BP2022-0179

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB Control No. 1660-0008
Expiration Date: 06/30/2026

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

A1. Building Owner's Name: **SAKATA SEED AMERICA, INC.**

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: **13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)**

City: **WOODLAND** State: **CA** ZIP Code: **95776**

A3. Property Description (e.g., Lot and Block Numbers or Legal Description) and/or Tax Parcel Number: **ASSESSOR'S PARCEL NUMBER: 027-280-003-000**

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): **PHASE 3 WAREHOUSE** Non-Residential

A5. Latitude/Longitude: Lat. **38°44'38.9"** Long. **-121°45'45.4"** Horizontal Datum: ☐ NAD 1927 ■ NAD 1983 ☐ WGS 84

A6. Attach at least two and when possible four clear photographs (one for each side) of the building (see Form pages 7 and 8).

A7. Building Diagram Number: **1B**

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s): **N/A** sq. ft.

b) Is there at least one permanent flood opening on two different sides of each enclosed area? ☐ Yes ☐ No ■ N/A

c) Enter number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade:
Non-engineered flood openings: **N/A** Engineered flood openings: **N/A**

d) Total net open area of non-engineered flood openings in A8.c: **N/A** sq. in.

e) Total rated area of engineered flood openings in A8.c (attach documentation – see Instructions): **N/A** sq. ft.

f) Sum of A8.d and A8.e rated area (if applicable – see Instructions): **N/A** sq. ft.

A9. For a building with an attached garage:

a) Square footage of attached garage: **N/A** sq. ft.

b) Is there at least one permanent flood opening on two different sides of the attached garage? ☐ Yes ☐ No ■ N/A

c) Enter number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade:
Non-engineered flood openings: **N/A** Engineered flood openings: **N/A**

d) Total net open area of non-engineered flood openings in A9.c: **N/A** sq. in.

e) Total rated area of engineered flood openings in A9.c (attach documentation – see Instructions): **N/A** sq. ft.

f) Sum of A9.d and A9.e rated area (if applicable – see Instructions): **N/A** sq. ft.

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1.a. NFIP Community Name: **YOLO COUNTY** B1.b. NFIP Community Identification Number: **060423**

B2. County Name: **YOLO** B3. State: **CA** B4. Map/Panel No.: **06113C 0435** B5. Suffix: **H**

B6. FIRM Index Date: **05/16/2012** B7. FIRM Panel Effective/Revised Date: **05/16/2012**

B8. Flood Zone(s): **A** B9. Base Flood Elevation(s) (BFE) (Zone AO, use Base Flood Depth): **46.8'**

B10. Indicate the source of the BFE data or Base Flood Depth entered in Item B9:
☐ FIS ☐ FIRM ☐ Community Determined ■ Other: **B.F.E. DETERMINATION (SEE SECTION D)**

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ■ NAVD 1988 ☐ Other/Source:

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ■ No
Designation Date: ☐ CBRS ☐ OPA

B13. Is the building located seaward of the Limit of Moderate Wave Action (LiMWA)? ☐ Yes ■ No

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: **13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)**

City: **WOODLAND** State: **CA** ZIP Code: **95776**

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ■ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, AO, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO, A99. Complete Items C2.a–h below according to the Building Diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: **FORD RM 2 (P.I.D. A15046)** Vertical Datum: **N.A.V.D. 88**

Indicate elevation datum used for the elevations in items a) through h) below.

☐ NGVD 1929 ■ NAVD 1988 ☐ Other:

Datum used for building elevations must be the same as that used for the BFE. Conversion factor used? ☐ Yes ■ No

If Yes, describe the source of the conversion factor in the Section D Comments area.

		Check the measurement used
a) Top of bottom floor (including basement, crawlspace, or enclosure floor):	**48.9**	■ feet ☐ meters
b) Top of the next higher floor (see Instructions):	**N/A**	☐ feet ☐ meters
c) Bottom of the lowest horizontal structural member (see Instructions):	**N/A**	☐ feet ☐ meters
d) Attached garage (top of slab):	**N/A**	☐ feet ☐ meters
e) Lowest elevation of Machinery and Equipment (M&E) servicing the building (describe type of M&E and location in Section D Comments area):	**49.7**	■ feet ☐ meters
f) Lowest Adjacent Grade (LAG) next to building: ■ Natural ☐ Finished	**47.6**	■ feet ☐ meters
g) Highest Adjacent Grade (HAG) next to building: ☐ Natural ■ Finished	**48.9**	■ feet ☐ meters
h) Finished LAG at lowest elevation of attached deck or stairs, including structural support	**47.6**	■ feet ☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by state law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ■ Yes ☐ No

■ Check here if attachments and describe in the Comments area.

Certifier's Name: **NEIL U. BUSCH** License Number: **L. S. 9157**

Title: **SENIOR CIVIL ENGINEER**

Company Name: **LAUGENOUR AND MEIKLE**

Address: **608 COURT STREET**

City: **WOODLAND** State: **CA** ZIP Code: **95695**

Signature: Neil U. Busch Date: **01/22/2024**

Telephone: **(530)662-1755** Ext.: **211** Email: **nbusch@lmce.net**

Place Seal Here

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including source of conversion factor in C2; type of equipment and location per C2.e; and description of any attachments):

THE B.F.E. DETERMINED BY THE ATTACHED REPORT "DETERMINATION OF BASE FLOOD ELEVATIONS FOR SAKATA SEED AMERICA, INC., COUNTY ROAD 100, YOLO COUNTY, CALIFORNIA (APN: 027-280-003-000)". HIGHEST ADJACENT GRADE IS THE CONCRETE ALONG EXTERIOR OF BUILDING. LOWEST MACINERY IS EQUIPMENT PAD LOCATED ON NORTH SIDE OF BUILDING.

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: **13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)**	**FOR INSURANCE COMPANY USE**
City: **WOODLAND** State: **CA** ZIP Code: **95776**	Policy Number: _____
	Company NAIC Number: _____

SECTION E – BUILDING MEASUREMENT INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO, ZONE AR/AO, AND ZONE A (WITHOUT BFE)

For Zones AO, AR/AO, and A (without BFE), complete Items E1–E5. For Items E1–E4, use natural grade, if available. If the Certificate is intended to support a Letter of Map Change request, complete Sections A, B, and C. Check the measurement used. In Puerto Rico only, enter meters.

Building measurements are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

E1. Provide measurements (C.2.a in applicable Building Diagram) for the following and check the appropriate boxes to show whether the measurement is above or below the natural HAG and the LAG.

a) Top of bottom floor (including basement, crawlspace, or enclosure) is: **N/A** ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is: **N/A** ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of Instructions), the next higher floor (C2.b in applicable Building Diagram) of the building is: **N/A** ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is: **N/A** ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is: **N/A** ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ■ No ☐ Unknown The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge*

☐ Check here if attachments and describe in the Comments area.

Property Owner or Owner's Authorized Representative Name: **N/A**

Address: **N/A**

City: **N/A** State: **N/A** ZIP Code: **N/A**

Signature: _____ Date: **N/A**

Telephone: **N/A** Ext.: **N/A** Email: **N/A**

Comments:

N/A

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.	FOR INSURANCE COMPANY USE
13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)	Policy Number:
City: **WOODLAND** State: **CA** ZIP Code: **95776**	Company NAIC Number:

SECTION G – COMMUNITY INFORMATION (RECOMMENDED FOR COMMUNITY OFFICIAL COMPLETION)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Section A, B, C, E, G, or H of this Elevation Certificate. Complete the applicable item(s) and sign below when:

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by state law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2.a. ☐ A local official completed Section E for a building located in Zone A (without a BFE), Zone AO, or Zone AR/AO, or when item E5 is completed for a building located in Zone AO.

G2.b. ☐ A local official completed Section H for insurance purposes.

G3. ☐ In the Comments area of Section G, the local official describes specific corrections to the information in Sections A, B, E and H.

G4. ☐ The following information (Items G5–G11) is provided for community floodplain management purposes.

G5. Permit Number: BP2022-0179 G6. Date Permit Issued: 3/14/23

G7. Date Certificate of Compliance/Occupancy Issued: _____

G8. This permit has been issued for: ☑ New Construction ☐ Substantial Improvement

G9.a. Elevation of as-built lowest floor (including basement) of the building: 48.9 ☐ feet ☐ meters Datum: _____

G9.b. Elevation of bottom of as-built lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____

G10.a. BFE (or depth in Zone AO) of flooding at the building site: 46.8 ☑ feet ☐ meters Datum: N.A.V.D 88

G10.b. Community's minimum elevation (or depth in Zone AO) requirement for the lowest floor or lowest horizontal structural member: _____ ☐ feet ☐ meters Datum: _____

G11. Variance issued? ☐ Yes ☑ No If yes, attach documentation and describe in the Comments area.

The local official who provides information in Section G must sign here. *I have completed the information in Section G and certify that it is correct to the best of my knowledge. If applicable, I have also provided specific corrections in the Comments area of this section.*

Local Official's Name: **SCOTT DOOLITTLE** Title: **Floodplain Administrator, Chief Building Official**

NFIP Community Name: **YOLO COUNTY (UNINCORPORATED)**

Telephone: **(530)666-8037** Ext.: _____ Email: **building.division@yolocounty.org**

Address: **292 WEST BEAMER STREET**

City: **WOODLAND** State: **CA** ZIP Code: **95695**

Signature: _____ Date: _____

Comments (including type of equipment and location, per C2.e; description of any attachments; and corrections to specific information in Sections A, B, D, E, or H):

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: **13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)**	**FOR INSURANCE COMPANY USE**
City: **WOODLAND** State: **CA** ZIP Code: **95776**	Policy Number: _____
	Company NAIC Number: _____

SECTION H – BUILDING'S FIRST FLOOR HEIGHT INFORMATION FOR ALL ZONES (SURVEY NOT REQUIRED) (FOR INSURANCE PURPOSES ONLY)

The property owner, owner's authorized representative, or local floodplain management official may complete Section H for all flood zones to determine the building's first floor height for insurance purposes. Sections A, B, and I must also be completed. Enter heights to the nearest tenth of a foot (nearest tenth of a meter in Puerto Rico). ***Reference the Foundation Type Diagrams (at the end of Section H Instructions) and the appropriate Building Diagrams (at the end of Section I Instructions) to complete this section.***

H1. Provide the height of the top of the floor (as indicated in Foundation Type Diagrams) above the Lowest Adjacent Grade (LAG):

a) **For Building Diagrams 1A, 1B, 3, and 5–9.** Top of bottom floor (include above-grade floors only for buildings with subgrade crawlspaces or enclosure floors) is: **N/A** ☐ feet ☐ meters ☐ above the LAG

b) **For Building Diagrams 2A, 2B, 4, and 6–9.** Top of next higher floor (i.e., the floor above basement, crawlspace, or enclosure floor) is: **N/A** ☐ feet ☐ meters ☐ above the LAG

H2. Is **all** Machinery and Equipment servicing the building (as listed in Item H2 instructions) elevated to or above the floor indicated by the H2 arrow (shown in the Foundation Type Diagrams at end of Section H instructions) for the appropriate Building Diagram?

☐ Yes ■ No

SECTION I – PROPERTY OWNER (OR OWNER'S AUTHORIZED REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and H must sign here. *The statements in Sections A, B, and H are correct to the best of my knowledge.* **Note:** If the local floodplain management official completed Section H, they should indicate in Item G2.b and sign Section G.

☐ Check here if attachments are provided (including required photos) and describe each attachment in the Comments area.

Property Owner or Owner's Authorized Representative Name: **N/A**

Address: **N/A**

City: **N/A** State: **N/A** ZIP Code: **N/A**

Signature: _____ Date: **N/A**

Telephone: **N/A** Ext.: **N/A** Email: **N/A**

Comments:

N/A

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.:
13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)

City: **WOODLAND** State: **CA** ZIP Code: **95776**

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Instructions: Insert below at least two and when possible four photographs showing each side of the building (for example, may only be able to take front and back pictures of townhouses/rowhouses). Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." Photographs must show the foundation. When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

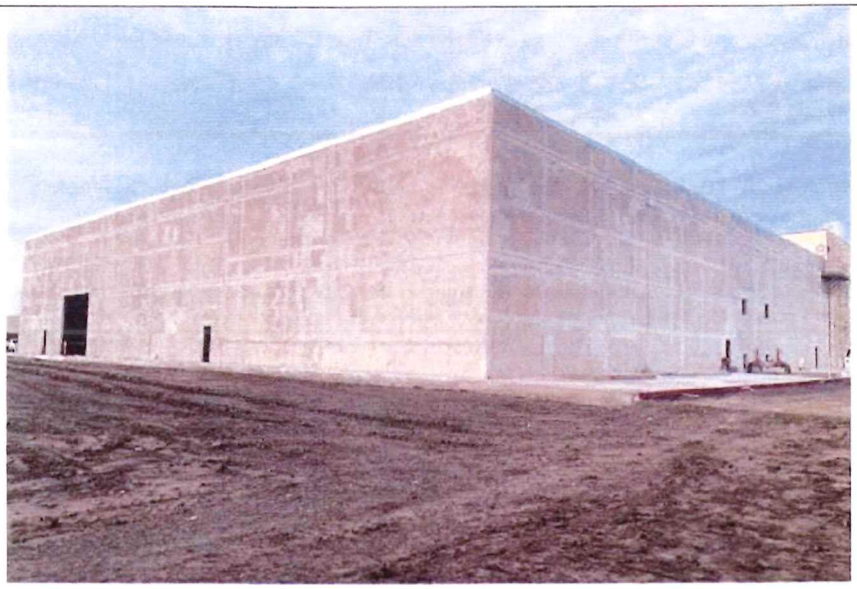


Photo One

Photo One Caption: **NORTHEAST CORNER (TAKEN 01/22/2024)**

Clear Photo One

Photo Two

Photo Two Caption: **SOUTHEAST CORNER (TAKEN 01/22/2024)**

Clear Photo Two

ELEVATION CERTIFICATE

IMPORTANT: MUST FOLLOW THE INSTRUCTIONS ON PAGES 9-19

BUILDING PHOTOGRAPHS

Continuation Page

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: **13459 COUNTY ROAD 100 (PHASE 3 WAREHOUSE)**

City: **WOODLAND** State: **CA** ZIP Code: **95776**

FOR INSURANCE COMPANY USE

Policy Number: _____

Company NAIC Number: _____

Insert the third and fourth photographs below. Identify all photographs with the date taken and "Front View," "Rear View," "Right Side View," or "Left Side View." When flood openings are present, include at least one close-up photograph of representative flood openings or vents, as indicated in Sections A8 and A9.

Photo Three

Photo Three Caption:

Clear Photo Three

Photo Four

Photo Four Caption:

Clear Photo Four

LAUGENOUR AND MEIKLE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING

MEMORANDUM

TO: ATTENTION: LOMA MANAGER
FEMA LOMC CLEARINGHOUSE
847 SOUTH PICKETT STREET
ALEXANDRIA, VA 22304-4605

FROM: BRIAN DELEMOS, P.E., CA C66421
LAUGENOUR AND MEIKLE

DATE: JULY 5, 2017

REGISTERED PROFESSIONAL ENGINEER
BRIAN R. DELEMOS
C 66421
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

SUBJECT: DETERMINATION OF BASE FLOOD ELEVATIONS FOR SAKATA SEEDS AMERICA, INC., COUNTY ROAD 100, YOLO COUNTY, CALIFORNIA (APN: 027-280-003-000)

INTRODUCTION:

This Memorandum documents the hydrologic and hydraulic methods used to determine the Base Flood (100-year, or 1% annual chance) Elevations (BFEs) for proposed structures on the property of Sakata Seeds America, Inc., located along County Road 100, north of Woodland, Yolo County, California (Assessor's Parcel Number 027-280-003-000). The 203-acre parcel, currently planted in row crops, is north of Cache Creek, and, as shown on **Exhibit 1. Vicinity Map and Hydraulic Sections** and **Exhibit 2. Location of Proposed Structures in Flood Zone**, the proposed structures (approximately located at Latitude 38°44`37.10" North, Longitude 121°45'48.46" West), near the center of the parcel, lie in an area designated by the Federal Emergency Management Agency (FEMA) as a Zone A special flood hazard area (Flood Insurance Rate Map [FIRM], Panel 06113C 0435H, May 16, 2012).

The source of flooding is Cache Creek, to the south of the project. The Creek is leveed in the vicinity of the project. The levees are federally authorized project levees, and they are maintained by the California Department of Water Resources.

BFE's for the proposed structures were developed in accordance with FEMA guidelines for Zone A areas[a]. The following topics are discussed below:

- Hydrology
- Hydraulic Model Approach
- Results

[a] Managing Floodplain Development in Approximate Zone A Areas, A Guide for Obtaining and Developing Base (100-Year) Flood Elevations. FEMA. April 1995.

HYDROLOGY:

The base flood flow (1% annual chance flow, or 100-year recurrence interval flow) for the proposed structures was estimated using information from the Flood Insurance Study (FIS) for Yolo County (FEMA, June 18, 2010). The relevant base flood flow listed in the FIS is that for Cache Creek at County Road 94B. County Road 94B is approximately 7 miles upstream (to the west) of the project area. Additional flow does not enter the Creek downstream of County Road 94B because the Creek (downstream of CR 94B) is a perched channel. That is, as can be seen by the elevation contours shown on **Exhibit 1. Vicinity Map and Hydraulic Sections**, the overbank areas slope downward heading away from the Creek.

Because Cache Creek is perched, overflows flow away from the Creek and do not return. The overflow under base flood conditions was estimated, and used as the base flood flow for the project. To estimate the overflow from the Creek, the channel capacity was subtracted from the base flood flow at County Road 94B:

Base Flood Flow at Project Site = Base Flood Flow at County Road 94B – Cache Creek Channel Capacity

The channel capacity of Cache Creek in the vicinity of the project was determined by the US Corps of Engineers (Corps) as reported in its 2003 Flood Damage Reduction Study Report (Corps Report).[b] The Corps Report is included electronically as **Appendix A – Corps Report**, on the enclosed disk. The Hydraulic Analysis (Appendix D of the Corps Report), and as highlighted in **Exhibit 3. Cache Creek Channel Capacity**, determined that the channel capacity, with levees failed, is 20,000 to 25,000 cubic feet per second (cfs).

The base flood flow was estimated using the equation above, as illustrated on **Exhibit 1. Vicinity Map and Hydraulic Sections**. The base flood flow at County Road 94B is approximately 64,000 cfs, per the FEMA FIS referenced above. The channel capacity of the Creek is 20,000 cfs, per the Corps Report. The base flood flow of 44,000 cfs (64000 cfs – 20,000 cfs) was utilized for the BFE determination at the project site.

It should be noted that utilizing the base flood flow of 44,000 cfs should be considered conservative for the project location. **Exhibit 4. Cache Creek 100-Year Flood**, from the Corps Report, indicates that approximately 20,000 cfs (13,600 cfs from the south bank plus 6,000 cfs from the north bank) would overflow from Cache Creek before reaching the project vicinity. This overflow (20,000 cfs) could not reach the project area due to topographic divides/ridges. The conservative base flood flow of 44,000 cfs is appropriate for use with the approximate method, referenced above, used for Zone A floodplain mapping.

[b] March 2003. Lower Cache Creek, Yolo County, CA, City of Woodland and Vicinity, Draft Feasibility Report for Potential Flood Damage Reduction Project. US Army Corps of Engineers.

HYDRAULIC MODEL APPROACH:

An HEC-RAS (Version 5.01) model was developed to compute the BFEs at the proposed structures. Key inputs included topography, base flood flow, roughness coefficients, and downstream boundary conditions.

Topography for the hydraulic model, as shown on **Exhibit 1. Vicinity Map and Hydraulic Sections**, was provided by the Yolo County Public Works Department. The topographic data is detailed data collected by the California Department of Water Resources in 2012 for the purpose of floodplain mapping. It is considered the best available topography of the floodplain in the project vicinity because it was collected recently and would reflect extensive field leveling and ground subsidence that have occurred over the past several decades. The vertical datum of the topographic data is the North American Vertical Datum of 1988 (N.A.V.D.88), which is the vertical datum used for the land survey data collected for the project improvement plans.

Two cross sections were taken from the topographic data for use in the hydraulic model, as shown on **Exhibit 1. Vicinity Map and Hydraulic Sections**. One section was taken at the downstream end of the proposed structures (Station 0), and one at the upstream end of the proposed structures (Station 1110). The sections are generally perpendicular to the overland flood flow path. They were not extended across the entire floodplain because there is a large ridge northwest of the cross sections. This approach is conservative because the entire overflow was applied to this portion of the flood plain. The cross section ground elevations are shown in **Exhibit 5A. HEC-RAS Model Section at Stream Station 0** and **Exhibit 5B. HEC-RAS Model Section at Stream Station 1110**, with the zero station of the cross section starting from the north side of the sections, and with the perspective looking from upstream to downstream.

The model was run in the steady state flow mode. The base flood flow of 44,000 cfs, as discussed above, was used.

Downstream boundary conditions were assumed to be subcritical, normal depth with a friction slope similar in gradient to the land in the down gradient directional slope (to the north). The down gradient slope was estimated from the topographic data to be approximately 0.0026 feet/foot. Downstream backwater conditions would not be expected. The downstream water body to the north, the Colusa Basin Drain, is unleveed on its south bank, and the bank elevation is approximately 31 feet (N.A.V.D.88). Considering this elevation, and that the lowest adjacent grade at the project site is approximately 45 feet (N.A.V.D.88), it would not be expected that backwater from downstream could affect water surface elevations at the vicinity of the project.

Roughness co-efficients were determined based on U.S.G.S. Water Supply Paper 2339 equations and observations of aerial photography. The land cover along the hydraulic model sections is primarily row crops, with some areas planted in orchards. The co-efficient was estimated as 0.040 for the overbank floodplain area. This value compares well to the co-efficients listed in the HEC-RAS Hydraulic Reference Manual for row crops and for trees (January 2010, Table 3-1).

The Cache Creek northern levee was modeled, in effect, using FEMA's Natural Valley Procedure. However, since Cache Creek is perched, and overflows do not return to the Creek, the overbank floodplain, where the project is located, was modeled separately from the Creek channel. The overflow to the overbank area was estimated, as described above, by subtracting out the channel capacity of the Creek, with levees failed, from the total base flood flow for Cache Creek upstream of the project area. All flow greater than the channel capacity was applied to the floodplain in the project vicinity. So, effectively, the northern levee was reflected as completely failed.

RESULTS:

The BFE's at Sections 0 and 1110 for the base flood (during a 1% chance flood event) are depicted on **Exhibit 5A. HEC-RAS Model Section at Stream Station 0** and on **Exhibit 5B. HEC-RAS Model Section at Stream Station 1110**, and would be approximately 45.3 and 47.9 feet (N.A.V.D. 88), respectively. Intermediate BFEs were interpolated as shown on **Exhibit 6. Estimated Base Flood Elevations for Proposed Structures.**

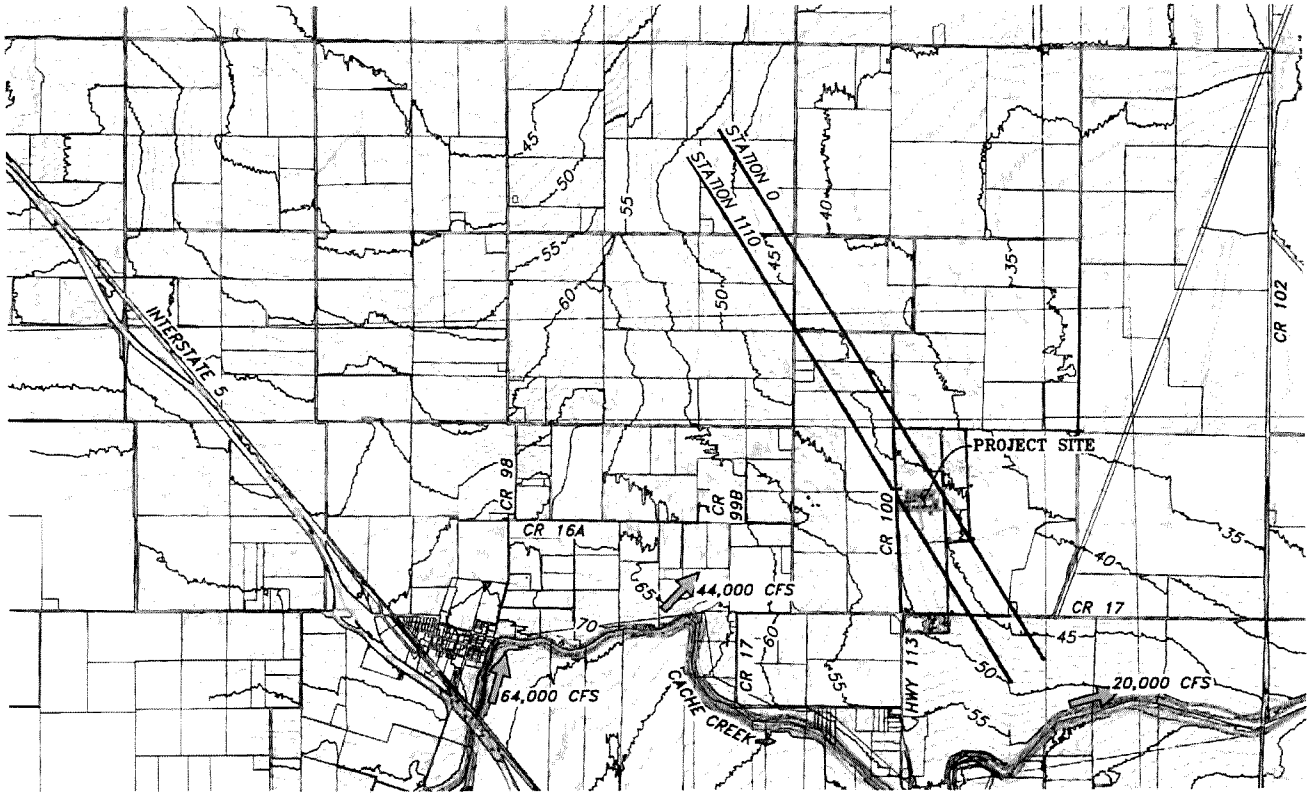
Table 1. Estimated BFEs and Minimum Required Finished Floor Elevations, shows estimated BFEs per proposed structure. Also listed are the minimum finished floor elevations required by the County, which are 1-foot above the BFE.

Table 1. Estimated BFEs and Minimum Required Finished Floor Elevations		
STRUCTURE	BFE, FT	MINIMUM REQUIRED FINISHED FLOOR, FEET
Dorm	47.3	48.3
Headhouse	47.6	48.6
Green houses, Phases 1-3	47.9	48.9
Washery	47.0	48.0
Mill/Warehouse, Phase 2	46.9	47.9
Mill/Warehouse, Phase 3	46.8	47.8
Mill/Warehouse, Phase 4	46.3	47.3
Office, Phase 2	47.4	48.4
Office, Phase 3	47.1	48.1
Office, Phase 4	46.8	47.8
Path Lab	46.6	47.6
Farm Shop	46.3	47.3
Greenhouses, Phase 4	46.8	47.8

The HEC-RAS model files have been included in this package for review. If you have any questions, please feel free to contact me at (530)662-1755, or e-mail me at bdelemos@lmce.net.

Enclosures

EXHIBITS



LEGEND

MODEL SECTION WITH STATION ALONG FLOW PATH

0 1500 3000 6000

SCALE: 1"=3000'

EXHIBIT 1
VICINITY MAP AND HYDRAULIC SECTIONS
FOR
SAKATA SEED AMERICA, INC.
LOCATED IN A PROJECTED PORTION OF SECTION 3,
TOWNSHIP 10 NORTH, RANGE 2 EAST,
MOUNT DIABLO MERIDIAN,
APN: 027-280-003-000
COUNTY ROAD 100
YOLO COUNTY, CALIFORNIA
SHEET 1 OF 1 JUNE 21, 2017

LM LAUGENOUR AND MEIKLE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
606 COURT STREET, WOODLAND, CALIFORNIA 95695 PHONE: (530) 662-1755
P.O. BOX 828, WOODLAND, CALIFORNIA 95776 FAX: (530) 662-4602

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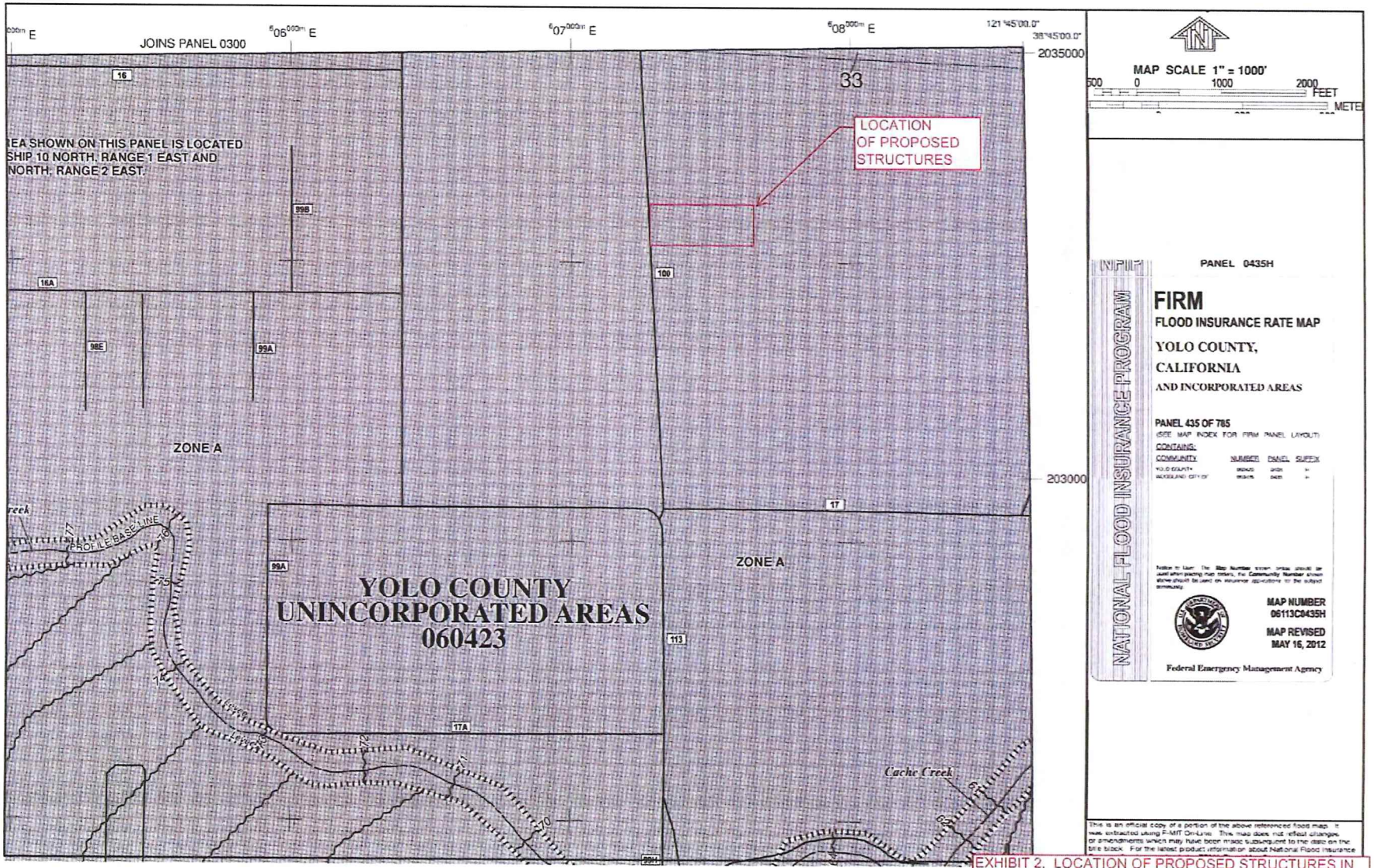

EXHIBIT 2. LOCATION OF PROPOSED STRUCTURES IN FLOOD ZONE

4.3 Historical Flooding. The following are descriptive accounts of flood events and a table of peak flows and 3-day volumes, where available:

a. January 26, 1983. This flood had the highest peak flow of record at Rumsey since construction of Indian Valley Dam was completed in 1974. The peak flow at Rumsey was estimated to be 53,500 cfs (a 2% or 1 in 50 chance exceedence). No estimate of the peak flow at Capay is available. The peak flow at the Yolo gage was 33,000 cfs. Due to the large difference between the peak at Rumsey and at Yolo, it is hypothesized that overbank flow occurred in areas upstream of the Yolo gage. Flood-fighting efforts were undertaken including protective measures to save the town of Yolo. Early in the morning of the 27th, the south levee of Cache Creek failed to the east of Road 102 (about 2 miles east of Woodland) and north of Interstate 5. Following the break, 12 flood fighters were stranded for a few hours between the break site and the stub end of the levee system. A California Highway Patrol Helicopter rescued the flood crews. The water from the break flowed in a southern direction toward the Cache Creek Settling Basin and flooded about 600 acres of agricultural land. If the levee had broken upstream of Highway 5, it would have threatened Woodland since the embankment of the freeway would have directed the flow southeast towards the city. At Rumsey, the 1983 event is estimated to have produced about 25% more runoff than the March 9th, 1995 event (comparison of 3-day volumes).

b. March 9, 1995. High flows in January were followed by an even larger event in March. The estimated peak flows at Rumsey were 33,000 and 52,000 cfs in January and March, respectively. This was the 2nd largest peak flow of record at Rumsey since Indian Valley Dam was built. Heavy bank erosion and debris endangered the Capay Bridge and buildings along the creek. Rock was dumped at the bridge to stabilize the banks. Farther downstream, sandbagging and bank protection measures were used to protect the Cache Creek levees. In this event, overbank flow is estimated to have started at 36,500 cfs. The levees were originally designed to convey about 30,000 cfs (not including the additional levee freeboard). Although the levees did not fail, overtopping did occur upstream of the Highway 5 Bridge on both the north and south sides of the levee. Water overtopping the south levee flowed southeast along the freeway embankment, eventually inundating it and stopping traffic in both directions. The City of Woodland declared a State of Emergency and advised voluntary evacuation of properties north of Woodland Avenue. Floodwaters continued south and came to a stop at the edge of the developed portion of the city. As in 1983, hundreds of acres of land were flooded. Flooding of the city would have been more likely if the south levee had failed rather than being overtopped. The failure of the levee would have decreased channel capacity from 36,000 cfs to about 20,000 – 25,000 cfs (as determined by MBK Engineers). The volume of water in this flood was also a factor. The peak flow at Road 94B was determined to have a 2.5% chance exceedence (1 in 40). The 72-hour volume of the hydrograph, however, was much smaller – only about a 5% chance exceedence (1 in 20). Had the frequency of the hydrograph volume been similar to its peak flow, worse flooding would have occurred. The following table provides historical peak flow and volume data for Cache Creek gages.

EXHIBIT 3. CACHE CREEK CHANNEL CAPACITY.

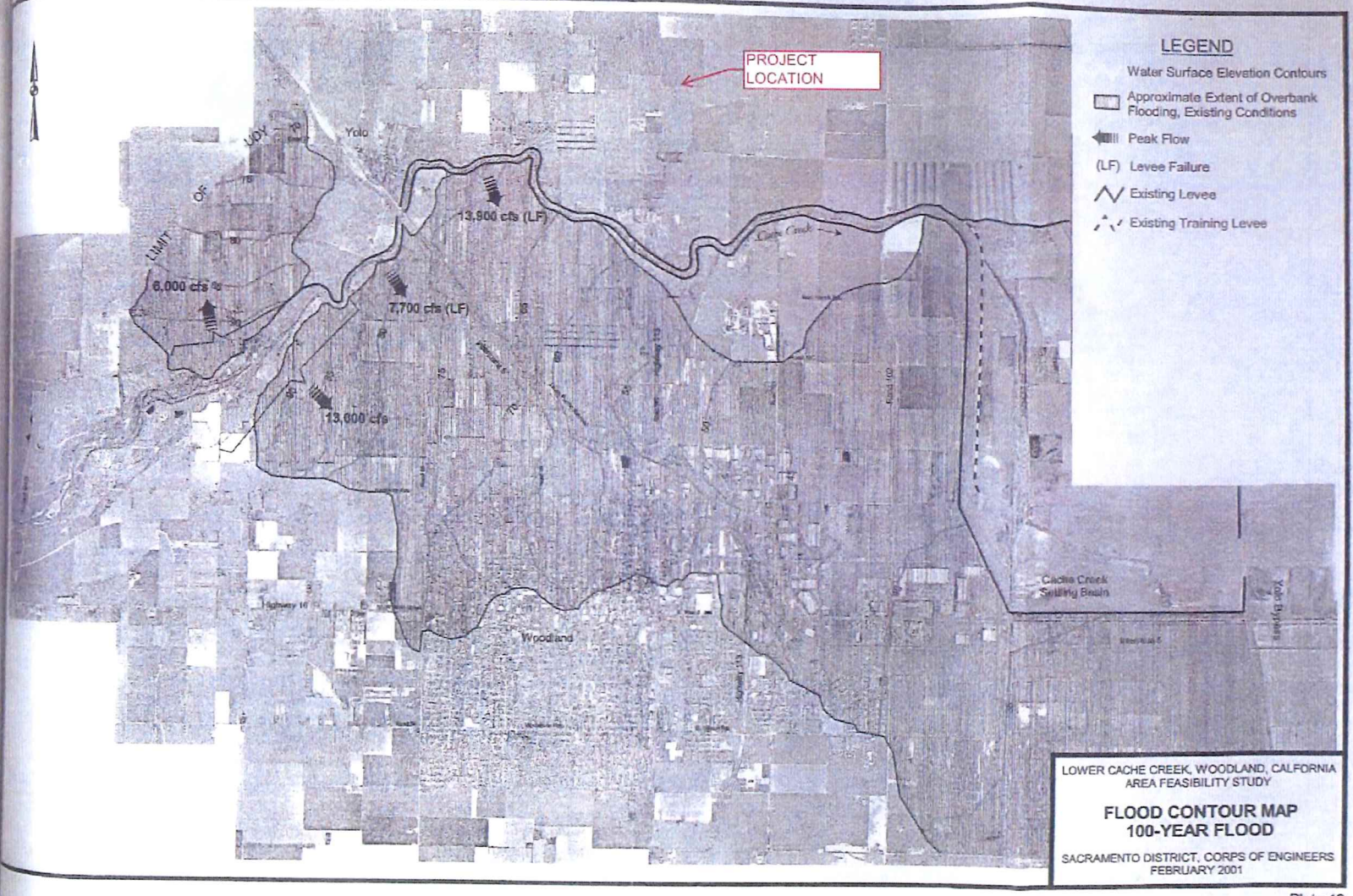

Plate 13

EXHIBIT 4. CACHE CREEK 100-YEAR FLOOD

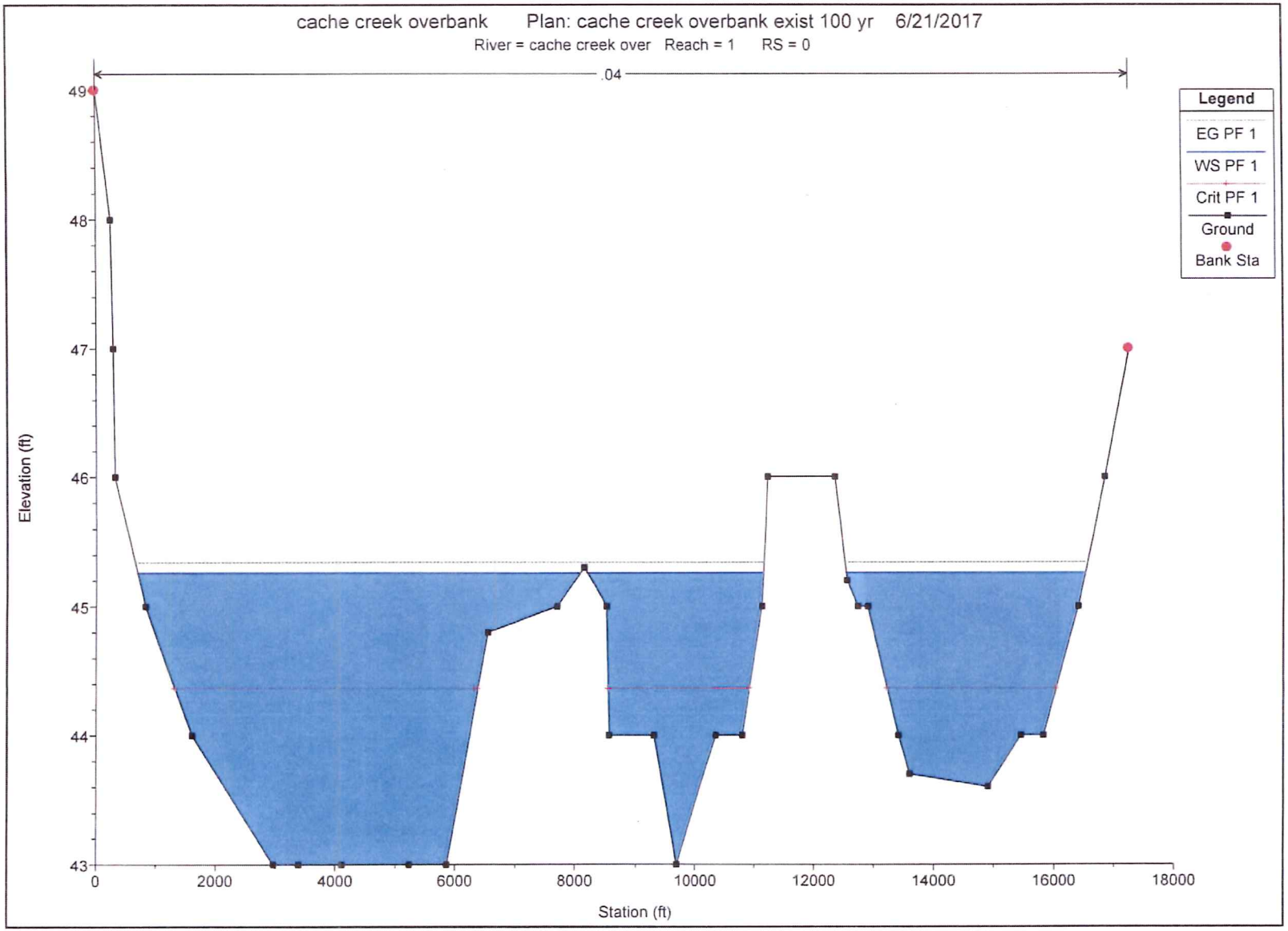

EXHIBIT 5A. HEC-RAS MODEL SECTION AT STREAM STATION 0

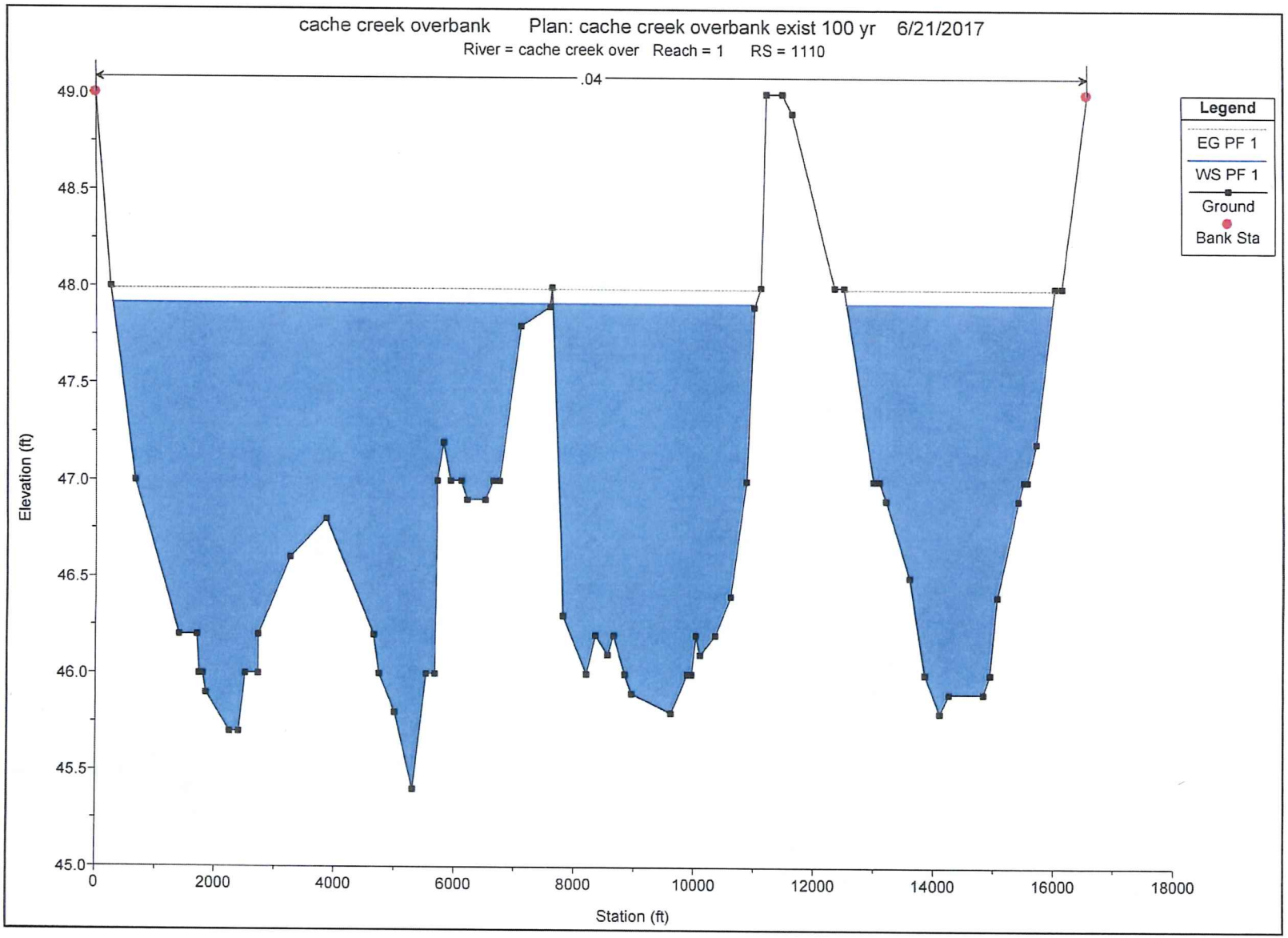

EXHIBIT 5B. HEC-RAS MODEL SECTION AT STREAM STATION 1110

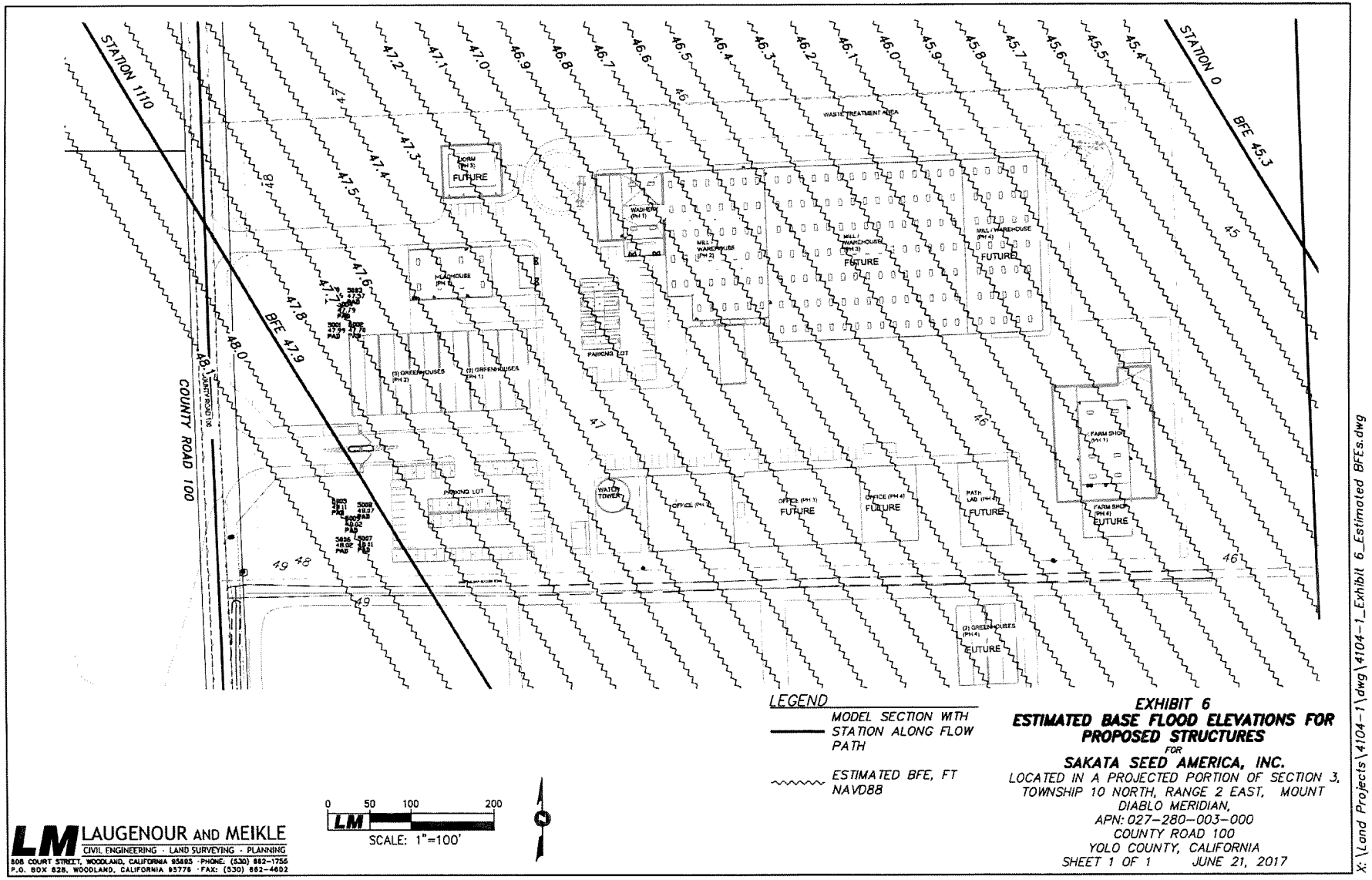

EXHIBIT 6
ESTIMATED BASE FLOOD ELEVATIONS FOR PROPOSED STRUCTURES
FOR
SAKATA SEED AMERICA, INC.
LOCATED IN A PROJECTED PORTION OF SECTION 3, TOWNSHIP 10 NORTH, RANGE 2 EAST, MOUNT DIABLO MERIDIAN,
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APPENDIX A
CORPS REPORT
(INCLUDED ON DISK)