4.77%
Assessment - Wisconsin	97,090.00	$0.00	$16.47	0.02%
Interest	90,000.00	$0.00	$37,415.00	41.57%
Property Tax	205,000.00	$0.00	$1,864.36	0.91%
Subvention Reimbursement (FY 23/24)	800,000.00	$0.00	$609,119.00	76.14%
2019-2020 DWR 5-Year Plan	0.00	$0.00	$0.00	0.00%
Delta Grant II - Flood Fight Supplies	15,000.00	$0.00	$14,954.50	99.70%
CAL OES 2023 FEMA Claim	0.00	$0.00	$34,776.97	0.00%
TOTAL	**$ 1,557,090.00**	**$0.00**	**$714,836.00**	**45.91%**
TOTAL NET INCOME (LOSS)	**$ 45,090.00**			

O&M Fund Balance (as of 12/31/2025)		**2,109,557.59**
Wisconsin Fund Balance (as of 12/31/2025)	**$**	**310,450.79**
Proposed Expenses		**41,043.81**
TOTAL CASH	**$**	**2,378,964.57**
Checking Account Balance (as of 12/31/2025)		**849.70**
TOTAL CASH ON HAND	**$**	**2,379,814.27**

RD 1614
Assessments

General Fund

	Payee	Amount Due	Amount Received	Notes
1	County of San Joaquin	$ 244.44	$ 244.00	
2	City of Stockton/Stockton Wastewarter Treatment Plant	$ 1,450.30	$ 1,450.30	paid additional penalties applied for 2022/2023, 2023/2024 and 2024/2025
3	Stockton Unified School District	$ 107,639.88	$ 107,639.88	also paid their 25/26 assessments totalling - $131,187.68

Wisconsin Fund

	Payee	Amount Due	Amount Received	Notes
1	Auditor-Controller County of San Joaquin	$ 31,778.60	$ 31,778.60	
2	**State of California**	$ 40,580.88		penalties applied for 2021/2022, 2022/2023, 2023/2024 and 2024/2025
3	**City of Stockton**	$ 8,926.44		penalties applied for 2023/2024 and 2024/2025 paid additional penalties applied for 2022/2023, 2023/2024 and 2024/2025
4	Stockton Unified School District	$ 16,281.66	$ 16,281.66	also paid their 25/26 assessments totalling - $20,175.06
5	Central Valley Flood Protection Board	$ 175.00	$ -	Per KSN (Jeff Mueller) - this parcel should not be subject to annual Assessments.

ITEM 6

250130.42_Smith Canal_O&M Manual_For FEMA.pdf

Submitted by Trustee Gulli



Operation, Maintenance, Repair, Rehabilitation and Replacement Manual

Smith Canal Floodwall and Control Structure

Stockton, California
December 31, 2024

Submitted to:

San Joaquin Area Flood Control Agency

Submitted by
PBI
80 Blue Ravine Road, Suite 280
Folsom, CA 95630

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Smith Canal Floodwall and Control Structure Operation, Maintenance, Repair, Rehabilitation and Replacement Manual

1 General

This O&M Manual is intended to provide information regarding the Operation, Maintenance, Repair, Rehabilitation and Replacement of all components of the Smith Canal Floodwall and Control Structure.

1.1 Project Description

The Smith Canal Gate Project includes the following components:

- A cellular steel sheet pile floodwall filled with granular material that extends from Dad's Point to the Stockton Golf and Country Club on the north bank of the San Joaquin River. The sheet pile tie-ins at Dad's Point to the south and Stockton Golf and Country Club to the north are lined with Riprap Scour Protection (RSP) to minimize potential future erosion.
- A 50-foot-wide steel miter (double-door) gate structure supported by a reinforced concrete substructure and a steel pipe pile foundation placed within the alignment of the dual sheet pile floodwall.
- Approximately 16,700 feet of sheet pile cutoff wall along Dad's Point and grade adjustment along Dad's Point to tie into high ground at Louis Park
- Recreational features and habitat improvements on Dad's Point

The normal position for the miter gate is open. Tides will continue to flow in and out of the Smith Canal. The Smith Canal gate will close on the low tide just prior to when the Delta stage is forecasted to exceed 8.0 ft, the design operating surface, 1.5 feet below the 200-year stage of 9.5 ft. All elevations provided are referenced to NAVD88, unless otherwise noted.

For 100-year stage events and greater, the gate would be closed only during high Delta stage events forecasted to exceed the design operating water surface elevation between November and April (rainy season). When a high Delta stage event is anticipated, the gate will normally be closed at the lowest tide prior to the forecasted high Delta stage. The gate will remain closed until interior drainage pumping causes the water level in Smith Canal to approach that of the Delta, at which point the gate will open equalizing the water surface elevation. Note that even during historical 25-year, 30-year and 50-year events, the tidal influence is observed with two high stages and two low stages each day.

For imminent or existing levee breaches, the gate will be closed as soon as possible following notification of the breach.

1.2 Features and Function

1.2.1 Cellular Sheet Pile Flood Wall

An AS500-12.7 straight web steel sheet pile section and marine grade ASTM A690 material was installed. The straight web steel sheet pile section is used as part of a cellular structure with diaphragm cells. The atmospheric corrosion resistance of this steel is substantially better than that of ordinary carbon steels with or without copper addition. The steel has also shown to have substantially greater resistance to seawater “Splash Zone” corrosion than ordinary carbon steel where exposed to the washing action of rain and the drying action of the wind or sun, or both.

In order to provide a tie below the dredge line, a sheet pile diaphragm was installed; this helped achieve the goals of reducing the deflection and bending between the walls. The flat web sheet piles transfer load through tension and bearing through the interlocks rather than through bending moment. The flat web sheet piles have manufacturer rated interlocks that have been tested and approved for transfer. The curved arch face allows load to be transferred longitudinally along the sheet pile and have the cellular structure act as an entire unit rather than a single sheet pile acting in bending as the Z section performs.

1.2.2 Floodgate Control Structure

The floodgate control structure consists of a concrete monolith with a base slab and two gate bay walls that house the steel miter gate leaves. The foot print of the monolith is a 71 foot 4 inch square. There are sixty-four 36-inch diameter x 7/8” thick steel pipe piles supporting the concrete monolith. The bottom of slab elevation is -13.0 feet. The concrete walls are 22 feet tall with a top of wall (TOW) elevation of +15.0 feet. The concrete slab and the typical wall sections are 6 feet thick. The walls are a variable shape due to the gate recess required for when the gate is in the open position. Typical wall reinforcement is comprised of #10 @12 inches horizontally and #10 @6 inches vertically along all faces. No cross-ties are required according to the wall design forces and the applicable provisions of ACI 318. Typical slab reinforcement is #10 @12 inches parallel to the concrete walls (parallel to flow) and #10 @6” normal to the concrete walls. There are also #6 headed cross-ties through the slab thickness at every bar intersection in the reinforcing mats.

The damming barrier between the cellular sheet pile flood wall and the floodgate control structure is a dual system consisting of a flexible rubber seal (sheet rubber in an accordion configuration) with a more robust, stiffer rubber j-bulb between it and the structure above the mud line and extending down below the mud line to just above the tremie slab. The sealing system is attached to the sheet pile wall with angles and bolts and to the concrete wall/slab with post-installed anchor bolts in a way that facilitates replacement if needed (although a little excavation will be required to reach the portion of the sealing assembly below grade). Below the mud line, there is a continuous sheet pile cut off wall that spans in front of the floodgate control structure. There is no direct

connection between the sealing assembly described above and the sheet pile cut off wall. Instead, both systems embed into an impervious clay layer, effectively tying the systems together without creating a seepage path. See Section 5.2.4 in the Basis of Design Report (BODR) in Appendix R for the design criteria.

1.2.3 Floodgate

The floodgate consists of a steel miter gate with two gate leaves. Each leaf forms a 65 degree angle with the control structure concrete walls. The top of gate (TOG) elevation is +15.0 with each gate leaf being 22 feet tall. The clear width of the gate bay is 50 feet. The gate is made up of seven girders that are approximately three feet deep. The miter gate leaf components, including the actuator and gudgeon connection assemblies, and all associated bolted connections and anchor bolts are made of either painted or galvanized carbon steel except for the seal assembly components and the female miter block which are made of stainless steel. All embedded steel plates, shapes, and anchors are also stainless steel. Horizontal girder bearing blocks consist of Columbia Industrial Products (CIP) contacting stainless steel at the quoin (contact surface between the gate leaf and pier wall) and miter (contact surface between gate leaves) interfaces.

The gate is connected to the control structure walls by the gudgeon at the top of the gate and the pintle at the bottom. The gudgeon assembly acts as a cylindrical hinge (longitudinal axis of the hinge/pin is in the vertical direction) and is anchored to the walls by two turnbuckle links that are connected to partially embedded high strength steel (HSS) circular columns. The turnbuckle links allow for adjustability to the gate leaf alignment. One turnbuckle link has a single pin on both ends, while the second turnbuckle link has a double pin on the gate side. This double pin is intended to prevent rotation of the components and provide stability of the gudgeon system during a gate closure under flow. All gudgeon assembly components are made of either painted or galvanized carbon steel. The pintle at the bottom of the gate acts similar to a ball and socket joint. The pintle assembly consists of a base, pintle, and socket. The pintle base is partially embedded in and anchored to the concrete slab. The pintle looks similar to a shaft with a nearly spherical ball on one end and is shrunk-fit into the base and also attached by drilled and tapped bolts. The pintle socket is attached to the miter gate leaf and rests on the pintle ball and has a pintle cup insert that is shrunk-fit into it. The pintle base and pintle are forged duplex stainless steel, and the pintle cup is forged 17-4 ph stainless steel. The pintle socket is forged carbon steel. Bolts connecting the pintle socket to the miter gate are A490 high strength carbon turned bolts while all bolts/screws and anchor rods for the pintle base and pintle are stainless steel.

The gudgeon and pintle bearing running surfaces are both lined with self-lubricating material (Kamatics Karon V) to prevent the need to run grease lines and reduce the required maintenance. There are additional spherical bearings at the gate actuator clevis that are also lined with self-lubricating Karon V material. The quoin and miter bearing blocks at the end of each horizontal girder that transfer the thrust load between gate leaves and from each gate into the pier when the gate is in the closed position will be CIP Hydro material, which is also self-lubricating. Finally, there are plain bronze bushings around the turnbuckle pins. Even though there is little to no movement expected at these

locations, the bronze bushings help reduce galling and mechanical adhesion effects and allow for easier and more cost effective replaceability.

See Section 5.2.3 in the BODR in Appendix R for the design criteria.

1.2.4 Floodgate Mechanical

The flood control structure includes two powered miter gates and features used to secure the gates in the open and closed position. Mechanical linear gate actuators will be used to move the gates from the open and closed positions.

Each gate is powered by an ACME screw type linear actuator with integral gearmotor, brake, and means for manual operation via an electric drill input. The actuator housing is mounted on a gimbal or Cardanic ring mount to allow for vertical and horizontal plane movement of the driving end of the actuator. The gate actuator has the following operating characteristics:

- 10 hp
- 68,000 lb. maximum load
- 1.0 in./second linear speed (approx. 120 second closing time)
- 118 in. stroke

Each gate is supplied with a latch assembly to secure the gate in the open and closed positions. The latch assembly consists of a bar driven by an ACME screw type linear actuator. The bar engages a receiver at the gate end. With the gates in the mitered position the lock bars will engage a receiver in the facing gate to hold the gates in contact. When the gates are opened, the lock bars will engage receivers mounted on each pier. The bars are located in the top and bottom of their respective receivers such that they can cross when the gate is mitered.

See Section 5.4 in the BODR in Appendix R for the design criteria.

1.2.5 Floodgate Electrical

The service tie-in at Dad's point is from a transformer provided by PG&E, which provides 480 V, 3 phase service to the site.

The new 480 V, 3 phase, 100 A service provides power to the new gate actuators and latches and a 208Y/120 V transformer. Lighting throughout the site, control and monitoring equipment, a siren, a strobe light, receptacles, cameras, and equipment heaters are powered off of the transformer via a 100 A panelboard.

Standby power is provided by a 480 V, 3 phase, 4 wire mobile generator (owned by the County) brought on site and connected via a generator plug and manual transfer switch located at the incoming service equipment.

The actuators and latches are controlled via a control station adjacent to the gate structure on the south side of the flood wall. The control station shall control the operation of the actuator motors, actuator motor brakes, latch motors, latch brakes, siren, and strobe light by energizing control relays in the control cabinet. The control cabinet is

sized accordingly to house the PLC system which will provide the future remote control of the gate via the internet provider connection.

New electrical conduit and wiring runs along Dad's Point from the utility tie-in to the electrical distribution equipment and out to the gate actuators and latches for power and control.

Light fixtures were added along the new flood wall and at the south abutment of the flood wall along Dad's Point. The lighting along Dad's Point includes removal of existing light fixtures and replacement with new fixtures. New conduit and wiring was installed throughout the site to power the light fixtures.

Cameras were provided along the new flood wall. Monitoring of the site is available via the internet provider connection.

A cabinet was added near the control cabinet at the south abutment of the flood wall to house the remote monitoring equipment. The remote monitoring will be accomplished via a datalogger or other OneRain supplied equipment. Relay contacts, water level sensors, directional flow meter, and rain gauge was connected to and recorded by the datalogger. Data is sent to the County network via the internet provider connection.

New equipment and devices for this project include:

- Actuator motors with integral brakes
- Latch motors with integral brakes
- Gate actuator control stand with the following features:
    - Control Stand Power: on-off
    - Gate 1: open-stop-close
    - Gate 2: open-stop-close
    - Latch 1: unlock-stop-lock
    - Latch 2: unlock-stop-lock
    - Siren: on-off
    - Strobe Light: on-off
    - Emergency Stop
    - Gate 1 Bypass: on-off
    - Gate 2 Bypass: on-off
    - Latch 1 Bypass: on-off
    - Latch 2 Bypass: on-off
- Gate position limit switches
- Latch position limit switches
- Channel gauge lights
- Site lighting

- Siren
- Strobe Light
- Receptacles (120 VAC)
- Camera Equipment (Cameras, poles, mounting kits, media converters, midspan, and power supplies)
- Remote Monitoring Equipment (Rain Gauge, Water Level Sensors, Directional Flow Meter, media converters, and power supplies)
- Control Equipment (relays, Ethernet switches, uninterruptible power supply, circuit breakers, and future PLC system for remote operation capabilities)
- Electrical Distribution equipment (panelboards, transformer, conduit, and wires)

The following describes system interlocks on this project:

- Emergency Stop: deactivates all motors when activated by removing control power to all motor starters.
- Gate Fully Open: prevents the gate from continuing to open once the gate has reached the fully open position.
- Gate Fully Closed: prevents the gate from continuing to close once the gate has reached the fully closed position.
- Gate Locked: prevents the latches from securing the gate when it is not fully closed.
- Latches Fully Unlocked: prevents the latch from continuing to unlock once the latch has reached the fully unlocked position.
- Latches Fully Locked: prevents the latch from continuing to lock once the latch has reached the fully locked position.
- Local/Remote Control: allows only one location to operate the gate at a time (for future remote control capabilities)

See Section 5.5 in the BODR in Appendix R for the design criteria, and Appendix G for photographs and list of equipment installed.

1.2.6 Navigation Related Structures and Features

The cellular sheet pile flood wall and floodgate control structure is protected by 36-inch diameter steel pipe pile dolphins spaced at 16 feet on center. In addition, each of the four corners of the floodgate control structure shall have a pile dolphins with 7-foot 6-inch diameter floating donut fenders on them to protect the structure and help guide vessels through the open bay. Floating buoys with navigation lights are used to identify the alignment of the bay opening. The combination of the donut fenders and floating buoys is put in place in lieu of a timber guidewall system. All navigation structures shall have appropriate navigation lighting installed.

See Section 5.2 in the BODR in Appendix R for the design criteria and Appendix O for the lighting O&M Manual.

1.2.7 Dad's Point Improvements

Improvements to Dad's Point include approximately 16,700 feet of sheet pile stability wall, and grade adjustment along Dad's Point that tie into high ground at Louis Park. Additionally, included are recreational features and habitat improvements on Dad's Point, as well as removal of invasive species vegetation.

1.2.8 Access Improvements to the Stockton Golf and Country Club

A widened path was constructed at the Stockton Golf and Country Club to provide maintenance and inspection access for the fixed cellular sheet pile floodwall that meets CVFPB Title 23 requirements.

2 Authorization

The project was included in the Lower San Joaquin River Feasibility Study which was authorized through the USACE in 2018.

3 Location

3.1 Facility Location

The facility is located in the City of Stockton and unincorporated San Joaquin County. The facility area includes Atherton Island, Atherton Cove, Louis Park (including Dad's Point), the Stockton Golf and Country Club, and the portions of the San Joaquin River in the immediate vicinity. Atherton Island is at the west end of Smith Canal, and Louis Park is southeast of Atherton Island at the mouth of the Canal. Dad's Point, a land bar that is an extension of Louis Park, is southwest of the mouth of Smith Canal and separates the Louis Park boat launch area from the San Joaquin River. Atherton Cove is a dead-end slough of the river that extends north and east around Atherton Island, and the Stockton Golf and Country Club is along the north bank of the river and southwest shore of Atherton Cove, to the northwest of Smith Canal. A navigable urban waterway, Smith Canal is a human-made, backwater slough that conveys stormwater and urban runoff away from adjacent residential neighborhoods. It extends from Yosemite Lake, approximately 2.5 miles downstream to the San Joaquin River. Because Smith Canal drains a limited stormwater drainage area, its border levees primarily serve to protect adjacent residences from back-flooding from the Delta rather than to confine upland riverine flows.



Figure 1. Smith Canal Gate Facility Vicinity

3.1.1 Facility Plan

Below is an overview of the Facility plan.

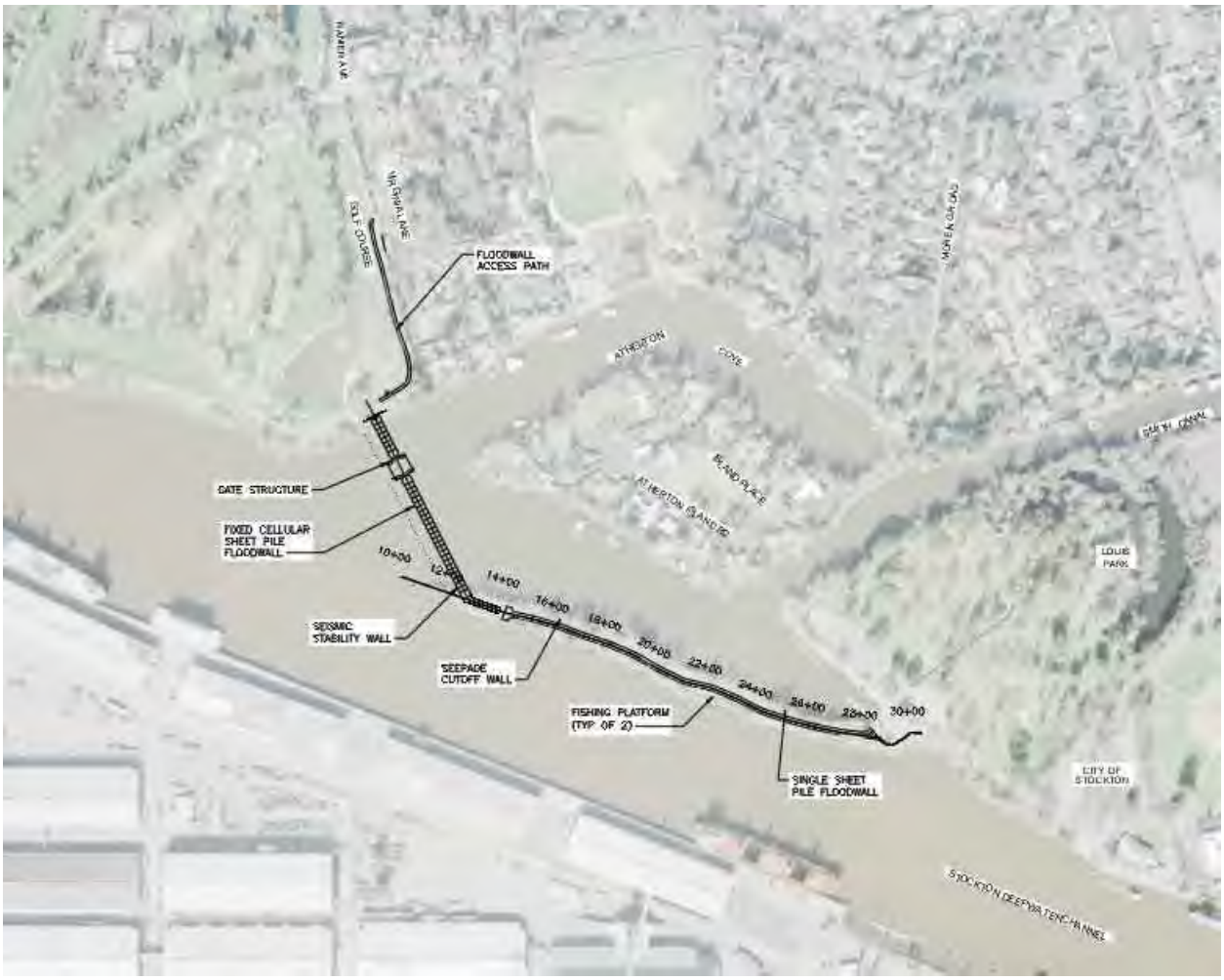


Figure 2. Smith Canal Gate Facility Plan

4 Pertinent Information

4.1 Tides and Currents

The project area includes portions of the San Joaquin River, Smith Canal, and Atherton Cove. The San Joaquin River watershed drains the southern part of the Central Valley and flows in a generally northward direction into the Delta, which discharges into the San Francisco Bay. Smith Canal extends approximately 3 miles east from the San Joaquin River. Starting at its eastern limit at Yosemite Lake, the canal receives stormwater from the surrounding urban area that then drains to the west into the San Joaquin River. In addition, there are nine pump stations that discharge into Smith Canal and four gravity discharge pipes.

Smith Canal receives tidal waters from the San Joaquin River; however the tidal exchange is relatively small at the upstream end of the canal. The Delta has a mixed semidiurnal tide cycle, which means there are two high tides and two low tides of differing levels each lunar day (approximately 24.8 hours). A previous study showed that after 20 days of tidal exchange, the fraction of water from the San Joaquin River that had mixed two miles upstream was about 60%, and about 50% river water had mixed at the upstream end at Yosemite Lake (Jones & Stokes 2005:23). Atherton Cove is tidally influenced by the San Joaquin River, with much greater tidal interchange than Smith Canal.

The closest monitoring station for measuring tide stages near the project area is the Rough and Ready Island gage, which is located approximately three-quarters of a mile downstream from the entrance to Smith Canal and is most representative of project area tidal conditions. Tide elevations for Rough and Ready Island are summarized in Table 1 and are based on gage data from October 1, 2006 to January 1, 2014. Mean higher high water refers to the average of the highest daily tides and does not reflect the peak tide levels. Mean lower low water level is an average of the lowest daily tides and does not reflect the lowest tide levels.

Table 1 Tide Elevations at Rough and Ready Island Gage

Datum	Elevation (feet, NAVD88)
Highest Observed Water Level (03/23/11)	+8.21
Mean Higher High Water (MHHW)	+6.11
Mean High Water (MHW)	+5.64
Mean Tide Level (MTL)	+4.25
Mean Low Water (MLW)	+2.87
Mean Lower Low Water (MLLW)	+2.37
Lowest Observed Water Level (10/22/07)	+1.28
North American Vertical Datum of 1988 (NAVD88)	0.00

Source: California Data Exchange Center (CDEC) Gage RRI

The San Joaquin River has a typical tidal flow of approximately ±8,000 cubic feet per second (cfs). Because of tidal influence in the project area, outflow becomes negative on a daily basis as tides force water up the San Joaquin River, which interchanges with water in Smith Canal and Atherton Cove.

4.2 Hydraulic Data

The typical tide range statistics are given above in Table 1. Stage data used for design of the Smith Canal improvements are discussed in the following sections.

4.2.1 Smith Canal Stage Data

The *San Joaquin River Delta Base Flood Elevation Refinement Study* (PBI, 2009) updated the previous USACE stage frequency analysis from 1978, 1982, and 1992 for

two gage stations near the City of Stockton: San Joaquin River at Rindge Pump (Rindge Pump) and Stockton Ship Channel at Burns Cutoff (Burns Cutoff). Figure 3 presents the location of these two gage stations. Table 2 presents the results of the *San Joaquin River Delta Base Flood Elevation Refinement Study.*



Figure 3. Gage stations near Smith Canal in Stockton, CA
(Source: CDEC)

Table 2. Stage Frequency Analysis Results (2009 Sea Level Conditions)

Annual Exceedance Probability	Confidence Limit[1]	Rindge Pump (ft NAVD88)[2]	Burns Cutoff (ft NAVD88)
1/50	95%	8.9	9.0
	50%	9.3	9.3
	5%	9.7	9.6
1/100	95%	9.1	9.0
	50%	9.4	9.4
	5%	9.8	9.8
1/200	95%	9.2	9.1
	50%	9.6	9.5
	5%	10.0	9.9

(1) The confidence limit represents the percent confidence the stage will be exceeded. For example, there is a 95% confidence that a 1/50 flood stage of 8.9 ft would be exceeded and a 5% confidence that a 1/50 flood stage of 9.7 ft would be exceeded at the Rindge Pump gage station. Note that the range of values between the 95% and 5% confidence limits represents the 90% confidence interval – meaning that there is 90% confidence that the given flood stage will occur between the two values.

4.2.2 Hydraulics of Structure

200-Year WSE

The median 200-year water surface elevation (WSE) was taken from the Burns Cutoff Gage Station (DWR No. B95660) located in the San Joaquin River approximately 1 mile downstream of the entrance to Smith Canal. Table 2 shows this elevation to be 9.5 ft NAVD88.

Sea Level Rise

Future sea level rise is predicted to increase the stage frequency results calculated for 2009. USACE ETL 1100-2-1, “Procedures to Evaluate Sea Level Change: Impacts, Responses, and Adaptation,” states that planning studies and engineering designs should consider alternatives that are developed and assessed for the entire range of possible future rates of sea level rise.

Low – use local historic rate of sea level rise

Intermediate - use the modified National Research Council (NRC) Curve I for estimating future sea level rise

High - use the modified NRC Curve III for estimating future sea level rise

Table 3 presents the estimated sea level rise at the Burns Cutoff gage station. For the Smith Canal Gate Project, the “high” future sea level rise for 2050 of 1.4 ft was used in the development of the design water surface elevation (DWSE).

Table 3. Estimated Future Sea Level Rise from 2009

Year	Sea Level Rise, ft		
	Low	Intermediate	High
2030	0.1	0.2	0.6
2050	0.3	0.5	**1.4**
2080	0.5	1.1	3.2
2100	0.6	1.5	4.7

Hydrologic Uncertainty

In addition to sea level rise, to take into consideration uncertainties and future modifications to hydrology, a 1.1-foot factor of safety was added to the 200-year WSE determine the DWSE.

Smith Canal Project DWSE

Based on the discussion above, the DWSE is calculated as follows:

Elev. 9.5 feet (NAVD88) – 200 year still water level (SWL)
+ 1.1 feet for hydraulic uncertainty
+ 1.4 feet for sea level rise through 2050 (high projection)
Elev. 12.0 Design Water Surface Elevation (DWSE)

Design Wind Setup and Wave Runup

The methodology for determining the wind setup and wave runup values for the design of the Smith Canal project followed the requirements presented in the ULDC. The wind setup and wave runup calculations are based on the potential wind speed, wind direction, fetch length, and water depth along the fetch line. Guidance for developing these parameters is given in the following USACE documents:

- *Coastal Engineering Manual*, EM 1110-2-1100 (CEM)
- *Shore Protection Manual* (SPM)
- *Process for the National Flood Insurance Program Levee System Evaluation*, EC 1110-2-6067

Table 4 presents the results of the *Smith Canal Gate Project Wind Setup and Wave Runup Calculations Addendum 1*. Table 4 shows that the maximum combined wind setup and wave runup elevation is 0.83 ft.

Table 4. Combined Wind Setup and Wave Runup Heights

Wind Direction	Wind Setup (ft)	2% Wave Runup (ft)	Combined Wind Setup and Wave Runup Elevation Increase (ft)
Gate Structure			
West	0.02	0.36	**0.38**
Southwest	0.00	0.19	0.19
Dad's Point			
Southwest	0.00	0.36	0.36
South	0.01	0.65	0.66
Southeast	0.02	0.81	**0.83**

Smith Canal Project Minimum Design Elevation

Since the maximum combination of wind setup and wave runup is less than 3 ft, the Minimum Top of Levee (MTOL) was determined by adding 3 ft for freeboard to the DWSE. This MTOL represents the minimum top elevation for the gate, floodwall, and levees included in this project.

Elev. +12.0 feet NAVD88, DWSE
+ 3.0 feet for Freeboard
Elev. +15.0 feet for Minimum Top of Levee

Normal Conditions

The normal position for the miter gate will be open. Tides would continue to flow in and out of the Smith Canal. The Smith Canal gate will close on the low tide just prior to when the Delta stage is forecasted to exceed 8.0 ft. This water surface elevation is 1.5 feet below the 200-year stage of 9.5 ft.

4.2.3 Gate Operation

Opening/Closing Criteria

The normal position for the gate is open. Tides will continue to flow in and out of the Smith Canal. The purpose of the Smith Canal gate is to create a barrier to block flooding in the event of either an imminent or existing levee breach and during 1% flood events and greater. In these cases, the gate would be closed, preventing flow of water from the Delta into Smith Canal. The Smith Canal gate will close when the Delta stage is forecasted to exceed 8.0 ft NAVD88 between November and April, which is at a 4-year recurrence interval (San Joaquin River Delta Base Flood Elevation Refinement, September 2010). This water surface elevation is 1.5 feet below the 1% annual maximum water surface elevation of 9.5 ft NAVD88.

For flood control purposes, the gate will be closed only during high Delta stage events forecasted to exceed the design operating water surface elevation between November and April.

Each year, prior to November 1, SJCFCWD/SJAFCA will obtain tide prediction tables to determine the timing of peak tides. These high tides will be used to develop an “alert” table to help plan activities during the flood season. In addition, because rainfall and runoff affect water surface elevation, the daily stage predictions generated by DWR will be monitored. This information will help determine when the miter gate and will be closed for flood control purposes.

When a high Delta stage event is anticipated, the gate would be closed at the lowest tide prior to the forecasted high Delta stage. The gate would open on outgoing tide to release any accumulated storm water whenever the level in the Delta is lower than the level in Smith Canal.

5 Construction History

Construction for the Smith Canal Gate Structure and Floodwall was initiated in the Summer of 2020. Substantial completion of the project was achieved in the fall of 2024 with miscellaneous items including the stop log storage foundation anticipated to be complete in 2025.

6 Facility Performance

6.1 Detailed Facility Purpose

SJAFCA has set forth the following project objectives:

- Improve flood performance to secure FEMA accreditation within the funding capability of SJAFCA
- Reduce flood risk to contribute to minimum 200-year level of performance as mandated by SB 5 within the funding capability of SJAFCA

- Construct improvements in accordance with DWR's Urban Levee Design Criteria
- Integrate compatibly with regional flood risk–reduction projects, including the LSJRFS and the Lower San Joaquin and Delta South Regional Flood Management Plan
- Construct a project that is economically, environmentally, politically, and socially acceptable
- Construct a project as soon as possible to reduce flood risk, avoid mandatory flood insurance, and avoid building restrictions
- Construct a project that considers the potential effects of climate change and is resilient to sea level rise while consistent with other project objectives
- Provide multi-objective benefits where consistent with other project objectives, such as water quality and recreation enhancements
- Facilitate compatibility with recreation goals for the area, including continued recreational boating access
- Facilitate compatibility with existing land use in the area

6.2 Consequences of Exceeding Project Design

6.2.1 Rainfall

In the event of excessive rainfall in the area impacting the project becoming a permanent occurrence, the DWSE may be insufficient if the uncertainty factors do not cover the resultant increase in water level. If the rise in annual rainfall levels persist, the levee may need to be raised or other mitigation measures enacted in order to meet design requirements.

6.2.2 Wind Tides

In the event that wind tides exceed the project design, there is an increased risk of the DWSE being greater than calculated, resulting in the freeboard dropping below the 3' target requirement. However, in order to be the driving factor for calculation of the MTOL, the wind wave values would need to increase more than 3.5 times in order to create deficiencies in the project design. If the wind values did increase by the required factor, the levee may need to be raised or other mitigation measures installed in order to meet all design requirements.

6.2.3 Seismic

There are several performance issues that may arise should a seismic event occurs that exceeds the project design. Given the relative low strength and susceptible to liquefaction condition of the foundation, both the floodwall and the gate structure foundations should be expected to permanently deform laterally and vertically. These deformations should be expected to include the levee tie-in locations, the mid-span of the floodwall, and the gate structures. Since the floodwall and gate structures are founded on differing systems and possess differing superstructures, the dynamic periods of both are

different. Therefore, it is anticipated that the deformations will not be in phase nor equal and will have differing settlements and lateral deformations. Based on the analyses performed in support of the design, it should be anticipated that the results of these deformations will have varying degrees of post-event mitigations including non-operational, gaps between the floodwall and control structure, and partial replacement of the facility. Refer to Section 12.3 for post-seismic emergency response plan for Dad's Point.

7 Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Agreement

SJAFCA, SJCFCWD, San Joaquin County and the City of Stockton (public use items) are to work together to maintain various aspects of the Smith Canal Gate.

8 Operation

8.1 Floodgate

This section contains the details associated with operating the floodgate, screw drive actuator, and portable emergency generator. A general description follows containing information regarding operation. This section covers the information operating personnel need to prepare the floodgate for operation before, during, and after a flood event, and during the rainy season.

8.1.1 Description and Record Keeping

Description

The floodgate control structure consists of a concrete monolith with a base slab and two gate bay walls that will house the steel miter gate leaves. The footprint of the monolith is a 71 foot 4 inch square. There are sixty-four 36-inch diameter x 7/8" thick steel pipe piles supporting the concrete monolith. The bottom of slab elevation is -13.0 feet. The concrete walls are 22 feet tall with a top of wall (TOW) elevation of +15.0 feet. The concrete slab and the typical wall sections are 6 feet thick. The walls are a variable shape due to the gate recess required for when the gate is in the open position. Typical wall reinforcement is comprised of #10 @12 inches horizontally and #10 @6 inches vertically along all faces. No cross-ties are required according to the wall design forces and the applicable provisions of ACI 318. Typical slab reinforcement is #10 @12 inches parallel to the concrete walls (parallel to flow) and #10 @6" normal to the concrete walls. There are also #6 headed cross-ties through the slab thickness at every bar intersection in the reinforcing mats.

The damming barrier between the cellular sheet pile flood wall and the floodgate control structure is a dual system consisting of a flexible rubber seal (sheet rubber in an

accordion configuration) with a more robust, stiffer rubber j-bulb between it and the structure above the mud line and extending down below the mud line to just above the tremie slab. The sealing system is attached to the sheet pile wall with angles and bolts and to the concrete wall/slab with post-installed anchor bolts in a way that facilitates replacement if needed (although a little excavation will be required to reach the portion of the sealing assembly below grade). Below the mud line, there is a continuous sheet pile cut off wall that spans in front of the floodgate control structure. There is no direct connection between the sealing assembly described above and the sheet pile cut off wall. Instead, both systems embed into an impervious clay layer, effectively tying the systems together without creating a seepage path

The floodgate consists of a steel miter gate with two gate leaves. Each leaf forms a 65 degree angle with the control structure concrete walls. The top of gate (TOG) elevation is +15.0 with each gate leaf being 22 feet tall. The clear width of the gate bay is 50 feet. The gate is made up of seven girders that are approximately three feet deep. The miter gate leaf components, including the actuator and gudgeon connection assemblies and all associated bolted connections and anchor bolts, are made of either painted or galvanized carbon steel, except the seal assembly components and the female miter block, which are made of stainless steel. All embedded steel plates, shapes, and anchors are also stainless steel. Horizontal girder bearing blocks will consist of Columbia Industrial Products (CIP) contacting stainless steel at the quoin (contact surface between the gate leaf and pier wall) and miter (contact surface between gate leaves) interfaces.

The gate is connected to the control structure walls by the gudgeon at the top of the gate and the pintle at the bottom. The gudgeon assembly acts as a cylindrical hinge (longitudinal axis of the hinge/pin is in the vertical direction) and is anchored to the walls by two turnbuckle links that are connected to partially embedded HSS circular columns. The turnbuckle links allow for adjustability to the gate leaf alignment once installed. One turnbuckle link has a single pin on both ends, while the second turnbuckle link has a double pin on the gate side. This double pin is intended to prevent rotation of the components and provide stability of the gudgeon system during a gate closure under flow. All gudgeon assembly components are made of either painted or galvanized carbon steel. The pintle at the bottom of the gate acts similar to a ball and socket joint. The pintle assembly consists of a base, pintle, and socket. The pintle base is partially embedded in and anchored to the concrete slab. The pintle looks similar to a shaft with a nearly spherical ball on one end and is shrunk-fit into the base and also attached by drilled and tapped bolts. The pintle socket is attached to the miter gate leaf and rests on the pintle ball and has a pintle cup insert that is shrunk-fit into it. The pintle base and pintle are forged duplex stainless steel, and the pintle cup is forged Type 17-4 PH stainless steel. The pintle socket is forged carbon steel. Bolts connecting the pintle socket to the miter gate are ASTM A490 high strength carbon turned bolts while all bolts/screws and anchor rods for the pintle base and pintle are stainless steel.

The gudgeon and pintle bearing running surfaces are both lined with self-lubricating material (Kamatics Karon V) to prevent the need to run grease lines and reduce the required maintenance. There are additional spherical bearings at the gate actuator clevis that are also lined with self-lubricating Karon V material. The quoin and miter bearing blocks at the end of each horizontal girder that transfer the thrust load between gate

leaves and from each gate into the pier when the gate is in the closed position will be CIP Hydro material, which is also self-lubricating. Finally, there are plain bronze bushings around the turnbuckle pins. Even though there is little to no movement expected at these locations, the bronze bushings help reduce galling and mechanical adhesion effects and allow for easier and more cost-effective replaceability.

The gates are electrically operated. Each gate utilizes one actuator for opening and closing by a 1,800 rpm motor that is approximately 10 hp, and one actuator for locking and unlocking the gate by an approximately 3 hp motor. The actuators are located in machinery recesses (abutments) by each gate. Gates are controlled locally via the control cabinet on the south side of the gate structure along the floodwall. All equipment is powered from utility power during normal operation. In the event of a power outage, a back-up generator can be brought on site and connected to the manual transfer switch generator receptacle, located on the exterior left hand side of the control cabinet, to operate the gates.

Record Keeping

Record keeping is a basic business practice and is applicable to all facilities. Complete, well organized records (stored in electronic format) can help ensure proper maintenance of facilities and equipment. Record keeping must be coordinated with all applicable State, Federal, and local Agencies and integrated with the development, operation, maintenance, repair, rehabilitation and replacement of the facility. Inspection and maintenance records keeping is covered in Section 10.2 - Floodgate Component Routine Inspection. Records shall include as a minimum:

- The date, exact place, time, name, description of activity, and observations.
- Name of inspector(s) and crew, where applicable.
- Analytical information as to the work done, repair, replacement, tests, and regular maintenance/inspection.
- Electronic photographs of deficiencies and remedial actions taken.
- Classification of event that prompted activity such as atmospheric rivers, regular maintenance/inspection, mobilization, reopening, gate closure/opening, or repair.
- Type of action taken for the applicable activity, whether safety, preventive, remedial, or replacement.
- A complete database of all work done in accordance with the OMRRR Manual to ensure adequate backing up of data and maintenance. Refer to Appendix B for specific inspection checklists.
- To have an attendant on site and on time to make the operation safe within the required operational constraints.
- To have damaged equipment repaired or replaced in the shortest possible time.
- Copies of As-Built documents and updates if modifications are made after construction.

- List of parts including manufacturer, catalog number and other pertinent information.
- Inventory of spare parts, including location of storage and shelf life of items.

8.1.2 Preparation for Operation

Before The Rainy Season

The steel miter gates are recessed in the cast-in-place concrete walls, allowing potential debris and drift to collect over time. Therefore, each gate shall be checked for obstructions prior to initiating floodgate closure to ensure the gate can swing unobstructed into the closed position. Tree limbs and trash may get lodged in the recess over time. The operator shall inspect the gates in the recessed position from the deck and flush out accumulated silt, drift and debris using the movement of the gates. The operator shall visually inspect and manually remove as many floating foreign objects as possible using debris hooks or debris rakes to manually move the debris away from the abutment recesses. In the event that heavy debris is clearly obstructing the gate and cannot be removed by operator manual effort, a crane barge and diver may be required to aid in removing heavy objects. To reduce the level of siltation from obstructing the gate, it is suggested that the gates be exercised a minimum of once every six (6) weeks to sweep silt away from the gates and abutment recesses. A full closure operation where the gates are locked together is not necessary for this operation and this operation can be performed more frequently at the operator's discretion and monitoring of the debris build-up in the area.

Both recesses (abutments) and gate sill shall be clean of foreign objects or mud that may hinder operation of the gate. The gate shall be checked for proper operation once the operator confirms both gate recesses are clean and free of debris. Then, the gates should be operated through the entire travel a sufficient number of times to indicate that all parts and equipment are in proper operating condition. The gates shall be positioned such that, when closed, there shall be negligible leakage at the miter, sill, and machinery block seals. With the gates in the closed position, the operator shall check the entire length of the gatebay sill from the deck, for debris. The operator shall remove all found foreign objects throughout the structure and again may identify heavy objects that may require the use of a crane for removal from the structure. The gates shall be reopened completely and recessed. The operator shall visually check the condition of the visible coating system (See Inspection Checklist for miter gates in Appendix E) from the deck and report any abnormalities.

Prior to operation, machinery slide and pivot areas, including:

- Bearings on the gate operator cardanic rings,
- Clevis connection between gate operator and gate,
- Clevis connection between latch operators and latch, and
- Latch bar and receivers shall be inspected and cleaned of any foreign debris.

Where required, lubrication shall be applied to the lock bar receivers and pivot bearings. Refer to Appendix L and M for all manufacturer recommended points of lubrication.

Current for each phase of each motor shall be measured and recorded on forms located in Appendix C during a full opening and closing operation sequence using calibrated and sufficiently rated clamp-on amp meters. Measurements shall be recorded by qualified personnel utilizing appropriate personal protective equipment (PPE) for exposure to 480 VAC.

During operation, the actuators for each gate leaf shall be monitored for abnormal noise or movement that could indicate foreign debris in pivot bearings or movement of the machinery supports. Similarly, the latch operators and their receivers should be inspected during operation and any abnormalities noted and addressed. The latch bars should drive smoothly and stop when fully driven (bar taper extends just beyond the receiver on the far leaf) and fully pulled (bar end is flush with the receiver on the near leaf).

The inventory of spare parts, including the backup generator, shall be inspected prior to the rainy season. Parts that are missing, damaged or have passed their life expectancy shall be replaced prior to the rainy season to ensure that all spare parts are readily available.

During The Rainy Season

Certain activities shall be performed during the rainy season to ensure proper functioning when a flood event may threaten the Stockton area. Inspection for evidence of sediment and debris along the floodgate and both recess cavities shall be performed every three weeks. A high pressure hose for blowing sediment out of the notches as well as crane and cabling to remove large objects should be made available as needed. The floodgate shall be operated a minimum of every two (2) weeks or within three (3) days after equipment repair or major debris removal by crane is performed.

Approaching Storm or Flood Event

In the event of an approaching storm or flood threat, preparations shall begin with consideration to its timing. The preparation timing sequence may be found in Appendix A – Operations Reference Guide.

Gate Closure Procedure

Prior to operation, inspect the gate operators, latch operators, latch bars, and latch bar receivers to confirm that no foreign debris is present.

The gate operating system is an electrically operated system. There are two actuators for each gate. See photographs of machinery and controls in Appendix G. The following electrical equipment associated with gate operation is located on the cellular wall on the south side of the gate structure:

- Incoming service equipment
- Electrical distribution equipment
- Control cabinet and motor control accessories

The control stand is located on the south side of the gate structure along the floodwall and is used to locally operate both gate leaves. The control system as designed and built

allows for separate closing of each gate and latch. The control stand panel is lockable when not in use. The layout is equipped with a two-position cylinder lock key to toggle between remote and local control and an emergency stop push button to stop control power to both gates and latches in the event of an emergency. This control stand is also equipped with selector switches for operation of the siren and strobe and indicator lights for status of each gate and latch. Limit switches provide information on gate and latch status and determine the end of travel of the gate leaves and latches in both directions. Each gate and latch has a corresponding three-position selector (open-off-close) switch to operate and stop each component. An elevation view of the electrical panel is provided in Figure 4 and a layout view of the control stand is provided in Figure 5. The gate operator locks the panel when operation is complete.

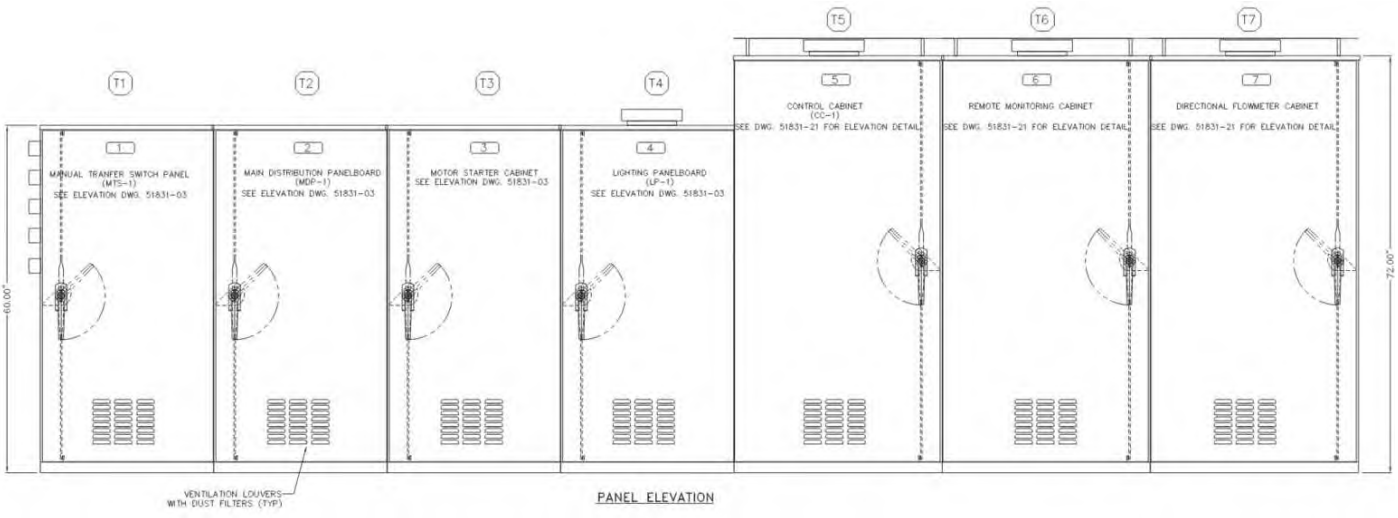


Figure 4. Electrical Panel Elevation

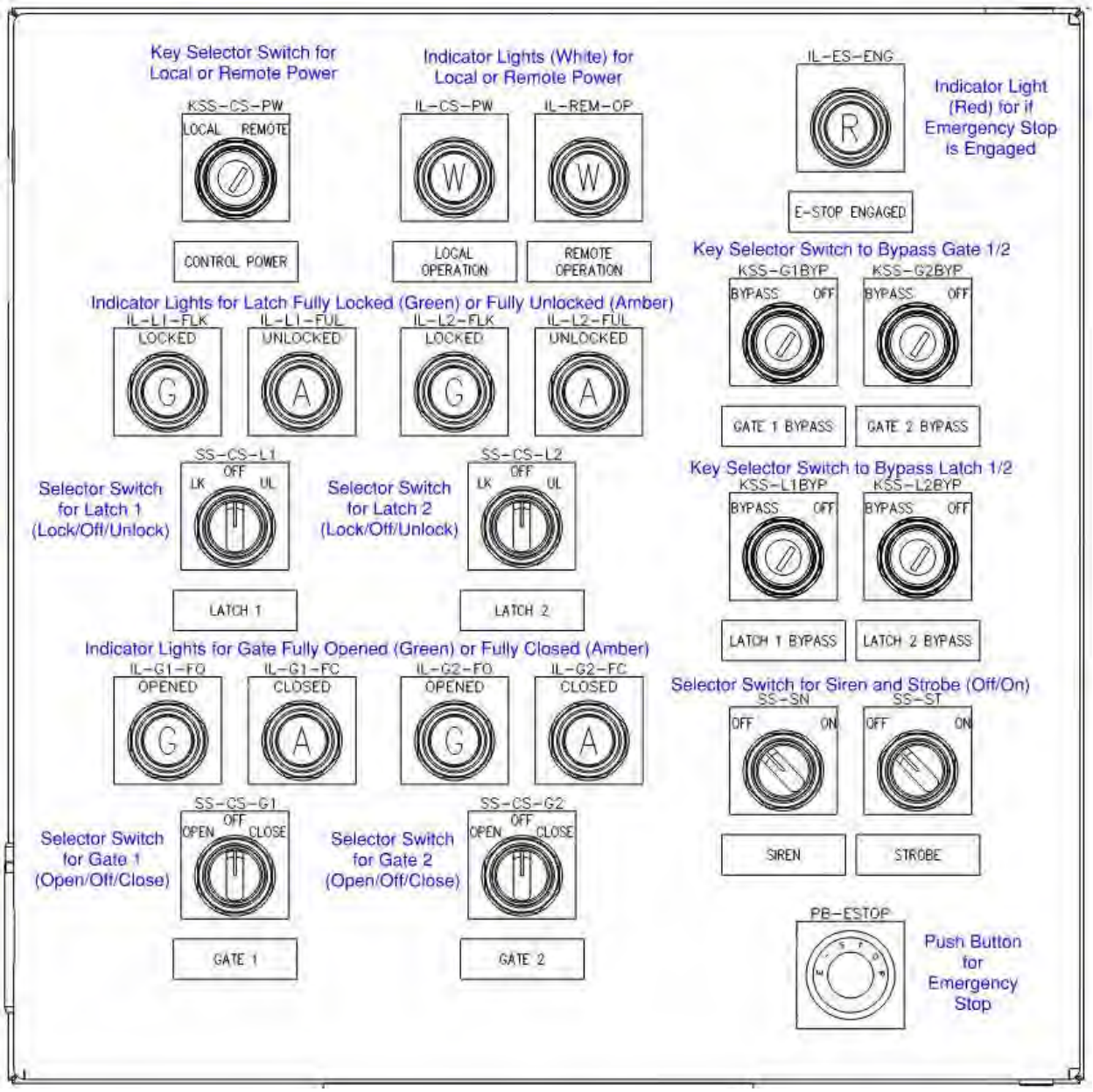


Figure 5. Gate Control Stand Layout

The gate closure procedure is as follows:

- <u>Procedure whether utility power is available or not</u>
    - Assess the marine traffic situation on the canal. Notify the Coast Guard of imminent gate closure by telephone and distribute navigation bulletin via fax from business office of SJCFCWD/SJAFCA.
    - Visually inspect the actuators, limit switches, control cabinet, control stand, and accessories to verify that the equipment appears to be in serviceable condition following the inspection checklist in Appendix C.
    - Check for foreign items left on any of the equipment such as tools, rags, etc.

- Check for loose or broken brackets and parts.
- Check for leaks in general throughout.
- Check all conduit for visual damage.

- Procedure continues when utility power is not available
  - Verify that the portable back-up generator appears to be in serviceable condition.
  - Set the manual transfer switch (MTS) to be fed from the back-up generator located in the far-left cabinet.
  - Start the generator engine.
  - The generator engine will go up to full operational speed automatically.
  - Check for oil pressure immediately after the engine starts. If the recommended pressure is not evident in 10 seconds, shut the engine down.
  - Continue monitoring the generator engine temperature and pressure until normal conditions are achieved.
- Procedure continues whether utility power is available or not
  - Use the control stand to locally operate the gates and latches.
  - Check that the two-position cylinder lock is in the “LOCAL” control power position and the corresponding “LOCAL OPERATION” white indicator light is illuminated.
- Procedure continues for closing the gates
  - Check that both Gate 1 and Gate 2 green “OPENED” indicator lights are illuminated.
  - Verify there are no obstructions to prohibit the gates from closing.
  - Turn both Latch 1 and Latch 2 selector switches to the unlock “UL” position.
  - Both latches will begin to unlock until the corresponding fully unlocked limit switch stops each latch in the unlocked position. The latches will not actuate unless the gates are in the fully opened position.
  - Observe the movement of each latch during the unlocking operation. If the fully unlocked limit switch fails to stop the corresponding latch in the fully unlocked position and attempts to over-travel, turn the corresponding latch selector switch to the “OFF” position.
  - If either latch fails to move and the corresponding gate is indicated as being fully open, the corresponding latch may need to be bypassed and/or manually actuated. See Section 9 for Emergency Operations.
  - Check that both Latch 1 and Latch 2 amber “UNLOCKED” indicator lights are illuminated. Turn both Latch 1 and Latch 2 selector switches to the “OFF” position.

- Prior to gate “CLOSE” operation, turn the Siren and Strobe selector switches to the “ON” position to provide an audible and visual alarm that the gates will begin closing.
- Turn both Gate 1 and Gate 2 selector switches to the “CLOSE” position.
- Both gates will begin to close until the fully closed limit switches stop the gates in the fully closed position. Each gate will not actuate unless its corresponding latch is in the fully unlocked position.
- Observe the movement of each gate during the closure operation. If the fully closed limit switch fails to stop the corresponding gate in the fully closed position, turn the corresponding gate selector switch to the “OFF” position.
- If either gate fails to move and its corresponding latch is indicated as being in the fully unlocked position, the corresponding gate and/or latch may need to be bypassed or manually actuated. See Section 9 for Emergency Operations.
- Check that both Gate 1 and Gate 2 amber “CLOSED” indicator lights are illuminated. Turn both Gate 1 and Gate 2 selector switches to the “OFF” position.
- Turn the Siren and Strobe selector switches to the “OFF” position.
- Turn both Latch 1 and Latch 2 selector switches to the lock “LK” position.
- Both latches will begin to lock until the corresponding fully locked limit switch stops each latch in the fully locked position. The latches will not actuate unless the gates are in the fully closed position.
- Observe the movement of each latch during the locking operation. If the fully locked limit switch fails to stop the corresponding latch in the fully locked position and attempts to over-travel, turn the corresponding latch selector switch to the “OFF” position.
- If either latch fails to move and the corresponding gate is indicated as being fully closed, the corresponding gate may need to be bypassed or manually actuated. See Section 9 for Emergency Operations.
- Check that both Latch 1 and Latch 2 green “LOCKED” indicator lights are illuminated. Turn both Latch 1 and Latch 2 selector switches to the “OFF” position.

8.1.3 After the Storm

The floodgates will be opened based upon review of water elevations, climatological conditions, and tides later in the day or days. See the decision process in Appendix A – Operations Reference Guide.

Re-opening Conditions

The decision as to when the floodgate will be reopened rests entirely with SJCFCWCD based on climatological conditions and conditions at site. The operations team will mobilize and proceed accordingly.

A crew to open the floodgate shall be available to remove any sediment or objects that may impede opening the gates.

The crew needed for gate operation should include:

- Equipment operator
- Mechanic

Note: if larger, heavier debris is in the area or obstructing the gate from re-opening, a barge mounted crane or other heavy rigging equipment might be necessary to remove the debris prior to operation. Refer to section 8.3 for barge vendors.

Mobilization Requirements

Once a decision is made to open the floodgate, the crew and equipment shall mobilize to the site. The equipment required for gate operations should include:

- Mechanics hand tools for troubleshooting and servicing gate and lock operators.
- Portable Generator and drill sized to operate the gate and lock operators in the absence of utility power. Note that the gate operating system has two means of being operated by generators in the loss of utility power. A larger sized generator may be plugged into the manual transfer switch located on the south side of the gate structure on the lefthand side of the electrical cabinet to power the gate and lock operators directly. A smaller sized generator may be used to power a corded drill attached to emergency input on the back of each gate or lock actuator. See Section 9 – Emergency Operations.
- Ropes, slings, boat hooks, debris rakes and miscellaneous rigging accessories to rig small and moderate size debris away from the gates.

Gate Opening Procedure

A gate opening criteria for the floodgate was developed to ensure velocities exiting the structure do not substantially exceed 2.5 fps in order to ensure the integrity of the riprap and the operability of the gate. The gate should not be opened with any differential head on the flood side; slack tide is the goal for gate operation unless closing the gate under flow is the only option in the event of an extreme emergency. Should a reverse head of greater than three inches be encountered on the protected side, the gate should be opened.

The gate opening procedure is as follows:

- <u>Procedure whether utility power is available or not</u>
    - Assess the marine traffic situation on the canal. Notify the Coast Guard of imminent opening by telephone and distribute navigation bulletin via fax from business office of SJFCWCD.

- Visually inspect the actuators, limit switches, control cabinet, control stand, and accessories to verify that the equipment appears to be in serviceable condition.
- Check for foreign items left on any of the equipment such as tools, rags, etc.
- Check for loose or broken brackets and parts.
- Check for leaks in general throughout.
- Check all conduit for visual damage.

- Procedure continues when utility power is not available
  - Verify that the portable back-up generator appears to be in serviceable condition.
  - Set the manual transfer switch (MTS) to be fed from the back-up generator.
  - Start the generator engine.
  - The generator engine will go up to full operational speed automatically.
  - Check for oil pressure immediately after the engine starts. If the recommended pressure is not evident in 10 seconds, shut the engine down.
  - Continue monitoring the generator engine temperature and pressure until normal conditions are achieved.
- Procedure continues whether utility power is available or not
  - Use the control stand to locally operate the gates and latches.
  - Check that the two-position cylinder lock is in the “LOCAL” control power position and the corresponding “LOCAL OPERATION” white indicator light is illuminated.
- Procedure continues for opening the gates
  - Check that both Gate 1 and Gate 2 amber “CLOSED” indicator lights are illuminated.
  - Verify there are no obstructions to prohibit the gates from opening.
  - Turn both Latch 1 and Latch 2 selector switches to the unlock “UL” position.
  - Both latches will begin to unlock until the corresponding fully unlocked limit switch stops each latch in the unlocked position. The latches will not actuate unless the gates are in the fully closed position.
  - Observe the movement of each latch during the unlocking operation. If the fully unlocked limit switch fails to stop the corresponding latch in the fully unlocked position and attempts to over-travel, turn the corresponding latch selector switch to the “OFF” position.

- If either latch fails to move and the corresponding gate is indicated as being fully closed, the corresponding latch and/or gate may need to be bypassed or manually actuated. See Section 9 for Emergency Operations.
- Check that both Latch 1 and Latch 2 amber “UNLOCKED” indicator lights are illuminated. Turn both Latch 1 and Latch 2 selector switches to the “OFF” position.
- Prior to “OPEN” operation, turn the Siren and Strobe selector switches to the “ON” position to provide an audible and visual alarm that the gates will begin opening.
- Turn both Gate 1 and Gate 2 selector switches to the “OPEN” position.
- Both gates will begin to open until the fully open limit switches stop the gates in the fully opened position. Each gate will not actuate open unless its corresponding latch is in the fully unlocked position.
- Observe the movement of each gate during the opening procedure. If the fully open limit switch fails to stop the corresponding gate in the fully opened position, turn the corresponding gate selector switch to the “OFF” position.
- If either gate fails to move and its corresponding latch is indicated as being in the fully unlocked position, the corresponding gate and/or latch may need to be bypassed or manually actuated. See Section 9 for Emergency Operations.
- Check that both Gate 1 and Gate 2 green “OPENED” indicator lights are illuminated. Turn both Gate 1 and Gate 2 selector switches to the “OFF” position.
- Turn the Siren and Strobe selector switches to the “OFF” position.
- Turn both Latch 1 and Latch 2 selector switches to the lock “LK” position.
- Both latches will begin to lock until the fully locked limit switch stops the each latch in the fully locked position. The latches will not actuate unless the gates are in the fully opened position.
- Observe the movement of each latch during the locking operation. If the fully locked limit switch fails to stop the corresponding latch in the fully locked position and attempts to over-travel, turn the corresponding latch selector switch to the “OFF” position.
- If either latch fails to move and the corresponding gate is indicated as being fully opened, the corresponding gate may need to be bypassed or manually actuated. See Section 9 for Emergency Operations.
- Check that both Latch 1 and Latch 2 green “LOCKED” indicator lights are illuminated. Turn both Latch 1 and Latch 2 selector switches to the “OFF” position.

8.1.4 Gate Operating Machinery

8.1.5 Electrical Equipment

Incoming Service Equipment

Electrical power for the floodgate structure is 480 V, 3 phase, 100 A. Power is obtained from the utility during normal operations; a back-up generator will be brought on site to operate the gates in the event of a utility power outage. Utility power will come from the southeast side of the site along Dad's Point.

Electrical Distribution Equipment

General

Power for actuators, lighting, controls, receptacles, cameras, heaters, and the strobe/siren is distributed to the entire gate structure from equipment located on the south side of the gate structure on the cellular wall.

Safety

Electrical distribution equipment enclosures shall remain locked and only accessible to authorized personnel. Special care shall be taken around electrical distribution equipment in accordance with EM 385-1-1 Safety and Health Requirements Manual and the National Electric Code (NEC). Particular attention shall be paid to loose connections, deteriorated wiring insulation, frayed wires, and inadvertent electrical grounds or shorts.

Panelboards

Circuit breakers inside panelboards must be operated by authorized personnel only. Breakers which are not connected to field wiring (spares) must be left in the off position. Breakers which have tripped (as indicated by the breaker trip indicator) may be switched off, and then on again, once the cause for the initial trip is assessed and corrected.

Transfer Switch

Operating procedures for the manual transfer switch (MTS) are provided in Appendix N – O&M Manual for Control Equipment.

Alarm and Indication Systems

General

The alarm and indication systems provide basic equipment and environment status information such as gate and latch positions, control location, control cabinet door status, water levels on both sides of the structure, rain fall quantity, and directional water flow.

Control Stand

The control stand located along the floodwall closest to the gate structure on the south side provides visual indication on the gate and latch positions, control location, and control cabinet door status. Green indicator lights are illuminated when the associated

gate is open or the associated latch is locked. A red indicator light is illuminated if the control cabinet door is opened. Amber indicator lights are illuminated when the associated gate is closed or the associated latch is unlocked. White indicator lights are illuminated when the controls are available remotely or locally.

Remote Monitoring Cabinet

The remote monitoring cabinet is located near the electrical distribution equipment on Dad's Point. The equipment logs status information for gate positions (fully opened or fully closed), latch positions (fully locked or fully unlocked), gate statuses (opening or closing), latch statuses (locking or unlocking), bypass switch statuses, control location (remote or local), siren operation, and strobe operation. Additionally, it will log the height of the water on both sides of the wall, rainfall quantity, and directional water flow. This data stored on a datalogger will then be transmitted to the County network via an Internet connection.

Navigation Aids

Both audible and visual navigation signals are controlled via selector switches on the control stand. The control stand is located on the floodwall, southeast of the gate structure. Additional information on the audible and visual signals can be found in Appendix J - Submittal Data.

Lighting Systems

General site lighting is provided for safe access. Light fixtures are LED. All gate wall light fixtures are manually switched via 3-way light switches. Two sets of switches are located on both sides and both ends of the gate structure. All lighting on Dad's Point is controlled via photocells, with one located on each fixture. Additional information on the lighting systems can be found in Appendix I - As-Built Information and Appendix J - Submittal Data.

8.2 Floodwall

8.2.1 Descriptions of the Protection System Elements

The floodwall consists of a cellular structure with diaphragm cells filled with granular material extending from Dad's Point to the Stockton Golf and Country Club on the north bank of the San Joaquin River. The sheets used for the cellular structure will have a top of wall elevation of 15.0 feet and a bottom of wall elevation of -70.8 feet. The sheet pile tie-ins at Dad's Point to the south and Stockton Golf and Country Club to the north will both be lined with RSP to minimize potential future erosion. A detailed description of the sheet pile wall can be found in Section 1.2.1.

8.2.2 Flood Event Inspection Patrols

Floodwalls shall be patrolled hourly when the floodwaters rise. Inspectors shall look for evidence of sheet pile wall distortion, interlock damage, overtopping, scour, the presence of leaks, seepage through the wall, boils, etc. Areas of obvious and significant distress to

the wall shall be further evaluated and, if determined to be necessary, temporarily repaired as soon as possible.

8.2.3 Post Flood Event Operations

Refer to Section 10 for maintenance and inspection requirements. The floodwall shall be inspected for distortion to the sheet piles, damage to the interlocks, and damage or undesirable movements along the alignment.

If such observations are made during the post event inspection, action shall be taken to schedule repairs, maintenance, or other activities identified in the post-flood event inspection report. The checklists attached to this document shall be completed as part of the post-flood event inspection for the various project components and filed as a part of the record for that event.

8.3 Stop Logs

8.3.1 Description of the Stop Logs

The stop logs consist of six manufactured steel stoplogs with a dimension of 50’ x 6’-9”. The stoplogs create watertight barriers on the Smtih Canal and the Stockton Deep Water Channel sides of the floodgate when deployed and installed. When this barrier is deployed, dewatering methods can be used to remove all water contained between the stoplog barriers for inspection, maintenance or replacement of components that would otherwise be inaccessible. The O&M Manual for the Stop Log system can be found in Appendix K.

When not deployed during dewatering events, the stoplogs are stored on permanent racks at the DWR storage facility on W Weber Avenue in Stockton, CA (See Figure 6).



Figure 6. Stop Log Storage Location

The stoplog storage facility includes two (2) permanent storage racks that house three (3) stoplogs and the lifting beam. Additionally, there are three (3) transit racks that are stored adjacent to the permanent racks to be used for deployment. Each transit rack holds two (2) stop logs at a time.

8.3.2 Deployment of Stoplogs

The stoplogs shall be transported by crane and barge from their storage location to the floodgate structure. This is accomplished by moving all three travel racks to a barge via land-based crane, and then via the same crane moving all six stoplogs onto the barge (See Figure 7).



Figure 7. Stop Log Deployment Layout

1. Position land crane in an orientation best suited to lift the stoplogs, and position the barge as close as possible to the shoreline adjacent to the permanent storage location at W Weber Ave.

2. Place the three transit racks on the barge at the loading area.

a. Don’t remove the logs from the rack until the storage racks are in place. If the logs are stacked on the floor this will damage the bottom seal of the logs.

3. Prepare the first stoplog to be lifted from the permanent storage rack and remove the bolts securing the log from the permanent rack. Use 400-ton crane to lift one

stoplog and lifting rack (48,000 lbs total) from permanent storage location to transporting rack on barge.

4. Use 400-ton crane to place second stoplog on transporting rack on barge.

5. Repeat steps 2-4 until all three transporting racks and six stoplogs are loaded onto the barge.

6. Transport the barge to the gate structure using the tugboat.

7. Using the barge-mounted crane, place the log marked “Lower Log” into the gate structure. Note, the smooth side marked “Miter Gate Side” should be facing inward toward the miter gate. Important: the stoplogs are labelled with their position (e.g. Lower Log, Upper / Middle Log). Position the logs during transportation so that the logs can be placed in the correct order. A diver should confirm correct placement of each stoplog.

8. Place all 6 logs in their corresponding position.

8.3.3 Post Deployment Operations

Once all stoplogs have been installed, the dewatering process may begin. Stoplogs shall be removed in a reversed process as deployment. After inspection/maintenance has been completed, return the stoplogs to the permanent storage rack by:

1. Use the barge crane to remove the stoplogs from the gate to the transportation rack on the barge (one at a time).

2. Transport to the DWR storage site.

3. Unload the stoplogs from the barge to the permanent storage rack using the land crane.

4. Secure each stoplog to the storage rack with bolts.

8.3.4 Potential Vendor Contact Information

Table 5. Potential Vendor Contact Information

Potential Barge Operators	
Lind Marine	(707)762-7251
	customerservice@lindmarine.com
Vortex Marine Construction	(510) 261-2400
Land Based Crane	
Maxim Crane Works	(209) 464-7635

9 Emergency Operations

9.1 General

Emergency operations that are most probable due to the environment associated with a flood control and navigation gate are total and complete failure of both utility and mobile back-up electrical power and vessel collisions that substantially weaken or damage the structure, and/or cause an oil spill and ignite potentially dangerous surface water fires. The following sub-sections layout the procedures required to address these emergencies at the time of occurrence for electrical power failure and oil spills.

Surface water fires due to fuel spills are issues that SJAFCA must address with the U.S. Coast Guard at (202) 372-2231.

In case of human loss of life or injury due to collision, explosion, or fire, the Search and Rescue Office of the U.S. Coast Guard should be notified at (202) 372-2086.

9.2 Floodgate Failures

9.2.1 Opening or Closing Gates Manually

Emergency Procedure for By-passing Gate Machinery

Place “Hand-off-Auto” in “Hand” Position (if applicable)

- Procedure for emergency operation of the floodgates
    - Assess the marine traffic situation on the canal. Notify the Coast Guard of imminent opening by telephone and distribute navigation bulletin via fax from business office of . SJCFCWD/SJAFCA
    - Visually inspect the actuators to verify that the equipment appears to be in serviceable condition.
    - Check for foreign items left on any of the equipment such as tools, rags, etc.
- Operate latch bars
    - Engage manual operation of the latch actuators via the interlock on the back of the actuator motor.
    - Attach a portable actuator or drill to each latch actuator and fully unlock the latch bars.
    - Confirm that the latch bars are fully unlocked and that the ends of the bars are flush with the receiver on the near gate.
    - Disengage manual operation of the latch bars.
    - Note: locking the latch bars is the same procedure but the manual operator turns in the opposite direction. The bar taper will extend just beyond the receiver on the far leaf when fully locked.
- Operate floodgates

- Confirm the latch bars are unlocked at end of each gate.
- Engage manual operation of the gate actuators via the interlock on the back of the actuator motor.
- Attach a portable actuator or drill to each gate actuator in turn and fully close/open gates.
- Confirm that the gates are fully seated on the bumper blocks if open or fully seated on the seals at the miter ends if closed.
- Disengage manual operation of the gate operators.
- Lock the latch bars following the procedure above.

9.2.2 Securing Gates in Closed Position during Flood Events

In the event of an electrical power failure requiring the gates to be closed by external means, i.e. a service boat and/or winches, the gates shall be latched together using marine-type mooring rope or wire rope to ensure that a reversal of hydraulic head on the gates cannot open or separate the miter gates once they have been closed; this procedure will serve as a back up to the latching system. The gate operators should be aware that the current in the canal may cause the closing speed for the miter gates to accelerate and slam against the adjacent gate or gate stops and harm the gate and/or machinery. It is imperative the gates be operated under a slack tide to avoid structural damage due to slamming unless there is a case of extreme emergency.

Prior to operating the gates, the latches must be pulled by auxiliary means. If the latches cannot be operated, the latch assemblies must be unbolted from their base plates and removed from the gate. The gate operators must also be disconnected from the gates and pivoted such that they do not interfere with gate operation.

9.2.3 Closing Gates for Oil Spills

In the interest of preserving the water quality in Smith Canal and the San Joaquin Delta, it is prudent to temporarily close the floodgates and immediately notify the Marine Safety Office of the U.S. Coast Guard Command Center at (202) 795-6729 that navigation has been closed on Smith Canal due to an oil spill. Other contact lists are provided in Section 13 - Notification of Distress.

9.3 Documentation

All emergency actions taken to protect the facility and related features shall be reported by date, time of day, nature of emergency, nature of required action, authorities notified, assistance provided, and results achieved to counteract the incidents. All injuries to operating personnel shall be attended to immediately and referred to Emergency Medical Services in the City of Stockton.

9.4 Sources of Assistance

The following table identifies emergency contact information.

Table 6. Emergency Assistance

Fire	
Emergency:	911
Non-Emergency:	(209) 937-5172
Police	
Emergency:	911
Non-Emergency:	(209) 937-8377
24-Hour Watch Command:	(209) 937-8480
Medical	
Emergency:	911
St Joseph's Medical Center:	(209) 943-2000
Marine Safety	
Port of Stockton:	(209) 946-0246
US Coast Guard Pacific Southwest Maritime Emergency:	(510) 437-3701

10 Maintenance and Routine Inspection

There are several local agencies that will be responsible for maintenance for various project features including SJAFCA, San Joaquin County, the City of Stockton, and RD 1614. Figure 8 below details the maintenance jurisdiction for these agencies.

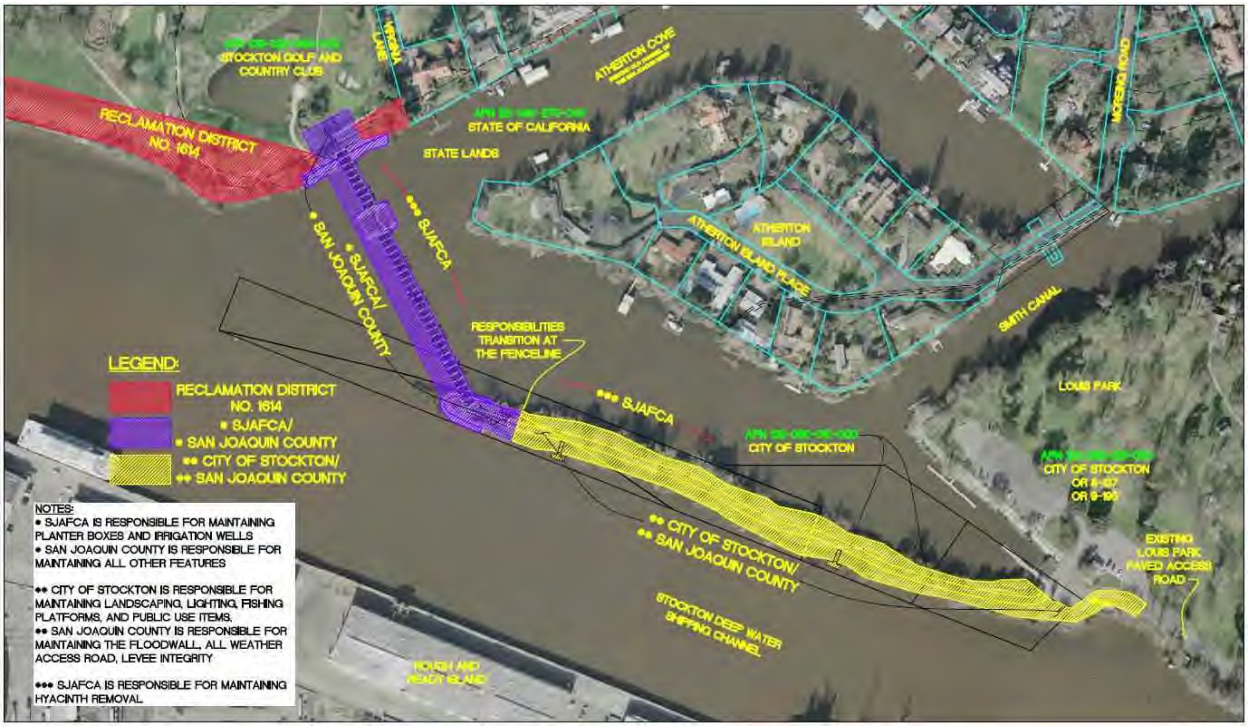


Figure 8. Smith Canal Gate Maintenance Jurisdictions

10.1 Floodgate Component Maintenance

The floodgate is comprised of two steel miter gates hinged to a cast-in place concrete monolith control structure. This floodgate structure blocks flood waters that would naturally flow into Smith Canal. Regular maintenance is required to ensure that the structure performs as expected for its intended purpose. Joint inspections of the exposed structure and machinery shall be made every four years. Major dewaterings shall be made every 10 years. Inspections shall be attended by representatives from SJAFCA, DWR, and the USACE. SJCFCWD/SJAFCA shall be responsible for coordinating closures to marine traffic with the USCG.

Refer to Appendix B – O&M Matrix for a detailed maintenance schedule.

10.1.1 General

The floodgate requires routine inspections of the concrete structure, miter gates, and machinery. This includes features such as joints, walls, bottom, gate recesses, sill, gate frames, gate members, skin plates, gudgeon and pintle assemblies, rack teeth, rubber seals, and any other structural component requiring unwatering for access. Repairs, maintenance, and inspections will include, but not necessarily be limited to:

- Sandblasting of fabricated steel structures and components.
- Painting.
- Replacing the rubber seals.

- Complete cleaning of the floodgate chamber including removal of debris and all foreign matter.
- Inspection of hinge and gudgeon assemblies.
- Any other underwater work that may be necessary.
- Inspection of above water components such as gear teeth, walkways, lift eyes, protection plate.

The public must be notified 120 days in advance of floodgate closing for major repairs and unwatering.

10.1.2 Floodgate Unwatering and Major Repairs

Routine maintenance and inspection before, during, and after the rainy season will dictate the scope of the major repair work to be performed during an unwatering.

Unwater and Re-water

The gatebay shall be unwatered in intervals of 15 years to allow for a thorough inspection of the submerged portion of the concrete structures and miter gates; and repair and painting of all underwater components. Unwatering of the gatebay will be accomplished with the gates in the closed position and by using steel stop logs located at the State Flood Emergency Materials Yard (see Figure 6). Installation of the maintenance stop logs is addressed in the Stop Logs section.

Allowable Water Elevations

For unwatering purposes, the gatebay has been designed for maximum water levels of elevation 12.0 NAVD on the DWSE side and elevation 4.0 NAVD on the protected side (Smith Canal Side). Water levels shall be monitored on both sides of the gatebay to ensure that these water elevations are not exceeded during unwatering operations. Re-watering of the gatebay will be required sufficiently in advance of these water elevations being attained. Since the water levels in the Smith Canal are completely dependent on prevailing climatic conditions in the area, unwatering during the summer season (May-September) will be most favorable.

Allowable Rates of Unwatering

Once the stop logs have been satisfactorily installed to form a temporary dam that holds back the water on the DWSC and Smith Canal sides of the gatebay, the unwatering can begin with a rate not to exceed an average rate of one foot per hour.

Method to Seal Gaps between Stop Logs

The stop logs for the gatebay are addressed under the Stop Logs section; however some seepage between stop log joints might occur. If during the unwatering process, the rate of seepage into the gatebay is unusual and noticeable, unwatering shall cease until the situation is investigated. The operator shall survey all leaks and determine whether sealing of existing gaps between needles joints with oakum is feasible. Oakum is a fibrous material that is fed into gaps to seal openings. Either reseating the stop logs or a

diver may be required to apply the Oakum to the poorly sealed joints. Once the gaps are filled with oakum, the unwatering operations may again be initiated. Some seepage can be expected and sump recesses are provided in the gatebay base slab to collect water for removal using small pumps.

Rates of Re-watering

The maximum re-watering rate shall not be more than two feet per hour.

Procedure if Stop Logs Should Overtop

In the event that rising tides on the DWSE side of the gatebay is predicted to cause overtopping on the DWSE side stop logs, all work inside the unwatered gatebay shall shut down and equipment secured until the tides recede.

Stop Logs

See section 8.3 for details on stop log deployment and operation.

Measurements

Six Settlement Reference Markers (SRM) were added to the top of the gatebay walls during construction. Additionally, piezometers were installed on the DWSE and Smith Canal sides of the gatebay structure. A plan showing locations of the SRMs is included in Appendix I. Measurements shall be taken prior to each inspection. Survey data shall include the control benchmark, date of survey, temperature and weather conditions, and the SRM elevation. Additionally, channel profiles and cross sections as indicated in Appendix I shall be taken by USACE.

Miter Gate Lifting, Removal and Replacement

The lifting lugs and lifting plan for the miter gates is located within Appendix J- Submittal Data for the Miter Gates.

Repair of Damage

Damage noticed on the gates during routine annual inspections, gate operation check during the rainy season, and following a storm must be documented and a damage assessment with respect to gate operability made. A structural engineer shall make an assessment in consultation with operations personnel. If the damage is discovered during the rainy season, a decision must be made on whether the gate(s) should be repaired immediately or if the repair can wait until the end of the rainy season. This decision will be based on the extent of the damage and likelihood that the damage could worsen.

Acceptable repairs to underwater or above water damage while the gate(s) is/are in the open position can be done when damage is small and repairs take no more than two days to complete. If the extent of the damage dictates removal of the gate during an approaching storm, a decision will be made on the best course to follow under the conditions. A structural engineer shall always approve all modifications and/or repairs to the floodgate structure whether temporary, emergency, or permanent and oversee work done on critical components.

Pintle and Gudgeon Assembly Refurbishing

The pintle assembly shall be refurbished after gate removal. Refurbishment shall consist of measurement of the existing pintle cup and pintle puck radii. If either of these exceeds allowable manufacturer's tolerances, they shall be replaced and re-finished per manufacturer's recommendations. If the measurements are within manufacturer's tolerances, the surface of the pintle cup and pucks shall be inspected. If the surfaces exceed the finish required by the manufacturer for proper operation, the pintle pucks and cup surfaces shall be re-finished. If re-finishing causes the fit between the pucks and cup to exceed recommended manufacturer tolerances, the pucks and/or pintle cup shall be replaced.

The gudgeon assembly shall be disassembled and inspected. The inspection shall determine the fit between the gudgeon pin and bushing. If the fit exceeds manufacturer's tolerances, the bushing shall be replaced. If the fit is within tolerance, the bushing surface finish shall be inspected. If the finish is not within manufacturer specifications, the bushing may be replaced or it may be operated as a lubricated bushing with the addition of a NGLI Grade 2 grease via the grease ports located on the outside of the gudgeon hub if manual lubrication of the gudgeon pin is selected rather than replacement of the bushing. The gudgeon bushing shall be inspected prior to operation in order to ensure proper lubrication.

Required Equipment for Unwatering and Re-watering

- Two hundred-fifty (250) ton crane barge capable of lifting 350,000 pounds at a 45 degree angle with a 150 foot boom.
- Two (2) welding machines, accessories, and grinders.
- Two (2) 250 psi air compressors.
- Unwatering pumps. (Four (4) 10-inch diameter or three (3) 12-inch diameter for unwatering and two (2) 3-inch diameter sumps for controlling minor leakage.)
- Complete set of diving equipment.
- Work lights, barricades.
- Sandblasting and painting equipment.
- Tugboat, dinghy.
- Rigging equipment – cables, slings, shackles, blocks.
- Night time lighting equipment.

Spare Parts Inventories

- Gate Seals – two (2) sets of vertical rubber seals; two (2) sets of bottom rubber seals at gate sill.
- Replacement limit switches for latch and gate position sensing.
- Actuator starters: one (1) set of contacts and one (1) coil for each starter.
- Indicator lights: six (6) indicating lights for each type used.

- Control relay: one (1) control relay for each type used.
- Navigation light: one (1) spare assembly for each type used included one lens of each color and size used.
- Gauge light: one (1) spare assembly.

Painting

Inspect the above water section of the gate prior to the rainy season every year for corrosion and repair where necessary, sandblasting and cleaning the metal and applying the above mentioned coating system. This touch-up painting may be performed with the gate in the open position. The floodgate should be completely repainted every ten to fifteen years (depending on existing conditions) during the dry season when in the dry (unwatered).

10.1.3 Floodgate Operating Machinery

ACME Screw Actuators and Dampening Mechanism

Maintenance of electro-mechanical operators to be performed by the manufacturer per manufacturer requirements as noted in Appendix M – O&M Manual for Latch Acturator.

Limit Switches

Confirm proper operation of switches at the correct point of movement for the gate and latches. Ensure all wiring connections are not loose.

10.1.4 Floodgate Electrical Equipment

Lighting

- Visually inspect light fixtures for operation when energized.
- Verify power is available at fixtures that do not operate.
- Replace lamps/LED arrays in fixtures that do not operate when energized.
- Test and maintain fixtures as recommended by the manufacturer and per information contained in Appendix O – O&M Manual for Lighting.

Electrical Distribution

Test equipment as recommended by the manufacturer. Manufacturer's recommendations can be found in Appendix N – O&M Manual for Control Equipment.

Control Stand

- Perform full test of gate and latch operation and interlocking annually. For each gate and corresponding latch:
    - With the gate in the fully open position and latch fully unlocked:
        - Temporarily disconnect the latch fully unlocked limit switch input.

        - Operate the control stand as if the gate were to be closed. Verify control logic is correct.
        - Reconnect the latch fully unlocked limit switch input. Verify control logic and indication are connect.
        - Simulate a gate fully closed input with a jumper wire across the gate fully closed limit switch input terminals in the control cabinet.
        - Operate the control stand as if the gate were to be closed. Verify control logic is correct. Once verified, remove jumper.
        - Temporarily disconnect the gate fully open limit switch input.
        - Operate the control stand as if the latch were to lock. Verify control logic is correct.
        - Reconnect the gate fully open limit switch input. Verify control logic and indication are correct.
        - Simulate a latch fully locked input with a jumper wire across the latch fully locked limit switch terminals in the control cabinet.
        - Operate the control stand as if the latch were to lock. Verify control logic is correct. Once verified, remove jumper.
    - With the gate in the fully open position and latch fully locked:
        - Temporarily disconnect the gate fully open limit switch input.
        - Operate the control stand as if latch were to unlock. Verify control logic is correct.
        - Reconnect the gate fully open limit switch input. Verify control logic and indication are correct.
        - Simulate a latch fully unlocked input with a jumper wire across the latch fully unlocked limit switch terminals in the control cabinet.
        - Operate the control stand as if the latch were to unlock. Verify control logic is correct. Once verified, remove jumper.
    - With the gate in the fully closed position and latch fully unlocked:
        - Temporarily disconnect the latch fully unlocked limit switch input.
        - Operate the control stand as if the gate were to open. Verify control logic is correct.
        - Reconnect the latch fully unlocked limit switch input. Verify control logic and indication are correct.
        - Simulate a gate fully open input with a jumper wire across the gate fully open limit switch terminals in the control cabinet.
        - Operate the control stand as if gate were to open. Verify control logic is correct. Once verified, remove jumper.

PLC Components

Maintain PLC components in accordance with the manufacturer's recommendations. Recommendations can be found in Appendix N – O&M Manual for Control Equipment.

Cameras and System Components

Maintain camera system components in accordance with the manufacturer's recommendations. Recommendations can be found in Appendix J - Submittal Data.

Navigation Aids

Maintain navigation signaling equipment in accordance with the manufacturer's recommendations. Recommendations can be found in Appendix J - Submittal Data.

10.2 Floodgate Component Routine Inspection

10.2.1 Floodgate Components

The floodgate is comprised of numerous steel and concrete elements that function together to block floodwater from the Delta into Smith Canal. The floodgate is founded on 36" diameter steel pipe piles tipped at EL -90.0 (82 feet long) that embed 5 feet into the 6 foot thick reinforced concrete base slab. A concrete sealing corbel protrudes vertically as a "lip" and serves as an emergency gate stop (to prevent gate damage if closed under flow with velocities higher than 2.5 feet per second) and also provide a positive seal closure. Concrete gatebay walls extend up from the base slab 22 feet and vary from 6 feet thick in the main sections to over 10 feet thick at the haunched sections near the hinge points. Each steel miter gate, as described above, is made up of seven girders that are approximately 3 feet deep. The miter gate leaf components, including the actuator and gudgeon connection assemblies, and all associated bolted connections and anchor bolts, are made of either painted or galvanized carbon steel, except for the seal assembly components and the female miter block, which are made of stainless steel. The steel skin plate is ½ inch thick and covers the entire upstream floodside (DWSE). Fenders and rub rails will be installed on the downstream or protected (Smith Canal) side for vessel protection with the gates in the open position. Steel walkways provide access for operation and maintenance activities for both sides of the gate structure. The miter gates are connected at the top and bottom respectively with gudgeon and pintle assemblies that are described in detail above in Section 8.1.1 - Description and Record Keeping.

10.2.2 Inspection Records and Record Keeping

Record keeping is a basic business practice and is applicable to all facilities. Complete, well organized records can help ensure proper inspection of facilities and equipment. Record keeping must be coordinated with all applicable governmental agencies and integrated with the development and inspection of the facility. Records shall include as a minimum:

- The date, exact place, time, name, description of activity, and observations.
- Name of inspector(s) and crew, where applicable.

- Analytical information as to the work done, repair, replacement, tests, and regular maintenance/inspection.
- Electronic photographs of deficiencies and remedial actions taken.
- Classification of event that prompted activity such as atmospheric river, regular maintenance/inspection, mobilization, reopening, gate closure/opening, or repair.
- Type of action taken for the applicable activity, whether safety, preventive, remedial, or replacement.

10.2.3 Gate Operating Machinery

- Visually inspect gate and latch operators before each operation.
    - Check for debris and deformation of operators or supports.
    - Check for corrosion or paint failure on operators or supports.
- If not operated otherwise, perform test operations of the gates in compliance with the minimum operating time frames noted in Section 8.1.2 Preparation for Operation.
    - Confirm smooth operation of latch and gate operators.
    - Confirm proper operation of brake releases on gate and latch operators.
    - Confirm operation of emergency actuator input on gate and latch operators by attaching and operating both latch and gate operators with emergency actuator.
    - Test interlocking on each operator with emergency actuator attached to confirm that internal motor on actuator cannot be operated with emergency actuator attached. Prepare this test such that the emergency actuator and personnel are not damaged or injured. The best method may through the use of a separate hex nut of the size of the auxiliary drive on the actuators that can be placed in the drive to engage the interlocking switch.

10.2.4 Miter Gates – Gate Structure

See Appendix E for the Miter Gate Inspection Checklist

10.2.5 Access and Walkway Platforms

The floodgate and floodwall are bridged by galvanized steel access platforms and walkways for safe operation and maintenance. The platforms are framed with channel and angle members with steel grating clip bolted to the framing. Railings are comprised of HSS tube members that are welded to the main floor channels. All walkways, railings, and stairways should be checked for loose panels or connections. These represent potential safety issues should regular inspection and maintenance of these items not be performed during routine floodwall and floodgate inspections.

10.2.6 General Surveillance of Floodgate and Adjacent Features

Surveillance of the structure shall be performed before and after the rainy season. Specifically, surveillance of the structure shall be performed after a flood event. The interfaces and tie-ins between the floodwalls and the floodgate structure shall be inspected for damage and leakage. The gate structure shall be inspected for damage and leakage. The gates shall be inspected to determine if there is flow of water through the gates due to damage or misalignment of the gates, missing gate seals, or a problem with or obstruction at the gate sill. It is expected that the primary hindrance with the gate sill will be that silt settles into the gate bays as well as the possibility of other debris going into the gate frame and recesses. Surveillance of the access walkway platforms shall also be performed. Surveillance of the fence and gates that surround the site shall be performed to identify damage. Damage to the fence or gates becomes a public safety issue to prohibit access to the site by unauthorized personnel. Surveillance of the general site and grounds shall be performed to maintain a safe site and provide a clean appearance to the public.

10.2.7 Electrical System

See Appendix C for Electrical Inspection Checklist

Lighting

- Visually inspect lamps/LED arrays for dark spots or other signs of imminent failure.
- Visually inspect fixture housings for signs of corrosion.
- Inspect fixtures and components as described in the manufacturer's maintenance manual. See Appendix O for lighting O&M Manual.

Electrical Distribution

- Visually inspect panelboards and transformer enclosures for signs of corrosion.
- Visually inspect terminals and bus bars for signs of warping, discoloration, or excessive heating.
- Visually inspect terminals and bus bars with an infrared scanner to identify any hot spots.
- Inspect panel and transformer components in accordance with the manufacturer's maintenance data. See Appendix N for control equipment O&M Manual.

Control Cabinet and Control Stand

- Visually inspect enclosures for signs of corrosion.
- Visually inspect relays for discoloration or other signs of impending failure.
- Visually inspect indicator lights for discoloration or other signs of impending failure.

PLC Components

- Visually inspect PLC components in accordance with the manufacturer's instructions. See Appendix N for control equipment O&M Manual.
-

Camera System Components

- Inspect camera system equipment components in accordance with the manufacturer's instructions. See Appendix J - Submittal Data.

Remote Monitoring Components

- Inspect remote monitoring system equipment components in accordance with the manufacturer's instructions. See Appendix J - Submittal Data.

10.2.8 Navigation Aids

- Visually inspect signage for corrosion.
- Inspect navigation signaling lighting/equipment components in accordance with the manufacturer's instructions. See Appendix J - Submittal Data.

10.3 Floodwalls

10.3.1 Description

The floodwall consists of a cellular structure with diaphragm cells filled with granular material extending from Dad's Point to the Stockton Golf and Country Club on the north bank of the San Joaquin River. The sheets used for the cellular structure will have a top of wall elevation of 15.0 feet and a bottom of wall elevation of -70.8 feet. The sheet pile tie-ins at Dad's Point to the south and Stockton Golf and Country Club to the north will both be lined with RSP to minimize potential future erosion.

10.3.2 Inspection Requirements

See Floodwall Inspection Checklist in Appendix D.

Inspections shall be made at least every 90 days, preferably prior to the start of flood season and immediately following any high water event. Particular attention shall be given, where applicable, to the following: condition of the sheet pile and adjacent granular fill materials, presence of sinkholes or other signs of settlement adjacent to the wall, presence of woody vegetation, and apparent seepage through the wall and seepage at tie-ins.

The inspection of the sheet piles shall include the recording and monitoring of corrosion, section loss, distortion, distress, and misalignment. Reductions to wall thicknesses shall be recorded along with the identifying location and size in order for future inspections to check against. Distortions/distress shall be measured and recorded. It is recommended that corrosion, section loss, and distortions be photographed.

If inspection data indicates that any of the above are progressing, further investigation by a registered engineer shall be performed. Areas of obvious, significant distress shall be further investigated, and all signs of distress at locations where accessories are (or were) attached to the floodwall shall be recorded and photographed. Repairs found necessary by such inspections shall be undertaken immediately. All repairs shall be in accordance with as-built drawings and specifications by methods acceptable in standard engineering practice.

10.3.3 Maintenance Requirements

All brush, trees, or other vegetation shall be removed within the floodwall. Fill within the floodwall shall be maintained to the design grades and section by correction of low areas caused by slides, settlement, or erosion. It shall be verified that there are no encroachments into the right-of-way that might adversely affect the structure or compromise its intended function. All debris or trash that has accumulated adjacent to the floodwall shall be removed on a regular basis. It shall also be verified that no fires are being built near the wall.

The alignment of the floodwall, both horizontally and vertically, shall be visually checked on a regular basis. If any type of movement is noted, the floodwall shall subsequently be surveyed. Survey results should be compared to as-built documents to determine the magnitude of any perceived movement. Movements considered significant by inspection and/or supervisory personnel will require immediate investigation to determine the cause.

It shall be verified that the sheet piles have not undergone significant corrosion or distortion to an extent that it might begin to affect the integrity of the floodwall or its water-tightness. All graffiti shall be removed from all surfaces, and painted surfaces shall be touched up on an as-needed basis.

10.4 Dad's Point Levee

10.4.1 Inspection

Inspections shall be made prior to the beginning of the flood season, immediately following each major flood event or at intervals not exceeding 90 days, and such intermediate times as may be necessary to ensure the best possible care of the levee.

See Appendix F for the Levee inspection checklist.

Each conduit, pipe, or culvert that passes through a levee shall be inspected every five years using video technology. Repairs found necessary by such inspections shall be undertaken promptly. All repairs shall be in accordance with the as-built drawings and specifications, and accomplished by methods acceptable in standard engineering practice.

10.4.2 Maintenance

All levee components shall be maintained in a good state of repair and in sound condition. Particular attention shall be given to grass maintenance and grass cutting.

Standards for accomplishing the above requirements are as follows:

- The grass shall be maintained to a maximum height of six inches by mowing at least every 30-days from April to October.
- The entire levee shall be mowed to the limits of the 15 feet vegetation-free zone, to the outer edge of drainage swale, or the limit of the permanent easement, whichever is the limiting distance and where it is practical to do so.
- The embankment shall be maintained to the as-built grade and section by the repair of washes, slides, and settlements.

- All brush, trees, or other undesirable woody vegetation shall be removed from the levee embankment and the subgrade material, topsoil, and grass shall be restored per the levee specifications.
- The levee shall be maintained free from all types of animal burrows. The animals shall be removed and the subgrade shall be replaced with compacted material. The topsoil and grass shall then be restored. If active animal burrows are present, an animal abatement program shall be implemented to remove burrowing animals from the levee and to prevent them from returning. Rodent control techniques involving fumigation, bait stations, bait broadcasting, or trapping have proven to be effective in certain situations. However, any chosen course of action must conform to local and state requirements.
- Unauthorized encroachments (excavations, structures, recreational vehicular traffic, or other obstructions) within the project easement area shall be removed or handled appropriately.
- The levee horizontal and vertical alignment shall be checked visually. If movement is noted, the levee shall then be surveyed. The survey results shall be compared to the as-built documents. Movements considered significant by inspection and/or supervisory personnel require immediate investigation to determine the cause.
- Conduits, culverts, and pipes of all diameters, dimensions, and materials that pass through any levee must be assessed using video technology. A structural or geotechnical engineer must review the latest condition assessment reports (video camera inspection report) for the levee system to see if any conditions or performance issues are noted that would reduce the engineer's confidence in the levee system.

10.5 Riprap Scour Protection at Tie-ins

10.5.1 Inspection

Inspections shall be made prior to flood season, immediately following moderate flood events as indicated by NWS river forecasts and warnings, or at intervals not exceeding 90 days. Additionally, bathymetric surveys of the RSP shall be performed every 5 years. During inspections, any indications of riprap being dislodged or scoured shall be noted and the defective areas promptly repaired. All repairs shall be in accordance with the as-built drawings and specifications by methods acceptable in standard engineering practice.

10.5.2 Maintenance

All brush, trees, or other woody growth shall be removed from the riprap prior to inspections outlined in Section 10.5.1. Any indications of dislodged or scoured riprap shall be noted and the defective areas promptly restored to project design conditions.

10.6 Recreational Platforms

10.6.1 Inspection

Inspections shall be made prior to flood season, immediately following moderate flood events as indicated by NWS river forecasts and warnings, or at intervals not exceeding 180 days. During inspections, any indications of pier scour or platform weakening shall be noted and the defective areas promptly repaired. All repairs shall be in accordance with the as-built drawings and specifications by methods acceptable in standard engineering practice.

10.6.2 Maintenance

All brush, trees, or other woody growth shall be removed from under the platforms prior to inspections outlined in Section 10.6.1. Any indications of pier scour or platform weakening shall be noted and the defective areas promptly restored to project design conditions.

11 Periodic Inspections and Instrumentation Evaluations

11.1 Periodic Inspections

11.1.1 General

Periodic inspections are required for those civil works structures whose failure or partial failure could jeopardize the operational integrity of the facility, endanger the lives and safety of the public, or cause substantial property damage. Inspections shall be conducted to evaluate the structural stability, safety, and operational adequacy of the current status for the project. The inspections and evaluations shall be supported by an appropriate instrumentation program that provides the timeliness and level of accuracy needed for evaluations under all operating conditions.

11.1.2 Qualifications of the Inspection Team

Inspection team personnel will consist of individuals qualified by experience in the design, construction, and operations of the project, and of individuals with appropriate specialized knowledge in structural project, and of individuals with appropriate specialized knowledge in structural, mechanical, electrical, hydraulic, embankment design, geology, soil mechanics, concrete materials, and construction procedures. As a minimum, the inspection team will consist of professional engineers in the following disciplines: structural engineer, mechanical engineer, electrical engineer, and geotechnical engineer.

11.1.3 Pre-Inspection Brochure Content

A technical packet shall be prepared in advance of the periodic inspection to familiarize inspection team members with general system features. The packet should be formatted to be incorporated into the final Periodic Inspection Report. This packet shall include, but not be limited to, the following:

a. General description of the project location and description of pertinent system features.

b. Vicinity and detailed map of the project.

c. Typical section drawings.

d. Drawings of closure structures.

e. If available, the most recent instrumentation data and/or plots, evaluation, and plan showing the instrumentation location. Where appropriate, cross-sections showing piezometric data shall show design uplift assumptions along with the current pressure line. Plots of piezometric elevation versus river elevation and plots of relief well or drain flow versus pool elevation shall be included.

f. Technical summary of foundation conditions, including any significant seismic sources.

g. Most recent culvert inspection results.

h. Most recent hydraulic and hydrologic information.

i. Summary of any significant issues that arose during construction that might have an impact on the performance of the system.

j. History of system deficiencies.

k. Most recent inspection report. Provide narrative of any special or unusual situations, as needed. Describe deficiencies corrected since the last inspection and past deficiencies not yet corrected.

l. Identification of fracture critical members.

m. Description of major flood events and system performance during those events.

n. Evaluation of design criteria as described in the Basis of Design Report (BODR) in Appendix R.

o. Federal and/or non-federal responsibilities for Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRRR) including annual O&M cost.

p. Emergency Action Plan.

q. Periodic Inspection Checklist.

r. Any approved variances or waivers that have been approved.

The pre-inspection brochure packet shall be completed and distributed to inspection team members at least 30 days prior to the inspection date.

11.1.4 Report Content

The Periodic Inspection Report shall present the results of each system inspection. The initial report shall provide a general system description and present the results of the inspection. Reports of subsequent inspections shall be supplementary to the initial report and only include the results of the inspection.

11.1.5 Report Format

The reports will be numbered sequentially, i.e., Report No. 2 would describe Periodic Inspection (PI) number 2. Specific details related to the publication of the report are as follows:

a. Text: All sections and paragraphs shall be numbered and shall be on 8 1/2 by 11 inch paper with sufficient margin on the left side for binding. Reproduction shall be accomplished by any available process with printing done head-to-head, if possible.

b. Drawings: Drawings or plates shall normally be 8 1/2 by 11-inch with sufficient margin on the left for binding. Foldouts normally shall not exceed 11 inches by 17 inches. Drawings and photos shall be included in the text or placed entirely in the appendices. However, any figure or drawing in the text shall support the written material. Sufficient plates shall be included to adequately represent the features of the flood protection system.

c. Binding and Cover: Reports shall have flexible paper or card stock, hidden-hinge covers with fasteners that facilitate removal and insertion of pages and drawings. Also, the name of the preparing agency and the date of inspection shall be shown on the cover.

11.1.6 Initial Periodic Inspection

The initial periodic inspection will be conducted by SJCFCWD/SJAFCA in cooperation with the USACE. The initial pre-inspection brochure and report should be prepared as noted above and should serve as a guide for subsequent documents and inspections throughout the life of the project.

11.1.7 Subsequent Periodic Inspections

Subsequent inspections will be made at one-year intervals for the following two years, at two-year intervals for the next four years and then gradually extended to five-year intervals if warranted by the results of the previous inspections. When the project is in the five-year cycle, an intermediate inspection of all or some of the features may be warranted. Selection shall be based on consequences of failure, age, and degree of routine observation, a natural event such as a flood, performance record, and history of remedial measures. Intermediate inspections shall also be made of any portion of a project exposed during unwatering that could not be accomplished during the scheduled periodic inspection. Periodic inspections should take place every 90 days.

11.1.8 Document Submittals

The pre-inspection brochure shall be furnished to USACE SPK Operations Division, Inspection of Completed Works (ICW) Program Manager 30 calendar days prior to the periodic inspection. Two copies of the draft report along with the electronic file shall be submitted to the ICW Program Manager within 45 calendar days after the periodic inspection. Also, all photographs taken by the inspection team shall be furnished to the ICW Program manager within one week after the inspection. The USACE will review the report and evaluate the proposed remedial actions for adherence to the LCA. Four copies of the final Periodic Inspection Report along the electronic file shall be provided within three months after the inspection.

11.2 Instrumentation Evaluation

11.2.1 General

An adequate level of instrumentation is needed to monitor and evaluate the structural integrity of the floodgate under operating conditions. The basic considerations of the floodgate's instrumentation program are subsurface settlement and channel scour. Reference bolts have been installed on the top of the gatebay and scour surveys will be taken in both approach channels.

11.2.2 Instrumentation Schedule

Data shall be acquired no sooner than three months prior to the next scheduled periodic inspection. The initial data set and survey layout should be contained in the first Periodic Inspection Report.

11.2.3 Data Evaluation

The tabulation of settlement data will be generated by spreadsheet software and plots of scour surveys should be generated such that numerous surveys, as they become available, are plotted along with the initial survey for comparison. An evaluation of the data taken will be included in the pre-inspection brochure and inspection report. A timely reduction and interpretation of instrumentation data are essential for a responsive safety evaluation of the project. Any distress or significant changes noted during the evaluation process should be immediately brought to the attention of SJAFCA and the ICW Program Manager.

11.2.4 Stage Records for Smith Canal

See Section 4.2.1 - Smith Canal Stage Data for Smith Canal stage-frequency data.

See Section 4.1 - Tides and Currents (Table 1) for typical, observed stage data at the Rough and Ready Island stage gage.

11.2.5 Land Surveys including Canal Bottoms

Monitoring by settlement gages and by land surveying shall be performed on the gate structure and the floodwalls prior to each operation. This is to determine if significant

settlement has occurred on these structural elements. The outfall flume, floodwalls, and channel bottoms shall be surveyed to determine if significant settlement has occurred and if the canal bottoms require either dredging, hydraulic sweeping, or riprap replacement. Stockton ship channel cut along Dad's Point and Atherton Island perimeter slope opposite gate structure shall be surveyed to check if scour is occurring and to assess if remedial action is needed. Bathymetric surveys shall be performed using side scan sonar.

11.2.6 Documentation

Reports on the surveillance performed as described in Section 11.1 - Periodic Inspections shall be developed and delivered to the USACE SPK Emergency Operations Division and the Operations Division. Stage and discharge records as described in Section 11.2.4 - Stage Records for Smith Canal shall be delivered to the USACE SPK Hydraulics and Hydrologic Branch, Emergency Operations Center, and the Operations Division. Reports on results of settlement gage readings and surveys obtained as described in Section 11.2 - Instrumentation Evaluation shall be developed and delivered to USACE SPK Emergency Operations Center and Operations Division.

12 Repair, Rehabilitation, and Replacement

12.1 Duties of San Joaquin County Flood Control and Water Conservation District

Repair is considered to entail those activities of a routine nature that maintains the project in a well-kept condition. Replacement covers those activities taken when a worn-out element or portion thereof is replaced. Rehabilitation refers to a set of activities as necessary to bring a deteriorated project back to its original condition. Repair, replacement, and rehabilitation actions are to conform to the project as-built plans and specifications unless other arrangements are made with the San Joaquin County Flood Control and Water Conservation District (SJCFCWCD) or the USACE SPK District Commander. These activities are the responsibility of the project sponsor.

Outlines of the maintenance and inspection records to be maintained and be made available for Government inspection are provided. Government inspections will be performed in consultation with SJCFCWCD. The District Commander may update the manual for changed conditions or, if warranted, to correct conditions discovered during inspections. Such updating will be performed in consultation with SJAFCA.

Evidence of distress at this structure must be reported immediately to SJAFCA and the District Commander. SJCFCWCD is solely responsible for the operation, maintenance, repair, replacement, or rehabilitation and SJAFCA will cover 100 percent of the associated project costs.

12.2 Duties of the Federal Government

The SPK District Commander must confirm any distress situation and determine if an engineering evaluation of the condition is required and if remedial measures are

required. He must immediately report the conditions through commercial (electronic) channels to the Emergency Management Element and Division and HQUSACE Commanders, and the Director of Civil Works.

12.3 Dad's Point Post-Seismic Emergency Response Plan

12.3.1 Background:

Due to the steep water side geometry (as evidenced by bathymetric survey) of the levee and the potential liquefiable soils identified during field exploration, results from the theoretical seismic stability analysis indicated a potential for seismic instability at the water side slope. The lateral extent (waterside) of theoretical slope instability is greater than the allowable "sacrificial" portion of the levee, resulting in a "stable" levee mass/prism less than the required minimum crown width of 20 feet, and minimum "stable" waterside and landside slopes of 3H:1V.

12.3.2 Post-Seismic Remediation Measures

Following a seismic event, Dad's Point shall be inspected for any seismic failures. The following tables outlines an action plan for identifying post-seismic failures and potential remediation measures.

Observation	**Corrective Action**	**Data to be Reported**	**Remarks**
Earthquake and Slope Failure – Liquefaction has initiated a slope failure with deep seated movement	(1) Drive PZ-40 sheetpiles where ground failures occurred (2) establish a monitoring program.	Monitor and report details for all other forms of distress.	Have additional equipment on standby. Consider risk of after-shock (potential for continued movement)
Liquefaction – Significant earthquake occurred with evidence of foundation liquefaction. There may be evidence of embankment cracking, bulging, settlement, or displacement.	(1) Monitor continuously during period at risk for after-shocks (2) Consider mobilizing equipment on standby	Monitor and report details for all other forms of distress.	Evidence of liquefaction consists of sand boils, concentrated seeps occurring after a seismic event.
Tremors – There was a minor seismic event well below the expected damage threshold for the project		Monitor and report. Consider supplemental annual inspection.	

Repairs would need to restore 10-year grade and dimensions within 8 weeks or less to avoid prolonged exposure of the community during flood season. To the extent that seismic damage to the levee system would be so significant and widespread that it would be infeasible to restore 10-year grade and dimensions within eight weeks, seismic strengthening is required to provide the urban level of flood protection. Further, the public should be informed as quickly as possible after a damaging earthquake as to system damages and the resulting interim level of protection that will be provided.

12.4 Documentation of Maintenance, Repair, Rehabilitation, and Replacement History

This OMRRR Manual will be updated systematically, at least every ten years and after every major rehabilitation by SJAFCA. The update will consist of, at a minimum, a formal review, with revisions if necessary. A description of the level of maintenance performed on each system and sub-system, including the benefits gained from tracking specific maintenance measurements, should be included in each update. Four copies of the updated manual along with the electronic file for the manual and revised or new drawings shall be furnished to the ICW Program Manager.

13 Notification of Distress

13.1 Reporting Procedures

Reports of distress found on any part of the floodgate, including floodwalls and levee tie-ins, shall be communicated to the U.S. Army Corps of Engineers (USACE), Sacramento District:

Emergency Management - 916-557-6911

Engineering Division - 916-557-5300

13.2 Distress Signals

A general description of items that indicate distress are:

- Water leaking across the control structure or water leaking through floodwalls and levees. Damage to the floodgates and debris in the gate recesses that would not allow the gates to close properly.
- Erratic movement, binding, excessive deflection, or vibration; frequent power interruptions of electric motors and components; or failure of any mechanical equipment should be reported immediately and inspections by competent professionals should be performed in due time.
- Differential settlement between structural components such as sheet piles, control structure, floodwalls and control structure, and floodwalls and levees. Distress would be indicated by significant cracking of reinforced concrete

structural components or unusual vertical or horizontal movement or cracking of abutments.

- Significant wear and tear; differential settlement; damage to fences, gates, or guide walls; or any other indications of potential failure that could inhibit the operation or endanger life and property would constitute distress.

13.3 Documentation

At the completion of the intermediate inspection, a report shall be compiled that indicates any distress issues or problems that were identified. For items that were found to be satisfactory, a statement indicating this shall be made in the report. These reports shall be submitted as described in Section 13.1 - Reporting Procedures above.

13.4 Contact List

13.4.1 San Joaquin County Flood Control and Water Conservation District (SJCFCWCD)

Water Resources Coordinator
San Joaquin County Flood Control and Water Conservation District
1810 East Hazelton Avenue
Stockton, CA 95205
(209) 468-3000

General Foreman
San Joaquin County Flood Control and Water Conservation District
1810 East Hazelton Avenue
Stockton, CA 95205
(209) 468-3000
eambriz@sjgov.org

13.4.2 San Joaquin Area Flood Control Agency (SJAFCA)

Executive Director
San Joaquin Area Flood Control Agency
2800 W. March Lane, Suite 200
Stockton, CA 95219
(209) 937-7900
Darren Suen, PE

13.4.3 San Joaquin County Office of Emergency Services (OES)

San Joaquin County Office of Emergency Services (OES)
2101 East Earhart Avenue, Suite 300
Stockton, CA 95206
(209) 953-6200

13.4.4 U.S. Coast Guard

USCG Station Rio Vista
900 Beach Drive
Rio Vista, CA
(707) 374-2871

USCG Sector San Francisco
1 Yerba Buena Road
San Francisco, CA
(415) 399-3547

13.4.5 U.S. Environmental Protection Agency

Region 9 (AZ, CA, HI, NV)
Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
Phone: (415) 947-8000
(866) EPA-WEST (toll free in Region 9)
Fax: (415) 947-3553
Email: r9.info@epa.gov

13.4.6 Port of Stockton Police Department

2201 West Washington Street
Stockton, CA 95203
(209) 946-0246

13.4.7 Stockton Fire Department

Fire Administration
400 E. Main Street, 4th Floor
Stockton, CA 95202
Phone: (209) 937-8801

Battalion Chief on Duty
(209) 464-4650

Station 6
1501 Picardy Drive
Stockton, CA 95203

Station 9
550 East Harding Way
Stockton, CA 95204

Appendices

Appendix A

Operations Reference Guide

Appendix B

O&M Matrix

Appendix C

Electrical Inspection Checklist

Appendix D

Floodwall Inspection Checklist

Appendix E

Miter Gates Inspection Checklist

Appendix F

Levee Inspection Checklist

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Electrical Control Photographs

Appendix H

Memorandum of Understanding

Appendix I

As-Built Information

Appendix J

Submittal Data

Appendix K

O&M Manual for Stop Logs

Appendix L

O&M Manual for Gate Actuator

Appendix M

O&M Manual for Latch Actuator

Appendix N

O&M Manual for Control Equipment

Appendix O

O&M Manual for Lighting

Appendix P

O&M Manual for Lighting Photocontrol

Appendix Q

O&M Manual for Jet Spray

Appendix R

Basis of Design Report

240628 OM Manual RD 1614

Submitted by Trustee Gulli

JOB NO. 0806-0410

OPERATIONS & MAINTENANCE MANUAL

RECLAMATION DISTRICT NO. 1614
WISCONSIN PUMP STATION UPGRADE

PREPARED FOR:

RECLAMATION DISTRICT NO. 1614
SMITH TRACT

PREPARED BY:

KJELDSEN, SINNOCK & NEUDECK, INC.
CIVIL ENGINEERS & LAND SURVEYORS

711 N. PERSHING AVENUE
STOCKTON, CALIFORNIA 95203
PHONE: (209) 946-0268

JUNE 28, 2024

PRIME PUMP

Reclamation District No. 1614
P.O. Box 4807
Stockton, CA 95204

C/O Arnaudo Construction Inc

RE: Wisconsin PumpStation Upgrade

As discovered in the field, the pump test results were inconclusive as to actual pump performance during an actual, major storm event. The recirculation system did not properly replicate real-world inlet flows to the site. During each round of pump testing, it was observed that return water reentering the sump through the existing discharge pipes created significant turbulence. The turbulence likely led to much more extensive air entrainment in the new pumps than would be expected during an actual rain event. As such, it is reasonable to expect the pump test results to be lower than rated values. Entrapped air will cause performance issues by become trapped in the low-pressure zone at the pump impeller eye, while the heavier liquid is thrown out of the pump's suction. These air bubbles obstruct fluid flow and reduce pump performance. The decrease in flow rate is accompanied by a decrease in total head and pump efficiency.

This letter is being sent to certifies that the two new pumps will perform as specified and submitted during a real-world storm event. The patterns used on this project's impellersthat had been previously factory tested on previous projects. Thismodel pump, the M18, has been in the Prime Pump line for 35 years and have had no known performance issues over that time. The pump's lateral and operations have been confirmed in the field to be correct, and during the winter storms seem to keep up with inlet flows and operate as designed.

If any additional concerns exist, please feel free to reach out with any questions.

Respectfully,

4/8/2024

John Theodosi

220608 ops manual.pdf

Submitted by Trustee Gulli

Reclamation District No. 1614

Smith Tract

Operations and Maintenance Manual

and

Flood Emergency Operations Manual

for

Levees and Terminal Drainage Facilities

Prepared by:

Kjeldsen, Sinnock & Neudeck, Inc.
711 N. Pershing Avenue
Stockton, CA 95203

July 24, 2017

Amendment A

(6/20/22)

Draft

Preface

Reclamation District No. 1614 (District) was organized under provisions of the California Water Code for the purpose of providing a means of flood control to the land encompassed by the District. Its main function is to adequately maintain the system of levees and drainage pumps which are the major components of the Flood Control System (FCS). A District Base Map and the Service Area and Drainage Sheds Map is included in Appendix A. This manual has been prepared as an information guide to aid and assist the District, especially in the case of a flood emergency situation.

The District has officially adopted the Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects, published by the State of California, Department of Water Resources (DWR), Division of Flood Management, (see Appendix E) to supplement District maintenance information. This manual has been prepared by DWR to assist reclamation districts in maintaining an adequate level of flood protection. It is specifically intended for use by the District Superintendent, or District Manager, who has primary responsibility for the operation and maintenance of the FCS. The duties and responsibilities of the Superintendent are defined for routine operations and maintenance of the FCS and in the event of a flood emergency.

This Manual includes information to guide and aid the District in the case of a flood emergency situation. It provides emergency triggers with telephone numbers, levee patrol procedures, instructions for possible hazardous levee conditions, District base map, District emergency supplies, and a list of government agencies along with their function. The District uses Standardized Emergency Management System (SEMS) in responding to emergency situation involving multiple jurisdictions or multiple agencies. To supplement flood emergency information, the District has also adopted the Reclamation District 1614, Smith Tract, Emergency Operations Plan (EOP) and Flood Contingency Map (FCM) (see Appendix D). The purpose of this EOP is to ensure the effective performance of Reclamation District 1614 responsibilities in a flood emergency in collaboration with other jurisdictions performing emergency functions within and around the District. This plan is to be used in conjunction with the emergency operations plans of the State of California and the San Joaquin Operational Area (SJOA) to facilitate multi-jurisdictional coordination within District boundaries.

The District also protected by other Flood Control Systems.

1). The Calaveras River Levee system along the south bank of the Calaveras River is a project levee that is part of the State plan of Flood control. This levee provides protection to the entire District. It is operated and maintained by the San Joaquin Flood and Water Conservation District.

2) The levee along Smith Canal East of Pershing Avenue also provides flood protection. It is also operated and maintained by the San Joaquin Flood and Water Conservation District.

3) The proposed Smith Canal Closure Device (SCCD) at the Atherton Cove provides a second level of resiliency for the Smith Canal Levees and can lower the flood stage in the canal during 100 year stage events or an imminent or existing levee breach. The SCCD is operated and maintained by the San Joaquin Area Flood Control Agency.

4) The storm water flood conveyance system which includes the streets, gutters, catch basins, culverts and pipes and retention systems is operated and maintained by the City of Stockton, County of San Joaquin and the State Department of Transportation. This conveyance system controls the time of concentration to the terminal drainage facilities of the District.

~~A separate Operations and Maintenance Manual has been prepared to assist the Smith Canal Closure Device (SCCD) operator in operating and maintaining the closure device and the Dad's Point levee at the mouth of Smith Canal. The SCCD is a gate structure that opens and closes for navigation, and it provides flood protection to the Smith Canal area from extreme high tides. Within the separate manual, the duties and responsibilities of the SCCD operator are defined for routine operations and maintenance in addition to flood emergency situations. The SCCD Operations and Maintenance Manual is a supplement to the District's manual.~~

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D – Reclamation District 1614, Smith Tract, Emergency Operations Plan and Flood Contingency Map

E – Superintendent's Guide to Operation and Maintenance of California's Flood Control Projects

F – Emergency Flood Fighting Methods

1. Project Description

Reclamation District No. 1614 – Smith Tract (District) is located in San Joaquin County within incorporated and unincorporated portions of the City of Stockton. The District encompasses nearly 1,600 acres and is bounded by the Calaveras River to the north, Pershing Avenue to the east, Smith Canal and Atherton Cove to the south, and the San Joaquin River and Riviera Cliffs Subdivision to the west. It is responsible for maintaining the levee system along Smith Canal, Atherton Cove, and the San Joaquin River as indicated below in Figure 1.

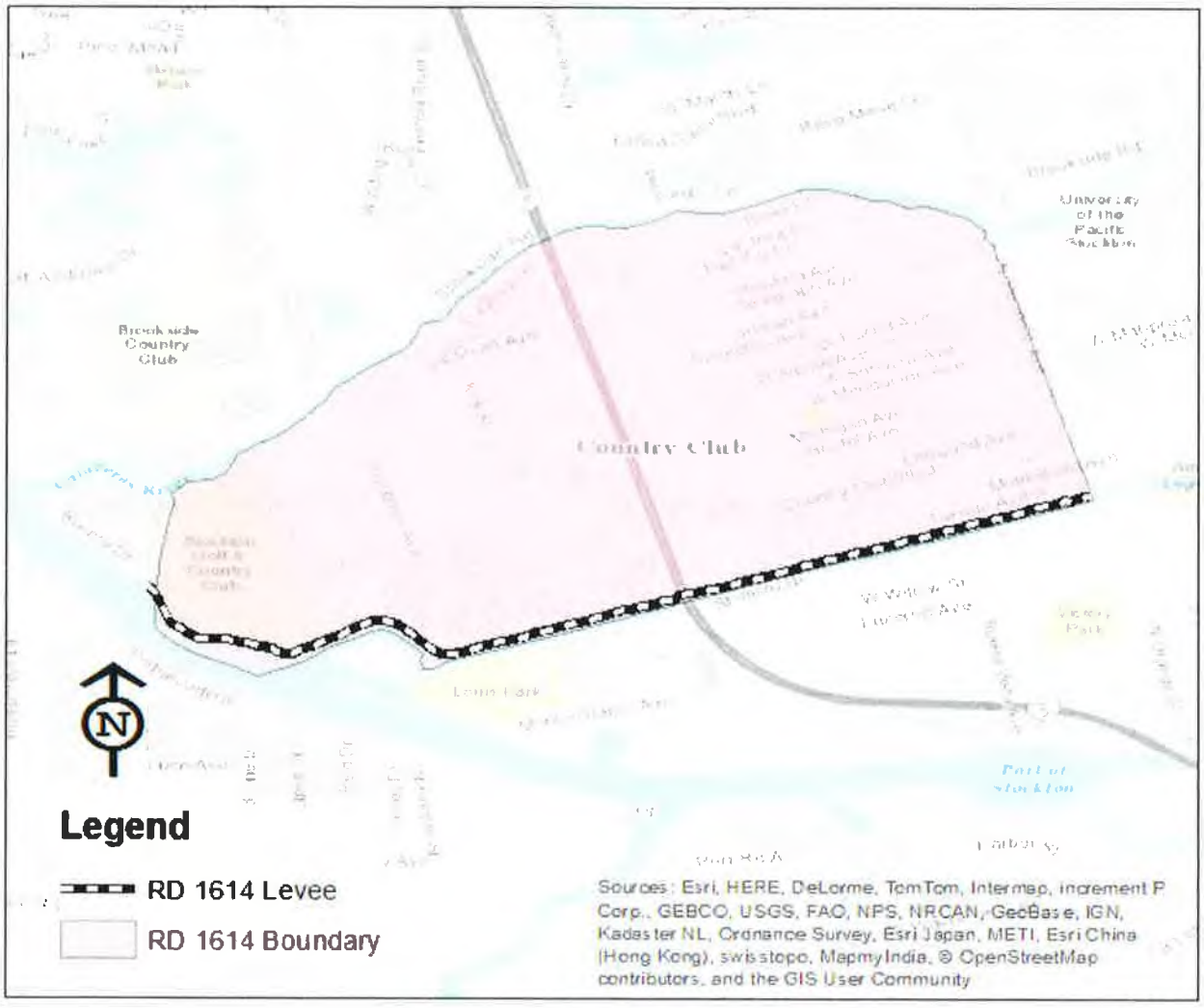


Figure 1 - RD 1614 Boundary and Levee

2. Routine Inspections and Levee Patrols

Annual Inspections

Thorough inspections shall be made prior to the beginning of the flood season and otherwise at intervals not exceeding one year. Each inspection of the urban portion of levee along Smith Canal shall consist of a "boat" team inspecting the entire length of levee that is otherwise accessible by boat.

An individual assessment on a parcel-by-parcel basis shall be documented by the "boat" team. An inspection form shall be filled out and at least one photograph shall be taken at each parcel. The "boat" team will determine its position using a location map that utilizes Google Earth and a .kmz file on a smartphone or tablet, similar to the representative screenshot as shown below in Figure 2. Observations shall be recorded concerning the extent of recent erosion based on the topography of the levee slope, the presence of existing rock slope protection, the density of vegetation and trees requiring clearing, and the presence of encroachments such as decks, docks, or bulkheads which would require removal or special handling in order for repairs to be performed. A parcel inventory with maps is included in Appendix B, and a copy of the inspection form to be used for each parcel is included in Appendix C.

The data gathered from the field assessment will then be compiled, and a summary of findings and a prioritization of repairs shall be developed. Immediate steps will be taken to correct dangerous conditions disclosed by such inspections. Regular maintenance and repair measures shall be accomplished during the appropriate season.

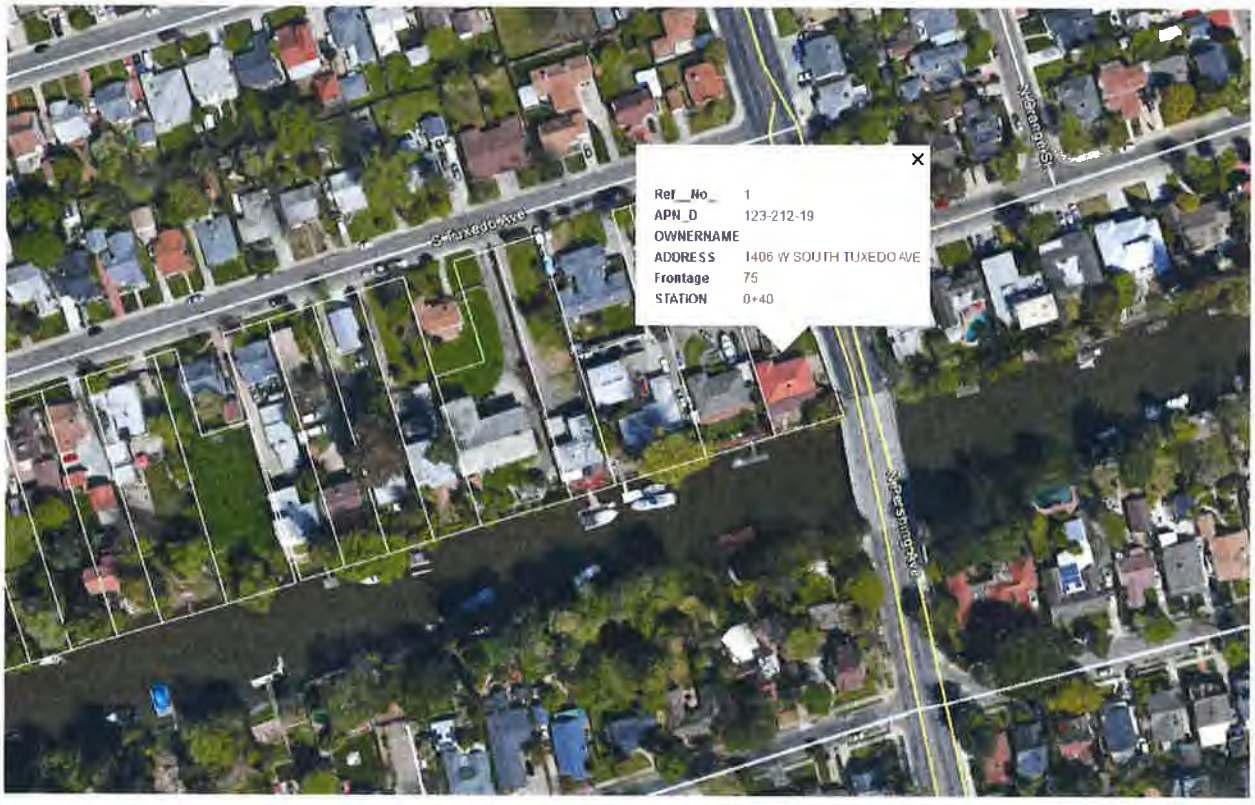


Figure 2 - Example of Smartphone/Tablet Location Map

Routine Monthly Patrols

The District provides routine patrols on a monthly basis or as otherwise may be required to ensure serviceability of the District levees in time of flood. Measures are taken to promote the growth of native grasses, exterminate burrowing animals, and provide for vegetation control of the grass and weeds, removal of wild growth and repair of damage caused by erosion or other forces. Routine monthly patrols shall be performed by the District from the water by boat to ensure that the above maintenance measures are being carried out and further, to evaluate if any of the following is occurring:

- Evaluate unusual settlement, sloughing, or if material loss of grade or levee cross section has taken place;
- Evaluate if slumping has occurred on either the landside or waterside of the levee which might affect the stability of the levee section;
- During flood stages, evaluate if seepage, saturated areas, or sand boils are occurring;
- Evaluate if embankment or riprap has been displaced, washed out, or removed;
- Evaluate that access roads to and on the levee are being properly maintained;
- Evaluate if crown of levee is maintained so as to drain readily and stay well shaped and maintained;
- Evaluate as to whether new encroachments are being made on the levee right-of-way, which might endanger the structure or hinder its proper and efficient functioning during times of emergency.

Additional land-based inspections shall be performed on an as-needed basis, especially during high water events. Special considerations need to be taken into account when performing routine levee patrols along Smith Canal. Because of the residential development adjacent to the levee, there exist many types of encroachments along the levee such as landscaping, decks, docks, patios, etc. As a result, it is much more difficult to visually inspect the condition of the levee within urban areas. Although these encroachments don't allow for a District representative to drive and regularly inspect this portion of levee firsthand, the fact that this portion of levee is within the backyard of a residence translates to frequent observations by homeowners. Homeowners will tend to notice certain loss of soil matters in their backyards such as settlement, sloughing, or slumping and should immediately communicate these concerns with the District's Superintendent, Engineer, and/or counsel. Furthermore, homeowners are informed by means of a District semiannual newsletter that addresses levee issues and provides updated contact information.

Immediate steps will be taken to correct dangerous conditions disclosed by such patrols. Regular maintenance and repair measures shall be accomplished during the appropriate season.

The Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects has been included for additional reference in Appendix E.

3. Levee Maintenance

This section identifies many of the activities that are necessary to maintain flood control works.

Levee Vegetation Management

Planted vegetation on or near levee slopes can significantly enhance the effectiveness and appearance of a levee. When properly managed, vegetation deters surface erosion from rain and runoff.

Levee slopes must allow visibility for regular maintenance inspections and, when necessary, for high water patrolling. Also, landside toes are often used as access points for maintenance. To the extent practicable, trees shall be trimmed five feet above ground level and thinned. Brush and weeds shall be trimmed, thinned, or removed for visibility and access, and groundcovers shall be no more than one foot in height. Levee slopes shall be kept free of large bunched, woody, or clumped vegetation that would interfere with flood fighting or emergency repairs. Agricultural pruning and other debris are special targets for removal because they attract burrowing rodents.

Levee Mowing and Spraying

Portions of the District's levees are covered by sod or some form of turf. These areas are generally mowed by the individual landowners.

Levee Slopes and Right-Of-Ways

Generally, levee slopes shall be free from encroachments or vegetative growth that could interfere with or prevent inspection or hamper flood fighting activities. Although this is currently not always the case along Smith Canal, it should be the ultimate goal. Quarry stone rock slope protection must be kept in good condition, and erosion shall not be occurring.

Gates and Signs

Gates and miscellaneous signs are installed to prohibit or discourage unauthorized personnel and vehicle traffic from using the flood control project facilities.

Rodent Control

The presence of ground squirrels and/or other burrowing rodents on a levee crown, slope or toe always warrants control measures. Because of their high reproductive potential and extensive burrow systems, these animals present a hazard to levees. When material is removed as a result of burrowing, the structural integrity of levees is threatened. Their burrowing loosens the soil, increasing the risk of erosion and sloughing. Also, a burrow can act like a pipe to carry floodwater into and through levee sections. The use of certain "restricted use" materials to control rodents and vegetation on levee slopes requires a permit from the County Agricultural Commissioner in San Joaquin County.

4. Warning System, Emergency Procedures, and Evacuation

Flood Warning System

The District will monitor and analyze water conditions, elevations, and forecasts for waterways affecting District levees throughout flood season for the purpose of promptly identifying heightened threats to the integrity of District levee systems. The objective of this monitoring effort is to identify conditions that warrant additional actions beyond routine flood season preparedness activities.

The District will use the Venice Island gauge to monitor tidal conditions and use visual reference as information sources in its monitoring effort. The Mossdale gauge (San Joaquin River) and Benson's Ferry (Mokelumne River) gauges will be used as secondary monitoring sources.

Emergency Procedures

The following actions will be taken when the trigger condition is identified by District personnel. These actions may be taken by District personnel at any time or tidal condition if it is felt that conditions affecting the levees and drainage system warrant such action. A list of triggers and actions is included below in Table 1.

Table 1 - Trigger Conditions

Action	Trigger
Alert the District Board of Trustees and personnel; Issue Delegation of Authority letter appointing District Incident Commander	Official prediction that 8.0' (NAVD 88) tide will be reached at Venice Island Gauge
Activate/hire District personnel and initiate periodic focused levee patrols	El. 8.0' (NAVD 88) tide at Venice Island Gauge
Initiate 24-hour continuous levee patrols	El. 9.0' (NAVD 88) tide at Venice Island Gauge
Contact City of Stockton OES/Fire, San Joaquin County Sheriff, and San Joaquin OES	Potential threat to levee integrity or if District begins patrol
Contact the State-Federal Flood Operations Center	Identified problem on levee

The District does not use "phases" where objective conditions trigger a group of actions. Each action indicated will be taken upon reaching the trigger condition shown or if District personnel feel it is warranted. As noted below, the District Engineer and District personnel are responsible for monitoring objective conditions affecting the District.

District personnel will take all of the above actions upon the identification, or verified report, of any out of the ordinary condition on a District levee that presents a potential risk of failure.

To supplement flood emergency information, the District has adopted the Reclamation District 1614, Smith Tract, Emergency Operations Plan (EOP) and Flood Contingency Map (FCM) as included in Appendix D.

A list of Emergency Contacts is shown below in Table 2.

Table 2 - Emergency Contacts

Contact	Telephone Number
District Superintendent:	
Abel Palicio	mobile 209-992-2827
District Engineer:	
Christopher H. Neudeck	office 209-946-0268 mobile 209-481-0316 home 209-948-8479
City of Stockton:	
Fire Department	office 209-937-8801 / 911
San Joaquin County:	
County Office of Emergency Services (OES)	office 209-953-6200
County Sheriff	office 209-468-4400 / 911
State of California:	
Department of Water Resources (DWR)	office 800-952-5530
State-Federal Flood Operations Center	office 916-574-2619
District Counsel:	
Andy Pinasco	office 209-948-8200 mobile 209-993-2503
District Trustees:	
Kevin Kauffman	209-969-1175
Chris Gaines	209-610-6004
Dominick Gulli	209-649-4555

Alerting and Warning of the Public

The City of Stockton and San Joaquin County are the jurisdictions responsible for alerting and warning the general public. They have three means of alerting affected residents that there is an emergency and that they would take at least the minimal action of staying tuned to the Emergency Broadcast System (EBS):

- Broadcast over the EBS and other available news media.
- Soundings of sirens where those are located.
- Sweeps of the affected area by law enforcement and other emergency responders using loudspeakers and personal contact

Evacuation

In the event of an evacuation notification, the following District personnel MUST be contacted:

- Abel Palicio Mobile: 209-992-2827
  District Superintendent

- Christopher H. Neudeck, P.E. Office: 209-946-0268
  District Engineer Mobile: 209-481-0316
  Kjeldsen, Sinnock & Neudeck, Inc. Home: 209-948-8479

Upon being notified, residents should move rapidly to the main roads designated as the most trafficable under adverse weather conditions. The primary evacuation routes are along Interstate 5 as shown below in Figure 3. This evacuation plan can also be found at http:/www.sjmap.org/evacmaps/.

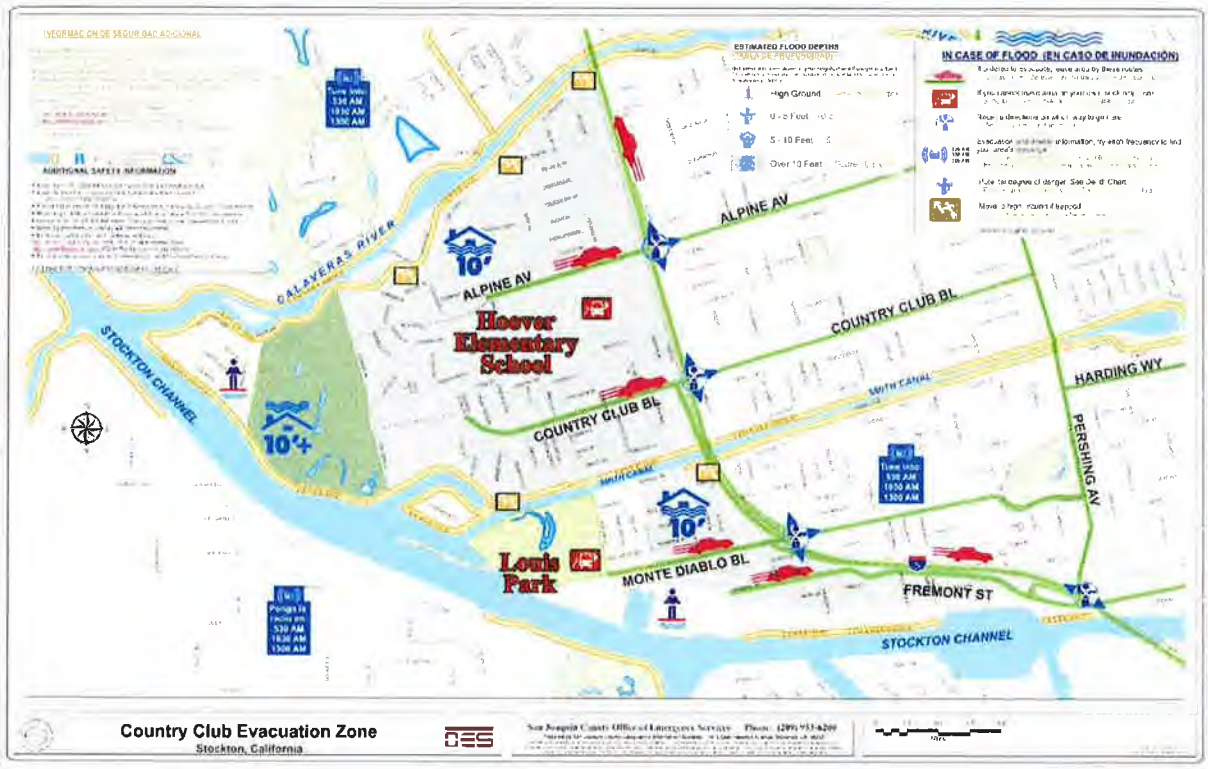


Figure 3 - Evacuation Plan (http:/www.sjmap.org/evacmaps/)

5. Assistance from Government Agencies

Local Agencies

SAN JOAQUIN COUNTY OFFICE OF EMERGENCY SERVICES

The San Joaquin County Office of Emergency Services (County OES) is responsible for coordinating County operations during a flood crisis. It maintains control of County flood-fight materials and supervises emergency purchases. It is also responsible for coordinating with State and Federal agencies operating in the County, or providing mutual aid.

209-953-6200

SHERIFF'S DEPARTMENT

The Sheriff's Department is responsible for public safety in unincorporated areas of the delta. This department will assist in rescue activities, evacuations, and will provide general security for impacted areas.

209-468-4400

FIRE DEPARTMENT

The Fire Department will assist in rescue operations and will assist in the protection of property.

209-937-8801

AMERICAN RED CROSS

The American Red Cross provides assistance for food, clothing, shelter and supplemental medical needs to disaster victims. Assistance is in the form of an outright gift and repayment is not required nor requested. The Red Cross provides emergency mass care to congregate groups, and also provides individual/family assistance. Upon the request of government, and resources permitting, the Red Cross may assist with warnings, rescue or evacuations.

800-733-2767

SALVATION ARMY

During an emergency, the Salvation Army may be called upon to provide food, clothing, furniture and housing, emergency communication, mobile canteen services, and spiritual ministry for disaster victims.

209-948-8959

State Agencies

DEPARTMENT OF WATER RESOUCES

The Department of Water Resources provides:

- Flood warnings and information on real and potential flooding
- Coordinates local, state and federal flood fight efforts during a major flood emergency
- Provides experienced personnel to advise and direct flood fight efforts
- Furnishes flood fight crews with experienced personnel to supervise and direct their work.
- Provides flood fight training

800-952-5530

CALIFORNIA OFFICE OF EMERGENCY SERVICES

The California Office of Emergency Services (Cal OES) coordinates State action during emergencies under the California Emergency Services Act and administers the State Natural Disaster Assistance Act by

providing financial assistance to local agencies for repairing and restoring flood damaged facilities.
916-845-8510

CALIFORNIA HIGHWAY PATROL
The Highway Patrol is responsible for traffic control during all emergencies. Direct assistance to State and Federal organizations engaged in flood fighting includes use of Highway Patrol communication facilities.
800-835-5247

CALIFORNIA NATIONAL GUARD
The California National Guard functions as a reserve force for the national armed forces, and is also the State's reserve source of emergency manpower, equipment and transportation during times of local disaster or disorder.
209-982-4621

CALIFORNIA CONSERVATION CORPS
The Flood Operations Center of the Department of Water Resources depends heavily upon the California Conservation Corps (CCC) to provide personnel for flood fighting and levee patrolling during emergency situations. Standby crews are frequently stationed near sites where problems are anticipated due to storm activity, high river stages, high tides or heavy reservoir releases.
209-948-7110

CALIFORNIA DEPARTMENT OF FORESTRY
The California Department of Forestry will provide labor crews to assist in flood fight activities during a flood alert period.
916-845-8680

Federal Agencies

FEDERAL EMERGENCY MANAGEMENT AGENCY
The Federal Emergency Management Agency coordinates the disaster relief functions of all federal agencies during a presidentially declared emergency or major disaster.
800-462-9029

U. S. ARMY CORPS OF ENGINEERS
During a flood alert, the U. S. Army Corps of Engineers gives local authorities the benefit of the Corps' flood fighting experience and answers requests for assistance in flood fighting received through the Department of Water Resources. In addition, the Corps is responsible for operating certain flood control reservoirs and maintaining surveillance over the flood control operations of other reservoirs having federal flood control reservation space.
916-452-1535

U. S. ARMY
Assistance from the U. S. Army may consist of manpower, equipment, and supplies for flood fighting, rescue, and relief work. Such assistance may be sought only when local and State facilities are unable to prevent extensive loss of life or property.
Requests for U. S. Army assistance in flood fighting must be made to the Corps of Engineers through the Department of Water Resources.

NATIONAL WEATHER SERVICE

The National Weather Service disseminates river forecasts, which have been produced at the joint Federal-State River Forecast Center in Sacramento, to its district offices located in Eureka, Reno, San Francisco, Fresno and Redding. The National Weather Service operates on a 24-hour schedule when emergency high water conditions exist or are anticipated.

916-979-3051

www.wrh.noaa.gov/sacramento

6. Flood Fight Supplies

Suggested Flood Fight Supplies

An ample supply of the following tools, materials, and equipment as shown in Table 3 should be readily available in a convenient location. The District maintains a cache of flood fight supplies, tools and equipment in a storage unit at their Franklin Pump Station yard at the south end of Franklin Avenue off of Country Club Blvd, as shown in Figure 3. These supplies should be regularly inventoried or restocked.

The inventory should be adjusted according to length of patrol area, number and type of flood control facilities, and experience during other flood events.

Table 3 - Flood Fight Supplies

Item	Quantity (Minimum Required)
Visquine Plastic sheeting, 10 mil, 100 x 20 feet -or- Canvas, 100 x 20 feet	3 rolls
Sandbags	1,000
Twine or baling wire	1 box
Stakes, 2-foot, 2"x4", w/v points	50
Laths, 4-foot	1 bundle
Tie buttons or stones	50
Flagging (fluorescent)	6 rolls
Lineman's pliers	4
Sledge hammers	2
Shovels	5
Life jackets	4
Logbook	1
Tire chains	2
Jumper cables	2
Highway flares	2 bundles
Tow chains	2
Axes	2
Chainsaws	1
Electric lanterns	2
Batteries for lanterns	1 box
Maps	1
Lighting system for night patrol	2
Two-way radios	2



Figure 4 - Location of Flood Fight Storage Unit

Directory of Materials and Equipment

A directory of materials and equipment suppliers is shown below in Table 4.

Table 4 - Directory of Materials and Equipment Suppliers

Item	Phone Number
Sandbags	
Sacramento Bag Mfg. Co. (Sacramento)	916-441-6121
M. Calosso and Sons (Stockton)	209-466-8994
Lumber and Hardware	
Valley Lumber (Stockton)	209-464-4565
Home Depot (Stockton)	209-474-8285
Canvas and Tarps	
Bonanza Industrial Supply (Oakley)	925-625-1000
Capitol Tarpaulin Co. (Sacramento)	916-451-2801
Construction Equipment	
Teichert Construction (Stockton)	209-983-2300
United Rentals (Stockton)	844-873-4948
Rock, Sand, and Gravel	
Teichert Aggregates (Vernalis)	209-834-8300
FTG Construction Materials (Lodi)	209-334-2112
Dredging and Barge Equipment	
Dutra Dredging (Rio Vista)	707-374-6339

7. Emergency Levee Patrols

Organizing Emergency Patrols

When a flood alert is called, the exterior levee system must be patrolled by boat with increasing frequency as flood conditions worsen. The District Engineer is required to prepare a patrol schedule that assigns specific shifts to individual boat patrol units. Land-based personnel shall be on standby in the event that flood fighting procedures need to be implemented.

Effective levee patrolling is the best defense against levee failure by early detection and remedial repair of weak spots. Patrols should look for wave wash, boils, seepage, cracks, or sloughing. The following will help in organizing personnel:

- Appoint one person to carry the responsibility for the entire operation.
- Provide sufficient number of personnel for two 12-hour shifts.
- Provide each person with a copy of this manual.
- Assign each person a definite length of levee to patrol, usually no more than can be inspected on foot at least once an hour.
- Furnish each person with a shovel, flashlight or lantern, and five to ten sacks with twine.
- Teach each person the correct way to fill and place sandbags, what danger signs to watch for, and how to signal for help.
- Arrange to stockpile sandbags and other tools and equipment at strategic locations along the levee.
- Be prepared to obtain more personnel, tools, and equipment on short notice.
- Advise the officials of the district or agency responsible for emergency assistance in the area of your efforts and, if necessary, request their help.
- Contact the nearest representatives of the Department of Water Resources or the Corps of Engineers for technical advice and assistance

Recommended Supplies for Standby Vehicles

The following are recommended materials and equipment that should be carried in each standby vehicle:

- Powerful electric lanterns and extra batteries
- Round-point shovels (to drain puddle water on the crown roadway)
- Axes or chain saws (for trees and branches that have fallen across the roadway)
- A tow chain (to drag debris from the roadway or assist stuck or trapped flood fight vehicles)
- Highway flares (to warn of dangerous road conditions)
- A set of battery jumper cables
- Tire chains
- Visquine sheeting
- Sandbags
- Stakes
- Rope or twine

8. Main Causes of Levee Failure and How to Control

The main causes of levee failure during high water are:

- Excessive seepage through or under levees is caused by rodent holes, sand lenses, decomposing tree roots, or leaks that result in a boil on the landside slope.
- Levee erosion by currents or wave action.
- Levee overtopping by flood flows that exceed levee height.

Emergency measures used to prevent levee failure from these causes are known as flood fight methods. Appendix F includes flood fight methods prepared by the DWR. These methods have proven effective during many years of use by DWR, USACE, and local agencies during food-related emergencies.

9. Pump Stations operations and Maintenance

RD 1614 provides terminal drainage facilities. The storm water collection and conveyance facilities within RD 1614 are owned and operated by San Joaquin County and the City of Stockton. RD 1614 provides the terminal discharge of all storm water via one of its eleven pump stations.

The Wisconsin Pump Station provides terminal storm drainage pumping for runoff from a drainage shed of nearly 700 acres. The Wisconsin Pump Station is sized with four pumps with a combined capacity of 30,000 gallons per minute (gpm) that discharge into the Calaveras River. Based on analysis by KSN, the capacity of 30,000 gpm meets current 100-year flood standards.

Pump Station inspections and operations are overseen by the District Superintendent. All pump stations are automatically controlled to come on when water is introduced to the system. The Drainage areas and conveyance system are relatively level and capable of storing and delaying the drainage to the pump stations. Pump Stations are inspected on a yearly basis prior to the rainy season to assure proper operation. During large rain events the superintendent checks the pumps while the pumps are in operation. All pumps can be manually activated in the event that the automatic system malfunctions.

Inspections include:

- Checking Pump Sumps and trash racks for debris and blockage.
- Verifying start up procedures and float operations.
- Maintain lubrication systems.
- Verifying electric controls and loads on pumps.

Maintenance includes:

- Cleaning trash racks and sumps.
- Keeping lubrication at appropriate levels.
- Replacement of electric controls as needed.

Reclamation District No. 1614
Operations & Maintenance Manual

Appendix A

District Base Map

RD 1614 Service Area and Drainage Sheds

Figure 1: *RD 1614 Service Area and Drainage Sheds*


PLYMOUTH ROAD NORTH
PSN
HOUGH AVENUE
PSN
RIVER WALK
PST
DRAINAGE AREA NO. 11
DRAINAGE AREA NO. 10
DRAINAGE AREA NO. 9
DRAINAGE AREA NO. 8
DRAINAGE AREA NO. 7
DRAINAGE AREA NO. 6
DRAINAGE AREA NO. 5
DRAINAGE AREA NO. 4
DRAINAGE AREA NO. 3
DRAINAGE AREA NO. 2
DRAINAGE AREA NO. 1
WISCONSIN AVENUE
PST
PSS
MORADA VISTA AVENUE
PSS
MORADA VISTA AVENUE
PSS
MORADA VISTA AVENUE

Reclamation District No. 1614
Operations & Maintenance Manual

Appendix B

Parcel Inventory and Maps

Reclamation District No. 1614
Operations & Maintenance Manual

Appendix C

Parcel Annual Inspection Form

Reclamation District No. 1614
Operations & Maintenance Manual

Appendix D

Reclamation District 1614, Smith Tract
Emergency Operations Plan and Flood Contingency Map

Appendix E

Superintendent's Guide to Operation and Maintenance of California's Flood Control Projects

Reclamation District No. 1614
Operations & Maintenance Manual

Appendix F

Emergency Flood Fighting Methods

ITEM 7

002 1991 FEMA Certificatio.pdf

Submitted by Trustee Gulli

Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
102

The Honorable George L. Barber
Chairman, San Joaquin County
Board of Supervisors
222 East Weber Avenue
Room 701
Stockton, California 95201

Communities: City of Stockton and
Unincorporated Areas
of San Joaquin County,
California

Map Panel Nos.: City of Stockton
FIRM 060302 0015 D
FIRM 060302 0020 D
San Joaquin County
FIRM 060299 0430 B

Effective Date
of This Revision: AUG 14 1991

Dear Mr. Barber:

This is in response to a letter dated May 31, 1991, from Mr. Henry M. Hirata, San Joaquin County Director of Public Works, regarding the effective Flood Insurance Rate Maps (FIRMs) for the City of Stockton, California, and San Joaquin County, California. In his letter, Mr. Hirata requested that we revise the effective FIRMs to show that the levee systems for Reclamation Districts 1614 and 828 provide 100-year flood protection. In support of his request, Mr. Hirata submitted a letter dated April 29, 1991, from Mr. Walter Yep, U.S. Army Corps of Engineers, Sacramento District, certifying that the levee systems provide protection against the 100-year flood. In addition, Mr. Hirata submitted operations and maintenance manuals (dated April 1991 and May 1991) for the levee systems. All of the data required to evaluate Mr. Hirata's request were received with his May 31 letter, letters dated June 13 and June 17, 1991, from Mr. Eugene B. Delucchi, San Joaquin County Flood Control and Water Conservation District, and a letter dated June 21, 1991, from Mr. Yep.

We have completed our review of the submitted data and the data used to produce the effective FIRMs, and have revised the FIRMs to modify the floodplain boundary delineations of a flood having a 1-percent probability of being equaled or exceeded in any given year (base flood) within the levee systems for Reclamation Districts 1614 and 828. The 100-year flood elevation at Atherton Island has been lowered to show that the source of flooding for that area is the San Joaquin River (Delta Area).

The revised zone designations for the land areas within the levee systems denote areas protected by levees from the 100-year flood. On the FIRM for the City of Stockton, this designation is Zone X; on the FIRM for San Joaquin County, this designation is Zone B.

The modifications are shown on the enclosed annotated copies of FIRM Panels 060302 0015 D, 060302 0020 D, and 060299 0430 B, which are crosshatched to show the areas revised. This Letter of Map Revision (LOMR) hereby revises FIRM Panels 0015 D and 0020 D dated February 4, 1988, and FIRM Panel 0430 B dated July 4, 1988.

The following is a list of existing and modified base (100-year) flood elevations (BFEs) within San Joaquin County.

Location	Existing BFE *(feet)	Modified BFE *(feet)
At the intersection of Rainier Avenue and Country Club Boulevard	11	None
At the intersection of West Alpine Avenue and Western Pacific Railroad	11	None
Atherton Island	11	8

*National Geodetic Vertical Datum, rounded to the nearest whole foot.

Because of current funding constraints, we must limit the number of physical map revisions. Consequently, we will not publish a revised FIRM for the City of Stockton or San Joaquin County to reflect modifications at this time. However, if in the future, we revise and republish the FIRM panels affected by this LOMR, we will incorporate the previously described modifications at that time.

These modifications have been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR, Part 65. Public notification of modifications to the base (100-year) flood elevations (BFEs) will be given in the Stockton Record on or about August 15 and August 22, 1991. In addition, a Notice of Changes will be published in the Federal Register.

As required by the legislation, a community must adopt and enforce floodplain management measures to ensure continued eligibility to participate in the National Flood Insurance Program (NFIP). Therefore, your community must enforce these regulations using, at a minimum, the BFEs, zone designations, and floodways in the Special Flood Hazard Areas shown on the FIRM and Flood Boundary and Floodway Map for your community, including the previously described modifications.

This response to your request is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all proposed floodplain developments, including this request, and for ensuring that necessary permits required by Federal or State law have been received. With knowledge of local conditions and in the interest of safety, State and community officials may set higher standards for construction, or may limit development in floodplain areas. If the State of California, the City of Stockton, or San Joaquin County has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP requirements.

The community number and suffix code listed above will be used for all flood insurance policies and renewals issued for your community on and after the effective date listed above.

The modifications described herein are effective as of the date of this letter. However, within 90 days of the second publication in the Stockton Record your community may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. All interested parties are hereby notified that, until the 90-day period elapses, the determination may be modified.

Please note that our review is for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by the Federal Emergency Management Agency (FEMA) as to how the levee systems will perform during a flood event.

If you have any questions regarding the modifications described herein, please call the Chief, Natural and Technological Hazards Division, FEMA, in San Francisco, California, at (415) 923-7177, or Mr. Alan Johnson of my staff in Washington, D.C., at (202) 646-3403.

Sincerely,

for William R. Locke
Chief, Risk Studies Division
Federal Insurance Administration

Enclosures

cc: ~~Mr.~~ Henry M. Hirata
San Joaquin County
Director of Public Works

Mr. Thomas E. Jeffry, Jr.
Neumiller and Beardslee

ROUTE TO	ACTION	INFO	COPY	FILE	INITIAL
DIRECTOR					
Administrative Coordinator					
Public Transportation					
Water Resources					
CHIEF DEP. DIR./OPERATIONS					
Special Districts					
Road Maintenance					
Equipment Maint./Garage Pool					
Channel Maintenance					
Utility Maintenance					
Solid Waste					
DEP DIR./ENGINEERING					
Design Engr.					
Field Engr.					
Bridge Engr.					
Traffic Engr.					
DEP. DIR./DEVELOPMENT					
Surveying					
Public Services					
Real Property					
Public Facilities					
DEP. DIR./GENERAL SERVICES					
Fiscal					
Accounts Payable					
Data Processing					
Payroll					

...RETURN TO CENTRAL FILES

KJELDSEN-SINNOCK & ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS

KENNETH L. KJELDSEN
STEPHEN K. SINNOCK
CHRISTOPHER H. NEUDECK

1113 WEST FREMONT STREET
POST OFFICE BOX 844
STOCKTON, CALIFORNIA 95201-0844

TELEPHONE 946-0268
AREA CODE 209
FAX NO. 946-0296

806-014.0

July 1, 1991

Mr. Harold J. Willis, Secretary
Reclamation District No. 1614
6 El Dorado South, Suite 304
Stockton, California 95202

Re: Reclamation District No. 1614, Smith Tract 100 Year Flood Plane

Dear Mr. Willis:

Pursuant to your telephone conversation of this date with Chris Neudeck, please find enclosed correspondence between The Flood Plain Management Branch of the U.S. Department of The Army, Corps of Engineers and Michael Baker Engineers regarding removal of the District from the 100 year flood plane. This correspondence is forwarded for review and discussion at the District's Board of Trustees meeting scheduled for July 3, 1991.

Also, please find enclosed an invoice for engineering services for the period of May 20, 1991 through June 15, 1991.

Sincerely,

KJELDSEN-SINNOCK & ASSOCIATES, INC.

Eric J. Usher

EJU/ls
Encl.
cc: Trustees (w/encl. correspondence)
Superintendent (w/encl. correspondence)

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814-4794

June 21, 1991

REPLY TO
ATTENTION OF

Flood Plain Management Branch

91 JUN 25 P3:47

Mr. David Overstreet
Michael Baker Engineers, Inc.
1420 King Street
Alexandria, Virginia 22314

Dear Mr. Overstreet:

This letter confirms the information provided you in a June 19 telephone conversation with Mr. Melvin Yarwood of our office. The conversation concerned the removal of FEMA 100-year flood plains from Reclamation Districts (RD) 828 and 1614 located in Stockton, San Joaquin County, California. These two RD's were the subject of a May 31, 1991 letter to Mr. William R. Locke, Chief, Risk Studies Division, FEMA, from Mr. Henry M. Hirata, Director of Public Works, San Joaquin County.

We believe RD 1614 and RD 828 should be considered as having FEMA 100-year flood protection provided proper maintenance of the levees continues. In addition, the area, now shown as flooded and lying east (outside) of RD 1614 and RD 828 (enclosure 1 - cross hatched area) should also be considered as having FEMA 100-year flood protection with the same restriction as above.

The two areas, Riviera Cliffs and Atherton Island, lying to the west and southwest respectively of RD 1614 were brought to our attention during our review of the two RD's. It is our opinion that, based upon the topographic information provided by San Joaquin County, Riviera Cliffs lying between the junction of the San Joaquin and Calaveras Rivers should not be considered to be within a FEMA 100-year flood plain (enclosure 2 - cross hatched area).

Atherton Island, lying north of the Smith Canal near its junction with the San Joaquin River (enclosure 2 - cross hatched area) is separated from RD 1614 by that RD's levee system. Thus the FEMA flood zone designation of A21 (EL 11) is incorrect since it is based upon the former designation for RD 1614. Limited topographic information provided by San Joaquin County indicates that Atherton Island lies one to two feet above the 100-year water surface elevation of the Stockton Deep Water Ship Channel. However, we believe more information (elevations of the properties) is required before a flood hazard evaluation can be made for this Island. We recommend the area be designated as a Zone A until more detailed information is provided and evaluated.

RECEIVED
JUL 01 1991

If you have any questions on the above, please contact Mr. Melvin Yarwood at (916)551-1882.

Sincerely,

Walter Yep
Chief, Planning Division

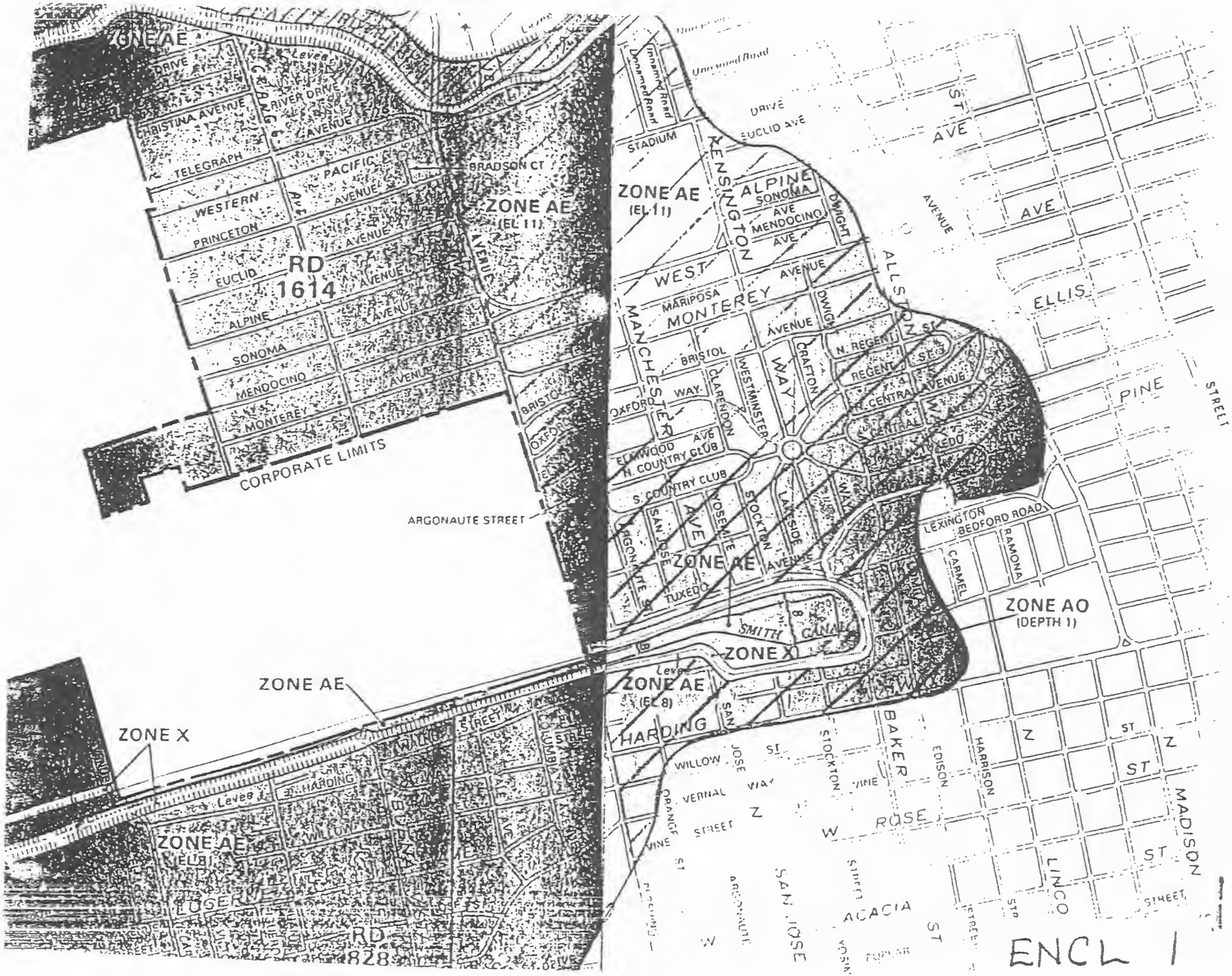
Enclosures

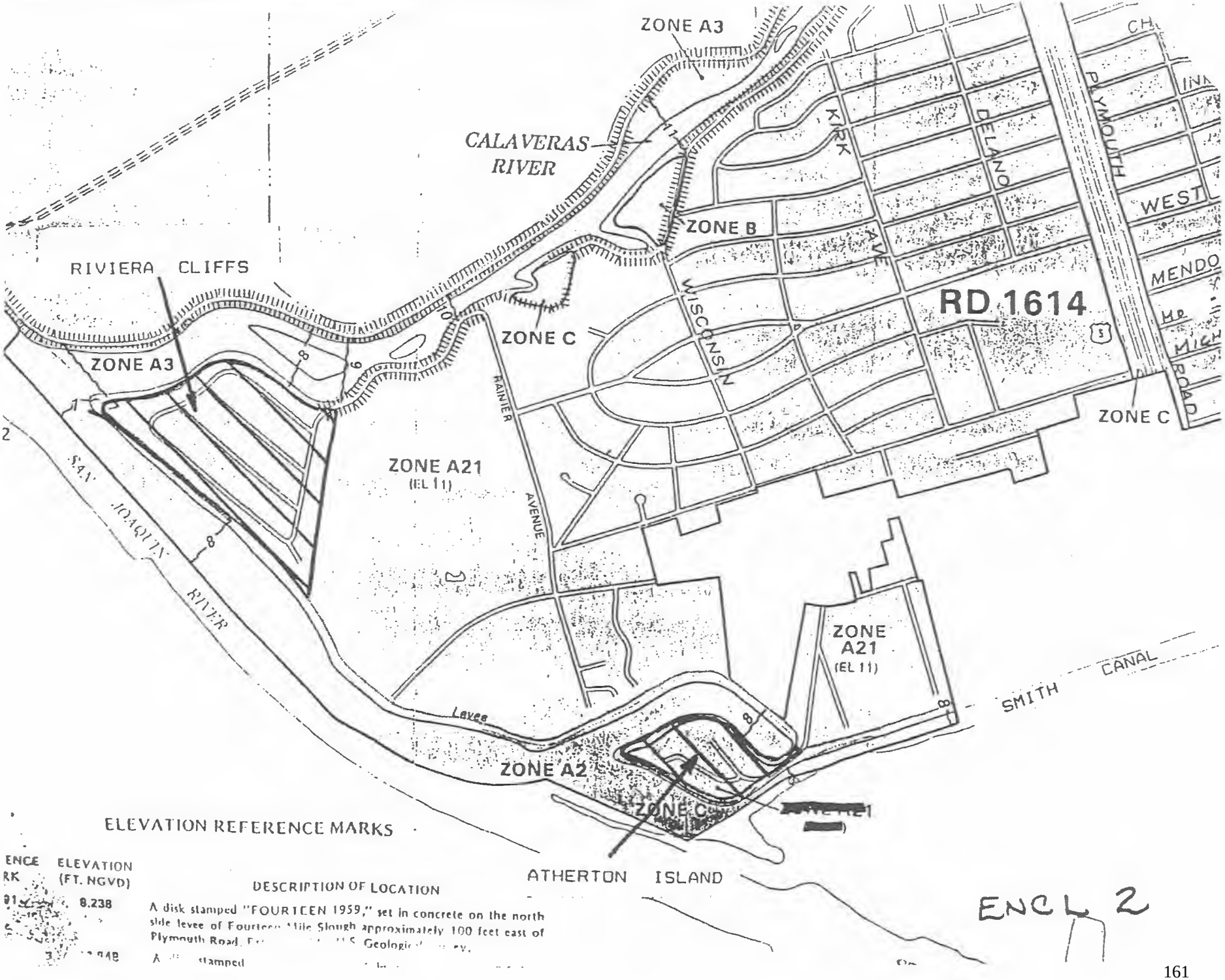
Copy Furnished:

Mr. Henry M. Hirata, Director of Public Works, San Joaquin County, 1810 East Hazelton Avenue, Stockton, California 95201 with enclosures

ROUTE TO	ACTION	INFO	COPY	FILE	INITIAL
DIRECTOR					
Administrative Coordinator					
Public Transportation					
Water Resources					
CHIEF DEP. DIR./OPERATIONS			✓		
Special Districts					
Road Maintenance					
Equipment Maint./Motor Pool					
Channel Maintenance					
Utility Maintenance					
Solid Waste					
DEP. DIR./ENGINEERING					
Design Engr.					
Field Engr.					
Bridge Engr.					
Traffic Engr.					
DEP. DIR./DEVELOPMENT					
Surveying					
Public Services					
Real Property					
Public Facilities					
DEP. DIR./GENERAL SERVICES					
Fiscal					
Accounts Payable					
Data Processing					
Payroll					
RETURN TO CENTRAL FILES w/					

w/ letter and


ZONE AE
ZONE AE (EL 11)
ZONE AE (EL 8)
ZONE X
ZONE AO (DEPTH 1)
RD 1614
RD 828
CORPORATE LIMITS
ARGONAUTE STREET
BRADSON CT
ALPINE
SONOMA
MENDOCINO
MONTERREY
PRINCETON
EUCLID
WESTERN
TELEGRAPH
CRISTINA AVENUE
PACIFIC AVENUE
RIVER DRIVE
GRAND AVENUE
STADIUM
DRIVE
EUCLID AVE
KENSINGTON
DWIGHT
WEST MONTEREY AVENUE
MARIPOSA
MANCHESTER WAY
BRISTOL
OXFORD
CLARENDON
WESTMINSTER WAY
CRAFTON
N. REGENT ST
REGENT
N. CENTRAL AVENUE
ELMWOOD N. COUNTRY CLUB
S. COUNTRY CLUB
SAN JOSE AVE
YOSEMITE
STOCKTON
LAKESIDE AVENUE
TUXEDO
SMITH CANAL
LEXINGTON
BEDFORD ROAD
CARMEL
RAMONA
ELLIS
PINE
STREET
ALLSTON WAY
HARDING
WILLOW
VERNAL
ROSE
ACACIA
BAKER
HARRISON
EDISON
LINCOLN
MADISON
ENCL 1


ZONE A3
CALAVERAS RIVER
KIRK
DELANO
PLYMOUTH
WEST
MENDO
ZONE B
RIVIERA CLIFFS
WISCONSIN AVE
RD 1614
ZONE C
ZONE A3
RAINIER
ZONE A21
(EL 11)
AVENUE
ZONE C
SAN JOAQUIN RIVER
ZONE A21
(EL 11)
SMITH CANAL
Levee
ZONE A2
ZONE C
ATHERTON ISLAND
ELEVATION REFERENCE MARKS
ELEVATION (FT. NGVD)
8.238
DESCRIPTION OF LOCATION
A disk stamped "FOURTEEN 1959," set in concrete on the north side levee of Fourteen Mile Slough approximately 100 feet east of Plymouth Road.
ENCL 2

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814-4794

April 29 1991

REPLY TO
ATTENTION OF
Flood Plain Management Branch

Mr. Henry M. Hirata
Director of Public Works
San Joaquin County
1810 East Hazelton Avenue
Stockton, California 95201

Dear Mr. Hirata:

We have reviewed your April 23, 1991 letter and the profiles and cross sections delivered to our office on 24 April by Mr. Eugene Delucchi and Mr. Tom Iwamiya of your office. The additional technical data was in response to our March 1, 1991 letter concerning 100-year flood protection for Reclamation Districts (RD) 1614 and 828.

Based on the additional data provided and previous information from the 1985 flood insurance study prepared by this office, the levee system around RD 1614 has sufficient freeboard to meet FEMA criteria to pass the 100-year flood on the Calaveras and San Joaquin Rivers and Smith Canal.

RD 828, which was subject to inundation from the 100-year flood along the Calaveras River flowing via RD 1614, would no longer be subject to inundation from this source.

We believe RD 1614 and RD 828 should be considered as having FEMA 100-year flood protection provided proper maintenance of the levees continues.

Sincerely,

for Walter Yep
Chief, Planning Division

RECEIVED
MAY 0 3 1991

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT
P O BOX 1810
1810 EAST HAZELTON AVENUE
STOCKTON CALIFORNIA 95201
TELEPHONE (209) 468-3000
FAX NO (209) 468-2999

April 23, 1991

Colonel Laurence R. Sadoff
District Engineer
Sacramento District Corps of Engineers
650 Capitol Mall
Sacramento, California 95814-4794

Attention: Flood Plain Management Branch

SUBJECT: CALAVERAS RIVER LEVEE, SOUTH BANK

Dear Colonel Sadoff:

Reference is made to the Corps of Engineers letter, dated March 1, 1991, regarding the 100-year flood protection to Reclamation District 1614, which is in an area behind the south bank of the Calaveras River. This letter noted that an area between Stations 155+00 to 160+00 on the levee profile shows the top of levee provided less than three feet of freeboard above the 100-year flood. We are submitting additional data, including extended cross sections and elevations of the surrounding area, which clearly indicate that the "high" ground provides 100-year flood protection for the area between Stations 150+00 to 165+00.

Therefore, we are requesting a reply letter confirming that Reclamation Districts 1614 and 828 are protected against the 100-year flood in accordance with FEMA criteria as a result of previous other data submitted to your office and certain levee improvements along the south bank of the Calaveras River.

Again, your assistance in removing the 100-year flood designation from this area is greatly appreciated.

Very truly yours,

Henry M. Hirata

HENRY M. HIRATA
Director of Public Works

HMH:TI:lt
C 1D297FCC1

RECEIVED
APR 29 1991

c: Mr. James Giottonini
Director of Public Works
City of Stockton
425 North El Dorado Street
Stockton, California 95202

Mr. Thomas Rosten
Reclamation District 828
227 Alvarado Way
Tracy, California 95376

Mr. Chris Neudeck
Reclamation District 1614
c/o Kjeldsen, Sinnock & Associates
1113 West Fremont Street
Stockton, California 95203

806-014.0

RECLAMATION DISTRICT NUMBER 1614

SMITH TRACT

OPERATIONS AND MAINTENANCE MANUAL

AND

FLOOD EMERGENCY OPERATIONS MANUAL

KJELDSEN-SINNOCK & ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS
1113 WEST FREMONT STREET
POST OFFICE BOX 844
STOCKTON, CALIFORNIA 95201-0844

TELEPHONE NUMBER: (209) 946-0268
TELEFAX NUMBER: (209) 946-0296

JUNE, 1990

Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IA-RA-RS:
19P
Community No. 060302

August 4, 1987

The Honorable Barbara Fass
Mayor, City of Stockton
25 South San Joaquin Street
Stockton, California 95202

Dear Mayor Fass:

This is to formally notify you of the final flood elevation determination for the City of Stockton, San Joaquin County, California, in compliance with Title 44, Chapter I, Part 67, Code of Federal Regulations (CFR). This section requires that notice of the final flood elevations shall be sent to the Chief Executive Officer of the community, all individual appellants, and the state coordinating agency, and shall be published in the Federal Register.

On February 8, 1983, the Federal Emergency Management Agency (FEMA) issued a Flood Insurance Rate Map (FIRM) that identified the Special Flood Hazard Areas in the City of Stockton, California. On December 22, 1986, FEMA provided you with copies of the Flood Insurance Study (FIS) report and FIRM that reflect a reevaluation of the flood hazards in your community. The proposed base flood elevations (BFEs) were published in the Stockton Record on March 26 and April 2, 1987, and in the Federal Register, at 52 FR 11709, on April 10, 1987.

The statutory 90-day appeal period, which was initiated on the second newspaper publication date cited above, has ended. Changes to the FIS report and FIRM, as discussed in our letter to you dated June 9, 1987, will be made prior to publishing the final maps. Additional data, certifying the south bank levee along the Calaveras River, were requested in our June 9 letter. Upon receipt, we will review these additional data and, if warranted, revise the flooding along the south bank of the Calaveras River. If the additional data are received by September 4, 1987, any warranted revisions will be incorporated prior to the publishing of the final maps. Information received after September 4 will be handled under the revision process in accordance with the provisions of Title 44, Chapter I, Part 65, CFR. Because no additional data requested in our June 9 letter were received prior to the end of the 90-day appeal period, or as of the date of this letter, the BFEs for your community are considered final. The final rule for BFEs will be published in the Federal Register as soon as possible. The FIRM for your community will become effective on February 4, 1988. Before the effective date, FEMA will send you final printed copies of the FIS report and FIRM.

Because the FIS establishing the BFEs for your community has been completed, certain additional requirements must be met under Section 1361 of the National Flood Insurance Act of 1968, as amended. The community is required, as a condition of continued eligibility in the National Flood Insurance Program (NFIP), to adopt or show evidence of adoption of floodplain management regulations that meet the standards of Section 60.3(d) of the enclosed NFIP regulations (44 CFR 59, etc.) by the effective date of the FIRM. These standards are the minimum requirements and do not supersede any State or local requirements of a more stringent nature.

It must be emphasized that all of the standards specified in Section 60.3(d) of the NFIP regulations must be enacted in a legally enforceable document. Some of the standards should already have been enacted by your community in order to establish initial eligibility in the NFIP. Your community can meet any additional requirements by taking one of the following actions:

1. Incorporate existing regulations by reference in any new regulations adopted to meet the additional requirements of 60.3(d);

2. Adopt all of the standards of Section 60.3(d) into one new comprehensive set of regulations; or,

3. Show evidence that regulations have previously been adopted that meet or exceed the minimum requirements of Section 60.3(d).

Communities that fail to enact the necessary floodplain management regulations will be suspended from participation in the NFIP and subject to the prohibitions contained in Section 202(a) of the 1973 Act as amended.

In addition to the community using the FIS report and FIRM to manage development in the floodplain, FEMA will use the FIS report and FIRM to establish appropriate flood insurance rates. On the effective date of the FIRM, actuarial rates for flood insurance will be charged for all new structures and substantial improvements to existing structures located in the identified 100-year floodplain. These rates may be higher if a structure is not built in compliance with the floodplain management standards of the NFIP. The actuarial flood insurance rates increase as the first floor elevation (including basement) of new structures decreases in relation to the BFEs established for your community. This is an important consideration for new construction because building at a higher elevation can greatly reduce the cost of flood insurance.

If your community is encountering difficulties enacting the necessary floodplain management measures, we urge you to contact the Chief, Natural and Technological Hazards Division, FEMA, in San Francisco, California, at (415) 923-7175.

Sincerely,

John L. Matticks
for Chief, Risk Studies Division
Federal Insurance Administration

Enclosure

C

3-25-86-16L

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814-4794

REPLY TO
ATTENTION OF

March 21, 1986

Flood Plain Management Branch

Mr. Henry M. Hirata
Director of Public Works
San Joaquin County
P.O. Box 1810
Stockton, California 95201

Dear Mr. Hirata:

The report referred to in your March 12 letter (Office Report, Sacramento-San Joaquin Flood Insurance Study, June 1985) was prepared to assist personnel in our Flood Plain Management Branch during their evaluation of 100-year flood plain areas that are included in the Sacramento-San Joaquin Delta and Mokelumne River, California, Flood Insurance Study (FIS).

The studies and determinations for that FIS are complete and the draft report has been forwarded to the Federal Emergency Management Agency (FEMA). The report is now in the review phase by FEMA'S technical evaluation contractor and any requests for changes should be retained until the formal 90-day appeal period, which should occur later this year. Any petition for a zoning change or any questions concerning FEMA levee policy should be directed to the regional FEMA representative listed at the bottom of this letter.

As discussed by members of our two staffs, we will review your "As Built" drawings detailing the improvement work for the subject levee reach (Reclamation District 1614) along the left bank of the Calaveras River. Our review will concentrate on the hydraulic aspect of the levee improvement; that is, we will make an evaluation to determine that the hydraulic conditions of the Calaveras River have not been changed significantly as a result of your levee improvement work.

We do not have funds to perform a stability analysis of the affected levee reach after you complete the improvements. However, we believe that FEMA will accept a letter from San Joaquin County

stating that the levee improvement work was accomplished using acceptable engineering standards and practices. Additionally, we will notify FEMA of our review findings.

Sincerely,

Walter Yep

Walter Yep
Chief, Planning Division

Copy Furnished:

Mr. Raymond T. Lenaburg, Project Officer, Federal Emergency Management Agency, Region IX, Building 105, Presidio of San Francisco, California 94129 Telephone (415) 556-9840 (w/cy Mr. Hirata March 12, 1986, letter)

RECEIVED
25 MAR 86
DEPT. OF WATER RESOURCES

CENTRAL STOCKTON

(RECLAMATION DISTRICT 1614)

Tab BB

CENTRAL STOCKTON (RD 1614)

1. Description. The area indicated as RD 1614 is protected by the left levee bank of the Calaveras River, the levee around the Stockton Country Club, and the levee on the north side of Smith Canal. This system consists of approximately 7 miles of levee and protects approx 1700 acres of residential area. The left levee of the area being studied from the University of the Pacific (just downstream of Pacific Avenue) to the Stockton Yacht Club (near River Mile 0.8) is maintained by Stockton County Flood Control District. From this point past the Stockton County Club and up the north side of Smith Canal to Yosemite Lake is maintained by RD 1614.

In 1970, the Calaveras River portion of the area became a "Project Levee" after the Corps of Engineers brought the levee up to project standards. "In 1969, the Sacramento District shaped and surfaced the levee crowns along various reaches. Most of this upgrading including rock bank protection, at two sites, was on the right levee. On the left bank only two sites were improved by shaping and surfacing of the levee crown. These include River Mile 0.9 (a.22 mile reach) and Mile 3.0 (a.30 mile reach). The levee around Stockton Country Club was constructed by the Port of Stockton in the early 1930's. The levee along the Smith Canal was constructed during the excavation of the Canal during the early 1900's.

2. Foundation Conditions. Based on the "Delta Peat Deposit" map, the foundation along the Calaveras River contains a layer of peat varying from about 10 feet thick near the confluence with the San Joaquin River to about 1 foot thick near the upper end of the area being studied. One boring, 2F-65-1, near the downstream end of the river, (Mormon Slough Project, DM

No. 1) indicates only a 1-foot thick layer of foundation peat. This does not agree with the Peat Map, but does provide further verification that some peat exists. Below the 1-foot layer of peat the same boring log indicates the next 8 feet of foundation consists of stiff gray silty clay. No boring data was immediately available along the Smith Canal or the Country Club area.

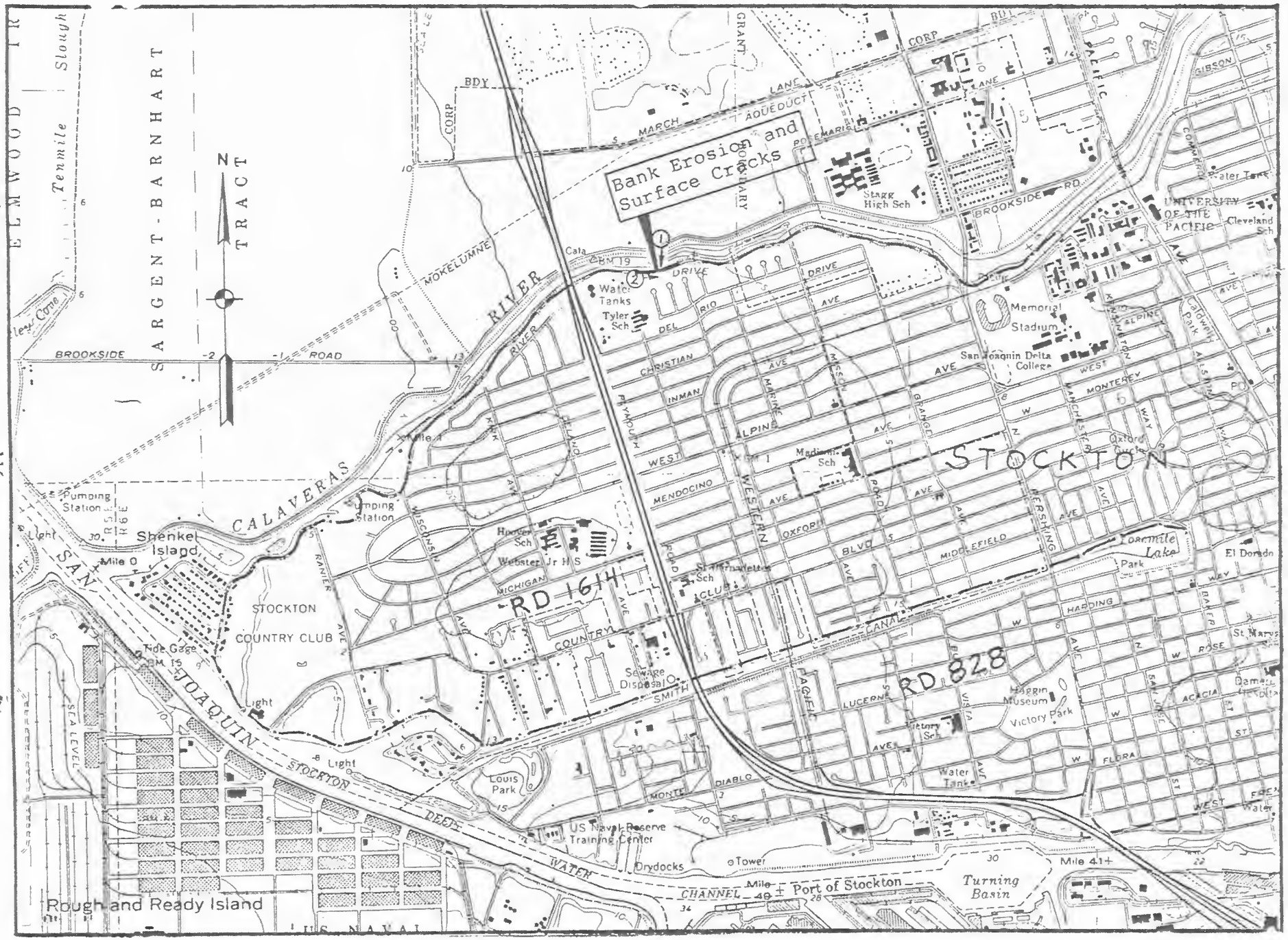
3. Levee Conditions. The levees along the Calaveras River were constructed of sandy silt, silt and silty clay soils. These materials are erodible as is evidenced by the intermittently eroded banks on each side of the river. A typical section along the left levee is 20 feet high on the waterside and 10 to 15 feet high on the landside. The slopes are typically 1(V):2(H) with a 20 to 25 feet wide paved crest. Other than intermitently placed rubble along some eroded sections of levee, there is no slope protection along the left bank. One 800-foot reach is in particularly poor condition. This reach is located approximately 1,000 feet upstream from the I-5 bridge. The waterside slope along this reach has eroded to a 1(V):0.5(H) slope. The slope is being undercut and the eroded slope is encroaching upon the paved portion of the road. Several tension cracks in the asphalt roadway run parallel to the levee. Signs of settlement are also evident.

The levee around the Stockton Country Club is fairly low in the area near the San Joaquin River. The 3-foot freeboard criteria should be checked. The levees, however, do appear to be in good condition in this area. The levees around the northern half of the country club are inconsequential to the flood potential of R.D. 1614. Dredged soils from the Stockton Deep Water Ship Channel were used in constructing a landfill for the entire area. ~~The landfill is as high as the existing~~ levee.

The levee along the Smith Canal is eroded and undercut in spots. There is no consistency in the slope protection used. Private homes are constructed adjacent to the entire length of the canal and each owner has chosen one form or another to protect against erosion. Rubble, rock, concrete slabs, and wood piers are examples of the methods that have been used. The levee was constructed from materials excavated during the construction of the Smith Canal. Surface samples of the levee soil indicates a fairly erodible sandy silt was used in constructing the levee. The levee along the north side of the canal is typically 12 feet high on either side, with a 15-foot wide crown, and 1(V):2(H) landside an 1(V):0.5(H) waterside slopes. However, there does not appear to be a high risk of levee failure due to erosion or instability. The levees appear stable and water velocities in the Canal are low since the canal terminates at Yosemite Lake. It should be noted that the north levee could only be spot-checked because of limited access at cross streets and limited viewing from the opposite bank.

4. Evaluation. The levees along the Smith Canal and the Stockton Country Club are considered stable. Several areas of levee along the Calaveras River are in need of maintenance. Also, several snags and growth in the River bottom were observed. These obstructions increase flood levels and divert flood waters against the banks. In it present condition this levee is not considered stable under a 100-year flood. Provided the 800-foot area the entire RD-1614 area discussed above is improved by placing gravel fill and rock slope protection, the entire RD 1614 area can be considered insurable under the 100-year flood.

Approx. location and direction of F[illegible]o



116

173

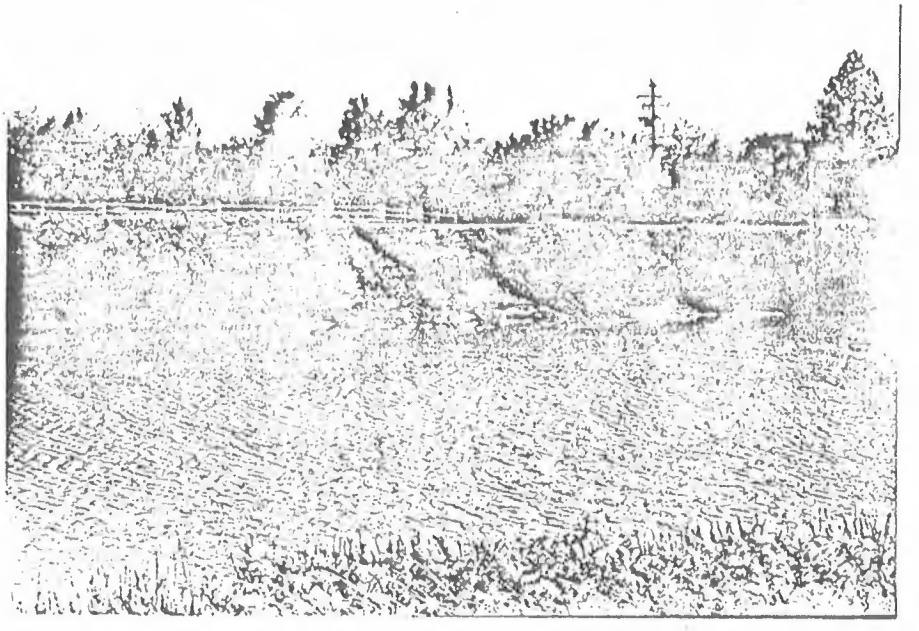


PHOTO 1. Eroded left bank of Calaveras river approximately .2 miles upstream of the I-5 Bridge. Concrete rubble used in attempt to stop erosion sloughed off. Photo 12 April 1985.



PHOTO 2. Same eroded bank on Calaveras River looking upstream. Note cracks in asphalt with signs of settlement. Photo 29 March 1985.

RECLAMATION DISTRICT NO. 1614

SMITH TRACT

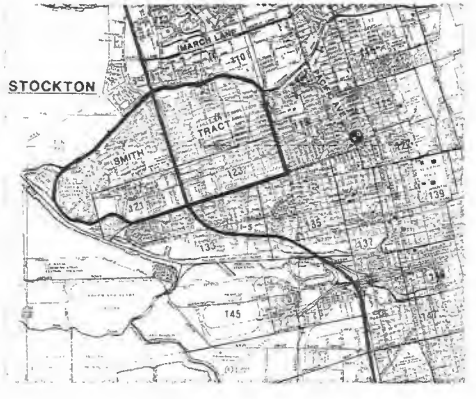
1987

PROFILES & SECTIONS



REGIONAL MAP

NTS



VICINITY MAP

NTS

1. BENCHMARK: BRASS DISK MARKING CITY OF STOCKTON TRAVERSE CONTROL MONUMENT STAMPED "78-1", IN MONUMENT BOX IN THE CROSS-WALK ON THE EAST SIDE OF PACIFIC AVENUE AT THE APPROXIMATE CENTERLINE OF WYANDOTTE STREET. ELEVATION 012 USGS DATUM SEE VICINITY MAP.
2. STATION 0+00 IS LOCATED AT WEST END OF PERSHING BRIDGE AS IT CROSSES SMITH CANAL. STATIONING PROCEEDS IN A CLOCKWISE DIRECTION.
3. PROFILE IS ALONG THE CENTERLINE OF THE LEVEE UNLESS OTHERWISE INDICATED.

GENERAL NOTES

INDEX:

TITLE SHEET	1A
BASE MAP	1B
PROFILES	1
CROSS SECTIONS	2-14

SMITH TRACT
RECLAMATION DISTRICT NO 1614

TITLE SHEET

12/87	
806-5	
NONE	
1A	14
E-1262	

TEMPORARY BENCHMARKS-

1. Top of curb at Pershing bridge, center railing Elev. 17.47'.
2. Top of headwall on north side of South Canal, 25' west of Pershing Bridge, Approx. Sta. 0+25; Elev. 4.97'.
3. Scribed arrow on top of curb at north-west corner of Walnut & Pershing; Elev. 4.94'.
4. West end of side-walk at northeast corner of Buena Vista & Walnut; Elev. 3.26'.
5. Top of northwest concrete wall at north end of Buena Vista pump station; Elev. 22.50'
6. Top of headwall at north side of Buena Vista pump station, at southwest corner of west wing walls; Elev. 2.45'.
7. Top of curb at east end on the north side of Chiquita Drive, north levee at South Canal, Sta. 61+90; Elev. 13.45'.
8. U.S. Army C.O.E. well monument, 53+22?, Sta. 128+42; Top of cover Elev. 17.18'; Top of 3" Steel pipe Elev. 16.98'.
9. Top of 3 X 3 post, Sta. 134+50; Elev. 12.15'.
10. U.S. Army C.O.E. well monument, 53+22?, Sta. 137+74; Top of cover Elev. 15.27'; Top of 2" Steel pipe Elev. 11.29'.
11. U.S. Army C.O.E. well monument, 53+22?, Sta. 148+50; Top of Cover Elev. 12.06'; Top of 2" Diameter iron pipe, Elev. 11.35'.
12. Top of survey marker post, Sta. 154+20; Elev. 13.58'.
13. P.K. nail at south edge of pavement along River Road, Sta. 167+10; Elev. 14.24'.
14. Bolt and washer at intersection of the centerlines of Palmer & River Roads; Sta. 181+67; Elev. 12.29'.
15. Discharge pipes at Wisconsin pump station, Sta. 197+75; west pipe, 1.4± elbow Elev. 6.94' west pipe, w.s. elbow Elev. 11.28' east pipe, 1.5± elbow Elev. 6.85' east pipe, w.s. elbow Elev. 11.21'
16. Top of pipe, Sta. 206+72; Elev. 16.84'.
17. Top of 18" discharge pipe, Sta. 226+35; Elev. 15.25'.
18. North rim of S.D. Manhole, 15' south of centerline, Sta. 245+18; Elev. 17.18'.
19. North rim of apparent box, Sta. 245+55; Elev. 16.64'.
20. Top of discharge pipe, w.s., Sta. 262+13; Elev. 17.29'.
21. Top of 8" discharge pipe, north side, Sta. 298+45; Elev. 14.65'.
22. Top of 4" diameter pipe, Sta. 367+27; landside Elev. 17.24'; waterside Elev. 16.24'.
23. Top of fire hydrant, "O" in Corey ,20' north of Euclid on west side of Pershing; Elev. 10.29'.
24. Chiseled cross on top of curb at southwest corner of Alpine and Pershing, Approx. Sta. 374+00; Elev. 7.03'.
25. Top of fire hydrant, "O" in ALPINE, at northwest corner of Monterey and Pershing; Elev. 8.24'.
26. Chiseled cross at top of curb at southwest corner of Country Club & Pershing; Elev. 5.35'.
27. Chiseled square at top of curb at southeast corner of Pershing & S. Tuxedo; Elev. 5.21'.

NOTE: TBMS 3,4,7, & 27 ARE NOT WITHIN DISTRICT BOUNDARIES

BRASS CAPS-

A. CALA PM 2 Brass cap U.S.C.A.G.S. monument stamped "CALA 2" 1959, located on north levee of Calaveras River, Across from Sta. 251+20; Elev. 7.26'.

B. CALA PM 1 Brass cap U.S.C.A.G.S. monument stamped "CALA 1" 1959, located on north levee of Calaveras River, Across from Sta. 259+50; Elev. 5.74'.

C. Brass cap stamped "U.S.E.D. Pacific", located on south levee of Calaveras River, Approx. 75' east of east side of Pershing Bridge; Elev. 21.15'.

D. Brass disk stamped "Pacific Use", located on south levee of Calaveras River, at southeast end of Pershing Bridge concrete abutment; Elev. 20.61'.

NOTE: BRASS CAPS ARE NOT WITHIN DISTRICT BOUNDARIES

USGS DATUM

1262

TEMPORARY BENCHMARKS-

1. Top of curb at Pershing bridge, center column, Elev. 12.82'
2. Top of headwall on north side of Santa Canal, 75' west of Pershing Bridge, Approx. Sta. 0+25; Elev. 4.82'.
3. Scribed arrow on top of curb at southwest corner of Walnut & Pershing; Elev. 4.94'.
4. West end of riprwalk at northeast corner of Buena Vista & Walnut; Elev. 2.76'.
5. Top of northwest concrete wall at north end of Buena Vista pump station, Elev. 11.58'.
6. Top of headwall at north side of Buena Vista pump station, at southeast corner of west wing wall; Elev. 2.46'.
7. Top of curb at east end on the north side of Sonoma Drive, south levee of Santa Canal. Sta. 31+55; Elev. 13.45'.
8. U.S. Army C.O.E. well monument, SU-232, Sta. 126+42; Top of cover Elev. 17.18'; Top of 2" Diam. pipe Elev. 16.88'.
9. Top of 3 I 2 post, Sta.134+93; Elev. 17.15'.
10. U.S. Army C.O.E. well monument, SU-233, Sta. 137+74; Top of cover Elev. 11.39'; Top of 2" Diam.pipe Elev. 11.20'.
11. U.S. Army C.O.E. well monument, SU-234, Sta.148+58; Top of Cover Elev. 12.96'; Top of 2" diameter iron pipe, Elev. 11.75'.
12. Top of survey marker post, Sta. 154+05; Elev. 13.56'.
13. P.C. nail at south edge of pavement along River Road, Sta. 167+15; Elev. 14.24'.
14. Bolt and washer at intersection of the centerlines of Palmer & River Roads; Sta. 181+67; Elev. 12.38'.
15. Discharge pipes at Wisconsin pump station, Sta. 197+25;
    west pipe, L.S. elbow; Elev. 9.04'
    west pipe, M.S. elbow; Elev. 11.52'
    east pipe, L.S. elbow; Elev. 9.65'
    east pipe, M.S. elbow; Elev. 11.21'
16. Top of pipe, Sta. 208+20; Elev. 14.64'.
17. Top of 18" discharge pipe, Sta. 208+95; Elev. 15.23'.
18. North rim of S.B. Manhole, 12' south of centerline, Sta. 245+18; Elev.17.18'.
19. North rim of monument nor, Sta. 245+50; Elev. 16.84 .
20. Top of discharge pipe, w.s., Sta. 252+15; Elev. 17.03'
21. Top of 8" discharge pipe, north side, Sta. 286+65; Elev. 14.64'.
22. Top of 4" diameter pipe, Sta. 287+27; Landside Elev. 13.34'; waterside Elev. 16.24'.
23. Top of fire hydrant, "2" in Corey ,20' south of Euclid on west side of Pershing; Elev. 10.29'.
24. Chiseled cross on top of curb at southwest corner of Alpine and Pershing, Approx. Sta. 324+45; Elev. 7.03'.
25. Top of fire hydrant, "8" in CONEY; at northwest corner of Monterey and Pershing; Elev. 5.22'.
26. Chiseled cross at top of curb at southwest corner of Country Club & Pershing; Elev. 5.25'.
27. Chiseled square at top of curb at southwest corner of Pershing & S. Tuxedo; Elev. 5.31'.

NOTE: TBMS 3,4,7, & 27 ARE NOT WITHIN DISTRICT BOUNDARIES

BRASS CAPS-

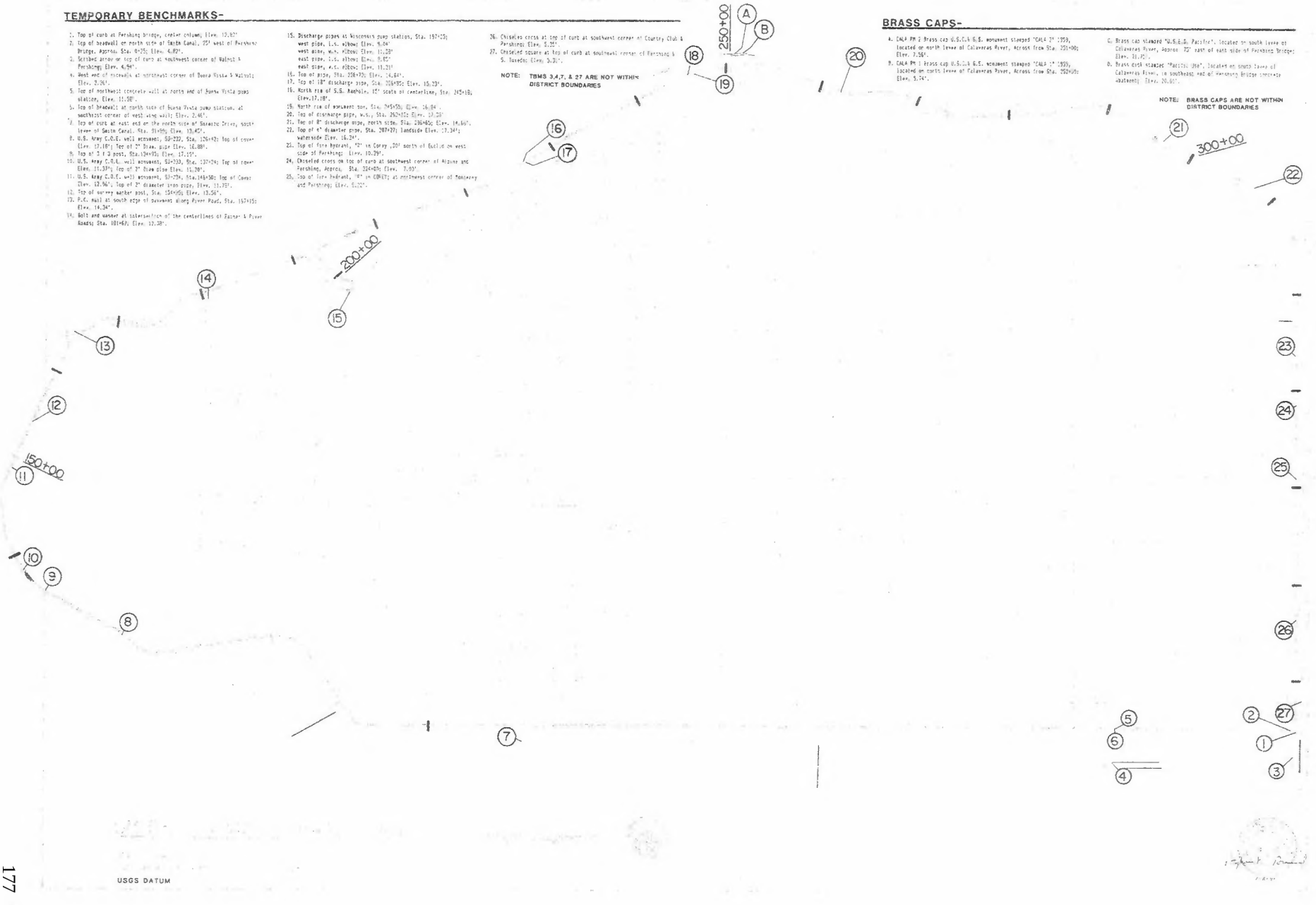
A. CALA PM 2 Brass cap U.S.C.&G.S. monument stamped "CALA 2" 1959, located on north levee of Calaveras River, across from Sta. 251+00; Elev. 7.56'.

B. CALA PM 1 Brass cap U.S.C.&G.S. monument stamped "CALA 1" 1959, located on north levee of Calaveras River, across from Sta. 292+05; Elev. 5.74'.

C. Brass cap standard "U.S.E.D. Pacific", located on south levee of Calaveras River, Approx. 75' east of east side of Pershing Bridge; Elev. 11.92'.

D. Brass disk stamped "Pacific 1964", located on south levee of Calaveras River, on southeast end of Pershing Bridge concrete abutment; Elev. 20.80'.

NOTE: BRASS CAPS ARE NOT WITHIN DISTRICT BOUNDARIES



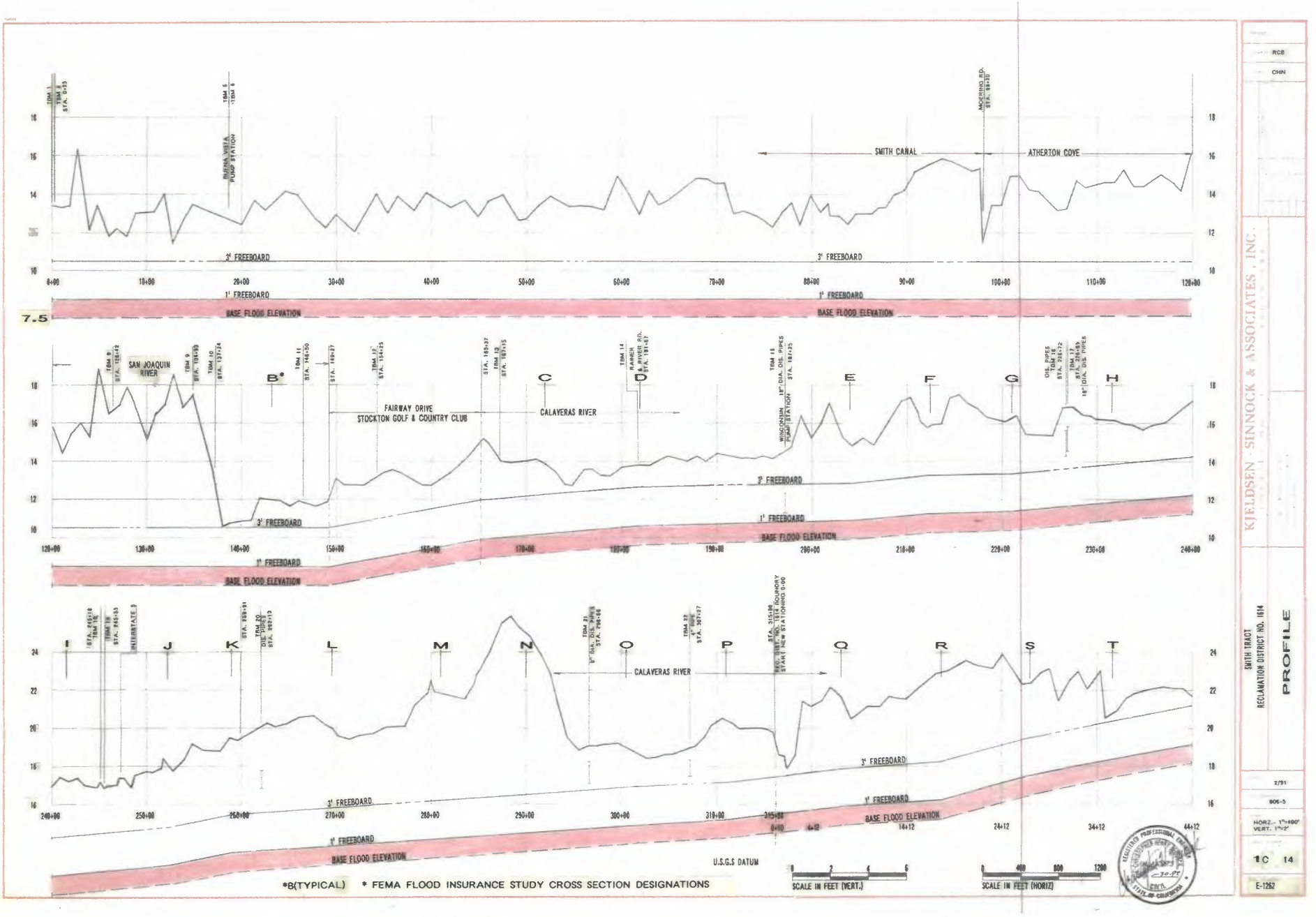
USGS DATUM

/MA

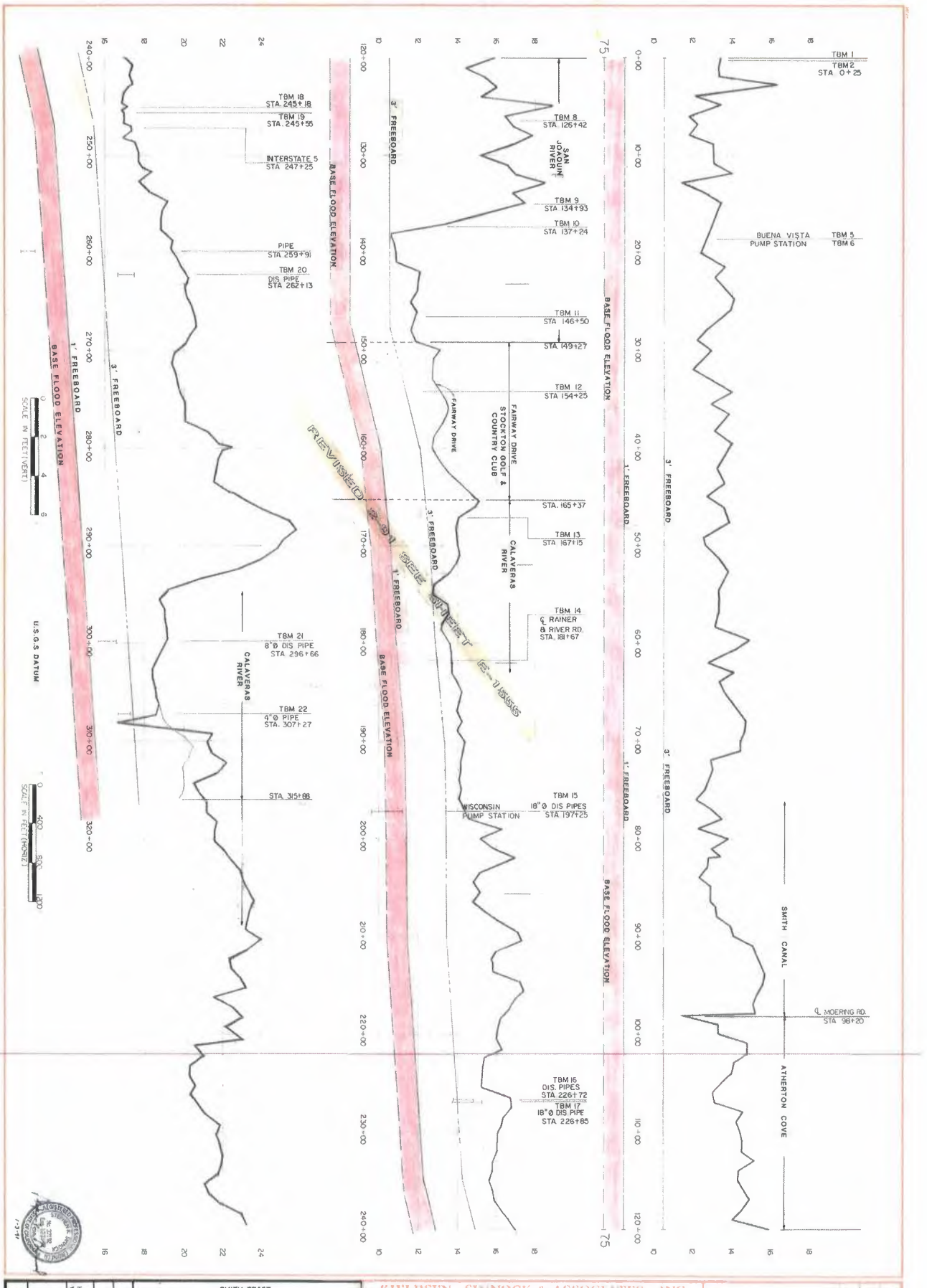
12

B 14

1262


SMITH CANAL
ATHERTON COVE
MORMON RD.
STA. 98+00
RIENA VISTA PUMP STATION
3' FREEBOARD
1' FREEBOARD
BASE FLOOD ELEVATION
SAN JOAQUIN RIVER
FAIRWAY DRIVE
STOCKTON GOLF & COUNTRY CLUB
CALAVERAS RIVER
RANNEY RD. & RIVER RD.
STA. 181+67
WISCONSIN PUMP STATION
STA. 187+25
CALAVERAS RIVER
U.S.G.S DATUM
*B(TYPICAL) * FEMA FLOOD INSURANCE STUDY CROSS SECTION DESIGNATIONS
SCALE IN FEET (VERT.)
SCALE IN FEET (HORIZ)
KJELDSEN · SINNOCK & ASSOCIATES, INC.
SMITH TRACT
RECLAMATION DISTRICT NO. 1614
PROFILE
HORZ.- 1"=400'
VERT. 1"=2'
1C 14
E-1262

PROFILE
KIELDSEN-SINNOCK & ASSOCIATES, INC.

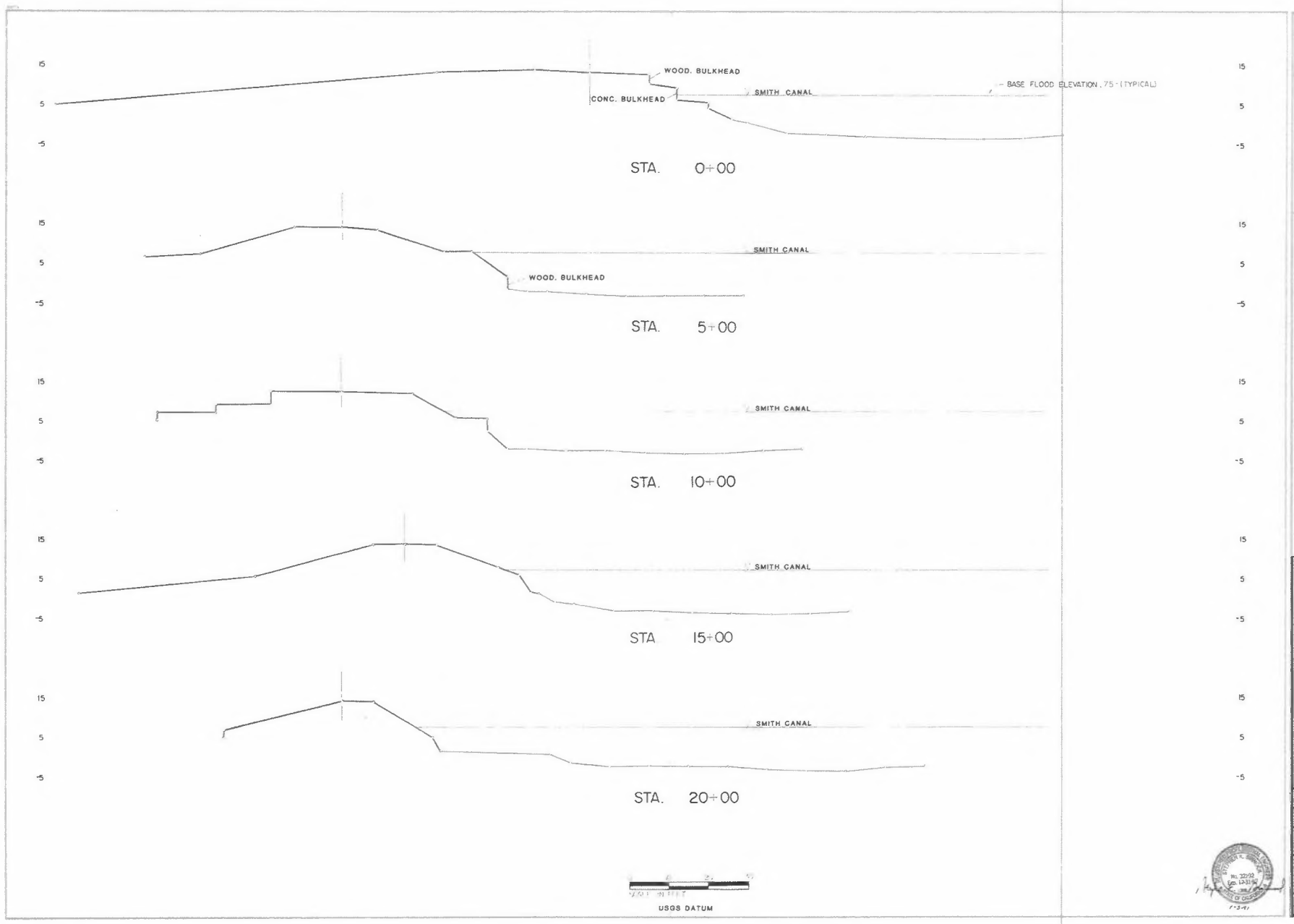


E-1262	14	HORIZ. - 1"=400' VERT. - 1"=4'	808-5	12/87	SMITH TRACT RECLAMATION DISTRICT NO. 1614 **PROFILE**

KJELDSEN SINNOCK & ASSOCIATES, INC.

1-3-91

1	1-1-91	PB	Changed Base Flood Elevation	JB	CHK'D MA
2	1-11-91	PB	- 24,000		
3	2-21-91	CHK	AVG 200		
4	9-1-91	PB	Added Profile		
5	11-11-91	PB	Changed Profile Grid		



JB
CHN/MA

KIELDSEN - SINNOCK & ASSOCIATES, INC.

SMITH TRACT
RECLAMATION DISTRICT NO. 1614

CROSS SECTIONS

12/87
806-5
1"-10'
2
14
E-1262

250130.33 Topographic Work Map.pdf

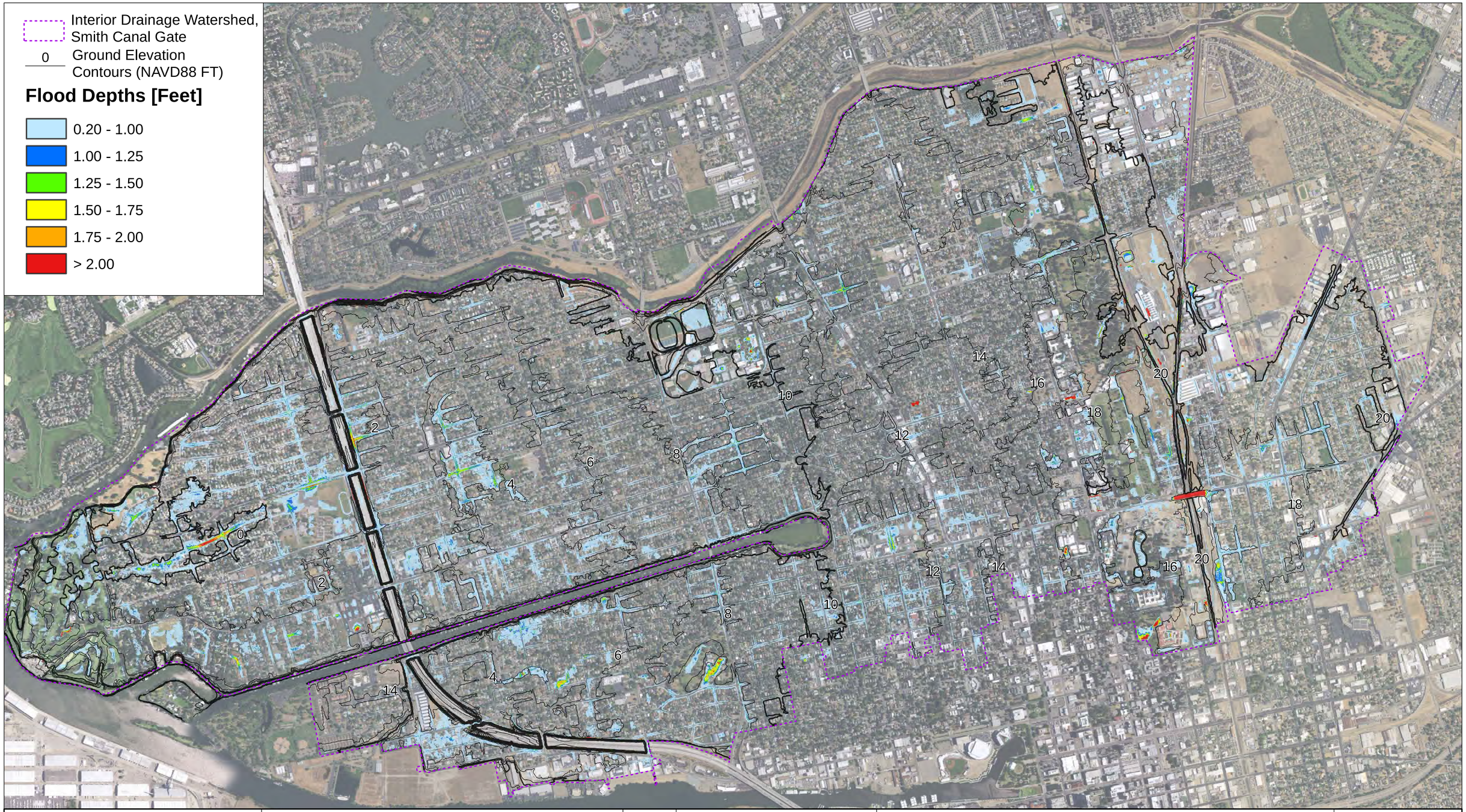
Submitted by Trustee Gulli

Interior Drainage Watershed, Smith Canal Gate

0 Ground Elevation Contours (NAVD88 FT)

Flood Depths [Feet]

- 0.20 - 1.00
- 1.00 - 1.25
- 1.25 - 1.50
- 1.50 - 1.75
- 1.75 - 2.00
- > 2.00



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Fax: (916) 608-2232

Data References

Ground Terrain:
Central Valley Flood Evaluation Delineation Program (2009)
Floodplain:
Smith Canal 100-year Interior Drainage Analysis (2017)

N

0 0.5 Miles

San Joaquin Area Flood Control Agency

Smith Canal Ground Topography and 100-year Residual Floodplain

PROFESSIONAL ENGINEER
David Peterson
No. C 69715
Exp. 06/30/18
CIVIL
STATE OF CALIFORNIA

250130.25-170216_2017.02.16. Interior Drainage Analysis

Submitted by Trustee Gulli

SJAFCA
San Joaquin Area FLOOD CONTROL Agency

February 24, 2017

Daven Patel, P.E. CFM
MT-2 Technical Manager, STARR II
LOMC Clearinghouse
847 South Pickett Street
Alexandria, VA 22304-4605

SMITH CANAL CLOSURE STRUCTURE – REQUEST FOR ADDITIONAL INFORMATION
Case No.: 16-09-2067R
Communities: City of Stockton, CA and
San Joaquin County (Unincorporated Areas), CA
Community Nos.: 060302 and 060299
316-AD

This correspondence is written in response to our last conference call on the December 15, 2016, regarding the proposed Smith Canal Closure Structure. The purpose of the conference call was for FEMA to provide comments on information we submitted on July 6, 2016, in response to FEMA's letter dated June 2, 2016. The conference call was productive and we asked if all the issues for the CLOMR had been satisfied and both STARR II and FEMA stated that was the case other than the remaining 2 items discussed during the call: internal drainage; notification to property owners for BFE and SFHA increases.

The attached internal drainage information includes a detailed base flood (100-year) interior drainage analysis. The results show ponding in the streets of less than 1 foot that should result in no mapping requirement and property owner notification.

It is important to note in 2010, we submitted a request to FEMA for a Conditional Letter of Map Revision (CLOMR). FEMA reviewed the CLOMR request and, in 2011, concurred that the gate structure would meet FEMA standards for providing at least 100-year flood risk-reduction. In 2013 property owners voted to assess themselves for the project based on the CLOMR. Homeowners started paying assessments in 2014 that average $170 and up $400 per year. Design is to be completed in 2017 and construction will begin in 2018.

During our conference call on December 15, the remaining information needed was communicated to us. However, to our dismay, your letter dated January 27, 2017, included a request for additional information not previously communicated on December

15. We look forward to our conference call on March 7, to discuss these additional data requests.

If you have any questions, I can be reached at (209) 937-8866 or at roger.churchwell@stocktonca.gov.

ROGER CHURCHWELL, P.E., CFM
DEPUTY EXECUTIVE DIRECTOR

RC:dc

Attachment

emc: Jim Giottonini, SJAFCA
Scott Shapiro, SJAFCA
Tom Schweitzer, STARR II
Brian Koper, FEMA
Michael Nakagaki, FEMA
Luis Rodriquez, FEMA
Dave Peterson, PBI
Mike Rossiter, PBI
Laura Morgan-Kessler, Van Scoyoc Associates
Max Perkins, Van Scoyoc Associates

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Smith Canal 100-year Interior Drainage Analysis

Prepared for: *San Joaquin Area Flood Control Agency* *February 16, 2017*

Prepared by: Michael Pantell, E.I.T.

Reviewed by: Mike Rossiter, P.E., C.F.M. & Dave Peterson, P.E.

Introduction

The San Joaquin Area Flood Control Agency (SJAFCA) received a letter from FEMA dated January 27, 2017 which included a "Summary of Additional Data Required to Support a Conditional Letter of Map Revision (CLOMR)" related to the Smith Canal closure structure. In response to Item 1 that was detailed in this letter, a 100-year interior rainfall-runoff analysis was refined to evaluate if there are areas of residual flooding within RD 1614 and RD 828. To do this, a HEC-HMS model was developed to analyze the 100-year rainfall runoff event and a HEC-RAS 2D model was used to analyze the flow paths and areas of expected ponding of this rainfall-runoff. The following Technical Memorandum (TM) outlines the effort to develop these models and to assess the residual flooding for the Smith Canal study area.

HEC-HMS Model Development

PBI previously developed a HEC-HMS model for the purpose of estimating the 25-year stormwater hydrograph that is expected to enter Smith Canal during a 100-year tide event [1]. For the purposes of assessing residual floodplains, the HEC-HMS model from the previous study was expanded to include additional subbasins that drain to pumps located along the south levee of the lower Calaveras River. The information in the following section is identical to the previous PBI HEC-HMS study with the addition of the lower Calaveras River subbasins.

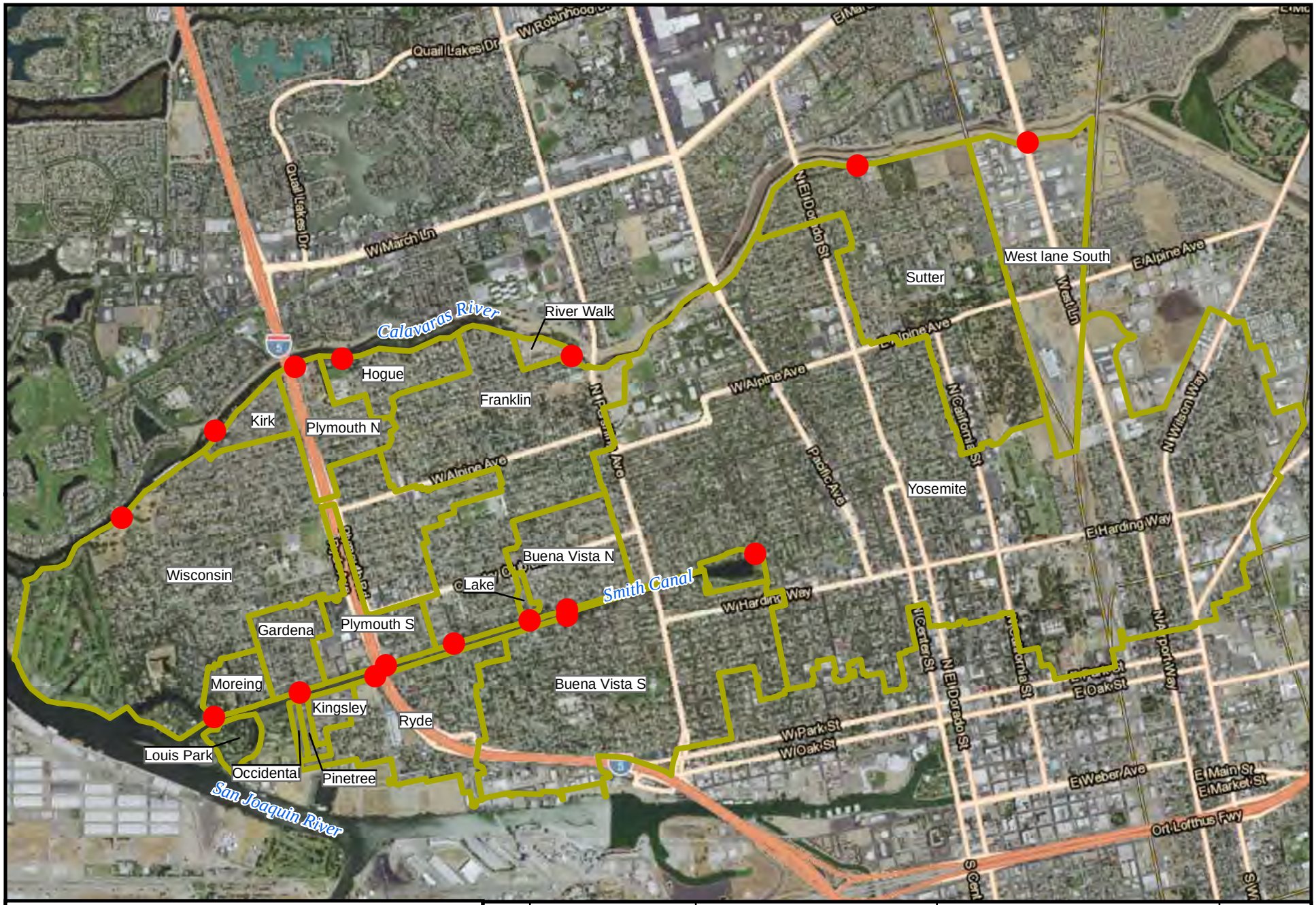
Subbasin Delineation

Subbasin boundaries were identified in the original 2010 Smith Canal Interior Drainage Analysis and the 2009 Calaveras River Interior Drainage Analysis reports; both prepared by Kjeldsen, Sinnock & Neudeck, Inc [2, 3]. Subbasins were delineated based on ground topography and the City of Stockton's storm drain infrastructure.

Figure 1 provides an overview of the subbasins included in this study. A total of 20 subbasins covering approximately 8 square miles were identified within the study boundary. Calculated subbasin areas in acres are provided in Table 1.

Table 1 Drainage areas (acres) for each subbasin.

Subbasin	Drainage Area (ac)
Buena Vista North	107.7
Buena Vista South	477.5
Franklin	420.2
Gardena	56.2
Hogue	67.3
Kirk	33.7
Lake	5.9
Moreing	34.2
Plymouth North	80.8
Plymouth South	85.9
River Walk	13.0
Ryde	167.1
Sutter	432.9
West Lane South	233.9
Wisconsin	737.7
Yosemite	1,935.9
Kingsley	18.0
Louis Park	21.3
Occidental	5.6
Pinetree	7.8
Subtotal Smith Canal	**3,343.3**
Subtotal Calaveras River	**1,599.3**
Total	**4,942.6**



Pump Stations

Basin Boundaries

0 1,300 2,600 Feet

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HEC-HMS Subbasins

FIGURE
1

User-Specified S-Graph

The HEC-HMS model uses a special summation unit hydrograph (s-graph) as its transform method to estimate the timing of the subbasin runoff. The user-specified s-graph method is based on subbasin lag times and a s-graph that is defined in the San Joaquin County Hydrology Manual [4].

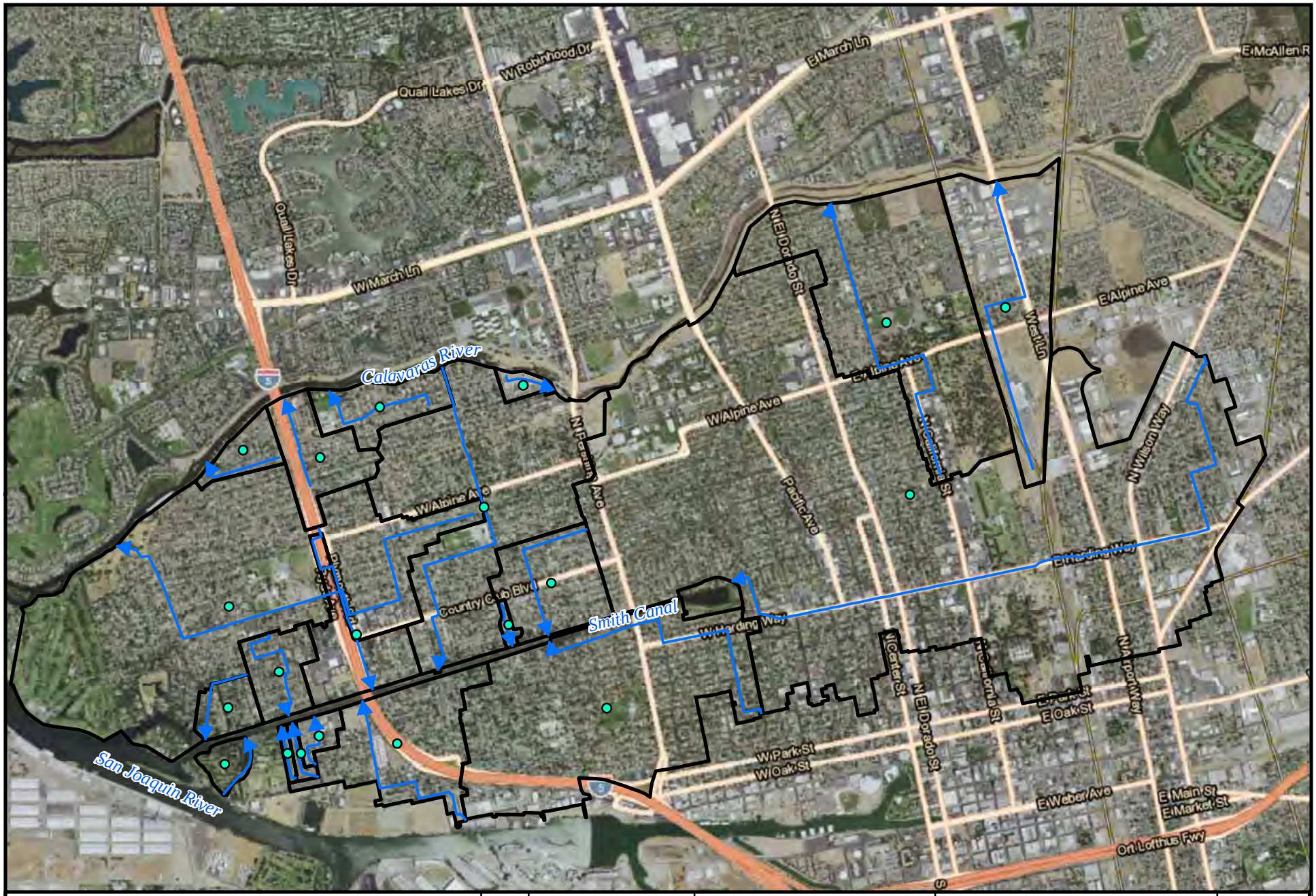
Lag time (Lg) defines the elapsed time from the beginning of unit effective rainfall to the instant that the summation hydrograph for the point of concentration reaches 50 percent of the ultimate discharge. Basin lag times were calculated according to guidelines set forth in the San Joaquin County Hydrology Manual [4]. The following equation was used:

$$L_g = 24n\left(\frac{L \cdot L_C}{S^{0.5}}\right)^{0.38}$$

Where:

L_g	=	Lag time [hours]
n	=	Average n value of watercourse estimated using Figure E-2 in the San Joaquin County Hydrology Manual
L	=	Length of longest watercourse [miles]
L_C	=	Length along longest watercourse, measured upstream to a point opposite center of area [miles]
S	=	Overall slope of longest watercourse [feet/mile]

L, L_C, and S were calculated using ArcGIS software, DWR LiDAR data [5], and Google Earth. Flowpaths identified for these calculations are shown in Figure 2.


Quail Lakes Dr
W Robinhood Dr
E March Ln
W March Ln
E McAllen R
N El Dorado St
E Alpine Ave
W Alpine Ave
Calaveras River
N Pilgrim Ave
Pacific Ave
N Wilson Way
E Fremont St
Smith Canal
E Harding Way
N Center St
N El Dorado St
E Oak St
W Park St
W Oak St
E Weber Ave
E Main St
E Market St
San Joaquin River
Flowpath
Basin Boundaries
Centroid
0
1,000
2,000
Feet
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SUBBASIN FLOWPATHS
FIGURE
2

The lag time parameters are summarized for each subbasin in Table 2.

Table 2 Lag time parameters for each subbasin

Drainage Subarea Name	L (mi)	Lc (ft)	Lc (mi)	Lg (hr)	Basin n Value
Buena Vista North	0.65	1,443	0.27	0.17	0.015
Buena Vista South	1.32	2,545	0.48	0.23	0.015
Franklin Avenue	1.56	5,020	0.95	0.35	0.015
Gardena Ave.	0.59	1,421	0.27	0.20	0.015
Hogue Ave.	0.57	1,641	0.31	0.17	0.015
Kirk Avenue	0.36	1,141	0.22	0.08	0.015
Lake Drive	0.19	479	0.09	0.05	0.015
Moreing	0.39	1,182	0.22	0.14	0.015
Plymouth North Rd.	0.38	1,346	0.25	0.08	0.015
Plymouth South Road	0.80	1,324	0.25	0.23	0.015
River Walk	0.23	409	0.08	0.03	0.015
Ryde Ave.	0.88	1,671	0.32	0.15	0.015
Sutter St.	1.51	2,639	0.50	0.29	0.015
West lane South	1.38	2,497	0.47	0.21	0.015
Wisconsin Ave	2.19	2,337	0.44	0.27	0.015
Yosemite Lake	3.02	7,086	1.34	0.49	0.015
Kingsley Ave.	0.26	479	0.09	0.06	0.015
Louis Park	0.29	1,404	0.27	0.18	0.025
Occidental Ave	0.24	646	0.12	0.09	0.015
Pinetree Dr.	0.28	773	0.15	0.10	0.015

The County's S-graph was developed based on rainfall-runoff data from a California catchment considered to be hydrologically similar to the local catchments. A valley developed s-graph was used for the analysis. The following figure shows the time versus discharge relationship for a s-graph that is geared toward a developed area with relatively flat slopes.

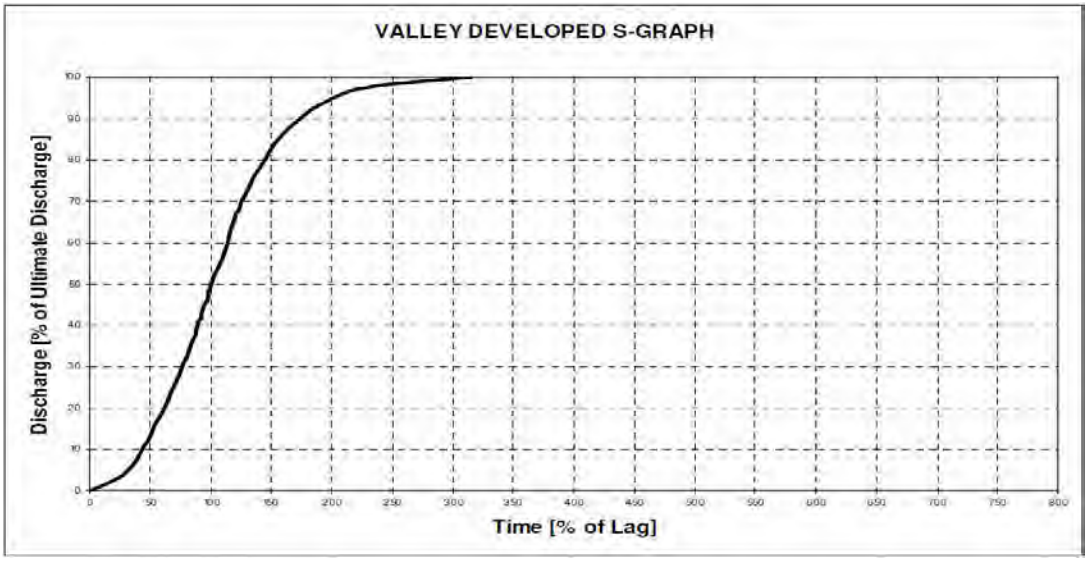


Figure 3 San Joaquin County Valley-Developed S-Graph

Loss Rates

The HEC-HMS model uses the initial and constant loss rate method to model subbasin infiltration and depression storage losses. The Natural Resources Conservation Service (NRCS) has classified all soils into four hydrologic soil groups (A, B, C, and D) according to their infiltration rates [6].

Table 3 NRCS hydrologic soil groups

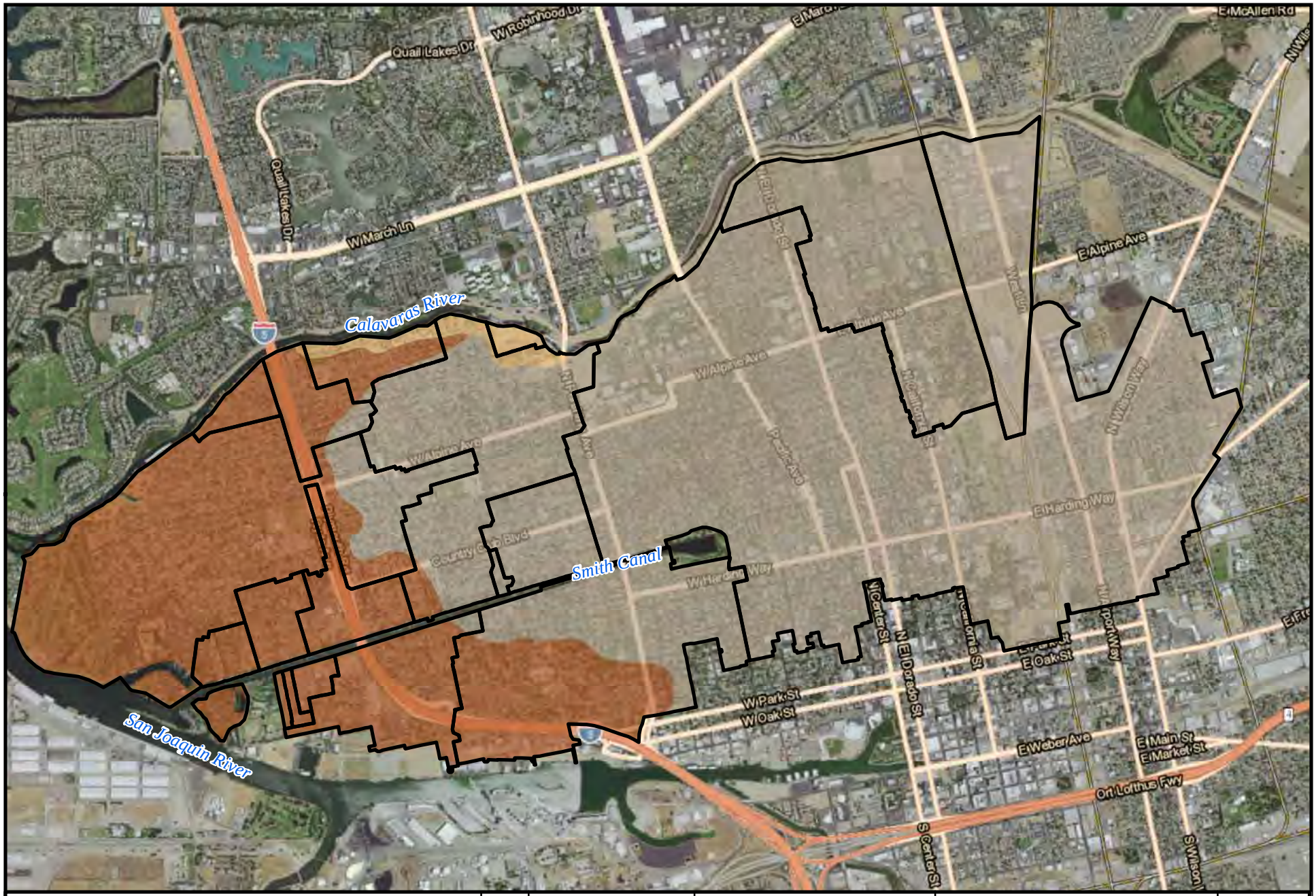
Hydrologic Soil Group	Loss Rate Range [in/hr]	PBI's Assumed Loss Rate [in/hr]
A	> 0.3	0.35
B	0.15 - 0.30	0.2
C	0.05 - 0.15	0.1
D	0.00 - 0.05	0.025

GIS soils data was obtained from the NRCS [7] and used to determine the proportional coverage of soil groups within each subbasin (Figure 4). A weighted average of loss rates was then calculated for each subbasin. With no Type A soils present in the study area, subbasin loss rates range from 0.025 inches per hour to 0.2 inches per hour. A summary table showing the makeup of soils and weighted loss rate parameters for each subbasin is provided in Table 4.

Table 4 NRCS hydrologic soil groups for each subbasin.

NRCS Soil Group	A	B	C	D	Composite Loss Rate	Initial Loss
Infiltration Rate	0.35 in/hr	0.2 in/hr	0.1 in/hr	0.025 in/hr		
Subbasin	[acres]	[acres]	[acres]	[acres]	[in/hr]	[inches]
Buena Vista North	--	--	--	107.2	0.025	0.2
Buena Vista South	--	--	234.7	234.4	0.063	0.2
Franklin	--	25.0	19.8	374.9	0.039	0.2
Gardena	--	--	55.4	--	0.100	0.2
Hogue	--	18.8	42.6	5.3	0.122	0.2
Kirk	--	--	33.7	--	0.100	0.2
Lake	--	--	--	5.9	0.025	0.2
Moreing	--	--	32.5	--	0.100	0.2
Plymouth North	--	1.2	67.5	12.2	0.090	0.2
Plymouth South	--	--	84.7	--	0.100	0.2
River Walk	--	12.9	--	--	0.200	0.2
Ryde	--	--	160.9	5.4	0.098	0.2
Sutter	--	--	--	432.9	0.025	0.2
West Lane South	--	--	--	233.8	0.025	0.2
Wisconsin	--	--	631.7	92.9	0.090	0.2
Yosemite	--	--	0.1	1,929.0	0.025	0.2
Kingsley	--	--	17.9	--	0.100	0.2
Louis Park	--	--	18.2	--	0.100	1.5
Occidental	--	--	5.6	--	0.100	0.2
Pinetree	--	--	7.7	--	0.100	0.2

EM 1110-2-1417 recommends that initial losses are set to 0.2 inches for urban subbasins and 1.5 inches for grass lands or open space [8]. The majority of the study area is developed residential with parks, fields, and golf courses spread throughout the subbasins. Initial losses ranged from 0.2 inches for subbasins that were 100% developed to 1.5 inches for the Louis Park subbasin which is a non-developed open space.



NRCS Hydrologic Soil Groups

Basin Boundaries | B | C | D

0 1,000 2,000 Feet

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SUBBASIN SOIL COVERAGE

FIGURE 4

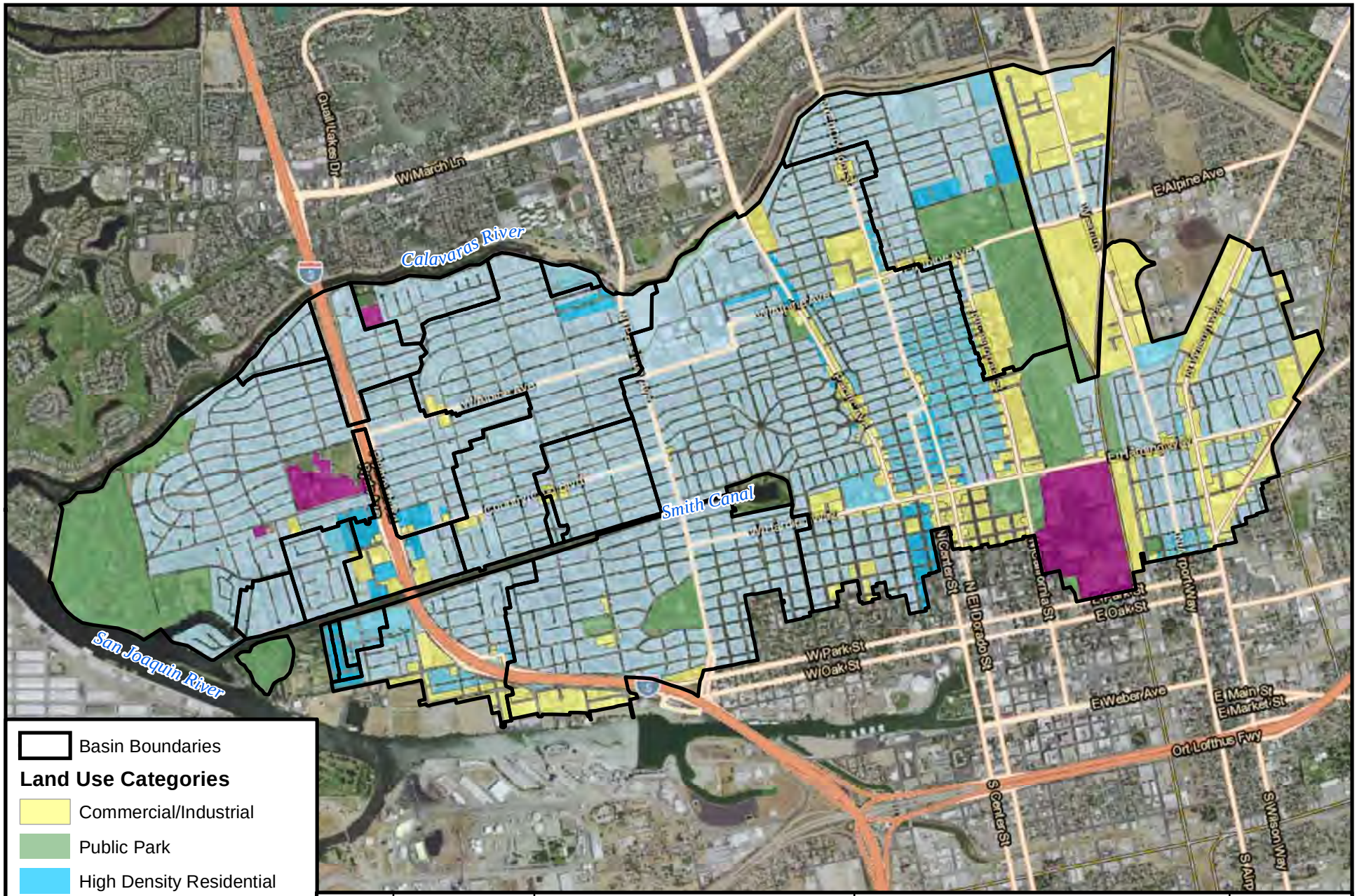
Impervious Percentages

Impervious percentages were assigned based on the land use type within each subbasin. GIS land use survey data was obtained from San Joaquin County and the City of Stockton and is shown in Figure 5 [9, 10].

Each land use type was assigned an equivalent impervious percentage based on recommendations in the San Joaquin County Hydrology Manual shown in Table 5 [4].

Table 5 Assigned impervious percentages for each land use type.

Land Use Type	Impervious %
School	40
Commercial	90
Industrial	90
Low Density Residential	40
Medium Density Residential	50
High Density Residential	80
Public Park	15


Calaveras River
Smith Canal
San Joaquin River
Quail Lakes Dr
W March Ln
E Alpine Ave
N Center St
N El Dorado St
Pershing Ave
E Oak St
W Park St
W Oak St
E Weber Ave
E Main St
E Market St
Off Lofthus Fwy
S Center St
S Wilson Way
Basin Boundaries
Land Use Categories
Commercial/Industrial
Public Park
High Density Residential
Medium Density Residential
Light Density Residential
School
0 1,000 2,000
Feet
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SUBBASIN LAND USE
FIGURE
5

A composite impervious percentage was calculated for each subbasin based on its proportional makeup of land use types. Composite impervious percentages were checked using aerial imagery and adjusted where necessary. A summary table of subbasin imperviousness is provided in Table 6.

Table 6 Assigned impervious percentages for each land use type.

Land Use Classification	Public Park	School	Low Density Residential	Medium Density Residential	High Density Residential	Commercial Downtown, Business, or Industrial	Composite Impervious Percentage
Percent Impervious	15%	40%	40%	50%	80%	90%	
Subbasin Area	[Acres]	[Acres]	[Acres]	[Acres]	[Acres]	[Acres]	
Buena Vista North	-	-	80.2	-	-	2.5	42%
Buena Vista South	27.9	-	267.2	2.2	-	33.6	43%
Franklin	-	-	311.9	0.5	9.6	5.6	42%
Gardena	-	-	36.2	4.7	3.0	0.9	45%
Hogue	-	9.3	43.6	-	-	-	40%
Kirk	-	-	26.1	-	-	-	40%
Lake	-	-	3.9	-	-	0.5	45%
Moreing	-	-	30.6	-	-	-	40%
Plymouth North	-	-	42.7	-	-	-	40%
Plymouth South	-	-	22.0	-	15.2	16.7	67%
River Walk	-	-	2.8	6.8	-	-	47%
Ryde	-	-	60.5	17.5	1.8	25	54%
Sutter	127.7	-	172.7	11.3	18.5	30.4	38%
West Lane South	5.7	-	43.8	-	-	137.5	76%
Wisconsin	170.9	41.8	362.0	-	11.4	5.7	34%
Yosemite	93.8	101.5	765.8	125.4	33.6	318.0	51%
Kingsley	-	-	-	13.5	0.3	-	51%
Louis Park	21.3	-	-	-	-	-	15%
Occidental	-	-	-	-	3.4	-	70%
Pinetree	-	-	-	0.1	5.4	-	70%

Pump Stations and Gravity Culverts

The subbasins are drained by through-levee culverts with flap gates and stormwater pump stations. Sixteen (16) of the 20 subbasins within the study area are drained by interior drainage pump stations. Pump station capacities were gathered from City of Stockton and Reclamation District records. These pump stations were added to the HEC-HMS model.

The Smith Canal study area also includes 4 small subbasins that drain through gravity culverts. Capacities of the culverts were determined using the U.S. Department of Transportation HY-8 culvert software.

The total pump station and gravity culvert capacities for each subbasin are shown in Table 7.

Table 7 Floodplain pump station capacities

Subbasin Name	**Total Capacity (cfs)**
Pump Stations	
Buena Vista North	12.3
Buena Vista South	69.3
Franklin	34.0
Gardena	12.5
Hogue	6.2
Kirk	14.5
Lake	6.0
Moreing	12.3
Plymouth North	6.0
Plymouth South	31.9
River Walk	10.5
Ryde	37.4
Sutter	54.1
West Lane South	47.5
Wisconsin	21.8
Yosemite	240.8
Gravity Culverts	
Kingsley	11.8
Louis Park	25.0
Occidental	12.1
Pinetree	16.3
Total	634.7

Planned Wisconsin Pump Station Upgrade

Plans to upsize the pumps at the Wisconsin pump station are currently at approximately the 60% design phase and would increase the maximum pump capacity from the existing 21.8 cfs to 66 cfs. A separate version of the HEC HMS model was created to analyze this upsized pump station scenario.

Design Storm Development

Design storms were developed for input into HEC-HMS according to procedures and precipitation depth-duration-frequency data included in the San Joaquin County Hydrology Manual. A 100-year return period, 24-hour duration storm event was created for estimation of interior drainage flows.

Design Storm Hyetograph

The San Joaquin County Hydrology Manual includes rainfall Depth-Duration-Frequency tables based on a statistical analysis of rainfall data in and immediately adjacent to San Joaquin County. The following rainfall data was coded into HEC-HMS as a 100-year, 24-hour storm.

Table 8 100-year Depth-Duration-Frequency for San Joaquin County (Isohyet #14)

Rainfall duration:	24 hour	12 hour	6 hour	3 hour	2 hour	1 hour	30 min	15 min
Precipitation (in):	3.36	2.55	1.93	1.46	1.24	0.94	0.71	0.54

HEC HMS Model Verification

The HEC-HMS model was run using rainfall from an observed storm event and the model output was compared to observed pump station records. The observed storm event occurred on December 11-12, 2014 where 2.16 inches of rainfall fell over a 20-hour period. Rainfall data were taken from the Stockton Fire Station (SFS) rainfall gage as reported by the California Data Exchange Center (CDEC). This storm event was selected because it was a relatively large, recent event where concurrent rainfall and pump station data were available.

Pump station records were obtained from the City of Stockton Municipal Utilities District (MUD). Pump data were available for the Legion Park pump station in terms of hour meter readings for each of the 5 pumps that make up this pump station. The Legion Park pump station drains the Yosemite subbasin which represents 39% of the total study area. The pump station is equipped with five pumps: Pump 1 is a small nuisance water pump that does not typically operate during flood events. Pumps 2 through 5 each have a 27,000 gpm (60.2 cfs) capacity. Table 9 shows the observed records from the four storm pumps during the December 11-12, 2014 storm event.

Table 9 Legion Park pump utilization during the 12/11/14 – 12/12/14 storm event

Pump No.	2	3	4	5
Capacity (cfs)	60.2	60.2	60.2	60.2
Hour-Meter Readings (hrs)				
12/11/2014 7:53	915.5	130.2	615.5	904.6
12/14/2014 15:53	937.5	140.2	629.2	919.4
Total hours in operation	22	10	13.7	14.8
Pumped Volume (ac-ft)	109.4	49.7	68.1	73.6
Total Pumped Volume (ac-ft)		300.8		

For the observed December 2014 storm event, model results were verified by comparing the modeled runoff volume within the Yosemite subbasin to observed runoff volumes that were determined based on stormwater pump records associated with the same storm.

The modeled results show 296.3 ac-ft of runoff being generated within the Yosemite Lake subbasin as a result of the December 11-12, 2014 storm event. Using the Legion Park pump records, it was estimated that this pump station discharged approximately 300 ac-ft from the Yosemite subbasin in response to this same storm, a 1.50% difference from the modeled estimate. The model verification indicates that the HEC-HMS model reasonably represents the hydrologic response of the watershed. A time-series table of precipitation, loss, and total runoff volumes from this calibration event is included in Attachment A.

HEC HMS Results

Following model verification, the HEC-HMS model was run with the 100-year, 24-hour precipitation scenario. A summary of results from the HEC-HMS model is provided in Table 10 on the following page.

The entire study area produced 1,118 acre-feet of total runoff, which equates to 81% of the total precipitation volume from the 100-year storm event. In terms of a standard SCS curve number (CN) approach, an 81% rainfall-to-runoff ratio corresponds to a composite CN of 92 for the study area. With the study area having predominantly Type D (low infiltration) soils and being highly urbanized with a large percentage of impervious surfaces, the runoff response computed in the modeling relates reasonably well with the SCS approach.

Table 10 HEC-HMS model results for each subbasin

Subbasin	Drainage Area (ac)	Precipitation[a] (ac-ft)	Loss (ac-ft)	Total Runoff (ac-ft)	Runoff to Precipitation ratio	Peak Pump/ Culvert Discharge (cfs)	Excess Runoff Beyond Pump Capacity (ac-ft)
Pump Station							
Buena Vista North	107.7	30.1	3.8	26.3	0.87	12.3	10.7
Buena Vista South	477.5	133.6	34.0	99.6	0.75	69.3	36.9
Franklin	420.2	117.6	20.5	97.1	0.83	34.0	47.3
Gardena	56.2	15.7	5.2	10.6	0.67	12.5	3.5
Hogue	67.3	18.8	7.3	11.6	0.61	6.2	5.7
Kirk	33.7	9.4	3.4	6.0	0.64	14.5	1.5
Lake	5.9	1.7	0.2	1.5	0.88	6.0	0.2
Moreing	34.2	9.6	3.4	6.2	0.65	12.3	1.6
Plymouth North	80.8	22.6	7.6	15.0	0.66	6.0	8.0
Plymouth South	85.9	24.0	4.7	19.3	0.80	31.9	4.3
River Walk	13.0	3.7	1.4	2.3	0.62	10.5	0.4
Ryde	167.1	46.8	12.5	34.3	0.73	37.4	10.3
Sutter	432.9	121.1	16.1	105.0	0.87	54.1	40.2
West Lane South	233.9	65.5	3.4	62.1	0.95	47.5	17.7
Wisconsin	737.7	206.2	76.6	129.6	0.63	21.8	91.4
Yosemite	1,935.9	539.9	56.5	483.4	0.90	240.8	177.9
Gravity Culvert							
Kingsley	18.0	5.0	1.5	3.5	0.70	11.8	0.7
Louis	21.3	6.0	3.8	2.2	0.37	25.0	0.1
Occidental	5.6	1.6	0.3	1.3	0.81	12.1	0.1
Pinetree	7.8	2.2	0.4	1.8	0.82	16.3	0.1
Total	**4,942.6**	**1,381.2**	**262.5**	**1,118.7**	-	-	-

[a]100-year, 24-hour Storm = 3.36 inches
[b]Wisconsin Pump station has plans to be upsized which will reduce ponding. See discussion in Section 6.0.

Using the Wisconsin subbasin as an example, the following provides a narrative of the data that is contained in Table 10: The Wisconsin subbasin totals 737.7 acres. With a 3.36-inch storm event, a total of 206.2 acre-feet of precipitation fell over this subbasin. 76.6 acre-feet of this precipitation was lost to soil infiltration, the remaining 129.6 acre-feet of the precipitation ended up as runoff which equates to a 0.63 runoff-to-precipitation ratio. The Wisconsin subbasin is equipped with a pump station that has a 21.8 cfs capacity and can discharge all runoff at or below this capacity to the Calaveras River. During the peak of the storm event, the total runoff is beyond the capacity of the pump station which results in 91.4 acre-feet of runoff in the subbasin that can't immediately be discharged.

Figure 6 provides an example hydrograph for the Wisconsin subbasin. Runoff hydrographs for all subbasins are provided in Attachment C.

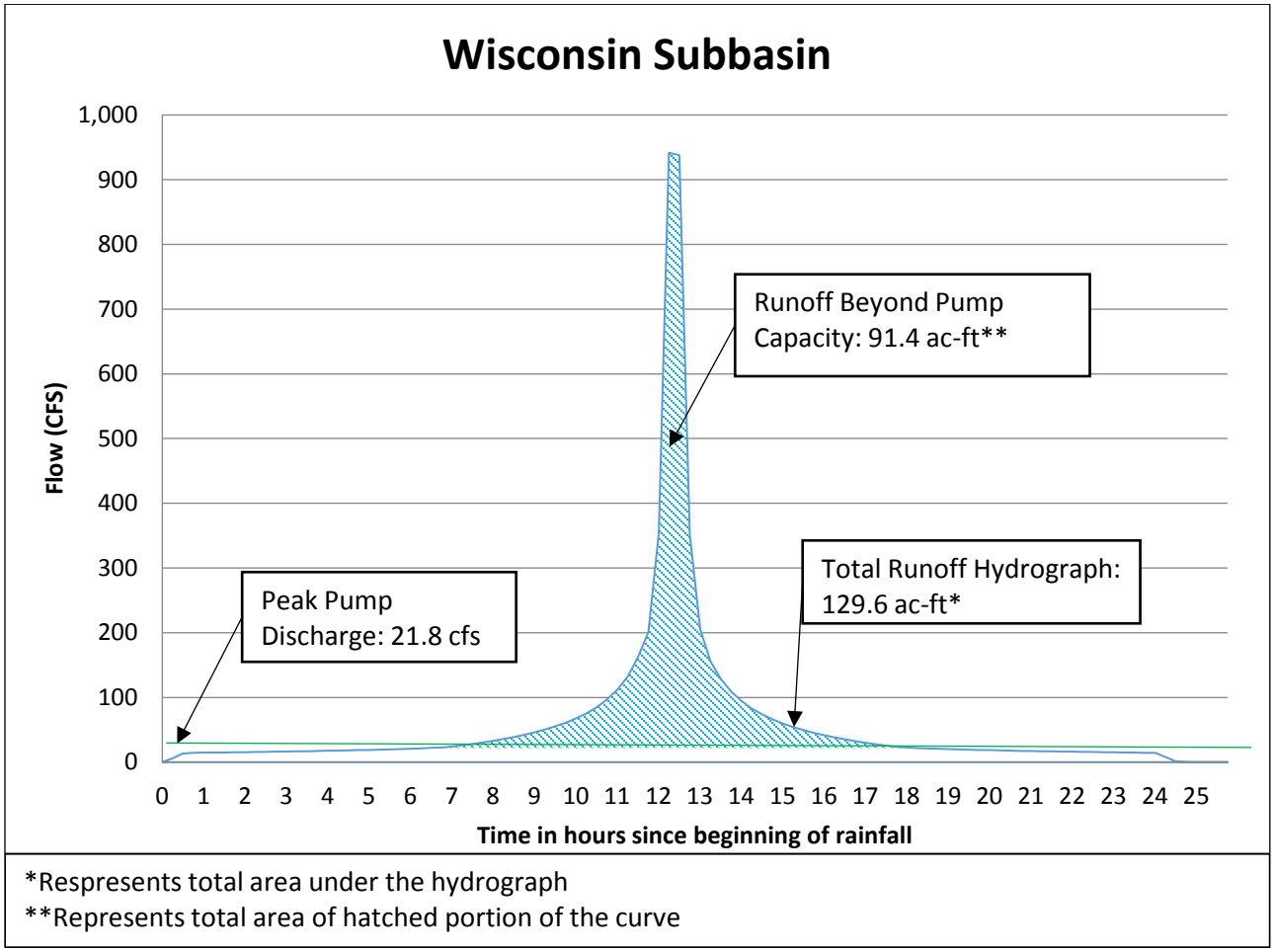


Figure 6 Example 100-year hydrograph for the Wisconsin subbasin.

2D Model Development with HEC RAS v5.0

HEC-RAS v5.0 was chosen to model the overland flow paths and areas of ponding of the rainfall-runoff that was beyond the capacity of the storm water pump stations. Several other hydraulic models were considered, however HEC-RAS v5.0 was chosen due to its superior capabilities to model overland flow and to map floodplains, which is the primary concern of this analysis.

- HEC-HMS is not able to analyze the flow of water over the terrain or the capability of the storm drain system to collect runoff once the peak of the storm recedes.
- Storm drain system models such as SWMM do a better job at analyzing the storm drain pipe systems and, while capable of analyzing surcharge conditions, they do a poor job of analyzing overland flow.
- While there are models that can couple overland flow and storm drain flow, such as XPStorm and MIKE Urban, the older versions of these models that are approved by FEMA do not provide high resolution overland flow or floodplain mapping capabilities.

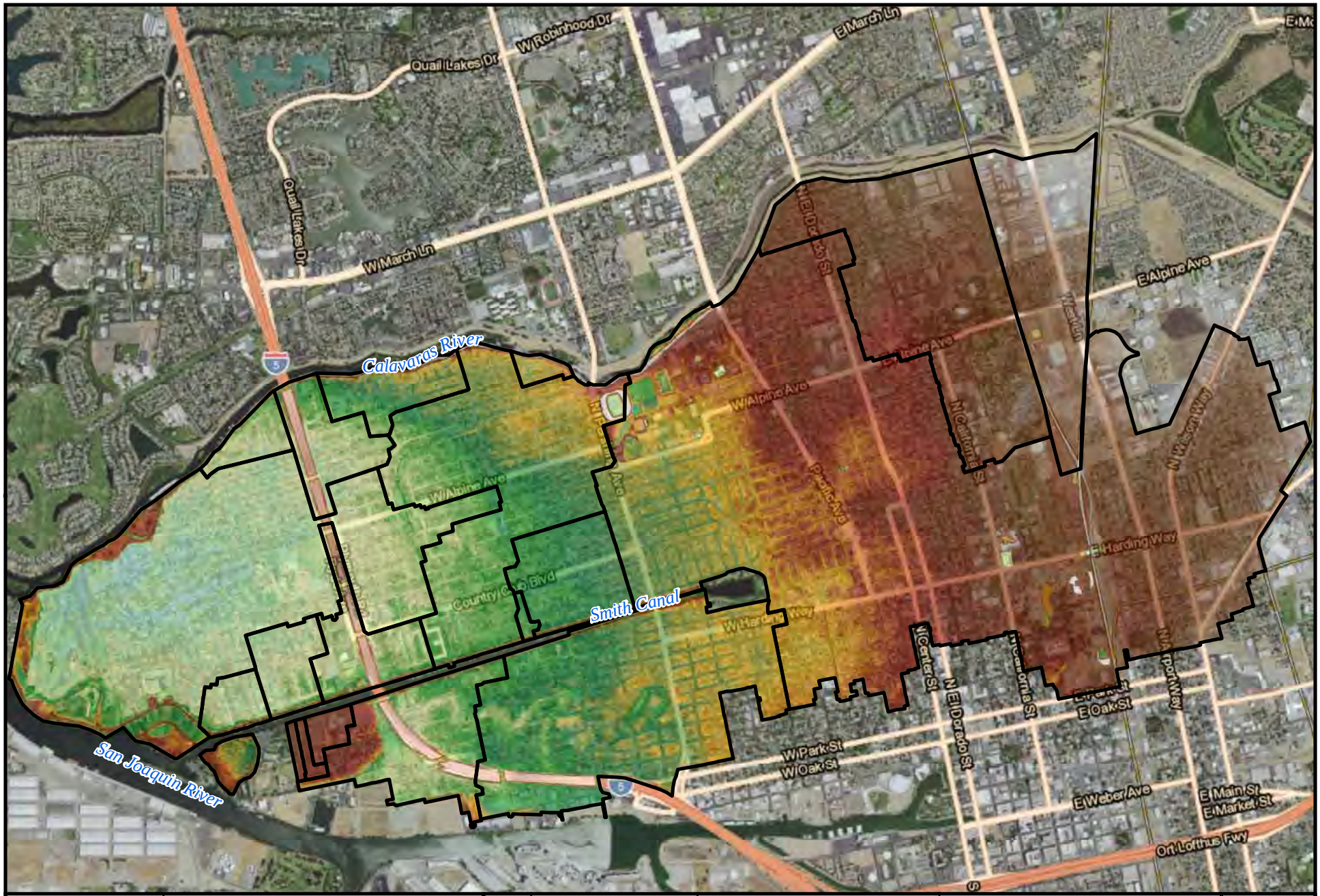
While HEC-RAS v5.0 cannot directly incorporate an entire storm drain network into the model, single pipes can be incorporated to include certain segments of the storm drain network where necessary. Recognizing that additional flow in pipes is a minor component of the hydraulics of a 100-year excess rainfall-runoff event, the HEC-RAS v5.0 2D model was utilized to analyze residual flood risk for the study area. The following sections detail the development and assumptions for this model.

Ground Topography

The ground topography within the study area was developed from high resolution LiDAR data acquired from the Central Valley Floodplain Evaluation and Delineation (CVFED) Program in 2009 [5]. The point cloud consisted of multiple return LiDAR in the North American Vertical Datum of 1988 (NAVD88) in feet at 1 square meter resolution. Although the LiDAR was collected at high resolution, it has its limitations. There are two main sources of LiDAR error within the basin.

1. Changes to the terrain since the LiDAR was flown in Summer 2009.
2. Inaccuracy of building pad elevations. LiDAR data represents the ground next to a building, but does not take into account that almost all structures include one or more steps to get up to the building pad elevation. And LiDAR post processing scrubs out buildings and other structures altogether, “mending” the data holes by interpolation.

The ground return portion of these LiDAR data was converted to a digital elevation model at 3.125’x 3.125’ resolution to analyze flooding at a street-level detail (Figure 7).


Quail Lakes Dr
W Robinhood Dr
E March Ln
W March Ln
Calaveras River
W Alpine Ave
E Alpine Ave
Country Club Blvd
Smith Canal
E Harding Way
E Oak St
W Park St
W Oak St
E Weber Ave
E Main St
E Market St
San Joaquin River
Basin Boundaries
Elevation: NAVD88 [feet]
54
-5
0
1,000
2,000
Feet
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GROUND TOPOGRAPHY
FIGURE
7

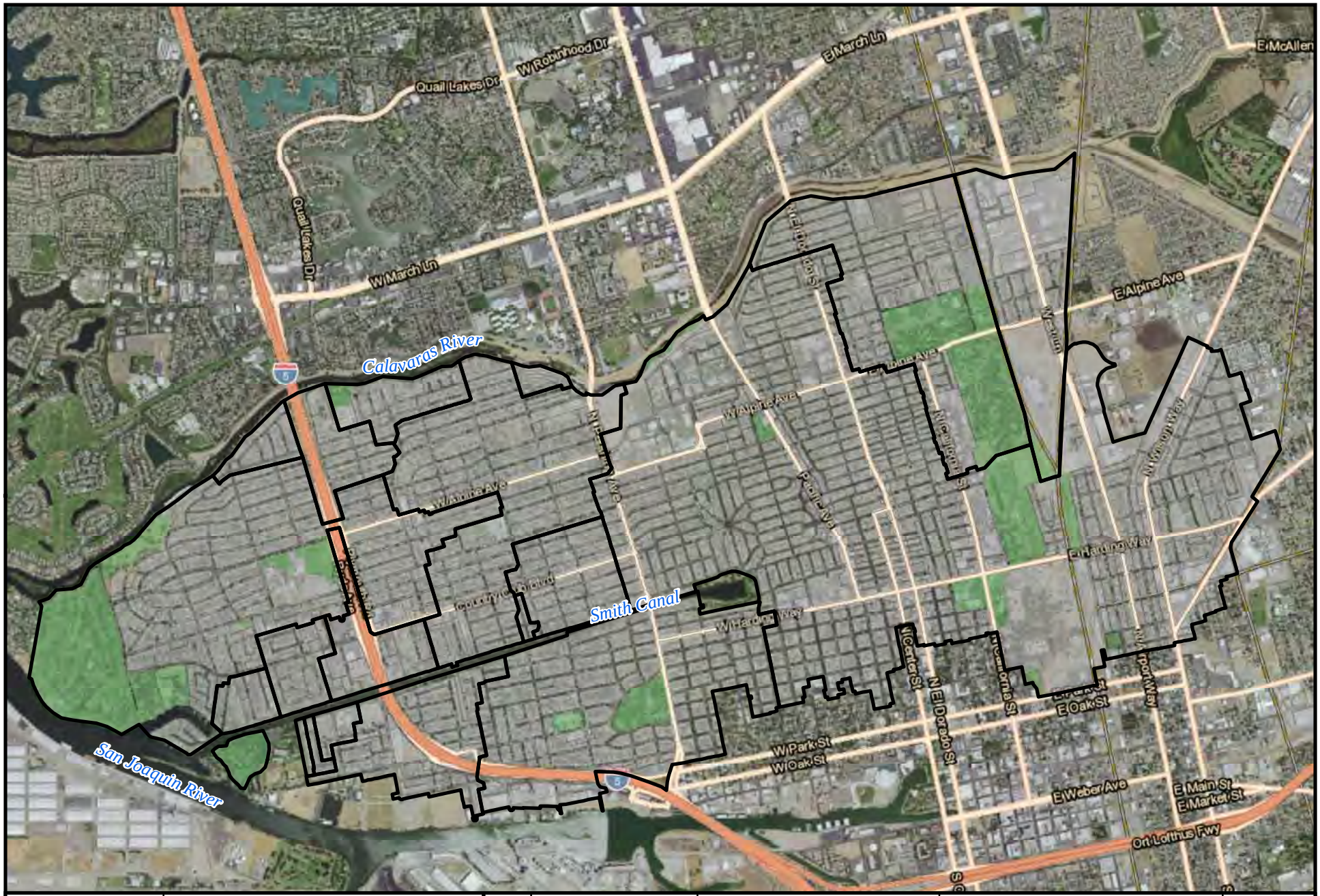
Land Use

The HEC-RAS 2D model uses Manning n values as the surface resistance components within the momentum equation that is used to model overland flow through the study area. The CVFED study classified typical Manning's n values for various land use types throughout the Central Valley [11]. Table 11 provides a summary of the land use zones and the corresponding Manning's n values that were used in the HEC-RAS 2D model. Roads were not included in the land use zones that were defined in the CVFED study and were assigned an n value of 0.015.These values were applied to the land use designations defined in the San Joaquin County and the City of Stockton GIS layers [10, 9] (Figure 8).

Table 11 CVFED Manning's n values with corresponding land use

Urban Area	
Land Use Type	**Assigned n-value**
Commercial	0.04
Industrial	0.04
Public Park/ Open Space	0.1
Residential	0.04
Roads	0.015
Schools*	-

*Schools that had large open fields were divided into public park and commercial land uses.


Calavaras River
Smith Canal
San Joaquin River
Quail Lakes Dr
W Robinhood Dr
E March Ln
W March Ln
E McAllen
E Alpine Ave
W Alpine Ave
W Hazelton Way
E Hazelton Way
W Park St
W Oak St
E Oak St
E Weber Ave
E Main St
E Market St
Crosstown Fwy
N El Dorado St
N Center St
N Sutter St
N Pilgrim St
N Pershing Ave
N Aurora St
N Wilson Way
Basin Boundaries
Basin n Value
0.04
0.1
*Streets set to value of .015
0
1,000
2,000
Feet
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FIGURE
BASIN MANNING'S N VALUES
8

Overland Grid Cell Mesh

The 2D flow areas in the HEC-RAS v5.0 are represented as grid cell meshes that calculate the flow over a region. The 2D flow areas use the ground topography to track the volume within the cells and use the land use information to calculate the flow across the cells. The overland grid cell mesh can take inflows as either (a) precipitation in the form of a hyetograph that is distributed across the entire mesh evenly or (b) flow inputs that can be entered only at the edge of the mesh. Outflows are also limited to only occurring at the boundary of the mesh.

Models were tested at different grid sizes ranging from 100'x100' to 15'x15'. Run times for the fine grid were approximately 10 hours versus 1 hour run times for the coarse grid. A 25'x25' cell size was used as it was determined to be sufficient to model at a street-level detail while keeping the number of grid cells and model run times to a reasonable amount. The 2D study area consisted of approximately one million cells for the entire study area.

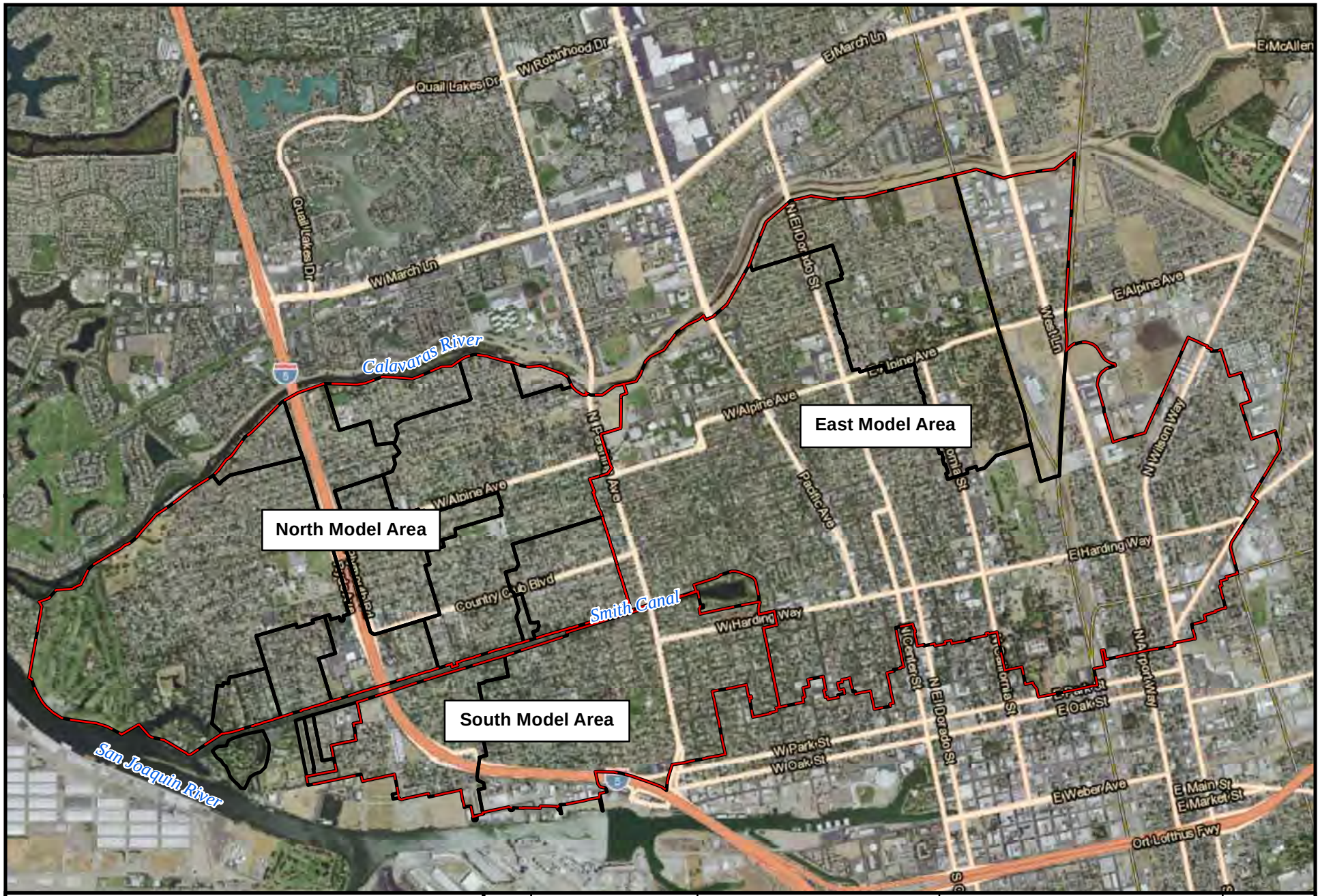
Model Plan Setup

Models were tested using various computation intervals between 5 seconds and 15 minutes. It was determined that a 15 second computation interval was appropriate to accurately model the movement of water within the study area. Any greater time step introduced additional model errors and anything smaller produced negligible changes.

A 48-hour simulation was set up to allow for sufficient travel time of overland flow to settle at the low points in the study area.

Hydrologic-Hydraulic Handoff

The HEC RAS 5.0 model includes three model areas: East, North and South. The model areas, shown in Figure 9, are each 2D flow areas with an assigned hydrologic input. The hydrologic input to the HEC-RAS 5.0 model includes all of the 100-year rainfall-runoff that was in excess of existing stormwater pumping capacities and distributes it across the 2D model areas in the form of hyetographs. The HEC-RAS 2D model then simulates the expected travel paths and ponding areas of this runoff. Figure 10 through Figure 11 illustrate the volume of water that was distributed into the HEC-RAS overland model.



Basin Boundaries

Model Areas

N

0 1,000 2,000 Feet

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HEC RAS MODEL AREAS

FIGURE 9

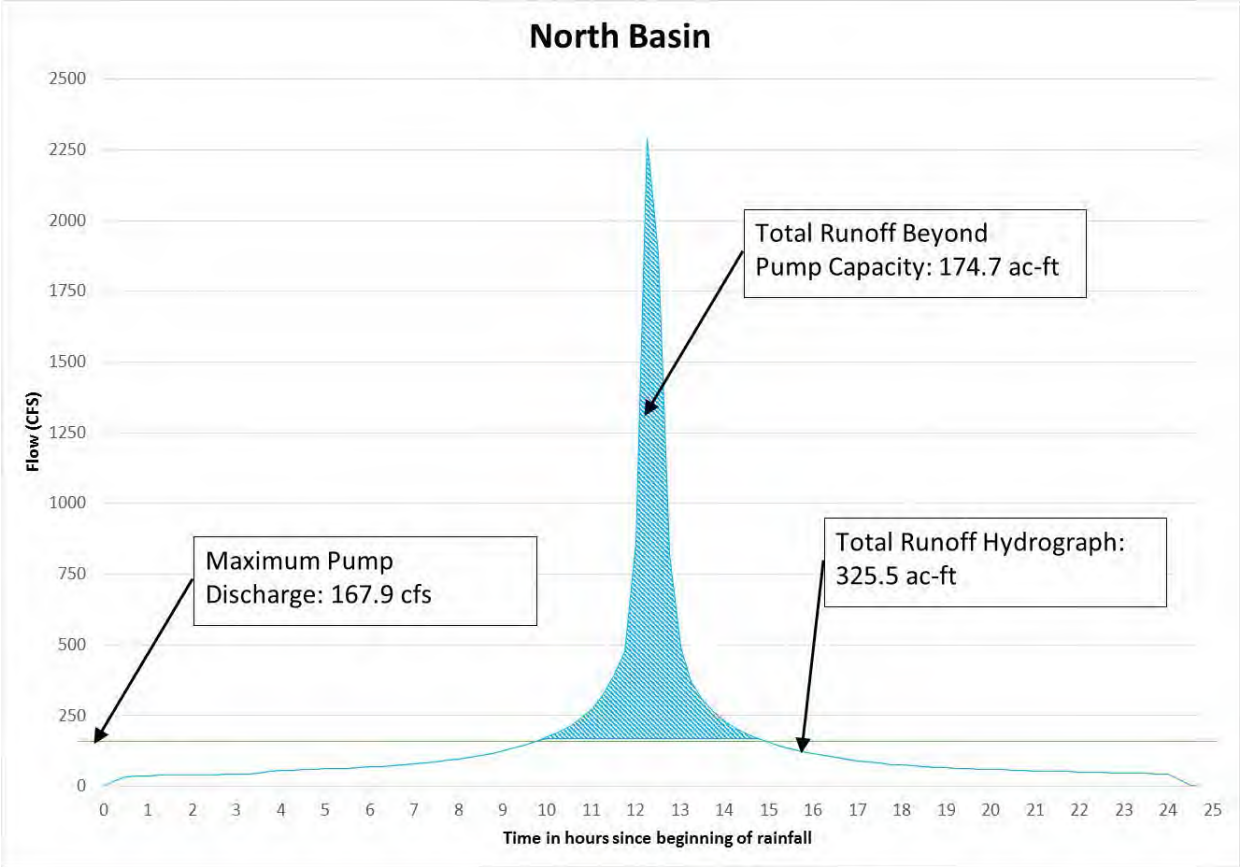


Figure 10 100-year rainfall-runoff that was beyond storm water pumping capacities in the "North" basin.

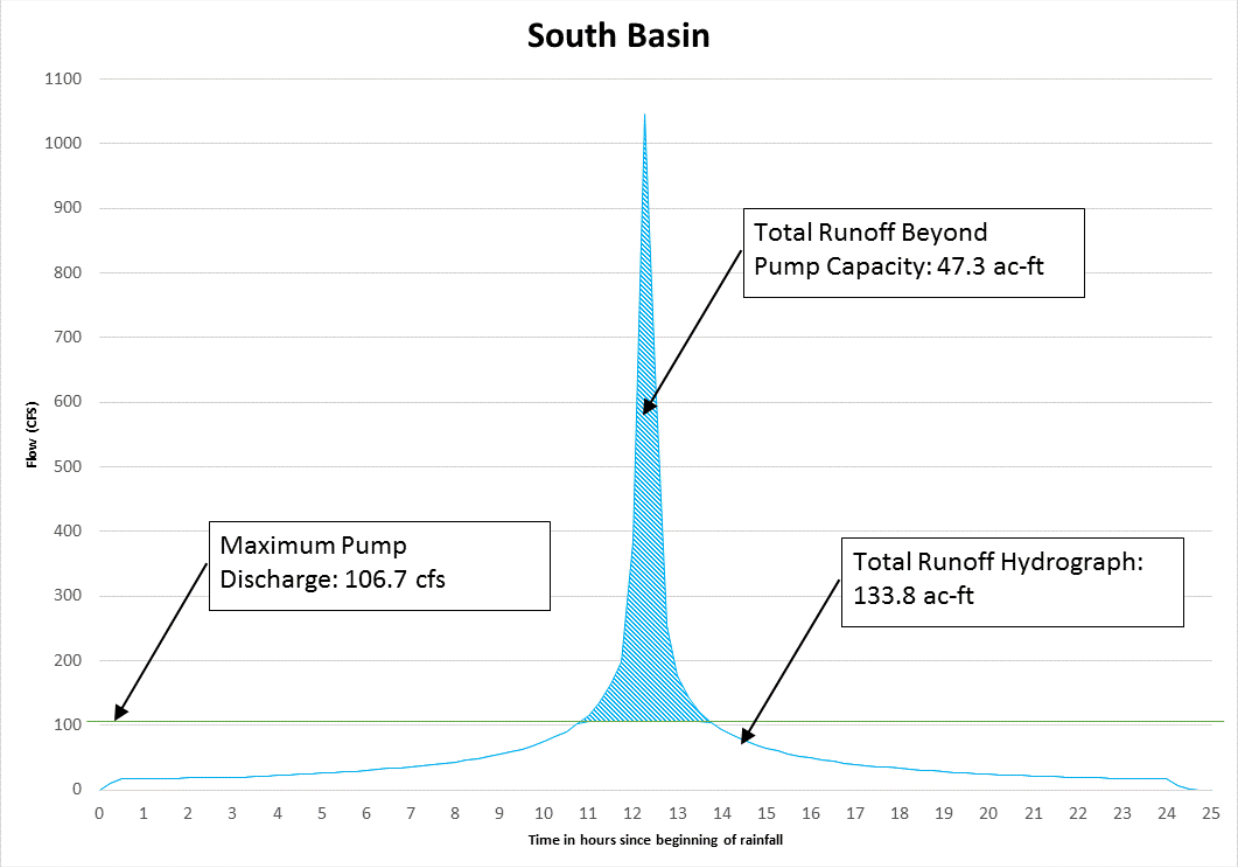


Figure 11 100-year rainfall-runoff that was beyond storm water pumping capacities in the "South" basin.

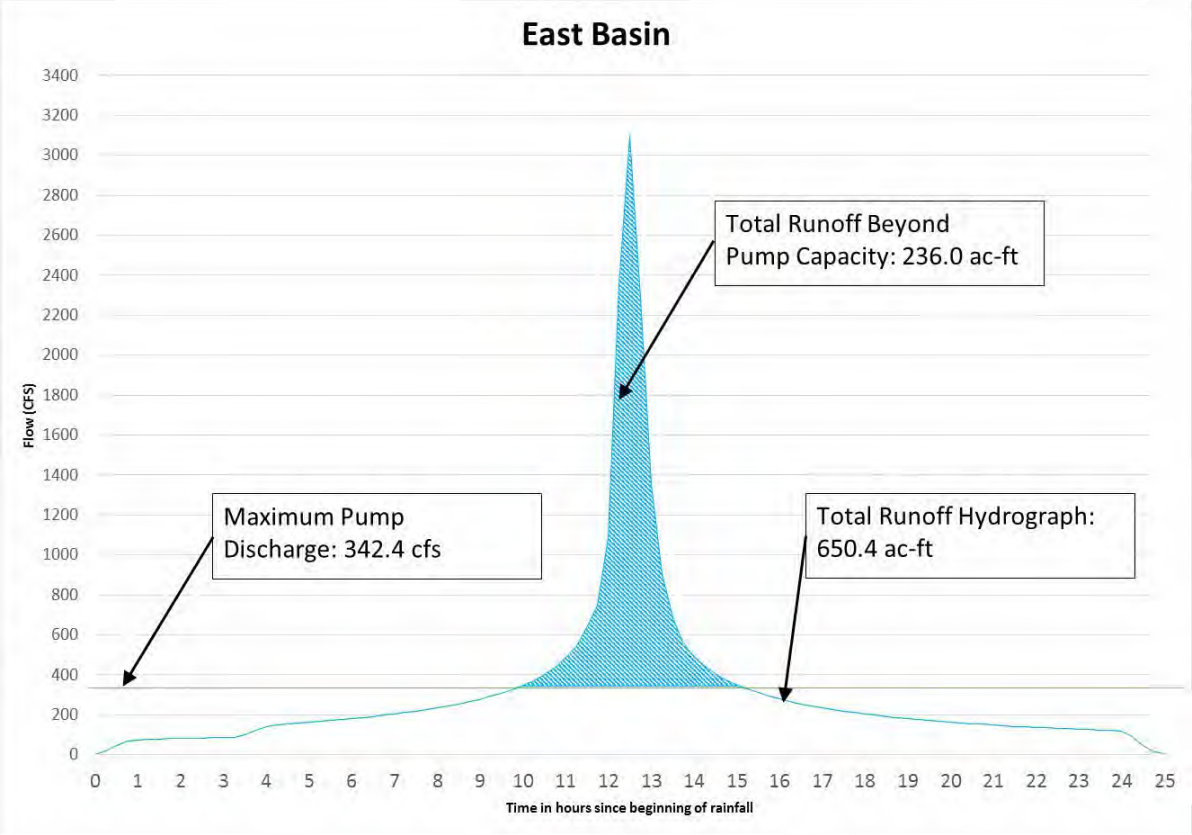


Figure 12 100-year rainfall-runoff that was beyond storm water pumping capacities in the "East" basin.

Pump Stations and Storm Drain Pipes

During the 24-hour rainfall event itself, the study area's storm water pumping capabilities are accounted for in the HEC-HMS model. However, the HEC-RAS 2D overland flow simulation continues an additional 24-hours beyond the end of the rainfall event to allow adequate time for runoff to travel through the basin and settle at low points in the western end of the study area. Pumps were therefore coded into the HEC-RAS 2D model to account for pumping that would take place after the main portion of the storm has passed. The pumps in HEC-RAS were set up to operate at full capacity only after the 24-hour storm was complete, so as not to double count pumping that had taken place in the HEC-HMS analysis. There is a portion of the simulation on the receding limb of the rainfall-runoff hydrograph (approx. hour 14 through hour 24) where the incoming rainfall-runoff is less than the pumping capacities, and the stormwater pumps can use a portion of their capacity to begin pumping out ponded areas in the basin. During this time, the HEC-RAS pumps were set to operate at partial capacity, again, so as not to double-count pumping taking place in the HEC-HMS model.

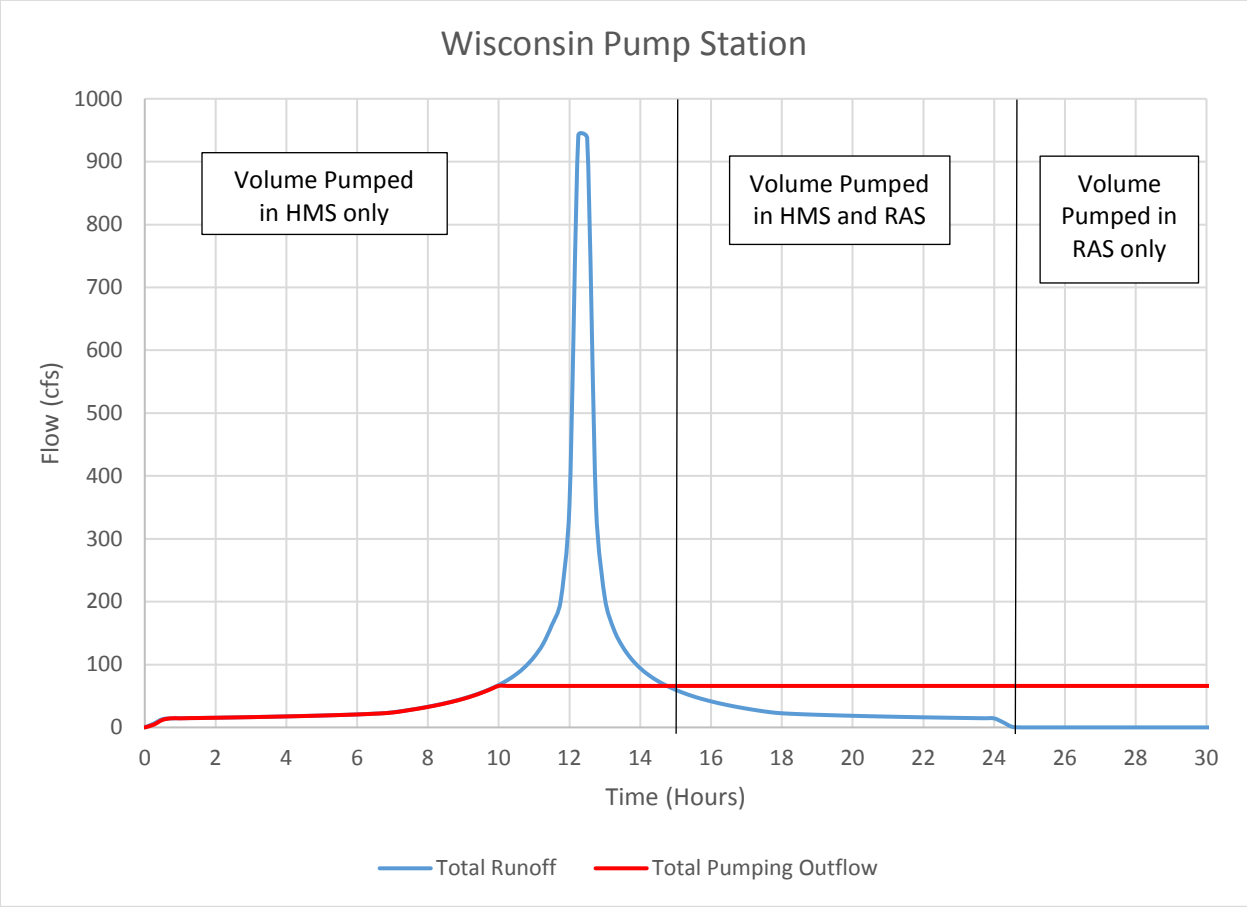


Figure 13 Example Subbasin Hydrograph of Models Pumping

HEC RAS 2D does not allow connection of pumps stations directly to 2D grid cells, so a gate structure was used to model the pump outflow. A gate structure was set up with a user-defined curve that specified the maximum outflow given the gate opening. Small depressions were added into the terrain to act as sumps to which the modeled pump stations were connected.

The study area's existing storm drain infrastructure includes over 505,000 feet of storm drains and thousands of drop inlets that have the ability to take street runoff and direct it to the pump stations. The HEC-RAS 5.0 model is superior at modeling overland flooding compared to other available hydraulic modeling software, however it does not have the capability to incorporate this entire storm drain network. It can, however model individual storm drain pipes to represent some of the main storm drain laterals that exist in the basin. To do this, culvert pipes can be coded into the model and connected to storage areas that represent the sumps of the pump stations. Culvert inlets were constricted such that the maximum flow at a single drop inlet would not exceed approximately 2-3 cfs which is consistent with various Department of Transportation handbooks [12] . Culverts were set up at select intersections where three to four drop inlets flow into the same pipe. Pipe flow is ultimately restricted by the capacity of the pump station that they lead to.

A total of 200 drop inlets of the storm drain network were added to the HEC-RAS model and account for

5% of the actual drop inlets that exist in the study area. Because of the small portion of the storm drain network that is being represented in the HEC-RAS model, floodplains resulting from the modeling analysis are likely to be conservatively large.

100-year Residual Floodplain Results

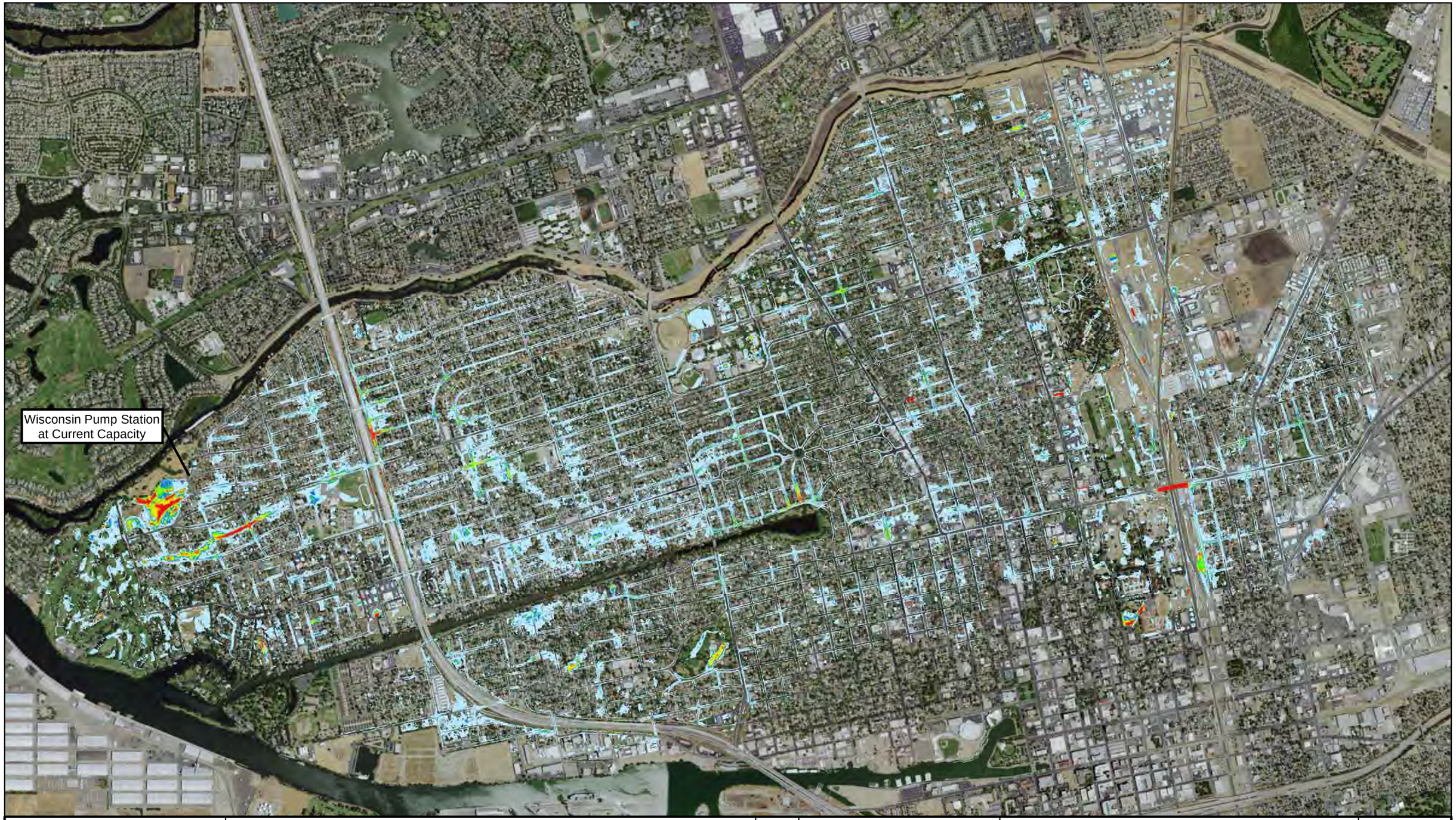
The estimated 100-year residual floodplain results for existing conditions is shown in Figure 14. Shallow ponding occurs in various locations throughout the basin with the majority of the water remaining in the streets. The most extensive flooding occurs in the area to the west of Interstate-5 in the Wisconsin subbasin near the Wisconsin pump station. To relieve this flooding, plans are underway to upsize the Wisconsin pump station by three-fold, from its existing 21.8 cfs capacity to a 66 cfs capacity. Design for this upsized pump station are currently at approximately the 60% design phase.

Figure 15 shows the estimated 100-year residual floodplain with the Wisconsin pump station upsized to 66 cfs. Within the Wisconsin subbasin, the ponding is reduced substantially.

The average depths of ponded areas were calculated to determine appropriate risk zones of the ponded areas. Two methods were considered to average the ponded areas; the cross-section method and the area method. The cross-section method calculates average depths along cross sections that are drawn perpendicular to streets and the area method calculates the average depth based on pond volume divided by area. The area method was deemed to be a more efficient method to apply to a large interior drainage study area using GIS methods, and was therefore the method chosen for this analysis. Professional judgement was used to determine the pond boundaries.

Figure 16 shows all of the ponded areas outlined with their respective average depths for the estimated 100-year residual floodplain with the Wisconsin pump station upsized to 66 cfs. Of the 85 ponded areas, 9 have an average depth of greater than 1 foot. These 9 ponded areas are either

a. restricted to street flooding,
b. in open spaces where no structures are impacted, or
c. due to errors in the LiDAR.



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Depth [Feet]

0.2 - 1.00 | 1.00 - 1.25 | 1.25 - 1.50 | 1.50 - 1.75 | 1.75 - 2.00 | > 2.00

N

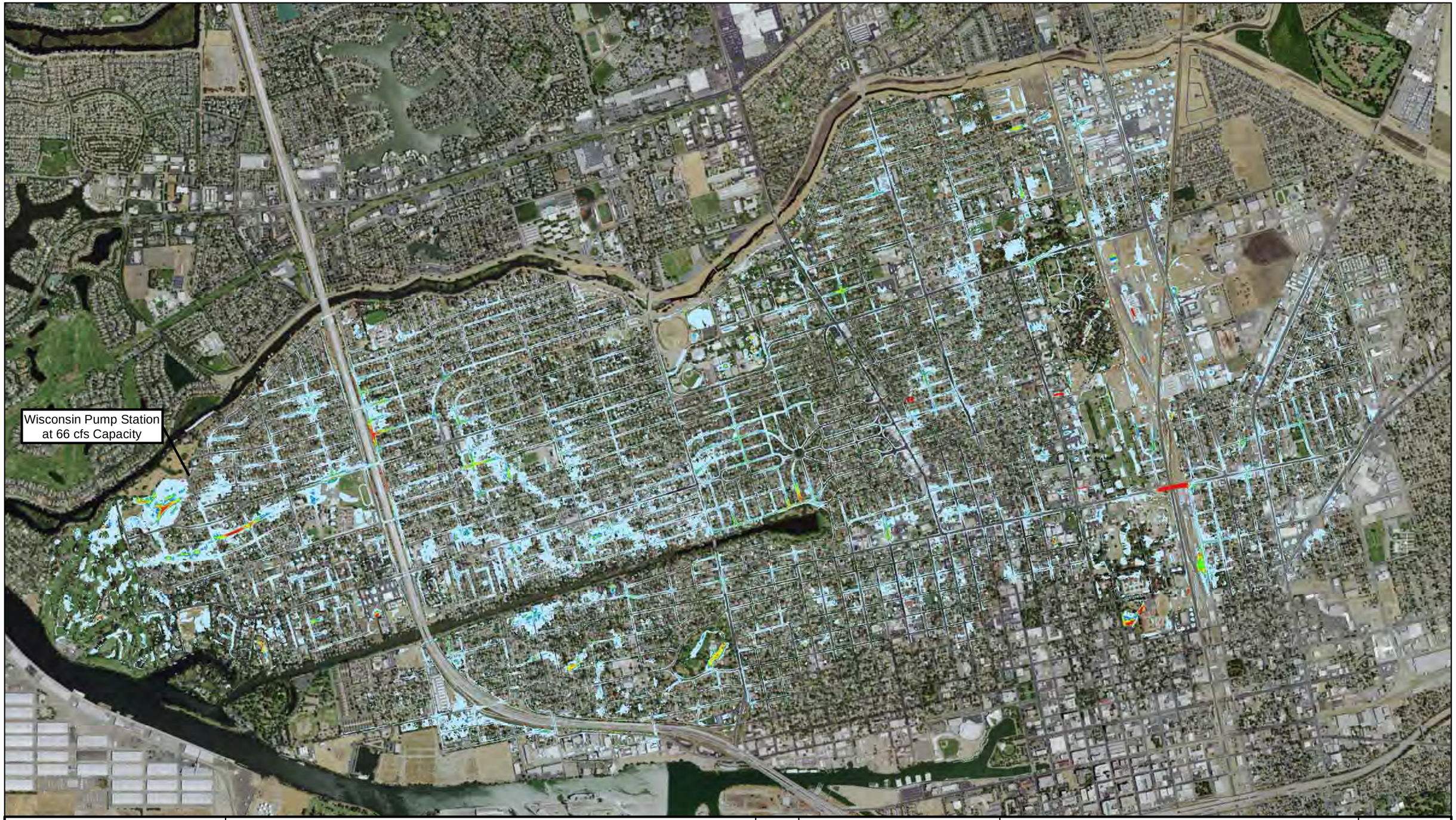
0 0.5 Miles

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100-Year Residual Floodplain Under Current Conditions

FIGURE

14



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Depth [Feet]

0.2 - 1.00 | 1.00 - 1.25 | 1.25 - 1.50 | 1.50 - 1.75 | 1.75 - 2.00 | > 2.00

N

0 0.5 Miles

San Joaquin Area Flood Control Agency

100-Year Residual Floodplain with Upsized Wisconsin Pump Station

FIGURE

15



a: Restricted to street flooding
b: Open space. No structures impacted
c: Due to error in LiDAR (See Ground Topography section on page 18 for details)

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Depth [Feet]

0.20 - 1.00 | 1.00 - 1.25 | 1.25 - 1.50 | 1.50 - 1.75 | 1.75 - 2.00 | > 2.00

N

0 0.5 Miles

San Joaquin Area Flood Control Agency

100-Year Residual Floodplain with Average Ponding Areas

FIGURE 16

References

[1] Peterson Brustad Inc., "Smith Canal Stage-Storm Coincident Frequency Analysis," 2016.

[2] Kjeldsen, Sinnock & Neudeck, Inc., "San Joaquin Area Flood Control Agency (SJAFCA), Interior Drainage Analysis Calaveras River," 2009.

[3] Kjeldsen, Sinnock & Neudeck, Inc., "Interior Drainage Analysis Tributary of Smith Canal," 2010.

[4] San Joaquin County, Final Draft Hydrology manual for San Joaquin County, 1997.

[5] California Department of Water Resources, "LiDAR Datasets and data shapefiles for the San Joaquin River Basin, Central Valley Floodplain Evaluation and Delineation Program (CVFED)," 2010.

[6] D. R. Maidment, Handbook of Hydrology, McGraw-Hill, 1993.

[7] National Resource Conservation Service (NRCS), "GIS Soils Data," 2010.

[8] USACE, "Engineer Manual 1110-2-1417: Flood-Runoff Analysis," 1994.

[9] City of Stockton, "GIS DATA," 2015.

[10] San Joaquin County, "GIS DATA," 2015.

[11] HDR, "San Joaquin Area Flood Control Agency Two-Dimensional Hydraulic Model of the Lower San Joaquin River System," 2013.

[12] Minnesota Department of Transportation, "Engineering Field Handbook," 2011.

[13] Peterson Brustad Inc, "Smith Canal Interior Drainage Analysis," 2016.

ATTACHMENT A

HEC-HMS OUTPUT FROM 2014 CALIBRATION EVENT

*Calibration Event = December 11-14, 2014

TABLE A-1. Historic December 11-12, 2014 Storm HEC-HMS output summary

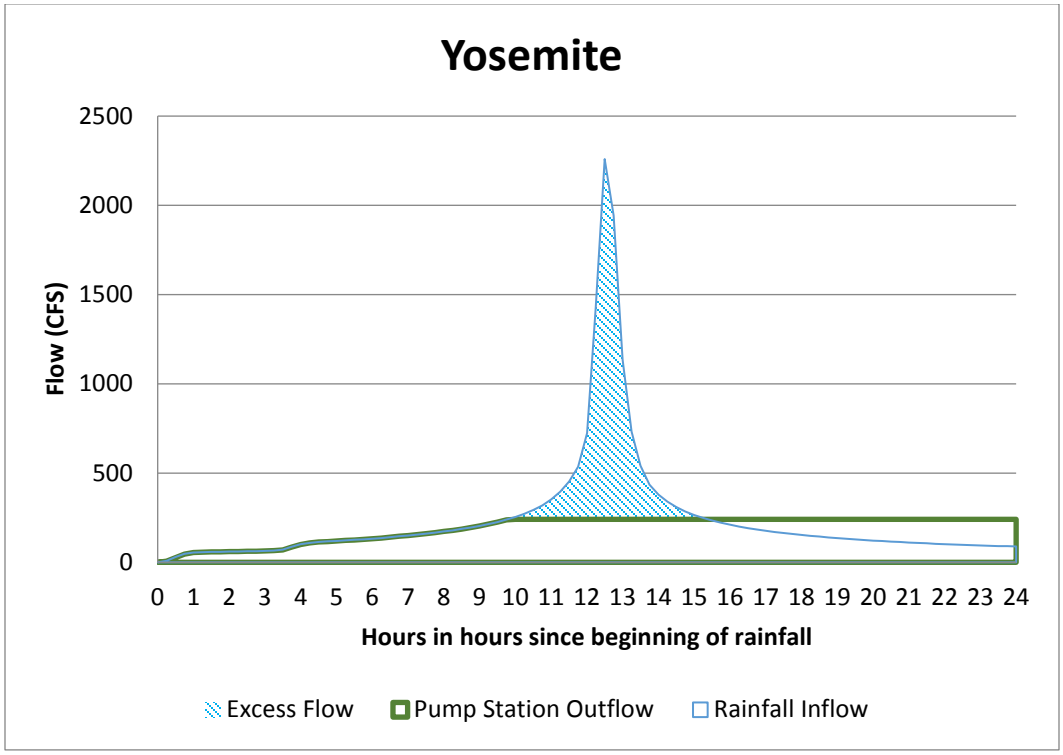
Date	Time	Precip (IN)	Loss (IN)	Excess (IN)	Total Flow (CFS)	Cumulative Runoff (ac-ft)
11-Dec-14	0:00				0	
11-Dec-14	1:00	0.00	0.00	0.00	0	0.0
11-Dec-14	2:00	0.00	0.00	0.00	0	0.0
11-Dec-14	3:00	0.00	0.00	0.00	0	0.0
11-Dec-14	4:00	0.00	0.00	0.00	0	0.0
11-Dec-14	5:00	0.00	0.00	0.00	0	0.0
11-Dec-14	6:00	0.00	0.00	0.00	0	0.0
11-Dec-14	7:00	0.00	0.00	0.00	0	0.0
11-Dec-14	8:00	0.00	0.00	0.00	0	0.0
11-Dec-14	9:00	0.00	0.00	0.00	0	0.0
11-Dec-14	10:00	0.04	0.02	0.02	39.3	3.2
11-Dec-14	11:00	0.24	0.12	0.12	300.6	28.1
11-Dec-14	12:00	0.36	0.02	0.34	662.9	82.9
11-Dec-14	13:00	0.12	0.01	0.11	232.6	102.1
11-Dec-14	14:00	0.04	0.01	0.03	62.2	107.2
11-Dec-14	15:00	0.12	0.01	0.11	204	124.1
11-Dec-14	16:00	0.12	0.01	0.11	211.2	141.6
11-Dec-14	17:00	0.08	0.01	0.07	136.7	152.9
11-Dec-14	18:00	0.08	0.01	0.07	133.1	163.9
11-Dec-14	19:00	0.08	0.01	0.07	133.1	174.9
11-Dec-14	20:00	0.08	0.01	0.07	133.1	185.9
11-Dec-14	21:00	0.08	0.01	0.07	133.1	196.9
11-Dec-14	22:00	0.12	0.01	0.11	207.6	214.0
11-Dec-14	23:00	0.08	0.01	0.07	136.7	225.3
12-Dec-14	0:00	0.16	0.01	0.15	282.1	248.6
12-Dec-14	1:00	0.08	0.01	0.07	140.2	260.2
12-Dec-14	2:00	0.12	0.01	0.11	207.6	277.4
12-Dec-14	3:00	0.04	0.01	0.03	62.2	282.5
12-Dec-14	4:00	0.04	0.01	0.03	55	287.0
12-Dec-14	5:00	0.04	0.01	0.03	55	291.6

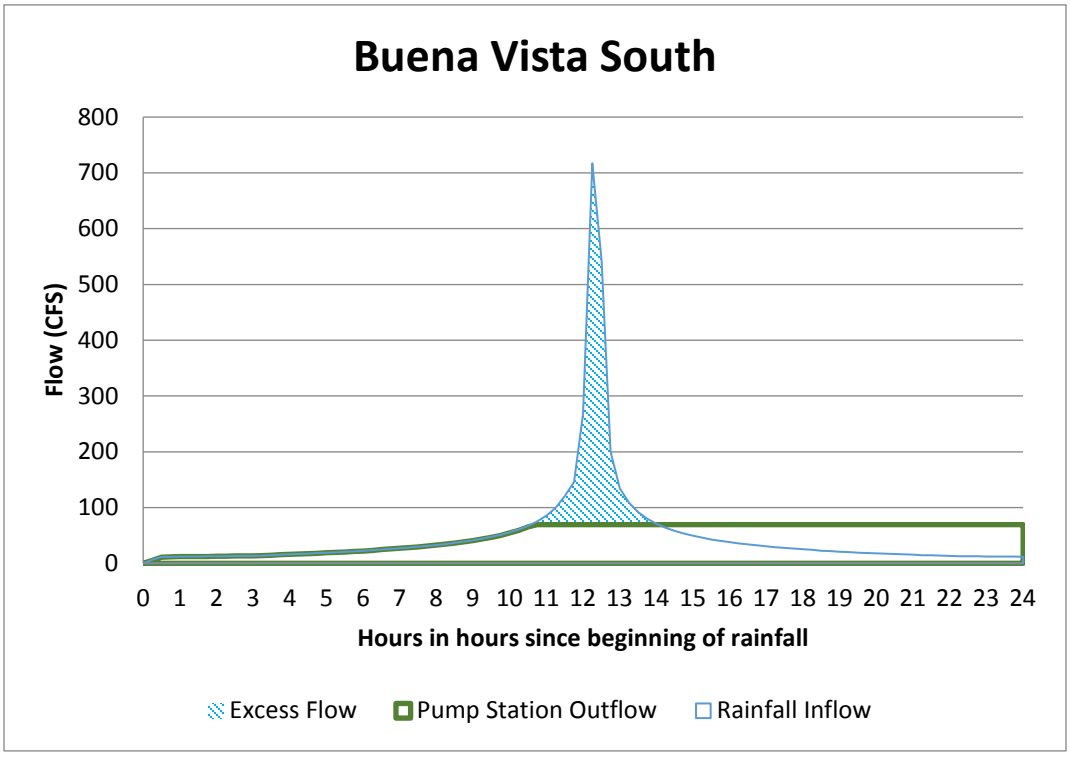
12-Dec-14	6:00	0.00	0.00	0.00	2.5	291.8
12-Dec-14	7:00	0.00	0.00	0.00	0	291.8
12-Dec-14	8:00	0.00	0.00	0.00	0	291.8
12-Dec-14	9:00	0.00	0.00	0.00	0	291.8
12-Dec-14	10:00	0.00	0.00	0.00	0	291.8
12-Dec-14	11:00	0.00	0.00	0.00	0	291.8
12-Dec-14	12:00	0.00	0.00	0.00	0	291.8
12-Dec-14	13:00	0.00	0.00	0.00	0	291.8
12-Dec-14	14:00	0.00	0.00	0.00	0	291.8
12-Dec-14	15:00	0.00	0.00	0.00	0	291.8
12-Dec-14	16:00	0.04	0.01	0.03	52.5	296.1
12-Dec-14	17:00	0.00	0.00	0.00	2.5	296.3
12-Dec-14	18:00	0.00	0.00	0.00	0	296.3
12-Dec-14	19:00	0.00	0.00	0.00	0	296.3
12-Dec-14	20:00	0.00	0.00	0.00	0	296.3
12-Dec-14	21:00	0.00	0.00	0.00	0	296.3
12-Dec-14	22:00	0.00	0.00	0.00	0	296.3
12-Dec-14	23:00	0.00	0.00	0.00	0	296.3
13-Dec-14	0:00	0.00	0.00	0.00	0	296.3
13-Dec-14	1:00	0.00	0.00	0.00	0	296.3
13-Dec-14	2:00	0.00	0.00	0.00	0	296.3
13-Dec-14	3:00	0.00	0.00	0.00	0	296.3
13-Dec-14	4:00	0.00	0.00	0.00	0	296.3
13-Dec-14	5:00	0.00	0.00	0.00	0	296.3
13-Dec-14	6:00	0.00	0.00	0.00	0	296.3
13-Dec-14	7:00	0.00	0.00	0.00	0	296.3
13-Dec-14	8:00	0.00	0.00	0.00	0	296.3
13-Dec-14	9:00	0.00	0.00	0.00	0	296.3
13-Dec-14	10:00	0.00	0.00	0.00	0	296.3
13-Dec-14	11:00	0.00	0.00	0.00	0	296.3
13-Dec-14	12:00	0.00	0.00	0.00	0	296.3
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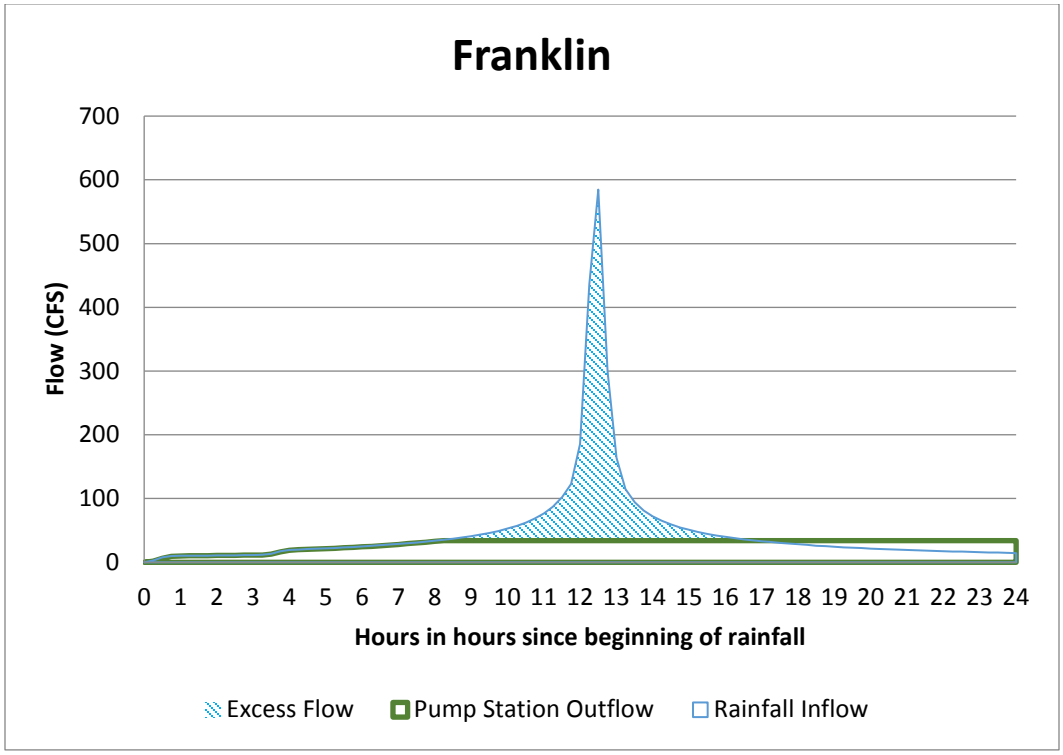
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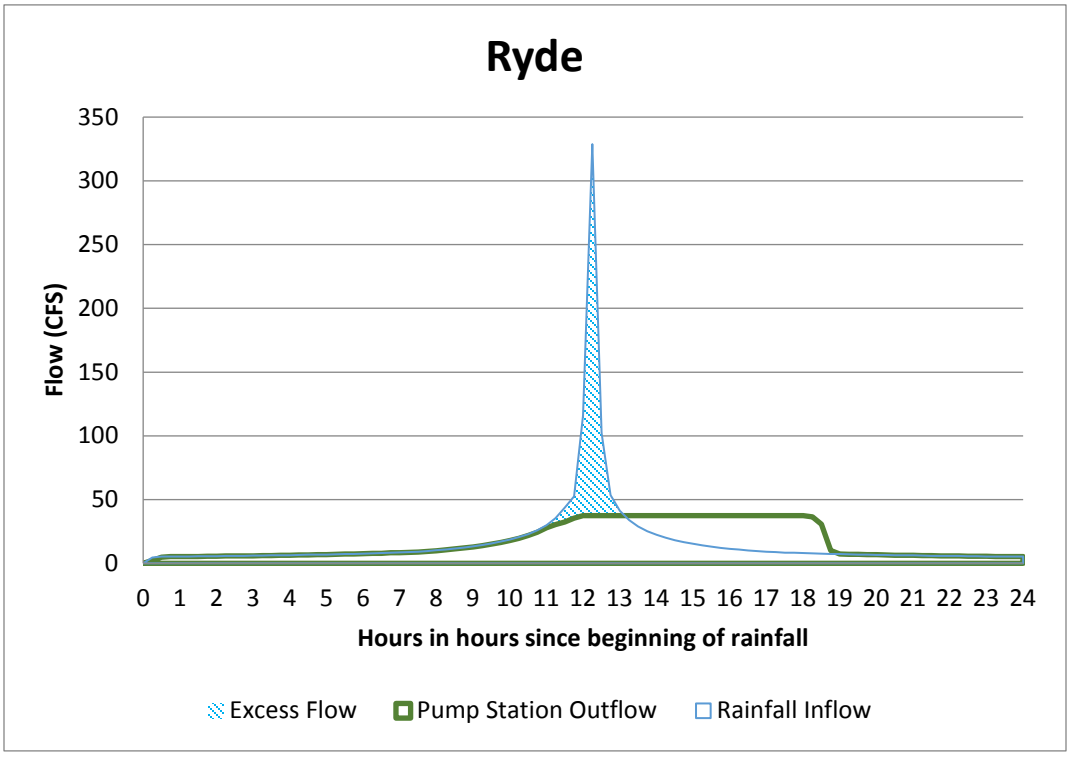
ATTACHMENT B

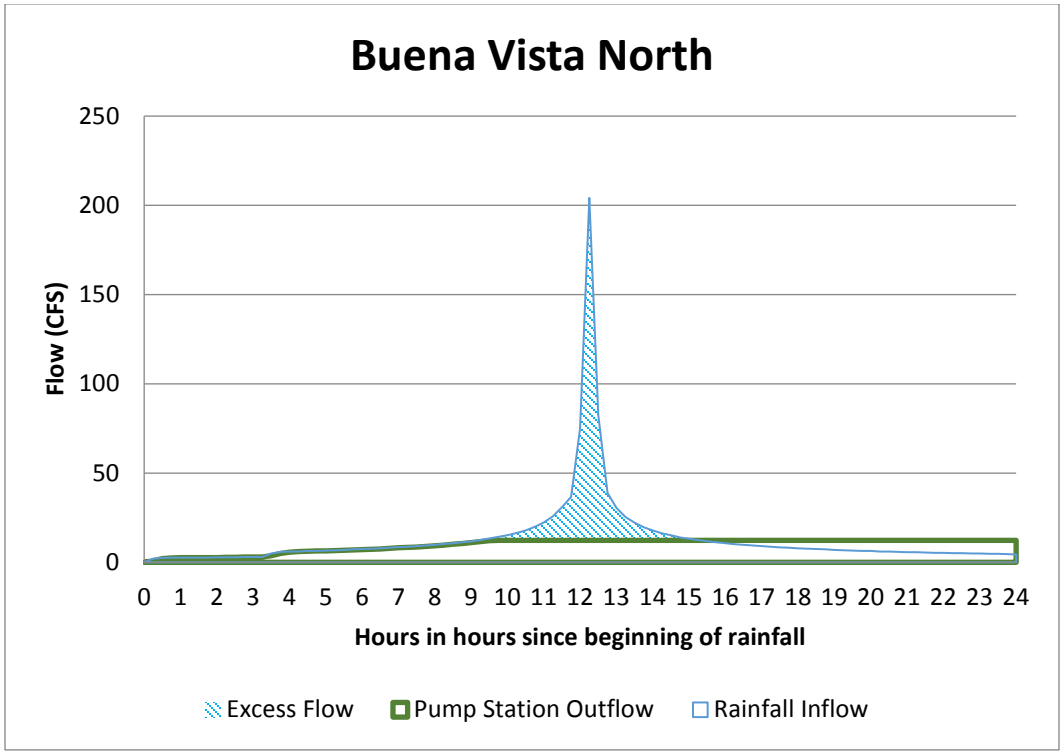
Rainfall-Runoff Hydrographs for Each Subbasin

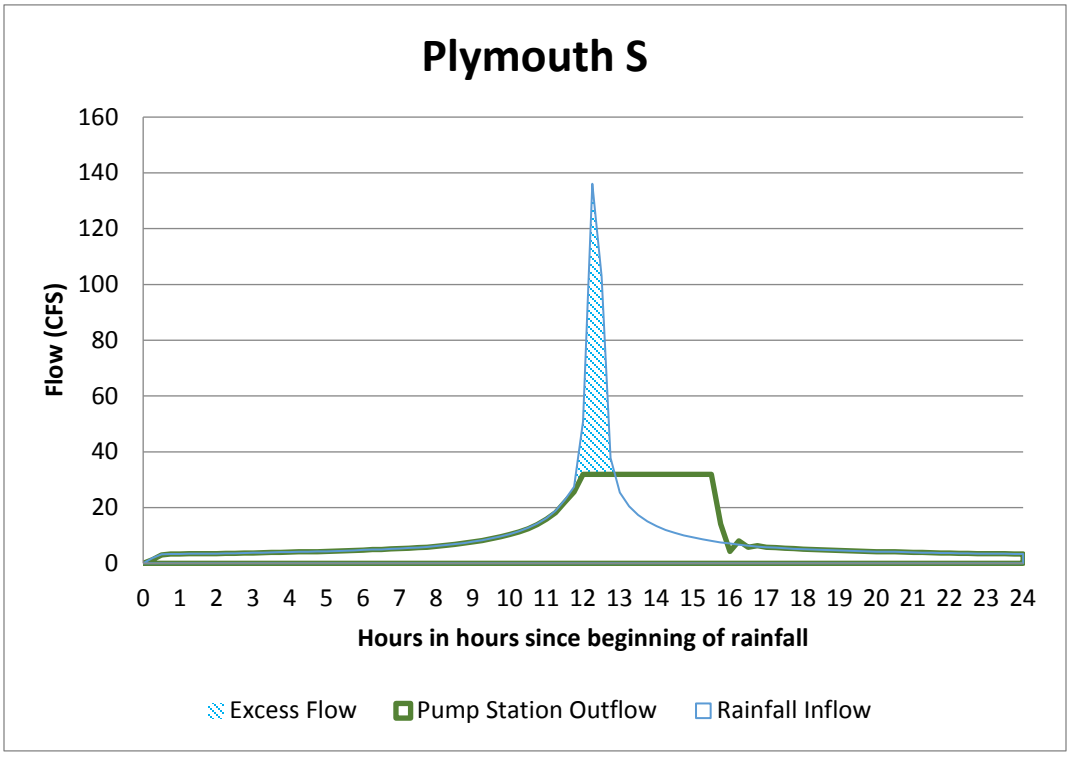

Yosemite
2500
2000
1500
1000
500
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

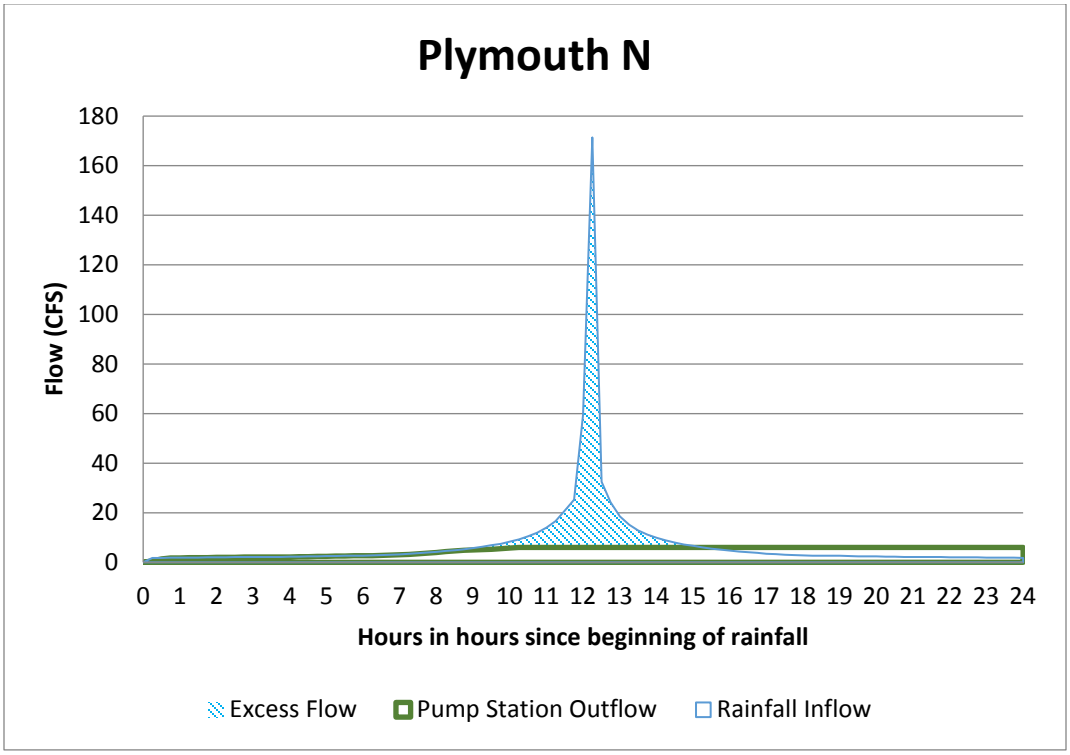

Buena Vista South
800
700
600
500
400
300
200
100
0
Flow (CFS)
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Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

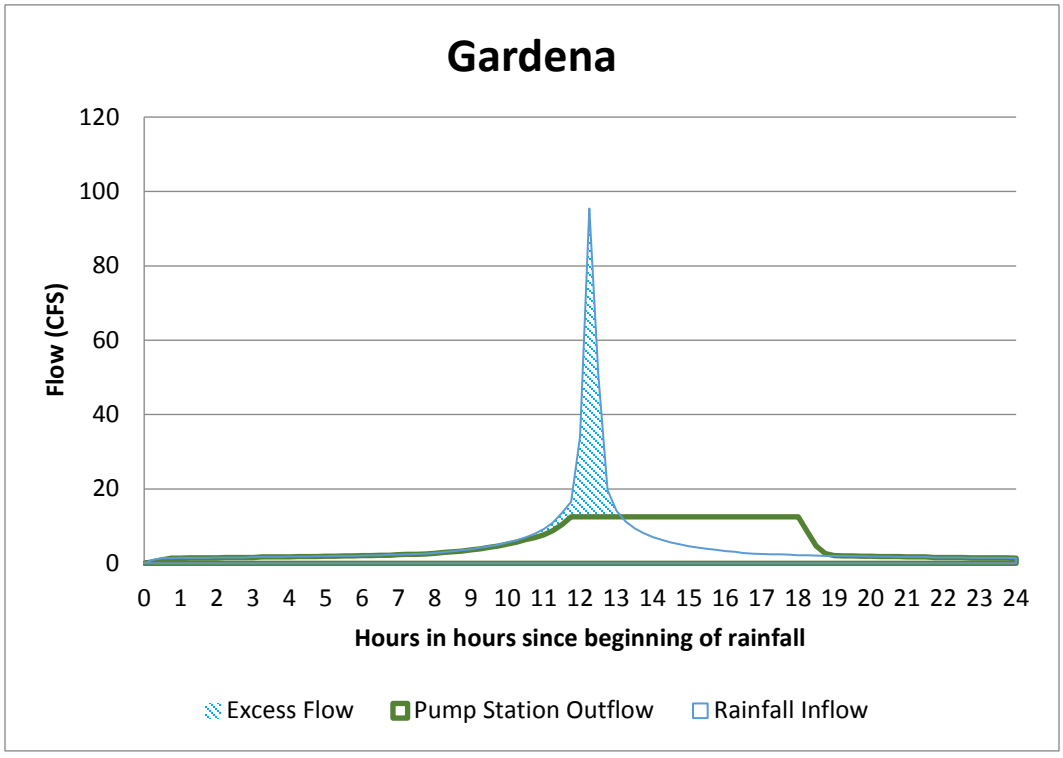

Franklin
700
600
500
400
300
200
100
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

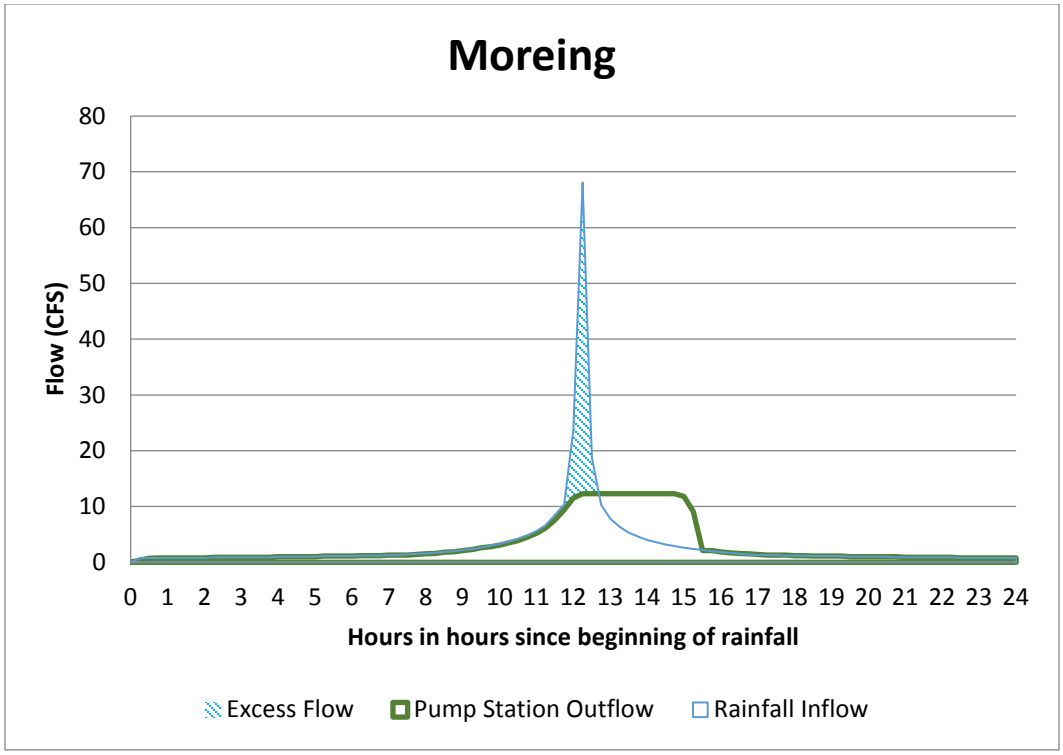

Ryde
350
300
250
200
150
100
50
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

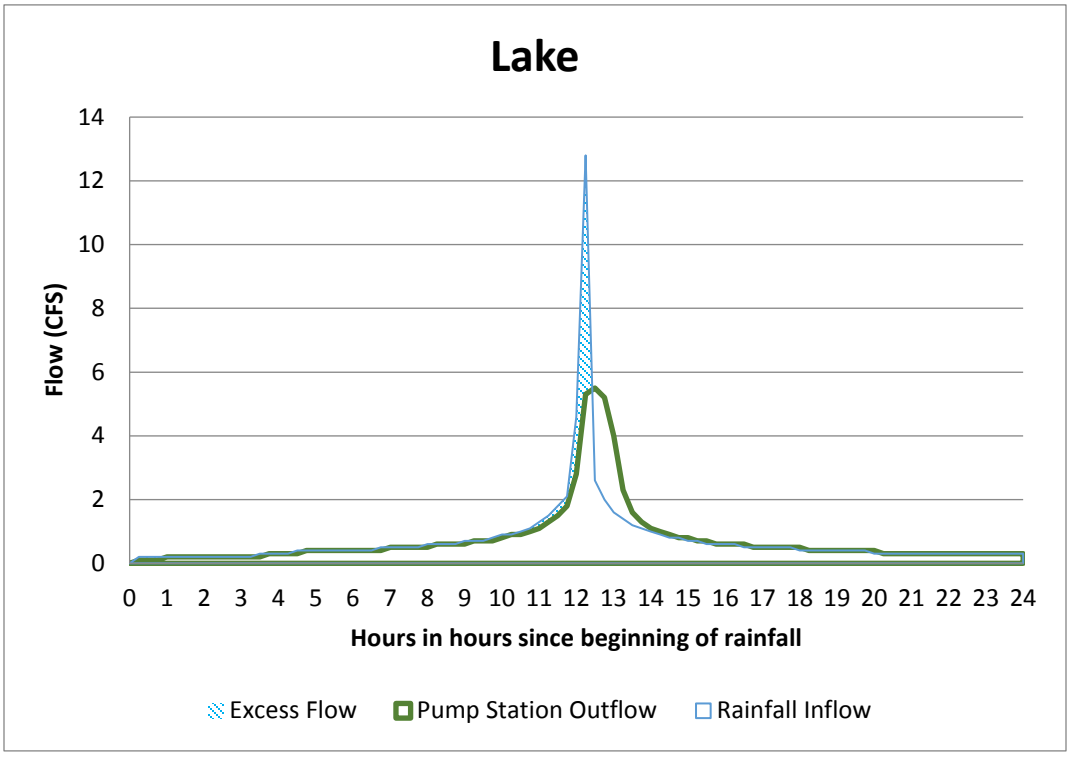

Buena Vista North
250
200
150
100
50
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

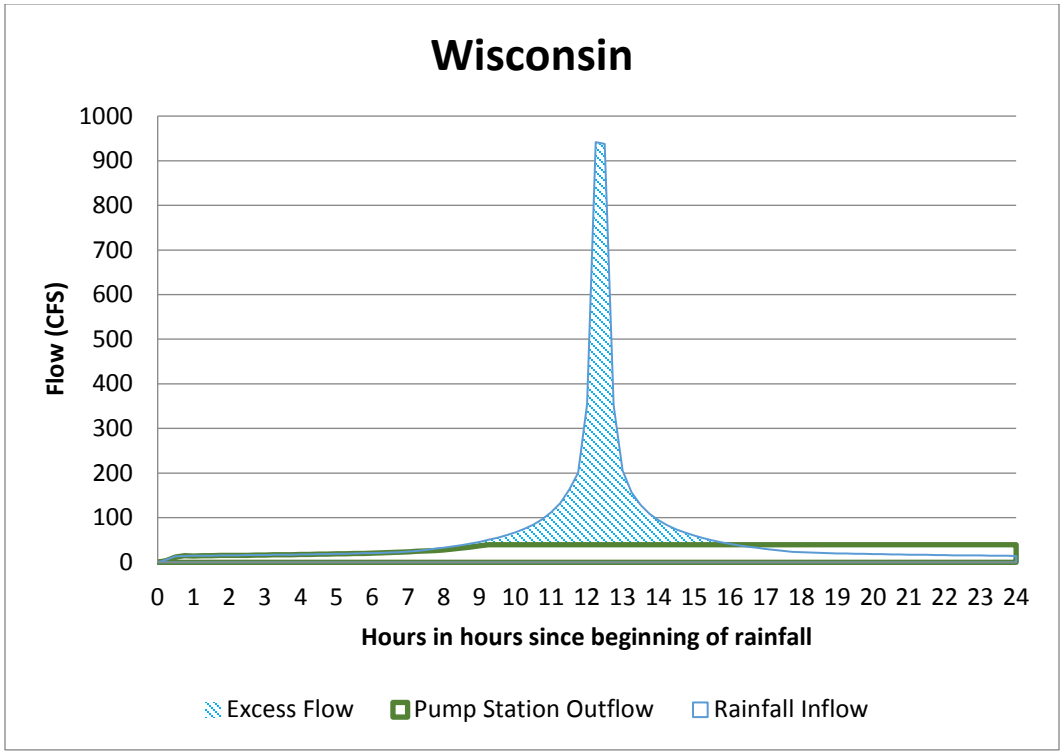

Plymouth S
160
140
120
100
80
60
40
20
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

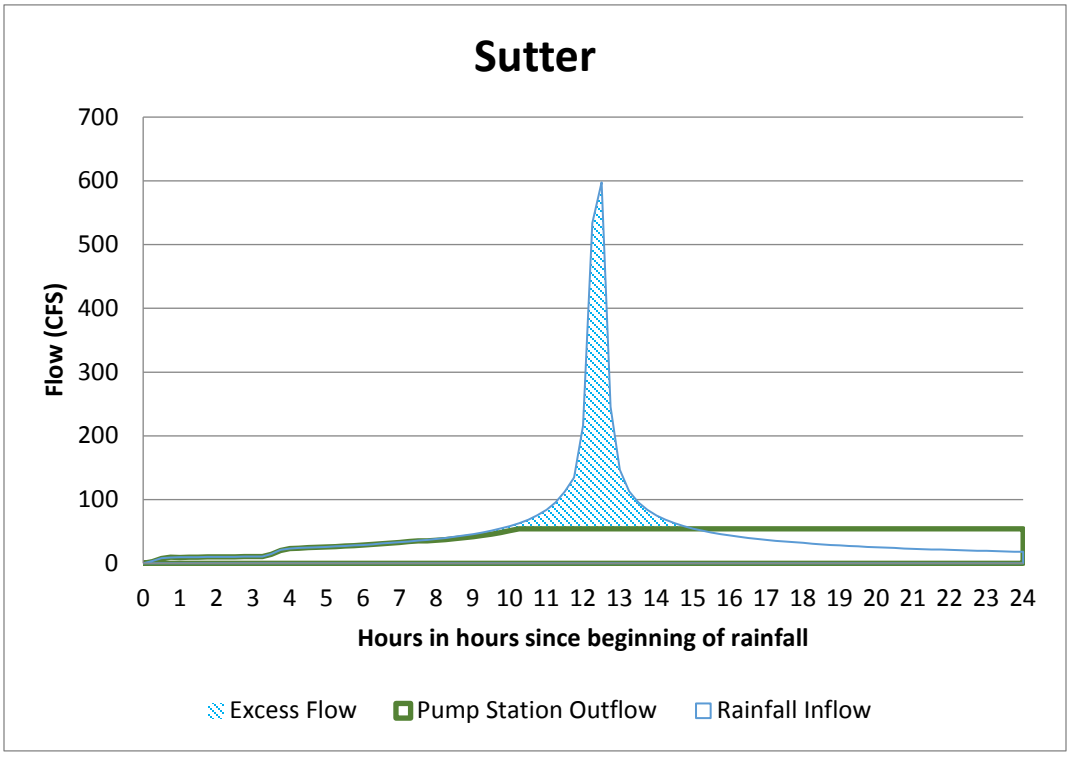

Plymouth N
180
160
140
120
100
80
60
40
20
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

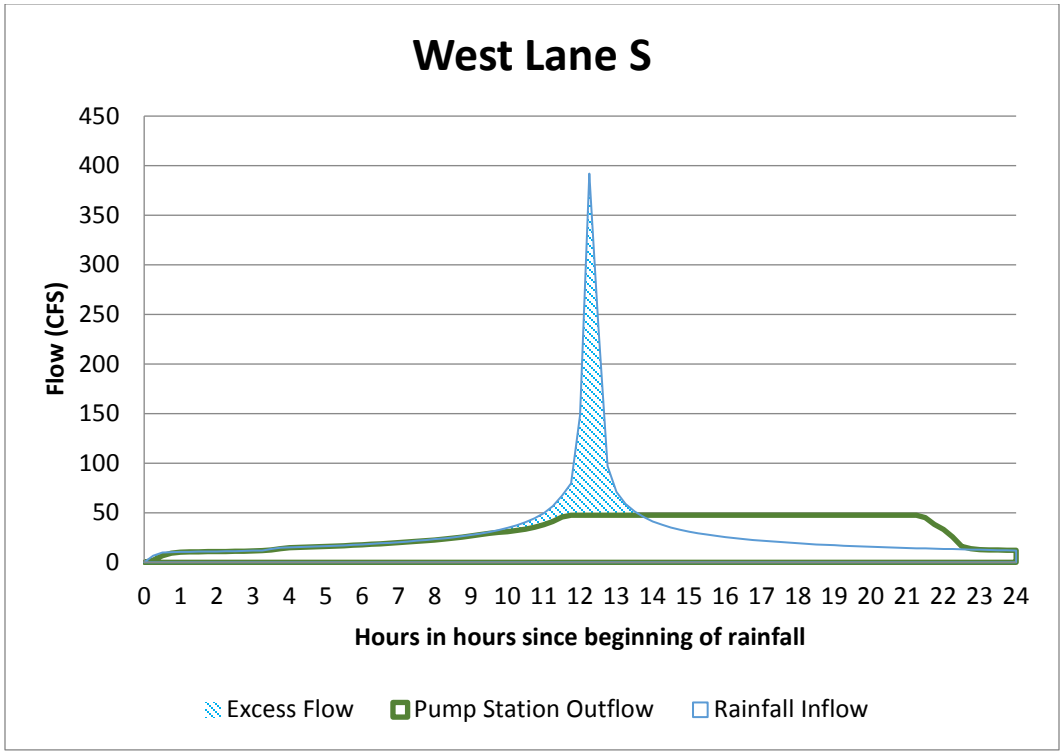

Gardena
120
100
80
60
40
20
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

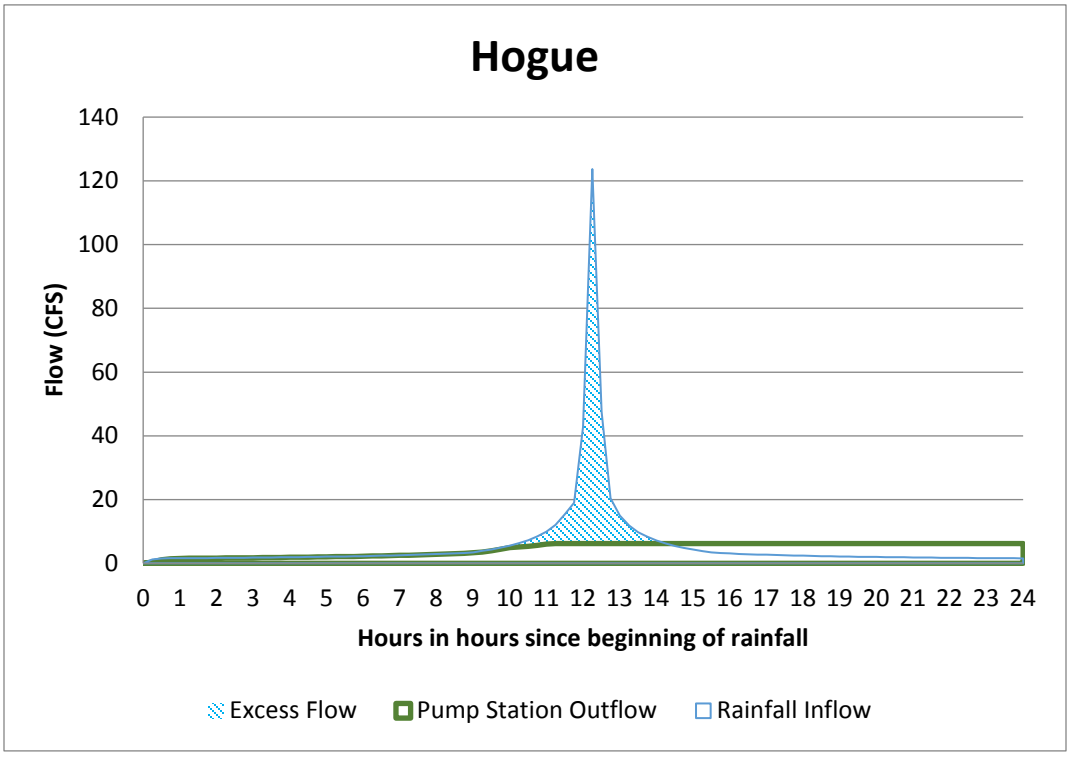

Moreing
80
70
60
50
40
30
20
10
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

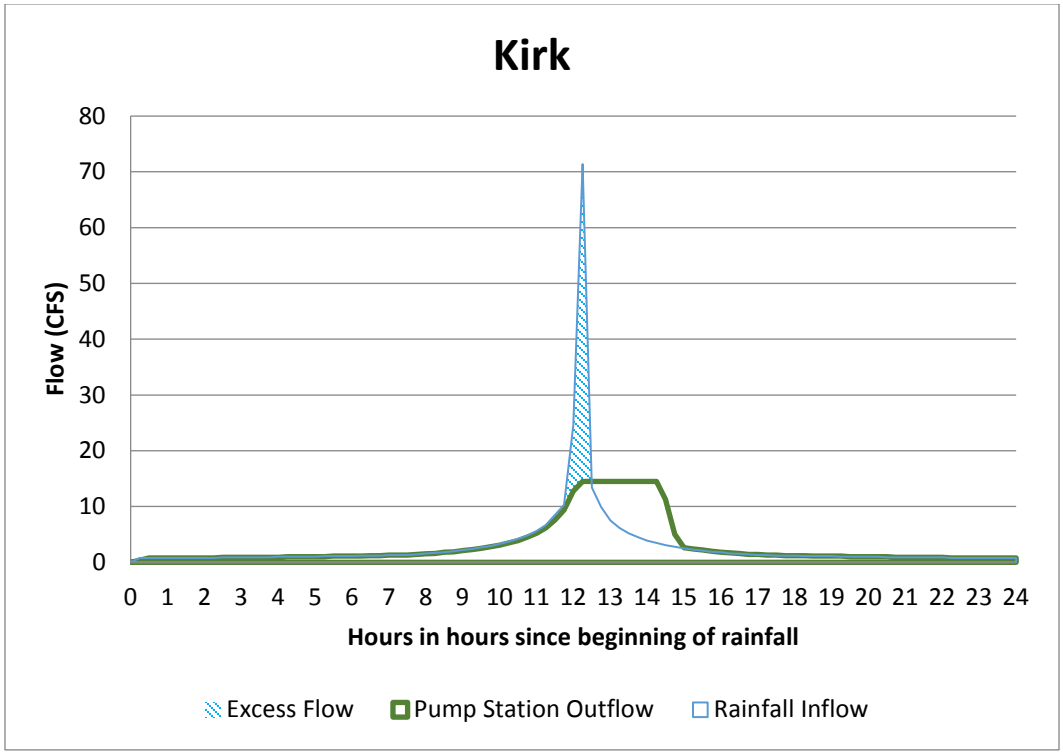

Lake
14
12
10
8
6
4
2
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

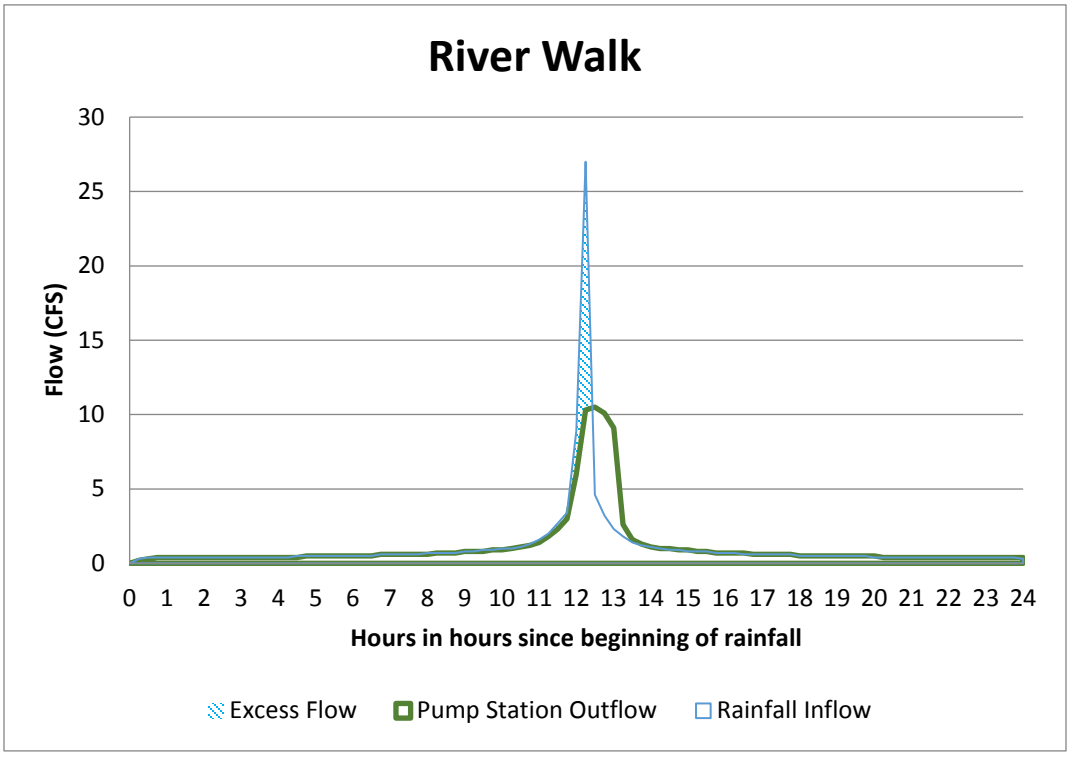

Wisconsin
1000
900
800
700
600
500
400
300
200
100
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow


Sutter
700
600
500
400
300
200
100
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow


West Lane S
450
400
350
300
250
200
150
100
50
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow


Hogue
140
120
100
80
60
40
20
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow


Kirk
80
70
60
50
40
30
20
10
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow


River Walk
30
25
20
15
10
5
0
Flow (CFS)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours in hours since beginning of rainfall
Excess Flow
Pump Station Outflow
Rainfall Inflow

240301 trustee memo LOMR.pdf

Submitted by Trustee Gulli

FEMA LOMR RD 1614 3/1/24
Trustee Memo to Board.

There are potential issues with the previous mapping efforts for the Smith Canal and the Calaveras River South Bank west of Interstate 5 and the Special Flood Hazard A zone may remain unless additional measures are undertaken to address residual flooding, such as larger pumps or detention requirements. The District should investigate with FEMA whether there are issues and plan accordingly for its remediation if required.

The Yosemite Pump Station is outside of the jurisdiction and boundary of RD 1614. The Interior drainage should have analyzed with Calaveras River South Bank west of Interstate 5. Apparently, this was not done and it is possible that this is the source of flooding that caused the SFHA a zone within RD1614 which is the lowest area in the system. It is unclear if a PAL agreement was issued or if the required work was completed.

At the last meeting, the Engineer stated that the previous Kjeldsen, Sinnock & Neudeck, Inc., "Interior Drainage Analysis Tributary of Smith Canal," 2010 was a draft and not suitable to be updated for a FEMA submittal. SFAFCA had prepared a more detailed analysis used for the CLOMR that required updating to reflect the Wisconsin Pump upgrade (SJAFCA Smith Canal 100-yr Interior Drainage Analysis dated 2/16/17 (170216 PBI IDA). It was proposed that this analysis be used for the Districts LOMR and that KSN provide the (170216 PBI IDA) and review with Trustee Gulli and Ridgeline Engineering to consider its suitability for the Districts LOMR. The review has not taken place, however Trustee Gulli has reviewed the 170216 PBI IDA and has some concerns regarding the methodology and conclusions.

FEMA requires any area "*with greater than 1 ft. of flooding to be shown as an AH Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.*"

The enclosed residual floodplain EX 14-15 indicate that the street network is such that it will store residual flooding in a uniform way as if the land were basically level and the water will spread out throughout the entire basin. The Attachment 2 indicates that the Eastern boundary is elevation 20 and the Western Boundary is Elevation 0. All the storm Drains Flow from East to West. Based on my experience last year with Terminous Tract, which also has 20 ft. of fall from East to West the water will back near the pump station (EX 50). It took months to pump off the Jan 3rd 2017 storm on Terminous. Fortunately, no homes or structures with the residual floodplain only sod fields planted by farmers aware of flood risk (note that the Terminous purchased a new pump to mitigate the flooding impacts). This is not true for Reclamation District 1614 and people's lives are at stake and if a pump is required it should be considered.

The CLOMR submittal included SJAFCA's Smith Canal 100-yr Interior Drainage Analysis dated 2/16/17 (170216 PBI IDA) which should be clarified with FEMA or reviewed in detail.

Following are my preliminary questions and concerns with the IDA, the CLOMR and obtaining a LOMR.

1. The Yosemite Pump Station is outside of the jurisdiction and boundary of RD 1614. The Interior drainage should have analyzed with the south bank of the Calaveras River System. Apparently, this was not done.
2. The 170216 PBI IDA analysis does consider the Yosemite Pump Station and others that drain 2,600 acres to the East of the District. The resulting residual flood plain and indicates areas greater than 1 ft. of depth. (See Figure 16) Per FEMA this Drainage has the potential to flow to the low point in the system at Wisconsin Pumps. The analysis indicates that at least 147-acre ft. of residual flooding to the East will result.
3. This interior drainage should have been considered when FEMA reviewed the Calaveras River South Bank Provisionally Accredited Levee system (PAL). The PAL required that "*Test Records of Mechanized Interior Drainage System*" be submitted. **Kathy Schaefer** stated on 4/10/08 that she "**was not accepting the PAL for the Calaveras River South Bank West of I5. Dave Jack and Pascal please take the appropriate action**". *"I would like to have the maps revised to show the left bank of the Calaveras River East of I5 as a PAL levee. The **left bank of the Calaveras River West of the I5 should be deaccredited and the SFHA should be drawn to reflect the SFHA** identified in the previous message."* (see enclosed LOMR and FEMA Correspondence.)
4. The 170216 PBI IDA assumes that streets will hold a 100-year storm storage at 1 ft. or less and not over flow to the low point in the system. This appears to be based on a Technical Memo which was prepared for SJAFCA 10/12/10 which states that *"It was assumed that approximately one-half of the street networks could fill up with water to a depth of one foot before the water would inundate any buildings."* The IDA used "*Professional judgement was used to determine the pond boundaries"*
5. The 170216 PBI IDA uses the full capacity of all pumps stations, without regard for pump inefficiencies, breakdowns or high head conditions. The Calaveras River PAL submittal required "*Test Records of Mechanized Interior Drainage System*" be submitted. The Corps of Engineers Manual recommends the use of back up pump.
6. The current FEMA Map indicates a floodplain that could not be based on a levee failure and resembles an interior drainage source of flooding from the East. FEMA comments indicate they are aware of the issue.
7. The 170216 PBI IDA does not consider the storm conveyance system which should be reviewed to determine where it will underflow and overflow.
8. FEMA raised the issue of the low point of the system during their review of the CLOMR. See enclosed 161214STARR and 170100 STARR correspondence just prior to the drainage analysis. Although the CLOMR was issued it is not entirely clear whether or not they have accepted this analysis. FEMA stated on 1//1/17 that "*we expect the interior drainage from the Calaveras River levee and the Smith Canal Levee to be located at the low lying area (near the intersection of Clement and Wisconsin Street)"*
9. The worst storms I have seen that resulted in street flooding were 5/18/19 and 5/20/19 total 2.52 inches (2 days). 12/29/22 to 1/1/23 total =1.38 inches in 3 days. According to the internet the greatest recorded 1 day total was 3.1 inches in 9/13/18. The 1.38 inches in 3 days resulted in street flooding greater than 1 ft. at Alpine and Delano.

10. The 100 year is 3.36" for a 24-hour duration which is a substantial increase from recent events.
11. The Smith Canal at Yosemite Lake appeared to be 1 to 2 ft. higher than the San Joaquin River CDEC information for the RRI gauge on 2/9/24 and 2/19/24.
12. The Yosemite Lake Pump (4) discharge pipes are at about an invert of elevation 7 (NAVD 88) and flow backward into the sump at high water greater that 7.
13. The Districts 2012 5-yr plan and Profile included the Calaveras River South Bank west of Interstate 5 and indicated approximately 1,800 ft. of levee that has areas below the 3 ft. of required freeboard west of I-5.

The District should consider requesting clarification from FEMA as our constituents have been waiting a long time to remove the SFHA. If indeed there are issues that need to be addressed it should be done now rather than spending significant time and expense to find out later. It appears to a Licensed Engineer Reclamation District Trustee to be fixable, albeit requiring additional expenditures.

Thank You

Dominick Gulli PE, PLS
Trustee





Exhibits:

(EX 10) January 2017 STARR Memo Calaveras River Interior Drainage.
(EX 20) 12/14/16 STARR Memo
(EX 30) 4/10/08 Calaveras River Provisional Levee Accreditation Information
(EX 40) 10/12/10 KSN Memorandum to PBI Interior Drainage on Street Storage
(EX 50) 1/3/23 Resdidual Flooding at Terminous Tract

11x17

(EX 14) Figure 14. 100-year Residual Floodplain without upsized Wisconsin Pump Station
(EX 15) Figure 15. 100-year Residual Floodplain with upsized Wisconsin Pump Station
(Ex 16) Figure 16. 100-year Residual Floodplain with upsized Wisconsin Pump Station
(Attachment 2) Certified Smith Canal Ground topography and 100-year residual floodplain. Topographic Figure 15. 100-year Residual Floodplain with average ponding areas.
(EX 13) 2012 RD 1614 5-year plan and profile.

Guidance on application of the Natural Valley LAMP Procedure for the Smith Canal

1. Calaveras River Interior Drainage
    a. The area near the intersection of Clement Ave and Wisconsin Ave are the lowest ground elevation points in the levee protected area for the Calaveras Levee as well as the Smith Canal levee embankments (please see Figure 2).

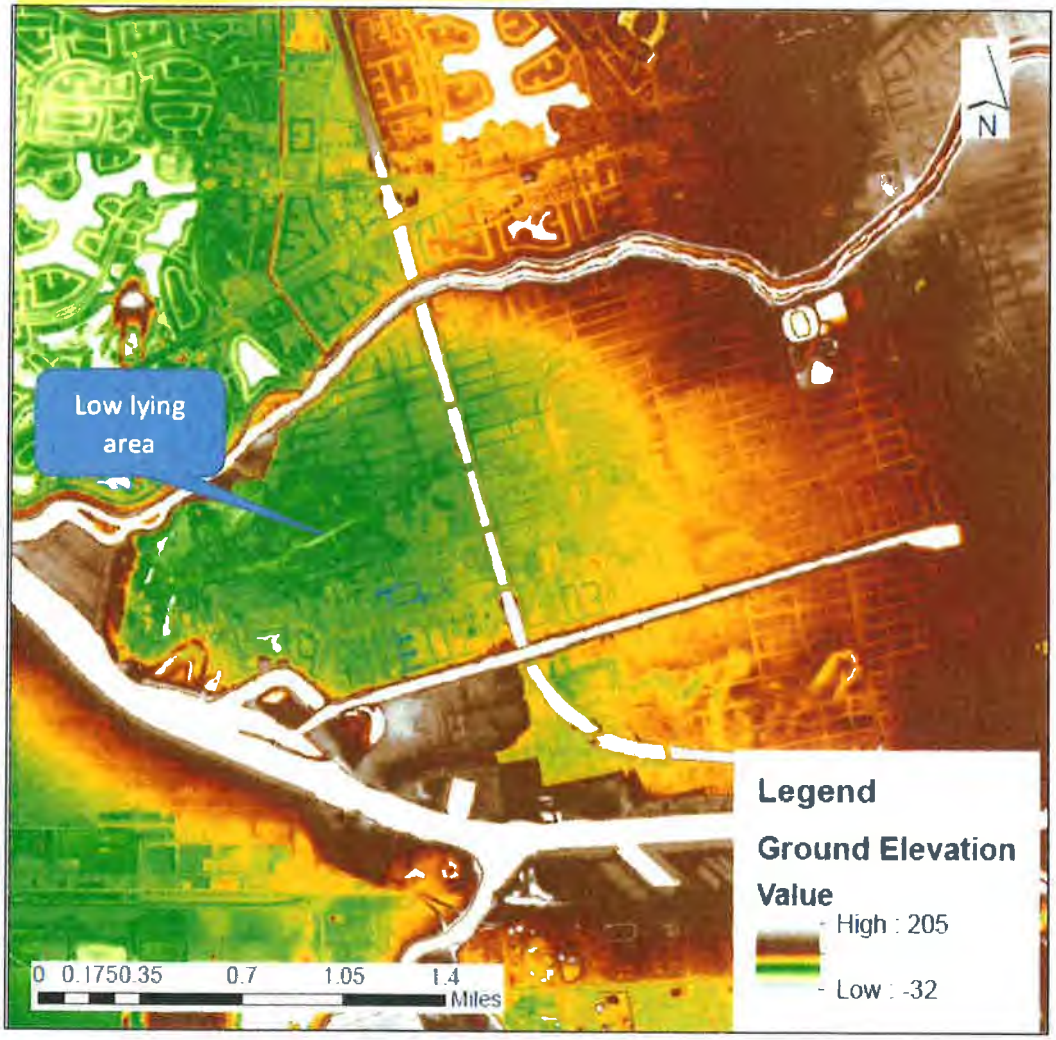


Figure 1: Low lying area near Clement Ave and Wisconsin Ave

    b. While we do not have the Calaveras River levee accreditation interior drainage floodplain, we expect it to be located in this low lying area.
    c. The overland runoff from Smith Canal will also end up in this low lying area.
    d. The analysis for Smith Canal needs to take into account the interior drainage from both levees and the respective pump systems.

2. Storm "Sewersheds" & their Storage
    a. The SJAFCA has provided FEMA with the "storm sewersheds" for the area immediately north of the Smith Canal (please see Figure 3).

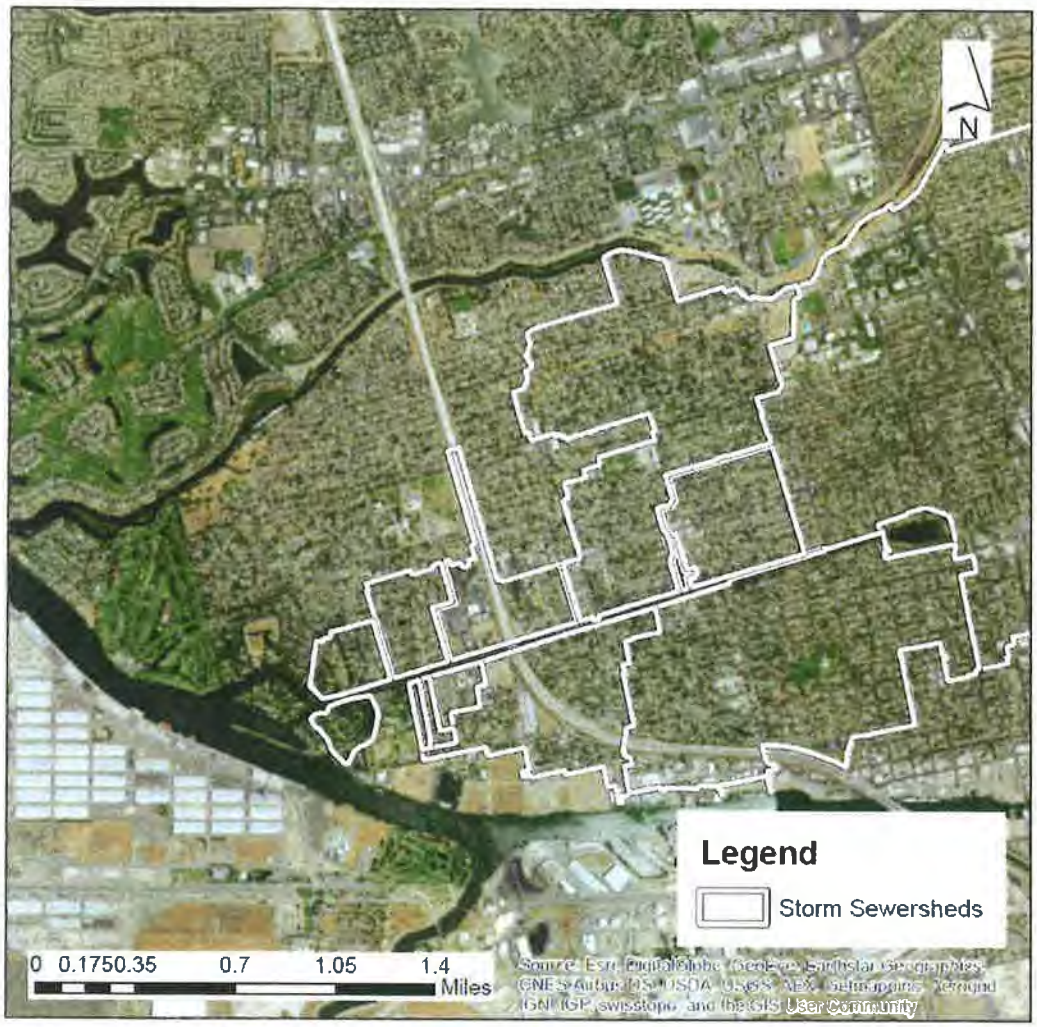


Figure 2: Storm Sewersheds

    b. FEMA understands that the storm sewer network is designed for a 10-year event. As such it may or may not offer significant storage.
    c. It is recommended that one storm sewershed be chosen and the storage in it be computed. The storage will be the volume stored between the invert of the lowest storm sewer pipe and the elevation of the lowest inlet to the storm sewer system.
    d. Based on the storage computed in 2c (above) it can be determined if the storage is significant and worth taking into account as considering it will increase the level of effort.

3. Flow from Smith Canal into Storm Sewersheds
    a. It is recommended that the outflow from the Smith Canal be considered for each storm sewershed (Please see Figure 4).



Figure 3: Canal outflow locations

    b. There are two conditions that need to be analyzed:
        i. Gate Open – King Tide flows into Smith Canal along with pumping the four-percent-annual-chance (25-year) event runoff[1] in storm sewersheds into Smith Canal.
        ii. Gate Closed – No tidal flows and 1% annual chance runoff in storm sewersheds into Smith Canal.
    c. The inflow hydrograph for each outflow for each of the two conditions above needs to be computed.

[1] Based on discussions with SJAFCA, FEMA understands that this is the 1% annual chance event based on Joint Probability.

d. It is recommended that the outflow hydrographs be computed as follows:
   i. The outflow from the Canal to each sewershed should be computed separately.
   ii. For the portion of the Canal south of each sewershed, the volume stored in the Canal above the elevation of the landward toe of the levee needs to be computed.
   iii. The elevation between the levee landward toe and the water-surface elevation needs to be computed.
   iv. The flow from each portion of the canal needs to be computed using the weir equation where the weir is assumed to be at the levee landward toe elevation with the head computed in 3.d.iii. (above).
   v. The outflow is assumed to occur for a suitable time step (1 min, 5 min etc.) and the volume of outflow computed.
   vi. Based on the outflow volume the remaining volume in the Canal is computed as well as the new water-surface elevation.
   vii. Steps (iv), (v), and (vi) are repeated until the Canal volume above the landward toe elevation is drained.
   viii. Using the time step and outflows computed above, outflow hydrographs are developed for each portion of the Canal south of the sewersheds.

4. Overland flow to low lying areas
    a. It is recommended that the overland flow from the Smith Canal outflows (computed above) be routed overland via a 2-dimensional model (e.g. FLO2D or HEC-RAS 5.0) which takes into account the Calaveras River interior drainage system (please see Figure 5).

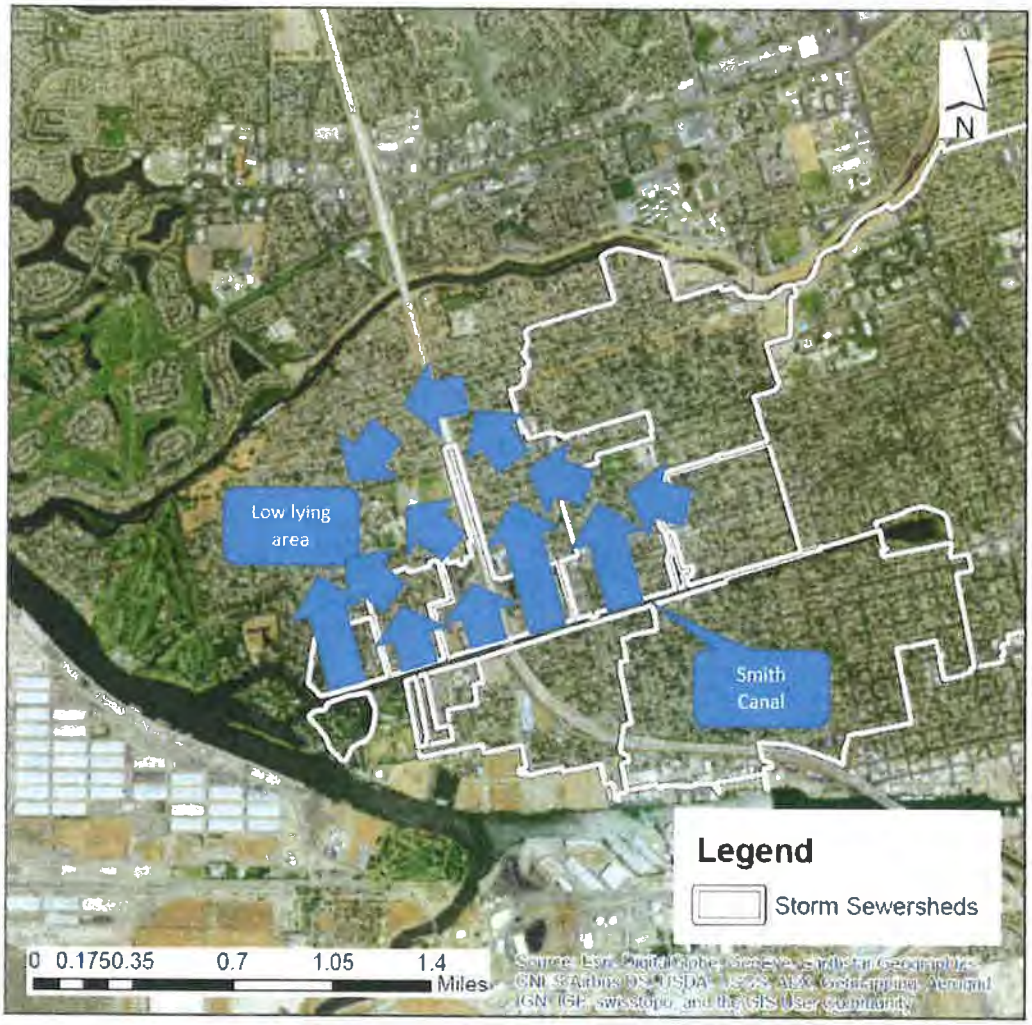


Figure 4: Potential overland flow paths

    b. This analysis may also be refined with flow through the storm sewer network being modeled but this will be a significant increase in level of effort which may not be justified with the potentially low storage in the storm sewer network.

STARR Strategic Alliance for Risk Reduction

MEMORANDUM

DATE: 12/14/2016

FOR: Case Folder 16-09-2067R

FROM: STARR II

SUBJECT: Review of Additional Information Received on 7/11/2016

Summary of Comments from the 316-AD letter dated June 2, 2016. The comments are shown in black and the review comments are shown in red.

1. The proposed project is using a revised base (1-percent-annual-chance) flood elevation for the San Joaquin River delta. Please provide the historic gage data information referenced in the documented titled, "San Joaquin River Delta Base Flood Elevation Refinement Stage Frequency Analysis," dated September 2, 2010, as supporting information for your analysis.

   Satisfied. Data was received.

2. The submitted geotechnical certification letter entitled "Smith Canal, Levee Analysis, SJAFCA – Smith Canal Gate Project, Stockton, California", prepared by Kleinfelder, Inc., dated March 3, 2016, references data and analyses for the Smith Canal levee embankments from the CA DWR Urban Levee Evaluation (ULE) project as part of the certification. Please submit all relevant data and analyses from the ULE project.

   Satisfied. Data was received.

3. The submitted geotechnical certification statement did not include a portion of the northern levee embankment along Smith Canal (designated as levee reach C3 from the ULE project). Please submit a revised geotechnical certification statement to include this levee reach, and any additional data as appropriate.

   Satisfied. According to the explanation and data that was received, levee reach C3 from the ULE project was analyzed as part of reach C1.

4. The submitted geotechnical certification statement references USACE and FEMA criteria. Please identify any specific documents and engineering manuals as part of the certification.

   Satisfied. Documents and manuals used for certification were identified.

5. The submitted interior drainage analysis references the San Joaquin County hydrology manual as the source of rainfall depths used in the analysis. Please provide a copy of the hydrology manual as supporting information for your analysis.

   Satisfied. Hydrology manual was provided.

6. The submitted interior drainage analysis assumed a 4-percent-annual-chance rainfall depth on the interior side of the Smith Canal levee embankments, coincident with a peak high tide event on the San Joaquin River Delta resulting in the gate structure being closed. Please submit an interior drainage analysis with a base flood rainfall depth on the interior side of the levee embankments and the proposed gate structure open.

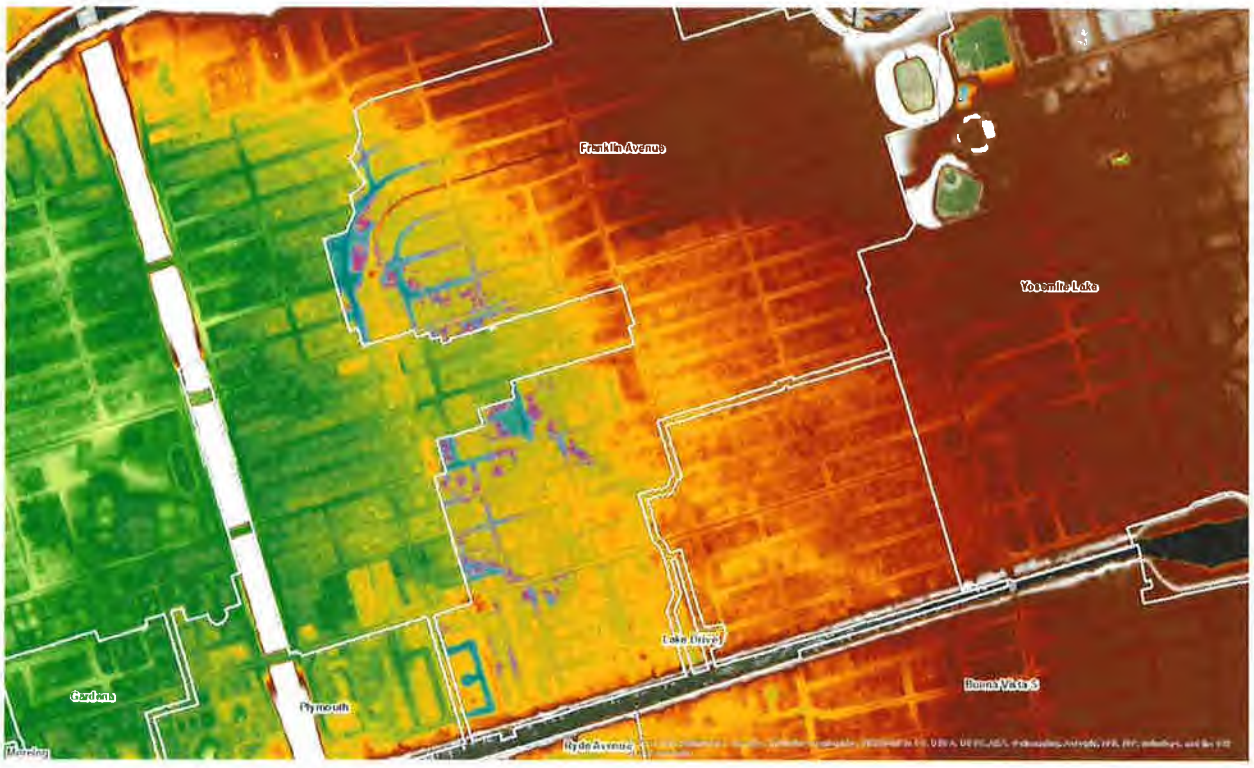
   This needs further discussion.

   a. The pumps and gravity drains cannot discharge the entire 100-year runoff. The submitted interior drainage analysis states that the volume of runoff that cannot be discharged will be stored in the streets (and will be less than 1 foot deep). The submitted analysis considers the calculated runoff (listed as "Ponding Beyond Pump Capacity" in the technical memorandum) as "in place storage", and that it will not flow and collect in the lowest elevation of the sub-basin. This is a critical assumption.

      Without this assumption, a preliminary analysis using calculated runoff versus available storage, of two interior sub-basins (Gardena and Franklin Avenue) shows that the calculated runoff could collect and pond in low areas and result in flooding (blue areas represents areas greater than 1-foot in flood depth, and purple areas represent flooding that is less than 1-foot in depth). Any flooding that is greater than 1-foot in depth will need to be shown as SFHA.



b. The sub-basin boundaries appear to be incorrect in some locations when compared against the terrain data. For example in the Franklin Avenue sub-basin there appears to be an abandoned railroad embankment that divides the sub-basin. Revised sub-basin boundaries and analyses may be required and the terrain data used to develop the sub-basin boundaries should be submitted. Additional information such as storm sewer network drainage patterns or storm sewer modeling could be submitted to support their sub-basin boundaries, and their analyses.



c. Need a digital copy of the HEC-HMS model.

7. Please submit documentation of the individual legal notices that were sent to property owners who would be affected by any increases in width and/or shifting of the floodplain of the base flood. Legal notice may take the form of certified mailing receipts, or certification that all property owners have been notified with an accompanying mailing list and a copy of letter sent, or a copy of a notice placed in a newspaper. Legal notices should be completed by the community or the community should be copied on the notices. Examples of individual legal notices can be found on pages 17 through 18 of the instructions for the MT-2 application/certification forms which can be found at https://www.fema.gov/media-library/assets/documents/1343.

Needs further discussion. PON was not submitted. Instead documentation of public outreach material was submitted. However notifications may not be needed if there is no BFE or SFHA increases.

8. The CLOMR request will be processed by FEMA only after FEMA receives documentation from the requestor that demonstrates compliance with the Endangered Species Act (ESA). For projects that are not constructed, funded or permitted by a federal agency, the requestor must demonstrate ESA compliance by submitting to FEMA written justification that a "Take," meaning to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct, has no potential to occur to threatened and endangered species present in the county as a result of the project. If a project has the potential to "Take" listed species, an Incidental Take Permit may be submitted with justification that the project is the subject, or is covered by the subject, of the permit.

   For projects with federal construction, funding, or permitting, a "not likely to adversely affect" determination with concurrence from the Services, a "No Effect" determination from the federal action agency, or other approval from the Services is acceptable documentation of ESA compliance.

   Additional information regarding ESA compliance related to Letters of Map Change (LOMCs) can be found at https://www.fema.gov/compliance-endangered-species-act-letters-map-change and https://www.fema.gov/media-library/assets/documents/116871.

   Satisfied.

URS (b)(6) Albuquerque/URSCorp
04/10/2008 05:21 PM

To (b)(6) @urscorp.com
cc
bcc
Subject Fw: Calaveras River Part 1B

(b)(6)

See attached for your use for SJ.

Thanks.

(b)(6)

-----Forwarded by (b)(6) /Albuquerque/URSCorp on 04/10/2008 05:21PM -----

To: (b)(6) @URSCorp.com>
From: "Schaefer, Kathleen" <kathleen.schaefer@dhs.gov>
Date: 04/10/2008 03:07PM
Subject: Calaveras River Part 1B

(b)(6)

Attached is a pdf that documents the fact that deficiencies of the left bank of the Calaveras are confined to the reach west of I-5. With this I would like to have the maps revised to show the left bank of the Calaveras east of I5 as a PAL Levee. The left bank west of I5 should be deaccredited and the SFHA should be drawn to reflect the SFHA identified in the previous message.

Call me if you have any questions,

More to come

Kathy

Kathleen Schaefer, P.E., CFM

1111 Broadway, Suite 1200

Oakland , CA 94607-4052

Phone: 510-627-7129

Cell: 510-292-9075

email: Kathleen.Schaefer@dhs.gov

URS (b)(6) Albuquerque/URSCorp
04/10/2008 05:23 PM

To (b)(6) @urscorp.com
cc
bcc
Subject Fw: PAL Forms

(b)(6)

See attached for your use for SJ.

Thanks.

(b)(6)

-----Forwarded by Dave Turk/Albuquerque/URSCorp on 04/10/2008 05:23PM -----

To: "Bartlett, Jonathon" <jonathon.bartlett@dhs.gov>, (b)(6)
(b)(6) @mapmodteam.com>, (b)(6) @URSCorp.com>, '(b)(6)
(b)(6) @mapmodteam.com>
From: "Schaefer, Kathleen" <kathleen.schaefer@dhs.gov>
Date: 04/10/2008 04:53PM
Subject: PAL Forms

Hi all,
Attached are the PAL forms for P459, P454, P140 and P557. I think we have previously considered P459 and P454 as PAL. We are accepting the PAL for these levees, please take the appropriate action.
I am accepting the PAL for the south bank of the Calaveras River east of I5. I am not accepting the PAL for the south bank of the Calaveras River west of I5. Dave, Jack, and Pascal, please take the appropriate action.
Thanks
Kathy

Kathleen Schaefer
510-627-7129

-----Original Message-----
From: kschaefl [mailto:kathleen.k.schaefer@fema.gov]
Sent: Thursday, April 10, 2008 11:33 AM
To: Schaefer, Kathleen
Subject:

This E-mail was sent from "RNPC9403B" (Aficio MP 5500).

Scan Date: 04.10.2008 14:32:51 (-0400)

This e-mail and any attachments are confidential. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

20080410143251503.pdf

THOMAS R. FLINN
DIRECTOR

THOMAS M. GAU
CHIEF DEPUTY DIRECTOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

ROGER JANES
BUSINESS ADMINISTRATOR

Public Works
San Joaquin County
Working for YOU

P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.sjgov.org/pubworks

RECEIVED
DEC 31 2007
By

December 24, 2007

CERTIFIED, RETURN RECEIPT REQUESTED
7007 0710 0001 8393 5658

Sally Kiolkowski, Director
Mitigation Division
FEMA Region IX
U. S. Department of Homeland Security
1111 Broadway, Suite 1200
Oakland, California 94607-4052

SUBJECT: PROVISIONALLY ACCREDITED LEVEE (PAL) AGREEMENT FORMS

Dear Ms. Kiolkowki:

We are herewith submitting the PAL Agreement Forms for the following levee segments: P459 (Atlas Tract Dry Land Levee), P454 (Calaveras River Levee North Bank), P140 and P357 (Calaveras River Levee South Bank), and P356 (Calaveras River Levee South Bank).

In the event you have any questions, please contact me at (b)(6).

Sincerely,

STEVEN WINKLER
Deputy Director/Operations

SW:KC:to
FM-7L069-T1

Enclosures

c: Kathy Schaefer
Federal Emergency Management Agency

Roger Churchwell
City of Stockton

Letter of Agreement and Request for Provisionally Accredited Levee (PAL) Designation and Agreement to Provide Adequate Compliance with the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10)

PAL Agreement Form

We, the undersigned, have received a letter from FEMA dated May 24, 2007 with an enclosed *"Levee Status Map"* and *"Levee Status Table"* and two enclosed documents titled *"Title 44 of the Code of Federal Regulations (CFR), Section 65.10 (44 CFR 65.10)"* and "*Requirements of 44 CFR Section 65.10: Mapping of Areas Protected by Levee Systems.*" We understand that FEMA is in the process of providing an updated Flood Insurance Rate Map for San Joaquin County, CA and that the flood hazards around levee(s) identified on the *Levee Status Map* and *Levee Status Table* with ID numbers **P140, P357**, P___,P___, P____, P____, P____ will be remapped to reflect that these levees have been designated a PAL. This/these levee(s) or levee system(s) is/are also known as **Calaveras River Levee South Bank**

To the best of our knowledge, the levee(s) identified above meet the criteria of 44 CFR 65.10 and has/have been maintained in accordance with an adopted operation and maintenance plan. For Scenario A (non-USACE Program) levees, this must be evidenced by an attached Operation and Maintenance Plan and records of levee maintenance and operation, as well as Test Records of Mechanized Interior Drainage System. We hereby submit to FEMA before March 28 2008 (deadline for USACE Program maintenance deficient levees PAL Agreements), our agreement to provide FEMA with all the necessary information to show that the levee(s) identified above comply with 44 CFR 65.10. We understand that this documentation will be provided before **March 28, 2010**. Providing the information described in 44 CFR 65.10 will allow FEMA to move forward with the flood mapping for San Joaquin County. We fully understand that if complete documentation of compliance with 44 CFR 65.10 is not provided within the designated timeframe of 24 months, FEMA will initiate a revision to the Flood Insurance Rate Map for San Joaquin County to redesignate the area as floodprone.

Levee Owner Representative (signature): _____ Date: 12/20/07

Levee Owner Representative (print name): **Thomas Flinn, Director of Public Works**

Community CEO (signature): _____ Date: 12/24/07

Community CEO (print name): **Manuel Lopez, County Administrator**

Other, if applicable (signature): _____ Date: _____

Other, if applicable (print name): _____

Required Attachments for Scenario A (non-USACE Program) Levees only:

- Operation and Maintenance Plan and Records
- Test Records of Mechanized Interior Drainage System

Instructions for Completing this Form:

- On this PAL Agreement Form, fill-in the levee ID numbers and levee(s) name/description for which the Provisionally Accredited Levee (PAL) designation is requested. A separate PAL Agreement Form is recommended for each unique levee owner/levee system. Make copies of this blank form to request PAL designation for multiple levee systems, as necessary.
- This document is available on-line (in a PDF format that can be filled-in electronically) via the link named "Generic PAL Agreement Form for Region IX" at http://rmc.mapmodteam.com/rmc9/Fact_Sheets.htm

Letter of Agreement and Request for Provisionally Accredited Levee (PAL) Designation and Agreement to Provide Adequate Compliance with the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10)

PAL Agreement Form

We, the undersigned, have received a letter from FEMA dated May 24, 2007 with an enclosed *"Levee Status Map"* and *"Levee Status Table"* and two enclosed documents titled *"Title 44 of the Code of Federal Regulations (CFR), Section 65.10 (44 CFR 65.10)"* and *"Requirements of 44 CFR Section 65.10: Mapping of Areas Protected by Levee Systems."* We understand that FEMA is in the process of providing an updated Flood Insurance Rate Map for San Joaquin County, CA and that the flood hazards around levee(s) identified on the *Levee Status Map* and *Levee Status Table* with ID numbers **P356**, P____, P____, P____, P____ will be remapped to reflect that these levees have been designated a PAL. This/these levee(s) or levee system(s) is/are also known as **Calaveras River Levee South Bank**

To the best of our knowledge, the levee(s) identified above meet the criteria of 44 CFR 65.10 and has/have been maintained in accordance with an adopted operation and maintenance plan. For Scenario A (non-USACE Program) levees, this must be evidenced by an attached Operation and Maintenance Plan and records of levee maintenance and operation, as well as Test Records of Mechanized Interior Drainage System. We hereby submit to FEMA before March 28 2008 (deadline for USACE Program maintenance deficient levees PAL Agreements), our agreement to provide FEMA with all the necessary information to show that the levee(s) identified above comply with 44 CFR 65.10. We understand that this documentation will be provided before **March 28, 2010**. Providing the information described in 44 CFR 65.10 will allow FEMA to move forward with the flood mapping for San Joaquin County. We fully understand that if complete documentation of compliance with 44 CFR 65.10 is not provided within the designated timeframe of 24 months, FEMA will initiate a revision to the Flood Insurance Rate Map for San Joaquin County to redesignate the area as floodzone.

Levee Owner Representative (signature): _____ Date: 12/4/07

Levee Owner Representative (print name): **Thomas Flinn, Director of Public Works**

Community CEO (signature): _____ Date: 12/24/07

Community CEO (print name): **Manuel Lopez, County Administrator**

Other, if applicable (signature): _____ Date: _____

Other, if applicable (print name): _____

Required Attachments for Scenario A (non-USACE Program) Levees only:

- Operation and Maintenance Plan and Records
- Test Records of Mechanized Interior Drainage System

Instructions for Completing this Form:

- On this PAL Agreement Form, fill-in the levee ID numbers and levee(s) name/description for which the Provisionally Accredited Levee (PAL) designation is requested. A separate PAL Agreement Form is recommended for each unique levee owner/levee system. Make copies of this blank form to request PAL designation for multiple levee systems, as necessary.
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Letter of Agreement and Request for Provisionally Accredited Levee (PAL) Designation and Agreement to Provide Adequate Compliance with the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10)

PAL Agreement Form

We, the undersigned, have received a letter from FEMA dated May 24, 2007 with an enclosed *"Levee Status Map"* and *"Levee Status Table"* and two enclosed documents titled *"Title 44 of the Code of Federal Regulations (CFR), Section 65.10 (44 CFR 65.10)"* and *"Requirements of 44 CFR Section 65.10: Mapping of Areas Protected by Levee Systems."* We understand that FEMA is in the process of providing an updated Flood Insurance Rate Map for San Joaquin County, CA and that the flood hazards around levee(s) identified on the *Levee Status Map* and *Levee Status Table* with ID numbers P_140, P_357,P___,P___, P____, P____, P____ will be remapped to reflect that these levees have been designated a PAL. This/these levee(s) or levee system(s) is/are also known as Calaveras River Levee South Bank_____.

To the best of our knowledge, the levee(s) identified above meet the criteria of 44 CFR 65.10 and has/have been maintained in accordance with an adopted operation and maintenance plan. For Scenario A (non-USACE Program) levees, this must be evidenced by an attached Operation and Maintenance Plan and records of levee maintenance and operation, as well as Test Records of Mechanized Interior Drainage System. We hereby submit to FEMA before March 28 2008, (deadline for USACE Program maintenance deficient levees PAL Agreements) our agreement to provide FEMA with all the necessary information to show that the levee(s) identified above comply with 44 CFR 65.10. We understand that this documentation will be provided before March 28, 2010. Providing the information described in 44 CFR 65.10 will allow FEMA to move forward with the flood mapping for San Joaquin County. We fully understand that if complete documentation of compliance with 44 CFR 65.10 is not provided within the designated timeframe of 24 months, FEMA will initiate a revision to the Flood Insurance Rate Map for San Joaquin County to redesignate the area as floodprone.

Levee Owner Representative (signature): _____ Date: _____

Levee Owner Representative (print name): _____

Community CEO (signature): _____ Date: 12/18/07

Community CEO (print name): Gordon Palmer, City Manager, City of Stockton

Other, if applicable (signature): _____ Date: _____

Other, if applicable (print name): _____

Required Attachments for Scenario A (non-USACE Program) Levees only:

- Operation and Maintenance Plan and Records
- Test Records of Mechanized Interior Drainage System

Instructions for Completing this Form:

- On this PAL Agreement Form, fill-in the levee ID numbers and levee(s) name/description for which the Provisionally Accredited Levee (PAL) designation is requested. A separate PAL Agreement Form is recommended for each unique levee owner/levee system. Make copies of this blank form to request PAL designation for multiple levee systems, as necessary.
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Letter of Agreement and Request for Provisionally Accredited Levee (PAL) Designation and Agreement to Provide Adequate Compliance with the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10)

PAL Agreement Form

We, the undersigned, have received a letter from FEMA dated May 24, 2007 with an enclosed *"Levee Status Map"* and *"Levee Status Table"* and two enclosed documents titled *"Title 44 of the Code of Federal Regulations (CFR), Section 65.10 (44 CFR 65.10)"* and *"Requirements of 44 CFR Section 65.10: Mapping of Areas Protected by Levee Systems."* We understand that FEMA is in the process of providing an updated Flood Insurance Rate Map for San Joaquin County, CA and that the flood hazards around levee(s) identified on the *Levee Status Map* and *Levee Status Table* with ID numbers P_356, P____, P____, P____, P____ will be remapped to reflect that these levees have been designated a PAL. This/these levee(s) or levee system(s) is/are also known as Calaveras River Levee South Bank_____.

To the best of our knowledge, the levee(s) identified above meet the criteria of 44 CFR 65.10 and has/have been maintained in accordance with an adopted operation and maintenance plan. For Scenario A (non-USACE Program) levees, this must be evidenced by an attached Operation and Maintenance Plan and records of levee maintenance and operation, as well as Test Records of Mechanized Interior Drainage System. We hereby submit to FEMA before March 28 2008, (deadline for USACE Program maintenance deficient levees PAL Agreements) our agreement to provide FEMA with all the necessary information to show that the levee(s) identified above comply with 44 CFR 65.10. We understand that this documentation will be provided before March 28, 2010. Providing the information described in 44 CFR 65.10 will allow FEMA to move forward with the flood mapping for San Joaquin County. We fully understand that if complete documentation of compliance with 44 CFR 65.10 is not provided within the designated timeframe of 24 months, FEMA will initiate a revision to the Flood Insurance Rate Map for San Joaquin County to redesignate the area as floodprone.

Levee Owner Representative (signature): _____ Date: _____

Levee Owner Representative (print name): _____

Community CEO (signature): _____ Date: 12/18/07

Community CEO (print name): Gordon Palmer, City Manager, City of Stockton_

Other, if applicable (signature): _____ Date: _____

Other, if applicable (print name): _____

Required Attachments for Scenario A (non-USACE Program) Levees only:

- Operation and Maintenance Plan and Records
- Test Records of Mechanized Interior Drainage System

Instructions for Completing this Form:

- On this PAL Agreement Form, fill-in the levee ID numbers and levee(s) name/description for which the Provisionally Accredited Levee (PAL) designation is requested. A separate PAL Agreement Form is recommended for each unique levee owner/levee system. Make copies of this blank form to request PAL designation for multiple levee systems, as necessary.
- This document is available on-line (in a PDF format that can be filled-in electronically) via the link named "Generic PAL Agreement Form for Region IX" at http://rmc.mapmodteam.com/rmc9/Fact_Sheets.htm

STEPHEN K. SINNOCK
CHRISTOPHER H. NEUDECK

KENNETH L. KJELDSEN
RETIRED

711 NORTH PERSHING AVENUE
POST OFFICE BOX 844
STOCKTON, CALIFORNIA 95201-0844

TELEPHONE (209) 946-0268
FAX (209) 946-0296
E-MAIL ksn@ksninc.com

2091-0060
05-001

MEMORANDUM

October 12, 2010

To: Barry O'Regan - Peterson, Brustad Inc.

Subject: Interior Drainage / Street Detention Storage

Project: Smith Canal Drainage Shed

From: Erik Almaas - KSN, Inc.

Background

In urban areas within the Central Valley, drainage systems are typically designed to accommodate 10-year storm events with the intention that run-off from events greater than 10-year will be temporarily stored within streets. This approach to handling storm drainage works within the Central Valley because the topography is relatively flat which requires that streets be designed with alternating high and low points to ensure they drain properly. This alternating high and low point design creates depression storage within streets which temporarily accommodates runoff in excess of the 10-year design storm. This was the basis for HDR's assertion made in SJAFCA Technical Memorandum #6, February 1999, that urban drainage sheds utilize temporary street storage to accommodate run-off from 100-year storm events. SJAFCA Technical Memorandum #6, prepared by HDR states that;

> "The ten sub-basins along the lower reach of Mosher Slough are developed as residential areas. An analysis of maps and aerial photographs of the area showed that approximately 20% of the area in these basins is taken up by roads. In general, the roads are lower than the houses, so water would collect in the street network before rising to the level of houses and other structures. An assumption was made that one-half of the street network could fill up with water to a depth of one foot before any houses were exposed to water one foot deep."

Using newly available LiDAR information, this memorandum serves to substantiate the interior drainage assumptions made in SJAFCA Technical Memorandum #6, February 1999, by HDR Engineering, Inc.

Introduction

Kjeldsen, Sinnock & Neudeck, Inc. (KSN) was given the task to analyze interior drainage within the Smith Canal drainage shed in support of the Smith Canal Closure Device CLOMR. The Smith Canal drainage shed consists of thirteen sub-basins mostly developed as residential areas (see Figure 1). Four of the sub-basins are on high ground that gravity discharge directly into Smith Canal. Interior drainage for the other nine sub-basins is routed through nine separate pump stations. Since land use and general topography are similar between the Smith Canal and lower Mosher Slough drainage sheds, the assertion stated above was utilized in analyzing available street detention storage within the Smith Canal sub-basins. This memorandum serves to confirm that this assertion is applicable to the Smith Canal drainage shed.

Analysis

First, two representative sub-basins, Gardena and Buena Vista North, were selected for analysis. Profiles along every street centerline within each sub-basin were developed using GIS parcel data, aerial photography, and LiDAR data. Localized depressions within each street profile that would be able to detain water were identified. See Figures 2 and 3 for sample street profiles and cross sections. Based on the profiles, an average depth of available storage was calculated for each street. Please note that the profiles were taken at the street centerline, not the gutter flowline, thus producing conservative results available storage. Consequently, an average depth of water was calculated for the entire street network for each of the two sub-basins.

Furthermore, an analysis using the GIS parcel data was performed on each sub-basin to determine the area of streets, measured from back of sidewalk to back of sidewalk, as a percentage of the entire sub-basin area. For the Gardena sub-basin, the area of streets is 575,381 square feet and the total area is 2,414,333 square feet. For the Buena Vista North sub-basin, the area of streets is 1,114,094 square feet and the total area is 4,765,043 square feet.

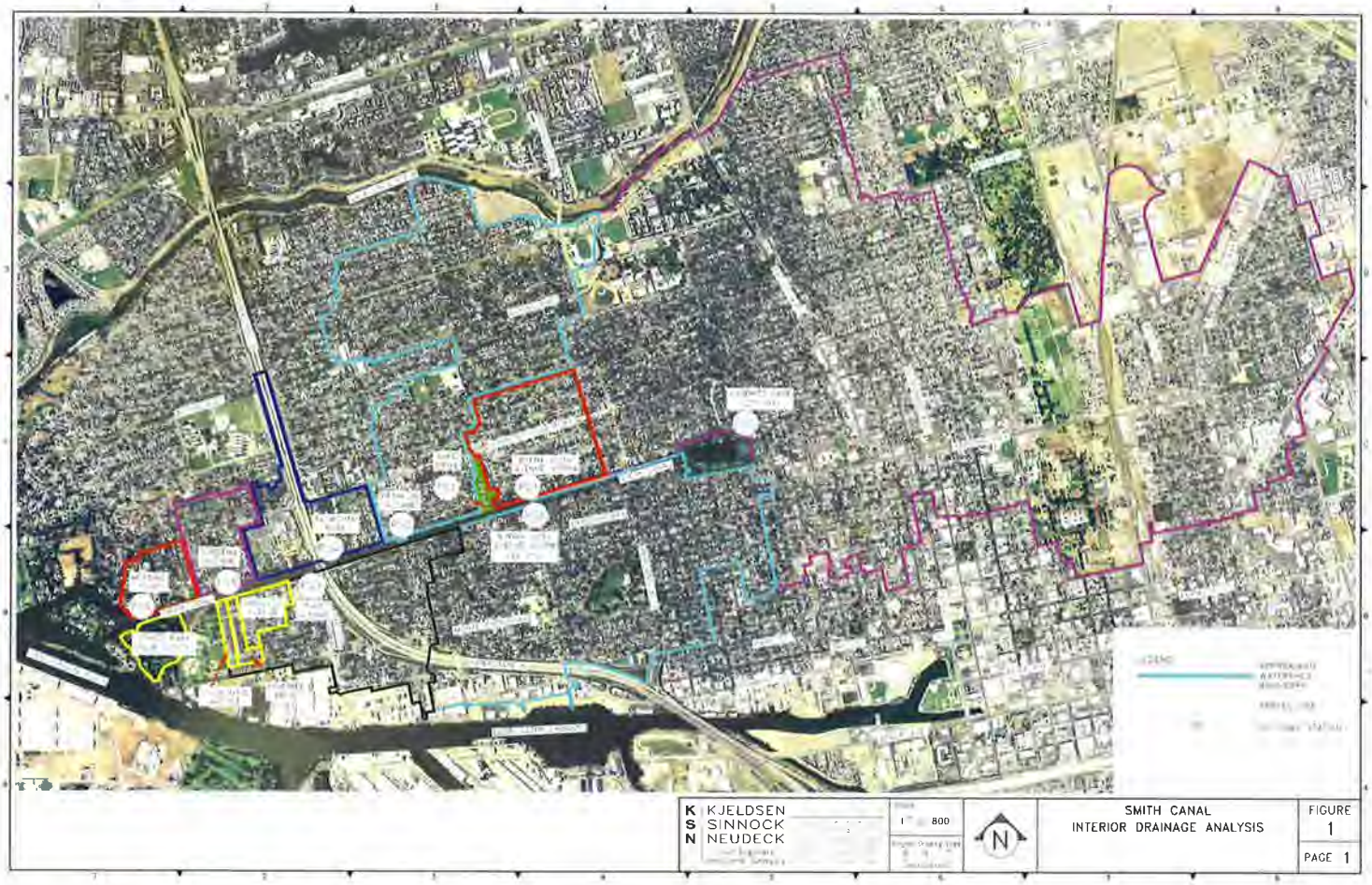
A storage factor was used as a means to compare the HDR assertion and the data compiled from the two Smith Canal sub-basins. This storage factor is defined as the product of the percentage of total drainage shed area that is streets *and* the average depth of available storage within those streets. For the HDR study, this factor equaled 10% of the drainage shed times 1.0', or 0.10.

Based upon the analysis described above, we determined that 23.8% of the Gardena sub-basin is made of streets and that the average depth of available street storage is 0.63 feet. This produces a storage factor of 23.8% x 0.63', or 0.15. For the Buena Vista North sub-basin our analysis shows that 23.4% of the sub-basin is made of streets and that the average depth of available storage is 0.41 feet. This produces a storage factor of 23.4% x 0.41', or 0.10. See Figure 4 for a summary of the storage factors.

Conclusion

Based on the summary in Figure 4, the storage factors for each of the two representative sub-basins equal or exceed the HDR assumed storage factor. Therefore, the assumptions made in SJAFCA Technical Memorandum #6 do apply to the Smith Canal watershed with regards to interior drainage and temporary street storage. Furthermore, we believe it is reasonable to assume that these storage factors would also apply to other watersheds of similar topography and land use.



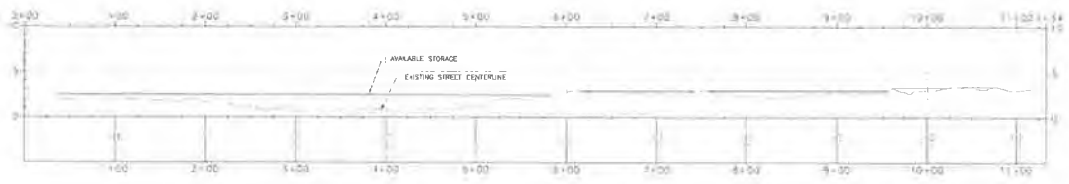


ATTACHMENT 1, Page 3 of 8



K KJELDSEN S SINNOCK N NEUDECK Civil Engineers and Land Surveyors	Scale 1" = 150'	N	SMITH CANAL WATERSHED GARDENA STREET DETENTION STREET PROFILES	FIGURE 2 PAGE 1

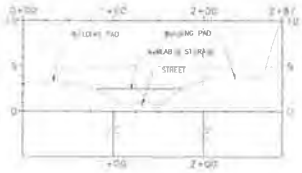
ATTACHMENT 1, Page 4 of 8



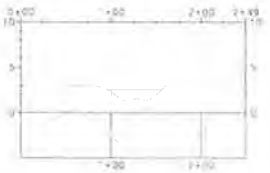
PROFILE 1



PROFILE 2



SECTION 1



SECTION 2

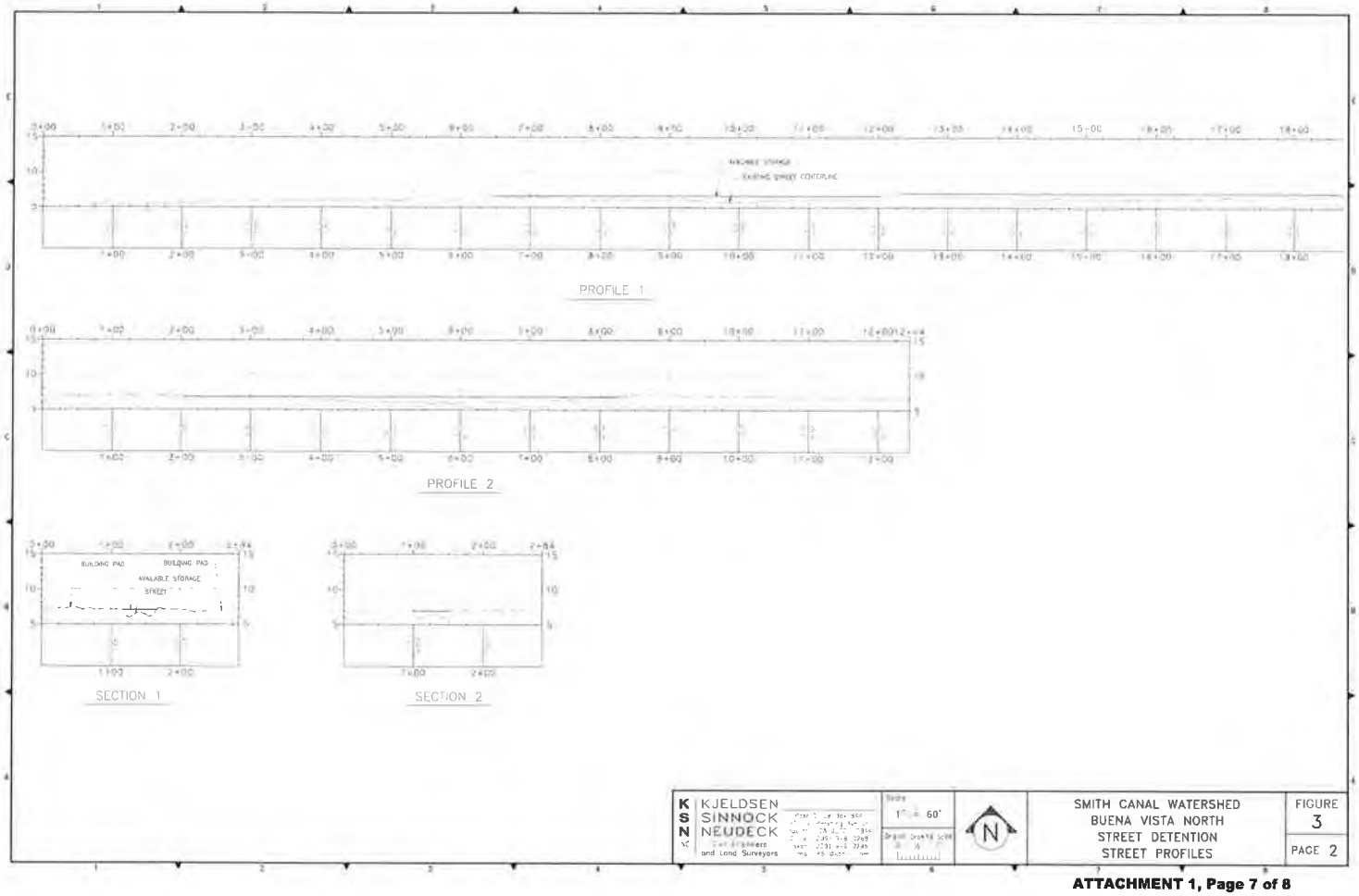
KSN KJELDSEN SINNOCK NEUDECK Civil Engineers and Land Surveyors	Scale: 1" = 50' Original Drawing Scale 0 1/2 1"	N	SMITH CANAL WATERSHED GARDENA STREET DETENTION STREET PROFILES	FIGURE 2 PAGE 2

ATTACHMENT 1, Page 5 of 8



K S N KJELDSEN SINNOCK NEUDECK	1" = 200	N	SMITH CANAL WATERSHED BUENA VISTA NORTH STREET DETENTION STREET PROFILES	FIGURE 3 PAGE 1

ATTACHMENT 1, Page 6 of 8



KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors

SMITH CANAL WATERSHED
BUENA VISTA NORTH
STREET DETENTION
STREET PROFILES

FIGURE 3
PAGE 2

ATTACHMENT 1, Page 7 of 8

KJELDSEN, SINNOCK & NEUDECK, INC. – CIVIL ENGINEERS & LAND SURVEYORS

BY: EEA	DATE: 9-29-10	JOB:	DESC:	NO.
CK:	DATE:	SMITH CANAL WATERSHED	INTERIOR DRAINAGE / STREET DETENTION STORAGE	PAGE 1 / 1

HDR TECH MEMO

% OF AREA THAT IS STREETS

AVERAGE DEPTH IN STREETS

AREA (ACRES) × 20% × 0.50' = VOLUME (AC-FT)

FACTOR = 0.10

GARDENA

AREA (ACRES) × 23.8% × 0.63' = VOLUME (AC-FT)

FACTOR = 0.15

BUENA VISTA NORTH

AREA (ACRES) × 23.4% × 0.41' = VOLUME (AC-FT)

FACTOR = 0.10

FIGURE 4



TERMINOUS TRACT. 1/3/2023



PETERSON . BRUSTAD . INC
ENGINEERING . CONSULTING
1180 Iron Point Rd , Suite 260
Folsom, CA 95630
Phone: (916) 608-2212
Fax: (916) 608-2232

Depth [Feet]

0.2 - 1.00 | 1.00 - 1.25 | 1.25 - 1.50 | 1.50 - 1.75 | 1.75 - 2.00 | > 2.00

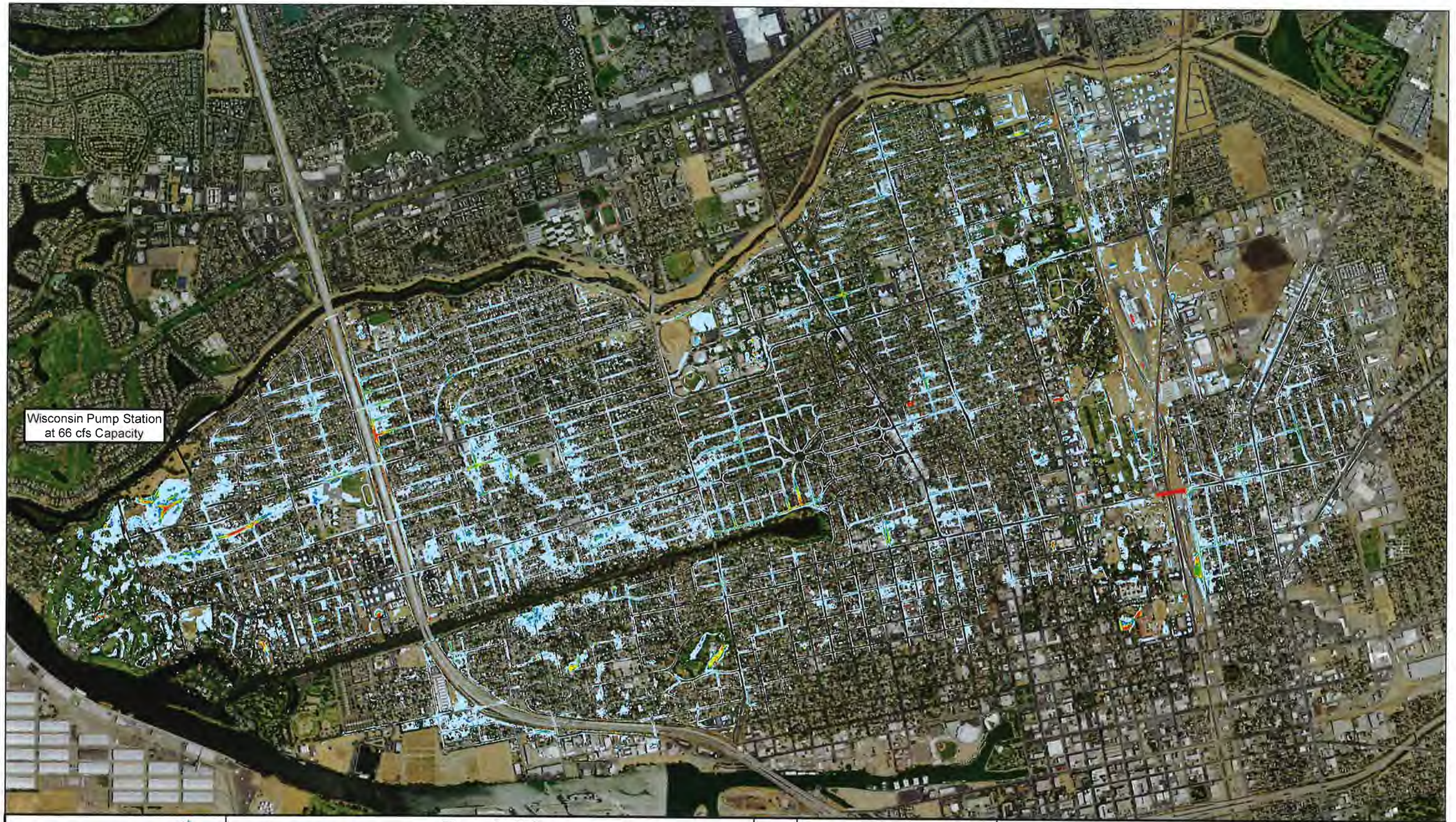
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0 0.5 Miles

San Joaquin Area Flood Control Agency

100-Year Residual Floodplain Under Current Conditions

FIGURE **14**



PETERSON . BRUSTAD . INC
ENGINEERING . CONSULTING
1180 Iron Point Rd , Suite 260
Folsom, CA 95630
Phone: (916) 608-2212
Fax: (916) 608-2232

Depth [Feet]

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N

0 0.5 Miles

San Joaquin Area Flood Control Agency

100-Year Residual Floodplain with Upsized Wisconsin Pump Station

FIGURE 15

a: Restricted to street flooding
b: Open space. No structures impacted
c: Due to error in LiDAR (See Ground Topography section on page 18 for details)

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ENGINEERING . CONSULTING
1180 Iron Point Rd., Suite 260
Folsom, CA 95630
Phone: (916) 608-2212
Fax: (916) 608-2232

Depth [Feet]

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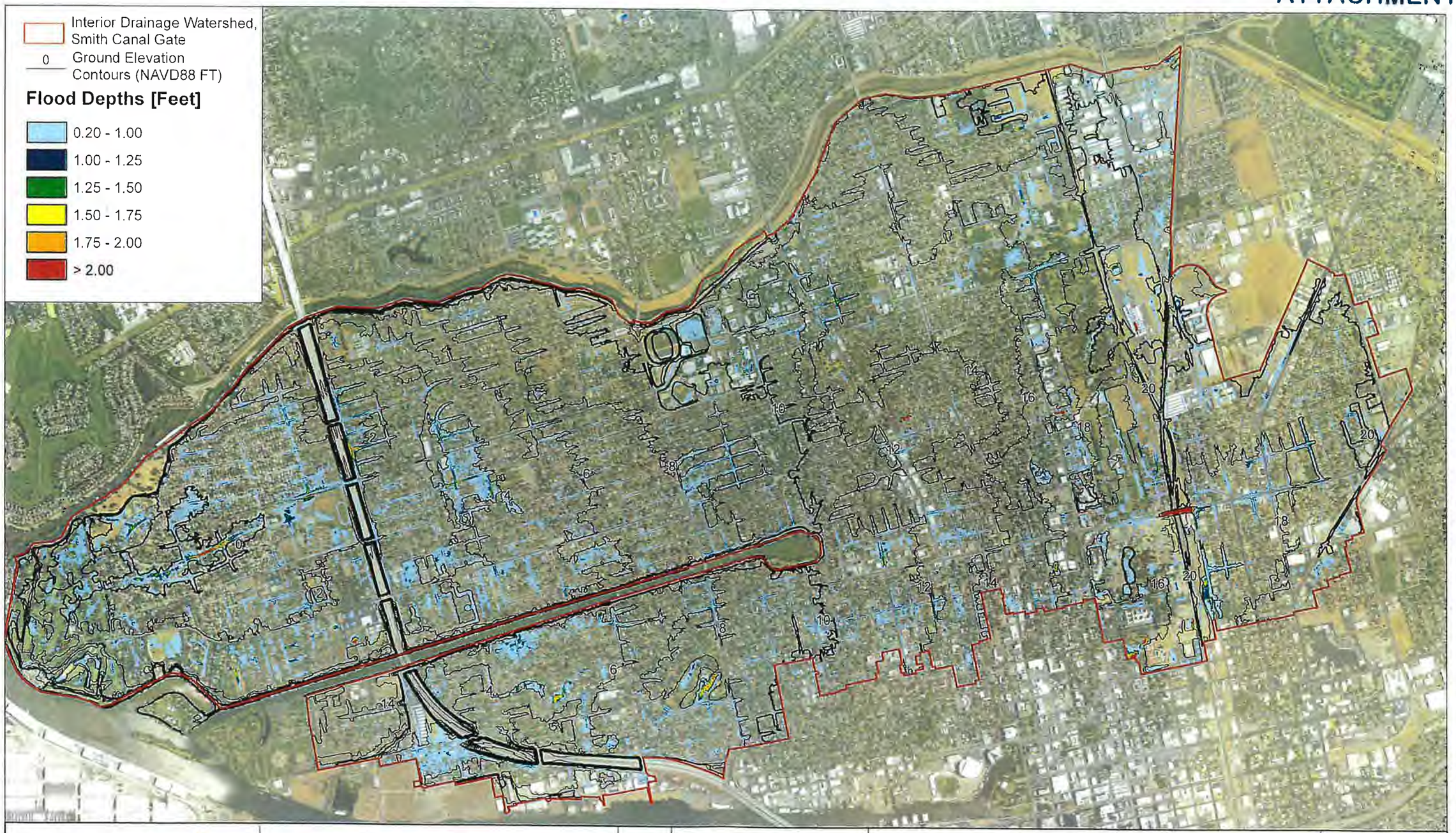
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0 0.5 Miles

San Joaquin Area Flood Control Agency

100-Year Residual Floodplain with Average Ponding Areas

FIGURE 16



PETERSON . BRUSTAD . INC
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Folsom, CA 95630
Phone: (916) 608-2212
Fax: (916) 608-2232

Data References
Ground Terrain:
Central Valley Flood Evaluation Delineation Program (2009)
Floodplain:
Smith Canal 100-year Interior Drainage Analysis (2017)

N

0 0.5 Miles

San Joaquin Area Flood Control Agency

Smith Canal Ground Topography and 100-year Residual Floodplain



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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

HATCHING LEGEND:

FEMA URBAN LEVEE STANDARD NON-COMPLIANT

KSN INC
KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office: (209) 946-0268
Faxes: (209) 946-0296
E-mail: KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

BASE MAP

Revisions				
No.	Description	Date	By	Aprvd. By

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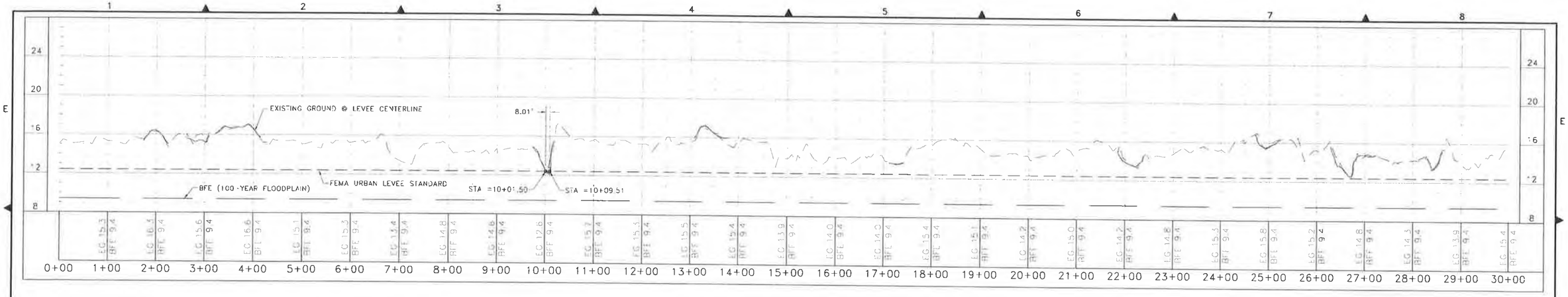
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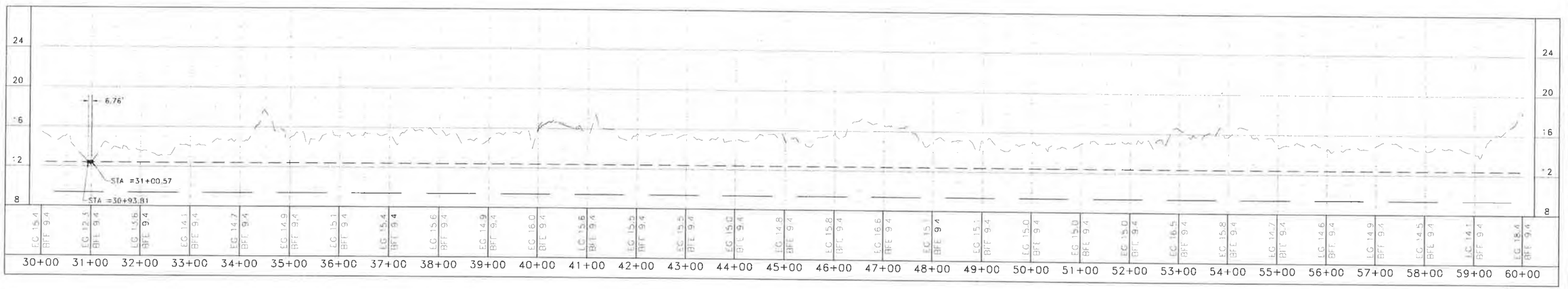
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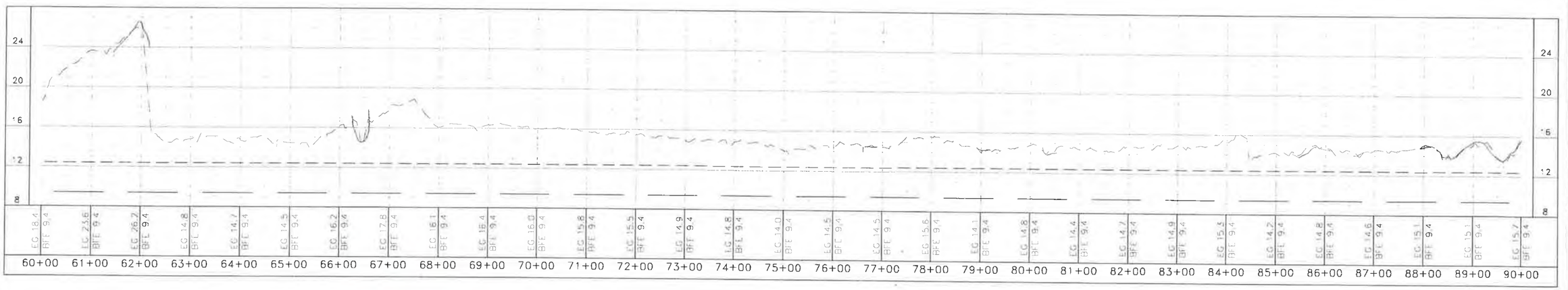
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Project File No. 0806-0470

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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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Civil Engineers and Land Surveyors
Post Office Box 844
311 N. Pershing Avenue
Stockton, CA 95201-0844
Office: (209) 946-0268
Faxes (209) 946-0296
E-mail: KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

PROFILE
2007 DWR LIDAR

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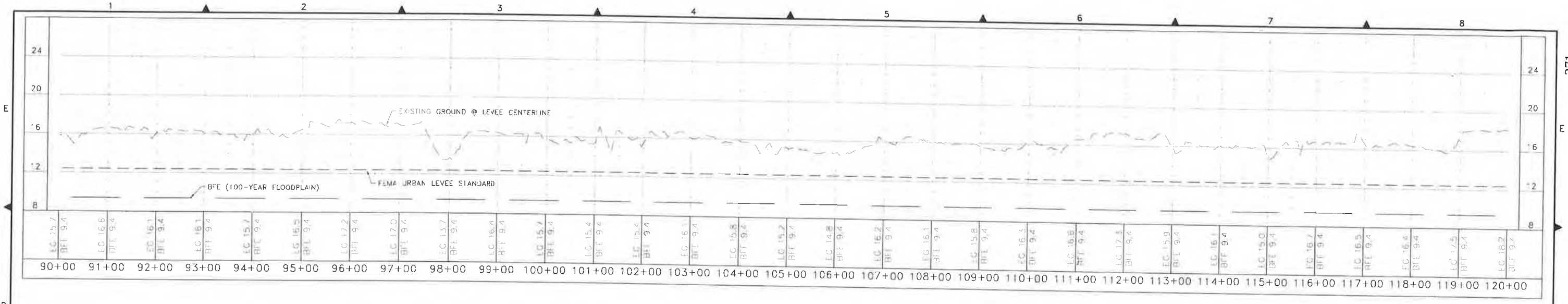
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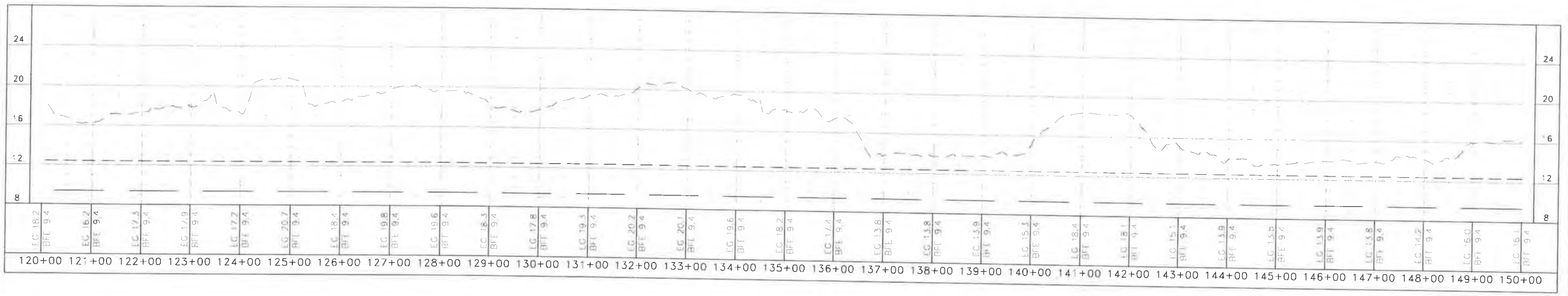
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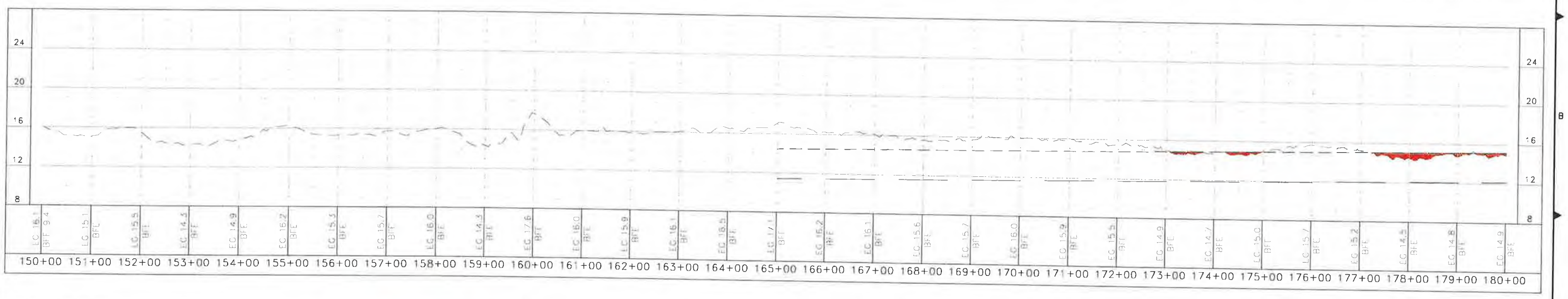
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Date JUNE 2012
Sheet Number 3 Of 17
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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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KSN INC. KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton CA 95201-0844
Office (209) 946-0268
Faxes (209) 946-0296
E-mail: KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT
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SAN JOAQUIN COUNTY, CALIFORNIA

PROFILE
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Date JUNE 2012

Sheet Number 4 Of 17

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BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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KSN INC. KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office: (209) 946-0268
Faxes (209) 946-0296
E-mails KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT
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SAN JOAQUIN COUNTY, CALIFORNIA

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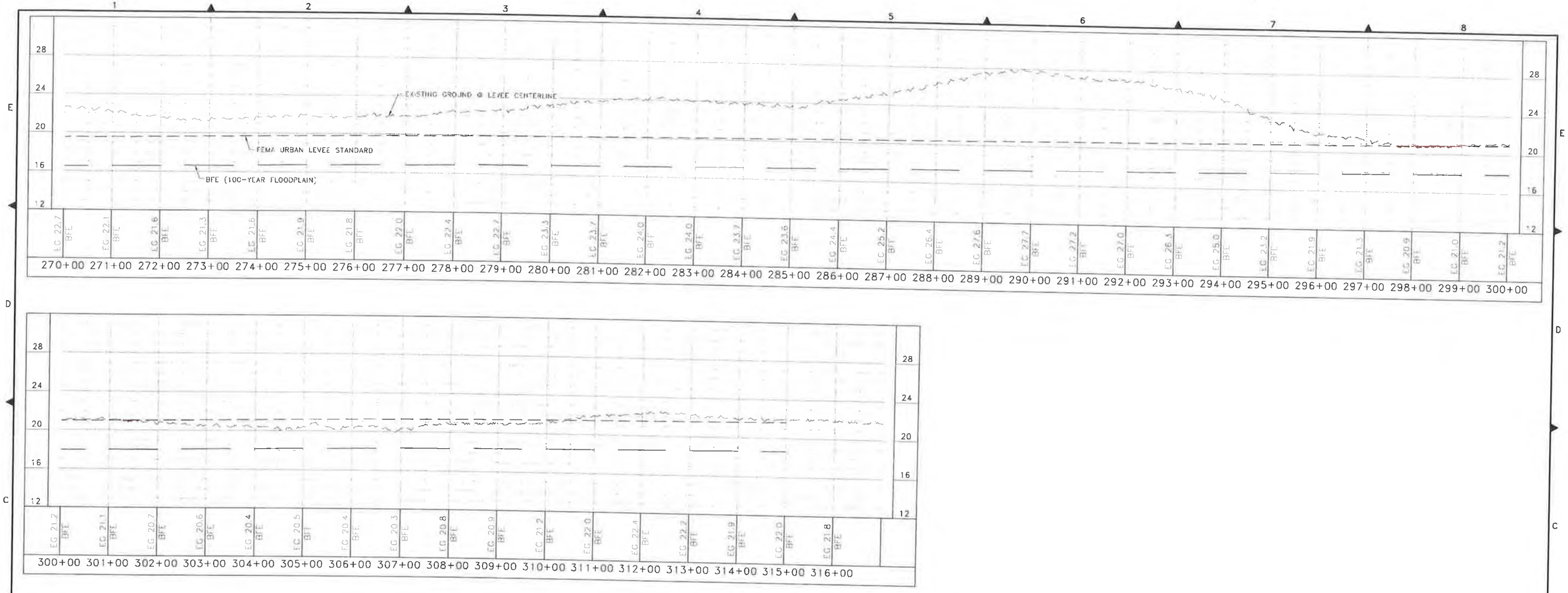
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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

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Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office: (209) 946-0268
Faxes (209) 946-0296
E-mail: KSN@ksninc.com

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SAN JOAQUIN COUNTY, CALIFORNIA

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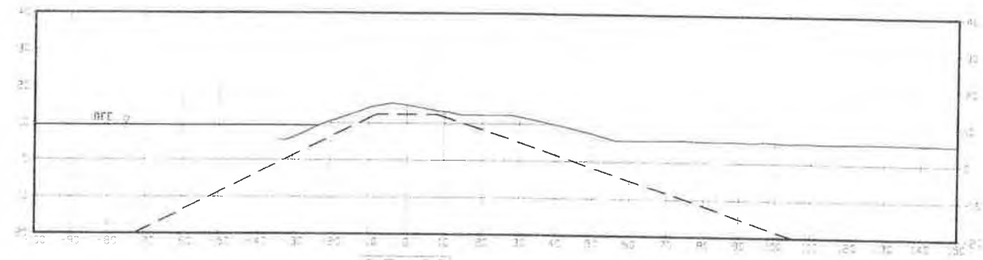
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BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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KSN INC
KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 344
711 N. Pershing Avenue
Stockton, CA 95201-0344
Office (209) 946-0268
Fax (209) 946-0296
e-mail: KSN@ksninc.com

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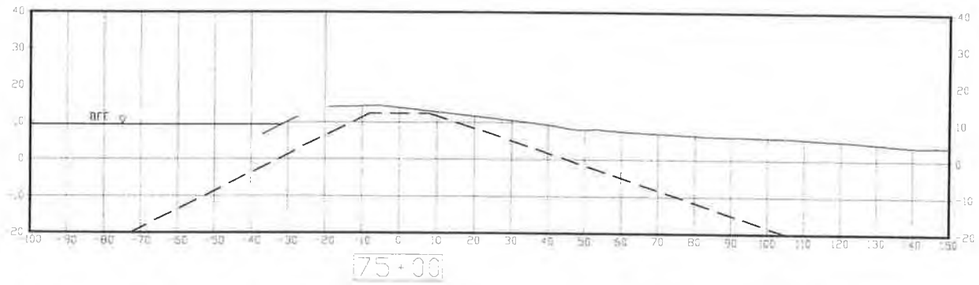
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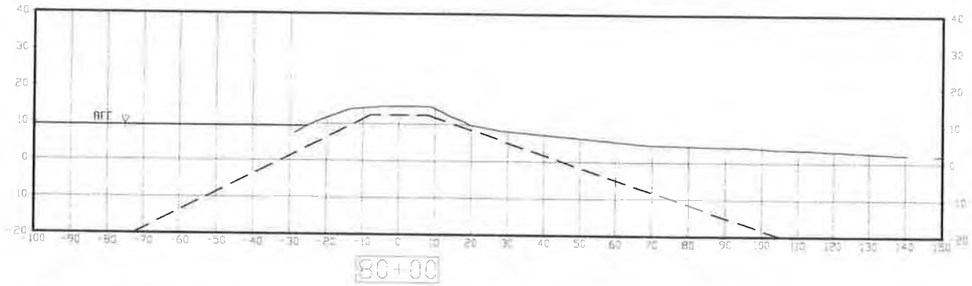
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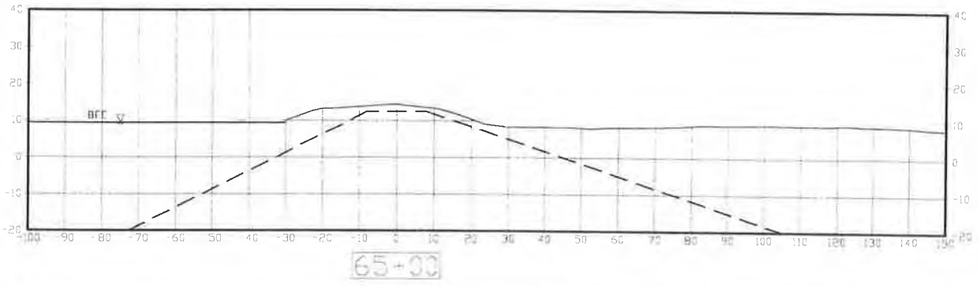
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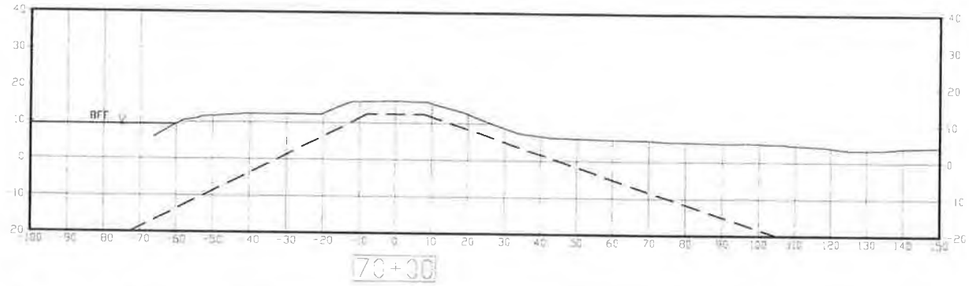
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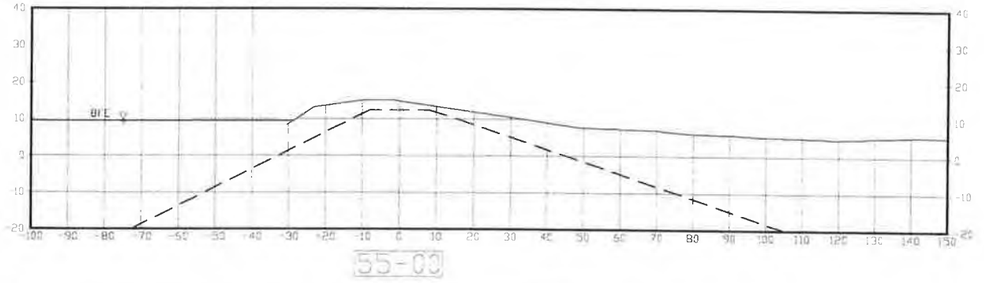
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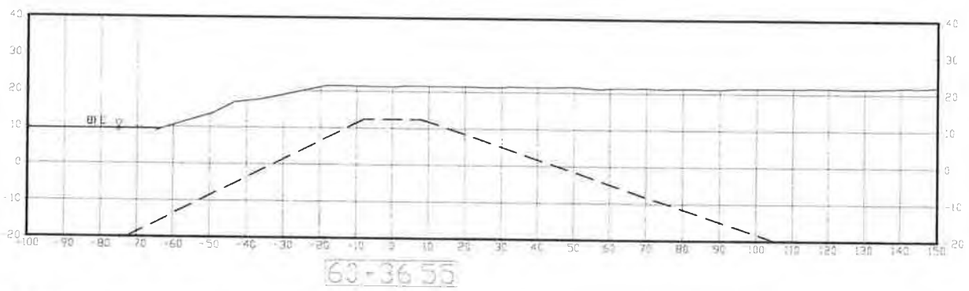


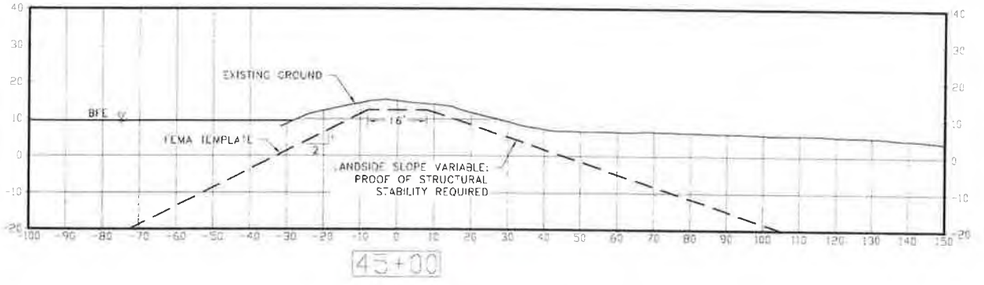


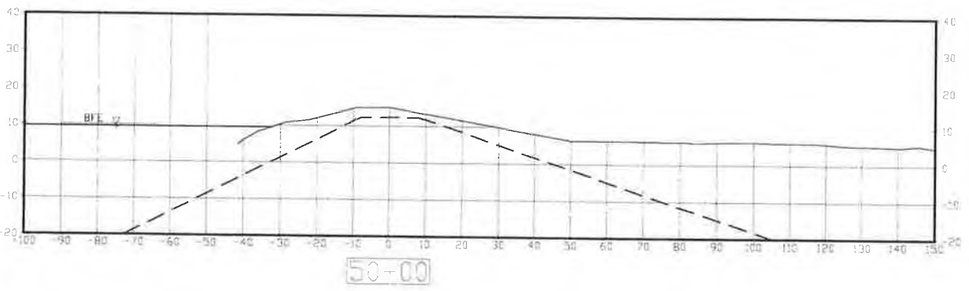












DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LIDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

HATCHING LEGEND:

FEMA URBAN LEVEE STANDARD NON-COMPLIANT

KSN INC
KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office (209) 946-0268
Faxes (209) 946-0296
E-mail: KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

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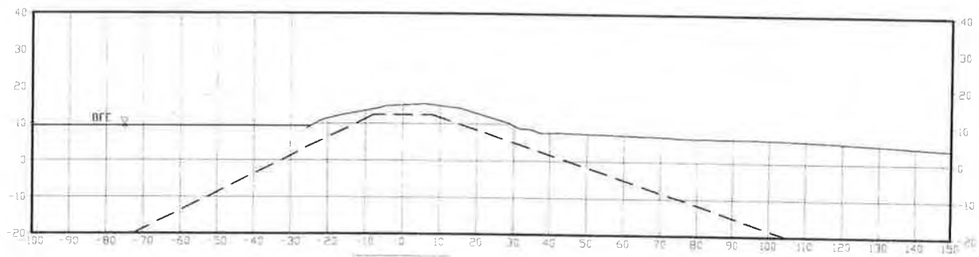
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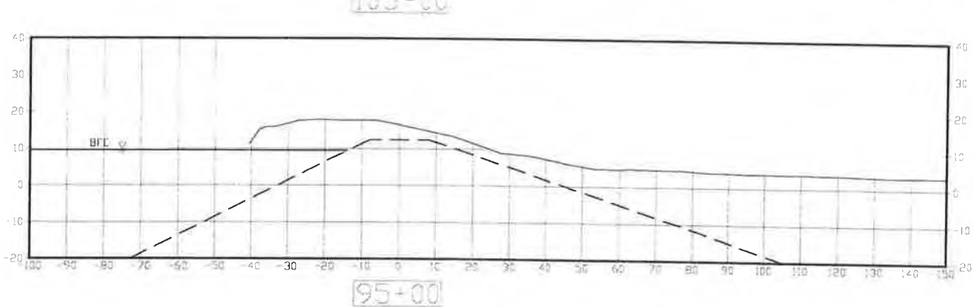
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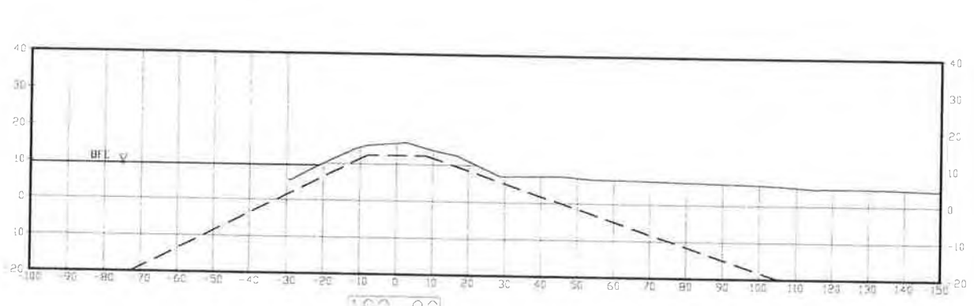
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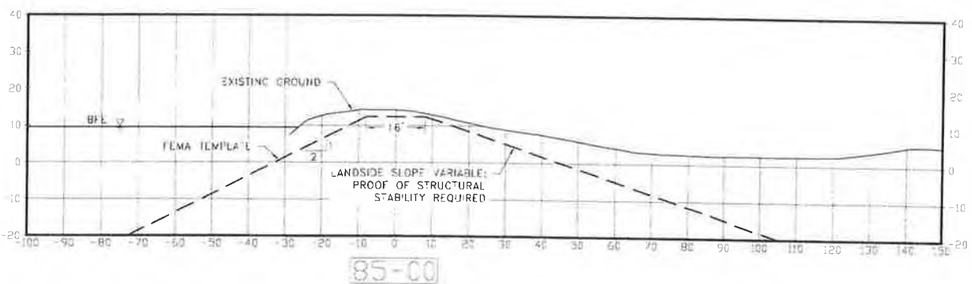
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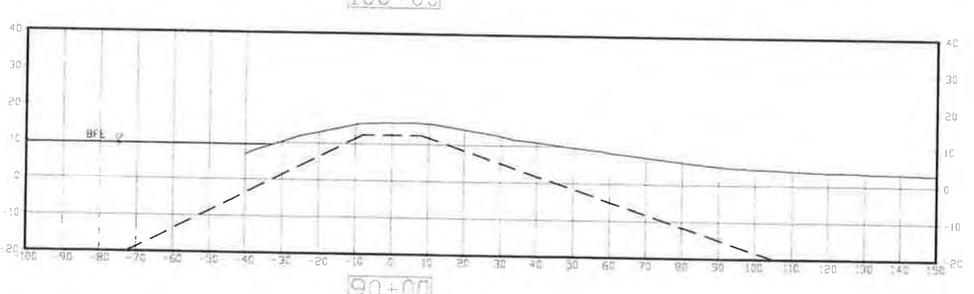
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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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KJELDSEN SINNOCK NEUDECK INC
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office (209) 946-0268
Faxes (209) 946-0296
E-mail: KSN@ksninc.com

RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

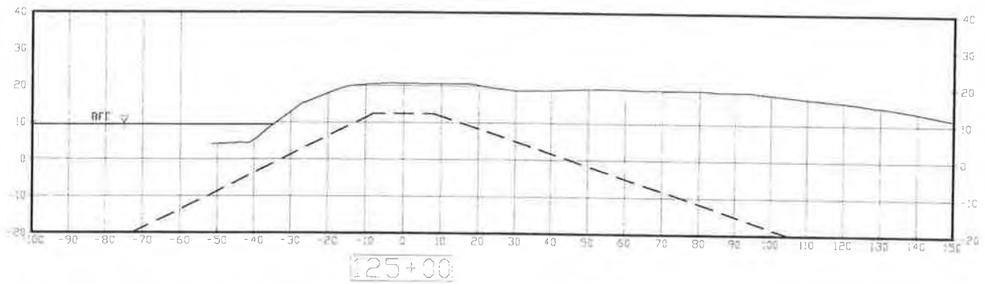
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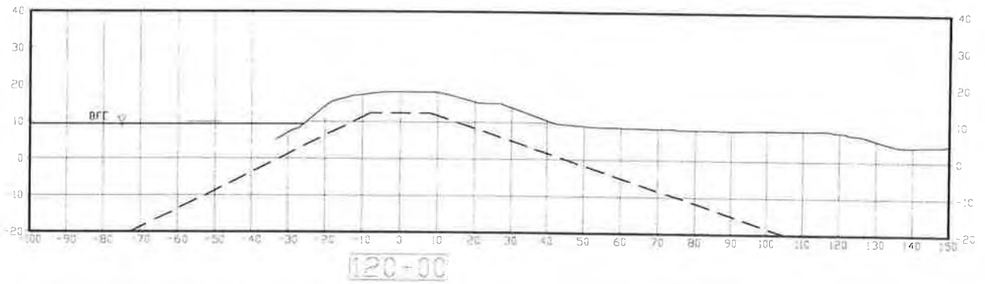
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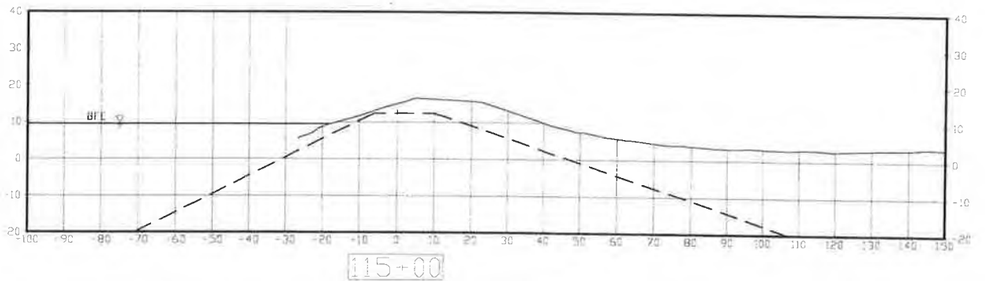
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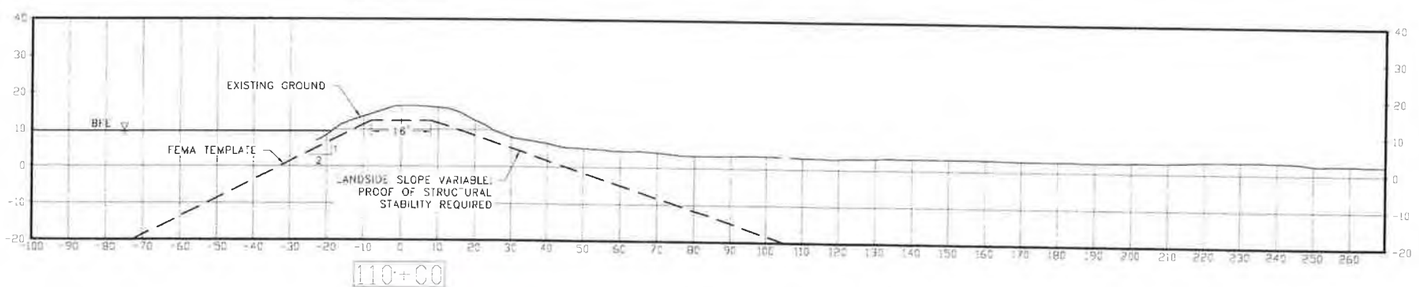
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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LIDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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2007 DWR LIDAR

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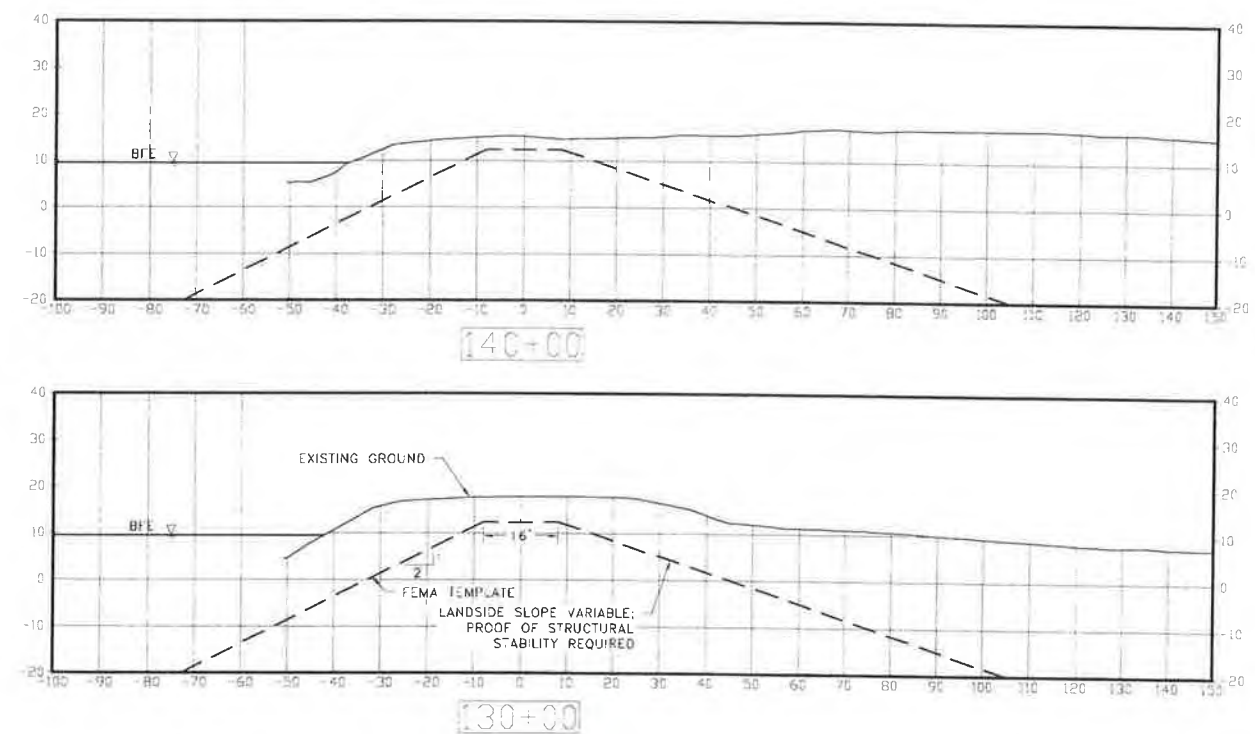
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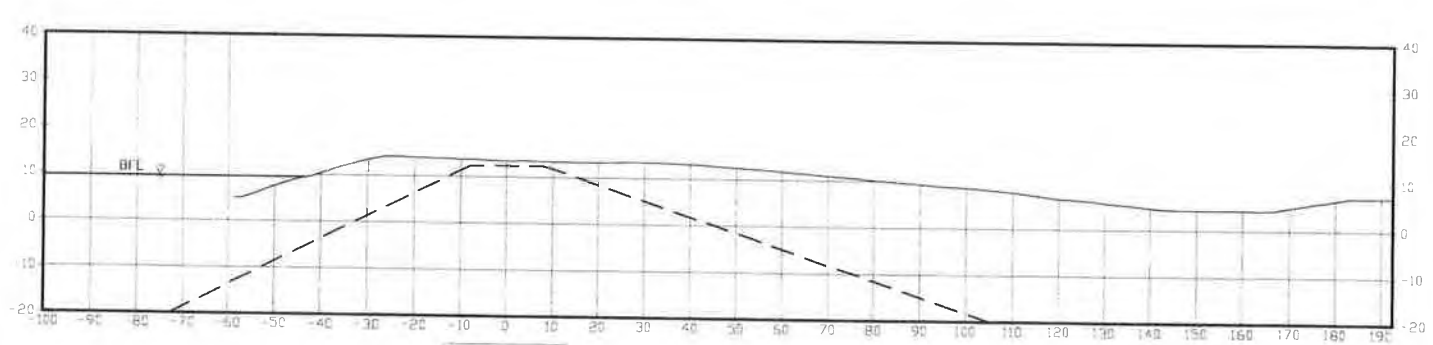
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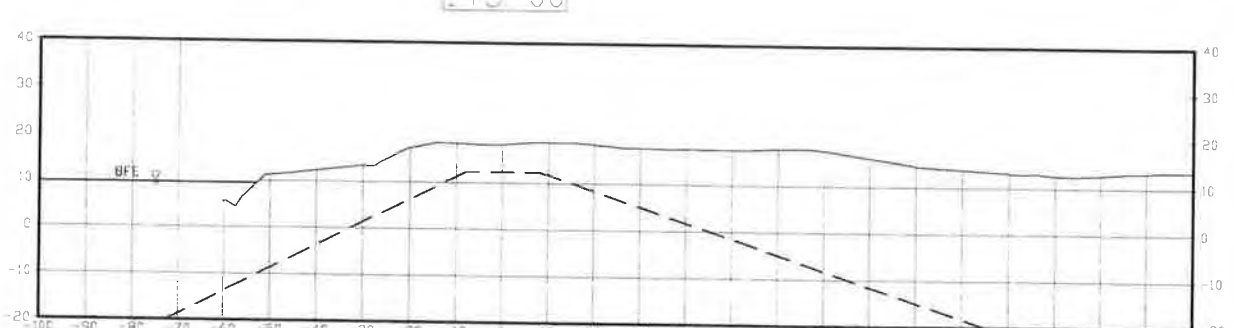


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DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

HATCHING LEGEND:

FEMA URBAN LEVEE STANDARD NON-COMPLIANT

KSN INC KJELDSEN SINNOCK NEUDECK
Civil Engineers and Land Surveyors
Post Office Box 844
711 N. Pershing Avenue
Stockton, CA 95201-0844
Office (209) 946-0268
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RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

Revisions				
No.	Description	Date	By	Aprvd. By

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Drawn EAR
Check CHN

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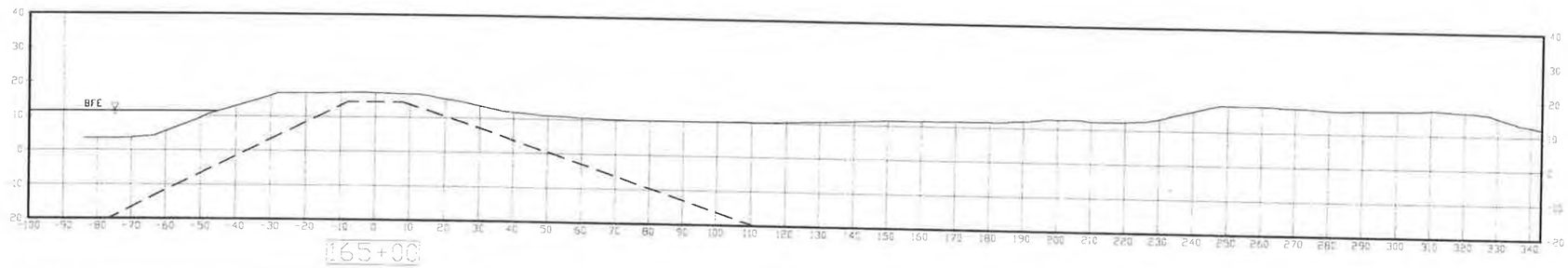
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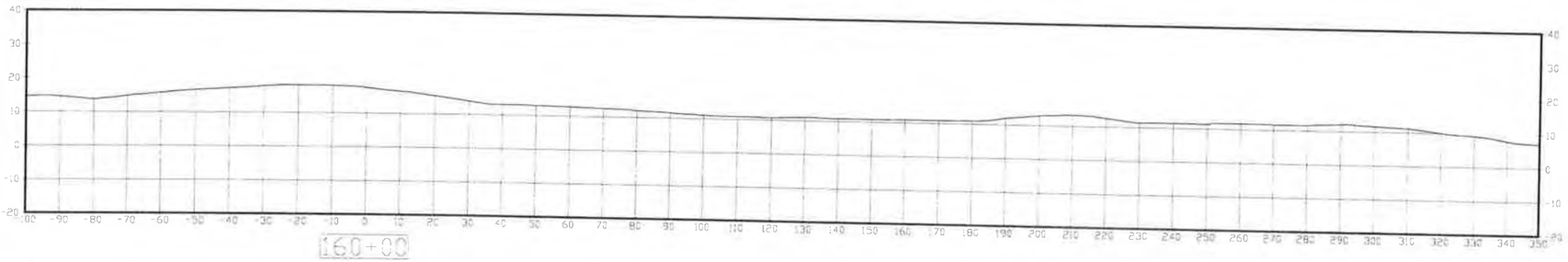
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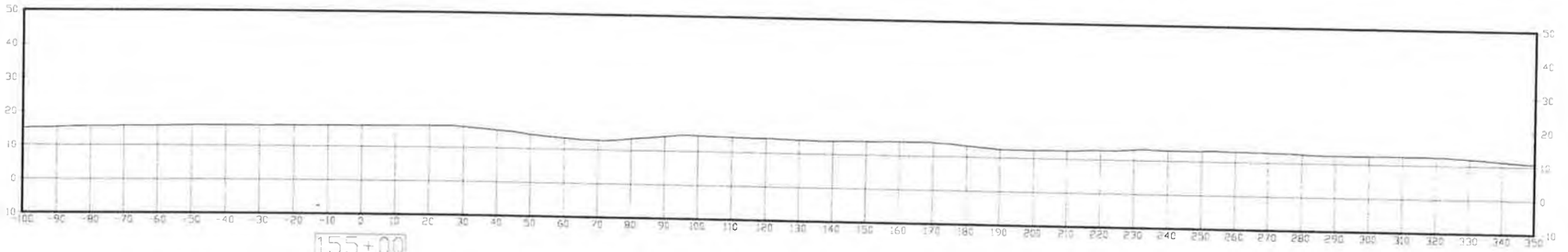
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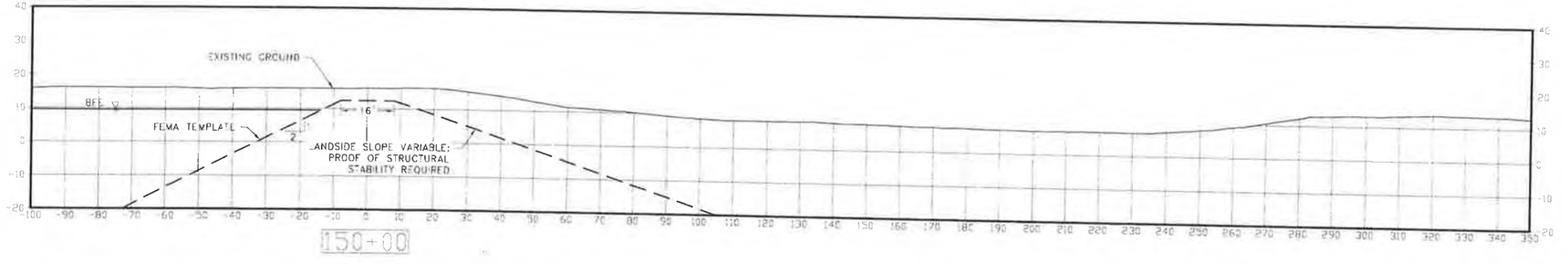
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DATA REFERENCES:

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RECLAMATION DISTRICT 1614, SMITH TRACT FIVE YEAR PLAN PROFILE & CROSS SECTIONS

SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS

2007 DWR LIDAR

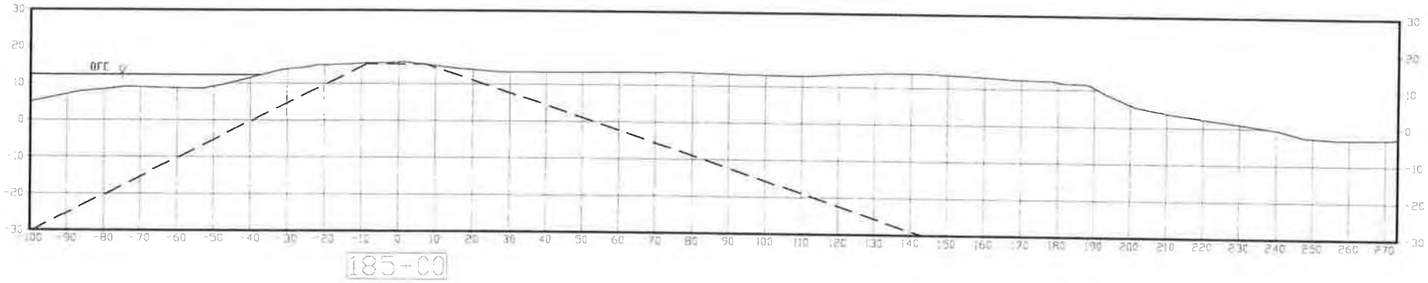
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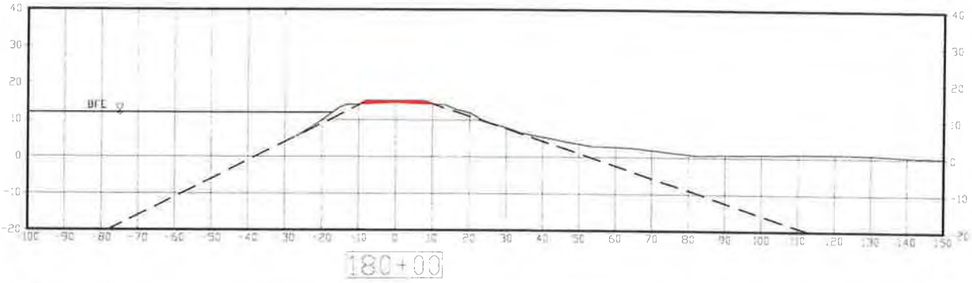
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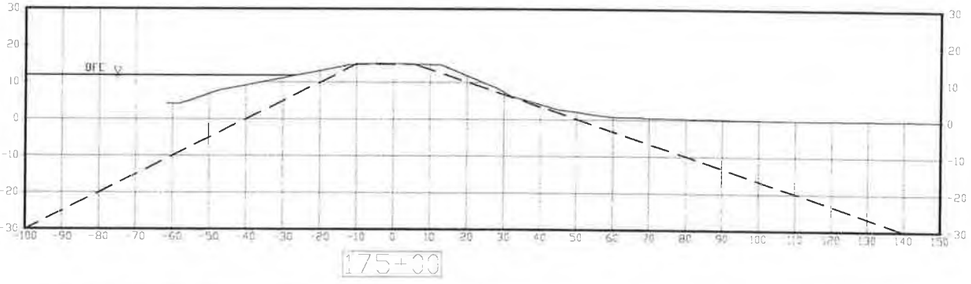
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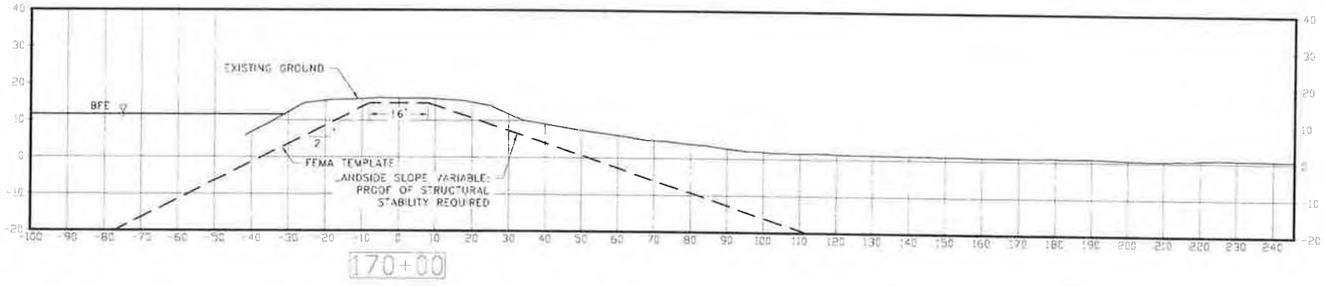
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PLOT DATE: May 31, 2012 - 4:54pm









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RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

Revisions

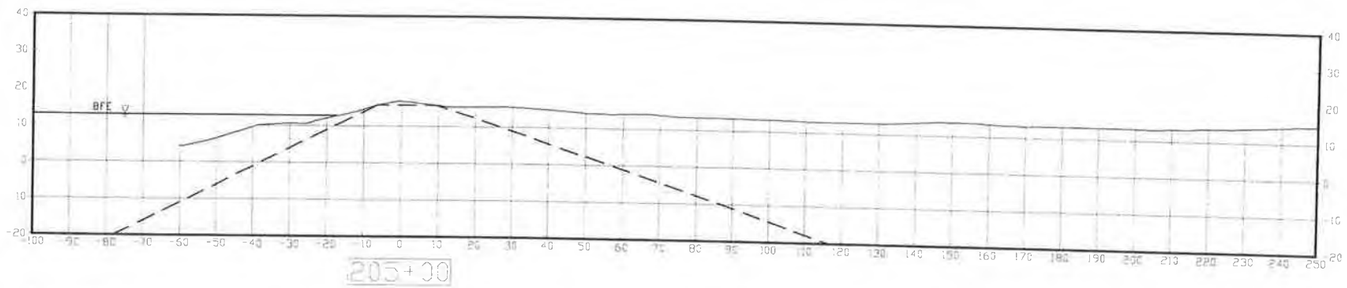
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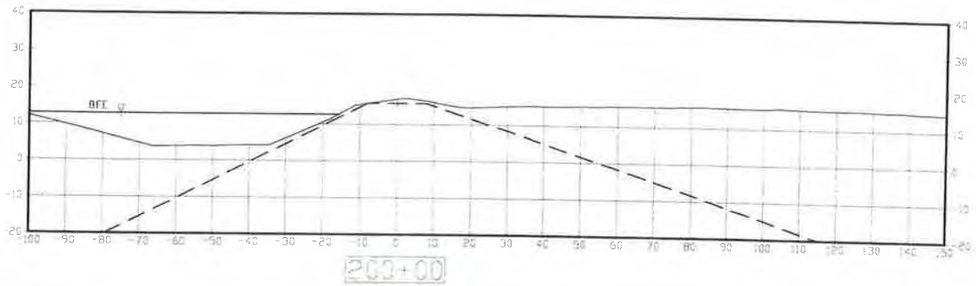
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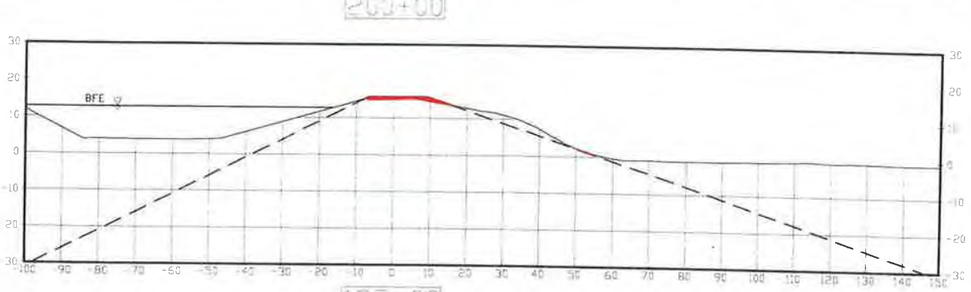
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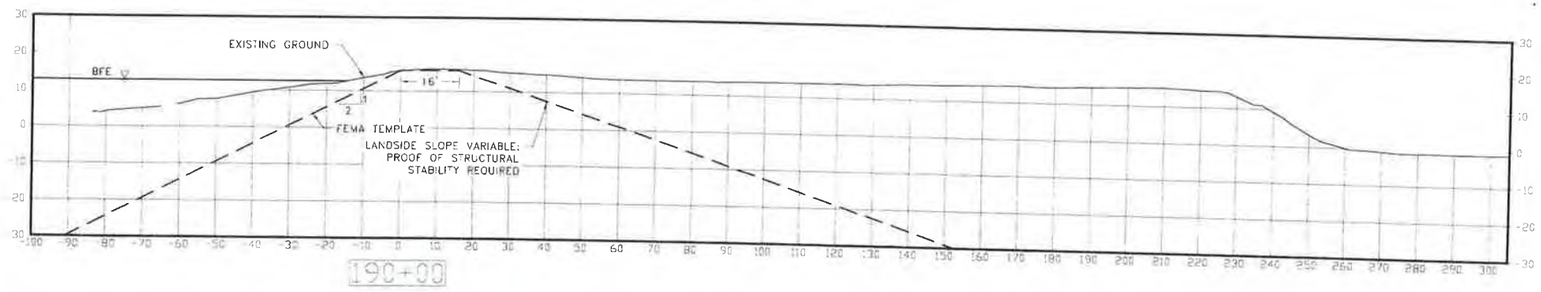
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RECLAMATION DISTRICT 1614, SMITH TRACT FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

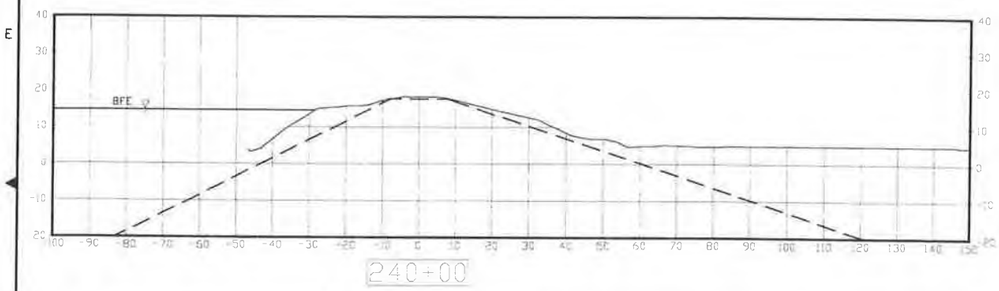
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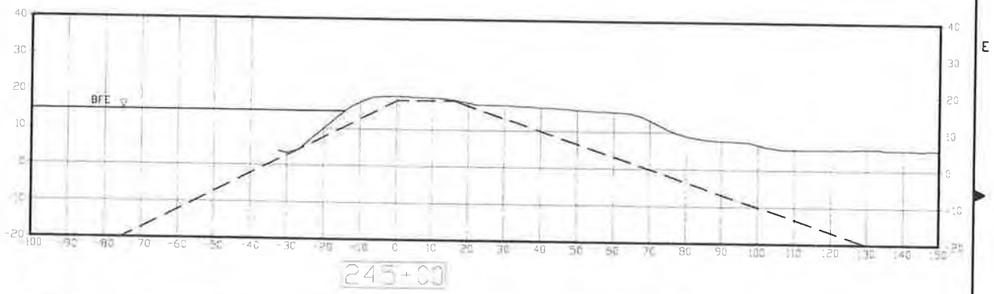
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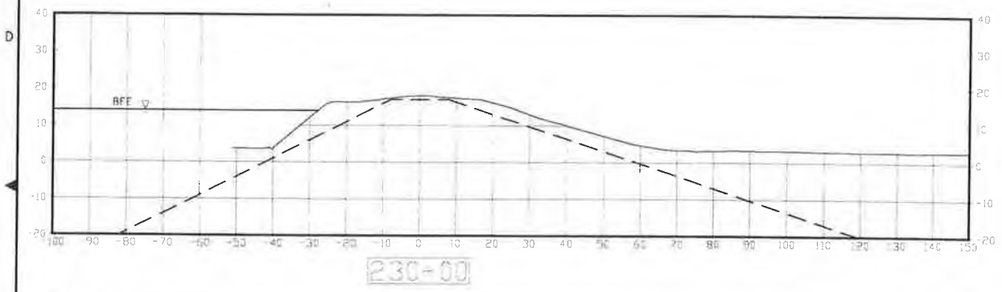
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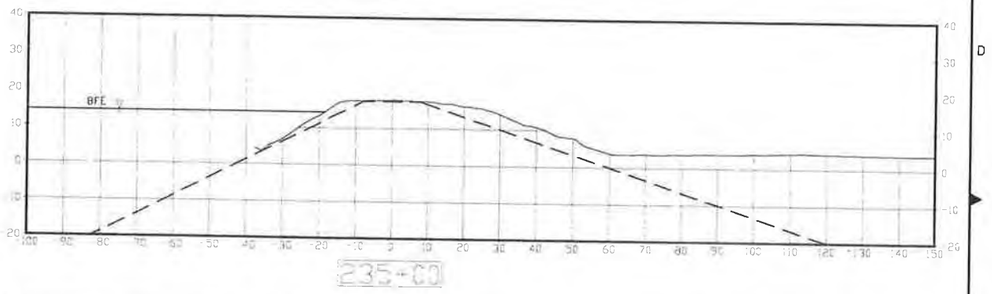
Date JUNE 2012
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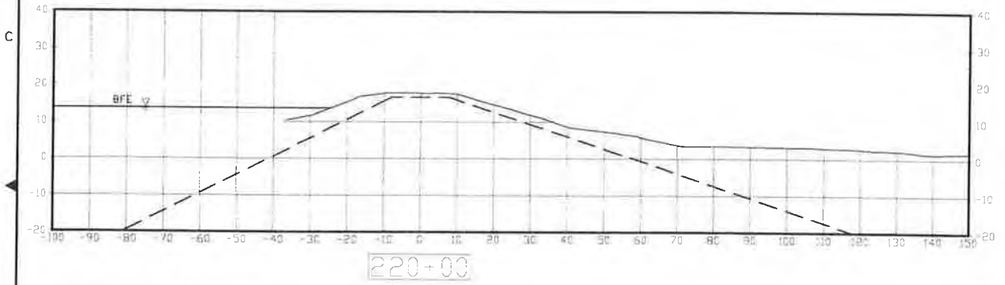
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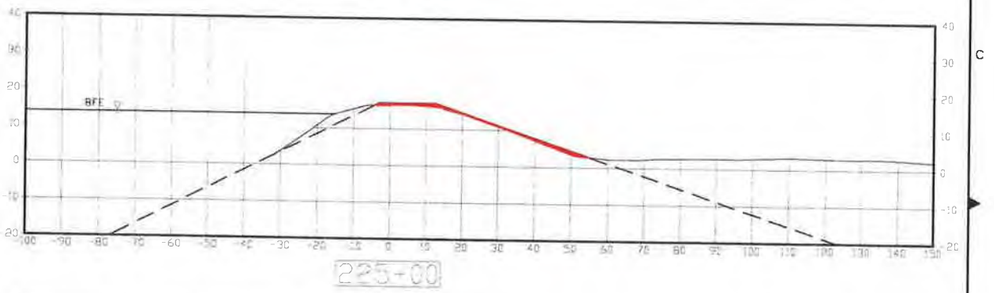


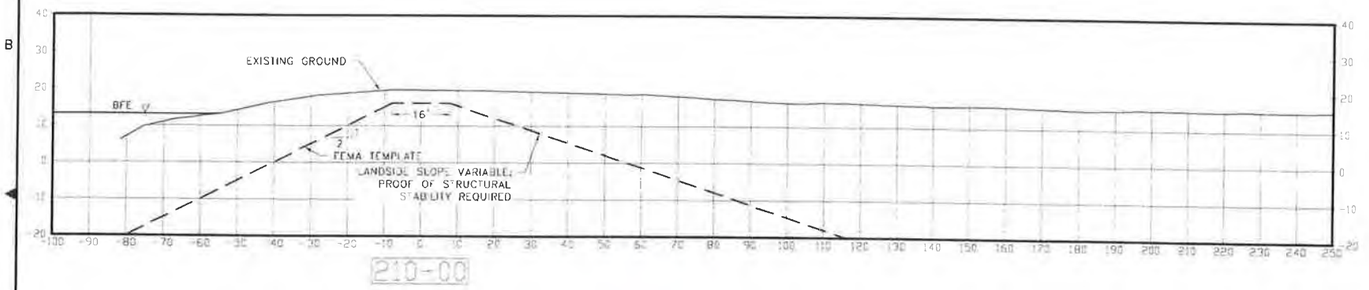


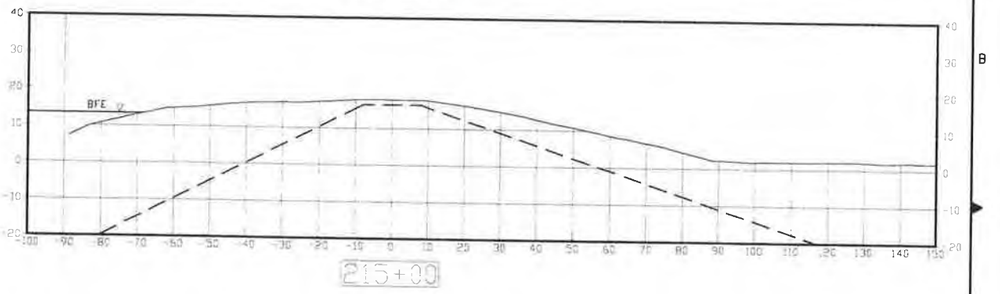












DATA REFERENCES:

PROFILE AND CROSS SECTIONS BASED ON 2007 DWR LiDAR.

BASE FLOOD ELEVATION (BFE) BASED ON JUNE 18, 2010 FLOOD INSURANCE RATE MAP (FIRM).

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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RECLAMATION DISTRICT 1614, SMITH TRACT
FIVE YEAR PLAN PROFILE & CROSS SECTIONS
SAN JOAQUIN COUNTY, CALIFORNIA

CROSS SECTIONS
2007 DWR LIDAR

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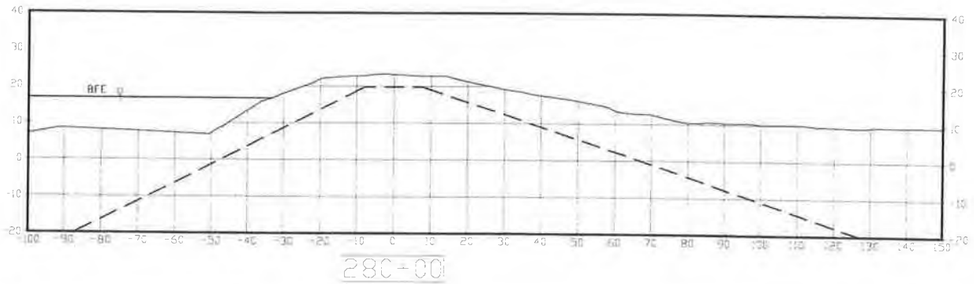
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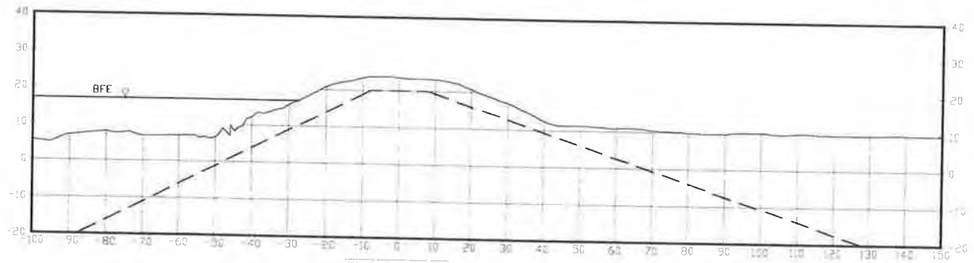
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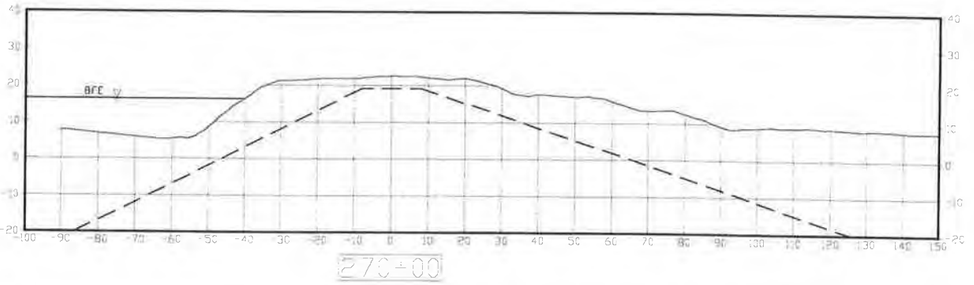
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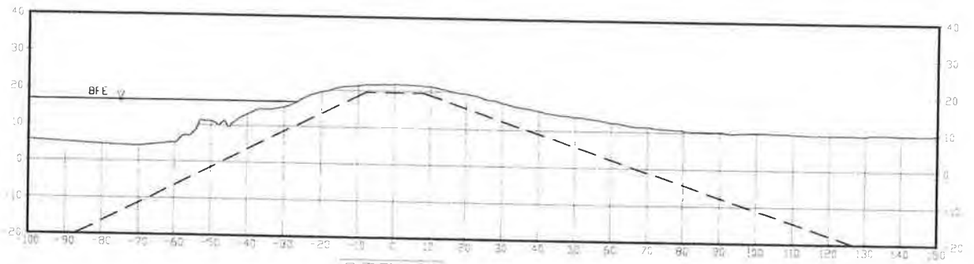
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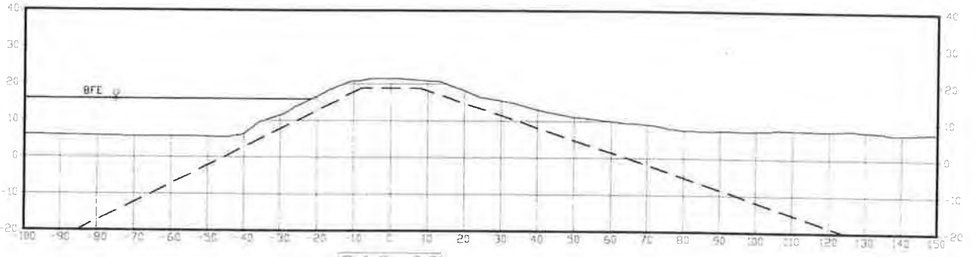
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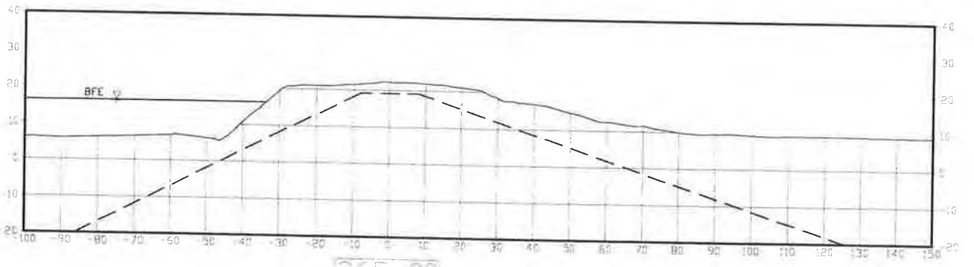
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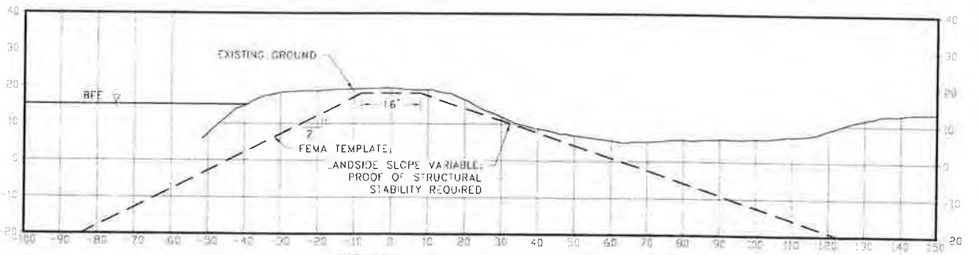
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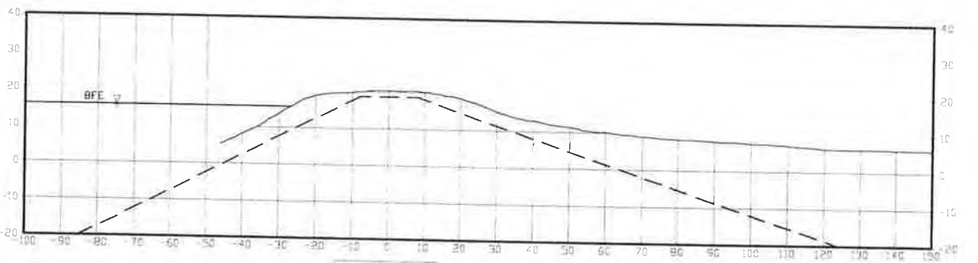
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DATA REFERENCES:

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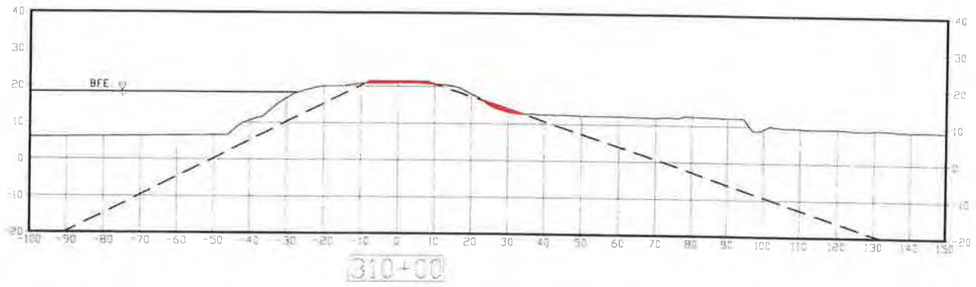
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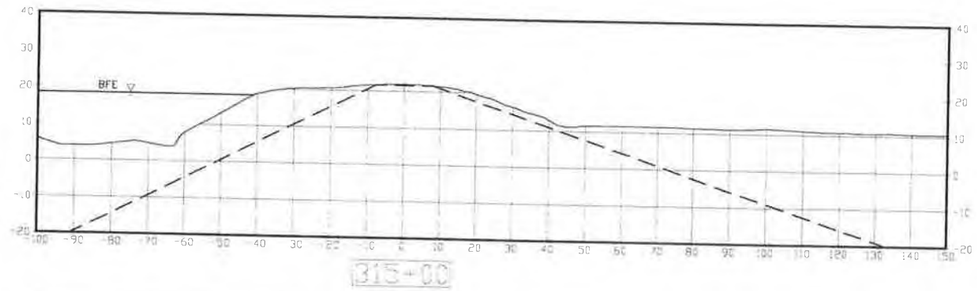
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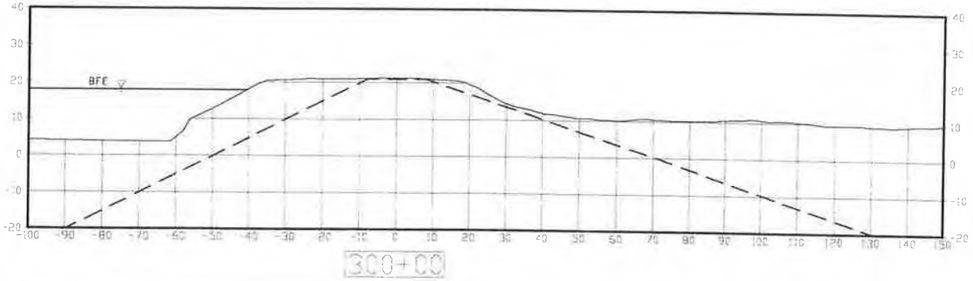
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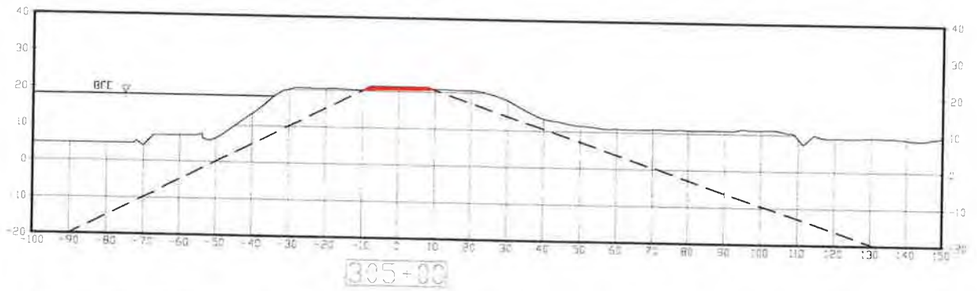
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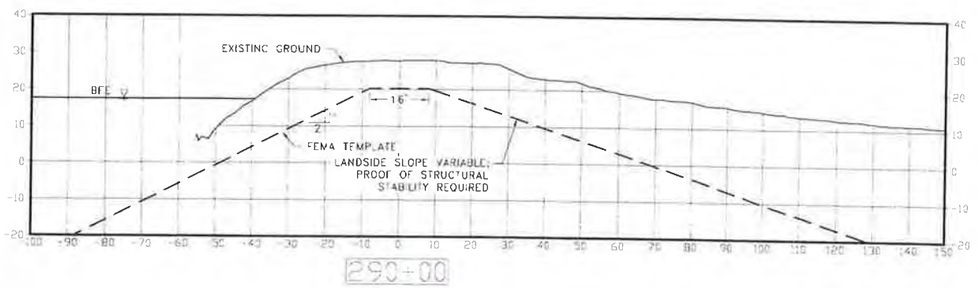
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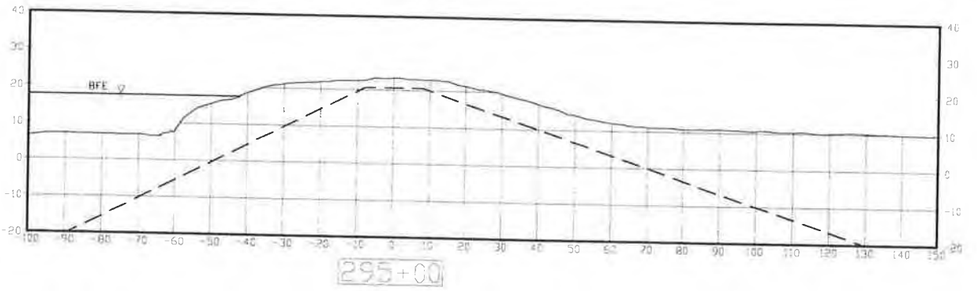












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PLOT DATE: May 31 2012 4:55pm

HAZARD MITIGATION PLAN SURVEY

Kjeldsen, Sinnock & Neudeck, Inc.

February 2011

251125 Stockton Flood Control Proposal 11-25-25

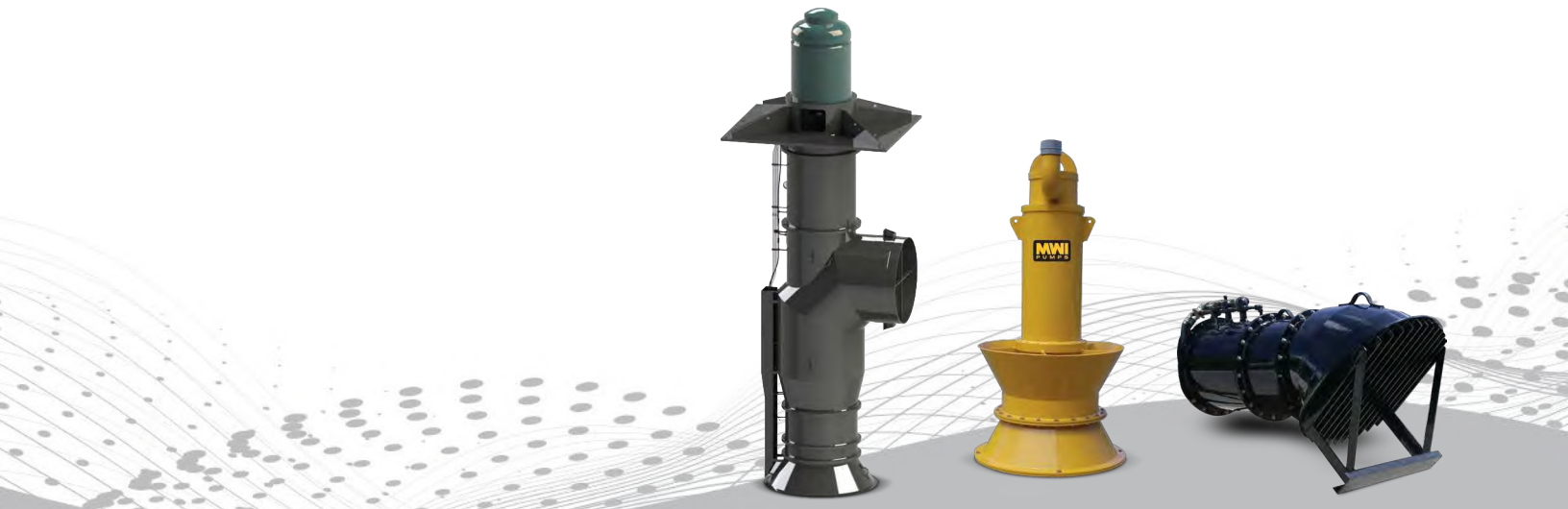
Submitted by Trustee Gulli

MWI PUMPS EQUIPMENT PROPOSAL

Project: Stockton Emergency Standby Flood Control

MWI Hydraflo Pump Purchase & Rental Proposal

11-25-25



Budgetary Quote

MWI Pumps **1860 82nd Ave Ste 203** **Vero Beach, FL 32966** **Cell: 772-321-3425**	**Date: 11-25-25** **MWI Job No.** **Quotation No. 25-434** **Quotation valid 45 days from date shown unless otherwise noted**

Project:	**Stockton Emergency Standby Flood Control**	**Terms: 25% deposit, Net 30 after delivery WAC**
Quote To:	President Reclamation District 1614 Dominick Gulli	**FOB: Deerfield Beach, FL** **Customer Approval: _____**
Delivery:	Current estimated delivery for the 42" pump and drive unit is 2-4 weeks. Current estimated delivery for the 20" pump and drive is 26-30 weeks.	**Quoted By: Kelby Morgan** kelbym@mwipumps.com

Item	Qty.	Description	Unit Price	Total Price
A	1	**MWI Hydraflo mixed flow pump, model HMF42 rated to 38,000 GPM @ 20' TDH with 42" discharge. Fabricated completely from ASTM A36 steel, blasted and epoxy coated. Driver is a MWI Hydraulic Drive unit model 4200D. The drive unit is in a skid mounted configuration with John Deere 6136 tier 4 final diesel engine rated to 375hp @ 1800rpms, Controls Inc digital control panel with safety high temp, low fluid shutdowns, on/off floats, 50' hydraulic hose set, and a 150-gallon fuel tank.**	$376,658	**$376,658**
B	1	**MWI Hydraflo axial flow pump, model HAC320 rated to 10,000 GPM @ 20' TDH with 20" discharge. Fabricated completely from ASTM A36 steel, blasted and epoxy coated. Driver is a MWI Hydraulic Drive unit model 2400D. The drive unit is in a skid mounted configuration with John Deere 4045 tier 4 final diesel engine rated to 125hp @ 1800rpms, Controls Inc digital control panel with safety high temp, low fluid shutdowns, on/off floats, 50' hydraulic hose set, and an integrated 187-gallon fuel tank. DOT trailer configurations are available for an additional cost.**	$144,149	**$144,149**
C	1	**Optional Silent Partner sound attenuated enclosure for Item B**	$14,875	**$14,875**
		Included in our offer: • **All submittals and drawings** • **MWI 1 year warranty** • **One eight-hour day startup services** **NOTE: Sales tax, freight, discharge piping, installation and anything not specifically listed above are not included.**		

This document contains a proposal quotation, only, as it does not contain all necessary material terms. This proposal is not an offer subject to acceptance by the recipient. If recipient is interested in proceeding forward under the proposal, then the recipient and MWI must discuss and come to written agreement as to all material terms and conditions.

Please note that prices do not include applicable Sales Tax, Fees, Installation or Freight unless otherwise noted

Two new, currently in stock, MWI Hydraflo HMF42 submersible pump heads.



HMF42 Pump



Pump discharge & Hydraulic Connections



Bar Screened Intake 42" & Leg Stand



42" ANSI Flanged Discharge



Hydraulic motor & diffuser section

Manufacturers

Moving Water Worldwide - Reliably and Efficiently

Established 1926

Rental Quote

MWI Pumps **1860 82nd Ave Ste 203** **Vero Beach, FL 32966** **772-321-3425**	**Date: 11-25-25** **MWI Job No.** **Quotation No. 25-435** **Quotation valid 30 days from date shown unless otherwise noted**

Project:	**Stockton Emergency Standby Flood Control**	**Terms: Per Rental Contract- to be sent separately**
Quote To:	President Reclamation District 1614 Dominick Gulli	**FOB: Vero Beach, FL** **Customer Approval: _____**
Delivery:	Pumps are currently in stock, estimated delivery is 7-10 days. Rental pumps are a first come first serve basis.	**Quoted By: Kelby Morgan kelbym@mwipumps.com**

Item	Qty.	Description	Unit Price	Total Price
A	**1**	**MWI Hydraflo Pump model HAC342 with 42" flanged discharge. Includes (1) Skid Mounted Tier 4 Final Diesel Drive Unit, Start/Stop Controls, on/off Floats, and 50' Hydraulic Hose Set. Pump is rated and 50,000 GPM @ 20' TDH.**	$29,000/mo	**$29,000/mo**
B	**1**	**Start-up is $3,500 per 8-hour day. Estimated 1 day, including travel.**	$3,500/day	**$3,500**
C	**1**	**Freight (1) Truck, Estimated Round Trip** ***To be calculated at time of shipping at cost + 10%***	$15,000	**$15,000**
		NOTE: Quote does not include any applicable sales tax, scheduled maintenance, diesel fuel, unloading/loading at job site, installation, discharge pipe, valves, or controls unless noted above. **Rental cycle billing is every 28 days.**		

This document contains a proposal quotation only, as it does not contain all necessary material terms. This proposal is not an offer subject to acceptance by the recipient. If recipient is interested in proceeding forward under the proposal, then the recipient and MWI must discuss and come to written agreement as to all material terms and conditions.

Please note that prices do not include applicable Sales Tax, Fees, Installation or Freight unless otherwise noted

Hydraflo™ Pumps

Hydraulically-Driven Large-Volume Submersibles



Heads up to 60ft./18.3M
Flows up to 120,000 GPM/7.6 M^3/S

The Power to Move Water® Since 1926
mwipumps.com

MWI PUMPS



The Hydraflo™ is a hydraulically driven submersible pump capable of moving large volumes of water while reducing installation cost and time. This pump features portability, versatility, and variable speed pumping control without the need for costly VFDs. Its prime mover can be installed remotely, saving a great deal in civil works.

Where MWI Pumps are Used

MUNICIPAL

- Flood control & storm water drainage
- Emergency pumping
- Sewer bypass & repair
- Pump station bypass
- Diesel backup pumps in case of power loss

MINES & QUARRIES

- Open pit & underground drainage
- Process water supply & transfer
- Aggregate wash down

INDUSTRIAL

- Large-volume processes
- Temporary raw water
- Wastewater bypass
- Water management

CONSTRUCTION

- Site dewatering & drainage
- River & stream bypass
- Surface water drawdown

MARINE

- Drydock
- Water transfer & waterway diversions
- Moving large volumes of water

AGRICULTURE

- Irrigation
- Aquaculture
- Flood control



BELOW
30" Mobile Hydraflo™
24" Mobile pump available



Hydraflo™ **Features** Advantages Beyond Compare

Hydraflo™ pumps get the job done quickly and effectively while saving up to 40% on civil works costs. Our units can do the work of many traditional pumps without the need to build complex housing structures thereby decreasing the bottom line and complexity of the job. These large water pumps can be set up in a matter of hours rather than months, which eliminates time and labor spent on installation, allows for portability, and provides variable speed control. We offer several hydraulic fluid options to choose from, and each is biodegradable.







A Fully-Operational Pump Station in Days

FAST INSTALLATION AND SETUP
Saves time and money

BUILT TOUGH FOR LONG LIFE
Designed heavy-duty & durable for the toughest jobs

INSTALLATION STATION SAVINGS
Save up to 40% on civil works/facility building costs

VARIABLE FLOW
Variable speed pumping control without the need for costly VFDs

RUN-DRY ENDURANCE
Oil lubricated mechanical seals allow the pump to run dry and safely shut down without damage to internal components

ENVIRONMENTALLY-FRIENDLY
Biodegradable hydraulic fluid used

HEAVY TRASH LOADING
Large capacity can handle up to 6"

VERSATILE & STACKABLE
Bolt-together feature allows for higher-head applications. Each unit has a low profile and can be installed vertically, angled, or horizontally.

QUICK PARTS & SERVICE
USA made with standard off-the-shelf bearings and seals allowing for quick response and lower replacement cost, means less downtime when service is needed

LESS MAINTENANCE REQUIRED
Streamlined design allows for low submergence, less costly operation and minimal wear

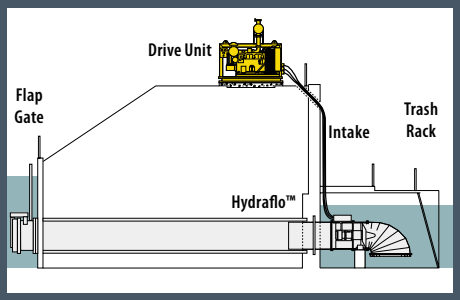


SCAN TO VIEW – Watch our 60 second video of a 100,000 GPM Hydraflo™ pump station installation completed in a matter of days!

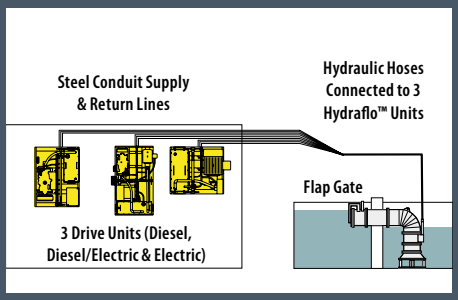
Installations & **Applications**

Customized to suit your needs

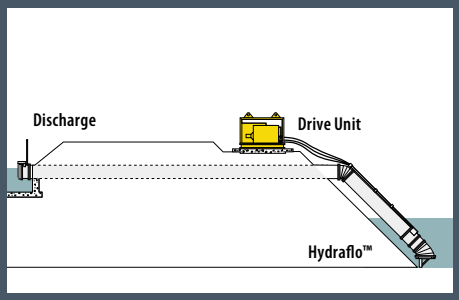
HORIZONTAL



VERTICAL

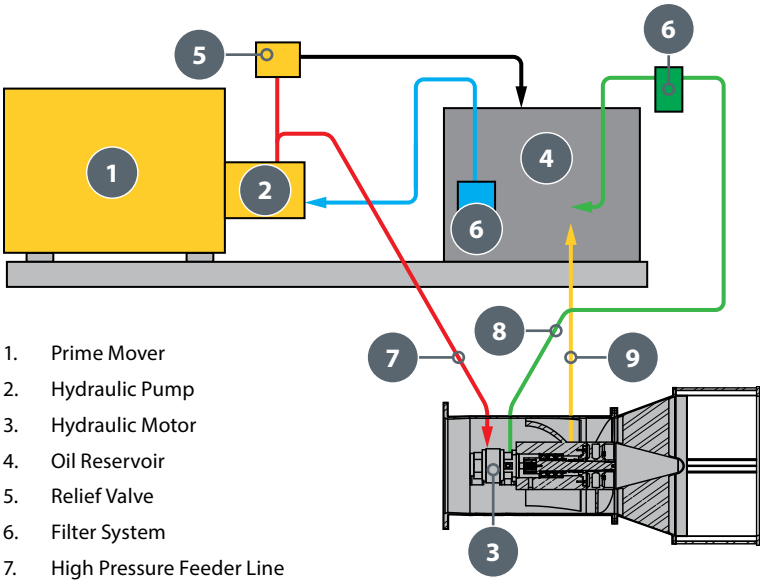


ANGLED



- Low profile
- Reduced cost civil works
- Retrofit existing pump stations
- Dual power for emergency backup
- Remote located drive unit
- Installs in multiple configurations (see above)

How the **Hydraulic System Works**



1. Prime Mover
2. Hydraulic Pump
3. Hydraulic Motor
4. Oil Reservoir
5. Relief Valve
6. Filter System
7. High Pressure Feeder Line
8. Low Pressure Return Line
9. Case Drain

Explore the functionality of our high-performance hydraulic system. The prime mover can be a diesel engine, electric motor or a combination of both to propel this unique hydraulic pump. The pump seamlessly supplies oil to the hydraulic motor housed within the water pump, which spins the hydraulic motor that is directly connected to the propeller. The hydraulic oil efficiently returns to the oil reservoir through the return filter. Navigating through a strainer, the hydraulic oil resumes its journey back to the hydraulic pump, thereby closing the circuit seamlessly.

Safe & Reliable

A relief valve from the high pressure side to the oil reservoir, serves as a fail-safe to bypass the power transmission fluid and divert flow in the event that an object gets lodged in the propeller. This distinctive safety feature, exclusive to Hydraflo™ systems, shields all components from potentially damaging “shock loads.”. Where variable flows are needed (such as in sewage effluent or “piped in” stormwater pumping), the propeller speeds can be infinitely adjusted automatically through the hydraulic power transmission system to optimally align with diverse water flow and head conditions.



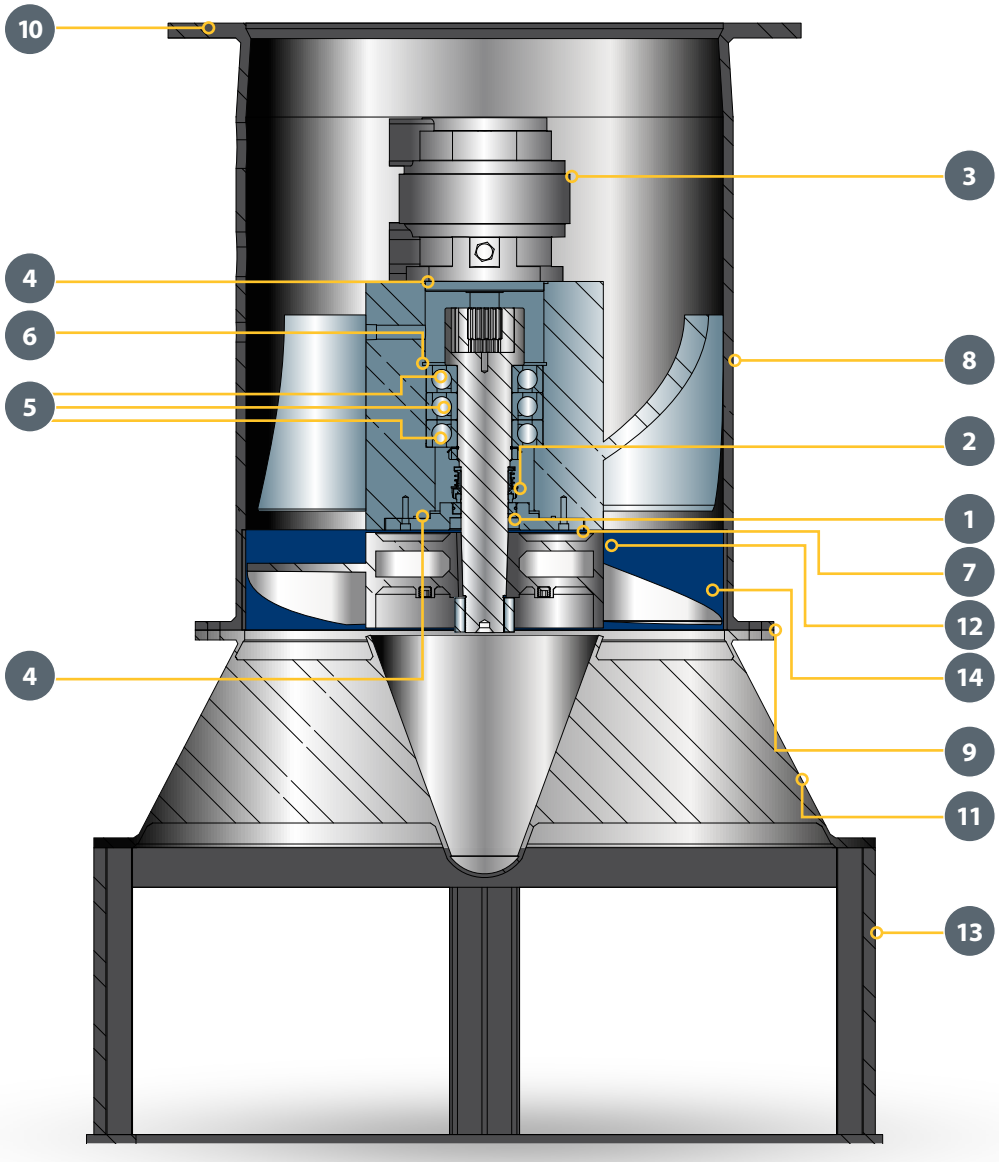
1 & 2-Way Gate Pump System

Turn any location with an existing gate into a pump station. MWI has been creating 2-way water pumping systems for decades. Choose from cast iron slide or flap gates, fabricated slide or flap gates, rectangular butterfly gates, stop logs, lifts and additional accessories.

- Simple design makes maintenance easy
- Efficient pumps save money on operating costs
- Lightweight yet durable sluice gate
- Intake bell designed to minimize vortex under low water levels
- Easy to install, low installation costs
- Durable and corrosion-resistant construction
- Can be custom designed to fit your specifications and existing structure
- No additional civil works, created to fit standard gate

Components Materials & Options

1. Lip Seal
2. Mechanical Seal
3. Hydraulic Motor
4. O-Ring
5. Bearing
6. Retainer Ring
7. Endplate
8. Diffuser
9. Gasket-Intake
10. Gasket-Discharge
11. Intake Bell
12. Propeller
13. Intake Stand
14. Liner



MWI Hydraflo™ water pumps are custom built to the customer's specifications. Our in-house team of professional, certified engineers work with our clients to customize the application-focused product while providing the highest quality service.

The materials and options shown are typical, but alternative materials are available. MWI can manufacture in exotic materials - for example duplex-type stainless steels, if requested. Each pump size, dimension, construction and capacity will vary based on customization to meet the needs of the customer.

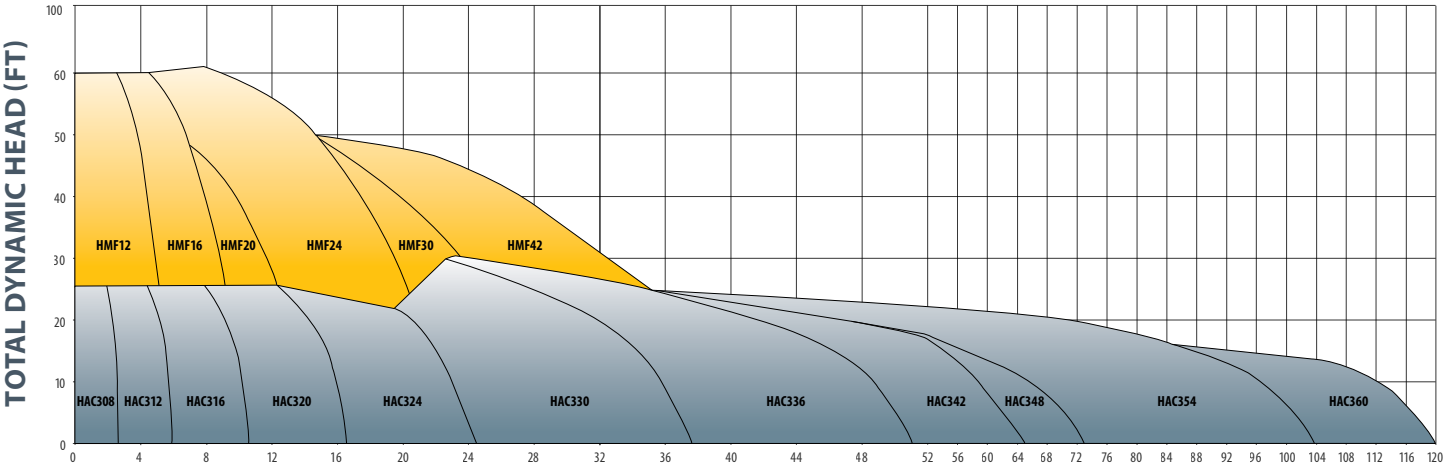
MATERIALS & OPTIONS	
Intake bell	A242/A588 Cor-Ten (A36 steel, 304 & 316 stainless steel options)
Impeller hub	A36 steel (304 and 316 stainless steel options)
Impeller blades	304 stainless steel (316 stainless steel options)
Impeller wear ring	304 stainless steel (316 stainless steel options)
Pump shaft	304 stainless steel (316 stainless steel options)
Diffuser housing	A242/A588 Cor-Ten (A36 steel, 304 & 316 stainless steel options)
Lip seal endplate	A36 steel (304 and 316 stainless steel options)
Bearing box	A36 steel (304 and 316 stainless steel options)
Fasteners	Carbon steel (18-8 and 316 stainless steel options)
Mechanical seal faces	Silicon carbide
Thrust bearings	Angular contact
Coating	Intergard 345 epoxy



These pumps carry all the stormwater from the pipe to the sea. That's why the levels are kept under control and the mitigation worked faster. If we did not have those pumps, all parts of our town would have been flooded.

Hydraflo™ pumps provide an efficient, elegant solution of pumping more water without the need for additional units to sustain the agricultural pumping capacity needed to irrigate our sugar crops no matter if we are faced with a drought or severe rainfall.

Performance



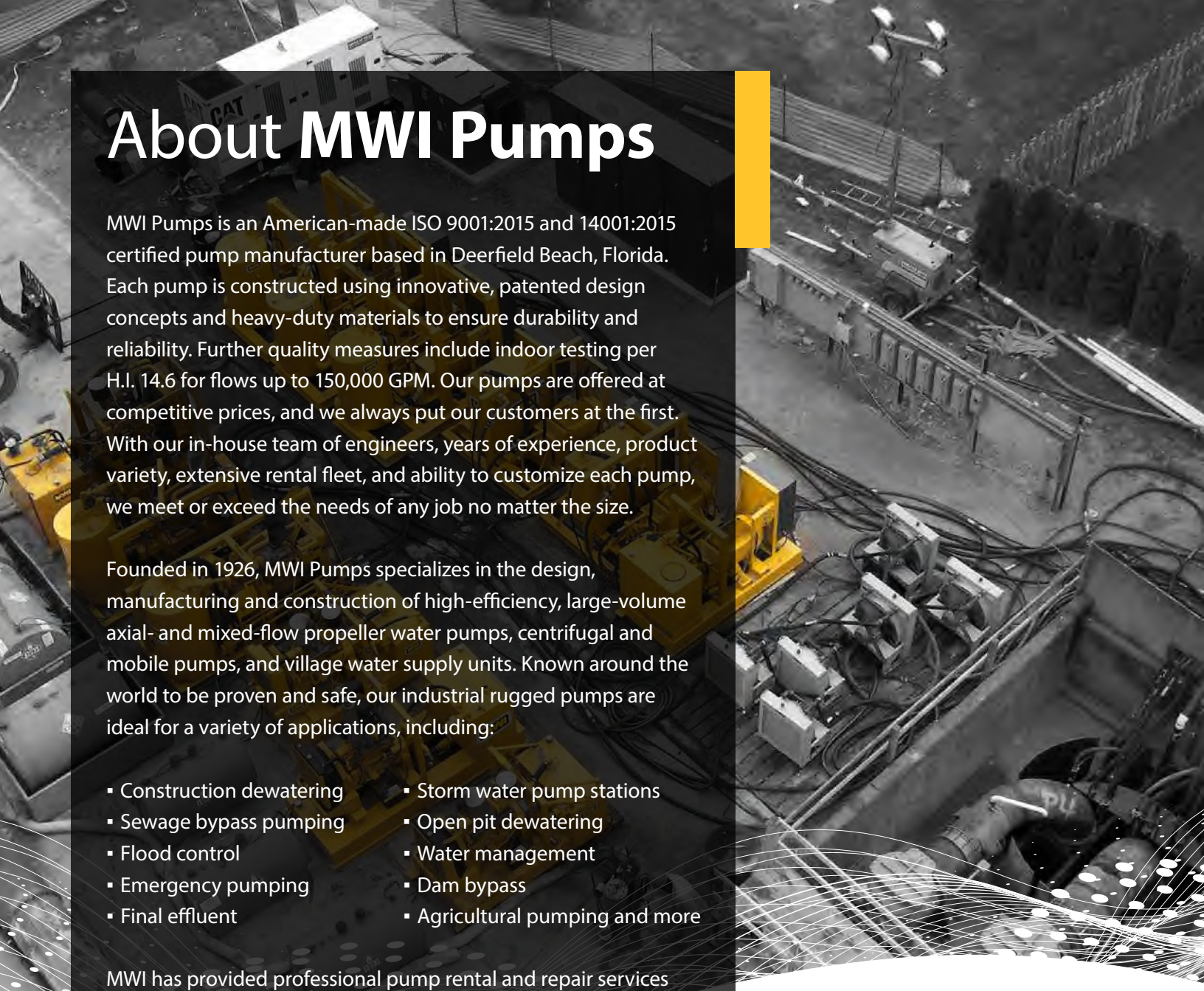
Performance curves for each bowl size are available upon request.











About **MWI Pumps**

MWI Pumps is an American-made ISO 9001:2015 and 14001:2015 certified pump manufacturer based in Deerfield Beach, Florida. Each pump is constructed using innovative, patented design concepts and heavy-duty materials to ensure durability and reliability. Further quality measures include indoor testing per H.I. 14.6 for flows up to 150,000 GPM. Our pumps are offered at competitive prices, and we always put our customers at the first. With our in-house team of engineers, years of experience, product variety, extensive rental fleet, and ability to customize each pump, we meet or exceed the needs of any job no matter the size.

Founded in 1926, MWI Pumps specializes in the design, manufacturing and construction of high-efficiency, large-volume axial- and mixed-flow propeller water pumps, centrifugal and mobile pumps, and village water supply units. Known around the world to be proven and safe, our industrial rugged pumps are ideal for a variety of applications, including:

- Construction dewatering
- Sewage bypass pumping
- Flood control
- Emergency pumping
- Final effluent
- Storm water pump stations
- Open pit dewatering
- Water management
- Dam bypass
- Agricultural pumping and more

MWI has provided professional pump rental and repair services since 1968, with locations throughout Florida, and representatives throughout the USA and worldwide. Contact us to learn more about our water pumps, pump repair, pump sales, cost-effective rentals, and other industrial water pump manufacturing services.

MWI Pumps
33 NW Eller Street, Deerfield Beach, FL 33441
General Inquiries: 954-426-1500 | Emergency Tel: 772-770-0004
mwipumps.com

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PLATFORM (SKID) DIESEL DRIVE

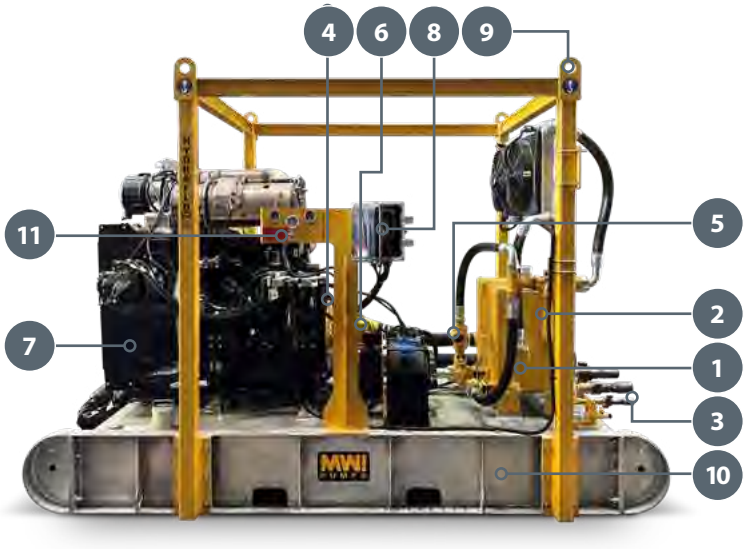
POWERING HYDRAFLO™ & DURAFLO™

MWI PUMPS
The Power to Move Water®

GENERAL INFORMATION									
Drive Model[1]	Water Pump	Hydraulic Reservoir		Day Tank		Hose Connection (in.)			Diesel Engine (BHP Range)
		Gals.	Ltrs.	Gals.	Ltrs.	Return	Supply	Case Drain	HP @ 1800 RPM
800D	8″	10	38	78	295	1	0.75	0.75	≤ 35
1200D	12-16″	10	38	94	356	1.25	1	0.75	36-70
2000D	20″	22	83	187	708	1.5	1.25	0.75	135
2400D	24″	22	83	187	708	1.5	1.5	0.75	136-200

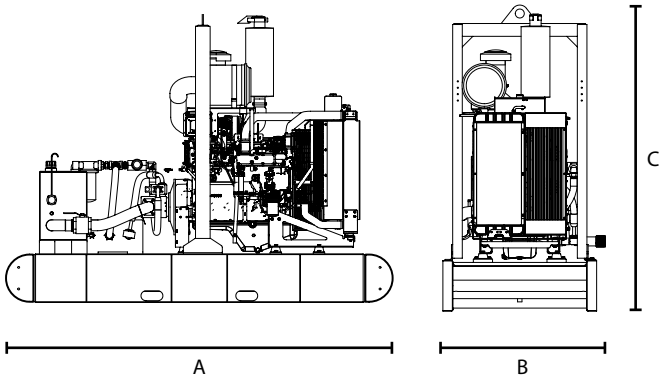
FEATURES

1. Oil reservoir/heat exchanger
2. Return filter
3. Quick couplers
4. Relief valve
5. Relief bypass sight indicator
6. Hydraulic pump
7. Diesel engine
8. Engine controls
9. Lifting eyes
10. Diesel reservoir
11. Hydraulic control panel



(1) Large Drive Unit Models including 3000D, 4200D and 6000D on reverse.

PHYSICAL DATA								
Drive Model	General Dimensions							
	A		B		C		Dry Weight (Approx.)	
	Ft.	Mts.	Ft.	Mts.	Ft.	Mts.	lbs	kg
800D	11.00	3.35	7.71	2.35	5.58	1.70	2500	1135
1200D	12.29	3.75	7.71	2.35	5.58	1.70	2900	1315
2000D	14.58	4.45	8.04	2.45	6.56	2.00	4000	1815
2400D	14.58	4.45	8.04	2.45	6.56	2.00	4800	2180



LARGE DIESEL DRIVE UNIT

POWERING HYDRAFLO™

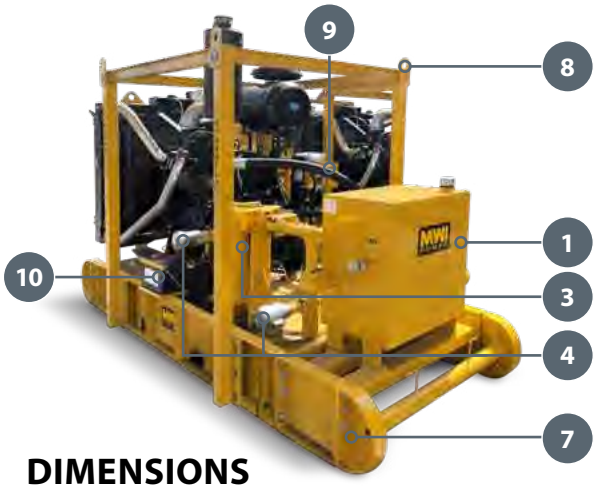
MWI PUMPS
The Power to Move Water®

GENERAL INFORMATION									
Drive Model[1]	Water Pump	Hydraulic Reservoir		Day Tank[2]		Hose Connection (in.)			Diesel Engine (BHP Range)
		Gals.	Ltrs.	Gals.	Ltrs.	Return	Supply	Case Drain	HP @ 1800 RPM
3000D	30-36"	60	227	187	708	2	2	0.75	201-350
4200D[2]	42-48"	225	852	100	379	2-2	2-2	0.75	351-575
6000D[2]	54-60"	300	1136	200	757	2-2	2-2	1	576-800

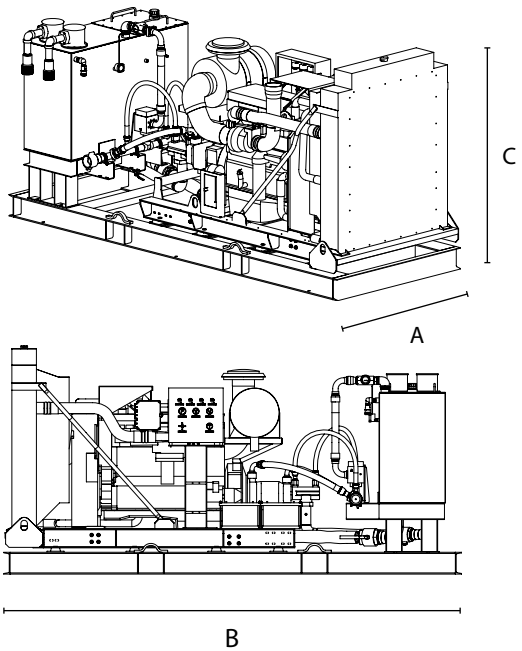
FEATURES

1. Oil reservoir/heat exchanger
2. Hydraulic oil level switch gauge[1]
3. Return filter
4. Quick couplers
5. Relief valve[1]
6. Hydraulic pump[1]
7. Heavy duty skid frame
8. Lifting eyes
9. Control panel
   - A. Suction strainer vacuum gauge
   - B. Hydraulic system pressure gauge
   - C. Oil temperature gauge
   - D. Failure reset
   - E. System loading valve
10. Battery

(1) Not shown in picture: Features 2, 5, 6
(2) Alternate capacities available upon request



DIMENSIONS



PHYSICAL DATA WITHOUT DAY TANK								
Drive Model Number	General Dimensions							
	A		B		C		Dry Weight (Approx.)	
	Ft.	Mts.	Ft.	Mts.	Ft.	Mts.	lbs.	kg.
3000D	4	1.22	12.50	3.81	7.17	2.18	7500	3402
4200D	6	1.83	13.33	4.06	8.77	2.67	9800	4445
6000D	7.33	2.24	16.33	4.98	8.25	2.51	15000	6804

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PORTABLE DIESEL DRIVE UNIT

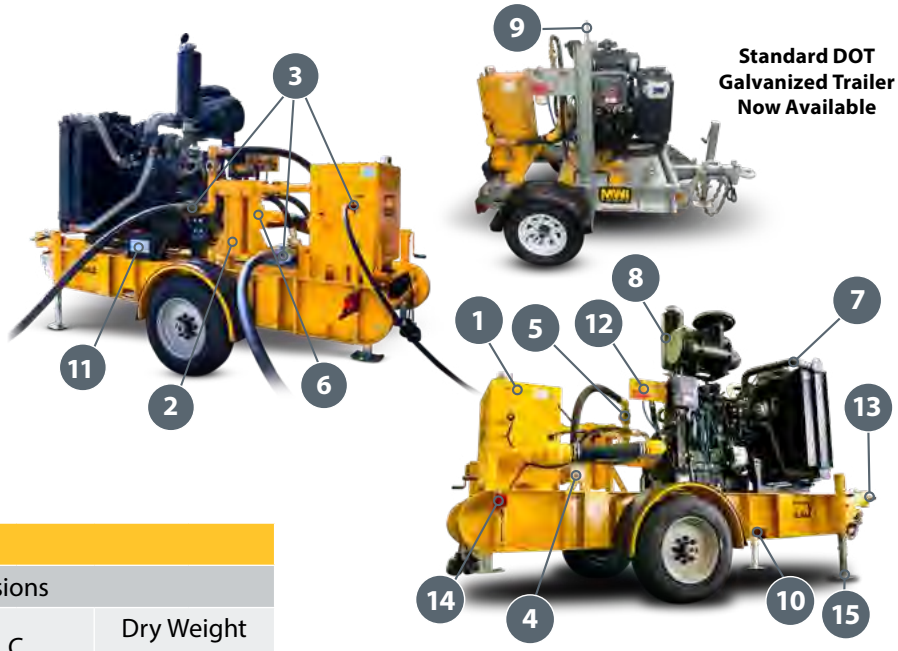
POWERING HYDRAFLO™ & DURAFLO™

MWI PUMPS
The Power to Move Water®

GENERAL INFORMATION									
Drive Model Number	Water Pump	Hydraulic Reservoir		Day Tank		Hose Connection (in.)			Diesel Engine (BHP Range)
		Gals.	Ltrs.	Gals.	Ltrs.	Return	Supply	Case Drain	HP
800DU	4″	10	38	28	106	1	0.75	0.75	25 @ 2400RPM
800	8″	10	38	78	295	1	0.75	0.75	≤ 35 @ 1800 RPM
1200	12-16″	10	38	94	356	1.25	1	0.75	36-70 @ 1800 RPM
2000	20″	15	57	94	356	1.5	1.25	0.75	76-100 @ 1800 RPM
2400	24″	22	83	187	708	1.5	1.5	0.75	101-200 @ 1800 RPM

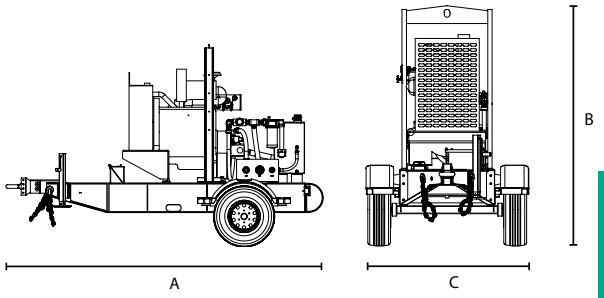
FEATURES

1. Oil reservoir
2. Return filter
3. Quick couplers
4. Relief valve
5. Relief bypass sight indicator
6. Hydraulic pump
7. Diesel engine
8. Engine controls
9. Lifting eyes
10. Diesel reservoir
11. Battery
12. Hydraulic control panel
13. Hydraulic surge brake actuator
14. Tail lights
15. Tongue jack



Standard DOT Galvanized Trailer Now Available

PHYSICAL DATA								
Drive Model Number	General Dimensions							
	A		B		C		Dry Weight (Approx.)	
	Ft.	Mts.	Ft.	Mts.	Ft.	Mts.	lbs	kg
800DU	5.14	1.57	7.59	2.31	5.72	1.74	2100	950
800	11.00	3.35	7.71	2.35	5.58	1.70	2500	1135
1200	12.29	3.75	7.71	2.35	5.58	1.70	2900	1315
2000	12.29	3.75	7.71	2.35	5.58	1.70	3500	1590
2400	14.58	4.45	8.04	2.45	6.56	2.00	4800	2180



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SILENT PARTNER

HEAVY-DUTY SOUND ATTENUATION ENCLOSURE WITH NOISE-ABSORBING INSULATION

The Silent Partner™ is a heavy-duty sound attenuation, quiet pack enclosure that fits the high-performance, automatic-priming, run-dry Primerite™ as well as Hydraflo™, Duraflo™, and Rotoflo™ pumps. This system includes noise-absorbing insulation, which allows the high-performance pumps to run cool and quieter while in sensitive areas such as residential neighborhoods, near hospitals, schools or government buildings. The enclosure also provides easy access to all components no matter what pump is inside.

FEATURES

- Quiet for sensitive areas – with sound levels as low as 67dB at 7M / 23' operating at full rated capacity (based on CPB standards)
- Critically silent pump system – includes engine vibration isolators, priming exhaust muffler and cowl silencer for quiet, trouble free operation
- Runs cool for long engine life
- Fast, easy and safe on-site access to critical components with multiple large access panels, lockable and side-swinging doors to avoid injury and prevent vandalism
- Easy and modular transport – bolt-together design for portability and complete access to components
- Available in skid or DOT highway trailer with lifting bail included
- Radiator access port for external topping off
- External engine oil drain to facilitate oil changes
- Exhaust in secondary enclosure to reduce temperature and keep the inside clean
- Easily remove or add lifting bail, tow bar, axle and bumpers to go from skid to portable or vice versa
- Manufactured in the USA

APPLICATIONS

- Residential Areas
- Hospitals
- Government Buildings
- Schools
- Religious Facilities
- *Or wherever else quiet operations are needed*



SILENT PARTNER™ COMPATIBILITY	
Primerite™	Automatic Dry Self-Priming Trash Pump
Hydraflo™ (Drive Unit)	Hydraulically-Driven, Large-Volume Submersible Water Pump
Duraflo™ (Drive Unit)	Submersible Hydraulic Trash Pump
Rotoflo™	Wellpoint Dewatering Pump

INSIDE THE BOX

Ideal for use in residential areas or wherever quiet operations are required, the Silent Partner™ is highly favored for a wide range of applications. Because of their heavy-duty design, these pumps can run hard while staying quieter in the most difficult of environments.

Choose from a wide selection of engine control panels for your exclusive quiet pump system. Each panel is designed for fully automated operation and includes fault indicator lights, auto start-stop, and telemetry. The Silent Partner™ can house Primerite™ or Rotoflo™ pumps in its enclosure as well as the drive units for the Hydraflo™ or Duraflo™ pumps.

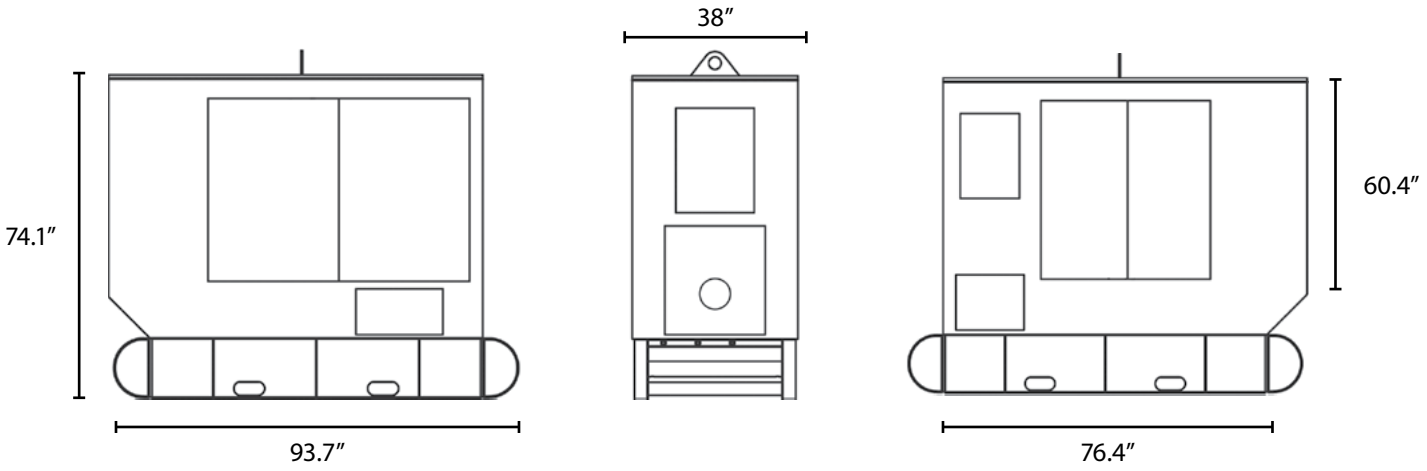




CONTROL PANEL

MWI offers a wide selection of engine control panels. The engine control panel is protected behind a lockable clear window that provides easy access when needed. The panels are designed for fully automated operation, including fault indicator lights, auto start-stop and telemetry.

DIMENSIONS



MWI Pumps Headquarters
33 NW 2nd St | Deerfield Beach, FL 33441
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Inquiries: 954-426-1500 | Email: info@mwipumps.com | **mwipumps.com**

ITEM 8

Dominick Gulli, President
Kevin Kauffman, Trustee
Christian Gaines, Trustee

RECLAMATION DISTRICT NO. 1614
SMITH TRACT

Andrew J. Pinasco, Counsel
Rhonda L. Olmo, Secretary
Christopher H. Neudeck, Engineer
Abel Palacio, Superintendent

BOARD OF TRUSTEES MEETING
MONDAY, JANUARY 5, 2026
2:00 PM

I. LEVEE MAINTENANCE PROJECT – FY 2025-2026

A. Currently budgeted work is for approximately 8 residential lots along Smith Canal and is estimated to cost approximately $400,000. Seek Authorization to seek bids upon completion of the final bid documents

EXHIBIT A: Levee Maintenance Project FY 2025-2026 Phase I

B. KSN Inc. conducted a field inspection of potential sites along the SJ River and met with SG&CC staff related to the available additional $600,000 of budgeted Rock Slope Protection. Survey work scheduled for 2nd week of January. Plans for Phase II will be developed thereafter for this marine contract.

II. PLAN REVIEW

A. Review Residential Plan submittal for 2141 Moreing Road.

a) 2141 Moreing Road
Patmon Company
Charles (Pat) Patmon
APN 121-030-450-000
(209) 751-7346 Cell

Review of application for a single-family residence on an empty residential lot on 2141 Moreing Road. Pat Patmon intends to add engineered fill to bolster the levee and provide a location off the levee to install a swimming pool.

KSN Inc. has reviewed the plans, and Pat has incorporated the suggestions discussed to date but there are a few remaining conditions that KSN Inc suggests. 1) supplement the rock slope protection including elevation to the top of the slope. Once the residential home is built access to the slope will become difficult to add or maintain additional rock. The additional Rock Slope Protection above the Base Flood Elevation on the slope will provide rock if the existing rock were to settle or slip. 2) require Patmon Company to horizontally bench the fill into the levee slope. 3) require Patmon Company to execute an application to

install riprap and an easement for the District's access, repair, and maintenance of the levee on the subject property at 2141 Moreing Road.
Provided the Board of Trustees agrees with the above conditions condition KSN Inc. recommends approval of this Single-Family Residence at 2141 Moreing Road.

EXHIBIT B: Plans for 2141 Moreing Road.

b) 3216 Moreing Court
Hayden and Amy Logan
APN 121-100-620-000

Review application for remodel of old Dr William and Verni Collin's residence along the Smith Canal Levee. Aside from some room changes the new remodel stays within the original footprint of the Collins residence and is acceptable related to the District rules and regulations. The existing Rock Slope protection is in great shape recently placed by RD 1614.

EXHIBIT C: Plans for 3216 Moreing Court

III. SJAFCA SMITH CANAL GATE

A. Review issue raised by Chairman Dominic Gulli (during public comment) regarding the Draft LOMR at the SJAFCA Board of Directors Meeting held on Thursday the 11/13/25. The issue raised by Chair Gulli was related to the FLOODING SOURCES AND REVISED REACHES on Page 1 of 5 of the Letter of Map Revision Determination Document (see below) that overlooked areas south of Smith Canal, specifically RD 828, whereby it does not mention them in this section of the Document. Darren Suen of SJAFCA spoke with the FEMA's consultant since the SJAFCA BOD Meeting regarding this matter. The consultant understood the issue but indicated that making any changes to the Draft documents could extend the effective date of the map currently set for February 9, 2025. It must be further understood regardless of this language the revised map is the operative document which is where a property owner can tell whether they are "in" or "out" of the Flood Plain.

Page 1 of 5	Issue Date: September 23, 2025	Effective Date: February 9, 2026	Case No.: 25-09-0442P	LOMR-APP

Follows Conditional Case No.: 17-09-2623R

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION
DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Stockton San Joaquin County California	LEVEE	2D HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS LEVEE CERTIFICATION UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 060302		
IDENTIFIER	Smith Canal Gate Structure and Dad's Point Levee	APPROXIMATE LATITUDE AND LONGITUDE: 37.958, -121.348 SOURCE: Other DATUM: NAD 83	

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 06077C0455F DATE: October 16, 2009 TYPE: FIRM* NO.: 06077C0460F DATE: October 16, 2009	NO REVISION TO THE FLOOD INSURANCE STUDY REPORT

Enclosures reflect changes to flooding sources affected by this revision.
* FIRM - Flood Insurance Rate Map

FLOODING SOURCES AND REVISED REACHES

Smith Canal - At the confluence with the San Joaquin River Delta to approximately 13,000 feet upstream of the confluence
Smith Canal (Interior Drainage Area) - Area located north of Smith Canal, east of the San Joaquin River Delta, and south of the Calaveras River

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Smith Canal	BFEs*	BFEs	NONE	YES
Smith Canal Interior Drainage	Zone A	Zone X (shaded)	NONE	YES

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional information about the NFIP is available on our website at https://www.fema.gov/flood-insurance.

David N. Bascom, Acting Director
Engineering and Modeling Division
Risk Analysis, Planning and Information Directorate

25-09-0442P 102-D-A

B. The Draft map is not effective until February 9th (provided appeals are not filed) and if one of RD 1614's constituents have sought to have their insurer to cancel their flood insurance the insurer would not have done so yet because the map is still draft until 2/9/26

Exhibit A

Follows Conditional Case No.: 17-09-2623R

Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

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David N. Bascom

David N. Bascom, Acting Director
Engineering and Modeling Division
Risk Analysis, Planning and Information Directorate

25-09-0442P 102-D-A

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Exhibit B

RECLAMATION DISTRICT NO. 1614

SMITH TRACT

SAN JOAQUIN COUNTY, CALIFORNIA

DRAFT

DRAFT

LEVEE MAINTENANCE PROJECT - FY 2025/2026

PHASE - I



VICINITY MAP

DWG NO.	SHEET NO.	DESCRIPTION
GENERAL:		
G-001	1	TITLE SHEET
G-002	2	GENERAL NOTES
CIVIL:		
C-101	3	BASE MAP
1-CS101	4	SITE 1: 1722 SOUTH TUXEDO AVENUE SITE PLAN
1-CD101	5	SITE 1: 1722 SOUTH TUXEDO AVENUE DEMOLITION PLAN
1-CG101	6	SITE 1: 1722 SOUTH TUXEDO AVENUE CONSTRUCTION PLAN
1- C-301	7	SITE 1: 1722 SOUTH TUXEDO AVENUE CROSS SECTIONS
2-CS101	8	SITE 2: 1822 & 1826 SOUTH TUXEDO AVENUE SITE PLAN
2-CD101	9	SITE 2: 1822 & 1826 SOUTH TUXEDO AVENUE DEMOLITION PLAN
2-CG101	10	SITE 2: 1822 & 1826 SOUTH TUXEDO AVENUE CONSTRUCTION PLAN
2- C-301	11	SITE 2: 1822 & 1826 SOUTH TUXEDO AVENUE CROSS SECTIONS
3-CS101	12	SITE 3: 2472 COUNTRY CLUB BOULEVARD SITE PLAN
3-CD101	13	SITE 3: 2472 COUNTRY CLUB BOULEVARD DEMOLITION PLAN
3-CG101	14	SITE 3: 2472 COUNTRY CLUB BOULEVARD CONSTRUCTION PLAN
3- C-301	15	SITE 3: 2472 COUNTRY CLUB BOULEVARD CROSS SECTIONS
C-501	16	DETAIL

SHEET INDEX



PROJECT SITE MAP

811 Know what's below. Call before you dig.

SUBMITTAL	
%	Date

NORTH ORIENTATION

PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY	NGC
DRAWN BY	NGC
CHECK BY	EEA
HORIZONTAL DATUM	CCS83, ZONE 3
VERTICAL DATUM	NAVD88

DRAWING SCALE: N.T.S

ORIGINAL DRAWING SCALE: 0 ½" 1"

KSN inc. KJELDSEN SINNOCK NEUDECK
CIVIL ENGINEERS & LAND SURVEYORS
www.ksninc.com
711 N. Pershing Avenue, Stockton, CA 95203, 209-946-0268
1550 Harbor Blvd., Suite 212, West Sacramento, CA 95691, 916-403-5900

RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

TITLE SHEET

DATE: DECEMBER 28, 2025
SHEET IDENTIFICATION: G-001
SHEET 1 OF 16
KSN PROJECT FILE NO.: 0806-0670-26-10

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\06_Civil\400_Plans\020_CAD\Sheets\G-001.dwg
PLOT DATE: Dec 17, 2025 - 2:04pm

GENERAL NOTES:

1 PRIOR TO THE COMMENCEMENT OF WORK, A JOINT INSPECTION BETWEEN THE ENGINEER, OR HIS REPRESENTATIVE, AND THE CONTRACTOR, OR HIS REPRESENTATIVE, WILL BE CONDUCTED TO REVIEW THE PRECONSTRUCTION CONDITIONS OF THE EXISTING FACILITIES IN THE VICINITY OF THE PROJECT SITE. (E.G. ROADS, PUMPS, DISCHARGE PIPES, SIPHONS, RAMPS, GATES, SIGNS, ETC.) IF SUCH EXISTING FACILITIES ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR, AT HIS EXPENSE, SHALL REPLACE OR RESTORE THEM TO THE CONDITION THAT EXISTED PRIOR TO THE COMMENCEMENT OF WORK.

2 THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT (209) 946-0268, A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.

3. THE DISTRICT RESERVES THE RIGHT TO SUSPEND CONSTRUCTION AT ANY TIME IN THE EVENT OF EXTREME HIGH OR LOW TIDES, FLOOD EVENTS, OTHER CONDITIONS OR EMERGENCIES THAT MAY JEOPARDIZE THE INTEGRITY OF THE DISTRICT'S LEVEE AND ROAD SYSTEM.

4 THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS, AS REQUIRED FOR TRAFFIC CONTROL AND PUBLIC SAFETY DURING PROJECT CONSTRUCTION.

5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS ALONG THE DISTRICT LEVEE ROADS AND ACCESS ROADS AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THE LEVEE ROADS AND ACCESS ROADS SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

6 IF DELIVERING MATERIAL OR EQUIPMENT BY TRUCK, ALL TRUCK TRAFFIC SHALL BE LIMITED TO THE DISTRICT LEVEE ROADS AND ACCESS ROADS, UNLESS OTHERWISE APPROVED.

7. THE ENGINEER WILL PROVIDE THE LOCATION OF THE DESIGNATED PROJECT REPAIR SITES WITH A START AND STOP POINT, AND WILL PROVIDE TEMPORARY BENCHMARKS IN THE VICINITY OF THE PROJECT SITES TO BE UTILIZED BY THE CONTRACTOR FOR SETTING ELEVATIONS.

8 ANY DEFICIENCIES NOTED DURING INTERIM AND FINAL INSPECTIONS BY THE ENGINEER AND/OR DISTRICT, SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE BY THE DISTRICT. ANY ADDITIONAL COSTS AND EXPENSES FOR MOBILIZATION AND/OR DEMOBILIZATION, LABOR, EQUIPMENT AND OTHER ASSOCIATED COSTS REQUIRED TO CORRECT THE DEFICIENCIES NOTED SHALL BE BORNE BY THE CONTRACTOR.

9. ALL IMPROVEMENTS TO BE DONE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.

10. THE INTENT OF THESE PLANS ARE TO SERVE AS A GUIDE AND TO PROVIDE THE CONTRACTOR WITH INFORMATION AND DETAILS NECESSARY TO CONSTRUCT THE PROJECT AND FURNISH THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PERFORM THE WORK IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES AND AMBIGUITIES WHICH MAY EXIST IN THE PLANS OR SPECIFICATIONS. IF THE PLANS DESCRIBE PORTION OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.

11. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER AT (209) 946-0268 FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.

12. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHENEVER IT APPEARS THERE IS A CHANGE IN SITE CONDITIONS OR AN ADJUSTMENT TO BE MADE IN WORK REQUIREMENTS.

13. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.

14. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.

15. THE CONTRACTOR SHALL NOT CLOSE ANY ROAD, STREET, OR HIGHWAY TO THE PUBLIC EXCEPT WITH THE PERMISSION OF THE ENGINEER AND THE PROPER GOVERNMENTAL AUTHORITY. TEMPORARY PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO ENSURE CONTINUOUS ACCESS TO PUBLIC AND PRIVATE DRIVEWAYS, AND PROPER FUNCTIONING OF DRAINAGE INLETS, GUTTERS, CULVERTS, DRAINAGE AND IRRIGATION DITCHES, AND NATURAL WATER COURSES.

16 THE CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD THE DISTRICT AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.

17. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE SECURITY OF HIS PLANT AND EQUIPMENT. THE DISTRICT WILL NOT TAKE ANY RESPONSIBILITY FOR MISSING OR DAMAGED EQUIPMENT, TOOLS, OR PERSONAL BELONGINGS.

ENVIRONMENTAL NOTES:

1 THE CONTRACTOR SHALL MAINTAIN AIR POLLUTION CONTROLS BY NOT DISCHARGING SMOKE, DUST, OR ANY OTHER AIR CONTAMINANTS INTO THE ATMOSPHERE IN SUCH QUANTITY AS WILL VIOLATE THE REGULATIONS OF ANY LEGALLY CONSTITUTED AUTHORITY. THE CONTRACTOR SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING AND SPRINKLING WITH WATER, OR OTHER MEANS AS NECESSARY. THE USE OF WATER IN AN AMOUNT WHICH RESULTS IN MUD ON PUBLIC ROADS IS NOT ACCEPTABLE AS A SUBSTITUTE FOR SWEEPING OR OTHER METHODS.

2. THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION AND COMPLY WITH ALL PERMITS TO PROTECT STREAMS, WATERWAYS AND OTHER BODIES OF WATER FROM POLLUTION WITH FUELS, OIL, BITUMENS, CALCIUM CHLORIDE, AND OTHER HARMFUL MATERIALS AND SHALL CONDUCT AND SCHEDULE HIS OPERATIONS SO AS TO AVOID OR MINIMIZE MUDDYING AND SILTING OF SAID WATERS. CARE SHALL BE EXERCISED TO PRESERVE ROADSIDE VEGETATION BEYOND THE LIMITS OF CONSTRUCTION.

3 THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE WORK SITE CONDITIONS CLEAN AND FREE FROM RUBBISH AND DEBRIS.

4 THE CONTRACTOR SHALL PRESERVE AND PROTECT ANY PLANTS AND TREES AS MAY BE DESIGNATED AND MARKED BY THE ENGINEER AT THOSE REPAIR SITES AND DESIGNATED PRIOR TO COMMENCEMENT OF WORK. SOME PRUNING AND TRIMMING OF BRANCHES MAY BE REQUIRED.

5 RIPRAP SHALL BE CAREFULLY PLACED, BY HAND IF NECESSARY, AROUND THE BASE OF ANY DESIGNATED PLANTS AND TREES.

DUST AND MUD CONTROL:

1. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION AREAS, EXCAVATION AND LEVEE CROWN FILL AREAS, ACCESS ROADS, OTHER ROADWAYS, AND OTHER USE AREAS WHERE DUST IS GENERATED WELL WATERED; AND DURING WET CONDITIONS, AREAS USED BY LOCAL TRAFFIC, FREE AND CLEAR FROM MUD.

   A. NON-WORK DAYS: THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN ANY PROJECT AREAS, ACCESS ROADS OR CROP AREAS WHICH ARE USED BY THE CONTRACTOR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

UTILITY NOTES:

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL SUCH FACILITIES.

2. THE APPROXIMATE LOCATION OF KNOWN UTILITIES, SUBMARINE CABLES SIPHONS, FERRY CABLES, DISCHARGE PIPES, ETC., MAY BE BE SHOWN ON THE PLANS FOR THE INFORMATION OF THE CONTRACTOR. THE DISTRICT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF THIS INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE ACTUAL LOCATION OF ALL UNDERGROUND, SURFACE, OVERHEAD, AND SUBMARINE IMPROVEMENTS, OR FACILITIES WHICH MAY BE SUBJECT TO DAMAGE BY REASON OF HIS OPERATIONS.

3. ALL UTILITIES MUST REMAIN FULLY OPERATIONAL DURING THE PERIOD OF CONSTRUCTION

POWER LINES:

1. THE CONTRACTOR SHALL TAKE NOTE OF POWER LINES WITHIN THE CONSTRUCTION ZONE. EXTREME CAUTION IS ADVISED WHILE WORKING AROUND AND NEAR THESE LIVE LINES.

CLEANUP:

1. THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE PREMISES OCCUPIED BY HIM IN A CLEAN AND ORDERLY CONDITION, DISPOSING OF REFUSE IN A MANNER SATISFACTORY TO THE ENGINEER.

2. THE CONTRACTOR, UPON COMPLETION OF ALL WORK, SHALL RESTORE ALL LEVEE AND ACCESS ROADS, HAUL ROADS, PROJECT SITES, AND ANY OTHER DISTURBED AREAS IN A MANNER SATISFACTORY TO THE ENGINEER, DISTRICT, AND LANDOWNERS.

CONTROL OF EROSION:

1. THE CONTRACTOR SHALL MAINTAIN EARTHWORK SURFACES TRUE AND SMOOTH AND PROTECTED FROM EROSION. WHERE EROSION OCCURS, THE CONTRACTOR SHALL PROVIDE FILL OR SHALL EXCAVATE AS NECESSRY TO RETURN EARTHWORK SURFACES TO THE GRADE AND FINISH SPECIFIED.

ACCESS ROUTES:

1 THE CONTRACTOR SHALL IMPROVE, MAINTAIN, AND REPAIR/RECONSTRUCT UPON COMPLETION, ALL THE LEVEE ROADS AND ACCESS ROADS AS MAY BE REQUIRED FOR TRANSPORTATION AND HAULING MATERIAL TO THE PROJECT REPAIR AREAS. ALL DISTURBED LEVEE ROADS AND ACCESS ROADS SHALL BE RESTORED TO PRE-EXISTING CONDITION OR BETTER.

2. THE ACCESS ROUTES FOR THIS PROJECT MAY REQUIRE THE CONTRACTOR TO MODIFY AND REWORK THE GRADING OF THE EXISTING ROADS TO MEET THE CONTRACTOR'S HAULING AND ROAD DRAINAGE REQUIREMENTS.

3 THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAKING ANY NECESSARY IMPROVEMENTS, MODIFICATIONS, AND ALTERATIONS TO MEET HIS REQUIREMENTS AND FOR THE MAINTENANCE AND EXPENSE THEREOF.

4 THE CONTRACTOR'S EQUIPMENT SHALL BE RESTRICTED TO OPERATE ONLY ON THOSE LEVEE ROADS AND ACCESS ROADS AND WITHIN THOSE SPECIFIED WORK AREAS INDICATED ON THE PLANS UNLESS OTHERWISE APPROVED BY THE ENGINEER, DISTRICT, AND LANDOWNERS.

5 NEITHER THE DISTRICT NOR THE ENGINEER MAKE ANY WARRANTY OR GUARANTEE AS TO THE ADEQUACY OF THE EXISTING NATIVE MATERIALS TO SUPPORT THE CONSTRUCTION TRAFFIC ON THE ACCESS ROADS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAKING THE NECESSARY IMPROVEMENTS AND PROVIDING THE NECESSARY MEASURES REQUIRED TO ACCOMMODATE HIS ANTICIPATED NEEDS.

6 THE CONTRACTOR SHALL SECURE ALL OTHER ACCESS ROAD EASEMENTS AS MAY BE REQUIRED WITH THE INDIVIDUAL PROPERTY OWNERS FOR ALL NON-DISTRICT AND/OR PUBLIC ACCESS ROADS AND AS DESCRIBED IN THE SPECIFICATIONS.

CLEARING & GRUBBING

1. UNLESS OTHERWISE INDICATED, THE WORK AREAS SHALL BE CLEARED AND GRUBBED BY THE CONTRACTOR PRIOR TO THE PLACEMENT OF RIPRAP.

2. USE CAUTION WHILE CLEARING AND GRUBBING AROUND POWER LINES & BURIED ELECTRICAL CABLES.

3. ALL MATERIAL THAT IS CLEARED AND REMOVED SHALL BECOME THE PROPERTY AND RESPONSIBILITY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL, OFFSITE.

ROCK SLOPE PROTECTION

1. ALL QUARRY STONE RIPRAP SHALL BE PLACED UNIFORMLY ON PREPARED LEVEE SLOPES AND KEYED INTO THE LEVEE SECTION AND INTO ANY PREVIOUSLY PLACED QUARRY STONE RIPRAP, UNLESS DIRECTED OTHERWISE.

2 WATERSIDE LEVEE SLOPE SHALL BE PREPARED FROM THE TOP OF THE LEVEE CROWN PRIOR TO QUARRY STONE RIPRAP PLACEMENT. UNLESS OTHERWISE DIRECTED OR INDICATED ON THE PLANS, THE WATERSIDE LEVEE SLOPE SHALL BE GRADED IN MANNER RESULTING IN A NEAT AND UNIFORM SLOPE SECTION AT A MINIMUM OF 1.5 HORIZONTAL TO 1 VERTICAL (1.5:1).

3 LANDSIDE MECHANICAL EQUIPMENT (e.g. BACKHOE, EXCAVATOR, DRAGLINE, ETC.) IS REQUIRED TO OBTAIN A WELL GRADED AND UNIFORM SLOPE AND KEYWAY, AND TO REARRANGE EXISTING SLOPE PROTECTION PRIOR TO PLACEMENT OF NEW QUARRY STONE RIPRAP, UNLESS DIRECTED OTHERWISE.

4. LARGE STOCKPILING OF QUARRY STONE RIPRAP ON THE LEVEE CROWN FOR REHANDLING AND SLOPE PLACEMENT WILL NOT BE PERMITTED.

5. NEW QUARRY STONE RIPRAP SHALL NOT EXTEND BELOW MEAN HIGHER HIGH WATER.

6. QUARRY STONE RIPRAP SHALL BE PLACED SYSTEMATICALLY BEGINNING AT THE BASE OF THE PREPARED WATERSIDE SLOPE TO THE LINES AND GRADES SHOWN ON THE PLANS.

7. BUCKET TAMPING OF THE QUARRY STONE RIPRAP MAY BE REQUIRED TO SET THE NEW ROCK SLOPE PROTECTION IN PLACE AND TO ACHIEVE THE REQUIRED SLOPE. BUCKET TAMPING OF THE QUARRY STONE RIPRAP SHALL BE PERFORMED IN A MANNER NOT TO DEGRADE THE RIPRAP PLACED.

8 REARRANGING OF INDIVIDUAL STONES BY MECHANICAL EQUIPMENT OR BY HAND MY BE REQUIRED TO THE EXTENT NECESSARY TO OBTAIN A REASONABLY WELL GRADED DISTRIBUTION OF STONE SIZED TO PROVIDE A FINISHED SURFACE FREE OF PROTRUDING STONES.

9 WATERSIDE LEVEE SLOPE SECTIONS REQUIRING SPOT REPAIRS WILL REQUIRE EXTREME CARE DURING PLACEMENT TO SUPPLEMENT ONLY THOSE AREAS ACTUALLY REQUIRING REPAIRS, AS DESIGNATED BY THE ENGINEER.

10. DESIGNATED REPAIR SITE ADJUSTMENTS MAY BE REQUIRED BY THE ENGINEER PRIOR TO OR DURING QUARRY STONE RIPRAP PLACEMENT.

11. ACTUAL FIELD CONDITIONS WILL VARY IN TYPE OF REPAIRS REQUIRED. THE ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR VERIFYING ACTUAL CONDITIONS AND TYPE OF REPAIRS REQUIRED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

12 EXTREME CARE MUST BE USED WHILE WORKING AROUND OR NEAR ANY RESIDENTIAL OR COMMERCIAL FACILITIES INCLUDING, BUT NOT LIMITED TO, STRUCTURES, UTILITIES, FENCES, BULKHEADS, DOCKS & GANGWAYS, ETC.

TRAFFIC CONTROL

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AS REQUIRED.

ABBREVIATIONS:

AB	AGGREGATE BASE	LP	LOW POINT
AC	ASPHALTIC CONCRETE	LT	LEFT
BC	BEGINNING OF CURVE	MAX	MAXIMUM
BFE	BASE FLOOD ELEVATION	MHHW	MEAN HIGHER HIGH WATER
BM	BENCHMARK	MIN	MINIMUM
CC	CENTER TO CENTER	N	NORTH, NORTHING
CL	CENTERLINE	(N)	NEW
CY	CUBIC YARD	NIC	NOT IN CONTRACT
DIAM	DIAMETER	NO	NUMBER
DIM	DIMENSION	NTS	NOT TO SCALE
E	EAST, EASTING	OC	ON CENTER
(E)	EXISTING	OD	OUTSIDE DIAMETER
EA	EACH	PL	PROPERTY LINE
EC	END OF CURVE	PRC	POINT OF REVERSE CURVATURE
EG	EXISTING GROUND	R	RADIUS
ELEV	ELEVATION	RC	RELATIVE COMPACTION
EP	EDGE OF PAVEMENT	ROW	RIGHT-OF-WAY
EW	EACH WAY	RSP	ROCK SLOPE PROTECTION
EX	EXISTING	RT	RIGHT
FG	FINISH GRADE	SPEC	SPECIFICATION
FL	FLOWLINE	SF	SQUARE FEET
FT	FOOT, FEET	STA	STATION
GB	GRADE BREAK	STD	STANDARD
HORIZ	HORIZONTAL	SY	SQUARE YARD
HP	HIGH POINT	TEMP	TEMPORARY
ID	INSIDE DIAMETER	TYP	TYPICAL
IN	INCH, INCHES	UNO	UNLESS NOTED OTHERWISE
INV	INVERT	VERT	VERTICAL
LF	LINEAR FEET		

CONVENTIONS:

- BENCHMARK - VERTICAL & HORIZONTAL
- BENCHMARK - VERTICAL ONLY
- TEMPORARY CONTROL POINT OR TEMPORARY BENCHMARK
- DETAIL INDICATOR: 1 / C401 — DETAIL IDENTIFICATION NUMBER; DRAWING NUMBER WHERE DETAIL IS SHOWN
- SECTION INDICATOR: 2 / D402 — SECTION IDENTIFICATION NUMBER; DRAWING NUMBER WHERE SECTION IS SHOWN
- 4 — NOTE IDENTIFICATION NUMBER
- 3 — REVISION NUMBER

DRAFT

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SUBMITTAL	
%	Date

PRELIMINARY NOT FOR CONSTRUCTION
PROJECT ENGINEER

NO	DESCRIPTION	DATE	APPR

DESIGN BY NGC
DRAWN BY NGC
CHECK BY EEA
HORIZONTAL DATUM CCS83, ZONE 3
VERTICAL DATUM NAVD88

DRAWING SCALE: N.T.S
ORIGINAL DRAWING SCALE: 0 ½" 1"

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

GENERAL NOTES

DATE: DECEMBER 28, 2025
SHEET IDENTIFICATION: G-002
SHEET 2 OF 15
KSN PROJECT FILE NO. 0806-0670-26-10

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\G-002.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm



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DRAWN BY	NGC
CHECK BY	EEA
HORIZONTAL DATUM	CCS83, ZONE 3
VERTICAL DATUM	NAVD88

DRAWING SCALE: 1" = 500'

ORIGINAL DRAWING SCALE: 0 ½" 1"

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

BASE MAP

DATE: DECEMBER 28, 2025
SHEET IDENTIFICATION: C-101
SHEET 3 OF 16
KSN PROJECT FILE NO.: 0806-0670-26-10

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\06_Civil\400_Plans\020_CAD\Sheets\xC-101.dwg
PLOT DATE: Dec 17, 2025 - 3:19pm



NOTES:

1. CONTRACTOR SHALL PLACE PLYWOOD, OR OTHER ACCEPTABLE MEANS, ALONG THE ENTIRE ACCESS PATH IN ORDER TO PROTECT EXISTING SURFACES AND TREATMENTS. ABSOLUTELY NO EQUIPMENT SHALL COME IN CONTACT WITH EXISTING LAWN, TURF, LANDSCAPING, PAVEMENT, CONCRETE, OR HARDSCAPING ALONG THE ACCESS PATH.
2. CONTRACTOR SHALL SECURE ACCESS TO, AND BETWEEN, THE PROPERTIES DURING NON-WORKING HOURS.

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NORTH ORIENTATION

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CHECK BY	EEA
HORIZONTAL DATUM	CCS83, ZONE 3
VERTICAL DATUM	NAVD88

DRAWING SCALE
1" = 20'

ORIGINAL DRAWING SCALE
0 ½" 1"

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

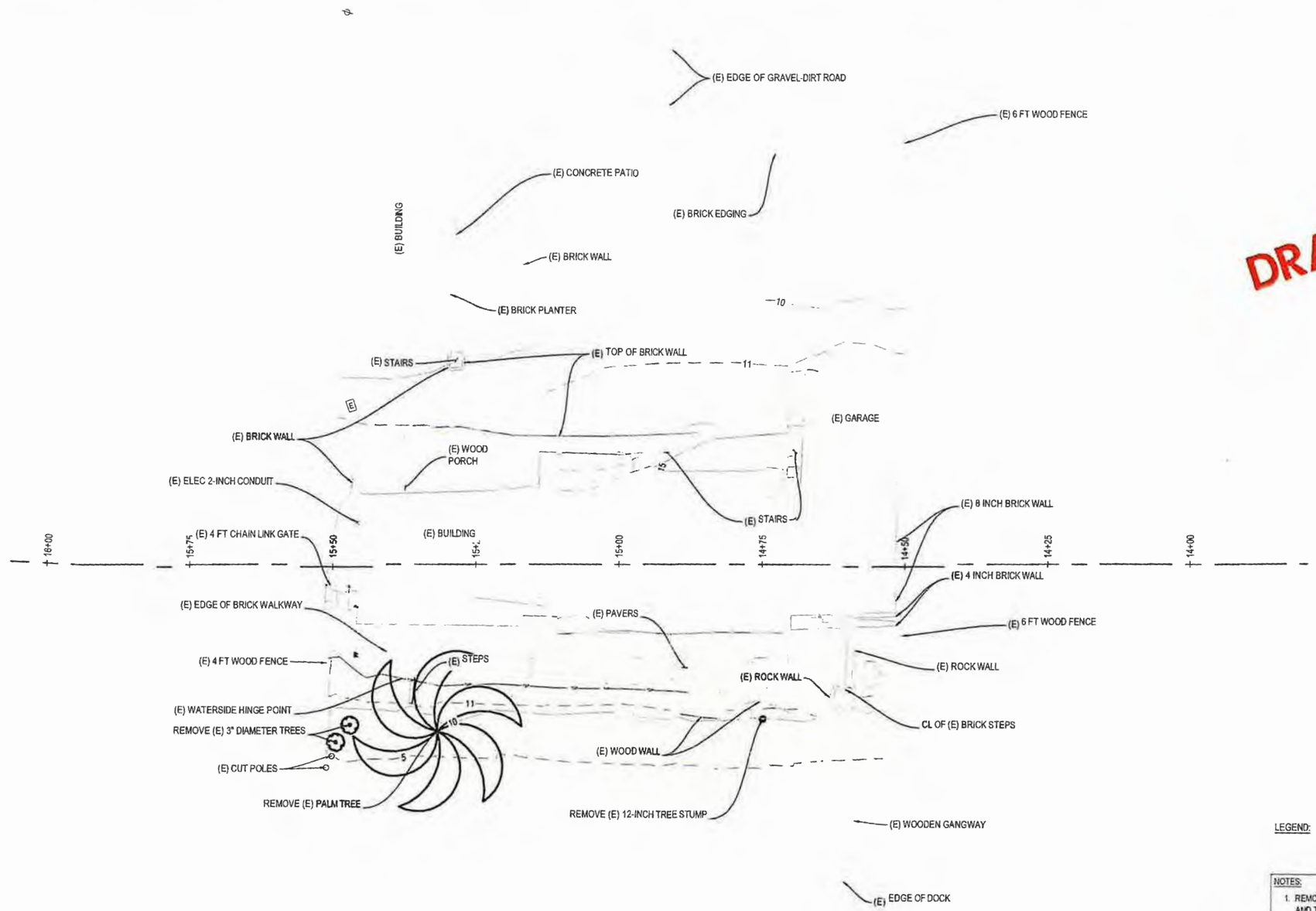
1722 SOUTH TUXEDO AVENUE
SITE PLAN
SITE 1

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
1-CS101
SHEET 4 OF 16

KSN PROJECT FILE NO.
0806-0670-26-10

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CS101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm



DRAFT

LEGEND:

CLEARING & GRUBBING LIMITS TYP.

NOTES:

1. REMOVE BRUSH, WEEDS, SHRUBS, AND SAPLINGS 3-INCH OR LESS AND TRIM GRASS TO 6-INCH OR LESS WITHIN CLEARING AND GRUBBING LIMITS
2. REMOVE ONLY PRE-APPROVED EXISTING TREES AND TRIM REMAINING TREE CANOPIES TO 6-FT MINIMUM WITHIN CLEARING AND GRUBBING LIMITS
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VERTICAL DATUM	NAVD88

DRAWING SCALE 1" = 10'

ORIGINAL DRAWING SCALE 0 ½" 1"

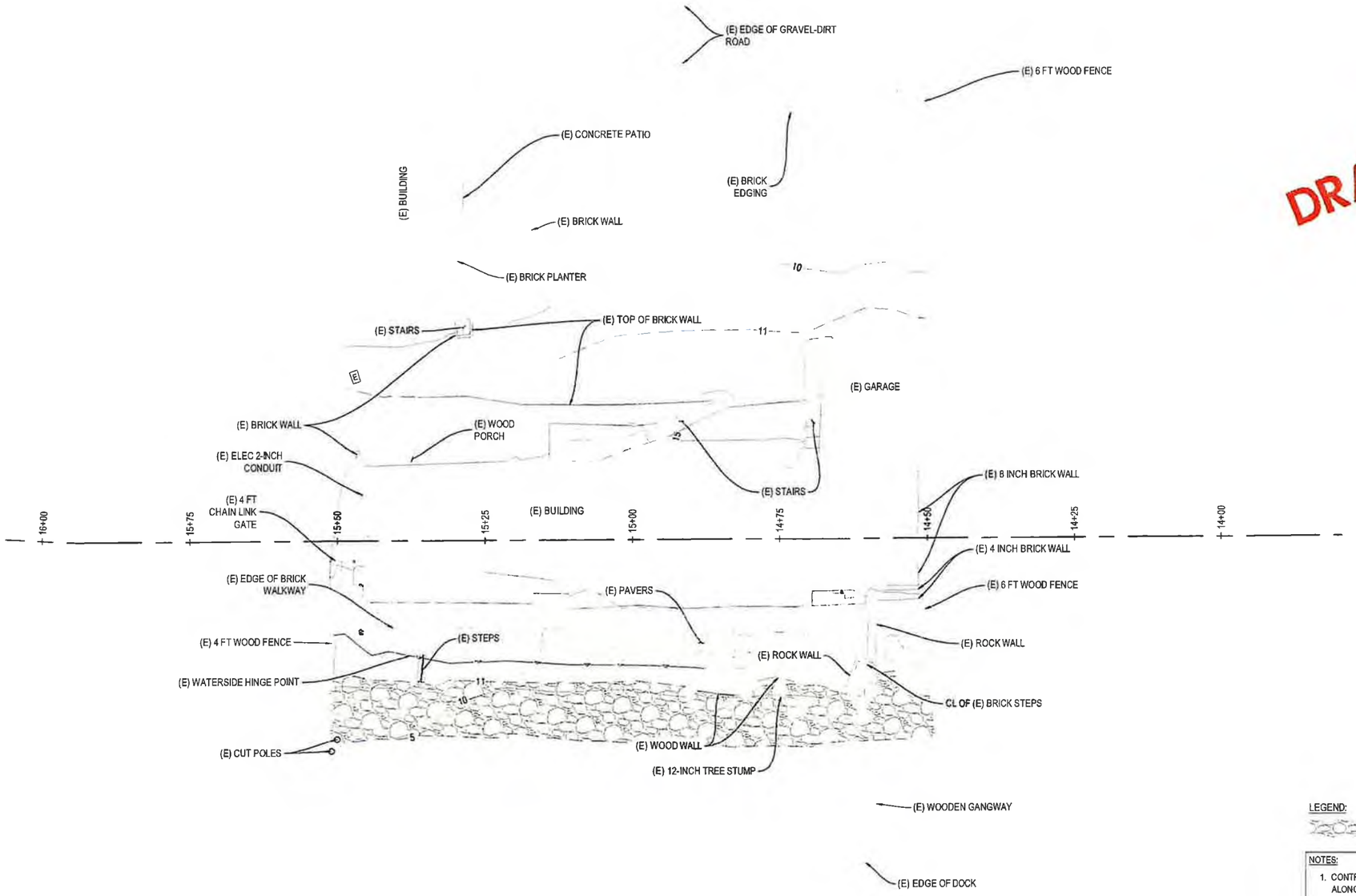
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LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

1722 SOUTH TUXEDO AVENUE
DEMOLITION PLAN
SITE 1

DATE DECEMBER 28, 2025
SHEET IDENTIFICATION 1-CD101
SHEET 5 OF 16
KSN PROJECT FILE NO. 0806-0670-26-10

FILE SPEC:P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CD101.dwg
PLOT DATE: Dec 17, 2025 - 2:05pm



DRAFT

LEGEND:

PROPOSED RIPRAP TYP.

NOTES:

1. CONTRACTOR SHALL PERFORM MINOR GRADING AND BENCHING ALONG THE WATERSIDE SLOPE IN ORDER TO PROVIDE A NEAT AND UNIFORM SLOPE OF 1.5:1 OR FLATTER PRIOR TO THE PLACEMENT OF THE NEW ROCK SLOPE PROTECTION (RSP)
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VERTICAL DATUM	NAVD88

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LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

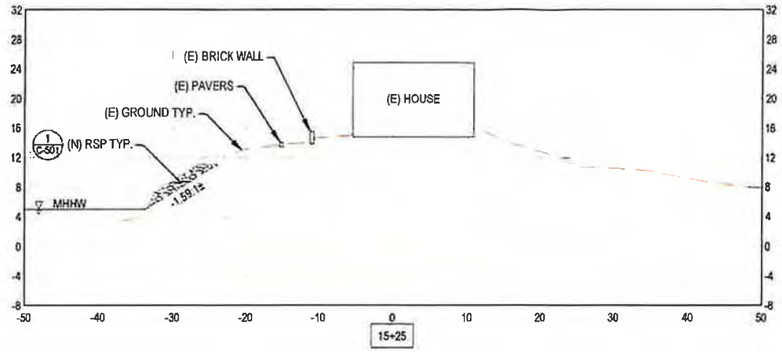
1722 SOUTH TUXEDO AVENUE
CONSTRUCTION PLAN
SITE 1

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
1-CG101
SHEET 6 OF 16

KSN PROJECT FILE NO.
0806-0670-26-10

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CG101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm



DRAFT

NOTES:

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VERTICAL DATUM NAVD88

DRAWING SCALE 1" = 10'

ORIGINAL DRAWING SCALE 0 ½" 1"

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

1722 SOUTH TUXEDO AVENUE
CROSS SECTIONS
SITE 1

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
1-C-301
SHEET 7 OF 16

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0806-0670-26-10

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PLOT DATE: Dec 17, 2025 - 2:09pm



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PROJECT ENGINEER

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CHECK BY	EEA
HORIZONTAL DATUM	CCS83, ZONE 3
VERTICAL DATUM	NAVD88

DRAWING SCALE
1" = 20'

ORIGINAL DRAWING SCALE
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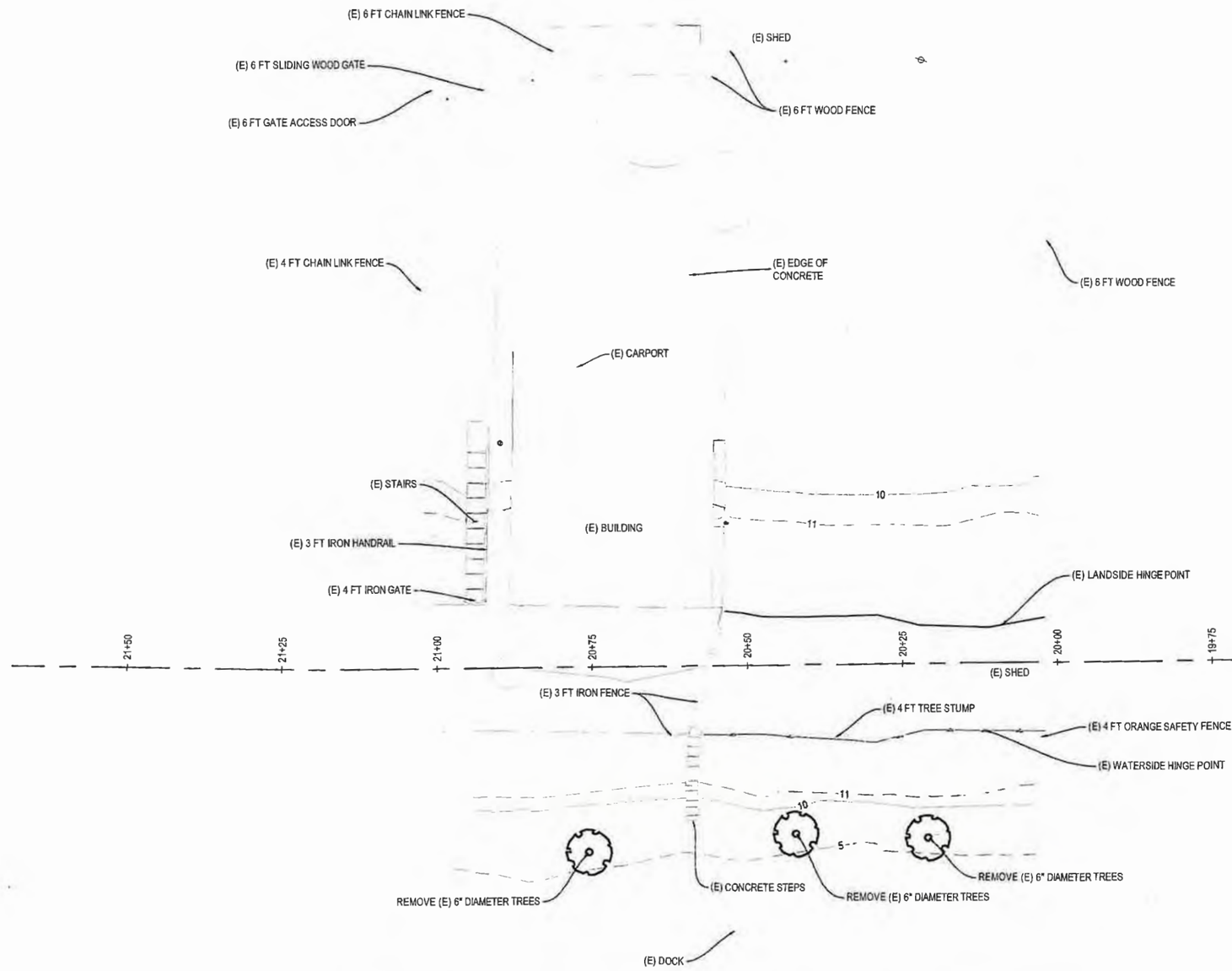
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LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

1822 AND 1826 SOUTH TUXEDO AVENUE
SITE PLAN

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
2-CS101
SHEET 8 OF 16



DRAFT

LEGEND:

CLEARING & GRUBBING LIMITS TYP.

NOTES:

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HORIZONTAL DATUM CCS83, ZONE 3
VERTICAL DATUM NAVD88

DRAWING SCALE
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ORIGINAL DRAWING SCALE
0 ½" 1"

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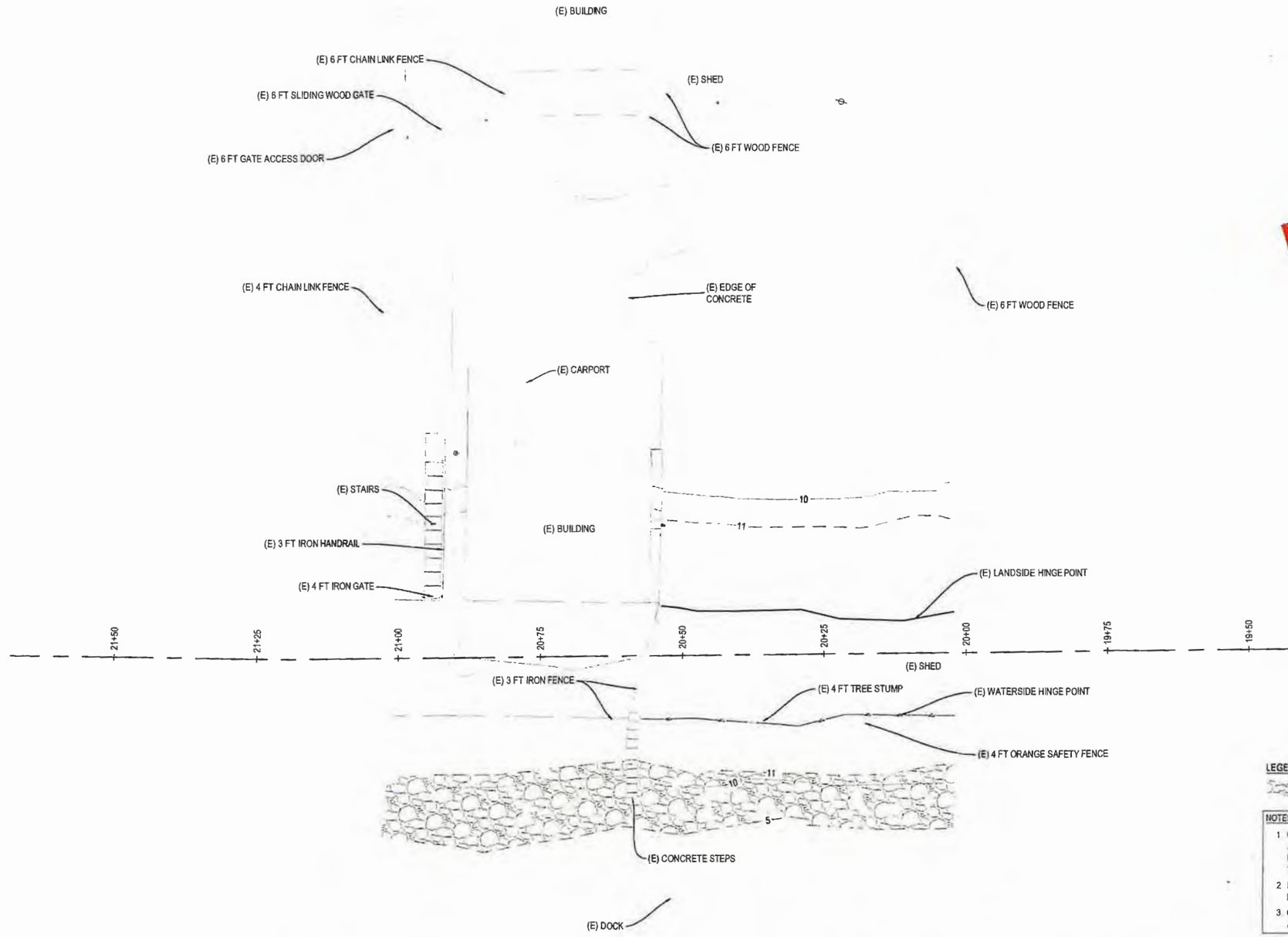
RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

1822 AND 1826 SOUTH TUXEDO AVENUE
DEMOLITION PLAN

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
2-CD101
SHEET 9 OF 16

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CD101.dwg
PLOT DATE: Dec 17, 2025 - 2:05pm



DRAFT

LEGEND:

PROPOSED RIPRAP TYP.

NOTES:

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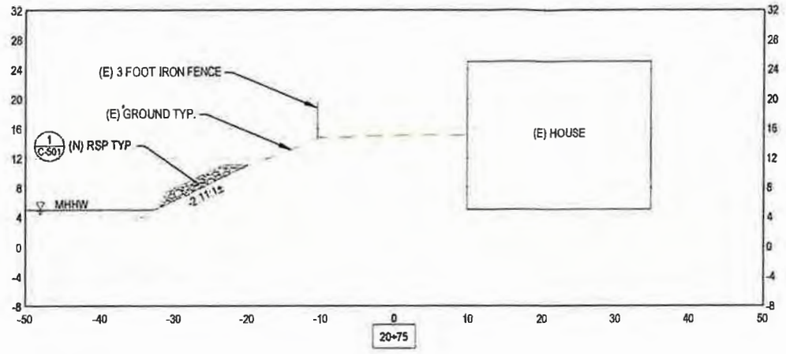
1822 AND 1826 SOUTH TUXEDO AVENUE
CONSTRUCTION PLAN

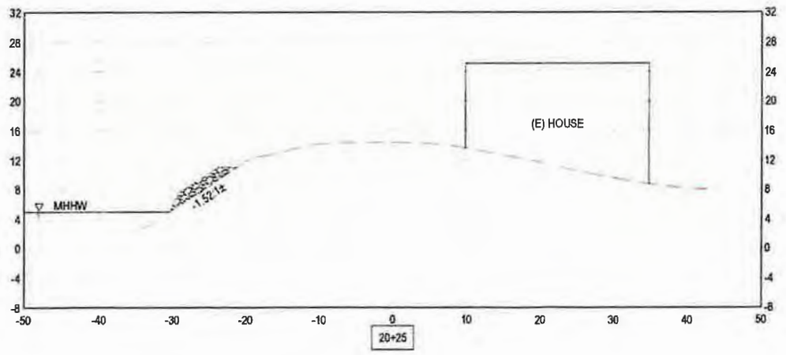
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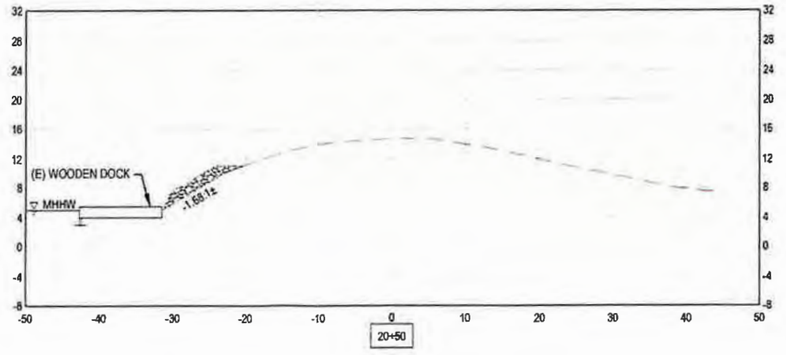
SHEET IDENTIFICATION 2-GG101

SHEET 10 OF 16

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CC101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm







DRAFT

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

1822 AND 1826 SOUTH TUXEDO AVENUE
CROSS SECTIONS

DATE
DECEMBER 28, 2025

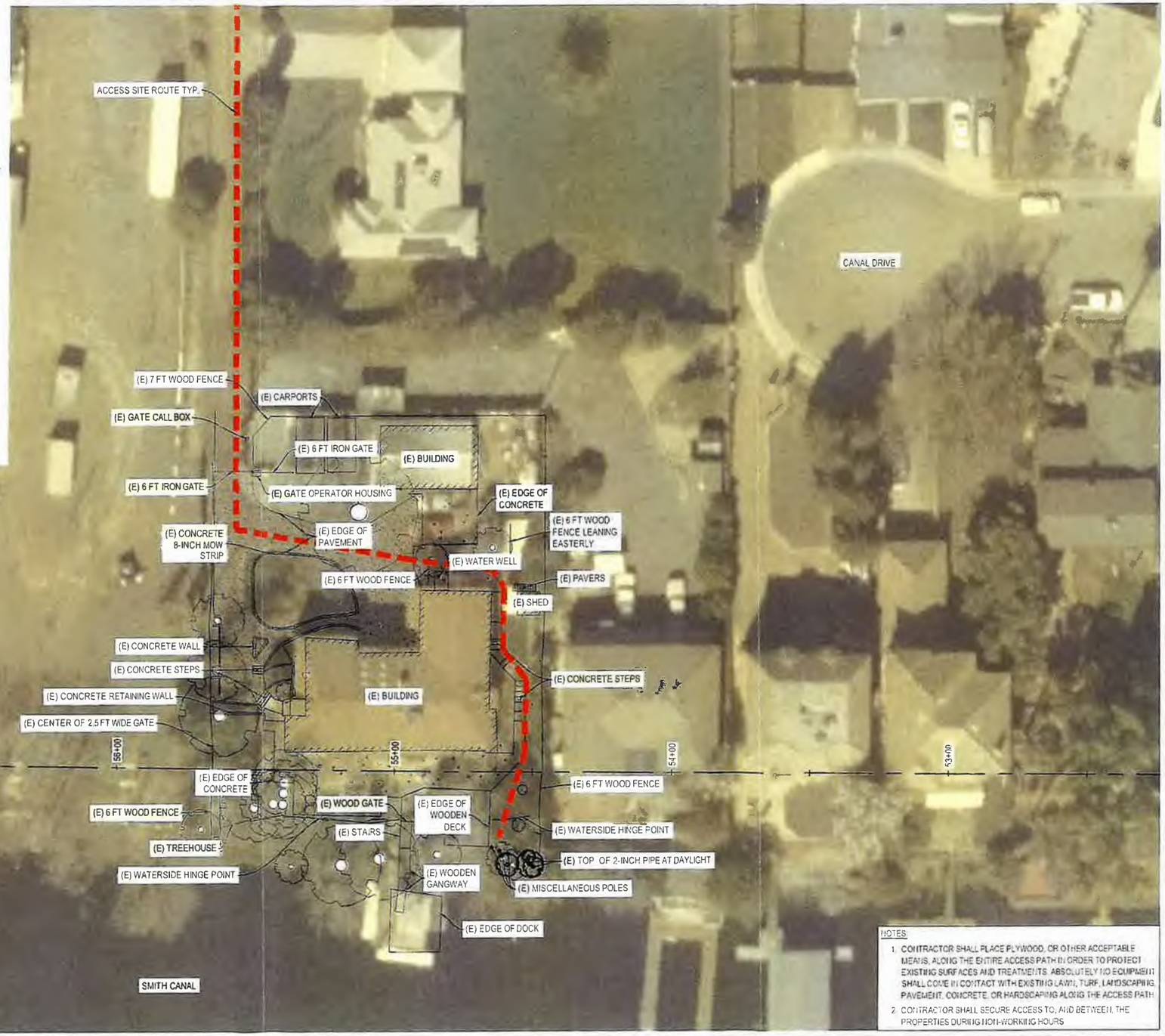
SHEET IDENTIFICATION
2-C-301
SHEET 323 OF 16

KSN PROJECT FILE NO.

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\C-301.dwg
PLOT DATE: Dec 17, 2025 - 2:05pm



N.T.S.



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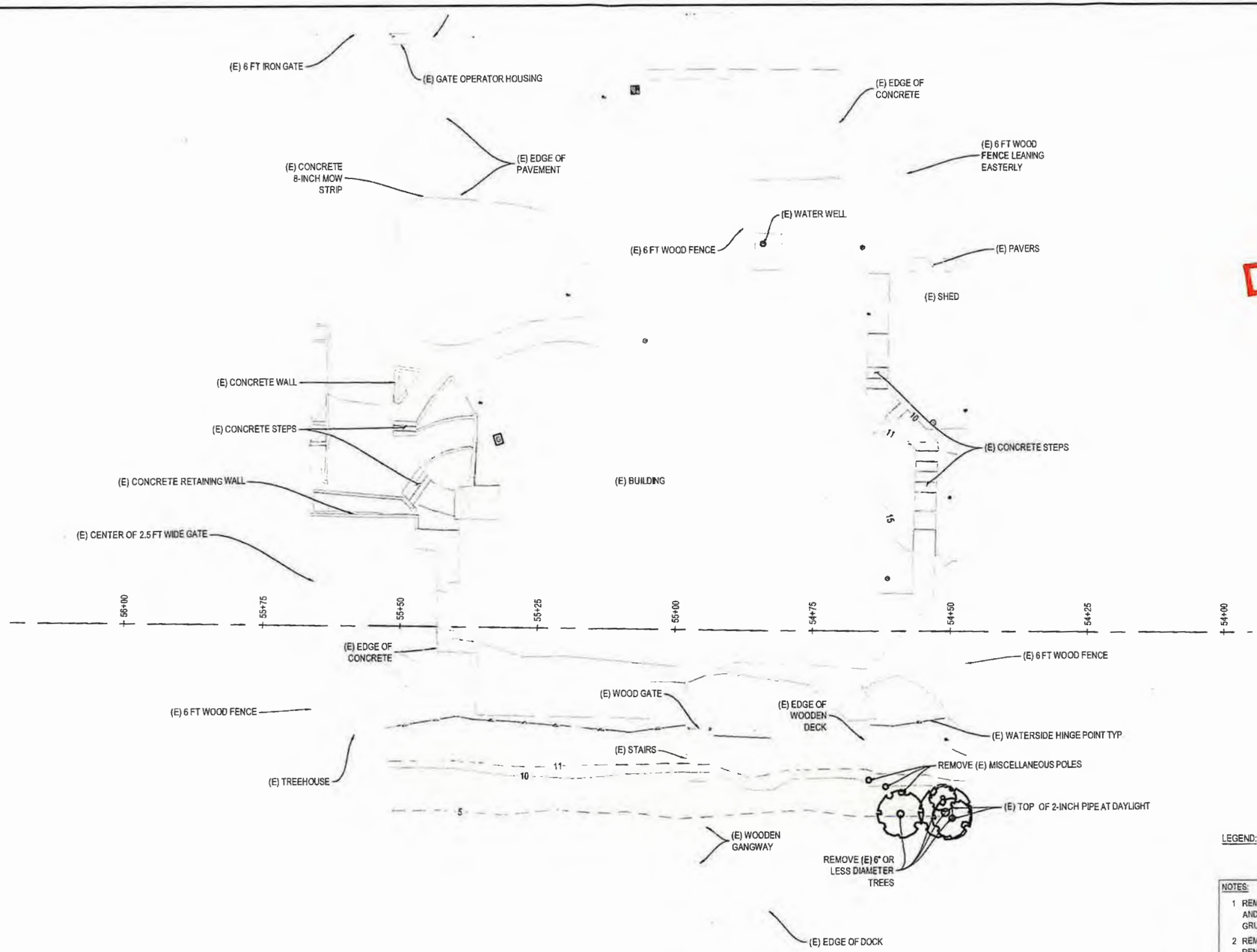
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LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

2472 COUNTRY CLUB BOULEVARD
SITE PLAN

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
3-CS101
SHEET 324 OF 16

FILE: SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\100_Plans\020_CAD\Sheets\CS101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm



DRAFT

LEGEND:

CLEARING & GRUBBING LIMITS TYP.

NOTES:

1. REMOVE BRUSH, WEEDS, SHRUBS, AND SAPLINGS 3-INCH OR LESS AND TRIM GRASS TO 6-INCH OR LESS WITHIN CLEARING AND GRUBBING LIMITS.
2. REMOVE ONLY PRE-APPROVED EXISTING TREES AND TRIM REMAINING TREE CANOPIES TO 6-FT MINIMUM WITHIN CLEARING AND GRUBBING LIMITS.
3. REMOVE BROKEN CONCRETE AND DEBRIS WITHIN CLEARING AND GRUBBING LIMITS
4. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING STRUCTURES AND APPURTENANCES, UNO.

811 Know what's below. Call before you dig.

SUBMITTAL	
%	Date

NORTH ORIENTATION

PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO	DESCRIPTION	DATE	APPR

DESIGN BY	NGC
DRAWN BY	NGC
CHECK BY	EEA
HORIZONTAL DATUM	CCS83, ZONE 3
VERTICAL DATUM	NAVD88

DRAWING SCALE: 1" = 10'

ORIGINAL DRAWING SCALE: 0 ½" 1"

KSN inc. KJELDSEN SINNOCK NEUDECK
CIVIL ENGINEERS & LAND SURVEYORS
www.ksninc.com
711 N. Pershing Avenue
Stockton, CA 95203
209-946-0268
1550 Harbor Blvd., Suite 212
West Sacramento, CA 95691
916-403-5900

RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

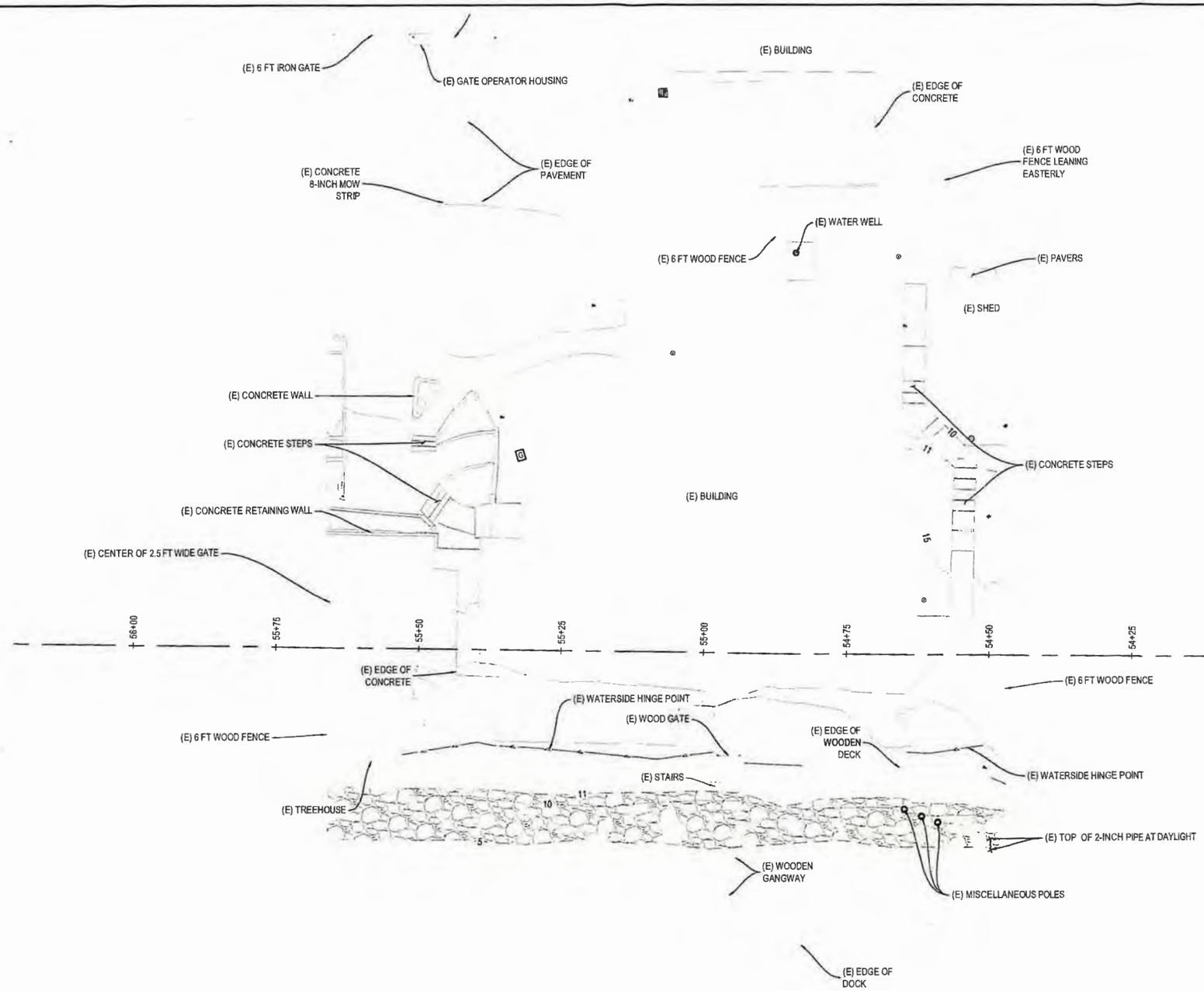
2472 COUNTRY CLUB BOULEVARD
DEMOLITION PLAN

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
3-CD101
SHEET 325 OF 16

KSN PROJECT FILE NO.

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CD101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm



DRAFT

LEGEND:

PROPOSED RIPRAP TYP.

NOTES:

1. CONTRACTOR SHALL PERFORM MINOR GRADING AND BENCHING ALONG THE WATERSIDE SLOPE IN ORDER TO PROVIDE A NEAT AND UNIFORM SLOPE OF 1.5:1 OR FLATTER PRIOR TO THE PLACEMENT OF THE NEW ROCK SLOPE PROTECTION (RSP)
2. NEW RSP SHALL BE PLACED FROM THE ELEV. 11.0 FT CONTOUR DOWN TO MHHW ELEV. 5.0 FT, UNO.
3. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING STRUCTURES AND APPURTENANCES, UNO.

811 Know what's below. Call before you dig.

SUBMITTAL	
#	Date

NORTH ORIENTATION

PROJECT ENGINEER

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VERTICAL DATUM	NAVD88

DRAWING SCALE: 1" = 10'

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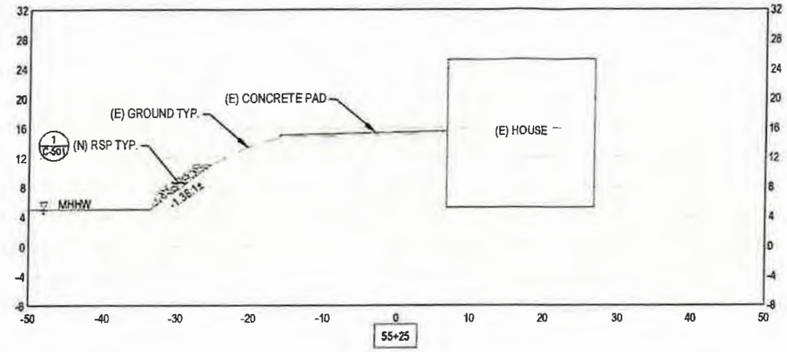
RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

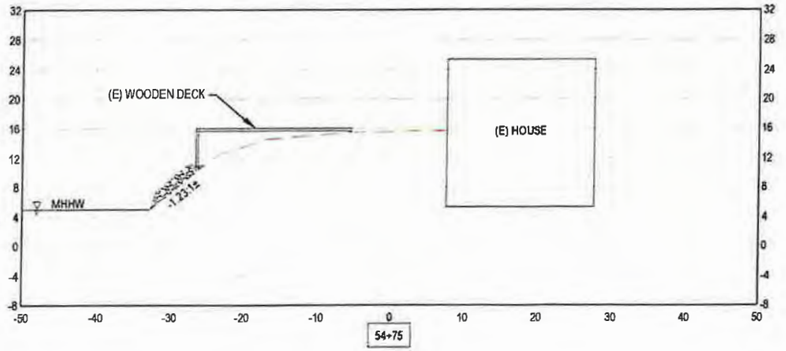
2472 COUNTRY CLUB BOULEVARD
CONSTRUCTION PLAN

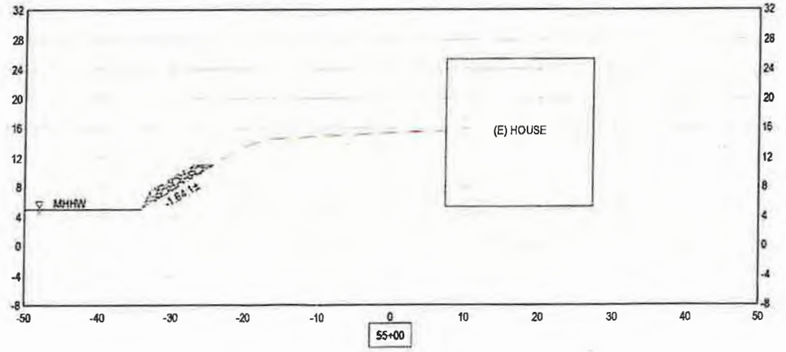
DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
3-CG101
SHEET 14 OF 16

FILE SPEC: P:\0806_Smith_Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2028\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\CG101.dwg
PLOT DATE: Dec 17, 2025 - 2:06pm







DRAFT

NOTES:

1. CONTRACTOR SHALL PERFORM MINOR GRADING AND BENCHING ALONG THE WATERSIDE SLOPE IN ORDER TO PROVIDE A NEAT AND UNIFORM SLOPE OF 1.5:1 OR FLATTER PRIOR TO THE PLACEMENT OF THE NEW ROCK SLOPE PROTECTION (RSP).
2. NEW RSP SHALL BE PLACED FROM THE ELEV. 11.0 FT CONTOUR DOWN TO MHHW ELEV. 5.0 FT, UNO
3. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING STRUCTURES AND APPURTENANCES, UNO

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SUBMITTAL	
%	Date

PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

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DRAWN BY NGC
CHECK BY EEA
HORIZONTAL DATUM CCS83, ZONE 3
VERTICAL DATUM NAVD88

DRAWING SCALE
1" = 10'

ORIGINAL DRAWING SCALE
0 ½" 1"

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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

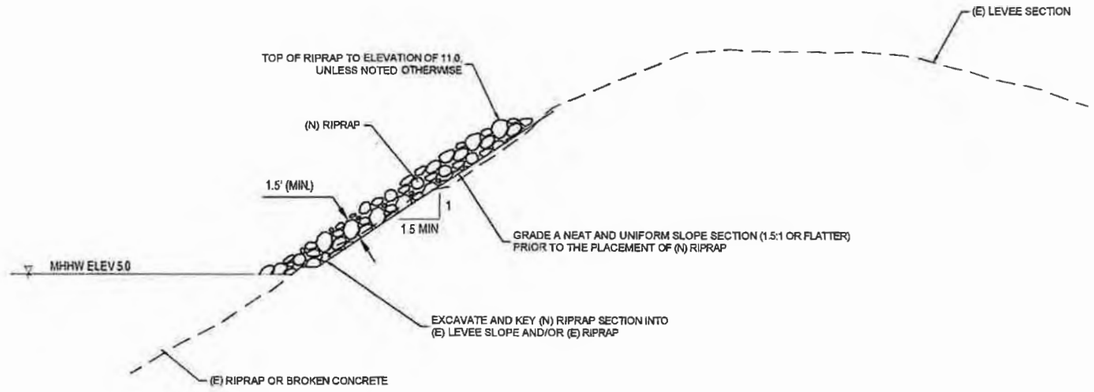
2472 COUNTRY CLUB BOULEVARD
CROSS SECTIONS

DATE
DECEMBER 28, 2025

SHEET IDENTIFICATION
3-C-301
SHEET 7 OF 16

KSN PROJECT FILE NO.

FILE: SPEC: P:\0806_Smith Tract\0570_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\C-301.dwg
PLOT DATE: Dec 17, 2025 - 2:05pm



1 TYPICAL LEVEE SECTION WITH RSP

SCALE: N.T.S.

DRAFT

FILE SPEC: P:\0806_Smith Tract\0670_Annual_Maint_Bid_Projects\FY_2025-2026\Phase I Residential Properties\08_Civil\400_Plans\020_CAD\Sheets\C-501.dwg
PLOT DATE: Dec 17, 2025 - 2:05pm

811 Know what's below. Call before you dig.

SUBMITTAL	
#	Date

PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY NGC
DRAWN BY NGC
CHECK BY EEA
HORIZONTAL DATUM CCS83, ZONE 3
VERTICAL DATUM NAVD88

DRAWING SCALE
AS SHOWN

ORIGINAL DRAWING SCALE
0 ½" 1"

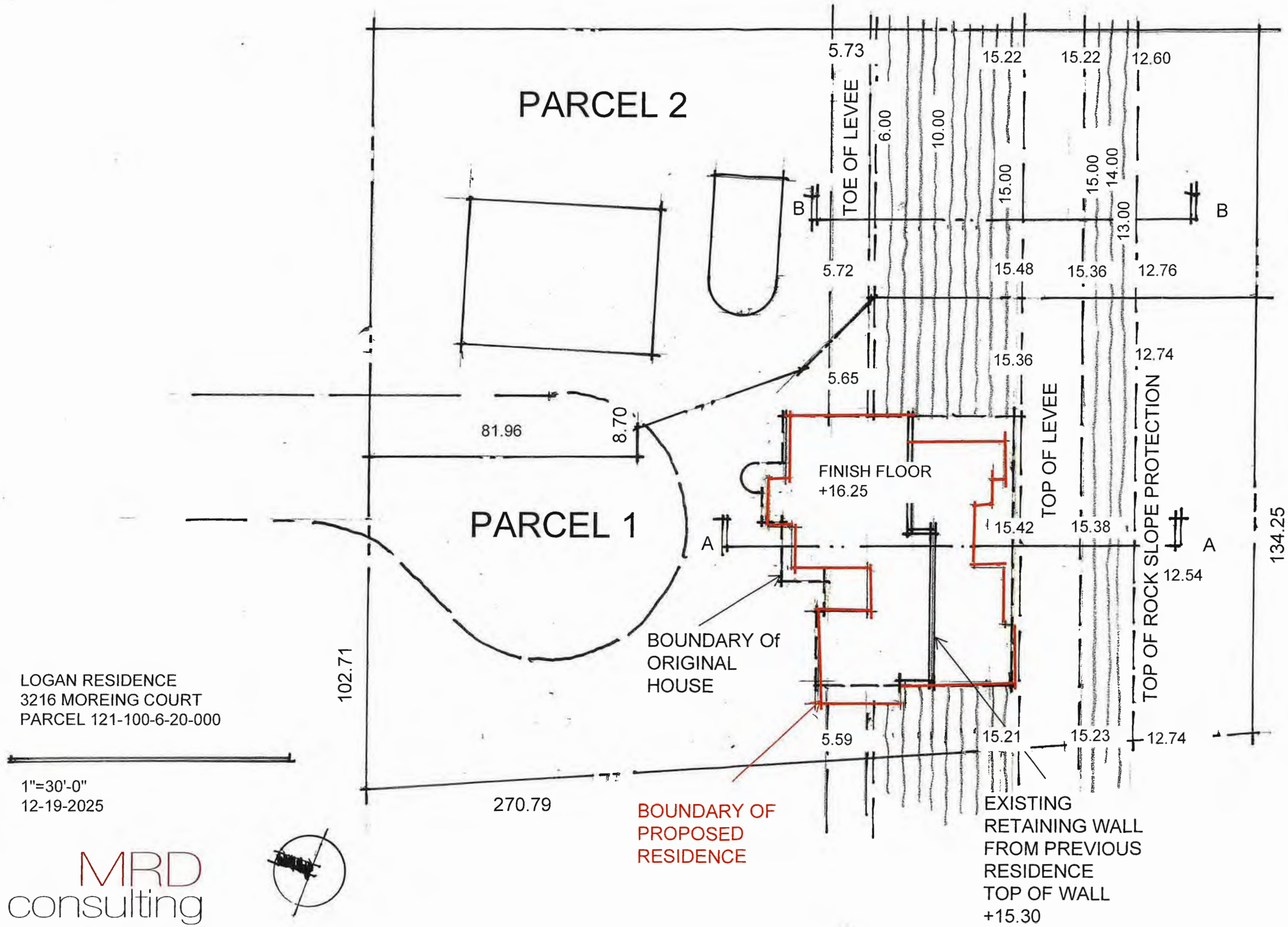
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CIVIL ENGINEERS & LAND SURVEYORS
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RECLAMATION DISTRICT NO. 1614
LEVEE MAINTENANCE PROJECT - FY 25/26 - PHASE I
STOCKTON, CALIFORNIA

DETAIL

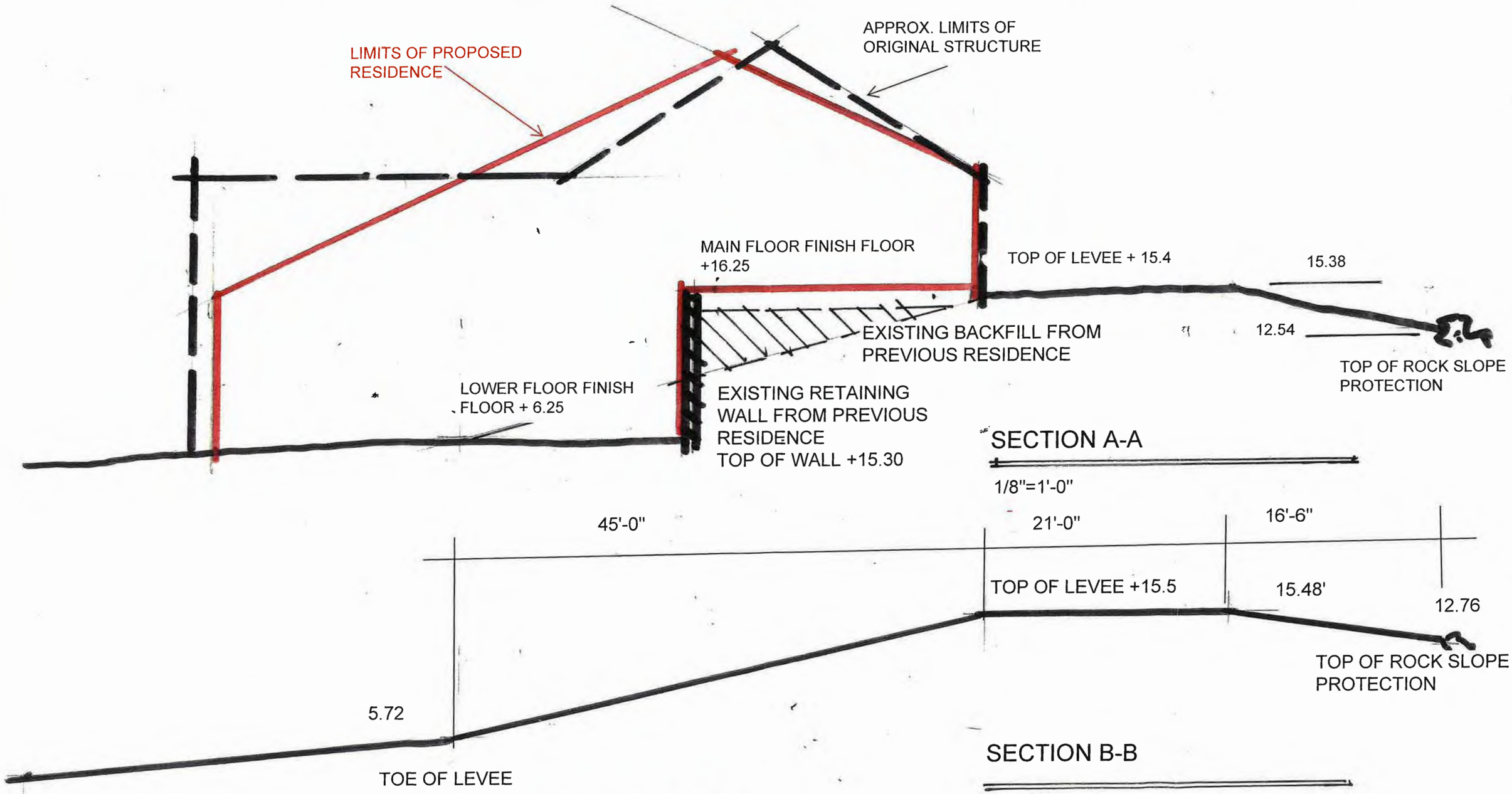
DATE
DECEMBER 26, 2025

SHEET IDENTIFICATION
C-501
SHEET 16 OF 16



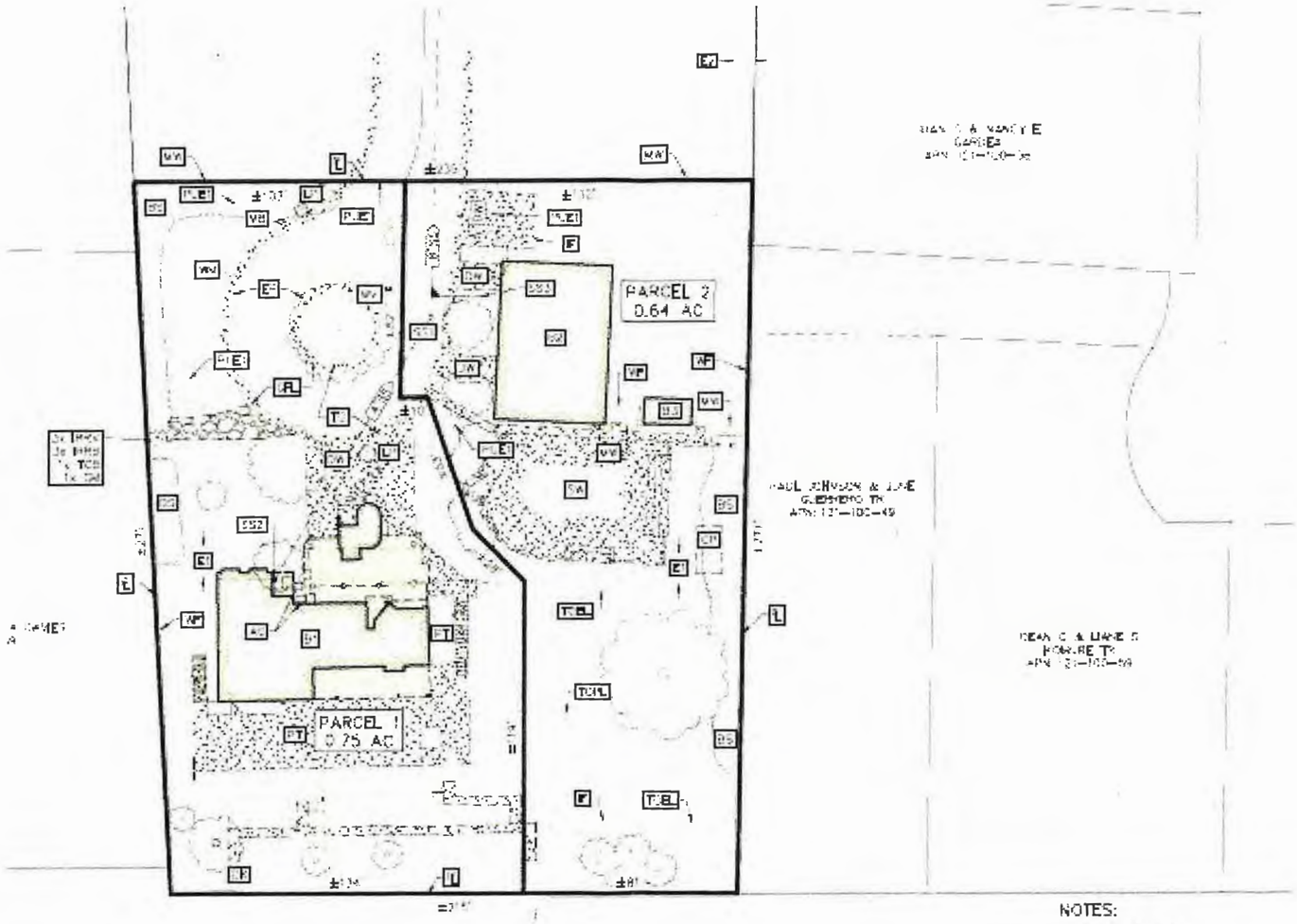
MRD consulting
Architecture • Design • Expert Opinion • LEED

Exhibit C



LOGAN RESIDENCE
3216 MOREING

MRD
MRD tina
consulting


PARCEL 2
0.64 AC
PARCEL 1
0.75 AC
SMITH'S CANAL
SH
NOTES:

GENERAL NOTES:

1 ALL WORK TO BE DONE IN COMPLIANCE WITH THE 2022 CRC, CEC, CPC, CMC, CEnC, & CAL-GREEN ALL CODES AS ADOPTED AND AMENDED BY THE LOCAL CITY, COUNTY OR OTHER JURISDICTIONAL AGENCY
2 BUILDER TO VERIFY ALL DIMENSIONS WRITTEN DIMENSIONS TAKE PREFERENCE OVER DRAWN, DRAFTSPERSON ASSUMES NO RESPONSIBILITY OTHER THAN CORRECTION OF DRAWINGS
3 SURFACE WATER TO DRAIN AWAY FROM BUILDING.
4 A HERS VERIFICATION AND TEST REPORT OF INSTALLED MEASURES IS REQUIRED AT FINAL INSPECTION.
5 GAS PLANS AND SPECIFICATIONS SHALL BE MADE AVAILABLE TO THE INSPECTOR PRIOR TO PLUMBING RI INSPECTION. PLANS SHALL INCLUDE ALL APPLIANCES TO BE CONNECTED, LIST BTU/HS FOR EACH GAS SEGMENT, LIST PIPE LENGTHS, INCLUDE ADDED LENGTH FOR FITTINGS. PLAN SHALL LIST APPROPRIATE TABLE USED FROM CHAPTER 12 OF THE CPC FOR THE GAS LINE SIZING.
6 PRIOR TO PLUMBING ROUGH-IN, PLUMBING DRAWINGS SHALL BE PROVIDED FOR VERIFICATION OF H&CW SIZING TO BATHROOM GROUPS AND LAUNDRY AREAS.
7 PRIOR TO HVAC ROUGH-IN, HVAC DRAWINGS SHALL BE PROVIDED WITH DUCTS SIZED USING ACCA STANDARDS

PLAN NOTES:

1 ADDRESS NUMBERS SHALL BE ARABIC NUMBERS OR ALPHABETICAL LETTERS (MIN 4" TALL WITH MIN 1/2" STROKE WIDTH) AND BE INSTALLED ON THE DWELLING IN SUCH A POSITION TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE PRIVATE ROAD SERVING THE DWELLING AND BE EXTERNALLY OR INTERNALLY ILLUMINATED AND MUST CONTRAST WITH THEIR BACKGROUND. IF THE ADDRESS NUMBER CANNOT BE SEEN FROM THE PRIVATE ROAD, AN ADDITIONAL ADDRESS SIGN SHALL BE POSTED AT THE ENTRANCE ON THE PRIVATE DRIVEWAY FROM THE PRIVATE ROAD. NUMBERS SHALL NOT BE SPELLED OUT.

2 BEFORE DIGGING IT IS NECESSARY TO CALL UNDERGROUND SERVICE ALERT (USA) AT 800 642 2444

SQUARE FOOTAGE SUMMARY

LOT AREA =	1 39 acres (2 parcels)
PARCEL 1 w/ MAIN DWELLING	0 75 acres
PARCEL 2 w/ ADU DWELLING	0 64 acres
MAIN DWELLING FOOTPRINT =	4 851 sq ft
EXISTING SQUARE FOOTAGE SUMMARY CONDITIONED SPACE (R3)	
LOWER FLOOR (R3) =	3,200 sq ft
UPPER FLOOR (R3) =	4,595 sq ft
TOTAL (R3) =	7,795 sq ft
REPLACED SQUARE FOOTAGE SUMMARY CONDITIONED SPACE (R3)	
LOWER FLOOR (R3) =	2,403 sq ft
UPPER FLOOR (R3) =	4,555 sq ft
TOTAL (R3) =	6,958 sq ft
CONVERTED (R3) TO (U) SPACE	797 sq ft
CONVERTED (R3) TO COVERED PATIO SPACE	40 sq ft

1

CONSTRUCTION TYPE:

TYPE	V-B SPRINKLED TWO STORY
OCCUPANCY:	DWELLING - R3
ZONING	R-1
LAND USE	DESIGNATION R

SCOPE OF WORK:

THIS PROJECT CONSIST OF
RENOVATIONS OF AN EXISTING SINGLE FAMILY DWELLING UNIT. EXTERIOR FOOTPRINT OF THE EXISTING DWELLING IS TO REMAIN OR BE REDUCED IN SIZE NO NEW WALLS ARE PLANNED OUTSIDE THE EXISTING EXTERIOR FOOTPRINT. FIRE SPRINKLERS TO BE ADDED DUE TO TOTAL REPLACEMENT OF THE ROOF FRAMING

SHEET INDEX

A-1	PLOT MAP & SHEET INDEX
A-2	LOWER FLOOR & FOUNDATION DEMO PLAN
A-3	UPPER FLOOR DEMO PLAN
A-4	LOWER FLOOR PLAN
A-5	UPPER FLOOR PLAN
A-6	FRONT & LEFT EXTERIOR ELEVATION
A-7	REAR & RIGHT EXTERIOR ELEVATION
A-8	FOUNDATION PLAN
A-9	FLOOR FRAMING & LOWER ROOF FRAMING PLAN
A-10.1	UPPER ROOF FRAMING PLAN
A-10.2	ROOF PLAN
A-11	FRAMING SECTIONS
A-12	FRAMING SECTIONS
A-13	DETAILS
A-14	LOWER LEVEL ELECTRICAL PLAN & SYMBOL LEGEND
A-15	UPPER LEVEL ELECTRICAL PLAN
A-16	GENERAL ELECTRICAL AND MECHANICAL NOTES
S-1	SHEAR WALL PLAN-1
S-2	SHEAR WALL PLAN-2
S-3	STRUCTURAL NOTES AND FASTENING SCHEDULE
CG-1	CALGREEN MANDATORY MEASURES
BMP	CONSTRUCTION BEST MANAGEMENT PRACTICES

DEFERRED SUBMITTALS BY OTHERS:

- FIRE SPRINKLER PLANS
- SOLAR COVERAGE PLANS
- PLUMBING PLAN SHOP DRAWINGS
- HVAC PLAN SHOP DRAWINGS
- REMOVAL AND RE-INSTALLATION OF THE EXISTING SOLAR PANEL SYSTEM

2

ENERGY NOTES:

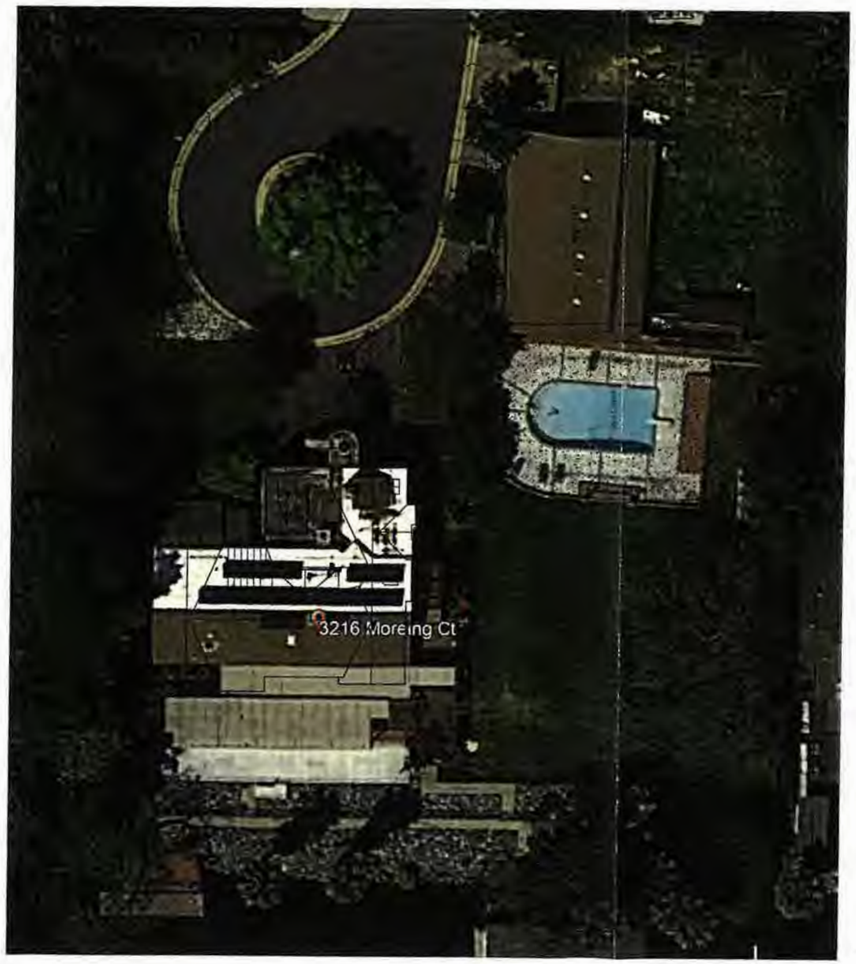
1 THE FOLLOWING FEATURES MUST BE INSTALLED AS CONDITION FOR MEETING THE MODELED ENERGY PERFORMANCE REQUIREMENTS
- INSULATION BELOW ROOF DECK R19 2

2 HERS REQUIREMENTS
- KITCHEN RANGE HOOD
- MINIMUM AIRFLOW
- VERIFIED SEER/SEER2
- FAN EFFICACY WATTS/CFM
- VERIFIED HEART PUMP RATED HEATING CAPACITY
- DUCT LEAKAGE TESTING
- LOW-LEAKAGE AIR HANDLING UNIT

1

- LOWER FLOOR VCHP for MINI-SPLITS

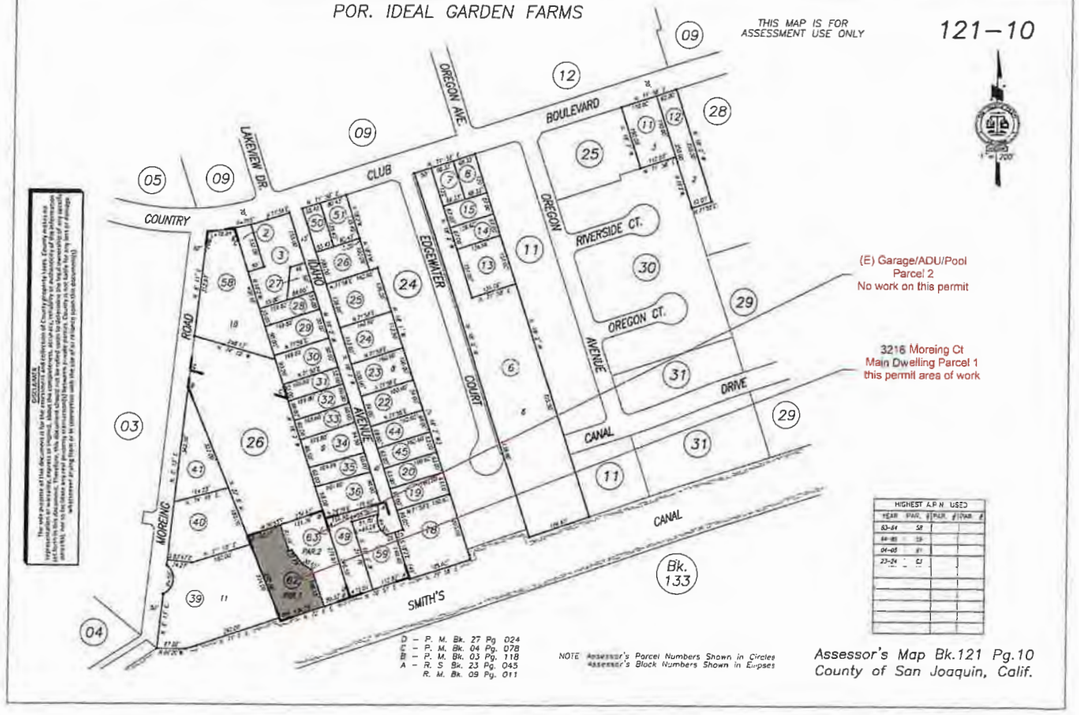
2



N

1 PLOT PLAN
SCALE: 1" = 20'-0"

0 20' 40



Assessor's Map Bk.121 Pg.10
County of San Joaquin, Calif.

2 ASSESSOR'S PARCEL MAP

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF WARD ENGINEERING, LLC.
ALL DESIGN INFORMATION CONTAINED IN THESE DRAWINGS IS FOR USE ON THE SPECIFIED PROJECTS AND SHALL NOT BE USED OTHERWISE WITHOUT THE EXPRESSED WRITTEN CONSENT OF WARD ENGINEERING, LLC.

REGISTERED PROFESSIONAL ENGINEER JONATHEW A. WARD C 74034 Exp 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG NET
HERALD, CA 95638 209 263 1382
PRIME CONSULTANT: WARDENG NET

DATE 7-17-25

NO.	REVISION ISSUE DESCRIPTION
1	PLAN CHECK COMMENTS
2	TITLE 24 UPDATES

HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

PROJECT NAME AND ADDRESS:

PLOT PLAN,
PARCEL MAP,
PROJECT NOTES,
& SHEET INDEX

SHEET TITLE:

ORIGINAL SCALE IS IN INCHES
0 1 2
FOR FULL SCALE PRINT ON 24x36" PAPER

DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-1 SHEET #:

FOUNDATION AND LOWER FLOOR DEMO NOTES

1. ALL (E) WINDOWS & DOORS TO BE REMOVED
2. (E) FOUNDATION TO REMAIN
3. ALL (E) WOOD FLOOR FRAMING TO BE REMOVED
4. ALL (E) EXTERIOR FINISH TO BE REMOVED
5. ALL (E) PLUMBING TO BE REMOVED
6. ALL (E) ELECTRICAL TO BE REMOVED
7. ALL (E) INTERIOR FINISH TO BE REMOVED

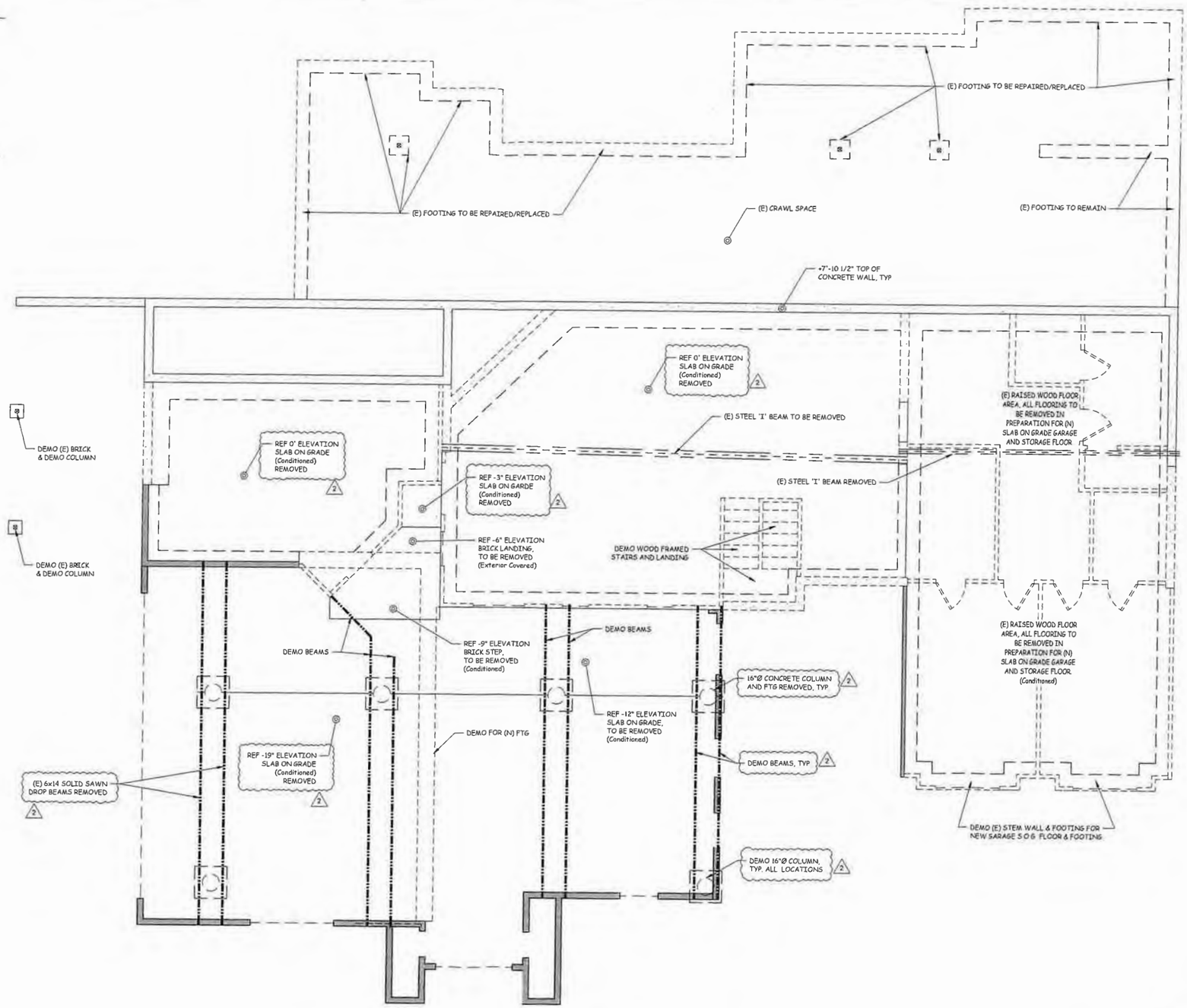
(E) LOWER FLOOR SQUARE FOOTAGE SUMMARY

3,200 sq ft (E) Conditioned Space (R3)
797 sq ft (R3) Space to be Converted to Garage/Storage Space (U)
2,403 sq ft (E) Conditioned Space to be replaced (R3)

(repair or replace as needed)

Demo Wall Legend

- (E) 2x Wood Stud Wall to be Removed
- (E) 2x Wood Stud Wall to be Replaced 2
- (E) 8" Concrete Wall to Remain
- (E) 8" Concrete Wall Removed 2



1 LOWER FLOOR/FOUNDATION DEMO PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD C 74034 Exp 6-30-26 CIVIL STATE OF CALIFORNIA
PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO.	REVISION ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25
2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA. 95204
APN: 121-100-620-000
PROJECT NAME AND ADDRESS:

LOWER FLOOR & FOUNDATION DEMO PLAN
SHEET TITLE:

ORIGINAL SCALE IS IN INCHES
0 1 2
FOR FULL SCALE PRINT ON 24x36" PAPER

DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-2
SHEET #:

UPPER FLOOR DEMO NOTES

1. ALL (E) WINDOWS & DOORS TO BE REMOVED
2. (E) 2x10 FLOOR JOISTS TO REMAIN, REMOVE AS NEEDED FOR (N) CONSTRUCTION ONLY
3. ALL (E) EXTERIOR FINISH TO BE REMOVED
4. ALL (E) PLUMBING TO BE REMOVED
5. ALL (E) ELECTRICAL TO BE REMOVED
6. ALL (E) INTERIOR FINISH TO BE REMOVED
7. ALL (E) ROOF FRAMING TO BE REMOVED

(E) UPPER FLOOR SQUARE FOOTAGE SUMMARY

4,595 sq ft (E) Conditioned Space (R3)
40 sq ft (R3) to be Converted to Covered Deck Space
232 sq ft (E) Exterior Open Deck Space

(repair or replace as needed)

Demo Wall Legend

(E) 2x Wood Stud Wall to be Removed

(E) 2x Wood Stud Wall to be Replaced

(E) OPEN DECK FRAMING AND SUPPORT MEMBERS TO BE REMOVED

REF +10' ELEVATION FINISH FLOOR, TYP. (Conditioned)

REF +10' ELEVATION FINISH FLOOR, TYP (Conditioned)

(E) OPEN DECK FRAMING AND SUPPORT MEMBERS TO BE REMOVED

N

1 UPPER FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD C 74034 Exp 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL:

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WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT WARDENG.NET

NO.	REVISION ISSUE DESCRIPTION	DATE
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2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

PROJECT NAME AND ADDRESS:

UPPER FLOOR
DEMO PLAN

SHEET TITLE:

ORIGINAL SCALE IS IN INCHES
0 1 2
FOR FULL SCALE PRINT ON 24x36" PAPER

DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A3.3

SHEET #

Wall Legend

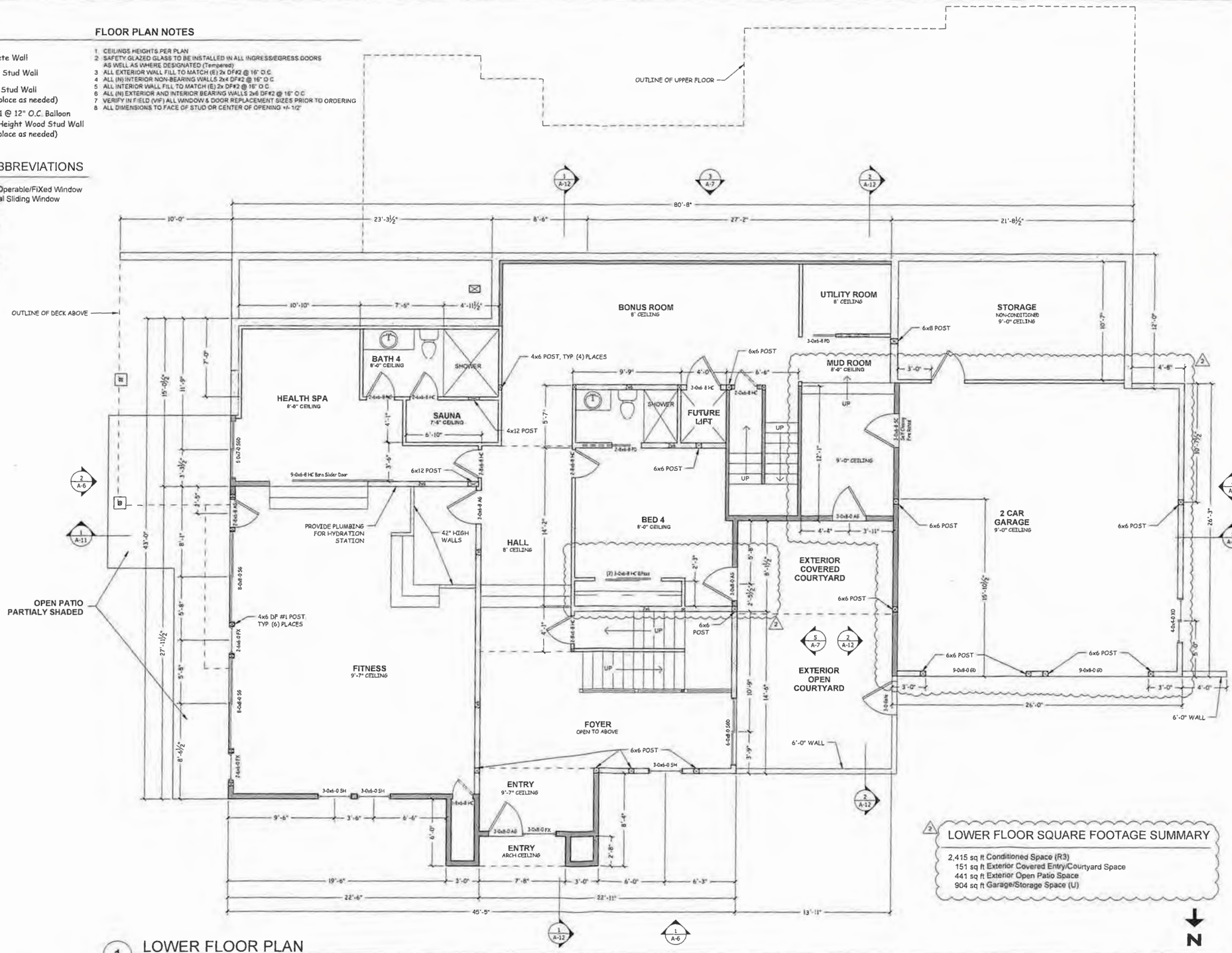
- (E) 8" Concrete Wall
- (N) 2x Wood Stud Wall
- (E) 2x Wood Stud Wall (repair or replace as needed)
- (E) 2x6 DF#1 @ 12" O.C. Balloon Framed Full Height Wood Stud Wall (repair or replace as needed)

FLOOR PLAN NOTES

1. CEILINGS HEIGHTS PER PLAN
2. SAFETY GLAZED GLASS TO BE INSTALLED IN ALL INGRESS/EGRESS DOORS AS WELL AS WHERE DESIGNATED (Tempered)
3. ALL EXTERIOR WALL FILL TO MATCH (E) 2x DF#2 @ 16" O.C.
4. ALL (N) INTERIOR NON-BEARING WALLS 2x4 DF#2 @ 16" O.C.
5. ALL INTERIOR WALL FILL TO MATCH (E) 2x DF#2 @ 16" O.C.
6. ALL (N) EXTERIOR AND INTERIOR BEARING WALLS 2x6 DF#2 @ 16" O.C.
7. VERIFY IN FIELD (VIF) ALL WINDOW & DOOR REPLACEMENT SIZES PRIOR TO ORDERING
8. ALL DIMENSIONS TO FACE OF STUD OR CENTER OF OPENING +/- 1/2"

WINDOW & DOOR ABBREVIATIONS

- XO ..... Horizontal Sliding Operable/FIXed Window
- SH ..... Single Hung Vertical Sliding Window
- CM ..... CasMent Window
- AG ..... Atrium Glass Door
- HC ..... Hollow Core Door
- SC ..... Solid Core Door
- PD ..... Pocket Door
- GD ..... Garage Panel Door
- SG ..... Sliding Glass Door
- BD ..... Sliding Barn Door



LOWER FLOOR SQUARE FOOTAGE SUMMARY

2,415 sq ft Conditioned Space (R3)
151 sq ft Exterior Covered Entry/Courtyard Space
441 sq ft Exterior Open Patio Space
904 sq ft Garage/Storage Space (U)

N

1 LOWER FLOOR PLAN
SCALE: 1/4" = 1'-0"

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF WARD ENGINEERING, LLC.
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REGISTERED PROFESSIONAL ENGINEER — MATTHEW A. WARD — C 74034 — EXP 6-30-25 — CIVIL — STATE OF CALIFORNIA
PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO.	REVISION/ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25
2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000
PROJECT NAME AND ADDRESS:

LOWER FLOOR PLAN
SHEET TITLE:

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0 1 2
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DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

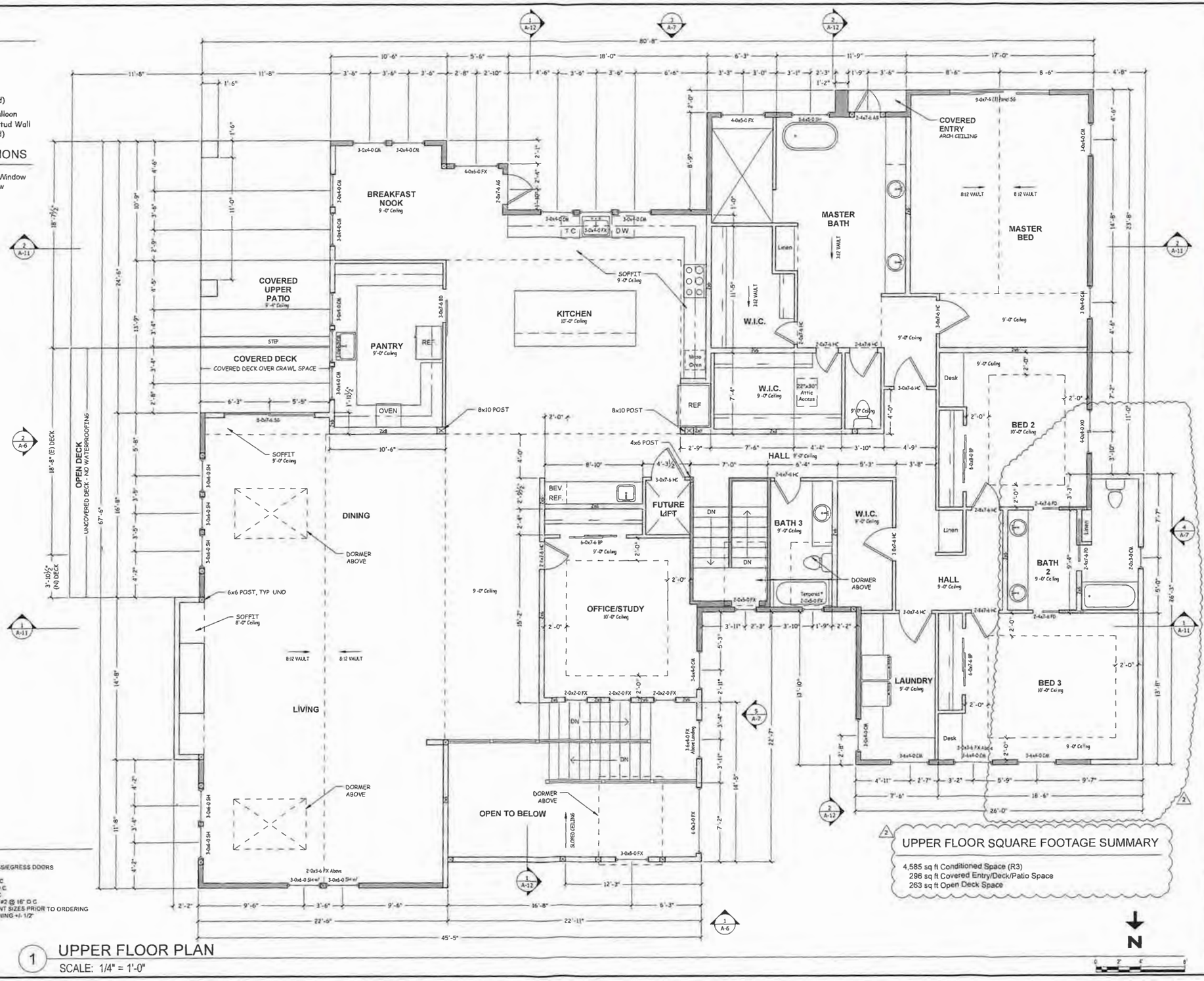
A-4
SHEET #: 336

Wall Legend

- (E) 8" Concrete Wall
- (N) 2x Wood Stud Wall
- (E) 2x Wood Stud Wall (repair or replace as needed)
- (E) 2x6 DF#1 @ 12" O.C. Balloon Framed Full Height Wood Stud Wall (repair or replace as needed)

WINDOW & DOOR ABBREVIATIONS

XO ..... Horizontal Sliding Operable/FiXed Window
SH ..... Single Hung Vertical Sliding Window
CM ..... CasMent Window
AG ..... Atrium Glass Door
HC ..... Hollow Core Door
SC ..... Solid Core Door
PD ..... Pocket Door
GD ..... Garage Panel Door
SG ..... Sliding Glass Door
BD ..... Sliding Barn Door



FLOOR PLAN NOTES

1. CEILINGS HEIGHTS PER PLAN
2. SAFETY GLAZED GLASS TO BE INSTALLED IN ALL INGRESS/EGRESS DOORS AS WELL AS WHERE DESIGNATED (Tempered)
3. ALL EXTERIOR WALL FILL TO MATCH (E) 2x DF#2 @ 16" O.C
4. ALL (N) INTERIOR NON-BEARING WALLS 2x4 DF#2 @ 16" O.C
5. ALL INTERIOR WALL FILL TO MATCH (E) 2x DF#2 @ 16" O.C
6. ALL (N) EXTERIOR AND INTERIOR BEARING WALLS 2x6 DF#2 @ 16" O.C
7. VERIFY IN FIELD (VIF) ALL WINDOW & DOOR REPLACEMENT SIZES PRIOR TO ORDERING
8. ALL DIMENSIONS TO FACE OF STUD OR CENTER OF OPENING +/- 1/2"

UPPER FLOOR SQUARE FOOTAGE SUMMARY

4,585 sq ft Conditioned Space (R3)
296 sq ft Covered Entry/Deck/Patio Space
263 sq ft Open Deck Space

1 UPPER FLOOR PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. WARD
C 74034
EXP 6-30-26
CIVIL
STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO	REVISION/ISSUE DESCRIPTION	DATE
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2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000
PROJECT NAME AND ADDRESS:

UPPER FLOOR PLAN
SHEET TITLE:

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CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

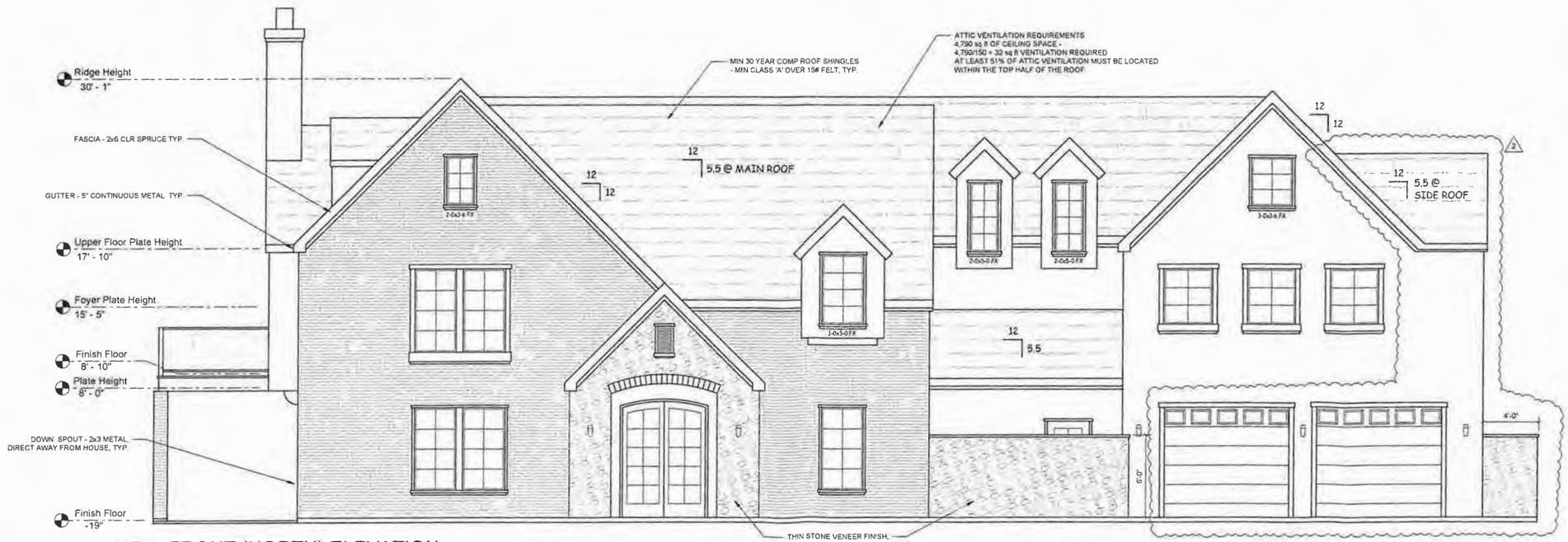
A-5
SHEET #:
337

SHEET NOTES:

1. THIS SHEET IS TO SHOW EXTERIOR ELEVATIONS, FINISH MATERIALS, AND WINDOW SIZES NOT SHOWN ON PLANS
2. ALL EXTERIOR WINDOWS AND DOORS TO HAVE APPROVED CORROSION-RESISTANT FLASHING APPLIED SHINGLE-FASHION IN SUCH A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER. CRC R703.8



2 LEFT (EAST) ELEVATION
SCALE: 1/4" = 1'-0"



1 FRONT (NORTH) ELEVATION
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
JONATHEN A. WARD
C 74034
EXP 6-30-25
CIVIL
STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
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NO.	REVISION/ISSUE DESCRIPTION	DATE
2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT.
STOCKTON, CA 95204
APN: 121 100-620 000

PROJECT NAME AND ADDRESS:

FRONT (NORTH) & LEFT (EAST) EXTERIOR ELEVATION

SHEET TITLE:

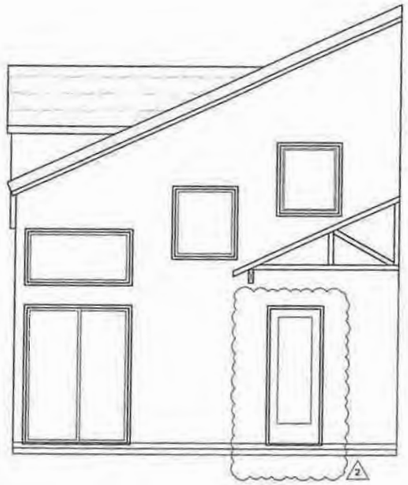
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CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025

A-6

1 THIS SHEET IS TO SHOW EXTERIOR ELEVATIONS AND FINISH MATERIALS.

2 ALL EXTERIOR WINDOWS AND DOORS TO HAVE APPROVED CORROSION-RESISTANT FLASHING APPLIED SHINGLE-FASHION IN SUCH A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER. CRC R703.8



5 INNER RIGHT (WEST) ELEVATION
SCALE: 1/4" = 1'-0"



4 RIGHT (WEST) ELEVATION
SCALE: 1/4" = 1'-0"



3 REAR (SOUTH) ELEVATION
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. WARD
C 74034
EXP 6-30-25
CIVIL
STATE OF CALIFORNIA

PROFESSIONAL SEAL:

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WARDENG.NET
HERALD, CA 95638 209.263.1382
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DATE: 12-7-25

NO.	REVISION ISSUE DESCRIPTION
2	POST APPROVAL FIELD CHANGES

HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA. 95204
APN: 121-100-620-000

PROJECT NAME AND ADDRESS:

REAR (SOUTH)
& RIGHT (WEST)
EXTERIOR ELEVATION

SHEET TITLE:

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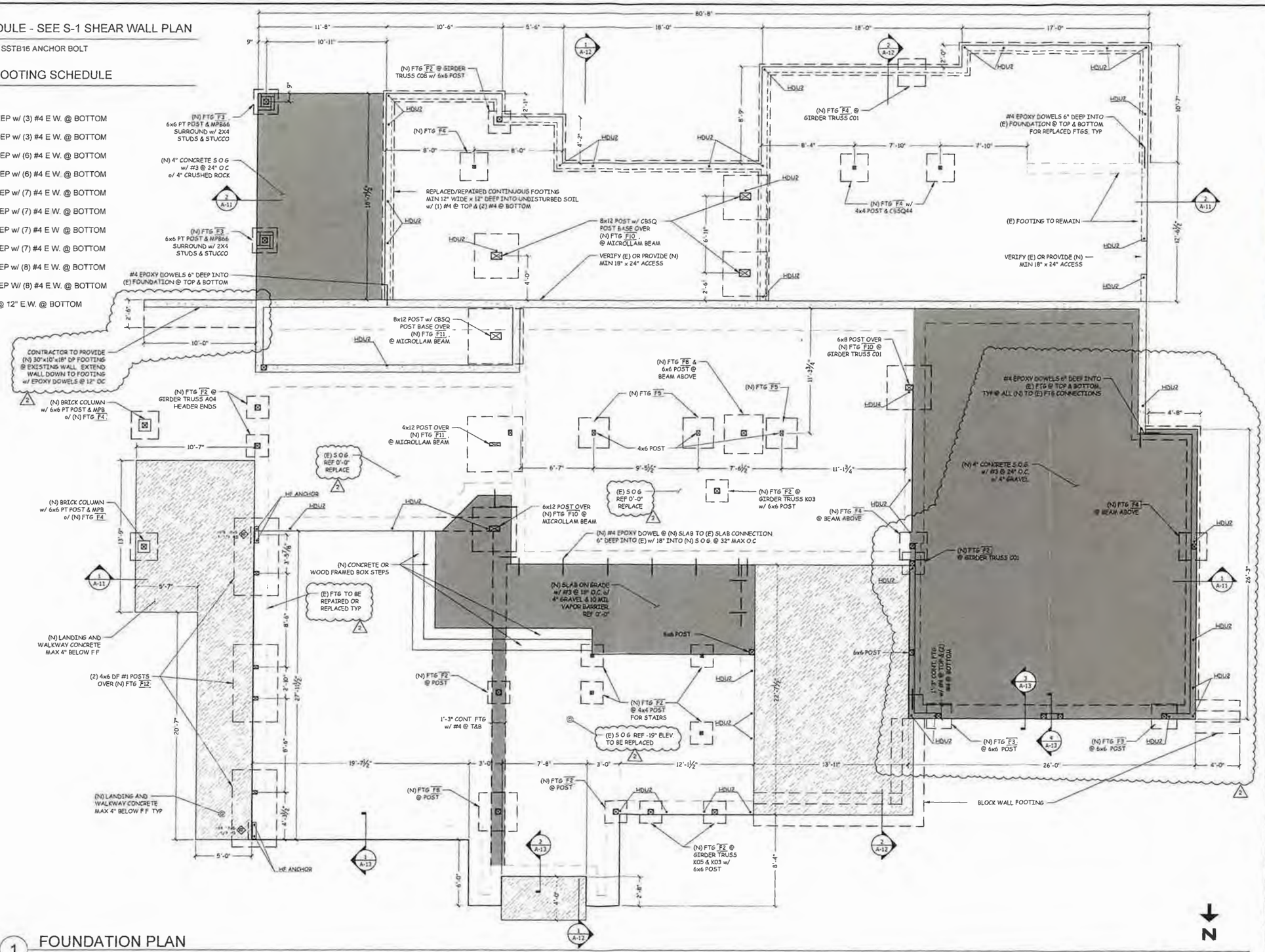
A337
SHEET #

HOLDOWN SCHEDULE - SEE S-1 SHEAR WALL PLAN

HDU2 = SIMPSON HDU2 w/ SSTB16 ANCHOR BOLT

CONCRETE PAD FOOTING SCHEDULE

F1	NOT USED
F2	= 24" SQUARE x 18" DEEP w/ (3) #4 E W. @ BOTTOM
F3	= 27" SQUARE x 18" DEEP w/ (3) #4 E W. @ BOTTOM
F4	= 30" SQUARE x 18" DEEP w/ (6) #4 E W. @ BOTTOM
F5	= 33" SQUARE x 18" DEEP w/ (6) #4 E W. @ BOTTOM
F6	= 36" SQUARE x 18" DEEP w/ (7) #4 E W. @ BOTTOM
F7	= 39" SQUARE x 18" DEEP w/ (7) #4 E W. @ BOTTOM
F8	= 42" SQUARE x 18" DEEP w/ (7) #4 E W @ BOTTOM
F9	= 45" SQUARE x 18" DEEP w/ (7) #4 E W. @ BOTTOM
F10	= 48" SQUARE x 18" DEEP w/ (8) #4 E W. @ BOTTOM
F11	= 60" SQUARE x 18" DEEP W/ (8) #4 E W. @ BOTTOM
F12	= 7'x4'x18" DEEP w/ #4 @ 12" E.W. @ BOTTOM



1 FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD C 74034 EXP 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO.	REVISION/ISSUE DESCRIPTION	DATE
2	POST APPROVAL FIELD CHANGES	12-7-25

PROJECT NAME AND ADDRESS:

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

SHEET TITLE:

FOUNDATION PLAN

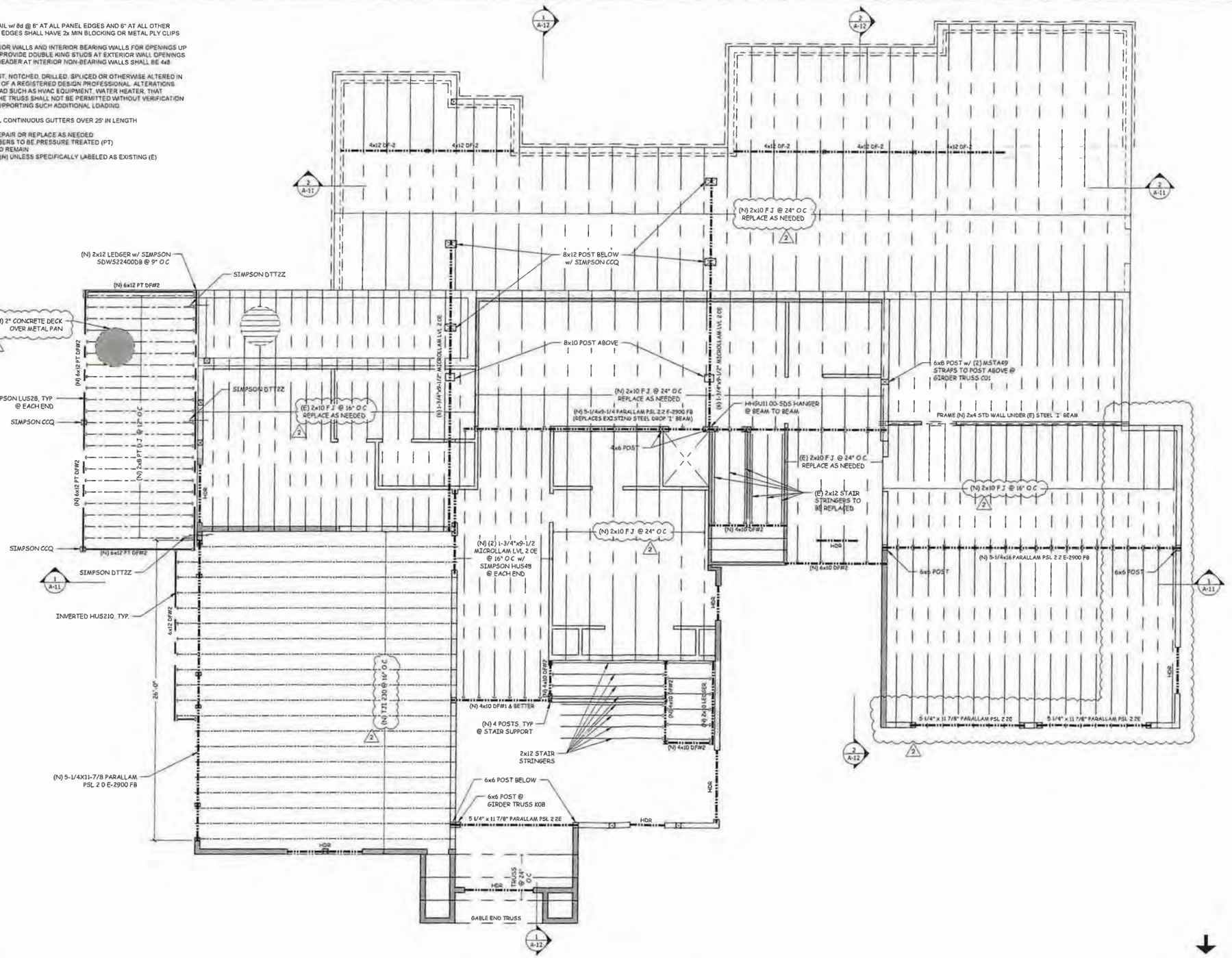
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DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-8
340
SHEET #:

PLAN NOTES:

1. **ROOF AND FLOOR SHEATHING**
   SHEATHING SHALL BE 7/16" OSB NAIL w/ 8d @ 6" AT ALL PANEL EDGES AND 6" AT ALL OTHER SUPPORTS. UNSUPPORTED PANEL EDGES SHALL HAVE 2x MIN BLOCKING OR METAL PLY CLIPS
2. **HEADERS**
   MINIMUM HEADERS (HDR) AT EXTERIOR WALLS AND INTERIOR BEARING WALLS FOR OPENINGS UP TO 8'-0" SHALL BE 6x12 DF#2 U O.N. PROVIDE DOUBLE KING STUDS AT EXTERIOR WALL OPENINGS 8'-0" WIDE OR GREATER. MINIMUM HEADER AT INTERIOR NON-BEARING WALLS SHALL BE 4x8
3. **TRUSSES**
   TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD SUCH AS HVAC EQUIPMENT, WATER HEATER, THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSS SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.
4. **GUTTERS**
   PROVIDE EXPANSION JOINTS AT ALL CONTINUOUS GUTTERS OVER 25' IN LENGTH
5. **FLOOR FRAMING**
   - (E) FLOOR FRAMING TO REMAIN - REPAIR OR REPLACE AS NEEDED
   - (N) EXPOSED WOOD FRAMING MEMBERS TO BE PRESSURE TREATED (PT)
   - ORIGINAL CRAWL SPACE ACCESS TO REMAIN
6. ALL ITEMS TO BE CONSIDERED NEW (N) UNLESS SPECIFICALLY LABELED AS EXISTING (E)



1 FLOOR FRAMING and LOWER ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

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PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO	REVISION ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25
2	POST APPROVAL FIELD CHANGES	12-7-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000
PROJECT NAME AND ADDRESS:

FLOOR FRAMING & LOWER ROOF FRAMING PLAN
SHEET TITLE:

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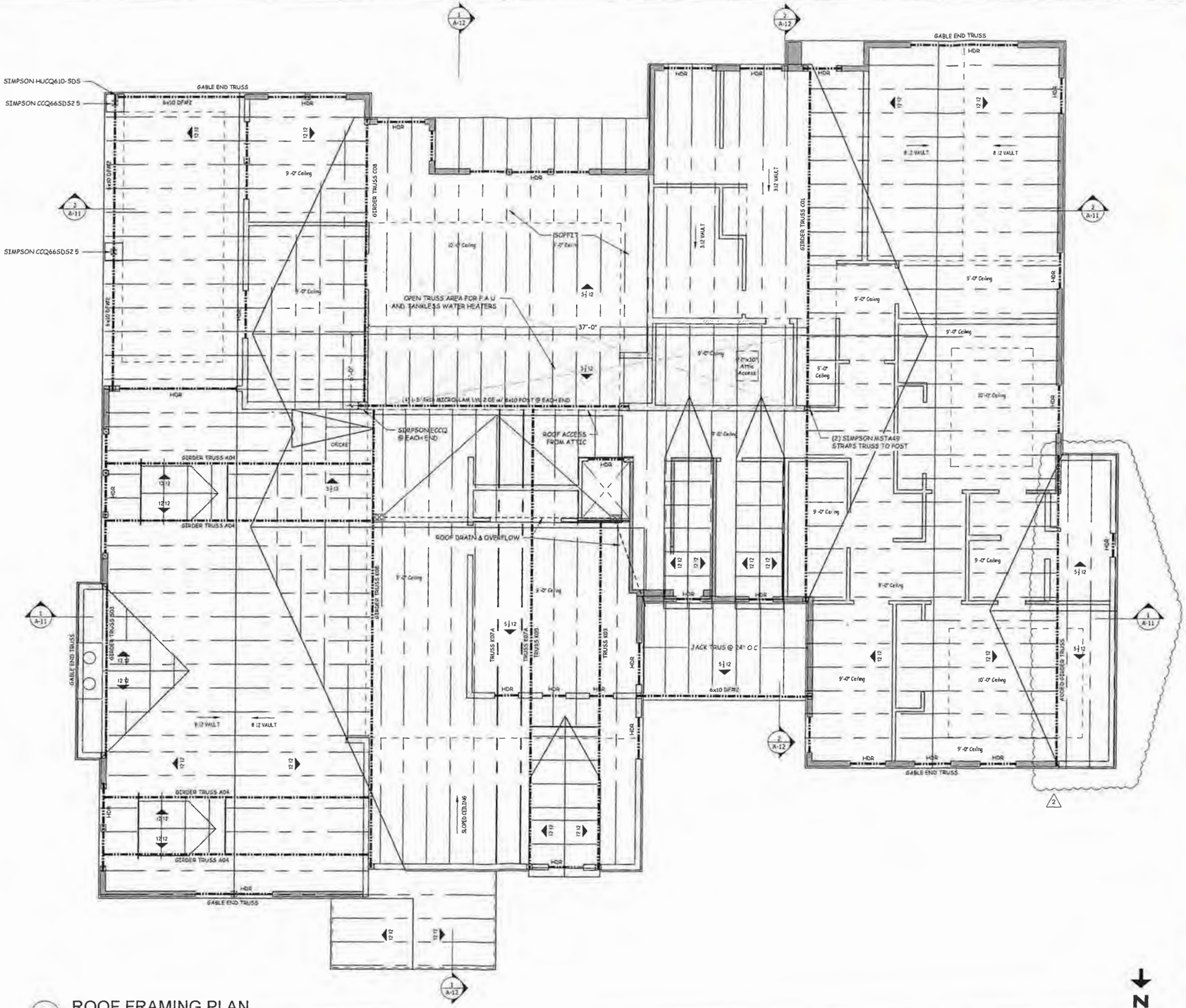
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CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-9
SHEET #: 341

PLAN NOTES:

SEE DETAILS FOR ADDITIONAL INFORMATION

1. ROOF AND FLOOR SHEATHING
   SHEATHING SHALL BE 7/16" OSB. NAIL w/ 8d @ 6" AT ALL PANEL EDGES AND 6" AT ALL OTHER SUPPORTS. UNSUPPORTED PANEL EDGES SHALL HAVE 2x MIN BLOCKING OR METAL PLY CLIPS.
2. HEADERS
   MINIMUM HEADERS (HDR) AT EXTERIOR WALLS AND INTERIOR BEARING WALLS FOR OPENINGS UP TO 6'-0" SHALL BE 6x12 DF#2 U.O.N. PROVIDE DOUBLE KING STUDS AT EXTERIOR WALL OPENINGS 8'-0" WIDE OR GREATER. MINIMUM HEADER AT INTERIOR NON-BEARING WALLS SHALL BE 4x8.
3. ATTIC FURNACE
   THE DISTANCE FROM THE PASSAGEWAY ACCESS TO THE FURNACE SHALL NOT EXCEED 20 FEET MEASURED ALONG THE CENTER LINE OF THE PASSAGEWAY. THE PASSAGEWAY SHALL BE UNOBSTRUCTED AND SHALL HAVE CONTINUOUS SOLID FLOORING NOT LESS THAN 24" WIDE FROM THE ENTRANCE OPENING TO THE FURNACE. A LEVEL WORKING PLATFORM NOT LESS THAN 30" IN DEPTH AND WIDTH SHALL BE PROVIDED IN FRONT OF THE ENTIRE FIRE BOX SIDE OF THE WARM AIR FURNACE. IF THE FURNACE TEMPERATURE LIMIT CONTROL, AIR FILTER, FUEL CONTROL VALVE, VENT COLLAR, OR AIR HANDLING UNIT IS NOT SERVICEABLE FROM THE FIRE BOX SIDE OF THE FURNACE, A CONTINUOUS FLOOR NOT LESS THAN 24" IN WIDTH SHALL BE PROVIDED FROM THE PLATFORM IN FRONT OF THE FIRE BOX SIDE OF THE FURNACE TO AND IN FRONT OF THIS EQUIPMENT. A PERMANENT ELECTRIC OUTLET AND LIGHTING FIXTURE CONTROLLED BY A SWITCH LOCATED AT THE REQUIRED PASSAGEWAY OPENING SHALL BE PROVIDED AT OR NEAR THE FURNACE.
4. TRUSSES
   TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD SUCH AS HVAC EQUIPMENT, WATER HEATER, THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSS SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING. SEE TRUSS DOCUMENTS FOR TRUSS LOCATIONS AND LAYOUT. TRUSS LOCATIONS ON THIS PLAN ARE SCHEMATIC IN NATURE FOR ORIENTATION ONLY. TRUSS DOCS TAKE PRESCIENCE.
5. GUTTERS
   PROVIDE EXPANSION JOINTS AT ALL CONTINUOUS GUTTERS OVER 25' IN LENGTH.



1 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER — MATTHEW A. WARD — C 74034 — Exp 9-30-26 — CIVIL — STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO.	REVISION ISSUE DESCRIPTION	DATE
1	POST APPROVAL FIELD CHANGES	12-7-25

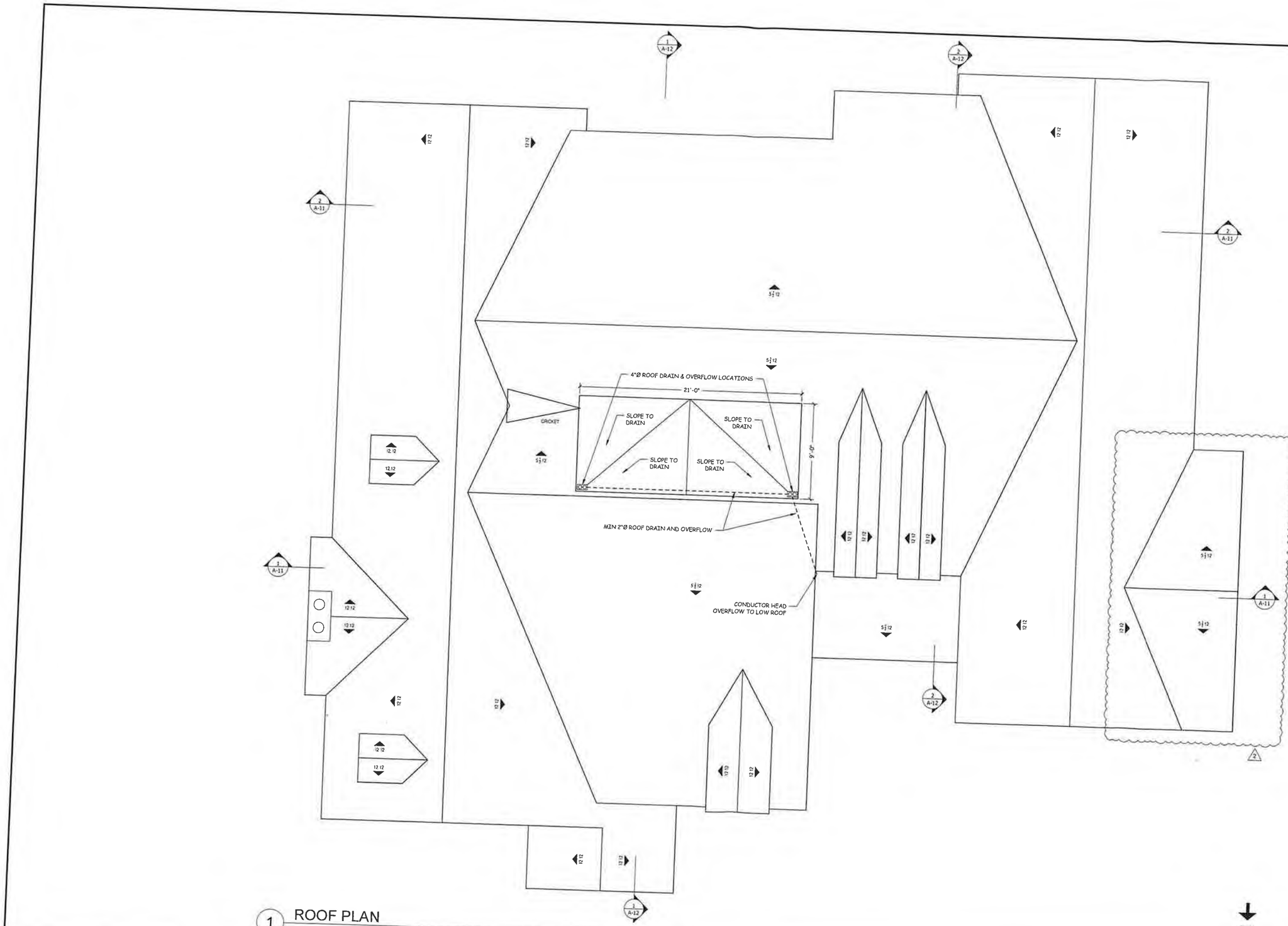
PROJECT NAME AND ADDRESS:
HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

SHEET TITLE:
ROOF FRAMING PLAN

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SCALE:	AS SHOWN

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SHEET #:



1 ROOF PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
MATTHEW A. WARD
C 74034
Exp 6-30-25
CIVIL
STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209 263 1382
PRIME CONSULTANT: WARDENG.NET

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1	PLAN CHECK COMMENTS	7-17-25
2	POST APPROVAL FIELD CHANGES	12-7-25

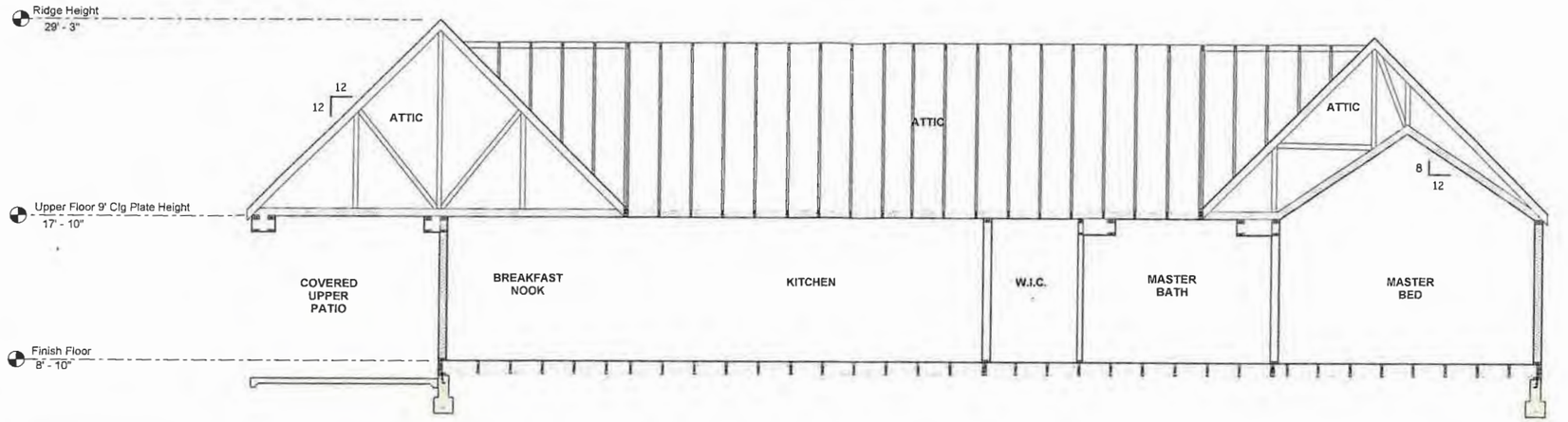
HOME REMODEL
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3216 MOREING CT
STOCKTON, CA 95204
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ROOF PLAN

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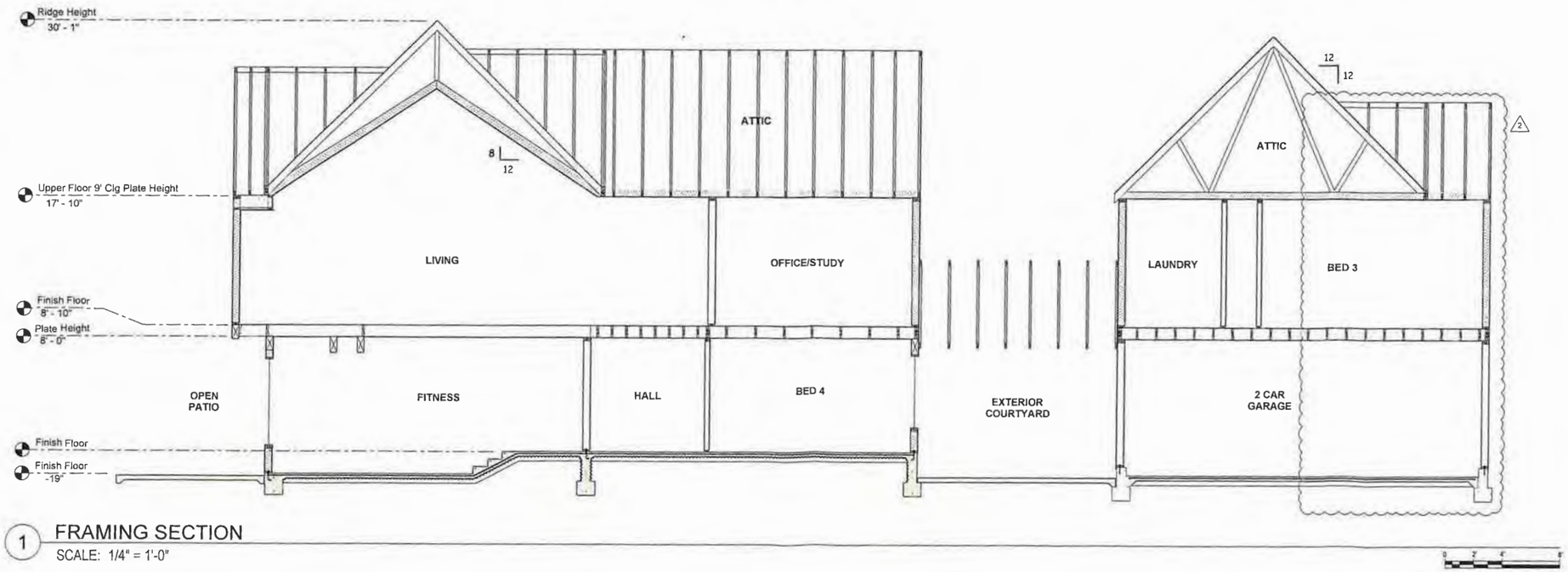
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PROJECT:	24-102
DATE	4-04-2025
SCALE	AS SHOWN

343
A-10.2
SHEET #:



2 FRAMING SECTION

SCALE: 1/4" = 1'-0"



1 FRAMING SECTION

SCALE: 1/4" = 1'-0"

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Exp 6-30-25
CIVIL
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PROFESSIONAL SEAL

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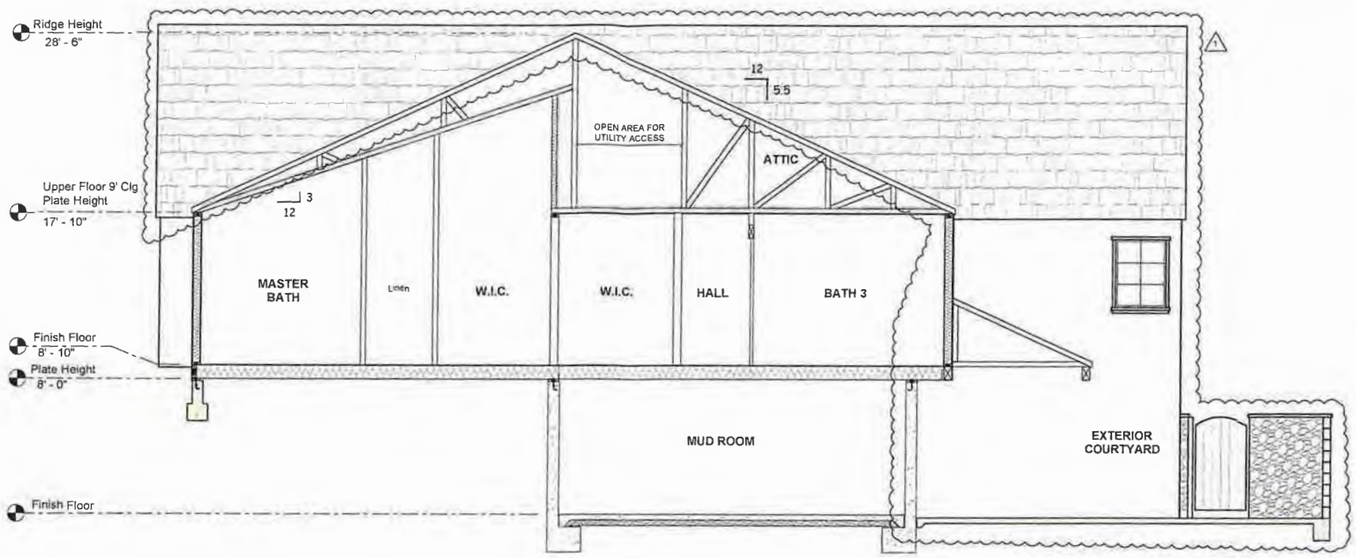
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FRAMING SECTIONS
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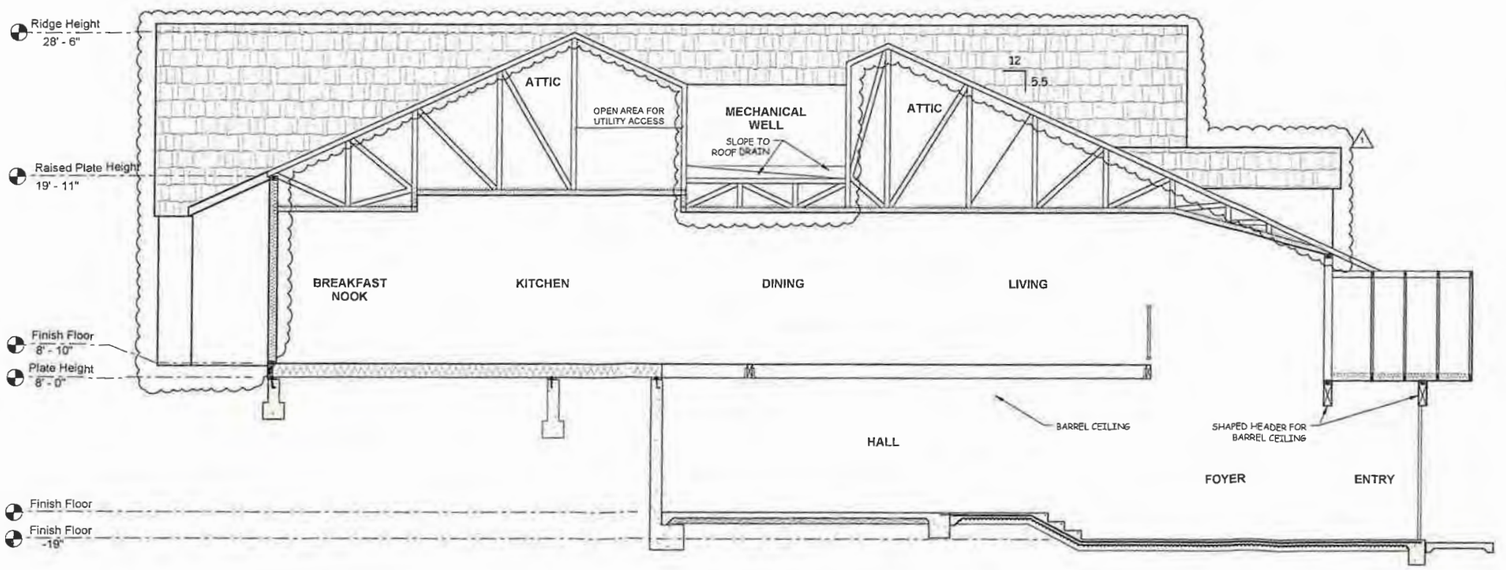
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A-11
SHEET #:



2 FRAMING SECTION

SCALE: 1/4" = 1'-0"



1 FRAMING SECTION

SCALE: 1/4" = 1'-0"

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PRIME CONSULTANT: WARDENG.NET

NO	REVISION ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25

HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-160-620-000

PROJECT NAME AND ADDRESS:

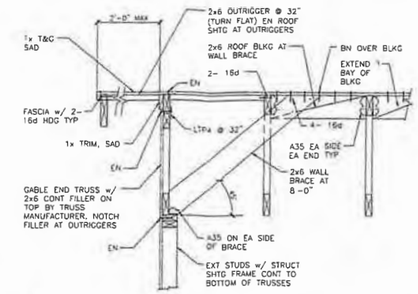
FRAMING SECTIONS

SHEET TITLE:

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FOR FULL SCALE PRINT ON 24x36" PAPER

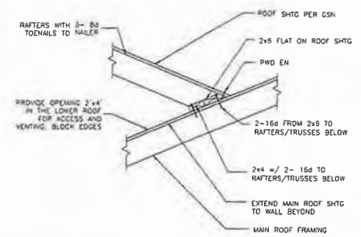
DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-12
SHEET #:



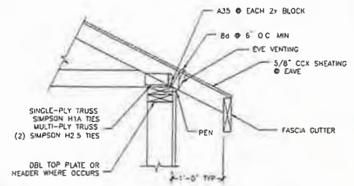
7 GABLE END WALL BRACING

1"=1'-0"



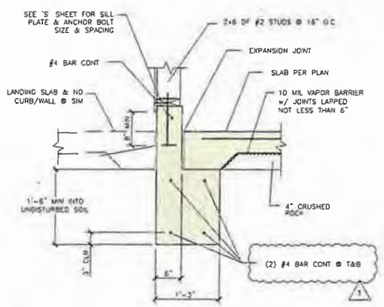
6 CALIFORNIA OVER FRAMING

3/4"=1'-0"



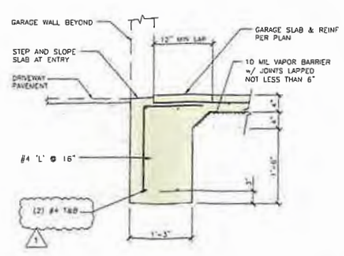
5 TYP EVE DETAIL

3/4"=1'-0"



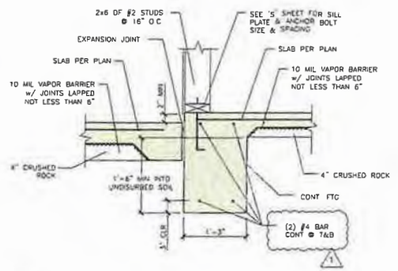
4 GARAGE PERIMETER FTG w/ CURB

3/4"=1'-0"



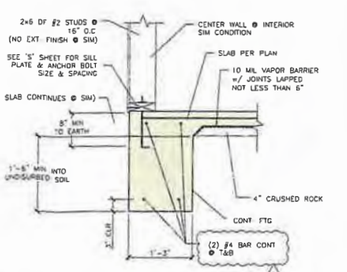
3 GARAGE FTG @ OPENING

3/4"=1'-0"



2 HOUSE TO PATIO/LANDING/GARAGE S.O.G.

3/4"=1'-0"



1 CONT. PERIMETER FTG

3/4"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD No. C 74034 Exp 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL:

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

NO.	REVISION/ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

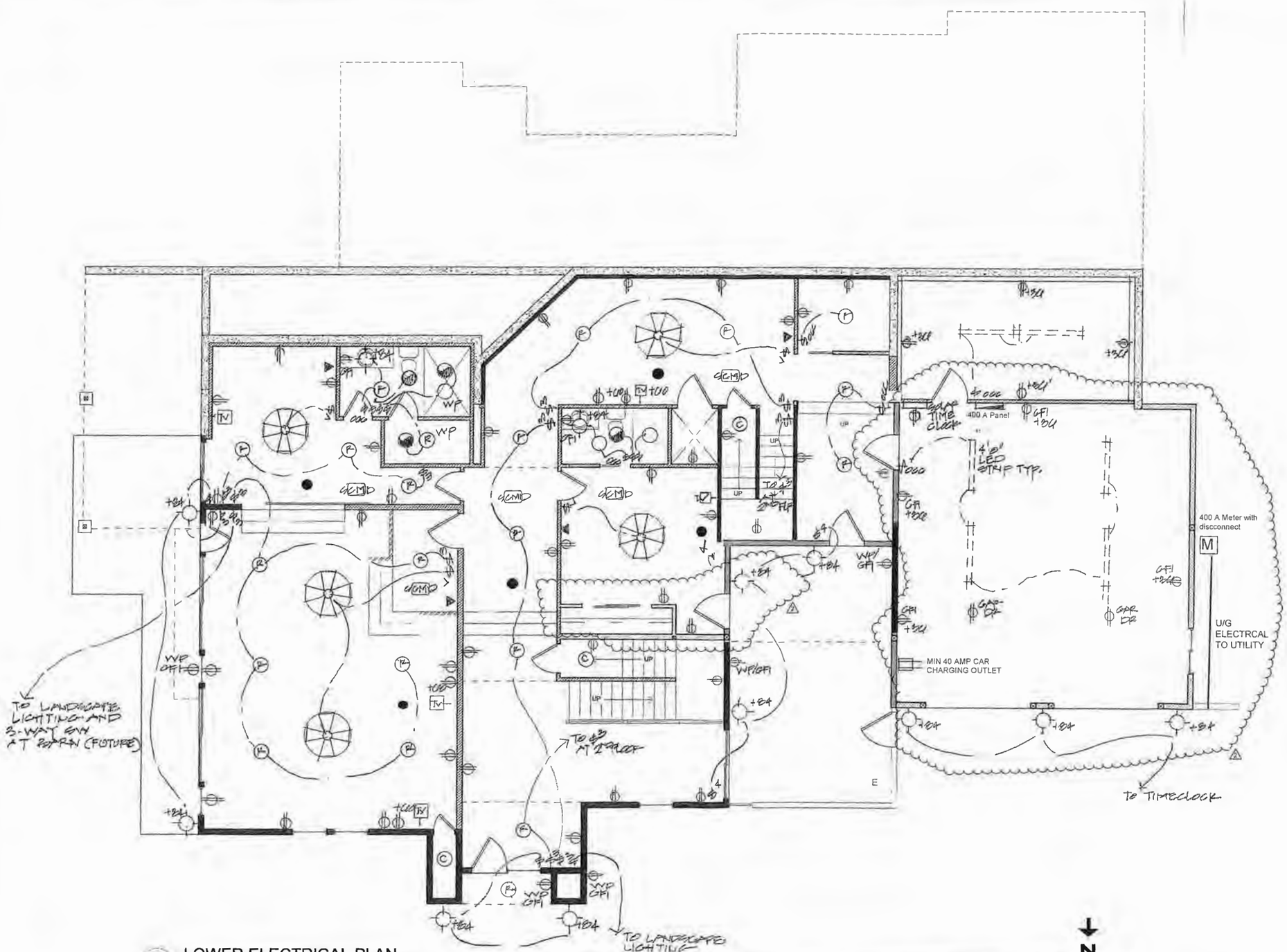
PROJECT NAME AND ADDRESS:

SHEET TITLE: DETAILS

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DRAWN BY:	WE
DESIGNED BY:	MD
CHECKED BY:	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE:	AS SHOWN

A-13
SHEET #:



1 LOWER ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD C 74034 EXP 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL

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WARDENG.NET
HERALD, CA 95638 209.263.1382
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NO	REVISION ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25
2	POST APPROVAL FIELD CHANGES	12-7-25

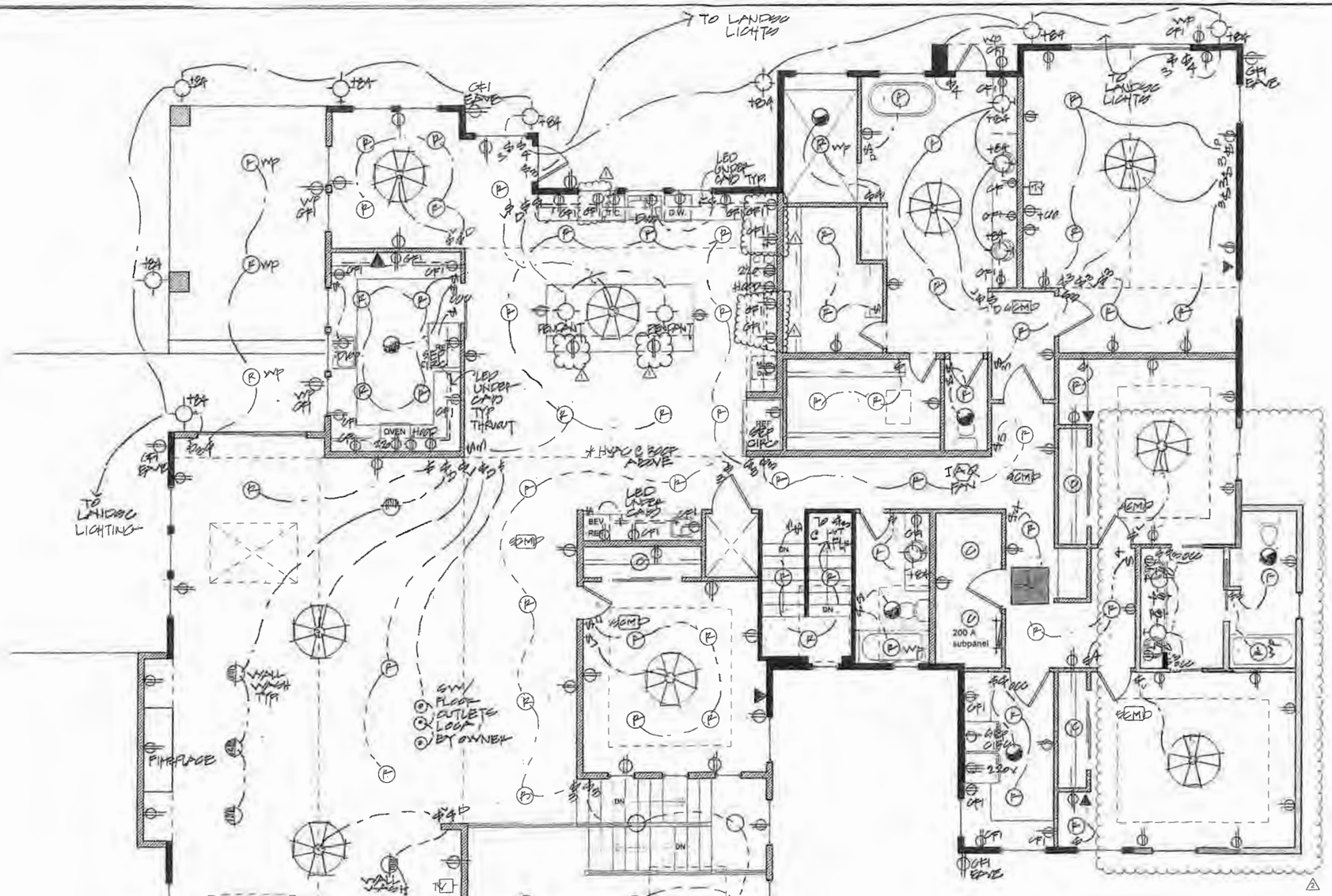
HOME REMODEL
FOR
HAYDEN & AMY LOGAN
3216 MORENG CT
STOCKTON, CA. 95204
APN: 121-100-620-000
PROJECT NAME AND ADDRESS:

SHEET TITLE:

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CHECKED BY	MW
PROJECT:	24-102
DATE:	4-04-2025
SCALE	AS SHOWN

A-14
SHEET #:



PROVIDE 3 EA 220V 50 a OUTLETS AT ROOF WELL FOR HVAC EQUIPMENT

* CONFIRM HVAC DISCONNECTS & POWER REQUIRED AT GROUND & ROOF LOCA. W/ OWNER & MECH. CONTR.

- ALL EXT. LIGHTING CONN. TO SOLAR TIME CLOCK
- ALL EXT EAVE OUTLETS CONN. TO SOLAR TIME CLOCK

N

1 UPPER ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER JONATHAN A. WARD C 74034 Exp 6-30-25 CIVIL STATE OF CALIFORNIA

PROFESSIONAL SEAL

WARD ENGINEERING LLC
WARDENG.NET
HERALD, CA 95638 209.263.1382
PRIME CONSULTANT: WARDENG.NET

DATE: 7-17-25, 12-7-25

NO.	REVISION ISSUE DESCRIPTION
1	PLAN CHECK COMMENTS
2	POST APPROVAL FIELD CHANGES

HOME REMODEL FOR HAYDEN & AMY LOGAN
3216 MOREING CT
STOCKTON, CA 95204
APN: 121-100-620-000

PROJECT NAME AND ADDRESS:

SHEET TITLE:

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DESIGNED BY	MD
CHECKED BY	MW
PROJECT	24-102
DATE	4-04-2025
SCALE:	AS SHOWN

A-15

SHEET #:

CA ELECTRICAL READINESS

E1 California Energy Code section 160.9 - The electrical service panel bus bars shall be 225A minimum per CEC, equipped with surge protector and dedicated breaker space for future electrification of the following equipment with wire stubbed within 3 of the appliance when natural gas or propane appliances are installed.
- A. Dedicated Electric vehicle fast charging circuit 40A 240V
- B. Dedicated Electric resistance or heat pump water heating circuit 30A 240V and dedicated 20A 120V outlet for recirc pump
- C. Dedicated circuit for oven/stove combination 50A 240V. When items are separated, each shall have its own dedicated 40A 208v circuit
- D. Dedicated indoor heat pump fan coil circuit at each gas fired HVAC unit 30A 240V
- E. Dedicated clothes drying circuit for either an electric or heat pump dryer, 30A 240V

E2 CEnergyC 150.0(s) - BESS (battery energy storage system) All new one and two family single homes shall be provided with reserved space for transfer switch within 3 of main panel and either a:
- A. A min 60A sub panel with a minimum of 4 circuits for connection to the future emergency/battery to sub panel using breaker space in sub panel or
- B. Battery interconnection to sub panel. Sub panel shall have minimum of 4 branch circuits

E3 Show the proposed location, size, burial depth and length of run for all new electrical lines.
- A. Specify conduit type, wire type and size to be used.
- B. Note trace wire shall be provided for locating
- C. Trace tape shall be placed above

E4 Battery Energy Storage Systems (BESS) Mounting and room enclosures shall be provided with the following and detailed on the plans:
- A. One line diagram showing connection of all power producing and consumption devices and their connection to the main panel.
- B. Provide BESS detail mounting of battery system to wall
- C. BESS systems shall be installed in shaded portions of the structure when mounted outside
- D. BESS systems mounted in garages shall be protected by bollards to prevent vehicle impacts to the batteries. If batteries are mounted > 48" above Finish Floor in front of vehicles, or mounted on sidewalls in a 30" or greater depth alcove, bollards are not required.
- E. The maximum BESS capacity to be installed in any one room is 20 Kwh

NEC and CEC LIGHTING

E5 All lighting shall be high efficacy. The definition of "high efficacy luminaires" includes all light sources identified as "efficient" under the 2022 Standards. This includes linear fluorescent, pin based compact fluorescent, GU-24 base CFL, HID, and induction. High efficacy products include any luminaire that contains a JA8-compliant lamp or other light source. In other words, any luminaire can qualify as high efficacy as long as it meets the requirements of Section 150.0 (k) and Joint Appendix JA8.

E6 Any JA8-compliant lamp or luminaire must be controlled by a vacancy sensor or dimmer. This requirement translates to any screw-base luminaire, ceiling recessed downlight, dedicated LED luminaire, or luminaire with an LED lamp. (Note: Preset scene controllers and EMCS can take the place of dimmers as long as the functionality meets code requirements).

E7 All outdoor lighting shall be high efficacy. In addition, wall mounted lighting shall be controlled by one of the following combinations
- A. Photocell and motion sensor
- B. Photocell and time switch
- C. Astronomical time clock
- D. EMCS with features of astronomical time clock, does not allow the luminaire to be ON during the day, and may be programmed to automatically turn lighting OFF at night.

E8 Exterior Doors
- A. Light for egress shall be mounted above and within 18" of door or in soffit above door.

E9 All fixtures located in wet areas (over tubs and showers, outdoors, etc.) shall be rated for wet locations

NEC OUTLETS and SWITCHES

E10 Mounting heights
- A. CRC 327 Mount all outlets no less than 17" to the top of the loughin box from floor
- B. CRC 327 - Push buttons (garage door and doorbell, etc.) no more than 48" aff
- C. CRC 327 Switches shall be mounted no higher than 48" to the top of the RI box
- D. Outdoor outlets - within 6' of grade/finished surface
- E. Garage outlets a minimum of 42" AFF.
- F. CEC section 406.12 All 120V -250V outlet/receptacles shall be tamper resistant in the areas listed in section

E11 Outlets shall be provided in the following spaces as described below:
- A. Habitable spaces. Outlets in Living, Dining, Family, Game, Bedroom, offices/libraries and Kitchens shall be spaced as follows
  - i. Outlets shall be placed on walls over 2 in length
  - ii. Outlets shall be located no more than 6 from an opening that touches the floor and extends to a header or ceiling
  - iii. Outlet spacing on wall as measured using the interior perimeter shall be spaced no more than 12 apart.
  - iv. Kitchens shall be provided with a minimum of (2) circuits.
  - v. Kitchen microwave shall have a dedicated circuit along with range hood if separate
  - vi. Outlets along kitchen countertops shall be spaced 4 apart with spacing starting 2 left and right of the range and 2 left and right of the sink .
  - vii. Each island/peninsula shall have a minimum of (1) outlet when surface area is less than 9 sq ft, 2 outlets for anything greater than 9 sq ft up to 18 sq ft, and one additional outlet for each additional 18 sq ft or fraction thereof.
- B. Non Habitable spaces
  - i. Outlets in bathroom shall be placed at each lavatory location.
  - ii. Outlets in hallways shall be placed with one outlet when hallway exceeds 4 in depth and be spaced no more than 25 on center
  - iii. Outlets in closets. Outlets are not required in closets may be placed at Owners direction. When installed they shall be AFCI protected.
  - iv. Laundry rooms. Dedicated Outlets shall be provided for the washer and dryer.
  - v. CEC 250.52(G)(1) Garages shall be equipped with (1)120V 20A GFCI protected outlet for each vehicle bay (defined as 1 parking space)
- C. at each exterior door a 20A 120V GFCI protected outlet in a weatherproof enclosure mounted no more than 60" above finished floor or deck
- D. at each HVAC Exterior and interior attic mounted equipment location a 20A 120V GFCI protected outlet. Exterior outlets shall be in a weatherproof enclosure and shall be shown within 25 of equipment.
- E. "NO OUTLET SHALL BE INSTALLED WITHIN 50" of a tub/shower or shower unit of any kind"

E12 All outlets in bathrooms, all kitchen receptacles serving the counters, outdoors with direct grade level access and in garages, laundry area, basements and within 6' of sinks and lavatories shall be GFCI protected. CEC, Article 210.8(A)

E13 All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in all living spaces, including kitchen shall be protected by AFCI (Arc-fault circuit interrupter) or GFCI (Ground fault circuit interrupter). CEC 210.12.
- A. Dedicated corded plug-in outlets shall be provided for Motors over ½ hp including
  - i. Refrigerators (GFCI)
  - ii. Freezers (GFCI)
  - iii. Washers (GFCI)
  - iv. Dryers (GFCI)
  - v. Furnace/HVAC equipment (GFCI if outdoors)
  - vi. Garbage disposers (GFCI)
  - vii. Microwaves (AFCI)
  - viii. Standalone kitchen hoods (AFCI)
  - ix. Restrooms (GFCI)
  - x. Dishwashers (GFCI)
  - xi. Kitchen Receptacles
- B. Dedicated circuits shall be provided for all 240 equipment.

E14 All outlets on the exterior of the building and mounted within a defined wet area (basement, garage, laundry room, expansive windows subject to condensation, within 2 of exterior door, etc.) shall be GFCI protected.

NEC CEILING HUNG EQUIPMENT

E15 Installation
- A. Indoor
  - i. Vacancy sensor shall be installed on at least one light with all other lights controlled by vacancy sensor or dimmer
    1. Garages
    2. Restrooms
    3. Hallways
    4. Closets
    5. Laundry Rooms
    6. All other non-habitable spaces
  - ii. hi light shall be installed within 18" of a clothes hanger
  - iii. Dimmers shall be provided for all other lights

E16 Outlet boxes or outlet box systems used as the sole support of a ceiling-suspended (paddle) fan shall be listed, shall be marked by their manufacturer as suitable for the purpose, and shall not support ceiling-suspended (paddle) fans that weigh more than 70 lb. For outlet boxes or outlet box systems designed to support ceiling suspended (paddle) fans that weigh more than 35 lb., the required marking shall include the maximum weight to be supported.

E17 Smoke and Carbon Monoxide Detection with Alarm Monitors:
- A. Smoke alarms shall not be installed within a 36" horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
- B. Smoke alarms shall not be installed within a 36" horizontal path from the tip of the blade of a ceiling-suspended fan
- C. Smoke alarms shall be permanently wired with a battery backup and shall be located in each bedroom, outside each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling.
- D. Carbon monoxide alarms shall be permanently wired with a battery backup and shall be located outside of each separate sleeping area in the immediate vicinity of the bedroom(s) and on every level of the dwelling. Smoke and CO2 alarms shall be interconnected
- E. Smoke and carbon monoxide detectors shall be interconnected, hardwired with a battery backup
- F. Carbon monoxide detectors are required where garages are attached to dwelling or fuel burning appliances are installed within the dwelling and sleeping units.

E18 All bathroom, laundry and isolated bathtub/shower compartment or water closet (has a closeable door) compartments shall be provided with a minimum 50 cfm fan. In rooms with bathtubs and showers, Provide a wall or fan installed humidistat to remove humidity to low levels to prevent mold (CEC IAQ requirement)

HVAC and PLUMBING EQUIPMENT

E20 Provide 30A 240V and 20A 120V circuit locations at the electric heat pump water heater. CEC 150

E21. Provide a disconnect for the outdoor HVAC unit, circuit shall be GFCI protected per NEC section 210.8 (Circuits with where voltage on leg is less than 150V)

E22. Provide separate switching from lights for Ventilation fans.

E23. Provide whole house ventilation fan control, provide placard in ½" hi lettering next to switch "DO NOT TURN OFF. SWITCH IS FOR WHOLE HOUSE VENTILATION SYSTEM. SYSTEM TO RUN CONTINUOUSLY."

ELECTRICAL LEGEND

$	SWITCH - ALL TRIM - WHITE "DECORA" OR EQ
$T	SWITCH w/ TIMER - SWITCHES @ BATHS TO BE OCCUPANCY SENSOR SW 160 & GARAGE AREAS
▶	PHONE/DATA JACK - 6V - VARIABLE SPEED
TV	T.V. OUTLET - 6D - DIMMER
T	THERMOSTAT
SCMD 110V	SMOKE/CARBON MONOXIDE DUAL DETECTOR
	220 OUTLET
	110 OUTLET
	EXHAUST FAN
	WALL LIGHT - CASE MFG HOT SHOWN
M	EMS OR MOTION ACTIVATED EXTERIOR LIGHT - ALL EXT. LIGHTS CONNECT TO ENERGY TIME CLOCK
	EXHAUST FAN/EFFICANT LIGHT COMBO UNIT
C	MOTION ACTIVATED LED CLOSET LIGHT
R	RECESSED LIGHT - WP = WATERPROOF ALL RECESSED - LED
	WALL MOUNTED VANITY LIGHT - WALL WASH RECESSED
	CEILING LIGHT - 110 v j-box for HVAC mini-split disconnect
	UNDER CABINET LIGHTING
	CEILING FAN/LIGHT
	WHOLE HOUSE VENTILATION FAN
	4' LED SURFACE LIGHT

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NO	REVISION ISSUE DESCRIPTION	DATE
1	PLAN CHECK COMMENTS	7-17-25
2	TITLE 24 UPDATES	

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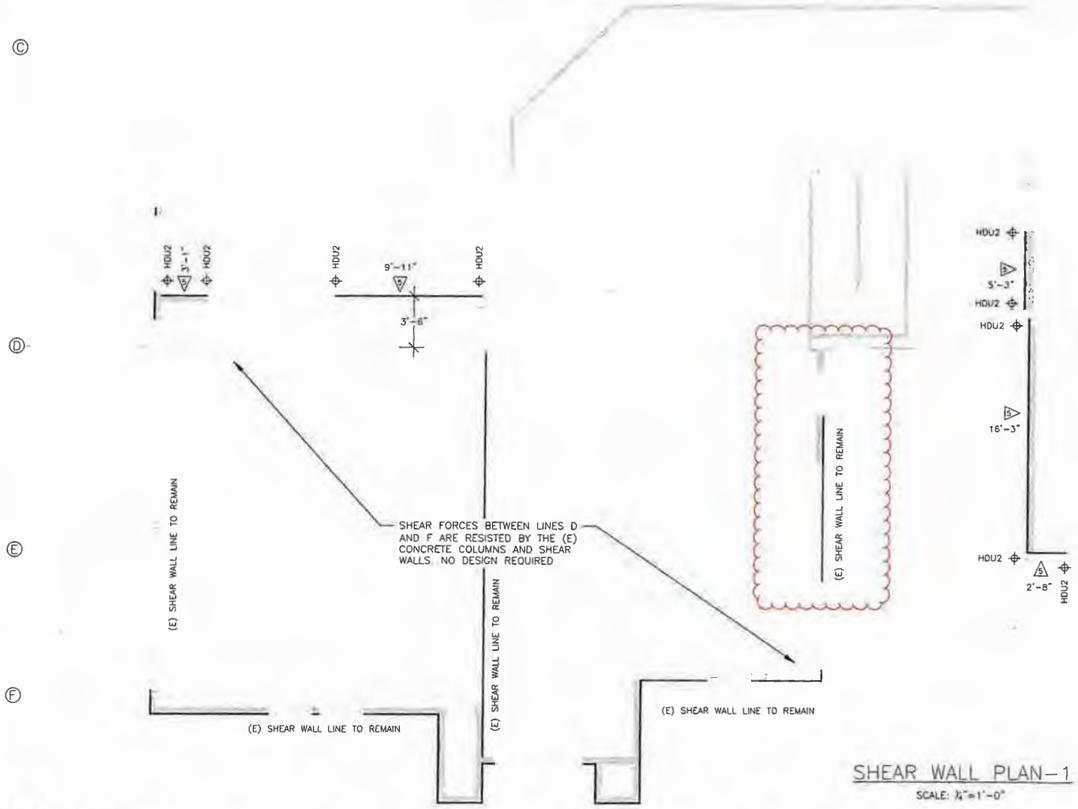
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SCALE:	AS SHOWN

A-16
SHEET #:





SHEAR WALL PLAN-1

SCALE: 1/4"=1'-0"

LOADING CRITERIA

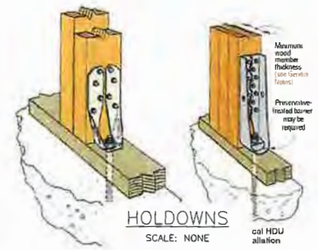
DEAD LOAD:
ROOF D_R: 8 PSF
FLOOR D_F: 11 PSF
LIVE LOAD:
ROOF L_r: 20 PSF
FLOOR L_F: 40 PSF
DECK L: 60 PSF
GROUND SNOW LOAD:
P_g: 0 PSF
WIND DESIGN DATA:
RISK CATEGORY: II
BASIC WIND SPEED, V: 93 MPH
ASD WIND SPEED, V_{ASD}: 72 MPH (0.77*V) (CBC EQN 16-33)
EXPOSURE CATEGORY: C
DESIGN WIND PRESSURE: 18 PSF (C&C POSITIVE ROOF PRESSURE)

SEISMIC DESIGN DATA:
S_s=0.776g S_1=0.298g
S_{DS}=0.621g S_{D1}=0.597g
SITE CLASS: D (DEFAULT)
SEISMIC DESIGN CATEGORY: D (ASCE 7-16 TABLE 11.6-1&2)
SEISMIC IMPORTANCE FACTOR: I_e=1.0
SEISMIC FORCE RESISTING SYSTEM:
LIGHT FRAMED (WOOD) WALLS SHEATHED W/ WSP RATED FOR SHEAR RESISTANCE
DESIGN BASE SHEAR: 21.4 KIPS
SEISMIC RESPONSE COEFFICIENT: C_s=0.096
RESPONSE MODIFICATION FACTOR: R=6.50
GEOTECHNICAL DATA:
ALLOWABLE BEARING PRESSURE: 1,500 PSF (NO REPORT)

SHEAR WALL TABLE

	WOOD STRUCTURAL PANEL SHEATHING MATERIAL	SHEATHING	NAILING EDGE - FIELD	ASD[1] ALLOWABLE SEISMIC SHEAR CAPACITY (PLF)	ASD[1] ALLOWABLE WIND SHEAR CAPACITY (PLF)	[2] SILL PLATE CONNECTION TO RIM	[3, 4, 5] SILL PLATE AND ANCHOR BOLTS	
							5/8"x12"	5/8"x12"
							2x SILL	3x SILL
5	SHEATHING	15/32"	[13] 10d 6" - 12"	311	435	16d @ 6" OC OR LTP4 @ 18" OC	36" OC	NA
6	SHEATHING	15/32"	[13] 10d 4" - 12"	461	645	16d @ 4" OC OR LTP4 @ 12" OC	24" OC	NA
7	SHEATHING	15/32"	[14] 10d 3" - 12"	600	840	16d @ 6" OC (2) ROWS STAGGERED OR LTP4 @ 9" OC	18" OC	NA
8	SHEATHING	15/32"	[14] 10d 2" - 12"	770	1078	16d @ 5" OC (2) ROWS STAGGERED OR LTP4 @ 6" OC	NA	18" OC

HOLDDOWN SCHEDULE		
SYMBOL	DESCRIPTION	MIN REQD POST
DTT2Z-SDS2.5	SIMPSON DTT2Z HOLDDOWN W/ ⅞" x 10" AB OR PAB4	3X3½
HDU2-SDS2.5	SIMPSON HDU2 HOLDDOWN W/ SSTB16 AB	3X3½
HDU4-SDS2.5	SIMPSON HDU4 HOLDDOWN W/ SSTB20 AB	3X3½
HDU5-SDS2.5	SIMPSON HDU5 HOLDDOWN W/ SSTB24 AB	3X3½
HDU8-SDS2.5	SIMPSON HDU8 HOLDDOWN W/ SSTB28 AB	3½X4½
HDU11-SDS2.5	SIMPSON HDU11 HOLDDOWN W/ PAB8-36 AB	3½x5½
HDU14-SDS2.5	SIMPSON HDU14 W/ SB1x30 AB	5½x5½



HOLDDOWNS

SCALE: NONE

CONSTRUCTION NOTES:

1. SHEAR WALL CAPACITIES ARE ALLOWABLE STRESS DESIGN (ASD) SHEAR CAPACITIES, DETERMINED BY DIVIDING THE NOMINAL SHEAR CAPACITIES PER AWC SDPWS-2021 TABLE 4.3A BY THE ASD REDUCTION FACTORS PER AWC SDPWS-2021 ARTICLE 4.1.4 (2.8 FOR SEISMIC DESIGN AND 2.0 FOR WIND DESIGN)
2. SPACING OF 16d COMMON NAILS SELECTED USING THE NAIL LATERAL DESIGN VALUES PER AWC NDS 2022 TABLE 12N AND A LOAD DURATION FACTOR OF 1.6 FOR WIND AND SEISMIC LOADS.
3. ANCHOR BOLTS SHALL HAVE A MINIMUM EMBEDMENT OF 7" PER 2022 CBC ARTICLE 2308.3.1.
4. ANCHOR BOLTS SHALL HAVE A 3"X3"X0.229" PLATE WASHER, SLOTTED (3/16" WIDE X 1-3/4" LONG). PROVIDE A STANDARD CUT WASHER BETWEEN PLATE WASHER AND NUT PER 2022 CBC ARTICLE 2308.3.1.
5. SILL PLATE SIZE AND ANCHOR BOLT SPACING SELECTED USING THE BOLT LATERAL DESIGN VALUES PER AWC NDS 2022 TABLE 12E AND A LOAD DURATION FACTOR OF 1.6 FOR WIND AND SEISMIC LOADS.
6. 3"X3" PLATE WASHER SHALL BE POSITIONED NO GREATER THAN 1/2" FROM THE BACK SIDE OF THE SHEAR PANEL.
7. INDIVIDUAL SHEETS USED IN CONSTRUCTION OF DIAPHRAGMS AND SHEAR WALLS SHALL BE NOT LESS THAN 4'X8' IN SIZE PER AWC SDPWS 2021 ARTICLE 4.3.7.1 #1.
8. MINIMUM SIZE SHEET AT BOUNDARIES AND CHANGES IN FRAMING SHALL BE 24 INCHES IN WIDTH.
9. SHEAR PANEL EDGES MUST OCCUR OVER FRAMING MEMBERS OR BLOCKING AT ALL SHEAR WALLS PER AWC SDPWS 2021 ARTICLE 4.3.7.1 #1.
10. ALL SHEAR PANELS ARE TO BE HAND NAILED OR AIR-OPERATED NAIL GUNS ARE TO BE SET TO PREVENT THE HEAD OF THE NAIL FROM BREAKING THE SURFACE OF THE SHEETING PANEL. GUNSET NAILS CAN THEN BE HAND SET TO PROPER LEVEL.
11. WHERE A SINGLE 3X SILL PLATE IS USED 2-20d BOX END NAILS SHALL BE USED FOR THE STUD TO SILL PLATE CONNECTION
12. SHEAR VALUES LISTED ARE FOR 2X NOMINAL STUD FRAMING @ 16" O.C.
13. 2" NOMINAL FRAMING MEMBERS AT ADJOINING PANEL EDGES PER AWC SDPWS ARTICLE 4.3.7.1 #4
14. 3" NOMINAL FRAMING MEMBERS AT ADJOINING PANEL EDGES, ALTERNATELY (2) FRAMING MEMBERS THAT ARE 2" NOMINAL FASTENED TOGETHER WITH 16d SINKERS @ 4" O.C. STAGGERED PER AWC SDPWS ARTICLE 4.3.7.1 #5
15. 4X FRAMING MEMBERS AT ADJOINING PANEL EDGES.
16. PERFORATED SHEAR WALL NAILING SHALL BE DESIGNED FOR SHEAR CAPACITY ADJUSTMENT FACTOR, Co PER AWC SDPWS-2021 TABLE 4.3.5.6.
17. DOUBLE SIDED SHEAR WALL AB SPACING SHALL BE REDUCED TO 1/2 OF SPECIFIED VALUE WITH 3" NOMINAL MUD SILL & 3" NOMINAL OR LARGER FRAMING MEMBERS AT ADJOINING PANEL EDGES AND NAILS AT ALL PANEL EDGES SHALL BE STAGGERED.
18. SHEAR VALUES LISTED ABOVE ARE FOR WIND AND SEISMIC FORCE. WIND FORCE MINIMUM SLENDERNESS RATIO = 3.5:1. SEISMIC FORCE MINIMUM SLENDERNESS RATIO = 2:1 PER AWC SDPWS-2021 TABLE 4.3.3. PER AWC SDPWS-2021 ARTICLE 4.3.3.4, THE SEISMIC FORCE SLENDERNESS RATIO MAY BE INCREASED FROM 2:1 TO 3.5:1 (MAX) PROVIDED THE ALLOWABLE UNIT SHEARS ARE REDUCED BY THE MULTIPLIER [2(WIDTH) / (HEIGHT)]

THE CONTRACTOR SHALL VERIFY ALL JOB CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. WARD ENGINEERING, LLC LIMITS ITS RESPONSIBILITY TO INFORMATION REPRESENTED THEREIN AND THE INTENDED USE THEREOF AND ASSUMES NO RESPONSIBILITY FOR ACTUAL AS-BUILT CONDITIONS

NO.	REVISION/ISSUE	DATE

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REGISTERED PROFESSIONAL ENGINEER MATTHEW A. WARD C74034 Exp 6-30-25 CIVIL STATE OF CALIFORNIA

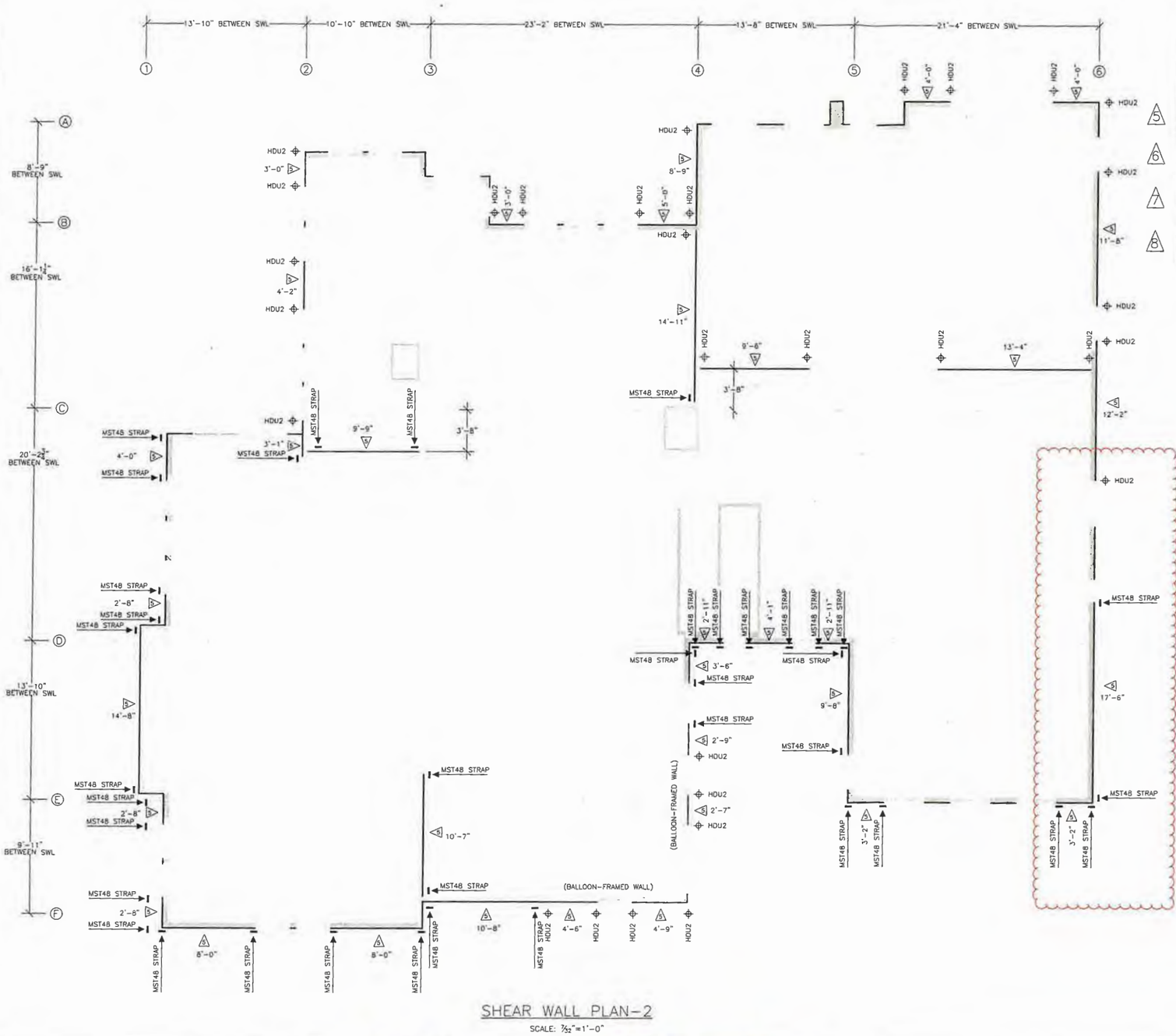
SHEAR WALL PLAN-1

LOGAN RESIDENCE REMODEL
3215 MOREING COURT
STOCKTON, CA 95204

SAN JOAQUIN COUNTY COMMUNITY DEVELOPMENT DEPARTMENT
1810 EAST HAZELTON AVE
STOCKTON, CA 95205

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES
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SHEET 350

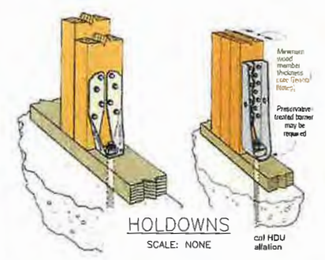


SHEAR WALL TABLE

WOOD STRUCTURAL PANEL SHEATHING MATERIAL	SHEATHING	NAILING EDGE - FIELD	ASD[1] ALLOWABLE SEISMIC SHEAR CAPACITY (PLF)	ASD[1] ALLOWABLE WIND SHEAR CAPACITY (PLF)	[2] SILL PLATE CONNECTION TO RIM	[3, 4, 5] SILL PLATE AND ANCHOR BOLTS	
						5/8"x12" 2x SILL	5/8"x12" 3x SILL
SHEATHING	15/32"	[13] 10d 6" - 12"	311	435	16d @ 6" OC OR LTP4 @ 18" OC	36" OC	NA
SHEATHING	15/32"	[13] 10d 4" - 12"	461	645	16d @ 4" OC OR LTP4 @ 12" OC	24" OC	NA
SHEATHING	15/32"	[14] 10d 3" - 12"	600	840	16d @ 6" OC (2) ROWS STAGGERED OR LTP4 @ 9" OC	18" OC	NA
SHEATHING	15/32"	[14] 10d 2" - 12"	770	1078	16d @ 5" OC (2) ROWS STAGGERED OR LTP4 @ 6" OC	NA	18" OC

HOLDDOWN SCHEDULE

SYMBOL	DESCRIPTION	MIN REQD POST
DTT2Z-SDS2.5	SIMPSON DTT2Z HOLDOWN W/ ½" x 10" AB OR PAB4	3X3½
HDU2-SDS2.5	SIMPSON HDU2 HOLDOWN W/ SSTB16 AB	3X3½
HDU4-SDS2.5	SIMPSON HDU4 HOLDOWN W/ SSTB20 AB	3X3½
HDU5-SDS2.5	SIMPSON HDU5 HOLDOWN W/ SSTB24 AB	3X3½
HDU8-SDS2.5	SIMPSON HDU8 HOLDOWN W/ SSTB28 AB	3½X4½
HDU11-SDS2.5	SIMPSON HDU11 HOLDOWN W/ PABB-J6 AB	3½X5½
HDU14-SDS2.5	SIMPSON HDU14 W/ SB1x30 AB	5½X5½



HOLDOWNS
SCALE: NONE

THE CONTRACTOR SHALL VERIFY ALL JOB CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. WARD ENGINEERING, LLC LIMITS ITS RESPONSIBILITY TO INFORMATION REPRESENTED THEREIN AND THE INTENDED USE THEREOF AND ASSUMES NO RESPONSIBILITY FOR ACTUAL AS-BUILT CONDITIONS

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SHEAR WALL PLAN-2

LOGAN RESIDENCE
REMODEL
3216 MOREING COURT
STOCKTON, CA 95204

SAN JOAQUIN COUNTY
COMMUNITY DEVELOPMENT
DEPARTMENT
1810 EAST HAZELTON AVE
STOCKTON, CA 95205

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES
0 1 2 3

DRAWN BY: MW
DESIGNED BY: MW
CHECKED BY: DE
SHEET 351

THE CONTRACTOR SHALL VERIFY ALL JOB CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. WARD ENGINEERING, LLC LIMITS ITS RESPONSIBILITY TO INFORMATION REPRESENTED THEREIN AND THE INTENDED USE THEREOF AND ASSUMES NO RESPONSIBILITY FOR ACTUAL AS-BUILT CONDITIONS

**TABLE 2304.10.2
FASTENING SCHEDULE**

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
		Wood	
1	Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d box (2½" × 0.113") or 3-8d common (2½" × 0.131") or 3-3d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Each end, toenail
2	Blocking between joists or trusses not at the wall top plate or other plane	3-8d common (2½" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail
		2-16d common (3½" × 0.162") 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails 3-3" 14 gage staples	End nail
3	Flat blocking to truss and web filler	16d common (3½" × 0.162") nails at 6" o.c. 3" × 0.131" nails at 6" o.c. 3" × 14 gage staples at 6" o.c.	12 inches
4	Ceiling joists to top plate	4-8d box (2½" × 0.113") or 3-8d common (2½" × 0.131") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Each joist, toenail
5	Ceiling joist and rafter to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d commons (3½" × 0.162") or 4-10d box (3" × 0.128"), or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Face nail
6	Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	Per Table 2308.7.3.1	Face nail
7	Collar tie to rafter	3-10d common (3" × 0.148") or 3-10d box (3" × 0.128"), or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Face nail
8	Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)	3-16d common (3½" × 0.162") or 3-10d box (3" × 0.128") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	2 toenails on one side and 1 toenail on opposite side of rafter or truss
9	Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d commons (3½" × 0.162") or 3-10d box (3" × 0.128"), or 3-10d box (3" × 0.128") or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Toe nail
		3-16d commons (3½" × 0.162") or 4-10d box (3" × 0.128"), or 4-10d box (3" × 0.128") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Lateral
		Wood	
10	Built-up header (2" to 2" header)	16d common (3½" × 0.162")	16" o.c. along each edge, face nail
11	Continuous header to stud	4-8d common (2½" × 0.131") or 4-10d box (3" × 0.128"), or 3-16d box (3½" × 0.135")	Toenail
12	Top plate to top plate	16d common (3½" × 0.162")	16" o.c. face nail
		10d box (3" × 0.128"), or 3" × 0.131" nails, or 3" 14 gage staples, ⅞" crown	12" o.c. face nail
13	Top plate to top plate, at end joints	8-16d box (3½" × 0.135") or 12-10d box (3" × 0.128"), or 12-3" × 0.131" nails, or 12-3" 14 gage staples, ⅞" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d box (3½" × 0.135") or 3" × 0.131" nails, or 3" 14 gage staples, ⅞" crown	16" o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	3-16d box (3½" × 0.135") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	At each joist, face nail
16	Stud to top or bottom plate	3-16d box (3½" × 0.135") or 4-10d box (3" × 0.128") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Toenail
		2-16d commons (3½" × 0.162") or 3-10d box (3" × 0.128") or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	End nail
17	Top plates, laps at corners and intersections	2-16d commons (3½" × 0.162") or 3-10d box (3" × 0.128") or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail
18	1" brace to each stud and plate	2-8d box (2½" × 0.113") or 2-8d common (2½" × 0.131") or 3-10d box (3" × 0.128") or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail
19	1" × 6" sheathing to each bearing	2-8d box (2½" × 0.113") or 2-8d common (2½" × 0.131") or 3-10d box (3" × 0.128") or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail

(continued)

**TABLE 2304.10.2—continued
FASTENING SCHEDULE**

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
		Wood	
20	1" × 8" and wider sheathing to each bearing	4-8d box (2½" × 0.113") or 4-8d common (2½" × 0.131") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail
		Other	
21	Joists to sill, top plate or girder	3-8d box (2½" × 0.113") or 3-8d common (2½" × 0.131") or flush 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Toenail
22	Rim joist, band joist, or blocking to top plate or other framing below	4-8d box (2½" × 0.113") or 3-8d common (2½" × 0.131") or flush 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	6" o.c. toenail
23	1" × 6" subfloor or less to each joist	2-8d box (2½" × 0.113") or 2-8d common (2½" × 0.131") or 3-10d box (3" × 0.128") or 2-3" × 0.131" nails, or 2-3" 14 gage staples, ⅞" crown	Face nail
24	2" subfloor to joist or girder	2-16d box (3½" × 0.135") or 2-16d common (3½" × 0.162")	End nail or face nail
25	2" planks (plank & beam – floor & roof)	2-16d box (3½" × 0.135") or 2-16d common (3½" × 0.162")	Each bearing, face nail
26	Built-up girders and beams, 2" lumber layers	Apply to each ply: 2-20d common (4" × 0.192") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	32" o.c. face nail at top and bottom staggered on opposite sides
		Apply to each end ply: 2-20d common (4" × 0.192") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail at each splice, face nail
27	Ledger strip supporting joists or rafters	3-16d commons (3½" × 0.162") or 4-10d box (3" × 0.135") or 4-10d box (4" × 0.128") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Each joist or rafter, face nail
28	Joists to band joist or rim joist	3-16d commons (3½" × 0.162") or 4-10d box (3" × 0.128") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	End nail
29	Bridging or blocking to joist, rafter or truss	2-8d common (2½" × 0.131") or 2-10d box (3" × 0.128") or 2-3" × 0.131" nails, or 2-3" 14 gage staples, ⅞" crown	Each end, toenail

(continued)

**TABLE 2304.10.2—continued
FASTENING SCHEDULE**

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	
	Wood structural panel (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing		Edges (inches)	Intermediate supports (inches)
		6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
30	½" or less	6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail (roof) or 8d deformed (2½" × 0.131") nail (roof)	6	6
		8d common (2½" × 0.131") or 8d deformed (2½" × 0.131") nail (roof)	4	8
		1¼" staple (16 gage, ½" crown (roof))	3	3
		8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
31	⅝" to ¾"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (roof)	6	6
		1¼" staple (16 gage, ½" crown (roof))	4	8
32	⅞" to 1"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
		8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (roof)	6	6
		1¼" staple (16 gage, ½" crown (roof))	4	8
33	1⅛" to 1¼"	10d common or deformed (3" × 0.148") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
		Other wall sheathing		
33	½" fiberboard sheathing[a]	1½" long galvanized roofing nail; 1½" head diameter, or 1½" long staple galvanized; 16 ga. wire (crown width of ½" minimum)	3	6
34	⅝" fiberboard sheathing[a]	1¾" long galvanized roofing nail; 1½" head diameter, or 1½" long staple galvanized; 16 ga. wire (crown width of ½" minimum)	3	6
		Wood structural panels, combination subfloor underlayment to framing		
35	¾" and less	6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail	6	12
36	⅞" to 1"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail	6	12
37	1⅛" to 1¼"	10d common or deformed (3" × 0.148") or 8d box (2½" × 0.113") nail	6	12
		Panel siding to framing		
38	½" or less	6d common nail (2" × 0.113"), or 8d box (2½" × 0.113") nail	6	12
39	⅝"	8d common nail (2½" × 0.131"), or 8d box (2½" × 0.113") nail	6	12

(continued)

**TABLE 2304.10.2—continued
FASTENING SCHEDULE**

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3½" × 0.162")	16" o.c. face nail
		10d box (3" × 0.128"), or 3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	12" o.c. face nail
10	Built-up header (2" to 2" header)	16d common (3½" × 0.162")	16" o.c. each edge, face nail
11	Continuous header to stud	8-8d common (2½" × 0.131") or 4-10d box (3" × 0.128"), or 3-16d box (3½" × 0.135")	Toenail
12	Top plate to top plate	16d common (3½" × 0.162")	16" o.c. face nail
		10d box (3" × 0.128"), or 3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	12" o.c. face nail
13	Top plate to top plate, at end joints	8-16d box (3½" × 0.135") or 12-10d box (3" × 0.128"), or 12-3" × 0.131" nails, or 12-3" 14 gage staples, ⅞" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d box (3½" × 0.135") or 3" × 0.131" nails, or 3" 14 gage staples, ⅞" crown	16" o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	3-16d box (3½" × 0.135") or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	At each joist, face nail
16	Stud to top or bottom plate	3-16d box (3½" × 0.135") or 4-10d box (3" × 0.128"), or 4-3" × 0.131" nails, or 4-3" 14 gage staples, ⅞" crown	Toenail
		2-16d commons (3½" × 0.162") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	End nail
17	Top plates, laps at corners and intersections	2-16d commons (3½" × 0.162") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail
18	1" brace to each stud and plate	2-8d box (2½" × 0.113") or 2-8d common (2½" × 0.131") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail
19	1" × 6" sheathing to each bearing	2-8d box (2½" × 0.113") or 2-8d common (2½" × 0.131") or 3-10d box (3" × 0.128"), or 3-3" × 0.131" nails, or 3-3" 14 gage staples, ⅞" crown	Face nail

(continued)

**TABLE 2304.10.2—continued
FASTENING SCHEDULE**

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION (inches)	
	Wood structural panel (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing		Edges	Intermediate supports
		6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
30	½" or less	6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail (roof)	6	6
		8d common (2½" × 0.131") or 8d deformed (2½" × 0.131") nail (roof)	4	8
		1¼" staple (16 gage, ½" crown (roof))	3	3
		8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
31	⅝" to ¾"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (roof)	6	6
		1¼" staple (16 gage, ½" crown (roof))	4	8
32	⅞" to 1"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
		8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail (roof)	6	6
		1¼" staple (16 gage, ½" crown (roof))	4	8
33	1⅛" to 1¼"	10d common or deformed (3" × 0.148") or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
		Other wall sheathing		
33	½" fiberboard sheathing[a]	1½" long galvanized roofing nail; 1½" head diameter, or 1½" long staple galvanized; 16 ga. wire (crown width of ½" minimum)	3	6
34	⅝" fiberboard sheathing[a]	1¾" long galvanized roofing nail; 1½" head diameter, or 1½" long staple galvanized; 16 ga. wire (crown width of ½" minimum)	3	6
		Wood structural panels, combination subfloor underlayment to framing		
35	¾" and less	6d common or deformed (2" × 0.113") or 8d box (2½" × 0.113") nail	6	12
36	⅞" to 1"	8d common or deformed (2½" × 0.131") or 8d box (2½" × 0.113") nail	6	12
37	1⅛" to 1¼"	10d common or deformed (3" × 0.148") or 8d box (2½" × 0.113") nail	6	12
		Panel siding to framing		
38	½" or less	6d common nail (2" × 0.113"), or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12
39	⅝"	8d common nail (2½" × 0.131"), or 8d box (2½" × 0.113") nail (subfloor and wall)	6	12

(continued)

BUILDING NOTES

GENERAL
1. ALL WORK SHALL CONFORM TO ALL CURRENT ADOPTED CODES – SEE COVER SHEET.
2. THESE PLANS ARE A "BUILDER'S SET". WARD ENGINEERING CONTRACTED TO PROVIDE A BUILDER'S SET WITH THE AGREEMENT THAT AN EXPERIENCED AND KNOWLEDGEABLE CONTRACTOR SHALL CONSTRUCT THIS PROJECT. THESE PLANS CONTAIN INFORMATION FOR GENERAL CONSTRUCTION PURPOSES ONLY. THEY ARE NOT EXTENSIVELY DETAILED, NOR ARE COMPLETE SPECIFICATIONS PROVIDED. FOR ITEMS, METHODS AND/OR MATERIALS NOT SHOWN, THE MINIMUM REQUIREMENTS OF THE APPLICABLE CODE SHALL GOVERN. ANY MATERIALS, CONNECTIONS, OR DETAILS NOT SPECIFICALLY PROVIDED IN THESE PLANS ARE THE SOLE AND COMPLETE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY VERIFY AND INSTALL.
3. THE ENGINEER DOES NOT PROVIDE CONSTRUCTION OBSERVATION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE QUALITY AND CONSTRUCTION STANDARDS FOR THIS PROJECT. THE ENGINEER PROVIDES NO WARRANTY OR GUARANTEE ON THE FINAL PROJECT, NOR DUTY TO ANY PERSON OR ENTITY BEYOND THE AFOREMENTIONED LIMITED INFORMATION ON THESE PLANS.
4. SPECIFIC DETAILS OR NOTES ON OTHER SHEETS SHALL PREVAIL OVER STANDARD DETAILS AND NOTES ON THIS PAGE.
5. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER SCALE ON THE PLANS, SECTIONS AND DETAILS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

SOILS AND FOUNDATIONS (CBC CHAPTER 18)
1. FOUNDATION DESIGN IS BASED OFF OF A PRESUMPTIVE LOAD BEARING VALUE OF 1,500 PSF (CBC TABLE 1806.2).
2. INTERIOR SLABS-ON-GRADE SHALL BE SUPPORTED ENTIRELY ON BEDROCK OR ENTIRELY ON NON-EXPANSIVE, COMPACTED ENGINEERED FILL OF RELATIVELY UNIFORM THICKNESS. THE ENGINEERED FILL SPECIFICATION SHALL HAVE A MINIMUM RELATIVE COMPACTION OF 90% PER ASTM D-1557.
3. ALL FOOTING DEPTH DIMENSIONS ARE INTO UNDISTURBED SOIL OR APPROVED ENGINEERED FILL. DEPTH SHALL BE MEASURED FROM LOWEST ADJACENT GRADE OR BOTTOM OF APPROVED FILL.
4. SLOPE GRADE AND FLATWORK AWAY FROM FROM STRUCTURE AT 2% MIN SLOPE FOR FLATWORK AND 5% MIN SLOPE FOR GRADE.
5. SOIL BEARING CONDITION IS CLASSIFIED BY SOILS REPORT INDICATED IN THE DESIGN CRITERIA, IF REPORT IS PROVIDED.
6. SPREAD FOOTINGS ARE TO BE CENTERED UNDER WALLS AND COLUMNS, UON.

CONCRETE (CBC CHAPTER 19)
GENERAL
1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND THE CBC.
2. MATERIALS USED TO PRODUCE CONCRETE, CONCRETE ITSELF AND TESTING THEREOF SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN ACI 318 (CBC 1903.1).
3. THE MINIMUM 28-DAY SPECIFIED CONCRETE COMPRESSIVE STRENGTH SHALL BE 3,000 PSI FOR SPREAD FOOTINGS, AND 3,000 PSI FOR WALLS.

REINFORCEMENT
1. #4 AND SMALLER: GRADE 40 (f_y=40 KSI)
2. #5 AND LARGER: GRADE 60 (f_y=60 KSI)
3. ELECTRIC WELDED WIRE FABRIC (EWWF): ASTM A185
4. LAP SPLICE OF REINFORCEMENT IN TENSION SHALL BE 40 BAR DIAMETERS MIN.

MASONRY (CBC CHAPTER 21)
1. MASONRY SHALL COMPLY WITH THE PROVISIONS OF TMS 402, TMS 403 OR TMS 404 AS WELL AS APPLICABLE REQUIREMENTS OF CBC CHAPTER 19 (CBC 2101A.2).
2. THE SPECIAL INSPECTION OF MASONRY SHALL BE AS DEFINED IN CHAPTER 17A, OR AN ITEMIZED TESTING AND SINSPECTION PROGRAM SHALL BE PROVIDED THAT MEETS OR EXCEEDS THE REQUIREMENTS OF CHAPTER 17 (CBC 2101.3)
3. CONCRETE MASONRY UNITS SHALL COMPLY WITH ARTICLE 2.3 OF TMS 602 (CBC 2103.1).
4. MORTAR FOR USE IN MASONRY CONSTRUCTION SHALL CONFORM TO ARTICLES 2.1 AND 2.6A OF TMS 602 (2103.2.1).
5. GROUT SHALL COMPLY WITH ARTICLE 2.2 OF TMS 602 (CBC 2103.3).
6. METAL REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ARTICLE 2.4 OF TMS 602 (CBC 2103.4).

STRUCTURAL STEEL CBC (CHAPTER 22)
CODES
1. ALL PHASES OF WORK PERTAINING TO STRUCTURAL STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CBC, AISC, AWS AND ASTM.

MATERIALS
1. STRUCTURAL PLATES AND ANGLES: ASTM A36 (F_y=36 KSI)
2. STRUCTURAL STEEL MEMBERS: ASTM A992 (F_y=50 KSI) AND ASTM A36 (F_y=36 KSI)
3. STRUCTURAL TUBING: ASTM A500 GRADE B (F_y=46 KSI)
4. STRUCTURAL PIPE: ASTM A53 GRADE B
5. COLD-FORMED: ASTM A924/A792 OR A570 (F_y=50 KSI)
6. COMMON BOLTS: ASTM A307 GRADE A (UNLESS NOTED ON THE PLANS AS HSMB)
7. HIGH-STRENGTH BOLTS, NUTS AND WASHERS: ASTM F3125 GRADE A325
8. ANCHOR RODS: ASTM F1554 (F_y=36 KSI)
9. WASHERS: ASTM F436
10. NUTS: ASTM A563
11. DECKING: ASTM A653, FABRICATION SHALL BE PER STEEL DECK INSTITUTE SPECIFICATIONS
12. ALL WELDING SHALL BE DONE WITH E70 SERIES LOW HYDROGEN RODS AND BE IN ACCORDANCE WITH THE LATEST OF THE AMERICAN WELDING STANDARDS.
13. ZINC-COATED IRON AND STEEL PRODUCT AND HARDWARE SURFACES FOR PAINTING PER ASTM D6386
14. ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT DIP PROCESS PER ASTM A653

CONSTRUCTION
15. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWING.
16. ALL STEEL SHALL BE SHOP-PRIMED WITH THE EXCEPTION OF GALVANIZED STEEL AND SURFACES TO BE WELDED OR PLACED IN CONCRETE.

SHOP DRAWING SUBMITTALS
1. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL STEEL MEMBERS AND SHALL BE SUBMITTED TO THE GENERAL CONTRACTOR, ENGINEER AND OTHER TRADES.
2. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DRAWINGS SHALL BE FLAGGED UPON REVIEW.
3. VERIFY ALL DIMENSIONS WITH THE ARCHITECT.
4. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM THE ORIGINAL CONTRACT DRAWINGS SHALL BE GROUNDED OR FLAGGED BY SUBMITTING PARTIES.
5. THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO THE ORIGINAL DRAWINGS AT ANY TIME BEFORE OR AFTER SHOP DRAWING REVIEW.
6. THE SHOP DRAWINGS DO NOT REPLACE THE ORIGINAL CONTRACT DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT ARE NOT TO BE CONSIDERED CHANGES TO THE ORIGINAL DRAWINGS.
7. THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR OR SUBMITTING AUTHORITY.
8. REVIEW IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.

WOOD (CBC CHAPTER 23)
GENERAL
1. SIZE, HEIGHT AND SPACING OF WOOD STUDS SHALL BE IN ACCORDANCE WITH CBC TABLE 2308.5.1.
2. DOUBLE TOP PLATES SHALL BE SPLICED IN ACCORDANCE WITH CBC 2308.5.3.2
3. PROVIDE FIRE BLOCKING IN ACCORDANCE WITH CBC SECTION 718.2.

MATERIALS
1. ALL WOOD MEMBERS SHALL BE DOUGLAS FIR-LARCH (DF) QUALITY GRADE-STAMPED. GRADE STAMPS SHALL INDICATE COMPLIANCE WITH GRADING REQUIREMENTS OF AWPA. WOOD MEMBERS SHALL HAVE 19% MAXIMUM MOISTURE CONTENT AT THE TIME OF PLACEMENT.
   HORIZONTAL MEMBERS
   JOISTS AND RAFTERS: GRADE #2
   4x BEAMS AND STRINGERS: GRADE #2
   6x BEAMS AND STRINGERS: GRADE #2
   LEDGERS: GRADE #2
   VERTICAL MEMBERS
   2x4 STUDS: STUD GRADE
   2x6 AND LARGER STUDS: GRADE #2
   POSTS AND TIMBERS: GRADE #2
2. WOOD STRUCTURAL PANELS, WHERE USED STRUCTURALLY, SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS 1, DOC PS 2 OR ANSI/APA PRP 210. EACH PANEL OR MEMBER SHALL BE IDENTIFIED FOR GRADE, BOND CLASSIFICATION, AND PERFORMANCE CATEGORY BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY (CBC 2303.1.3).
3. WOOD REQUIRED BY SECTION 2304.12 TO BE PRESERVATIVE TREATED SHALL BEAR THE QUALITY MARK OF AN INSPECTION AGENCY THAT MAINTAINS CONTINUING SUPERVISION, TESTING AND INSPECTION OVER THE QUALITY OF THE PRESERVATIVE-TREATED WOOD. INSPECTION AGENCIES FOR PRESERVATIVE-TREATED WOOD SHALL BE LISTED BY AN ACCREDITATION BODY THAT COMPLIES WITH THE REQUIREMENTS OF THE AMERICAN LUMBER STANDARDS TREATED WOOD PROGRAM, OR EQUIVALENT (CBC 2303.1.9.1)
4. WOOD USED ABOVE GROUND IN THE LOCATIONS SPECIFIED IN CBC SECTIONS 2304.12.1.1 THROUGH 2304.12.1.5 SHALL BE NATURALLY DURABLE WOOD OR PRESERVATIVE-TREATED WOOD USING WATERBORNE PRESERVATIVES, IN ACCORDANCE WITH AWPA U1 FOR ABOVE GROUND USE. (CBC 2304.12.1)

WOOD FASTENERS AND CONNECTORS
1. THE NUMBER AND SIZE OF FASTENERS CONNECTING WOOD MEMBERS SHALL BE NOT LESS THAN THAT SET FORTH IN TABLE 2304.10.2 FASTENING SCHEDULE
2. MACHINE BOLTS PER ASTM A307 WITH STANDARD CUT WASHER.
3. FASTENERS, INCLUDING NUTS AND WASHERS, AND CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE IN ACCORDANCE WITH SECTIONS 2304.10.6.1 THROUGH 2304.10.6.4. THE COATING WEIGHTS FOR ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM A153.
4. ALL JOIST HANGERS, STRAPS, HOLDOWNS, CLIPS, ANCHORS, ETC TO BE SIMPSON STRONG-TIE, AS NOTED ON THE DRAWINGS. INSTALL ALL HARDWARE PER MANUFACTURER'S SPECIFICATIONS AS REQUIRED TO ACHIEVE MAXIMUM LOAD VALUES, UON.
5. WOOD SILL PLATES SUPPORTED DIRECTLY ON CONTINUOUS FOUNDATIONS SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH CBC 2308.3.1.
6. WOOD SILL PLATES FOR NONSTRUCTURAL WALLS SHALL BE ANCHORED WITH POWDER-ACTUATED FASTENERS (PAF) MODEL # X-CF 72 OR X-CP 72 (OR EQUAL), SHANK LENGTH 2⅞" SHANK DIAM. 0.145" AT A MAX SPACING OF 24" OC PER ESR-2379.

MANUFACTURED WOOD TRUSSES
1. THE TRUSS MANUFACTURER SHALL PROVIDE A TRUSS PLACEMENT DIAGRAM THAT IDENTIFIES THE PROPOSED LOCATION FOR EACH INDIVIDUALLY DESIGNATED TRUSS AND REFERENCES THE CORRESPONDING TRUSS DESIGN DRAWING. THE TRUSS PLACEMENT DIAGRAM SHALL BE PROVIDED AS PART OF THE TRUSS SUBMITTAL PACKAGE, AND WITH THE SHIPMENT OF THE TRUSSES DELIVERED TO THE JOB SITE (CBC 2303.4.2).
2. THE TRUSS SUBMITTAL PACKAGE PROVIDED BY THE TRUSS MANUFACTURER SHALL CONSIST OF EACH INDIVIDUAL TRUSS DRAWING, THE TRUSS PLACEMENT DIAGRAM, THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING METHOD AND DETAILS AND ANY OTHER STRUCTURAL DETAILS GERMANE TO THE TRUSSES; AND, AS APPLICABLE, THE COVER/TRUSS INDEX SHEET (CBC 2303.4.3).
3. ADDITIONAL TRUSSES SHALL BE SUPPLIED AS REQUIRED TO SUPPORT MECHANICAL EQUIPMENT.
4. DO NOT CUT ANY TRUSSES.

ROOF FRAMING (CBC CHAPTER 23)
1. ROOF SHEATHING SHALL BE IN ACCORDANCE WITH CBC TABLE 2304.8(3).
2. PROVIDE 2x RIDGE BLOCKING BETWEEN TRUSSES AT ALL RIDGES.
3. ONLY BRACE ROOF FRAMING TO BEARING WALLS AND BEAMS DESIGNED FOR SUCH LOADS.
4. PROVIDE CLIP AT ALL TRUSS/RAFTER TO TOP PLATE/BEAM CONNECTIONS, PER THE FOLLOWING:
   4.1. SINGLE PLY TRUSS/RAFTER: H1 CLIP, UON
   4.2. MULTI-PLY TRUSS/RAFTER AND GABLE END TRUSS/RAFTER: (2) H2.5A CLIP, UON
5. PROVIDE PURLINS OF SAME SIZE AS SUPPORTED RAFTERS.
6. CONTINUE ROOF SHEATHING UNDER OVER-FRAMING.
7. PROVIDE RESTRAINT AT ENDS OF ALL MEMBERS TO PREVENT ROTATION.

FLOOR FRAMING (CBC CHAPTER 23)
1. FLOOR SHEATHING SHALL BE SHALL BE IN ACCORDANCE WITH CBC TABLE 2304.8(3).
2. JOIST LAYOUTS SHOWN ON THE PLANS ARE APPROXIMATE. DRAG/COLLECTOR AND DOUBLE JOISTS ARE TO BE PLACED AS SHOWN ON THE PLANS. ALL OTHER JOISTS SHOWN MAY BE ADJUSTED AS REQUIRED PROVIDED THAT JOISTS MAINTAIN MAX SPACING AS NOTED ON PLANS.

GRID REFERENCE
DETAIL NO
SHEET NO
DETAIL IN SECTION REFERENCE
FOOTING SCHEDULE ITEM
(LENGTH)
SHEAR WALL SCHEDULE ITEM
WALL REINFORCING SCHEDULE ITEM
ELEVATION (SECTIONS & DETAILS)
ELEVATION (PLANS)

PLYWOOD
WOOD (CONTINUOUS)
WOOD (BLOCKING)
STEEL
GYPSUM BOARD
GROUT
MASONRY
SAND
GRAVEL
EARTH

NO.	REVISION/ISSUE	DATE

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF WARD ENGINEERING, LLC. ALL DESIGN INFORMATION CONTAINED IN THESE DR

CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

Construction Projects Are Required to Implement the Stormwater Best Management Practices (BMPs) on this Page, as they Apply to Your Project, All Year Long.



MATERIALS & WASTE MANAGEMENT

Non-Hazardous Materials

- ❑ Berm and securely cover stockpiles of sand, dirt, or other construction materials with tarps when rain is forecast or if stockpiles are not actively being used. For best results, this should be done at the end of the work day throughout construction when feasible.
- ❑ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Waste Management

- ❑ The California Green Building Code requires all permitted residential and non-residential construction, demolition and additions/alterations projects to recycle or salvage a minimum 65% of nonhazardous construction materials from the project.
- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills. Incorporate secondary containment and locate them away from storm drain inlets.
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste (the Monterey Regional Waste Management District offers a Household Hazardous Waste Facility that accepts these items).



EQUIPMENT MANAGEMENT & SPILL CONTROL

Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, steam cleaning equipment, etc.
- ❑ Inlet protection is the last line of spill defense. Drains/inlets that receive storm water must be covered or otherwise protected from receiving sediment/dirt/mud, other debris, or illicit discharges, and include gutter controls and filtration where applicable in a manner not impeding traffic or safety.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly (see the Monterey Regional Waste Management Districts' guidelines for accepting hazardous waste materials).
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil (see the Monterey Regional Waste Management District's Contaminated Soil Acceptance Criteria).
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: Dial 911.



EARTHWORK & CONTAMINATED SOILS

Erosion Control

- ❑ Schedule grading and excavation work for dry weather only.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.

Sediment Control

- ❑ Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, inlet filler, berms, etc.
- ❑ Prevent sediment from migrating offsite by installing and maintaining sediment controls, such as fiber rolls, silt fences, or sediment basins.
- ❑ Keep excavated soil on the site where it will not collect into the street.
- ❑ Transfer excavated materials to dump trucks on the site, not in the street.
- ❑ If any of the following conditions are observed, test for contamination and contact the Monterey County Environmental Health Department, Regional Water Quality Control Board, and local municipal inspector:
  - Unusual soil conditions, discoloration, or odor
  - Abandoned underground tanks
  - Abandoned wells
  - Buried barrels, debris, or trash.



PAVING/ASPHALT WORK

- ❑ Avoid paving and seal coating in wet weather, or when rain is forecast before fresh pavement will have time to cure.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt or concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- ❑ Completely cover or barricade storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Protect storm drain inlets, gutters, ditches, and drainage courses with appropriate BMPs, such as gravel bags, inlet filters, berms, etc.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.



CONCRETE, GROUT & MORTAR APPLICATION

- ❑ Store concrete, grout and mortar under cover, on pallets and away from drainage areas. These materials must never reach a storm drain.
- ❑ Wash out concrete equipment/trucks offsite or in a contained area, so there is no discharge into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ Collect the wash water from washing exposed aggregate concrete and remove it for appropriate disposal offsite.



LANDSCAPE MATERIALS

- ❑ Contain stockpiled landscaping materials by storing them under tarps when they are not actively being used.
- ❑ Stack erodible landscape material on pallets. Cover or store these materials when they are not actively being used or applied.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.



PAINTING & PAINT REMOVAL

Painting cleanup

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or surface waters.
- ❑ For water-based paints, paint out brushes to the extent possible. Rinse to the sanitary sewer once you have gained permission from the local wastewater treatment authority. Never pour paint down a drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of residue and unusable thinner/solvents as hazardous waste.

Paint Removal

- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyltin must be disposed of as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.



DEWATERING

- ❑ Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site.
- ❑ Divert run-on water from offsite away from all disturbed areas or otherwise ensure protection of its water quality for compliance.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap, and/or disposal in sanitary sewer may be required.
- ❑ In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer and municipal staff to determine whether testing is required and how to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

* Adapted with permission from the San Mateo Countywide Water Pollution Prevention Program

STORM DRAIN POLLUTERS MAY BE LIABLE FOR FINES OF UP TO $10,000 PER DAY!

ITEM 9

RECORDING REQUESTED BY, AND WHEN RECORDED MAIL TO: RECLAMATION DISTRICT 1614 P.O. BOX 4807 STOCKTON, CA 95204-4807	

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Documentary Transfer Tax not applicable.
Public agency is Grantee.

_____
Secretary, Reclamation District 1614

EASEMENT DEED

Preamble and Recitals

This Agreement is entered into on January ____, 2026 by and between Stockton Golf an d Country Club, hereafter referred to as "Grantor," and Reclamation District 1614, hereafter referred to as "Grantee."

A. Grantor is the owner of certain real property situated in San Joaquin County, California (hereafter referred to as the "Servient Tenement"), and more particularly described in Exhibit A, which is attached to this Agreement and hereby incorporated by reference.

B. Grantee desires to acquire certain rights in the Servient Tenement.

Grant of Easement

1. For valuable consideration, receipt of which is hereby acknowledged, Grantor grants to Grantee an easement, subject to the terms of this Agreement.

Character of Easement

2. The easement granted in this Agreement is in gross.

Description of Easement

3. The easement granted in this Agreement is an easement for the exclusive power to construct, maintain, operate and otherwise control reclamation works, including the maintenance, operation and control of the levees and bulkheads and other reclamation works, including the right to permit or refuse any and all private uses, including the maintenance, construction or installation of any structure or other work of improvement

which is within the areas of the easement described herein, or which affects any levee, bulkhead or other reclamation work (collectively "reclamation purposes") on that portion of the artificial waterway commonly known as San Joaquin River in the area described by the following boundaries: (1) bounded on the north by a line offset inland (in a northerly direction) ten feet from the toe of the levee along the north bank of said San Joaquin River, located along the southerly boundary of the Servient Tenement, (2) bounded on the east by the easterly line of the Servient Tenement; (3) bounded on the west by the westerly line of the Servient Tenement, and (4) bounded on the south by the southerly boundary of the Servient Tenement; together with an easement of ingress and egress to and from such described easement, for personnel and equipment, across the remainder of the Servient Tenement; provided, however, that any private structures which exist as of the date of recordation of this easement which, in the judgment of Grantee, do not substantially adversely affect the physical integrity of the reclamation works are deemed to be permitted by Grantee; private structures which do substantially adversely affect the physical integrity of the reclamation works may be removed at the cost of the Grantee.

Term

4. The easement granted in this Agreement shall be perpetual.

Nonexclusive Easement

5. Except as specified herein, the easement granted in this Agreement is nonexclusive. Grantor retains the right to make any sue of the Servient Tenement, including the right to grant concurrent easements in the Servient Tenement to third parties, that does not interfere unreasonably with Grantee's free use and enjoyment of the easement.

Agreement Nonassignable

6. This Agreement shall not be assigned. Any purported assignment of this Agreement or of any interest in this Agreement shall be void and of no effect.

Attorneys' Fees

7. If any legal action or proceeding arising out of or relating to this Agreement is brought by either party to this Agreement, the prevailing party shall be entitled to receive from the other party, in addition to any other relief that may be granted, the reasonable attorneys' fees, costs, and expenses incurred in the action or proceeding by the prevailing party.

Entire Agreement

8. This Agreement constitutes the entire agreement between Grantor and Grantee relating to the above easement. Any prior agreements, promises, negotiations, or

representations not expressly set forth in this Agreement are of no force and effect. Any amendment to this Agreement shall be of no force and effect unless it is in writing and signed by Grantor and Grantee.

Binding Effect

9. This Agreement shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors, and assigns of Grantor and Grantee, except as otherwise provided in this Agreement.

Executed on January_____, 2026.

GRANTOR(S)

Stockton Golf and Country Club

By:_____

GRANTEE

_____
KEVIN M. KAUFFMAN
President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of _____)

On _____, before me, _____,
a Notary Public, personally appeared _____ who proved t
o me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed th
e same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on th
e instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary Public

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of _____)

On _____, before me, _____,
a Notary Public, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary Pubic

Exhibit A
Levee Easement
Assessor Parcel Number 109-020-060-000

The real property located within the State of California, County of San Joaquin, Section 6, Township 1 North, Range 6 East, Mount Diablo Base and Meridian, being a portion of Lot 1 as shown on The Map of the Tuxedo Country Club Farms by Budd and Widdows, recorded in Book 8 of Maps at Page 66 filed September 20, 1916, San Joaquin County Records; also being a portion of that certain Grant Deed to Stockton Golf and Country Club, a corporation, recorded in Book of Official Records Volume 10, at Page 67, on April 11, 1924, San Joaquin County Records, and also being a portion of that certain Indenture to Stockton Golf and Country Club, recorded in Book of Official Records Volume 293, Page 44, on June 22, 1929, San Joaquin County Records, and also being a portion of that certain Indenture to Stockton Golf and Country Club, recorded in Book "A" Volume 254 of Deeds, Page 245, on October 23, 1915, San Joaquin County Records, also being a portion of the old channel of the San Joaquin River lying Northerly of that portion of the new channel of the San Joaquin River, known as "Devil's Elbow Cut-Off", and also being a portion of an island in the San Joaquin River opposite "Oakland Landing" so-called on Rough and Ready Island and being formed by the bend of said river called "The Devil's Elbow" and the North line of cut-off made by the United States Government and situated in the Southeast 1/4 of Section 6, Township 1 North, Range 6 East, Mount Diablo Base and Meridian and is embraced within the boundaries of swamp and overflowed Land Survey No. 1299, more particularly described as follows:

Bounded on the east by the east boundary of the said parcel conveyed in the Grant Deed recorded on April 11, 1924 in Book of Official Records Volume 10, at Page 67.

Bounded on the south by the south boundary of the said parcels conveyed to Stockton Golf and Country Club as described in the above preamble.

Bounded on the west by the west boundary of the said parcel described in that certain Indenture recorded on June 22, 1929 in Book of Official Records Volume 293, Page 44.

Bounded on the north by a line offset 10 feet in a northerly (landward) direction from the existing landside levee toe of the north levee of San Joaquin River, said line also being offset perpendicular to said levee toe.

TOGETHER WITH any real property lying within the San Joaquin River prior to reclamation and/or alteration that was conveyed in said above-described Deeds.

SUBJECT TO any public trust easement lying within the banks of the San Joaquin River.

SUBJECT TO special assessments, if any, restrictions, reservations and easements of record.

Any distances referenced in this description are based on the United States Survey Foot unit and are ground, not grid distances.

End of Description.

Stockton Golf & Country Club
3800 W Country Club Boulevard
Stockton, CA 95204

PROFESSIONAL LAND SURVEYOR
BRETT A. SETNESS
No. 8265
Exp. 12-31-2025
STATE OF CALIFORNIA

10-31-2024

ITEM 10

Dominick Gulli, President
Kevin Kauffman, Trustee
Christian Gaines, Trustee

RECLAMATION DISTRICT 1614
P.O. BOX 4807
STOCKTON, CA 95204

PHONE: (209) 948-8200

Andrew J. Pinasco, Counsel
Christopher A. Neudeck, Engineer
Abel Palacio, Superintendent
Rhonda L. Olmo, Secretary

Via email and U.S. Mail
December 22, 2025

FOIA Officer
Federal Emergency Management Agency
Disclosure Branch, Information Management Division
Office of the Chief Administrative Officer
500 C Street, SW, Mail Stop 3172
Washington, DC 20472-3172
Email: fema-foia@fema.dhs.gov

Re: FOIA Request – Case No. 25-09-0442P

Case Number:	25-09-0442P
Communities:	City of Stockton and San Joaquin County California
Community Nos:	060302 and 060299
Identifier:	Smith Canal Gate Structure and Dad's Point Levee
Flooding Sources:	Smith Canal
FIRM Panels Affected:	06077C0455F, 06077C00460F, and 06077C00480F
Case Reviewer:	Hernan Rodriguez, P.E., CFM, Hernan.Rodriguez@aecom.com

To the FOIA Officer,

On behalf of Reclamation District 1614, this letter is a request under the Freedom of Information Act, 5 U.S.C. § 552, for access to and copies of all agency records in possession, custody, or control of FEMA (including the National Flood Insurance Program) and any FEMA contractors or consultants involved in Case No. 25-09-0442P (Smith Canal Gate Structure and Dad's Point Levee).

The specific records requested for inspection and copying are:

1. All MT-2 letter of map revision ("LOMR"), conditional letter of map revision ("CLOMR"), or related submittals, technical data, calculations, hydraulic and hydrologic models, model input/output files, work maps, and backup documentation submitted to FEMA or its contractors in connection with Case No. 25-09-0442P for the Smith Canal Gate Structure and Dad's Point Levee project, including any revisions or resubmittals.
2. All correspondence (including letters, emails, memoranda, meeting notes, and transmittals) between FEMA, NFIP, AECOM (including but not limited to Hernan Rodriguez, P.E., CFM), the City of

Stockton, San Joaquin County, San Joaquin Area Flood Control Agency, and/or Reclamation District No. 1614 concerning Case No. 25-09-0442P, the Smith Canal Gate Structure, Dad's Point Levee, Smith Canal flooding analyses, or the FIRM panels identified above.

3. All internal FEMA or contractor review comments, technical review memoranda, checklists, and responses to comments related to Case No. 25-09-0442P and the associated modeling, mapping, and engineering analyses.
4. Any decision documents, approval letters, denial letters, request for information letters, and final determination documents issued or prepared by FEMA or its contractors in connection with Case No. 25-09-0442P.
5. Any guidance documents, standard operating procedures, or technical policies specifically applied to the review of the Smith Canal Gate Structure and Dad's Point Levee case, to the extent they are not already publicly available on FEMA's website.

If you determine that any requested records are exempt in whole or in part under FOIA, please: (1) identify each record withheld; (2) specify the FOIA exemption(s) asserted for each withholding; (3) explain how each exemption applies; and (4) release all reasonably segregable non-exempt portion.

Please also advise of any FOIA fee category determination (e.g. commercial requester, educational/noncommercial scientific institution, representative of the news media, or "other"), any anticipated fees, and any right to appeal. To the extent applicable, Reclamation District No. 1614 requests classification in the lowest-cost appropriate fee category and requests a waiver or reduction of fees on the grounds that disclosure is in the public interest and will contribute significantly to public understanding FEMA's floodplain management and mapping decisions for the Smith Canal area.

Electronic production (via email, secure file transfer, or other commonly used electronic format) is preferred where feasible. If you anticipate that fees for searching, reviewing, and duplicating records will exceed $100 please notify the undersigned before incurring such costs so that the scope of the request may be discussed if necessary.

If clarification would help expedite your attention to this request, please contact me at **(209) 948-8200 and/or rolmo@neumiller.com**

Thank you for your timely attention to this matter.

Respectfully,

Rhonda L. Olmo

Rhonda L. Olmo
District Secretary
Reclamation District 1614

Pinasco, Andy J.

From: Olmo, Rhonda L.
Sent: Wednesday, December 31, 2025 9:23 AM
To: Pinasco, Andy J.
Subject: FW: FOIA Request Number 2026-FEFO-00389 Acknowledgment

FYI

From: jennifer.chavez@associates.fema.dhs.gov <noreply@securerelease.us>
Sent: Wednesday, December 31, 2025 7:39 AM
To: Olmo, Rhonda L. <rolmo@neumiller.com>
Subject: FOIA Request Number 2026-FEFO-00389 Acknowledgment

12/31/2025

SENT VIA E-MAIL TO: rolmo@neumiller.com

Re: FOIA Request Number 2026-FEFO-00389
Acknowledgment

Dear Rhonda Olmo:

This correspondence acknowledges receipt of your Freedom of Information Act (FOIA) request to the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), dated 12/30/2025 and received in this office on 12/30/2025. You are seeking records for the following information:

1. All MT-2 letter of map revision ("LOMR"), conditional letter of map revision ("CLOMR"), or related submittals, technical data, calculations, hydraulic and hydrologic models, model input/output files, work maps, and backup documentation submitted to FEMA or its contractors in connection with Case No. 25-09-0442P for the Smith Canal Gate Structure and Dad's Point Levee project, including any revisions or resubmittals.

2. All correspondence (including letters, emails, memoranda, meeting notes, and transmittals) between FEMA, NFIP, AECOM (including but not limited to Hernan Rodriguez, P.E., CFM), the City of 1889479-2 Stockton, San Joaquin County, San Joaquin Area Flood Control Agency, and/or Reclamation District No. 1614 concerning Case No. 25-09-0442P, the Smith Canal Gate Structure, Dad's Point Levee, Smith Canal flooding analyses, or the FIRM panels identified above.

3. All internal FEMA or contractor review comments, technical review memoranda, checklists, and responses to comments related to Case No. 25-09-0442P and the associated modeling, mapping, and engineering analyses.

4. Any decision documents, approval letters, denial letters, request for information letters, and final determination documents issued or prepared by FEMA or its contractors in connection with Case No. 25-09-0442P.

5. Any guidance documents, standard operating procedures, or technical policies specifically applied to

the review of the Smith Canal Gate Structure and Dad's Point Levee case, to the extent they are not already publicly available on FEMA's website.

Your request has been assigned the following tracking number 2026-FEFO-00389.

Due to the increasing number of FOIA requests received by this office, we may encounter some delay in processing your request. Consistent with the DHS FOIA Regulations 6 C.F.R. §5.5(a), FEMA processes FOIA requests according to their order of receipt. Although FEMA's goal is to respond within 20 business days of receipt of your request, FOIA does permit a 10-day extension of this time period in certain circumstances. As your request seeks documents that will require a thorough and wide-ranging search, FEMA will invoke a 10-day extension for your request pursuant to 5 U.S.C. §552(a)(6)(B). If you would like to narrow the scope of your request, please contact our office. We will make every effort to comply with your request in a timely manner.

We have queried the appropriate offices within FEMA for responsive records. If any responsive records are located, they will be reviewed for determination of releasability. We will contact you again once our review is completed and/or the search is completed. Interim responses will be provided as appropriate. We appreciate your patience as we proceed with your request.

If you have any questions or would like to discuss this matter, please contact the assigned FOIA specialist directly at jennifer.chavez@associates.fema.dhs.gov and reference the request number 2026-FEFO-00389. Again, if you require additional support, you may also contact FEMA's Public Liaison at FEMA-FOIA@fema.dhs.gov. If you need to contact FEMA's FOIA Public Liaison, then please reference the FOIA request number and address your email to "Attn: FEMA's Public Liaison" and summarize your concerns.

You may also contact FEMA at (202) 646-3323, or you may contact FEMA's Public Liaison in the same manner. Please reference FOIA request number 2026-FEFO-00389.

For a faster response please communicate by email.

Thank you for your interest in FEMA.

Sincerely,

Disclosure Branch
Information Management Division
Office of the Chief Administrative Officer
Federal Emergency Management Agency
U.S. Department of Homeland Security

ITEM 12

Date: November 25, 2025

Superintendents Monthly Operations Report

Reporting Period: November 2025

November was a notably wet month, particularly in the first half. A total of 3.3 inches of rainfall was recorded in the 95204 area . I am pleased to report that only a few minor issues occurred at the pump stations and levee during this period of heavy rainfall.Throughout the month, maintenance and inspection activities were conducted at all 11 pump stations, and a levee inspection was also completed.

Pump Station Maintenance & Safety

- Conducted monitoring and system checks on electrical and mechanical systems
- Responded to “Alarm Agent” automated alerts at two pump stations during heavy rain events
- Performed servicing on a district boat
- Completed general pump station and yard maintenance, including debris removal from grating and influent lines

Levee Monitoring and Inspection

- Comprehensive levee inspection performed (see attached documentation for details)

This concludes my report.
Respectfully submitted,
Abel Palacio
Superintendent, Reclamation District 1614

Reclamation District 1614 Monthly Waterside Inspection Report

Personnel present: Abel Palacio (RD 1614 Superintendent), Aaron Lickingteller (KSN)

Inspection conducted: Monday, November 10, 2025 at 8:00am –11:30pm. Low tide occurred at 4:36am -(0.2 feet) and high tide occurred at 8:45pm (3.9 feet). A photo summary of select properties is provided below:

Smith Tract



3216 W. Moering Ct: The existing house was demolished and digging equipment could be heard working along the landside toe.



2015 Moering Rd: Waterside slope could use RSP.



2141 Moering Rd: This property could use RSP before construction that is supposed to be occurring in the near future.



2047 Cove Ct.: Waterside slope could use RSP.



3548 Country Club Blvd: Waterside slope could use RSP.



3452 Country Club Blvd.: Waterside slope could use RSP.



1822 & 1826 S. Tuxedo Ave: These slopes will be receiving RSP this year.



1842 S. Tuxedo Ave.: These slopes need to be cleaned up to determine if they need RSP.



1848 S Tuxedo Ave.: This condemned property needs to be cleaned up to determine RSP needs for the waterside slope.



2000 Mission Rd.: This property needs to be cleaned up so RSP needs can be ascertained.



2009 Buena Vista Ave.: No issues here.

Date: December 31, 2025

Superintendent's Monthly Operations Report

1. Coverage During Absence
   - Lonnie provided coverage during my scheduled vacation (Dec 2–7).
   - Completed turnover meeting with Lonnie upon return; no issues were reported.
2. Routine Station Checks & Site Visits
   - Conducted standard pump station inspections following return.
   - Performed grounds maintenance checks pump statins and levee
   - Heavy fog in the area required slower travel and increased caution during inspections.
3. Contractor Coordination
   - Met with Valley Pacific Tree Service at Lake Drive to obtain a quote for tree trimming work.
   - Met with Art from Dalek Landscape to review yard maintenance needs at Wisconsin, Kirk, and
   - Completed functional testing of pumps.
   - Lubricated pump equipment as part of routine preventive maintenance.
   - Performed alarm system maintenance, including battery checks and data verification.
5. Weather-Related Actions & Emergency Response
   - With heavy rain in the forecast, contacted Holt to request a standby generator for the Wisconsin pump station.
   - Met Holt driver on-site to receive the genset and continued station monitoring.
   - Significant rainfall resulted in elevated station activity:
   - Continuous monitoring of pump stations during heavy rain periods.
   - Responded to several alarms throughout the night and following day due to high inflow conditions.Addressed repeated high wet-well alarms and inspected known problem areas.
6. Community Assistance
   - Received a call from concerned neighbors at Lake Drive regarding flooding in the court.
   - Identified leaves clogging the catch basin; cleared debris to restore drainage.
7. Final Actions
   - With rain no longer in the immediate forecast, canceled the generator standby request.

This concludes my report.
Respectfully submitted,
Abel Palacio
Superintendent, Reclamation District 1614

ITEM 14

Pinasco, Andy J.

From: kevin14882@comcast.net
Sent: Tuesday, December 30, 2025 5:18 PM
To: Pinasco, Andy J.
Subject: Fw: SGCC proposed deck at club house
Attachments: SGCC Deck Plan & Sections_122325.pdf

FYI

From: Jeff Sanguinetti <jmsang@aol.com>
Sent: Tuesday, December 30, 2025 4:52 PM
To: cneudeck@ksninc.com <cneudeck@ksninc.com>
Cc: Augustin Telly <augiet@aabuilders.net>; kevin14882@comcast.net <kevin14882@comcast.net>
Subject: SGCC proposed deck at club house

Good Afternoon Chris.....Happy New Year and I hope the family had a great Christmas

As you may know by now I left you a voice message earlier today regarding the Country Club's proposed deck project. I have attached a PDF showing the proposed deck as provided by the Architect super imposed on out topographical survey map. As instructed by the Architect I have limited the extension of the Deck to a point that does not exceed bank contour elevation 12, assuming the Rec District is going to RSP to elevation 12. As you can tell there is NO design work provided at this point for thee deck, it is simply schematic as to the concept. What we are looking for from the Rec. District is basic approval as to our concept before the project actually is designed. We know that we have structural, architectural and drainage/SWQ considerations that will be required, but we want to know the project concept is acceptable before we proceed. Also please note the topo info shown is based on the information you & your firm provided me earlier this year, so we should be on the same datum as your RSP project. We are hoping this can be heard at the upcoming Rec Board meeting.

If you have any questions please do not hesitate to contact me. Please advise accordingly

Thanks

Jeff M Sanguinetti
A R Sanguinetti & Associates
Civil Engineering, Land Planning & Surveying
(209) 482-6599 cell

Warning:
Information provided via electronic media is not guaranteed against defects including translation and transmission errors. If the reader is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this information in error, please notify the sender immediately.

EXISTING HOLE 1 – TEE BOX

EXISTING CONCRETE CART PATH

EXISTING GRASS AREA

EXISTING TEE BOX

EXISTING CONCRETE STEPS

EXISTING FENCE

EXISTING MOW-LINE

EXISTING LANDSCAPING

EXISTING SQUARE METAL GAZEBO

EXISTING CART STORAGE BELOW EXISTING CLUB HOUSE

EXISTING CLUB HOUSE

DECK DESIGN/LAYOUT (8,118 FT²) IS FROM ARCHITECT DRAWING EMAIL DATED 10/21/25

CP #2005, 3/4" REBAR, ELEV. 10.32

CP #2003, FELTMARK, ELEV. 18.01

CP #2001, CHISLED CROSS, ELEV. 14.51

KSN #636

S82°31'44"E 382.79'

S80°29'31"E 351.70'

KSN #639

EXISTING P.G.&E. PH9 AND CONCRETE PAD

EXISTING P.G.&E. TRANSFORMER AND CONCRETE PAD

EXISTING CONCRETE PILLARS (12"x12" AT TOP OF PILLAR)

EXISTING PARKING LOT

APPROXIMATE UNDERGROUND ELECTRICAL TO REMAIN UNDISTURBED

SAN JOAQUIN RIVER

SCALE: 1"=10'

0' 10' 20' 30'

STOCKTON GOLF & COUNTRY CLUB

APPROVED SUBJECT TO THE DATA SHOWN.

STOCKTON GOLF REPRESENTATIVE

DATE:

A.R. SANGUINETTI & ASSOCIATES
CONSULTING CIVIL ENGINEERS
1150 W. ROBINHOOD DR., STE. 1C
STOCKTON, CALIFORNIA

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED

DESIGNED BY:

DRAWN BY: SLM

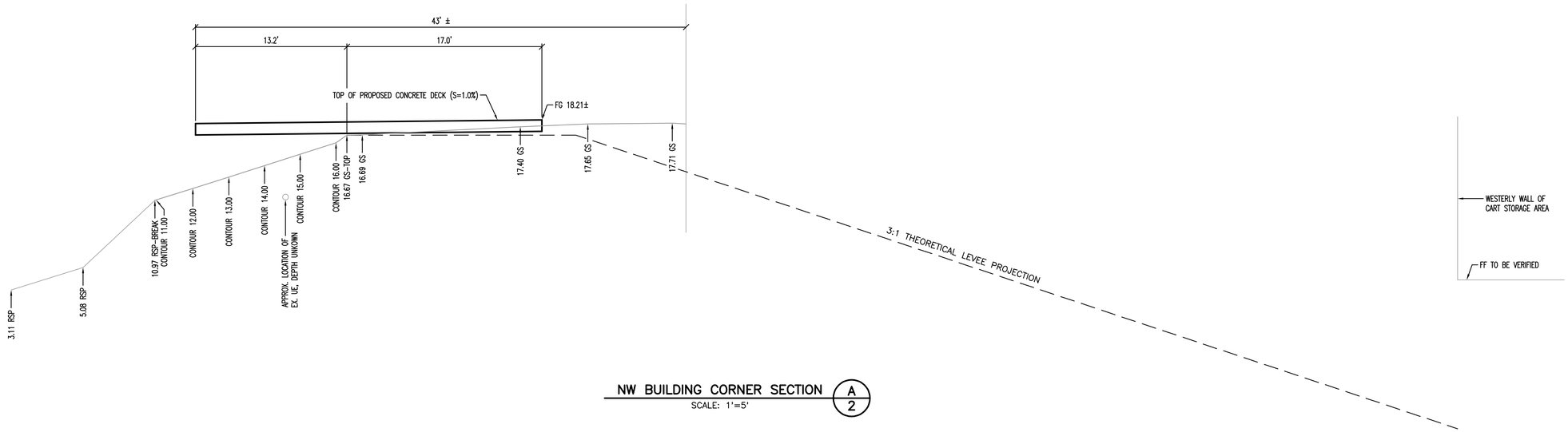
CHECKED BY: JMS/SLM

SCALE: AS SHOWN

STOCKTON GOLF & COUNTRY CLUB
3800 COUNTRY CLUB BLVD.
STOCKTON, CA.

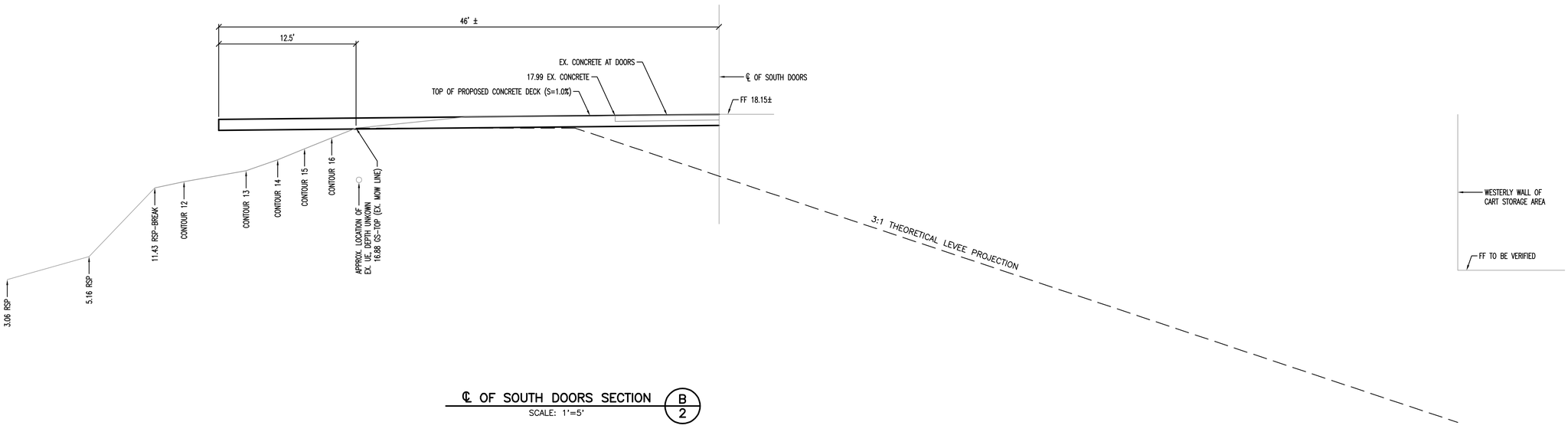
TOPOGRAPHICAL SURVEY W/ DECK LAYOUT

SHEET **1** OF **3** SHEETS



NW BUILDING CORNER SECTION A/2

SCALE: 1"=5'



℄ OF SOUTH DOORS SECTION B/2

SCALE: 1"=5'

STOCKTON GOLF & COUNTRY CLUB

APPROVED SUBJECT TO THE DATA SHOWN.

STOCKTON GOLF REPRESENTATIVE

DATE:

A.R. SANGUINETTI & ASSOCIATES
CONSULTING CIVIL ENGINEERS
1150 W. ROBINHOOD DR., STE. 1C
STOCKTON, CALIFORNIA

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED

DESIGNED BY:

DRAWN BY: SLM

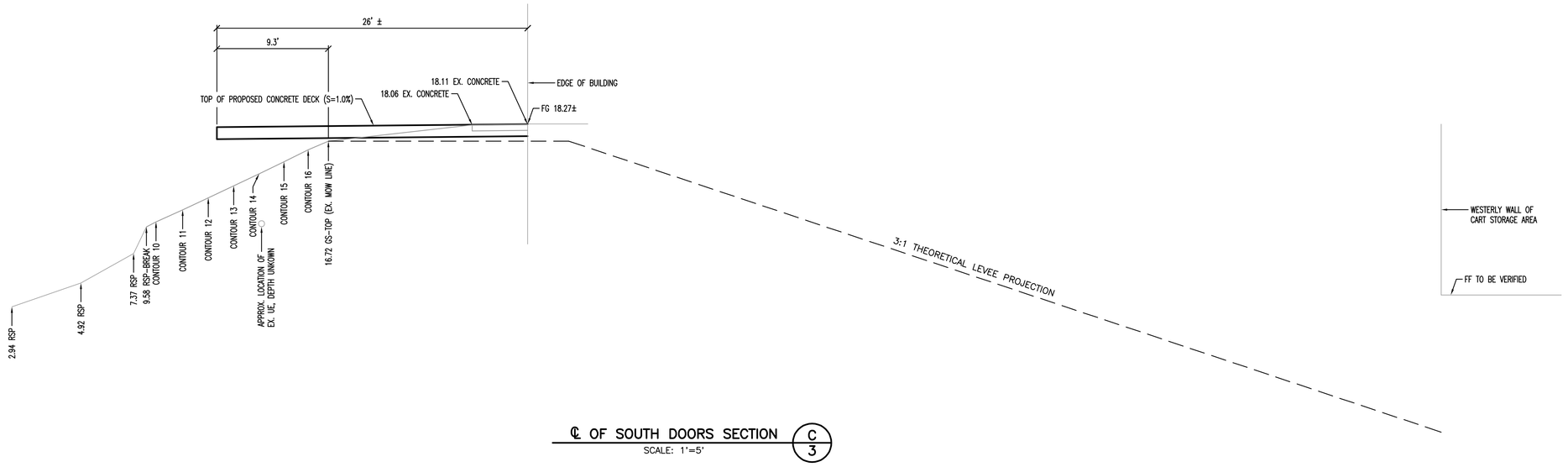
CHECKED BY: JMS/SLM

SCALE: AS SHOWN

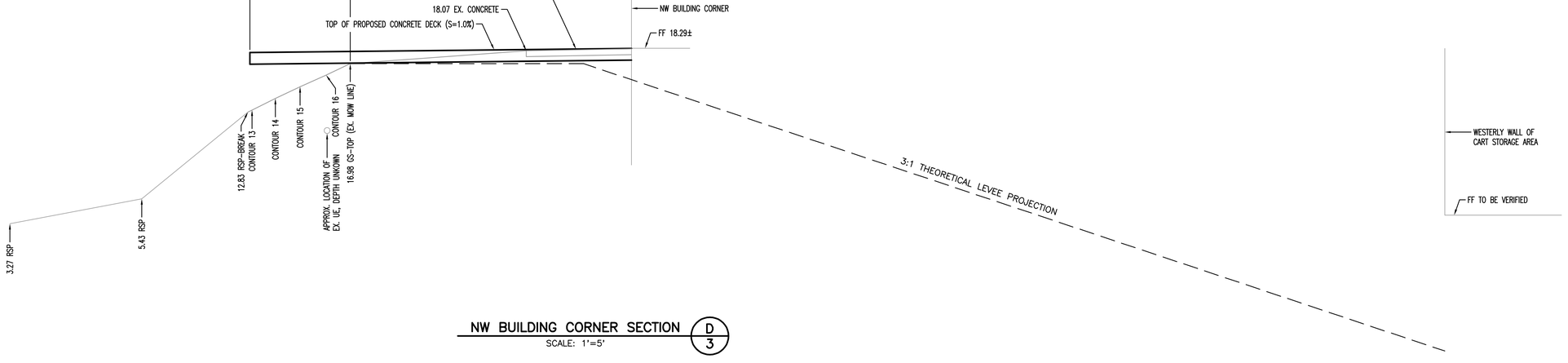
STOCKTON GOLF & COUNTRY CLUB
3800 COUNTRY CLUB BLVD.
STOCKTON, CA.

PORPOSED DECK SECTIONS

SHEET **2** OF **3** SHEETS



℄ OF SOUTH DOORS SECTION (C/3)
SCALE: 1'=5'



NW BUILDING CORNER SECTION (D/3)
SCALE: 1'=5'

STOCKTON GOLF & COUNTRY CLUB

APPROVED SUBJECT TO THE DATA SHOWN.

STOCKTON GOLF REPRESENTATIVE

DATE:

A.R. SANGUINETTI & ASSOCIATES
CONSULTING CIVIL ENGINEERS
1150 W. ROBINHOOD DR., STE. 1C
STOCKTON, CALIFORNIA

REVISIONS			
SYMBOL	DATE	DESCRIPTION	APPROVED

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
	SLM	JMS/SLM	AS SHOWN

STOCKTON GOLF & COUNTRY CLUB
3800 COUNTRY CLUB BLVD.
STOCKTON, CA.

PORPOSED DECK SECTIONS

SHEET
3
OF **3** SHEETS

ITEM 15

RD 1614: MASTER CALENDAR

JANUARY

FEBRUARY

- Send out Form 700s, remind Trustees of April 1 filing date
- Update Document Retention Policy

MARCH

- Evaluation Review of Employees

APRIL

- April 1: Form 700s due
- Biannual Town Hall Meeting

MAY

- Draft Budget

JUNE

- June 15: Provide notice/make available to the public, documentation/materials regarding determination of Appropriations (15 days prior to meeting at which Appropriations will be adopted) (*Government Code* §7910).
- Approve Audit Contract for expiring fiscal year
- Adopt Annual Budget.
- Reminder that Liability Insurance Expires Annually the end of July.
- Adopt Annual CEQA Exemption for levee maintenance
- Adopt Annual Levee Subventions Agreement Resolution
- Notice for Appropriations Limit

JULY

- Adopt Resolution for setting Appropriations and submit to County Assessor's Office.
- Adopt Resolution Establishing Annual Assessments.

AUGUST

- August 1: Deadline to certify assessments for tax-roll and deliver to County (duration of current assessment: no expiration).
- Send handbills for collection of assessments for public entity-owned properties
- In election years, opening of period for secretary to receive petitions for nomination of Trustees (75 days from date of election.) (*Cal. Wat. Code* §50731.5)
- Employee Embezzlement Policy Expires this Month.
- Renewal of Insurance
  (Crime policy does not come up for renewal until 8/22/2026)

SEPTEMBER

- In election years, last legal deadline to post notice that petitions for nomination of Trustees may be received (7 days prior to close of closure.) (*Cal. Wat. Code* §50731.5).
- In election years, closing of acceptance of petitions for nomination of Trustees (54 days from date of election.) (*Cal. Wat. Code* §50731.5).
- Review Status of Encroachment Permit request from Randy Pierson for fence at corner of Del Rio Ave and Kirk Ave.

OCTOBER

- Publish Notice of Election, even numbered years (once per week, 4 times, commencing at least 1 month prior to election).
- Newsletter
- Biannual Town Hall Meeting.

NOVEMBER

- Election: to be held date selected by Board each even-numbered year.

DECEMBER

- New Trustee(s) take office, outgoing Trustee(s) term(s) end on first Friday of each even-numbered year.
- Follow up on Smith Canal Proposition 218 Reimbursement for costs advanced to SJAFCA.
- Election of Board officers (Election years)

Term of Current Board Members:

Name	Term Commenced	Term Ends
Christian Gaines Appointed in lieu 11/8/22	First Friday 12/2/2022	First Friday of 12/4/2026
Kevin Kauffman	First Friday 12/6/2024	First Friday of 12/1/2028
Dominick Gulli	First Friday 12/6/2024	First Friday of 12/1/ 2028

No Expiration on Assessment

Emergency Operations Plan Review – September 2022.

Reclamation District Meetings

- **First Monday of each month, at 2:00 P.M.**
  at the offices of
  Neumiller &Beardslee
  3121 W. March Lane, Suite 100
  Stockton, California 95219

ITEM 19

Reclamation District 1614
November 2025 Bills

NAME	INVOICE #	AMOUNT	TOTAL $	WARRANT #	CHECK #	SUBVENTION FUND
Rhonda Olmo		$1,645.12		6496		
			$1,645.12			
Neumiller & Beardslee	355939	$8,442.84		6497		
			$8,442.84			
Kjeldsen, Sinnock & Neudeck, Inc.	42020	$2,335.38		6498		
	42021	$1,220.50				
	42022	$699.00				
	42023	$310.00				
	42024	$73.75				
	42025	$174.00				
	42026	$427.50				
	42027	$20,155.25				
	42028	$4,706.25				
			$30,101.63			
Delk Pest Control	293879	$220.00		6499		
			$220.00			
Holt Repair & Mfg. Incorporated	13621	$2,707.00		6500		
			$2,707.00			
Abel Palacio -November Payroll		$1,651.35			Direct Deposit	
			$1,651.35			
Orlando Lobosco - November Payrolll		$328.14			2558	
			$328.14			
State of California Payroll Taxes - November		$60.07			online	
			$60.07			

Reclamation District 1614
November 2025 Bills

Federal Government Payroll Taxes - November		$572.24			online	
			$572.24			
ADP - Period Ending 10/31/25		$138.86				
ADP - Period Ending 11/30/25		$142.88				
			$281.74			
Comcast		$150.93			online	
			$150.93			
T-Mobile - October		$83.90			online	
			$83.90			
PG&E		$3,347.22			online	
			$3,347.22			
Visa		$705.13				
			$705.13			

WARRANT TOTAL:	**$43,116.59**
CHECKING TOTAL:	**$7,180.72**
TOTAL BILLS PAID	**$50,297.31**

Reclamation District 1614
December 2025 Bills

NAME	INVOICE #	AMOUNT	TOTAL $	WARRANT #	CHECK #	SUBVENTION FUND
Dominick Gulli - January 5, 2026 Mtg.		$100.00		6501		
			$100.00			
Kevin Kauffman - January 5, 2026 Mtg.		$50.00		6502		
			$50.00			
Christian Gaines - January 5, 2026 Mtg.		$50.00		6503		
			$50.00			
Rhonda Olmo		$1,924.48		6504		
			$1,924.48			
Neumiller & Beardslee	356750	$7,523.68		6505		
	356751	$422.50				
			$7,946.18			
Kjeldsen, Sinnock & Neudeck, Inc.	42239	$1,629.70		6506		
	42240	$847.64				
	42241	$233.00				
	42242	$42.80				
	42243	$147.50				
	42244	$812.00				
	42245	$295.00				
	42246	$9,813.50				
	42247	$1,307.50				
			$15,128.64			
Delk Pest Control	297237	$220.00		6507		
			$220.00			

Reclamation District 1614
December 2025 Bills

Reclamation District 1614 - checking account funds		$35,000.00		6508		
			$35,000.00			
San Joaquin County Mosquito and Vector Control District Assessments for FY 25/26	SJ10029	$93.80		6509		
			$93.80			
Raco Mfg. and Eng. - Renewal Fee	1913	$5,775.00		6510		
			$5,775.00			
Orlando Lobosco - December Payroll		$164.07			2559	
			$164.07			
Abel Palacio -December Payroll		$1,506.78			Direct Deposit	
			$1,506.78			
State of California Payroll Taxes - December	Lobosco	$5.04			online	
	Palacio	$44.45				
			$49.49			
Federal Government Payroll Taxes - December	Lobosco	$28.62			online	
	Palacio	$490.14				
			$518.76			
ADP - Period Ending 12/5/25		$138.86				
ADP Tax Fee		$33.66				
			$172.52			
Comcast		$160.61			online	
			$160.61			

Reclamation District 1614
December 2025 Bills

T-Mobile		$83.90			online	
			$83.90			
PG&E		$5,385.05			online	
			$5,385.05			
Visa		$1,112.55				
			$1,112.55			
State Compensation Insurance Fund	547268048	$601.98				
			$601.98			

WARRANT TOTAL:	**$66,288.10**
CHECKING TOTAL:	**$9,755.71**
TOTAL BILLS PAID	**$76,043.81**