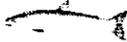


**Biological Assessment
for a Bank Stabilization Project
at 700-779 Center Blvd
(Fair-Anselm)
Fairfax, California**



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EXECUTIVE SUMMARY

The proposed project at 700-779 Center Boulevard in Fairfax, California, is located on a site directly adjacent and below the Fair-Anselm Shopping Center, on the bank of San Anselmo Creek. The objective of the project is to stabilize the northerly bank of the San Anselmo Creek channel that is under the Fair-Anselm Shopping Center, and a portion of the bank just west of the building. Creek erosion beneath the building is resulting in the migration of silt and gravel from this reach of the creek downstream.

In its review of the proposed project, the Town of Fairfax Department of Planning and Building Services (Town) stated that the project could have a significant impact on biological resources because it occurs within the riparian creek area. The Town stated that a report by a qualified biologist must be written that addressed the project plans, the proposed construction mitigations and indicate whether or not the measures proposed during and post-construction would reduce impacts to a level of insignificance.

To that end, Michael Watkins (Ballard & Watkins) contracted with A. A. Rich and Associates (AAR), to assist with the project, with regard to biological resources issues, and to provide a Biological Technical Report (Biological Report). The purpose of this Biological Report was two-fold:

- (1) To determine whether or not the mitigation measures for the proposed project were adequate to reduce construction and post-construction impacts to a level of insignificance for the biological resources that could be affected by the project; and,
- (2) If the measures to minimize impacts were not adequate to reduce impacts to a level of insignificance for biological resources, to provide additional mitigation measures to reduce potential impacts to less than significant.

To prepare this Biological Report, the following tasks were undertaken:

- (1) Communicated with agency personnel and others familiar with the proposed project and project issues;
- (2) Conducted a reconnaissance-level habitat evaluation; and,
- (3) Reviewed and analyzed relevant information, studies, and reports.

The Central California Coast steelhead is the only listed species in the proposed project area. It was concluded that the project would result in no significant impacts on biological resources provided that the protective measures discussed in the report were implemented.

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I. INTRODUCTION

A. PROJECT AREA

The proposed project (owned by Fairfax Center Properties, LLC) at 711-713 Center Boulevard in Fairfax, California, is located on a site directly adjacent and below the Fair-Anselm Shopping Center, on the bank of San Anselmo Creek (Figure 1; Appendix A: Photos). San Anselmo Creek flows out of Cascade Canyon originating in the Marin County Open Space area, flows down through the towns of Fairfax, San Anselmo, and a portion of Ross before becoming Corte Madera Creek. Corte Madera Creek flows into San Francisco Bay just south of the San Quentin Peninsula, approximately 10 miles north of the Golden Gate Bridge. The Corte Madera Creek Watershed is among the few watersheds with streams flowing into San Francisco Bay that retains a steelhead population.

B. BACKGROUND AND OBJECTIVES

The proposed project would replace a failed retaining wall underneath the Fair-Anselm Shopping Center. Currently, half of the building is above the bank of the creek, with half extended over the creek. The existing conditions consist of a concrete structure on deep concrete piers adjacent to San Anselmo Creek. Erosion beneath the building is resulting in the migration of silt and gravel from this reach of the creek, extending downstream (JARPA, 2012). The objective of the proposed project is to stabilize the northerly bank of San Anselmo Creek channel that is under the Fair-Anselm Shopping Center, and a portion of the bank just west of the building.

In addition to the Project Plans (Appendix B), a number of reports and documents have been prepared for the proposed project. The Town of Fairfax (2011a) prepared an Initial Checklist for the project. Both geotechnical (Neil O. Anderson & Associates, 2008; Miller Pacific Engineering Group, 2009) and hydraulic (Oberkamper and Associates, 2011) investigations were conducted. In addition, the Town of Fairfax (Town) contracted with AAR to conduct fishery resources studies (Rich, 2006) and Smeltzer and Orum (2006) to conduct geotechnical investigations in 2006 after the December 31, 2005 flood. The 2006 flood-related studies included the reach of San Anselmo Creek adjacent to the proposed project area (see photos Appendix A).

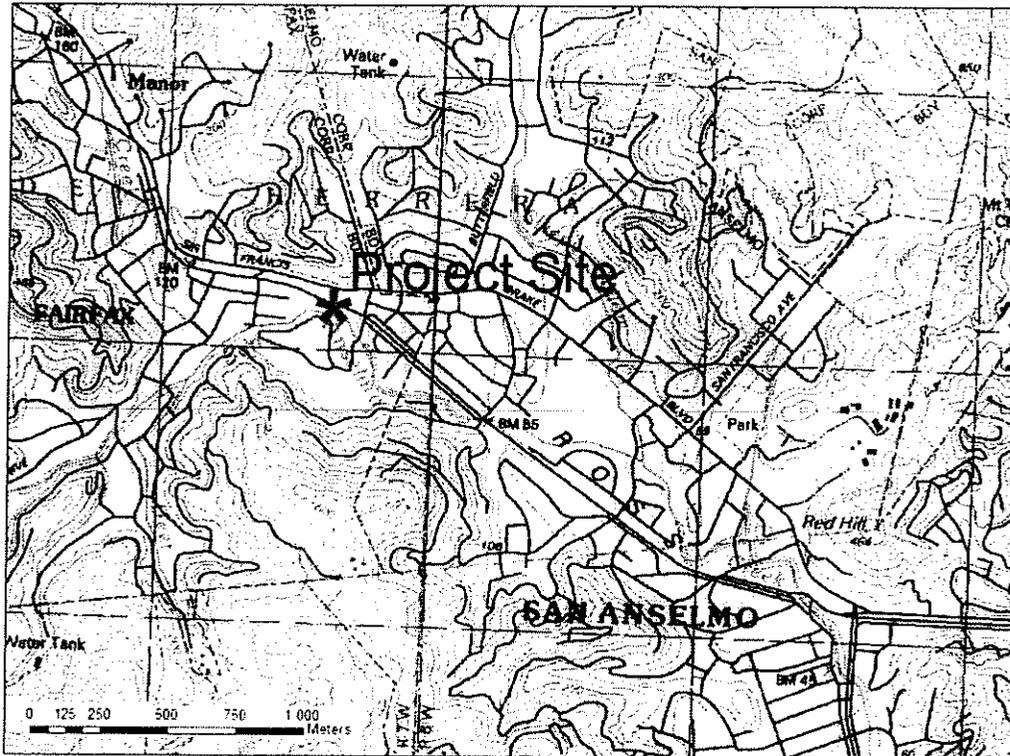


FIGURE 1. PROJECT LOCALE

Source: USGS San Rafael 7.5 minute quadrangle map

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The California Department of Fish and Game (DFG) and NOAA Fisheries have reviewed the proposed project and have approved it in concept, but are waiting for the completed JARPA before responding formally. In its review of the proposed project, the Town stated that (Town of Fairfax, 2011b):

“ The project could have a significant impact on Biological Resources because it is occurring within a Riparian Creek Area..... However, a report must be included with the initial study by a biologist, preferably specializing in creek habitats, reviewing the project plans, the proposed construction mitigations and indicated that they are adequate to mitigate construction and post construction impacts to a level of insignificance.”

To that end, Michael Watkins, of Ballard & Watkins, contracted with A. A. Rich and Associates (*AAR*), to assist with the project, with regard to biological resources issues, and to provide a Biological Technical Report (Biological Report). The purpose of this Biological Report is two-fold:

- (1) To determine whether or not the mitigation measures for the proposed project are adequate to reduce construction and post-construction impacts to a level of insignificance for the biological resources that could be affected by the project; and,
- (2) If the measures to minimize impacts are not adequate to reduce impacts to a level of insignificance for biological resources, to provide additional mitigation measures to reduce potential impacts to less than significant.

To prepare this Biological Report, the following tasks were undertaken:

- (1) Communicated with agency personnel and others familiar with the proposed project and project issues;
- (2) Conducted a reconnaissance-level habitat evaluation; and,
- (3) Reviewed and analyzed relevant information, studies, and reports.

II. PROJECT DESCRIPTION

The failed retaining wall would be replaced with a new sculpted and stained shotcrete wall supported on helical piers, and with tiebacks further upslope than the existing wall (see Appendix B for Project Plans). Re-contouring of the creek bank would provide a more natural slope. To slow the speed of the water through the reach of the creek section, the surface of the shotcrete bank protection would be textured. This would enhance the function of the area as a retention basin during high creek levels.

The creek bank adjacent to the project area would be protected with turf reinforcing matting that would be planted with live willow stakes. Due to the lack of sun, the area under the building does not lend itself to planting of willows. Therefore, the bank area under the building would be protected from erosion by using sculpted and stained concrete. This would also be supported with helical piers and tiebacks that would be keyed into the creek bed to prevent scouring at the toe of the bank. Site landscaping would be enhanced with the addition of bioswales at the parking lot planting area. During high rainfall, the bioswales overflow into drop inlets (DI's) that daylight within the creek in a tee-shaped energy dissipater. A new bioswale area, which would intercept and filter the water from the roof drains, would be added to the area adjacent to the top of the retaining wall. To enhance the look and slow the speed of water within the bioswale, the bioswales would be interplanted with native grass.

The construction activities would include the following.

- To regrade the bank at the location of the new shotcrete retaining wall, a gradeall with bucket would be used. This work would be performed from the parking lot at the top of the slope by reaching over the bank and pulling the excavated material up to the bank.
- To provide the key at the base of the shotcrete bank protection, a small trencher, or bobcat, would be used.
- To install the helical piers and tiebacks, the bank would be hand-graded and a bobcat, or portable drilling derrick, would be used.
- Shotcrete application would be from a mixing device at the parking lot, with a boom crane used to help with hose control.
- Removal of all shotcrete rebound and any construction debris would be accomplished with the bobcat.

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- In order to prevent trucks and equipment from traveling into Town to make deliveries, the staging area would be in the west (between the Post Office and Fair-Anselm Center) parking lot. Trucks and deliveries would make a left turn from the Pastori-Sir Francis Drake intersection, proceed to the Pastori/Center Boulevard intersection, and take a right turn. They would then proceed down Center Boulevard and turn left into the parking lot. Trucks leaving the site would travel the same route in the reverse direction.

The total construction duration is planned for two months. The work would be done during construction hours of 7 am to 4 pm. No equipment would be placed in the creek and no work would be conducted in the creek.

III. STATUS OF BIOLOGICAL SPECIES

The Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*) is the only federal- or state-listed species in the proposed project area (CDDDB, 2011). There is no suitable habitat for either the California red-legged frog (CRLF) or the foothill yellow-legged frog (FYLF) on the site. The CRLF is most often found in creeks with pools that last well into the summer season and have emergent vegetation for cover. This type of habitat does not occur in the vicinity of the project site. Similarly, the FYLF typically occurs in stream reaches with cobbles; the habitat in the project area is not suitable for this species. There are no other federal- or state-listed species in the project area. Finally, there are no wetland areas near the project area.

The CCC steelhead is listed as threatened, under the Federal Endangered Species Act (ESA) (Federal Register, 2006, 1997).¹

¹ This Distinct Population Segment (DPS) includes all naturally-spawned populations of steelhead in coastal streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin rivers; and tributary streams to Suisun Marsh, including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough, exclusive of the Sacramento-San Joaquin River Basin of the California Central Valley (Federal Register, 2006, 1997).

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IV. EXISTING FISHERY RESOURCES CONDITIONS

A. HABITAT CONDITIONS

Fishery resources habitat conditions in San Anselmo Creek adjacent to the project area vary, depending upon the season. However, as the project would occur during the low-flow, or summer conditions, habitat conditions during that time are the most relevant. Dr. Rich conducted a habitat survey in August 2011 (see Appendix C for habitat typing survey form). Beginning downstream of the project area, at the Pastori Avenue Bridge and proceeding upstream in the creek adjacent to the Fairfax Post Office, the creek was characterized as follows. Immediately upstream of the Pastori Avenue Bridge, there was a long (approximately 40 m¹), wide (4-8 m), and fairly shallow (less than 0.5 m depth) channel. In the creek adjacent to the downstream end of the Fair-Anselm² building was a good-sized (length: 10 m; width: 2-5 m; depth: 1 m) rootwad pool that provided good salmonid rearing habitat.³ Proceeding upstream in the creek adjacent to the Fair-Anselm building, the creek split, with most of the water flowing within a channel adjacent to the bank opposite the proposed project. A "trickle" of water "flowed" most of the way under the Fair-Anselm building. In San Anselmo Creek at the upstream end of Fair-Anselm building, there was a large (length: 8 m; width: 9-12 m; depth: 0.2- >0.5 m) dammed (stranded) pool where no water flowed in or out.

B. FISHES

Although no fish collection surveys were undertaken in 2011, juvenile steelhead/rainbow trout were collected in the deeper pools in San Anselmo Creek in vicinity of the proposed project area (Rich, 2006). In addition, California roach and sculpin were collected. The most abundant of the three fish species collected were the steelhead/rainbow trout and sculpin.

¹ m = meter

² Fair-Anselm Building = building under which proposed project is located.

³ In 2005, seven juvenile steelhead/rainbow trout were collected in this rootwad pool (Rich, 2006).

**V. LIFE STAGE PERIODICITIES AND HABITAT REQUIREMENTS
OF STEELHEAD AND RAINBOW TROUT**

A. OVERVIEW

Although there are several fish species in this area of San Anselmo Creek (steelhead/rainbow trout, California roach, sculpin), the fish species of interest for this Biological Report is the steelhead, as it is listed as threatened under the Federal ESA. The steelhead is the anadromous (an anadromous fish is one that begins life in a freshwater stream or river, migrates out to sea to grow and mature, and then returns to its natal stream or river to spawn) form of the resident rainbow trout. Except for their ocean-going habits and larger spawning size, the steelhead is visually indistinguishable from its non-migratory counterpart, the rainbow trout; only genetic studies can provide the necessary information that differentiates the two forms (Utter et al., 1980; Allendorf, 1975; Thorgaard, 1983; Behnke, 1972; Needham and Gard, 1959). Whether or not a particular stream supports an anadromous or resident trout population, or both, appears to be the result of local adaptation to geographic location. Steelhead have well-developed homing abilities and usually spawn in the same stream in which they were born.

B. STEELHEAD

The life history information for the steelhead is divided into the following life stage events (Figure 2, Table 1):

- Adult Immigration/Passage;
- Spawning;
- Egg/Alevin (yolk sac not absorbed) Incubation;
- Fry/Juvenile Rearing; and,
- Juvenile Smoltification/Emigration

The life history information that follows is based a combination of what is known about the Corte Madera Creek Watershed and, generally, what is known about this species in California coastal streams.

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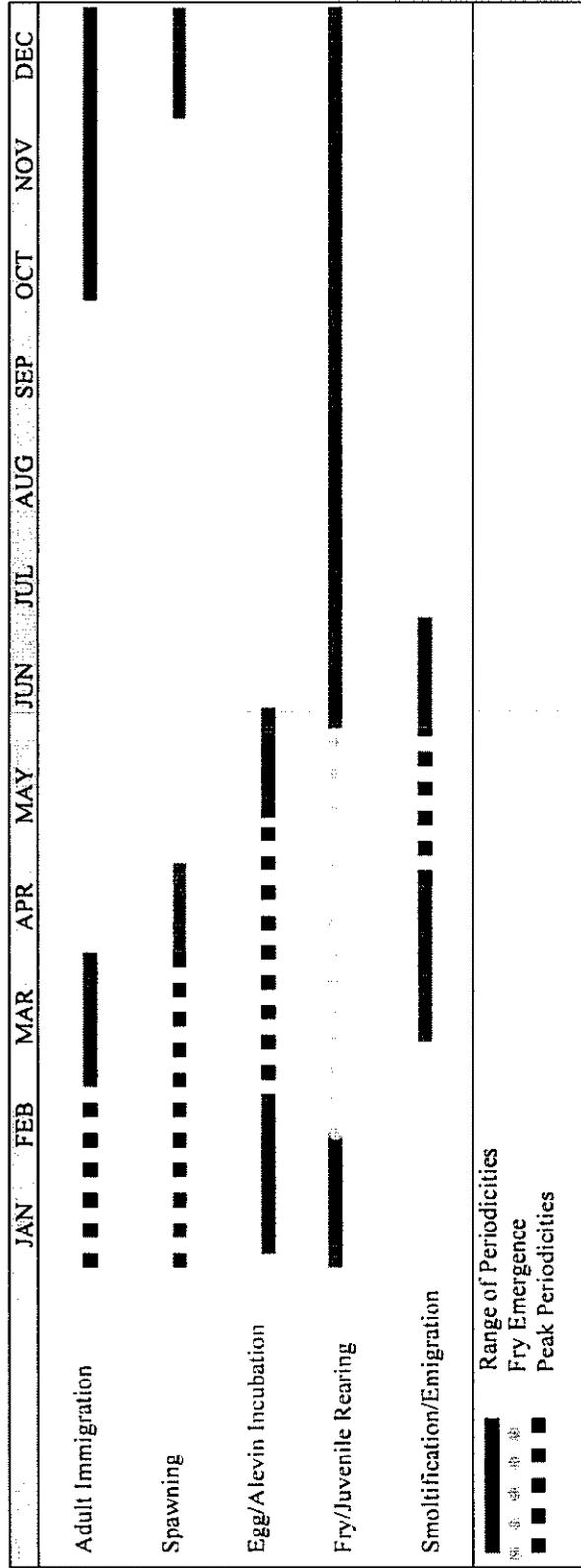


FIGURE 2. LIFE STAGE PERIODICITIES OF STEELHEAD

Sources: Shapovolov and Taft, 1954; Giddings, 1948-1977; Briggs, 1953; Fukushima and Lesh, 1998; Withler, 1966.

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TABLE 1. OPTIMUM CONDITIONS FOR STEELHEAD

Lifestage	Water Temperature Preference °F	Dissolved Oxygen (mg/l)	pH	Water Depth (ft)	Water Velocity (ft/s)	Substrate Size (inches)
Immigration and Passage	46.0-52.0	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	> 0.6	< 2.4	N/A
Spawning	46.0-52.0	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	> 0.8	1.3-3.0	0.5-4.0
Incubation	46.0-52.0	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	> 0.1	< 6.0	0.5-4.0
Fry Emergence	48.0-52.0	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	> 0.1	< 6.0	0.5-4.0
Rearing	55.0-60.1	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	0.6-2.2	0.2-0.8	2.5-9.8
Smoltification and Emigration	44.4-52.3	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	0.6-2.2	0.2-0.8	2.5-9.8

ft = Feet
 F = Fahrenheit
 ft/s = Feet per Second
 > = More Than
 < = Less Than

Sources: Adams et al., 1975; Folmar and Dickhoff, 1980; Rich, 1987; Dickson and Kramer, 1971; Doudoroff and Shumway, 1970; Orcutt et al., 1968; Thompson, 1972; Smith, 1973; Phillips and Campbell, 1961; Davis, et al., 1963; Wagner, 1974; Zaugg and Wagner, 1973; Zaugg et al., 1972.

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Environmental factors that affect the various life stages of steelhead include stream flows, water temperature, dissolved oxygen (DO) concentrations, suitability of spawning and rearing habitat (i.e., size of gravel, percentage of silt and fines), angling pressure, phase of the moon, and photoperiod.

C. RAINBOW TROUT

Although not sea-dwelling, the rest of the life history of the resident rainbow trout is similar to that of steelhead. Most rainbow trout are spring spawners (February to June). Most resident rainbow trout mature in the second or third year although the time of first maturity can vary from the first to the fifth year of life (size at maturity can be 5 inches or longer). The numerous factors that affect steelhead also affect the rainbow trout (Figure 3; Table 2).

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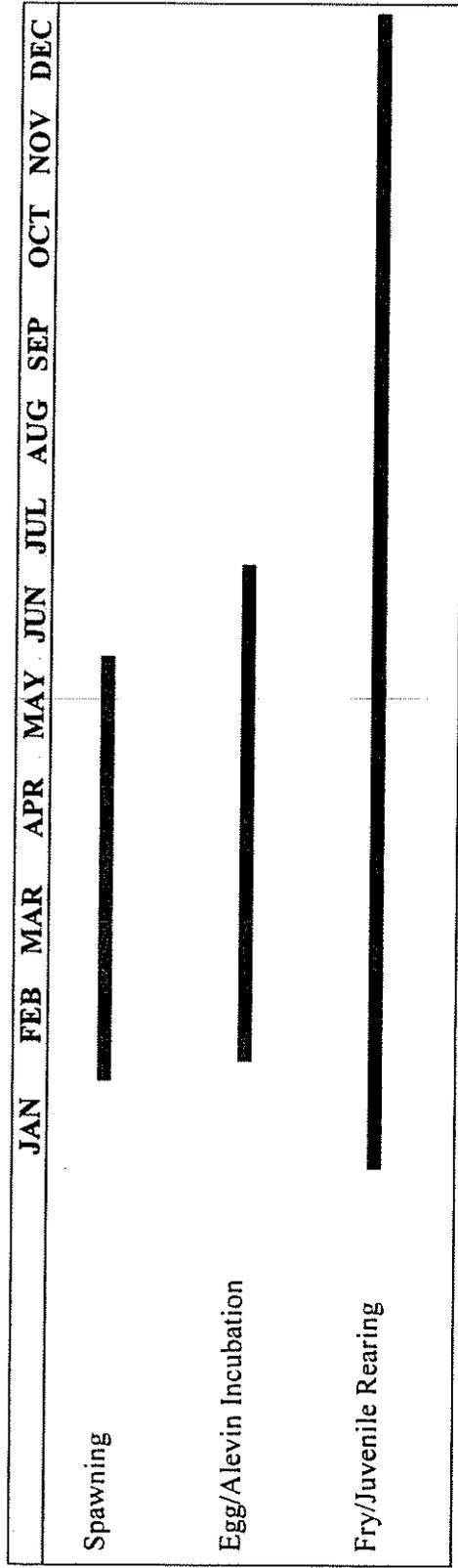


FIGURE 3. LIFE STAGE PERIODICITIES OF RAINBOW TROUT

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TABLE 2. OPTIMUM CONDITIONS FOR RAINBOW TROUT

Lifestage	Water Temperature Preference (°F)	Dissolved Oxygen (mg/l)	pH	Water Depth (ft)	Water Velocity (ft/s)	Substrate Size (inches)
Spawning	53.6-64.4	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8	0.6-6.5	1.0-2.3	0.6-2.4 for spawners < 20 in long 0.6-2.4 for spawners ≥ 20 in long
Rearing	59.0-68.0	≥ 7 at ≤ 59 °F ≥ 9 at > 59 °F	7-8			

ft = Feet
 F = Fahrenheit
 ft/s = Feet per Second
 > = More Than
 < = Less Than
 ≥ = More than or equal to

Sources: Reiser and White. 1981; Dickson and Kramer. 1971; Doudoroff and Shumway. 1970; Orcutt et al., 1968.

**VI. HISTORICAL PERSPECTIVE OF STEELHEAD AND SALMON
IN THE CORTE MADERA CREEK WATERSHED**

There are few written records of “how things used to be” before the Europeans arrived, with regard to the fishery resources in Marin County creeks. There is no question that trout were ample enough for the Coast Miwok Indians to rely upon for food (Margolin, 1978). Although no quantitative surveys were ever conducted, it is evident that, as the years have passed, there have been fewer and fewer salmonids, to the point where steelhead are fewer in the Corte Madera Creek Watershed today than there used to be. Although occasionally both adult coho salmon (*O. kisutch*) and Chinook salmon (*O. tshawytscha*) immigrate into the Corte Madera Creek Watershed, no juveniles of either species have been observed or collected in decades (Rich, 2000, 2006). Furthermore, there is no suitable rearing habitat for coho salmon; juvenile coho salmon prefer deep, dark, and dense (i.e., presence of woody debris) pools, something sorely lacking in this watershed.

**VII. POTENTIAL IMPACTS OF THE PROPOSED PROJECT
ON BIOLOGICAL RESOURCES**

A. AREA OF IMPACT

Approximately 500 linear feet of reach along the creek, and 0.23 acres of area would be affected by the project. To facilitate the construction of the shotcrete retaining wall, approximately 250 yards of material would be removed from the project site (JARPA, 2012).

**B. PROJECT MEASURES TO MINIMIZE IMPACTS ON BIOLOGICAL
RESOURCES AND THE SURROUNDING ENVIRONMENT**

The proposed project has been designed to minimize the impacts on San Anselmo Creek and associated ecosystem. The following measures that minimize impacts would be part of the proposed project:

- (1) The work would occur during the low flow season (August and September), when there is little water in the creek adjacent to the project area;
- (2) No work would be conducted within the creek;
- (3) The creek bed would be protected during construction by the installation of a gravel bag silt fence, plywood debris fence, and planking over the creek;
- (4) The creek would be protected by a silt fence that would not interfere with the flow line of the creek;
- (5) A significant portion of the final configuration is above the high water flood level;
- (6) To re-establish a natural setting adjacent to the creek in the project area that would be below the high water level, low impact turf reinforcing matting and willow shoots would be used;
- (7) To treat parking lot drainage waters, bioswales and DI's to storm drains would filter the water prior to its entering the creek; and,
- (8) To slow the flow, and encourage infiltration of waters, rather than runoff from the parking lot, bioswales would be constructed of rock swale areas and swale areas would be planted with native grasses.

**VIII. RECOMMENDED ADDITIONAL PROTECTIVE MEASURES
TO MINIMIZE IMPACTS ON STEELHEAD AND THE SURROUNDING
ENVIRONMENT**

In addition to the previously-discussed measures that would minimize impacts on the aquatic environment, the following Best Management Practices (BMP's) are recommended, if warranted:

- In case of rain, silt fences would be placed in appropriate locations;
- Fuels, lubricants, and chemicals would be placed away from the stream channel and any storm drains;
- Fueling and equipment maintenance would be performed away from the stream;
- No refueling would be allowed in the stream channel;
- To prevent stormwater pollution in the creek, the contractor would cover and protect all stockpiles at all times;
- The contractor would monitor weather forecasts and would prepare the site for rainfall if more than 0.1 inches of rain is predicted. At all times, materials that would be needed to prepare the site for rain would be on-site or could be delivered to the site within four hours;
- At the end of the project, the contractor would remove all accumulated materials from the project area and adjacent environs; and,
- To protect the creek from any disturbance, a biologist would monitor construction activities.

IX. CONCLUSION

It is concluded that the proposed project will result in no significant impacts on biological resources provided that the protective measures, discussed in Sections II and VII, are implemented.

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A.A. RICH AND ASSOCIATES

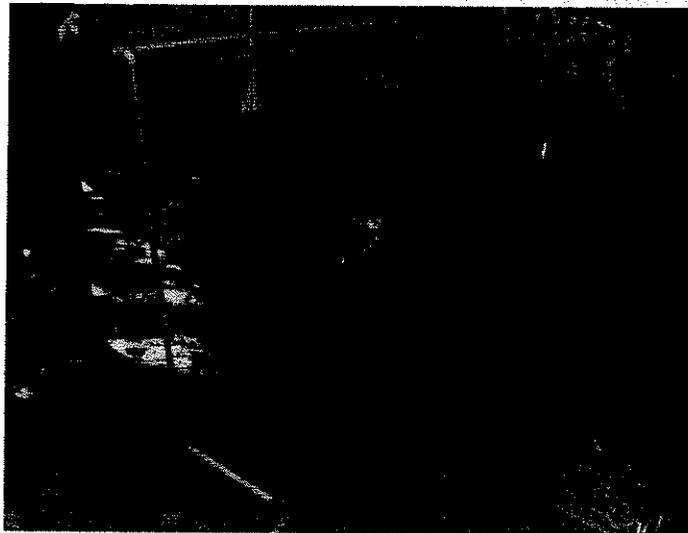
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A.A. RICH AND ASSOCIATES

APPENDICES

A.A. RICH AND ASSOCIATES

APPENDIX A
PHOTOS OF THE PROJECT AREA



Facing under Fair-Anselm Building toward San Anselmo Creek below



Project area under the Fair-Anselm Building



Under the Fair-Anselm Building facing upstream





**San Anselmo Creek facing upstream under ("right channel")
Fair-Anselm Building**



San Anselmo Creek facing upstream ("left channel")



San Anselmo Creek facing upstream ("left channel")



A.A. RICH AND ASSOCIATES

APPENDIX B
PROJECT PLANS

A.A. RICH AND ASSOCIATES

APPENDIX C
HABITAT SURVEY SHEET¹

¹ Bisson et al., 1982

A.A. RICH AND ASSOCIATES

HABITAT SURVEY

STREAM: _____ DATE _____ CREW _____

LATITUDE _____ LONGITUDE _____ WEATHER _____

SRU _____ HABITAT TYPE _____ TIME _____

LENGTH (m) _____ LENGTH (TOTAL) _____

WIDTH (m) _____ WIDTH (AVERAGE) _____

DEPTH (m) _____ DEPTH (AVERAGE) _____

GRADIENT (%) _____ SPAWNING GRAVEL (presence or absence/amount) _____

TEMP, AIR (°C) _____ TEMP, WATER, BOTTOM _____ °C TEMP, WATER, SURFACE _____ °C

COVER TYPE (0=NONE 1=LITTLE 2=MODERATE 3=ABUNDANT)

ROCK ___ ROOTWAD ___ BEDROCK ___ WOODY DEBRIS ___ DEPTH (> 0.5 M) ___

CANOPY ___ AQUATIC VEGETATION ___ TURBULENCE ___ OVERHANG. VEG. ___

UNDERCUT BANKS ___ OTHER _____

SUBSTRATE, TYPE (DOMINANT TO LESS DOMINANT) _____

PHOTOS

Number

DESCRIPTION

Number	DESCRIPTION
_____	_____
_____	_____
_____	_____
_____	_____

COMMENTS

(continue on back)

Substrate: Boulder: >10"

Rubble/Cobble: 2.5-10" (64-256 mm)

Gravel: 0.08-2.5" (2-64 mm)

Sand/Silt: < 0.08 (< 2mm)

Biological Report
700-779 Center Boulevard ("Fair-Anselm") Project
March 7, 2012

A.A. RICH AND ASSOCIATES

Alice A. Rich, Ph.D.
Principal

150 Woodside Drive
San Anselmo, CA 94960
Tel: (415) 485-2937
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alice@aarichandassociates.com
www.aarichandassociates.com

March 14, 2012

Michael G. Watkins, PE, LEED GA
Ballard & Watkins
174 Pine Street
San Anselmo, CA 94960

RE: Fair-Anselm Creek Bank Stabilization Project/Measures to Minimize Impacts to
Biological Resources and the Environment.

Dear Michael:

This letter is to acknowledge my satisfaction, with regard to Miller Pacific's additions on the revised Sheet C1 (dated 3/13/12) of their project plans. On the revised Sheet C1, Miller Pacific has added the recommended additional protective measures that I listed on page 16 of my Biological Assessment for the project. The protections listed on Miller Pacific's revised Sheet C1, together with those listed in section II (pages 4-5) of my Biological Report, will provide the necessary measures so that the project will result in no significant impacts on biological resources.

Thank you.

Sincerely,

Alice A. Rich, Ph.D.

Alice A. Rich, Ph.D.

cc: file (mw031412 letter)



Bay Area Division
 900 Modoc Street
 Berkeley, CA 94707

Phone: 510.524.3991
 Fax: 510.524.4419
 www.pacificlegacy.com

August 29, 2011

Mr. Rich Hall
 Fairfax Center Properties, LLC
 P.O. Box 633
 Ross, CA 94957

Re: Archaeological Assessment Report for the San Anselmo Creek Stabilization Project, Town of Fairfax, Marin County, California

Dear Mr. Hall:

This letter report presents the results of a cultural resources investigation conducted by Pacific Legacy, Inc. for the proposed San Anselmo Creek Stabilization Project in the Town of Fairfax, Marin County. The purpose of the investigation was to identify cultural resources within the study area that may be adversely impacted by the project as stipulated under the California Environmental Quality Act (CEQA). All work was completed under contract number 2558-01 between Pacific Legacy, Inc. and Fairfax Center Properties, LLC. The proposed project will stabilize the north bank of San Anselmo Creek which is adjacent to and underneath the Fair-Anselm Plaza.

The investigation included (1) an archival record and information search; (2) Native American and historical society contact; (3) an archaeological survey; and, (4) inspection of soil cores from a geotechnical project being conducted on the property. The record and information search revealed that one prehistoric site, P-21-002620, was reported to be within or near the project area. A search of the "Sacred Lands Inventory" by the Native American Heritage Commission (NAHC) failed to reveal the presence of previously documented ethnographic resources or sacred sites within the project area. Native American contact resulted in a response from the Federated Indians of Graton Rancheria with regard to the project area. The Fairfax Historical Society provided a property history for the parcel and adjoining area.

An archaeological survey of the property revealed a patch of midden soil in the eastern portion of the project area, which is likely associated with P-21-002620. The extent of the deposit could not be determined based on current ground conditions. The deposit does not appear to continue west underneath the current exposed cut bank below the Fair-Anselm Plaza. It could not be determined if remnants of the site remain underneath the parking lot and stream bank in the western portion of the project area where a new retaining wall will be built.

It is our recommendation that, prior to construction, subsurface probing along the eastern and western portions of the project area be completed to ascertain (1) if prehistoric cultural deposits do exist, (2) the depth and nature of the deposits, if extant. If significant deposits or deposits eligible for listing on the California Register of Historical Resources (CRHR) are found, we recommend that a treatment plan be prepared for mitigation of impacts that may occur to the deposit as a result of project activities. Due to the potential to encounter human remains (common to Bay Area shell middens), we also recommend archaeological monitoring of

Sierra Central 4919 Windplay Dr. #4 El Dorado Hills, CA 95762 916.358.5156 Ph. 916.358.5161 Fax	Southern California 44702 10 th St. West Lancaster, CA 93534 661.729.9395 Ph. 661.729.9417 Fax	Pacific Basin 30 Aulike St. #301 Kailua, HI 96734 808.263.4800 Ph. 808.263.4300 Fax	Business Office PO Box 6050 Arnold, CA 95223 209.795.4481 Ph. 209.795.1967 Fax
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subsurface excavation in areas deemed to be sensitive. Further, we recommend additional contact with potential Native American stakeholders to determine appropriate treatments if significant deposits are found.

Project Description

Fairfax Center Properties, LLC intends to remove and replace an existing failed retaining wall; to stabilize the creek bank under the existing building; and to improve drainage in the west parking lot. As proposed, the project involves demolishing an existing failed retaining wall along the existing parking lot in the western end of the project area. The proposed new retaining wall will abut the parking lot and slope southerly to the creek bottom. The area of impact is approximately 150 feet long and 40 feet wide. From the toe of the slope at the creek bottom, the bank will be sloped to the north and remove approximately 1.5 to 4 feet of existing soil to the top of the cut. Turf reinforcement matting and willows will be placed along the slope.

Underneath Fair-Anselm Plaza, erosion along the base of San Anselmo Creek has resulted in undercutting of the creek bank. Currently, there are no bank protection features in place. To shore up and protect the bank from further erosion, a shotcrete and soil nail retaining wall will be constructed between the western edge of the Fair-Anselm Plaza pad to the eastern edge of the pad. The wall will be approximately 380 feet long, 4-6 inches thick, and will be embedded approximately 2 feet into the existing surface of the stream bank.

Improvements will also be made to the parking lot in the form of bioswales for improved water drainage. Approximately 140 feet of bioswales will be constructed in the parking lot. The swales will measure approximately 1 to 1.5 feet deep, they will be lined with rock, then planted with vegetation. Three drainage pipes will be constructed that will drain into the creek. These will be excavated to a maximum depth of 2 feet.

Figure 1 depicts the project area on the San Rafael USGS 7.5' Quadrangle (Township 2 North, Range 7 West, Unsectioned). The project area is bounded by Center Boulevard to the north; Pastori Avenue to the east; a U. S. Post Office to the west; and San Anselmo Creek to the south in the Town of Fairfax (see Figure 2).

Regulatory Context

California Environmental Quality Act

CEQA, as codified at PRC Sections 21000 et seq., requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. As defined in PRC Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type;
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, CEQA Guidelines define historical resources as: (1) a resource in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the Lead Agency's determination is supported by substantial evidence in light of the whole record.

If a Lead Agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet CEQA Guidelines criteria for a historical resource, then the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]). Per CEQA the Proposed Project would be considered to have a significant impact on the environment if it would:

- 1) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5;
- 2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- 3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- 4) Disturb any human remains, including those interred outside of formal cemeteries.

California Register of Historic Resources

The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code [PRC] Section 5024.1[a]). The eligibility criteria for inclusion on the CRHR are based on NRHP criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historical-period property must be significant at the local, state, and/or federal level under one or more of the following criteria:

- 1) it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- 2) it is associated with the lives of persons important in our past;
- 3) it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
- 4) it has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the CRHR, it must also retain enough of its character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. A historic resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR.

The CRHR consists of resources that are listed automatically as well as those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined to be eligible for the NRHP;
- California Historical Landmarks from No. 770 onward;
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the CRHR; and

Other resources that may be nominated to the CRHR including

- historical resources with a significance rating of Category 3 through 5 (i.e., properties identified as eligible for listing in the NRHP, the CRHR, and/or a register maintained by a local jurisdiction);
- individual historical resources;
- historical resources contributing to historic districts; or
- historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.

The site identified during this survey has not been evaluated for CEQA significance nor for eligibility for listing on the CRHR.

Report Preparation

John Holson, M.A., 30 years experience in California prehistory and history

Elena Reese, M.A., 25 years experience in California prehistory and history

Lisa Holm, Ph.D., seven years experience in California prehistory and history

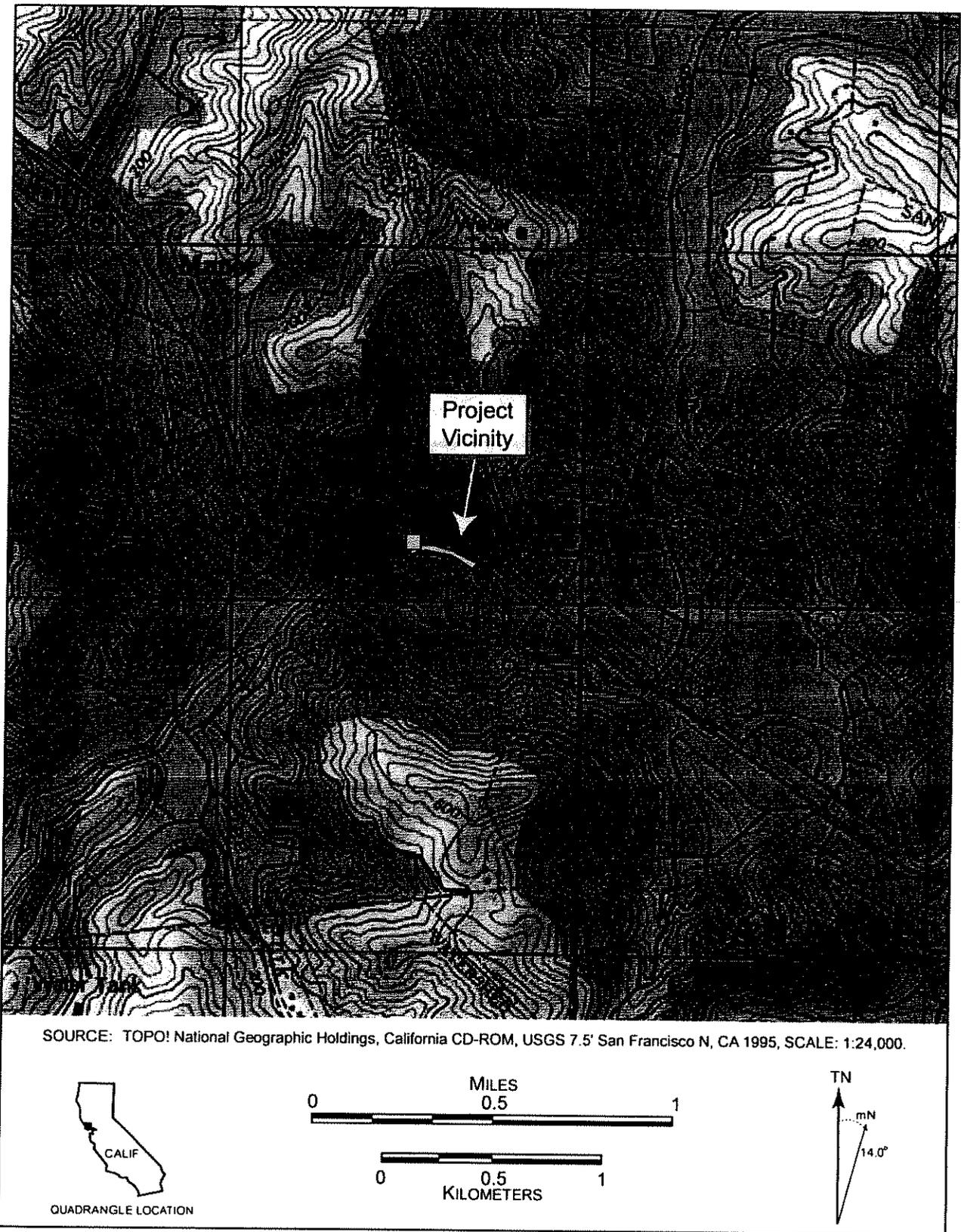


Figure 1. Project Vicinity Map.

San Anselmo Creek Bank Stabilization Project
 Fairfax, Marin County
 August 2011



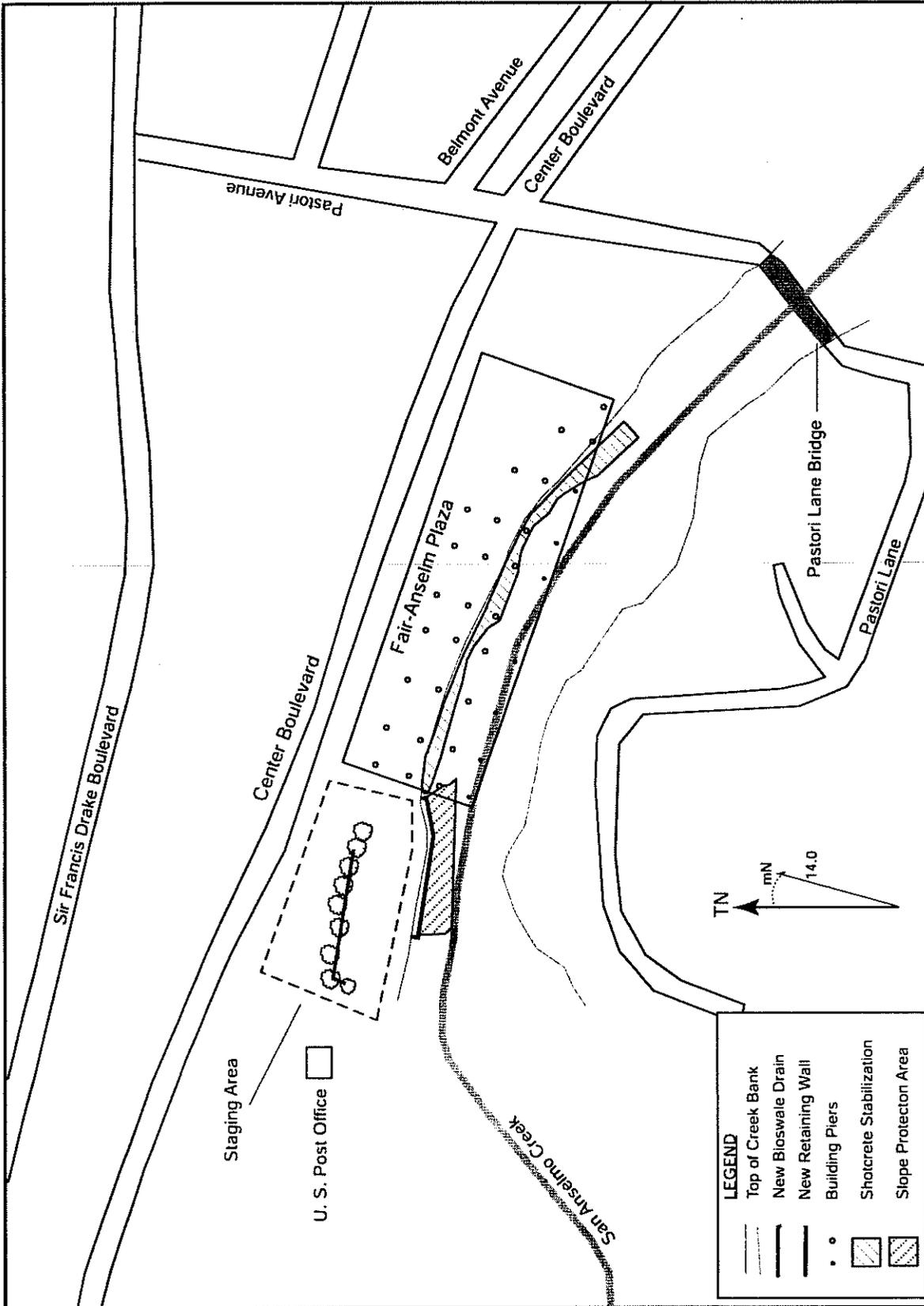


Figure 2. Project Area Location Showing Improvements and Survey Area.

San Anselmo Creek Bank Stabilization Project
 Fairfax, Marin County
 August 2011

Archaeological Background

While a number of coastal sites in California have yielded clues to the region's earliest inhabitants dating to more than 10,000 years ago, only a few isolated finds in Marin County can be attributed to this early occupation (Stewart 2003: 114). This paucity of evidence, however, may be the result of sedimentation and sea-level changes that have inundated many early coastal sites, rather than a lack of early settlement in the peninsula. By the period of 8,000-5,000 B.P. such changes in sea level were already taking effect and altering the local ecology. The oldest known archaeological site on the San Francisco Bay shore dates to this period (roughly 5,500 B.P.) and was found on De Silva Island near Tiburon (Moratto 1984:275). The succeeding period, or Middle Archaic Period (5,000-2,500 B.P.), is characterized by an increase in the number of sites, which may in turn relate to larger, more sedentary groups occupying the area. By about 2,500 years ago, Proto-Miwokan people were already inhabiting the coastal areas of the Marin Peninsula, perhaps after expanding from the shores of the San Francisco Bay to neighboring regions due to increased competition for resources and changing climatic conditions (Stewart 2003: 116-117).

Although the period of roughly 1,000 years ago saw shifting climatic conditions and large-scale population movements, it appears that the Miwok hold on the Marin Peninsula and surrounding areas was more or less unchanged. At around the same time, the bow and arrow replaced the atlatl, the rectangular *Olivella* shell bead appears throughout the area, and a sharp increase in mortars and pestles suggests the development of an acorn economy. Many of the major village sites in Point Reyes and along the Marin bay shore, including Angel Island, were first occupied during this time (Stewart 2003: 118). By about 500 years ago, the territories and lifeways of the Native Californian groups encountered by European settlers were more or less in place. In the general San Francisco Bay area, native culture was characterized by elaborate ceremonial practices involving specialized regalia and structures, as well as by a sophisticated toolkit that included the hopper mortar and pestle, corner-notched projectile points, chert bead drills, and several different types of shell beads. Native peoples also engaged in far-flung exchange networks in which clamshell disk beads manufactured near the Marin and Sonoma coasts were traded widely and served as major status markers.

Ethnography

The project area is located within the territorial boundaries of the Coast Miwok. Prior to the arrival of Europeans to the San Francisco Bay Area, Coast Miwok territory included the entire Marin Peninsula and stretched as far north as Duncan's Point and as far east as Sonoma. Linguistically, Miwok is one of the California Penutian languages and comprises several groups including Coast Miwok. Pre-contact population estimates for the Coast Miwok suggest that population density was low, with perhaps as few as 2,000 people living in the entire area (Kelly 1978).

Isabel Kelly, an anthropologist from the University of California, Berkeley, undertook ethnographic interviews with two Coast Miwok elders in 1931-1932 (recently published as Collier and Thalman 1996). Her work represents the most detailed study of the group and provides the basis for Kelly (1978). Other early anthropologists, such as Merriam (1907, 1916), Barrett (1908), Kroeber (1925), and Loeb (1932), included only limited information on the Coast Miwok.

The settlement patterns of the Coast Miwok, like other native groups in the region, were largely dictated by the seasonal availability of important food resources. During the warmer summer months, villages were occupied along rivers, estuaries, and the coast. Winter villages were often located further inland and contained semi-permanent structures and food storage facilities (Lightfoot *et al.* 2009:211). Settlements consisted of conical dwellings that were constructed of wood or bark and covered with grass. Large villages contained semi-subterranean sweathouses and other ceremonial structures (Kelly 1978:417).

The Coast Miwok subsistence economy revolved around fishing, hunting, and gathering, and local Indian people exploited a wide array of terrestrial and marine resources. Shellfish played an important role in Coast Miwok diet, and various fishes—including coastal, anadromous, and freshwater species—were caught. Birds and terrestrial mammals such as deer were hunted and eaten. Many plants were collected by Coast Miwok people from the diverse habitats of the Marin Peninsula. Acorns, for example, were a food staple in late pre-contact times, and certain Coast Miwok individuals or families owned particular highly productive oak trees or groves (Kelly 1978; Lightfoot *et al.* 2009).

The Coast Miwok created a diverse array of material culture. Since pottery was not used by most Native Californians, basketry was of particular importance and served a number of purposes including, cooking, serving, parching, carrying, and storage. Although baskets were primarily utilitarian in nature, some were multicolored and sported feather and shell ornaments. Lupine roots were used to make cordage for nets, and wooden objects included foot drums and paddles for use with the tule balsa, an important watercraft. Weaponry consisted of the bow and arrow, as well as the sling and a bola for hunting waterfowl. Arrow points were typically made from obsidian, although chert was used to make different types of flaked stone tools. Other stones were used as mortars and pestles (Kelly 1978:417-418). Shell was another important material, and abalone in particular was commonly used for ornamentation.

Ethnohistoric Background

The first contact between Coast Miwok and Europeans occurred over 400 years ago. This event presumably took place in 1579 when Sir Francis Drake made landfall somewhere in Coast Miwok territory, although the exact location of his landing is unknown. Drake remained in the area for six weeks, and experienced a number of amicable interactions with the local people. Sixteen years later, Sebastian Cermeño landed in what is today known as Drakes Bay. His galleon, the *San Agustin*, was wrecked by a storm, forcing Cermeño and his men to make the return trip to Acapulco by launch (Lightfoot and Simmons 1998). Even before they had left, however, the Coast Miwok began salvaging items from the larger vessel, and the Chinese porcelains and metal objects they recovered have been noted in archaeological assemblages from throughout the area (Schneider 2009).

Nearly two centuries passed before Europeans again visited the lands of the Coast Miwok. In 1775, the Ayala expedition stopped at the Marin Peninsula in order to explore the area in advance of the founding of Mission Dolores and the Presidio of San Francisco in 1776 (Stewart 2003:189). Coast Miwok people were drawn to the mission beginning in the 1780s, and most of Marin's native inhabitants were engulfed in the Spanish mission system by the early 1800s (see Milliken 1995 for a detailed account of this process). Mission San Rafael was founded in 1817

and was home to many Coast Miwok families, although accounts from the Russian mercantile outpost at Colony Ross indicate that native people including Coast Miwok sought refuge there from the epidemic disease and directed enculturation of the mission system (Lightfoot 2005).

The Spanish missions were secularized in the mid-1830s, and the native people who had lived there were forced to fend for themselves in a dramatically changed world. Many Coast Miwok worked at nearby ranchos, such as General Mariano Vallejo's Rancho Petaluma (Silliman 2004). Rancho Olompali, located in Marin, was actually owned by a California Indian and was the only land grant officially conferred to a native of the state, despite the promises of the secularization decrees. Olompali remained an important Coast Miwok village for many years. Once California entered the United States, native peoples living in Marin were further marginalized as American towns and agricultural interests expanded. Census records from Marin for the late nineteenth and early twentieth centuries list less than fifty people as Native American, although it is likely that many indigenous people claimed other ethnicities to avoid the rampant discrimination directed toward Native Californians (Stewart 2003: 193).

By the turn of the twentieth century, the plight of the California Indians had attracted popular attention and the federal government issued a number of laws known as the California Homeless Indian Acts. As part of this legislation, in 1920 the government purchased land in the town of Graton to serve as a home for local Coast Miwok and Southern Pomo peoples. This small 15.45 acre parcel became Graton Rancheria. The area was an important gathering place for local native peoples, but federal recognition of the Rancheria ended in 1958 during an era characterized by the "termination" of the tribal status of indigenous groups throughout the country. In the case of many California Indian groups, such terminations were later found to be illegal. The status of the Federated Indians of Graton Rancheria as a federally recognized tribe was restored in 2000 (Federated Indians of Graton Rancheria 2006).

Historical Overview

The earliest documented contact between the native inhabitants of the San Francisco Bay region and the Spanish occurred in 1769 when Gaspar de Portolá led an expedition through the area. This was followed in later years by the Pedro Fages expeditions of 1770 and 1772, the Fernando Javier de Rivera expedition of 1774, and Juan Bautista de Anza's 1776 expedition (Hoover et al 1990:285, 330-331). When Russian colonization extended south into California at the end of the eighteenth century, the Spanish government began to take an active interest in colonizing Alta California with the establishment of a series of missions, pueblos, and presidios (Hoover et al. 1990:474). Once established, the missions began proselytizing to the Native Californians, beginning a process of culture change that would bring most Native peoples in the area into the mission system by 1810. At the expense of traditional skills, the neophytes were taught the horticultural and pastoral skills of the Hispanic tradition, continuing the process of social disruption begun by relocation to the missions and population decrease due to epidemic and endemic disease.

With the declaration of Mexican independence in 1821, Spanish control of Alta California ceased. However, political change did not begin in earnest until mission secularization in 1834, when the Native peoples were freed from missionary control and the mission lands were granted to private individuals. Even before official secularization, many Mexican landowners

served as overseers of the mission lands. This placed the landowners in an advantageous position when the lands were divested and effectively excluded almost all the Native population from acquiring land. The rancho economy was based on raising livestock, primarily cattle, for the trade of hides and tallow for imported household goods. This rancho economy dominated the years of Mexican rule of California, creating a social structure of wealthy *Californios*, who employed the disenfranchised Native population as vaqueros or workers on their ranchos.

When the United States acquired Alta California from Mexico following the Treaty of Guadalupe Hidalgo in A.D. 1848, news of gold strikes in the Sierra Nevada sparked a huge migration of Americans into California. The latter half of the nineteenth century saw a continued American immigration into the region, which led to changes in the culture and economy of the area. As the economy shifted from gold mining to farming, dispersed farmsteads slowly replaced the immense Mexican ranchos.

Farming in the American Period was characterized by three types of pursuits: cattle and sheep ranching; grain farming; and, irrigation agriculture. Cattle and sheep ranching were dominant until the 1880s. During this time, free-ranging, comparatively wild Spanish cattle were gradually replaced by American breeds of livestock and dairy cows. During this period, Marin County became known for its dairy farms (Hoover et al. 1990:181). During the 1870s to 1880s, agriculture became more intensive as farming shifted to wheat and barley cultivation. During this period, barbed wire became commercially viable, and fencing with wooden posts and barbed wire became a prominent feature across the landscape as free range ranching came into conflict with farming enterprises. After 1869, the Transcontinental Railroad and railroad expansion across California brought a new means for farmers to transport their produce, fruit, and grains to a wider market. This innovation expanded agriculture to a prominent role in the state's economy which continues today.

Project Area Historic Background

The Town of Fairfax is located within a portion of the 6,658-acre Mexican Land Grant, Rancho Cañada de Herrera, which was granted to Domingo Sais for his military service in 1839 (Fairfax Historical Society 2011a; Hoover et al. 1990:176). Ten years later, Sais gave a 40-acre parcel that included the project area to a visiting doctor, Dr. A. W. Taliaferro, who settled next to San Anselmo Creek (Fairfax Historical Society 2011a). In 1855, Taliaferro sold the parcel to Charles S. Fairfax, for whom the Town of Fairfax is named. Fairfax was active in local, state and federal politics. He used his estate "Bird's Nest Glen" to entertain his political colleagues, which included an 1861 duel fought on the property (Hoover et al. 1990:176).

After Fairfax's death in 1869, the property eventually passed to the Pastori family in the 1890s. The Pastori family established a popular restaurant at the Fairfax home from the 1890s to 1925. Although the Fairfax house was destroyed in a fire in 1911, the Pastori restaurant rebuilt and the current structure still stands today (Fairfax Historical Society 2011b).

In 1925, the property was sold to the Emporium Country Club, which used the property as a summer retreat. In 1937, they leased the property to the Marin Boys School who used the property as a small private school until 1943 when the Emporium sold the parcel to Max

Friedman (Fairfax Historical Society 2011b). Friedman established the Marin Town and Country Club which boasted a swimming pool, tennis courts, a dance hall, a cocktail lounge, and a café. Although the Country Club property included the project area and extended north to the abandoned Northwestern Pacific Railroad right-of-way, it did not develop the area north of the creek as part of the country club. The Country Club closed in 1972 and is currently planned for public park development (Fairfax Historical Society 2011c, 2011d). The property south of the creek is the site of California Landmark #679, the Home of Lord Charles Snowden Fairfax (California State Historic Preservation Office 1996:116). The project area parcel on the north side of the creek was sold between 1958 and ca. 1960 (Byrne 2006). This parcel was developed into the Fair-Anselm Plaza shopping center.

Northwestern Pacific Railroad

The northern boundary of the project area parcel is Central Boulevard which incorporates the abandoned railroad grade of the Northwestern Pacific Railroad. In the mid 1870s, the North Pacific Coast Railroad built a three-foot narrow gauge railroad line from the ferries at Sausalito to the Russian River via Tomales Bay. This line went through Fairfax and became the North Shore Railroad in 1902 (Wikipedia 2011a). The North Shore Railroad improved the line and electrified it as far as Fairfax. In 1907, it merged with the Northwestern Pacific Railroad and widened to standard gauge by 1920. During the 1930s, rail use dropped off due to competition from car transportation and the completion of the Golden Gate Bridge. The railroad line was abandoned in 1941 (Sagar and Sagar 2005:21).

Archival Research

An archival record and information search for the project area was conducted by Pacific Legacy staff on July 22, 2011 at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University (File No. 11-0078). The record search included a review of the following:

- *Historic Properties Directory* (California Office of Historic Preservation 2008);
- *California Inventory of Historic Resources* (State of California 1976);
- *California Historical Landmarks* (State of California 1996); and
- National Register of Historic Places (NRHP) (*Directory of Determinations of Eligibility*, California Office of Historic Preservation, Volumes I and II, 1990; Office of Historic Preservation Computer Listing 1990 and updates).

In addition, historic U. S. Geological Survey (USGS) topographic maps encompassing the project area were inspected online.

The NWIC record and information search revealed that the San Anselmo Creek Stabilization project area has been the subject of one previous archaeological study. This study, S-10438, was a literature and record search for the Fairfax Redevelopment Plan and General Plan Update completed by Holman and Associates (1989). The study revealed that, at that time, there was only one recorded site and one historic property located within the study area, which included most of central Fairfax. The single site recorded was a multi-component resources (CA-MRN-440/H) located within one-half mile of the current project area; it lies to the south of and across the street from Fair-Anselm Plaza. The Holman and Associates study also noted that "at least

one concerned citizen" had contacted the NWIC to enquire about an unrecorded archaeological site located on the country club grounds (1989:1).

In addition to the single study that encompassed the current project area (Holman and Associates 1989), the NWIC record and information search revealed an additional 14 studies that have been completed within one-half mile of the current project area. These studies are summarized in Table 1.

Table 1. Archaeological Studies within One Half Mile of the Project Area.

Study Number	Author	Date	Type	Results
S-002821	Chavez, D.	1982	Archaeological Survey	Negative
S-013100	Pursell, Jr., C. W.	1979	Architectural Survey and Historic Study	Negative
S-013433	Roop, W.	1991	Archaeological Survey	Negative
S-017665	Bacchetti, D., and W. Roop	1994	Archaeological Survey	Negative
S-017666	Flynn, K.	1995	Archaeological Survey	Negative
S-019926	Holman, M. P.	1993	Archaeological Survey	Negative
S-020778	Psota, S.	1998	Historic Resources Review	Negative
S-029399	Pesnichak, L., and C. Chattan	2004	Archaeological Survey	Positive, CA-MRN-490/H
S-029772	Billat, L.	2005	Undetermined Study	Undetermined
S-030211	Historic Resource Associates	2005	Archaeological Survey	Positive, P-21-002570
S-037494	Wills, C. D.	2010	Archaeological Survey	Negative
S-037729	DeBaker, C., and J. Lang	2008	Archaeological Survey	Positive, P-21-002678
S-037864	Jones and Stokes	2005	Architectural Evaluation for the NRHP	Positive, P-21-002700
S-038067	Blind, H.	2011a	Monitoring Report	Positive, CA-MRN-490/H

The record and information search revealed that one previously recorded cultural resource had been identified within the immediate project area. The Fair-Anselm Plaza site, P-21-002620, was recorded as a prehistoric occupation site. The site record was based on a Fairfax Historic Society bulletin that reported that "on the north side of the creek, an area consisting of approximately six acres, there was a small rise consisting of Native American shell deposits, stands of trees, and the abandoned Northwestern Pacific Railroad right-of-way" (Byrne 2006). The 2006 site map shows that the southern portion of the site intersects the current project area.

Pacific Legacy conducted monitoring at 720 Center Boulevard, adjacent to the Fair Anselm Plaza, for renovation of a retail property during the summer of 2011. Though the report detailing those monitoring activities has yet to be finalized, patches of midden containing shell, faunal remains, and flaked stone debris were observed in some of the areas exposed during construction activities and were also observed underlying the fill of the property's building pad. Four fragments of human bone were reported, but no articulated human remains were discovered. The site, which has been subject to grading and redeposition of sediments, is most likely P-21-002620.

In addition to the single prehistoric resource recorded within the project area, the record and information search revealed that nine other previously recorded cultural resources are located within one mile of the project area. The resources include three prehistoric sites, one multi-component site, and five historic-era buildings or structures, which are summarized in Table 2.

Table 2. Previously Identified Cultural Resources within One Mile of the Project Area.

Site Number	Recorded By	Date	Type	Description
P-21-000104 CA-MRN-74	Nelson, N. C. Byrne, S.	1907 2002a Update	Prehistoric habitation mound	Prehistoric shell midden with obsidian and human remains
P-21-000440 CA-MRN-490/H	Thompson, N. B. Byrne, S. Pesnichak, L. Blind, H.	1978 2002b Update 2004 Update 2011b Update	Prehistoric habitation Multi-component: Prehistoric habitation site and historic structure	Prehistoric shell midden with obsidian Historic Fairfax Pavilion ; dance pavilion built in 1921
P-21-000566	Tom Origer & Associates	1995	Historic structures	Marin Stables; date to 1930s
P-21-001356	Lang, J.	2010	Historic bridge	Saunders Avenue Bridge; built in 1923
P-21-002567 CA-MRN-668	Evans, S.	2004	Prehistoric habitation	Shell midden with fire-affected rock, groundstone, lithics, faunal bone, and human remains
P-21-002570	Supernowicz, D.	2005	Historic structure	Fairfax Theater, built in 1950
P-21-002621	Byrne, S. and K. Frank	2006	Prehistoric burials	Prehistoric human remains, groundstone and shell artifacts
P-21-002678	Lang, J.	2008	Historic culvert	Lansdale Avenue Culvert, built in the 1920s
P-21-002700	Haley, K.	2005	Historic structure	Historic church built in 1950

The Directory of Historic Properties for Marin County identified one historic property just south of the project area across San Anselmo Creek (California Office of Historic Preservation 2011). This property is the Lord Charles Snowden Fairfax Home site, which is listed on the California Inventory of Historic Resources (California Office of Historic Preservation 1976, 1996:116). The property was also designated California Historical Landmark No. 679 in 1959. The Directory of Historic Properties gives the Fairfax Home site a status of 7L, which designates it as needing to be reevaluated using current standards (California Office of Historic Preservation 2011). As proposed, the current project should not affect the Fairfax Home Site.

Historic U. S. Geological Survey (USGS) Tamalpais and San Anselmo, California quadrangles revealed the structural history in the vicinity of the project area. The 1897 Tamalpais quadrangle showed the location of the Fairfax Home site on the south side of the creek, and the North Pacific Coast Railroad line and one structure on the north side. The structure appears to have been located just north of the project area. The railroad line alignment is now Center Boulevard. The 1941 Tamalpais quadrangle showed no structures on the north side of the creek, however

four structures were shown to the south side. The railroad line was shown for the last time on the 1941 quadrangle and was absent on later quadrangles, suggesting it was likely removed during World War II. The 1950 Tamalpais quadrangle showed eleven structures on the south side of the creek representing a country club complex. One of these structures may overhang the creek.

Native American Contact

Contact with potential Native American stakeholders was initiated on July 22, 2011 with a letter to the Native American Heritage Commission (NAHC) requesting a review of the Sacred Lands Inventory. The review was completed to determine if there were any areas of concern to local Native American individuals or groups within the project area. A response was received from the NAHC on July 26, 2011 stating that no Native American ethnographic resources were identified in the immediate project area. The NAHC provided a list of Native American individuals and organizations for Marin County that might have knowledge of unreported resources or areas of concern. These individuals and organizations were contacted by letter on July 27, 2011. Letters were sent to Greg Sarris, Frank Ross, and Gene Buvelot of the Federated Indians of Graton Rancheria, and Ya-Ka-Ama.

One response has been received from the Federated Indians of Graton Rancheria (FIGR), a federally recognized tribe, regarding our information request about the San Anselmo Creek Stabilization project area. Nick Tipon, Sacred Sites Protection Committee of the FIGR, responded on August 10, 2011 that the San Anselmo Creek Stabilization project area is located on prehistoric site P-21-002620. Since human remains have been discovered near the project area, the FIGR is concerned that "additional human remains will be disturbed by project activities." Mr. Tipon indicated that the FIGR and the Town of Fairfax are planning to meet and discuss a "Tribal Treatment" for mitigation impacts to the prehistoric site reported within the Fair Anselm Plaza. Any future correspondence will be forwarded to Fairfax Center Properties, LLC as it is received. We have attached the NAHC correspondence, Native American contact list, and Native American correspondence as Attachment A.

Historic Society Contact

On July 26, 2011 Pacific Legacy sent a letter to the Fairfax Historical Society to request historic information regarding the San Anselmo Creek Stabilization project area. One response was received regarding our consultation request from Mr. Bill Segar of the Fairfax Historical Society on August 26, 2011. He called to say that the Society had received the contact letter and had little information about the project area. He said that Max Friedman bought the property in 1943 and developed the shopping center sometime during in the 1950s. He plans to mail a timeline of property owners to document that information. We have attached the correspondence and a telephone log as Attachment B. Any future responses will be forwarded to Fairfax Center Properties, LLC as they are received.

Archaeological Survey

An intensive pedestrian survey of the San Anselmo Creek Stabilization project area was completed by Elena Reese, M.A., of Pacific Legacy on July, 22, 2011. The project area is located in the Town of Fairfax and is bounded by Center Boulevard, San Anselmo Creek, Pastori Avenue, and a U. S. Post Office. The project parcel is located within a primarily commercial

neighborhood, which also includes a former grocery store, the closed Marin Town and Country Club, and the U. S. Post Office.

The survey area is located along the north bank of San Anselmo Creek, under the south side of the Fair-Anselm Plaza building, and in the existing parking lot to the west of the building within the 711 to 730 Center Boulevard parcel (see Figure 2). Photographic documentation of the survey is presented in Confidential Attachment C.

The existing west parking lot, the failed retaining wall area, and the creek bank area behind the existing Fair-Anselm building were examined for signs of cultural materials or deposits wherever soils were visible. The west parking lot pavement completely obscured soil visibility except for the landscape planting bed, where the proposed bioswale will be located (Photographs 1 and 2). Within the planter area, the soil visibility was about 10 to 15%. The visible surface soil there was light yellowish brown compact silt with small gravel content. Landscape vegetation included unidentified trees and rosemary shrubs. No signs of historic or prehistoric deposits were observed on the surface in this area. It is likely this area is covered with fill or has been graded to native soils for construction of the parking lot.

The creek bank area in the vicinity of the failed retaining wall was steeply sloped (Photographs 3 and 4). Soil visibility was obscured by dense vegetation (blackberry vines, seasonal grasses, and sycamore and willow trees), concrete rubble, and the remains of a plank and I-beam retaining wall. Ground visibility was less than 1% along the creek edge behind the retaining wall beams. The small amount of visible soil was light yellowish-brown compact silt with rock and cobble content. It is undetermined whether this soil was introduced during retaining wall construction or was part of the original soils. There was also substantial concrete rubble in the creek bed in this area. No signs of historic or prehistoric deposits were observed in the exposed areas examined.

Under the Fair-Anselm building, the creek bank exhibited substantial erosion damage. The first two rows of concrete building support piers have been exposed, and erosion is undermining the building. Several perpendicular erosional cuts are present on the stream bank face. Evidence of previous attempts to stabilize the creek bank under the building consist of imported angular cobbles and small boulders dumped along the base of the creek bank (Photograph 5). No vegetation was present. Soil visibility of the creek bank profile was 90-100%.

Two soil strata were visible consisting of an upper stratum of 2.5Y 7/6 yellow clayey silt soil and a lower stratum of 2.5 Y6/3 light yellowish-brown silty clay (Photograph 6). The upper stratum may have been imported during construction of the shopping center. Modern trash is present ranging from aluminum beer cans and bottle glass to furniture fragments. No historic materials older than fifty years were observed. At the west end of the building, there was substantial concrete rubble and rebar present, also dumped at the base of the creek bank. No prehistoric artifacts or deposits were observed at the west end or center of the building footprint.

At the east end of the building, the creek bank area outside the building footprint sloped steeply to the creek bed and was covered with ivy, *vinca major*, very sparse poison oak, and trees

including bay laurels and live oaks (Photograph 10). There was a deeply worn, narrow footpath that ran parallel to the building and sloped steeply down to the creek bed. The ground visibility in this area was variable. In the footpath, there was 100% visibility, whereas on the rest of the slope the visibility was 0 to 15% due to dense vegetation. The survey revealed a patchy prehistoric shell-bearing midden deposit present in the area at the east end of the building that included the footpath (see Confidential Figure 3 in Attachment D; Photographs 7-9, 11). The midden soil was mostly present outside the building footprint in the top of the creek bank. There was an intermittent lens of midden soil visible mixed with non-cultural soils under the east end of the building suggesting disturbance during building construction. There did not appear to be midden soil at the base of the creek bank or further west than the first exposed building pier.

Cultural sediments were a dark brown silty loam with highly fragmented shell content. No prehistoric artifacts, other than shell, were observed in the midden deposit. The visible deposit was approximately 9 to 12 meters long by 1.5 to 2.4 meters wide. Erosion cut along the footpath, suggesting the midden may be from 10 to 60 cm below the surface. The midden deposit has been disturbed by building construction, erosion, vegetation, and current use of the footpath.

Geological Core Sampling Consultation

In addition to the archaeological survey, an adjacent investigation of geological soil core sampling was completed within the northeast corner of the shopping center building floor in late July 2011. The core sampling was completed to check soils for hazardous gases and chemicals associated with a former dry cleaning operation. The soil core samples were stored in a sealed barrel on site.

On August 2, 2011, Elena Reese, M.A., of Pacific Legacy consulted with Rob Pexton of Risk-Based Decisions, Inc. who completed the geological soil study to determine whether midden soil had been observed during the core sampling investigation. Mr. Pexton said that he remembered only one core sample location (Core EGR-SG-2R) where a thin lens of dark brown soil was observed approximately 2.5 feet below the surface (see Confidential Figure 3 in Attachment D, and Photograph 13 in Confidential Attachment C). He did not remember any shell or other cultural material associated with the dark soil. One soil core fragment from the soil gas testing area appeared to contain a trace of dark brown midden soil (see Photograph 14 in Confidential Attachment C). The soil lens described by Mr. Pexton might represent midden soil and/or it might represent the original soil surface before the shopping center was constructed. The north end of the shopping center is built on two to three feet of fill soil. Regardless, the soil cores suggest that there are no substantial midden deposits under the northeast corner of the Fair-Anselm Plaza shopping center building.

Discussion of Results and Recommendations

The record and information search revealed that one archaeological study had been conducted within the San Anselmo Creek Stabilization project area. Within one-half mile of the project area, 14 previous cultural resource studies had been completed. One previously recorded prehistoric site, P-21-002620, was identified within the project area; however, the site record was based on a historic account rather than direct evidence from archaeological survey. Nine other recorded cultural resources were found to have been recorded within one mile of the project

area, including three prehistoric sites, one multi-component site, and five historic-era buildings and structures. Recent monitoring efforts at the reported location of P-21-002620, north and across the street from Fair-Anselm Plaza, did result in the recovery human bone fragments, shell midden, faunal remains, and flaked stone debris.

The Native American Heritage Commission did not find any ethnographic resources listed on the Sacred Lands Inventory for the project area. One response has been received to date from the Federated Indians of Graton Rancheria regarding our request for information about the San Anselmo Creek Stabilization project area. They are concerned that human remains could be disturbed by stabilization project activities and plan to meet with the Town of Fairfax regarding mitigation measures for the project. The Fairfax Historical Society provided a property history for the parcel and adjoining area.

The archaeological survey of the project area revealed one prehistoric cultural resource consisting of an apparently disturbed deposit of shell-bearing midden soil along the top of the creek bank at the east end of the Fair-Anselm Plaza building. The results of archaeological survey under the south edge of the building and geological soil sampling in the northeast corner of the shopping center building floor suggest that the deposit does not extend under the entire building. The midden deposit is likely associated with P-21-002620.

Based on the presence of a prehistoric site deposit within the project area boundaries and the recent discovery of human remains near the vicinity of the project area, Pacific Legacy recommends the following:

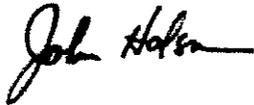
- 1) Prior to construction, the midden deposit within the San Anselmo Creek Stabilization project area should be subject to subsurface examination to (a) determine the horizontal and vertical extent of the deposit; (b) attempt to determine if the site deposit is intact or redeposited; and, (c) record the midden constituents. Pacific Legacy recommends that auger bores or shovel probes be used for subsurface investigation due to the obvious soil color difference of the midden soil and the steepness of the creek bank. This would be conducted at the east end of the project area where midden soils were observed and at the west end, which offered limited surface visibility. The exploration would take place in the Area of Direct Impact where subsurface disturbance is planned. The subsurface exploration results should be included in a site record update for site P-21-02620 as well as a report. If significant deposits are discovered, or if the site is found to be eligible for the CRHR, then a treatment plan should be developed to mitigate the effects of the San Anselmo Creek Stabilization project on the site.
- 2) Depending on the depth of the cut and its location, it is recommended that sensitive areas should be monitored by a qualified archaeologist during subsurface excavation.
- 3) The landowners should continue consultation with potential Native American stakeholders regarding the treatment of finds and particularly regarding the treatment of human remains if they are encountered.
- 4) Prior to the initiation of construction or ground-disturbing activities, all construction personnel should be alerted to the possibility of buried cultural remains, which include prehistoric and/or historic materials. Personnel should be instructed that, upon discovery of buried cultural materials not identified in the subsurface exploration phase, work in the immediate area of the find must be halted and the landowner and the Town

of Fairfax notified. Once the find has been identified, the landowner and the Town of Fairfax should make the necessary plans for treatment of the find(s) and for the evaluation and mitigation of impacts to the find(s) if they are found to be significant or eligible for the CRHR.

- 5) If buried human remains are encountered during construction, work in that area must halt, and the Marin County Coroner must be notified immediately. If the remains are determined to be Native American, the Native American Heritage Commission (NAHC) should be notified within 24 hours as required by Public Resources Code 5097. The NAHC will determine and notify a designated Most Likely Descendant who will provide recommendations for the treatment of the remains within 48 hours of being granted access to the site. The landowner should take steps to ensure that the site of discovery is not disturbed until plans for treatment are agreed upon by all parties.

Should you have any questions or require further information, I can be reached at 510-524-3991, ext. 1.

Sincerely,



John Holson
Senior Archaeologist
Pacific Legacy, Inc., Bay Area Division

Attachments:

- Attachment A - Native American Contact
- Attachment B - Historical Society Contact
- Attachment C - Confidential Photographic Documentation
- Attachment D - Confidential Figure 3

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**ATTACHMENT A:
NATIVE AMERICAN CONTACT**



Bay Area Division
900 Modoc St
Berkeley, California 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

July 22, 2011

Larry Myers
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Re: San Anselmo Creek Bank Stabilization Project, Fairfax, Marin County, PL 2558-01

Dear Mr. Myers:

We have been retained by Fairfax Properties, LLC to conduct an archaeological assessment for a property, Fair-Anselm Center, located at 731 Center Boulevard, Fairfax, Marin County, California. Fairfax Properties, LLC intends to remove a failed retaining wall, replace it with a shotcrete creek bank stabilization wall, and improve the adjacent parking lot drainage system.

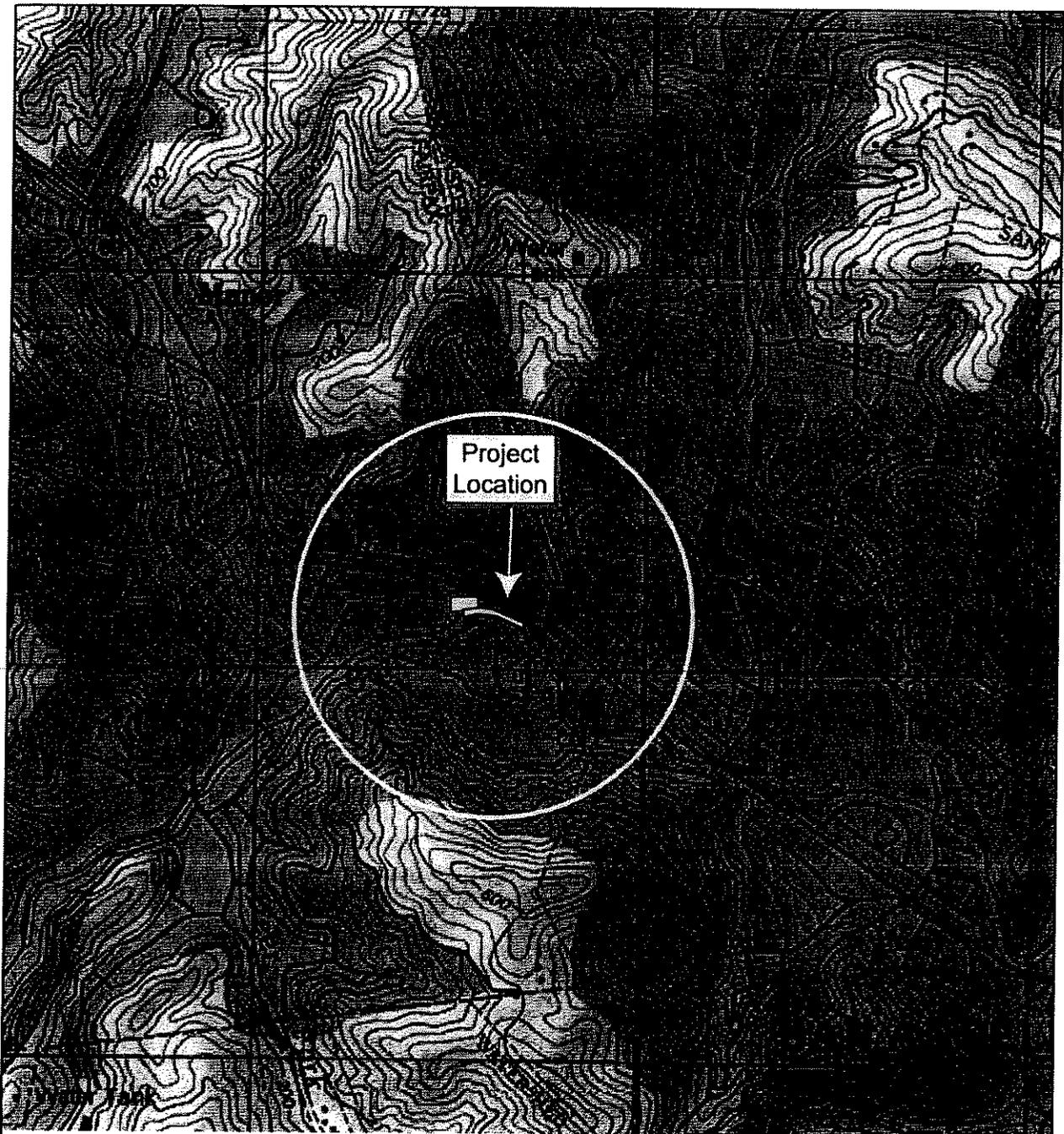
Please review the Sacred Lands Inventory to determine if there are any areas of concern to local Native American Groups within the project area. The attached map provides the area of potential impact on the San Rafael, CA 7.5' USGS Quadrangle. This project is located in Township 2 North, Range 7 West, unsectioned.

Please send us a list of interested Native American groups for Marin County. We will be contacting those groups for consultation. Should you need further information, I can be reached at (510) 524-3991, ext. 3. Thank you for your kind attention to this matter.

Sincerely,

Elena Reese
Archaeologist
Bay Area Division

Attachment: Project Area on the San Rafael, CA 7.5' USGS Quadrangle



SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' San Francisco N, CA 1995, SCALE: 1:24,000.



QUADRANGLE LOCATION

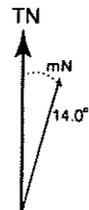
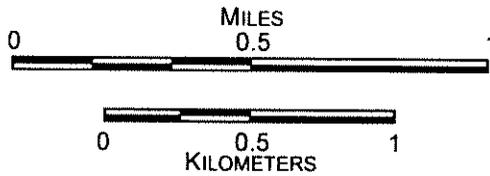


Figure 2. Project Location Map.

San Anselmo Creek Stabilization Project
 Fairfax, Marin County
 July 2011



STATE OF CALIFORNIA

Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

916 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6082
Fax (916) 667-5390
Web Site www.nahc.ca.gov



July 26, 2011

Elena Reese
Pacific Legacy, Inc.
900 Modoc St.
Berkeley, CA 94707

Sent by Fax: 510-524-4419
of Pages: 2

Re: Proposed San Anselmo Creek Bank Stabilization Project; Marin County.

Dear Ms. Reese:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

A handwritten signature in cursive script that reads "Katy Sanchez".

Katy Sanchez
Program Analyst

**Native American Contact List
Marin County
July 26, 2011**

**The Federated Indians of Graton Rancheria
Gene Buvelot**

6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park, CA 94928 Southern Pomo
coastmiwok@aol.com
(415) 895-1163 Home
(415) 259-7819 Cell

Ya-Ka-Ama

7485 Steve Olson Lane Pomo
Forestville, CA 95436 Coast Miwok
info@yakaama.org Wappo
(707) 887-1541

**The Federated Indians of Graton Rancheria
Greg Sarris, Chairperson**

6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park, CA 94928 Southern Pomo
coastmiwok@aol.com
707-566-2288
707-566-2291 - fax

**The Federated Indians of Graton Rancheria
Frank Ross**

100 Cleo Lane, Apt 102 Coast Miwok
Novato, CA 94949 Southern Pomo
miwokone@yahoo.com
(415) 269-6075

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for proposed PL 2558-41 San Anselmo Creek Bank Stabilization Project, Fairfax, Marin County.



Bay Area Division
900 Modoc St.
Berkeley, California 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

The Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste. 300
Rohnert Park, CA 94928

July 27, 2011

Re: San Anselmo Creek Stabilization Project, Town of Fairfax, Marin County, PL 2558-01

Dear Mr. Sarris,

We have been retained by Fairfax Center Properties, LLC to conduct an archaeological assessment for a property, the Fair-Anselm Plaza, located at 711-730 Center Boulevard in Fairfax, California. Fairfax Center Properties, LLC intends remove a failed retaining wall, replace it with a shotcrete stabilization wall, stabilize the creek bank under the building with a concrete wall and piers, and improve the adjacent parking lot drainage system to the creek.

The attached map provides the area of potential impact indicated by the project area marked in yellow within a white circle on the San Rafael, California 7.5' USGS Quadrangle.

The Sacred Lands Inventory on file with the Native American Heritage Commission (NAHC) has been reviewed. This review failed to indicate the presence of cultural resources in the immediate project area. The NAHC provided us with your name as a contact to identify any locations of concern to local Native American Groups within the project area. If appropriate, please provide us with any information you may have regarding locations of concern in the project area. This information will be used for project planning and will be kept confidential. If you do not feel it is appropriate to divulge the type of resource, it can be noted as "environmentally sensitive area".

You may respond by mail, email, phone, or visit our office in Berkeley to inspect our research files. We anticipate receiving your reply within 14 days. At present, there is no date for start of construction. If you have any questions, please contact me, at (510) 524-3991, ext. 3. Thank you for your kind attention to this matter.

Sincerely,

Elena Reese, M.A.
Archaeologist
Bay Area Division
reese@pacificlegacy.com

Attachment: Project Area on the San Rafael, California 7.5' USGS Quadrangle



Bay Area Division
 900 Modoc St.
 Berkeley, California 94707

Phone: 510.524.3991
 Fax: 510.524.4419
 www.pacificlegacy.com

The Federated Indians of Graton Rancheria
 Gene Buvelot
 6400 Redwood Drive, Ste. 300
 Rohnert Park, CA 94928

July 27, 2011

Re: San Anselmo Creek Stabilization Project, Town of Fairfax, Marin County, PL 2558-01

Dear Mr. Buvelot,

We have been retained by Fairfax Center Properties, LLC to conduct an archaeological assessment for a property, the Fair-Anselm Plaza, located at 711-730 Center Boulevard in Fairfax, California. Fairfax Center Properties, LLC intends remove a failed retaining wall, replace it with a shotcrete stabilization wall, stabilize the creek bank under the building with a concrete wall and piers, and improve the adjacent parking lot drainage system to the creek.

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Sincerely,

Elena Reese, M.A.
 Archaeologist
 Bay Area Division
reese@pacificlegacy.com

Attachment: Project Area on the San Rafael, California 7.5' USGS Quadrangle



Bay Area Division
900 Modoc St.
Berkeley, California 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

The Federated Indians of Graton Rancheria
Frank Ross
100 Cielo Lane, Apt. 102
Novato, CA 94949

July 27, 2011

Re: San Anselmo Creek Stabilization Project, Town of Fairfax, Marin County, PL 2558-01

Dear Mr. Ross,

We have been retained by Fairfax Center Properties, LLC to conduct an archaeological assessment for a property, the Fair-Anselm Plaza, located at 711-730 Center Boulevard in Fairfax, California. Fairfax Center Properties, LLC intends remove a failed retaining wall, replace it with a shotcrete stabilization wall, stabilize the creek bank under the building with a concrete wall and piers, and improve the adjacent parking lot drainage system to the creek.

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Sincerely,

Elena Reese, M.A.
Archaeologist
Bay Area Division
reese@pacificlegacy.com

Attachment: Project Area on the San Rafael, California 7.5' USGS Quadrangle



Bay Area Division
900 Modoc St.
Berkeley, California 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

Ya-Ka-Ama
7465 Steve Olson Lane
Forestville, CA 95436

July 27, 2011

Re: San Anselmo Creek Stabilization Project, Town of Fairfax, Marin County, PL 2558-01

Dear Ya-Ka-Ama members,

We have been retained by Fairfax Center Properties, LLC to conduct an archaeological assessment for a property, the Fair-Anselm Plaza, located at 711-730 Center Boulevard in Fairfax, California. Fairfax Center Properties, LLC intends remove a failed retaining wall, replace it with a shotcrete stabilization wall, stabilize the creek bank under the building with a concrete wall and piers, and improve the adjacent parking lot drainage system to the creek.

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Sincerely,

Elena Reese, M.A.
Archaeologist
Bay Area Division
reese@pacificlegacy.com

Attachment: Project Area on the San Rafael, California 7.5' USGS Quadrangle

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Restricted Delivery Fee (Endorsement Required)	\$ 00.00	
Total Postage & Fees	\$ 03.29	07/27/2011

Sent To Mr. Gene Buvetot
The Federated Indians of Gaton Rancheria
 Street, Apt. No. or PO Box No. 6400 Redwood Dr., Ste. 300
 City, State, ZIP+4 Rohnert Park, CA 94928
 PS Form 3800, August 2006 See Reverse for Instructions

7010 3090 0002 5676 9829

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Restricted Delivery Fee (Endorsement Required)	\$ 00.00	
Total Postage & Fees	\$ 03.29	07/27/2011

Sent To Mr. Greg Sarris, Chairperson
The Federated Indians of Gaton Rancheria
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 City, State, ZIP+4 Rohnert Park, CA 94928
 PS Form 3800, August 2006 See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	\$ 00.00	
Total Postage & Fees	\$ 03.29	07/27/2011

Sent To Ya-Ka-Ama
 Street, Apt. No. or PO Box No. 7465 Steve Olson Lane
 City, State, ZIP+4 Forestville, CA 95436
 PS Form 3800, August 2006 See Reverse for Instructions

7010 3090 0002 5676 9867

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Return Receipt Fee (Endorsement Required)	\$ 00.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	\$ 00.00	
Total Postage & Fees	\$ 03.29	07/27/2011

Sent To Mr. Frank Ross
The Federated Indians of Gaton Rancheria
 Street, Apt. No. or PO Box No. 100 Cielo Lane, Apt. 102
 City, State, ZIP+4 Novato, CA 94949
 PS Form 3800, August 2006 See Reverse for Instructions



Sacred Sites Protection Committee
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
707- 566-2288

August 10, 2011

Elena Rose
Pacific Legacy
900 Modoc Street
Berkeley, CA 94707

Dear Elena:

Thank you for your letter regarding the San Anselmo Creek Restoration Project in the Town of Fairfax. The Federated Indians of Graton Rancheria (FIGR), a federally recognized Tribe and sovereign government, appreciates the opportunity to comment regarding possible sacred lands and other cultural sites within the scope of work at 711-730 Center Blvd.

Contrary to your records search, there are cultural resources located at this site. The project location is a Nelson shell mound designated as P-21-002620 in the California Historic Information System. Part of this site is thought to be located across the street, where, human remains have been discovered last month by representatives from Pacific Legacy working on the Good Earth relocation project. We feel additional human remains will be disturbed by project activities. The site is also under study by the State Department Toxic Control, who is developing a toxic removal plan.

The Tribe has also had initial conversations with the James Moore, Planning Director of the Town of Fairfax regarding possible mitigation measures. The City has communicated their desire to complete a "Tribal Treatment" for this project.

We will be scheduling a meeting with the Town of Fairfax in the near future will notify your firm of the meeting.

If you have any questions, please contact me at the numbers below.

Respectfully,

Nick Tipon
Sacred Sites Protection Committee
707 478-1737

**ATTACHMENT B:
HISTORICAL SOCIETY CONTACT**



Bay Area Division
900 Modoc Street
Berkeley, CA 94707

Phone: 510.524.3991
Fax: 510.524.4419
www.pacificlegacy.com

July 26, 2011
Fairfax Historical Society
P.O. Box 622
Fairfax, CA 94978-0622

Re: Request for historical information and comment on areas of historical concern regarding the San Anselmo Creek Stabilization Project, Fairfax, Marin County, PL#2558-01

Dear Fairfax Historical Society Members:

Pacific Legacy, Inc. has been retained by Fairfax Center Properties, LLC to conduct an archaeological assessment for a proposed project located at the Fair-Anselm Center, 711 to 731 Center Boulevard, Fairfax, Marin County, California. Proposed project activities include the removal of a failed retaining wall, the replacement of the retaining wall with a shotcrete stabilization wall, the stabilization of the creek bank under the building with a concrete wall, and improvement to the adjacent parking lot drainage system. The project area location is indicated on the enclosed map.

We are seeking information regarding the history of the project area and would appreciate your contacting us if you can offer any such information. If your membership has comments on areas of historical concern regarding the project area location, we will include them in our report. We are in the process of conducting a records search with the California Historical Resources Information System, and are contacting the Native American Heritage Commission and local Native American contacts.

You may respond by mail, e-mail, or phone. At present, there is no date for start of construction. If you have any questions, please contact me at, (510) 524-3991, ext. 3. Thank you for your kind attention to this matter.

Sincerely,

Elena Reese
Staff Archaeologist
900 Modoc St.
Berkeley, CA 94707
Ph. 510-524-3991, ext. 3
reese@pacificlegacy.com

Business Office
2641 Hwy 4
PO Box 6050
Arnold, CA 95223
209.795.4481 Ph.
209.795.1967 Fax

Sierra-Central
4919 Windplay Dr. Ste. 4
El Dorado Hills, CA 95762
530.677.9713 Ph.
530.677.9762 Fax

Pacific Basin Hawaii
30 Aulike St., Ste. 301
Kailua, HI 96734
808.263.4800 Ph.
808.263.4300 Fax

Lancaster
44702 10th St. West
Lancaster, CA 93534
661.729.9395 Ph.
661.729.9417 Fax



TELEPHONE CONVERSATION RECORD

Date: August 26, 2011 Time: 2:45pm
Project Name: San Anselmo Creek Stabilization
Job No. 2558-01
Phone No.
Prepared By: Elena Reese
Call: [] Placed [x] Received

Contact/Title: Mr. Bill Segar, Fairfax Historical Society
Agency/Client:

Discussion:

Mr. Segar called to say the Historical Society did not have much information about the San Anselmo Creek project area. He said that they had a timeline of property owners for the parcel, since it was part of the adjacent property (southside of creek). He said he would send along that information to me. He said that Max Friedman bought the property in 1943 and developed the shopping center sometime during the 1950s.

Action Required:

**ATTACHMENT C:
CONFIDENTIAL PHOTOGRAPHIC DOCUMENTATION**

Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites, which should not be disclosed to unauthorized persons.

Information regarding the location, character or ownership of a historic resource is exempt from the Freedom of Information Act pursuant to 16 U.S.C. 470w-3 (National Historic Preservation Act) and 16 U.S.C. § 470hh (Archaeological Resources Protection Act). In addition, access to such information is restricted by law, pursuant to Section 6254.10 of the California State Government Code.

Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

Photograph No. 1

Direction:

West

Description:

Overview of the parking lot to the west of the Fair-Anselm Plaza building showing the location of the planting beds.



Photograph No. 2

Direction:

Close-up

Description:

Close-up of soils within the landscape area in the parking lot.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

Photograph No. 3

Direction:

West

Description:

Overview of the creek bank at the west end of the Fair-Anselm Plaza building showing dense vegetation.



Photograph No. 4

Direction:

West

Description:

Overview of the failed retaining wall on the west side of the Fair-Anselm Plaza building.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

Photograph No. 5

Direction:
East

Description:
Overview of the creek bank under the Fair-Anselm Plaza building showing bank erosion and the prior boulder/concrete stabilization.



Photograph No. 6

Direction:
North Northwest

Description:
Soil profile under the center of the Fair-Anselm Plaza building.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

Photograph No. 7

Direction:

North

Description:

Midden soil mixed with fill soil under the east end of the Fair-Anselm Plaza building.



Photograph No. 8

Direction:

West

Description:

Overview of the top of the creek bank at the east end of the Fair-Anselm Plaza building.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Location: Fairfax, CA.

Photograph Dates: July 22 and August 2, 2011

Prepared by: E. Reese

Photographer: E. Reese

Photograph No. 9

Direction:

West

Description:

Close-up of midden deposit on top of the creek bank at the east end of the building. Note the soil color change from the soil under the building (right side) versus midden deposit (left side).



Photograph No. 10

Direction:

East

Description:

Overview of creek bank slope at east end of Fair-Anselm Plaza from the base of the bank.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

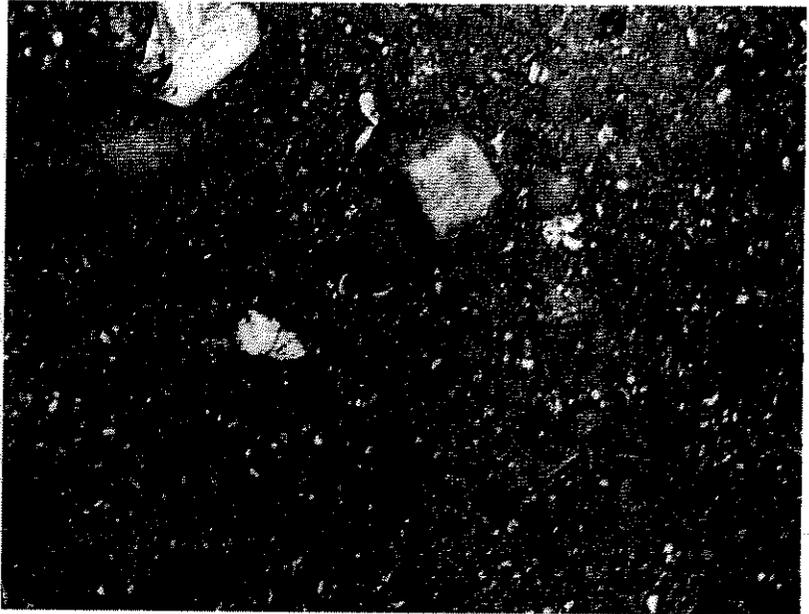
Photograph No. 11

Direction:

Close-up

Description:

Close-up showing the density of shell fragments in midden deposit.



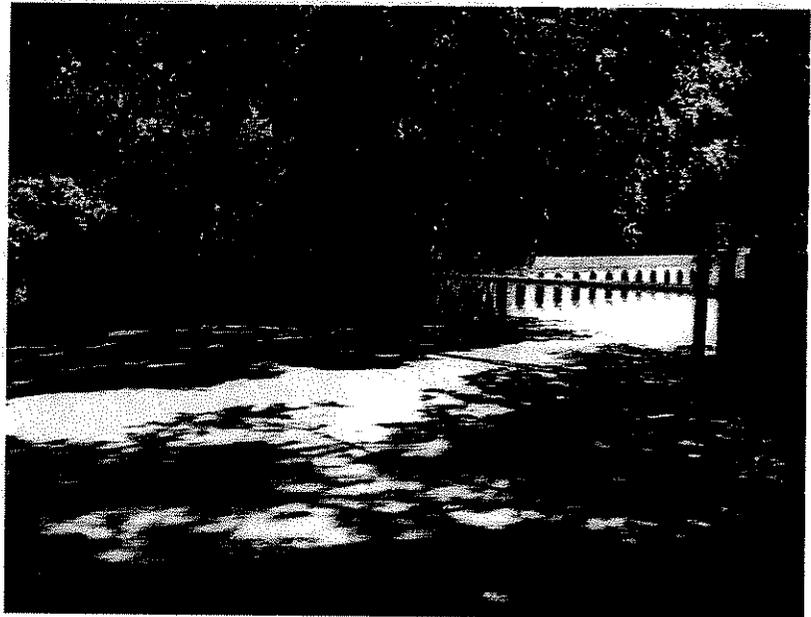
Photograph No. 12

Direction:

Southeast

Description:

Pastori Bridge to east of project area that leads to closed Marin Town and Country Club and California Landmark #679.



Pacific Legacy Photographic Documentation

Client: Fairfax Center Properties, LLC

Prepared by: E. Reese

Location: Fairfax, CA.

Photographer: E. Reese

Photograph Dates: July 22 and August 2, 2011

Photograph No. 13

Direction:
North

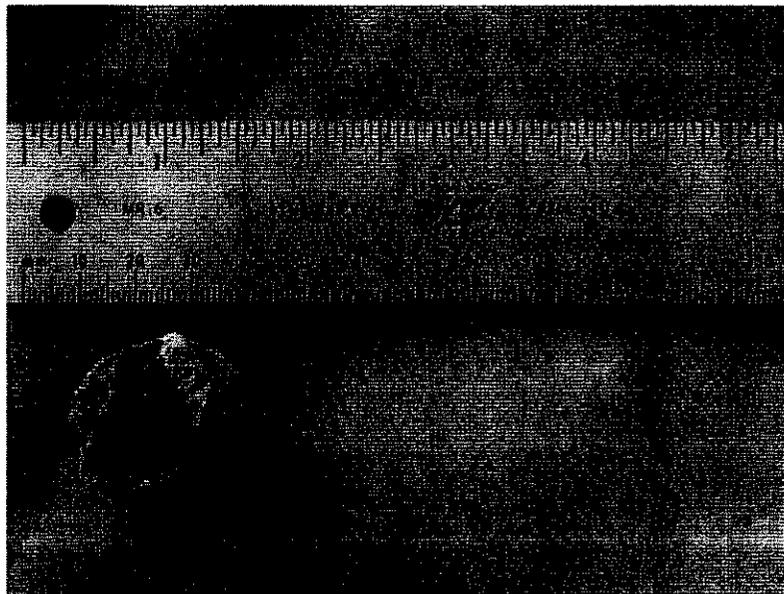
Description:
Location of Soil Core EGR-SG-2R
marked with pink tape within the
northeast corner of the Fair-Anselm
Plaza building.



Photograph No. 14

Direction:
Close-up

Description:
Close-up of soil core fragment
exhibiting a possible trace of midden
soil.



**ATTACHMENT D:
CONFIDENTIAL FIGURE 3**

Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites, which should not be disclosed to unauthorized persons.

Information regarding the location, character or ownership of a historic resource is exempt from the Freedom of Information Act pursuant to 16 U.S.C. 470w-3 (National Historic Preservation Act) and 16 U.S.C. § 470hh (Archaeological Resources Protection Act). In addition, access to such information is restricted by law, pursuant to Section 6254.10 of the California State Government Code.

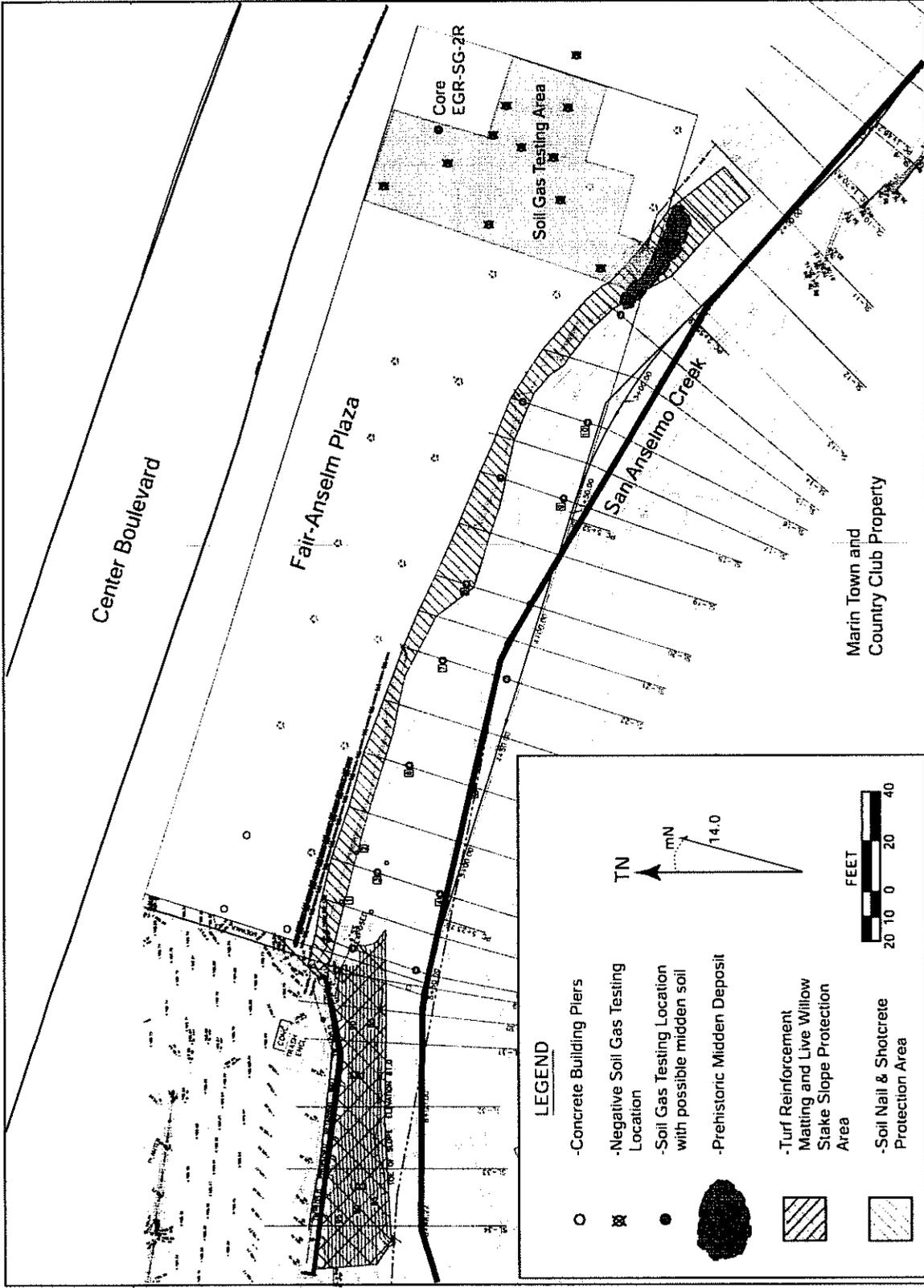
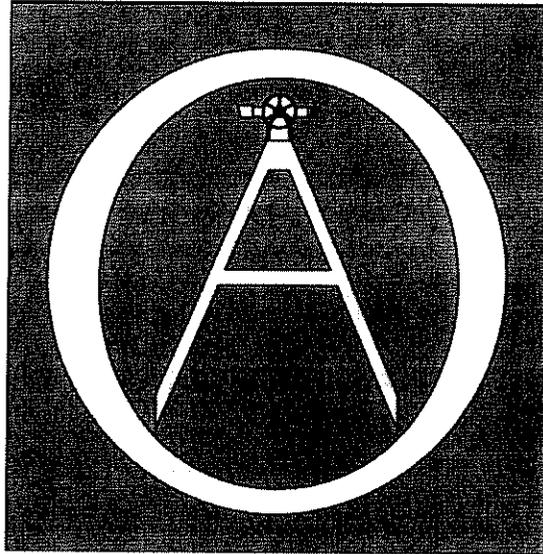


Figure 3. Confidential Midden Location Map.

San Anselmo Creek Bank Stabilization Project
 Fairfax, Marin County
 August 2011



FAIR ANSELM PLAZA

FAIRFAX, CA

HYDRAULIC ANALYSIS

January 19, 2011

Prepared for:

Fairfax Center Properties, LLC

Prepared by:

Oberkamper and Associates
Civil Engineers, Inc.
7200 Redwood Blvd., Suite 308
Novato, CA 94945
(415) 897-2800



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APPENDIX E	Future Conditions - HEC-RAS results Flow Results Table Weir (at Pastori Bridge) Summary Table Flow Area Cross Sections Manning’s “n” composite calculation
APPENDIX F	Flood Insurance Rate Map - 06085C0756H
APPENDIX G	Project Stabilization Plans



1.0 INTRODUCTION:

The purpose of this report is to provide a hydraulic analysis of the floodwaters of San Anselmo Creek as they pass through the subject property, as well as, to analyze the effects of slope bank stabilization work on the floodwaters. This report incorporates the recommendations for slope bank improvements as described in the Miller Pacific Engineer Group (MPEG) Geotechnical Investigation dated September 28, 2009 and shown on MPEG detail *Schematic Soil Nail & Shotcrete Wall* dated August 26, 2010.

2.0 SITE DESCRIPTION:

The subject property is located at 753 Center Boulevard in Fairfax, California. Buildings consist of 45,600 ft² of commercial space on a site bounded by Center Boulevard to the North, Pastori Drive to the East and San Anselmo Creek to the South. The building space was constructed in the early 1960's and extends over the Northern edge of the creek. The building slab is supported by precast concrete beams over steel girders. The girders are supported by drilled and cast-in-place concrete piers. There are piers within the creek and other piers above the creek bank. Over the last 50 years or so of the buildings existence, the creek has eroded the northern bank beneath the structure. The creek also eroded behind a soldier pile retaining wall beyond the western end of the building so that it has completely failed and no longer retains or supports the creek bank. Topographic mapping of the creek from 1971 shows that the soldier pile wall provided channel confinement on the north slope of the creek. Since the wall's failure the slope has eroded back to the present angle. The project improvement work consists of stabilization of the creek beneath the building and in the area of the former soldier pile wall.

3.0 EXISTING CONDITIONS:

The MPEG Geotechnical Investigation provides soil results from 5 exploratory boring taken in the parking lots to the West and East of the building. In general, the site is underlain by 3-4 of fill material which is above approximately 30 feet of alluvial soils consisting of variable proportions of sands, silts, and clays. Groundwater was encountered at two borings at a depth of 30 feet.

Sonic echo testing was performed by ABE Engineering on ten foundation piers on July 30, 2009. Their results indicate that the foundation piers are embedded in bedrock below any potentially liquefiable soil layers. Complete results are included in the MPEG Investigation.



Flood Insurance Study:

The FEMA Flood Insurance Study (FIS) for Marin County and Incorporated areas was published most recently on May 4, 2009. The hydrologic and hydraulic analyses from the FIS report were completed in June 1976 by the USGS, for all of the significant flooding sources affecting the Town of Fairfax and the City of San Anselmo. This portion of San Anselmo Creek is capable of containing the 1-percent annual chance flow as shown on the Flood Insurance Rate Map Panel 06041CO452D.

Peak Flows from Flood Insurance Study

The following peak flows were taken from Table 4 of the Flood Insurance Study:

<u>SAN ANSELMO CREEK</u>		<u>1-PERCENT</u>
Mouth of Fairfax Creek	-	3,500 cfs
Mouth of Deer Park Creek	-	2,100 cfs
Mouth of Wood Lane Drainage	-	1,900 cfs
Cross Section P	-	1,590 cfs
-At corporate limits of Town of Fairfax	-	1,480 cfs

The subject property is located just below the confluence of San Anselmo Creek and Fairfax Creek at a point where the flooding within the Town of Fairfax (created by overbank flow of Fairfax Creek) has reentered channel banks and is contained within San Anselmo Creek.

4.0 VERTICAL DATUM

The elevations shown in the FIS and on the FIRM for Marin County are referenced to the North American Vertical Datum of 1988 (NAVD88). The topographic mapping of the site area has all been prepared based on the National Geodetic Vertical Datum of 1929 (NGVD29) and all of the elevations shown in this report are referenced to the NGVD29. The conversion factor from NGVD29 to NAVD88 is 2.75 for Marin County. An example of a Base Flood Elevation conversion would be that a BFE of 100' in NGVD29 would be elevation 102.75 in NAVD88. Since the Base Flood Elevations shown on the FIRM represent whole-foot, rounded values, 102.75 would appear as 103.



5.0 HYDRAULIC DATA AND METHODS USED FOR EVALUATION:

HEC-RAS Modeling

The U.S. Army Corps of Engineers computer program HEC-RAS was used to model the 100-year design flows of 3,500 cfs through the site. The 100-year design flow has a 1-percent chance of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year.

Weir Flow & Downstream Reach Boundary Condition

The HEC-RAS model for the project extends just below the concrete structure at Pastori Avenue. The FIS describes the structure as follows: "Two major drop structures exist on San Anselmo Creek at Canyon Road and Pastori Avenue, their primary purpose being the reduction of erosive stream velocities" (page 20). The creek Flood Profile is shown in the FIS on page 76P. The channel slope ($S=0.006$ ft/ft) below the dam was scaled off of the profile and used for the downstream reach boundary condition in the model. The structure was modeled as a weir in HEC-RAS. The building structure concrete piers were modeled as bridge piers.

Manning's Roughness Coefficient

The FIS provides a range for Manning's Roughness Coefficient "n" in the Town of Fairfax as 0.025-0.080. A composite "n" was calculated for each channel cross section. The composite "n" consists of a weighted average of the coefficients from the Left Channel Bank, Channel Bottom, and Right Channel Bank which are multiplied by the length of each segment along the wetted perimeter. The following "n" coefficients were applied:

<u>Location</u>	<u>"n"</u>
Soldier Pile Wall '71	- 0.025
Creek bottom	- 0.025
Bare Earth	- 0.025
Existing Slope Bank	- 0.060
Willow Slope Bank	- 0.050
Shotcrete Textured	- 0.025

The complete results of the calculations are included in the Appendix.

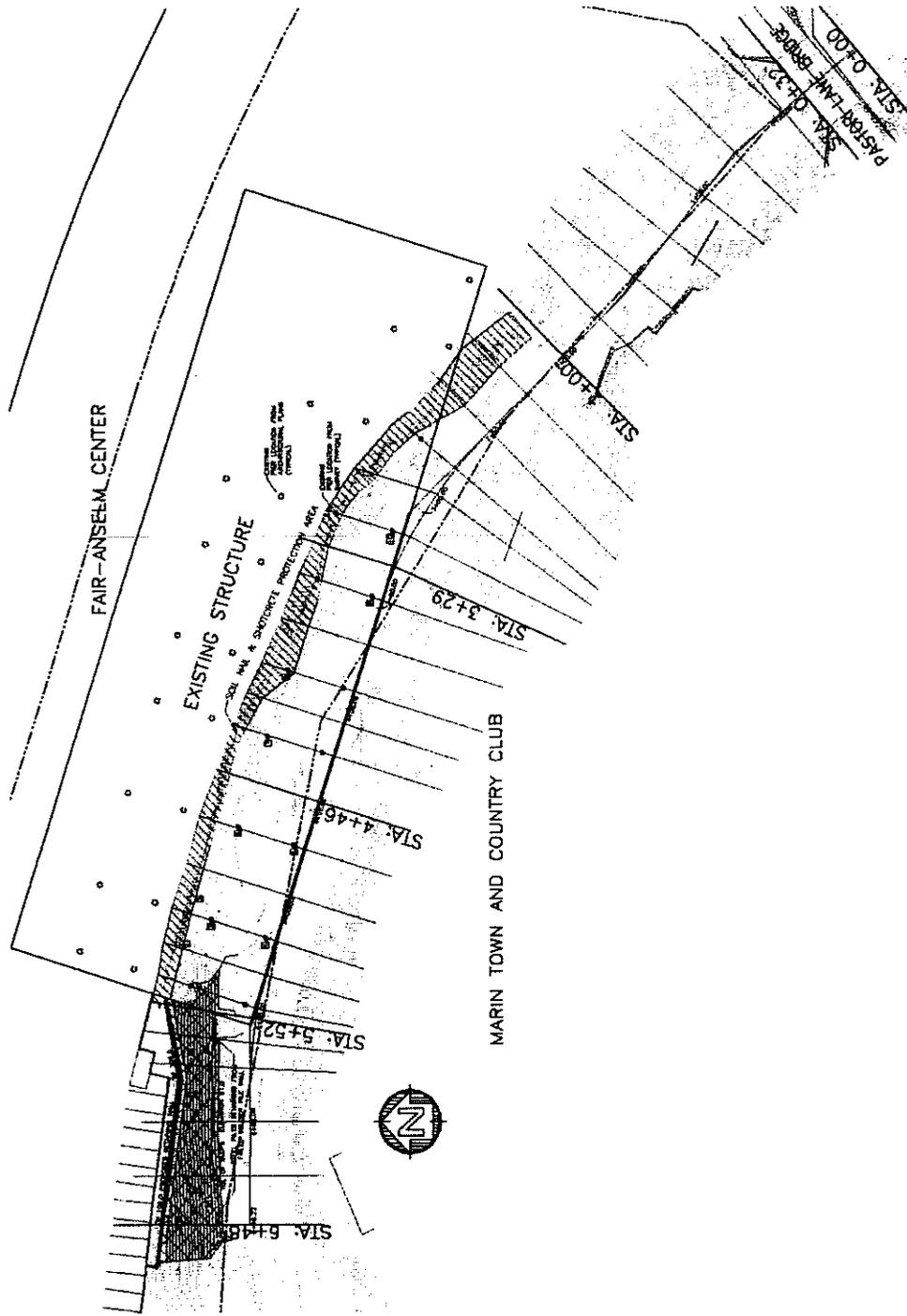


6.0 RESULTS FROM HEC-RAS MODELING:

A steady state flow of 3,500 cfs was applied to the HEC-RAS model at Sta: 6+48.22. There were four creek bed channel conditions modeled. The first model condition utilizes the creek topography from 1971. The second condition utilizes the present day topography. The third condition models the proposed creek condition with channel bank improvements. The fourth condition models the future creek condition after improvements have been constructed and willow planting has had sufficient time to become established for slope bank stabilization. A fifth set of water surface elevations are those from the FEMA stream profile. The purpose of comparing the HEC-RAS results with the FEMA water surface elevations is to verify the consistency of the model results with those determined by FEMA.



FIGURE 1





Water Surface Elevations

The flow results of the model and FEMA profile can be summarized as follows:

Station	FEMA	Water Surface Elevations (in feet)			
		1971	Present Day	Proposed	Future Condition
6+48	92.47	93.87	92.86	92.69	92.78
5+52	92.09	92.64	92.34	92.44	92.45
4+46	91.69	92.55	92.22	92.29	92.29
3+29	91.25	91.86	91.68	91.65	91.65
2+00	90.76	90.96	90.92	90.92	90.92
0+32.5	89.90	89.98	89.96	89.96	89.96
0+00	83.80	81.26	81.09	81.09	81.09

Note: see Appendix for complete results

There are several conclusions that can be drawn from this analysis which are described as follows.

- Pastori Avenue Dam (which was modeled as a Weir in HEC-RAS) is the downstream reach boundary condition that controls the water surface elevations across the project area.
- The FEMA results which were calculated in 1976 are generally consistent with the model results in terms of magnitude.
- Comparing the 1971 results with the Present Day results shows that the erosion that has occurred from 1971 until 2010 has created a wider creek channel which has lowered the water surface elevation and reduced the flow velocities in the creek. The soldier pile wall that existed in 1971 provided channel confinement which increased velocities and contributed to erosion under the building.
- Comparing the Present Day results with the Proposed and Future Condition results shows that the proposed improvements will lower the water surface elevation at the upstream end of the stabilization area. The improvements will not have any negative effects on stormwater flooding upstream.



Velocity of Flow

The velocity results for the Proposed condition can be summarized as follows:

Slope Bank West of Building

Station	Average Velocity	Bank Surface Velocity
6+48	6.25 ft/sec	4.19 ft/sec
6+25	7.29 ft/sec	4.88 ft/sec
6+00	7.56 ft/sec	5.07 ft/sec
5+75	6.34 ft/sec	4.25 ft/sec
5+63	6.13 ft/sec	4.11 ft/sec
5+52	6.01 ft/sec	4.03 ft/sec
<hr/>		
Average	6.59 ft/sec	4.42 ft/sec

Under Building

Station	Average Velocity	Bank Surface Velocity
5+31	5.03 ft/sec	3.37 ft/sec
4+92	4.96 ft/sec	3.32 ft/sec
4+46	4.94 ft/sec	3.31 ft/sec
4+07	5.38 ft/sec	3.60 ft/sec
3+68	5.93 ft/sec	3.97 ft/sec
3+29	6.14 ft/sec	4.11 ft/sec
2+89	5.08 ft/sec	3.40 ft/sec
<hr/>		
Average	5.35 ft/sec	3.58 ft/sec

The lower portion of the slope bank west of the building will be covered with a 100% biodegradable, organic, erosion control blanket capable of handling an unvegetated velocity of 10 ft/sec. The erosion control blanket will be secured with wooden EcoSTAKES and planted with live willow stakes in order to provide greater slope bank stabilization. The slope bank blanket and willow planting will provide an effective and all-natural erosion control and vegetation establishment in an environmentally- and wildlife-friendly manner leaving no synthetic residues on-site after vegetation is established. The upper portion of the slope bank west of the building will be supported by a sculpted shotcrete wall.

The slope bank under the building will be stabilized with a sculpted shotcrete slope blanket. There are no further post construction erosion control measures proposed under the building.

7.0 SUMMARY:

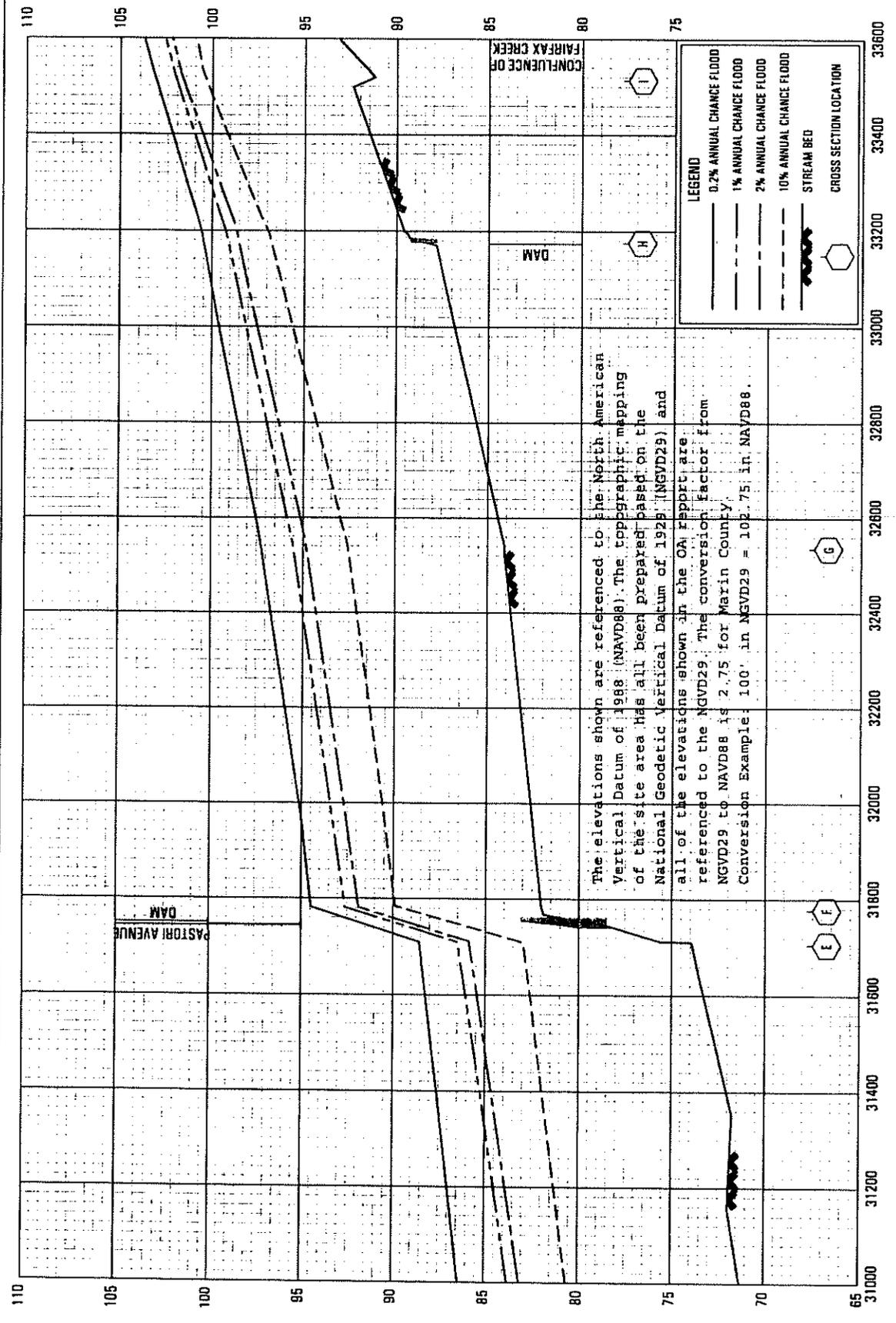
Using the 100-year flow rate from the Flood Insurance Study, the HEC-RAS model was used to determine the water surface elevations and flow velocities for the four creek conditions modeled: 1971 condition, Present Day condition, Proposed condition, and Future condition. The model results showed that the improvements will stabilize the slope bank without creating any negative effects on the creek's ability to convey floodwaters of the 100-year flow. The existing steel I-beams from the failed soldier pile wall will be removed and replaced with a slope bank and shotcrete wall. The slope bank will be covered with a biodegradable erosion control blanket and planted with live willow stakes. The improvements provide both slope stabilization and increased channel capacity. The proposed project will not adversely affect the storm water flows of the creek or the neighboring properties.

APPENDIX A

FEMA Flood Profile of San Anselmo Creek

FEDERAL EMERGENCY MANAGEMENT AGENCY
MARIN COUNTY, CA
AND INCORPORATED AREAS

FLOOD PROFILES
SAN ANSELMO CREEK



The elevations shown are referenced to the North American Vertical Datum of 1988 (NAVD88). The topographic mapping of the site area has all been prepared based on the National Geodetic Vertical Datum of 1929 (NGVD29) and all of the elevations shown in the OA reports are referenced to the NGVD29. The conversion factor from NGVD29 to NAVD88 is 2.75 for Marin County. Conversion Example: 100' in NGVD29 = 102.75' in NAVD88.

LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- · · 2% ANNUAL CHANCE FLOOD
- · · 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

STREAM DISTANCE IN FEET ABOVE U.S. HIGHWAY 101

ELEVATION IN FEET (NAVD 88)

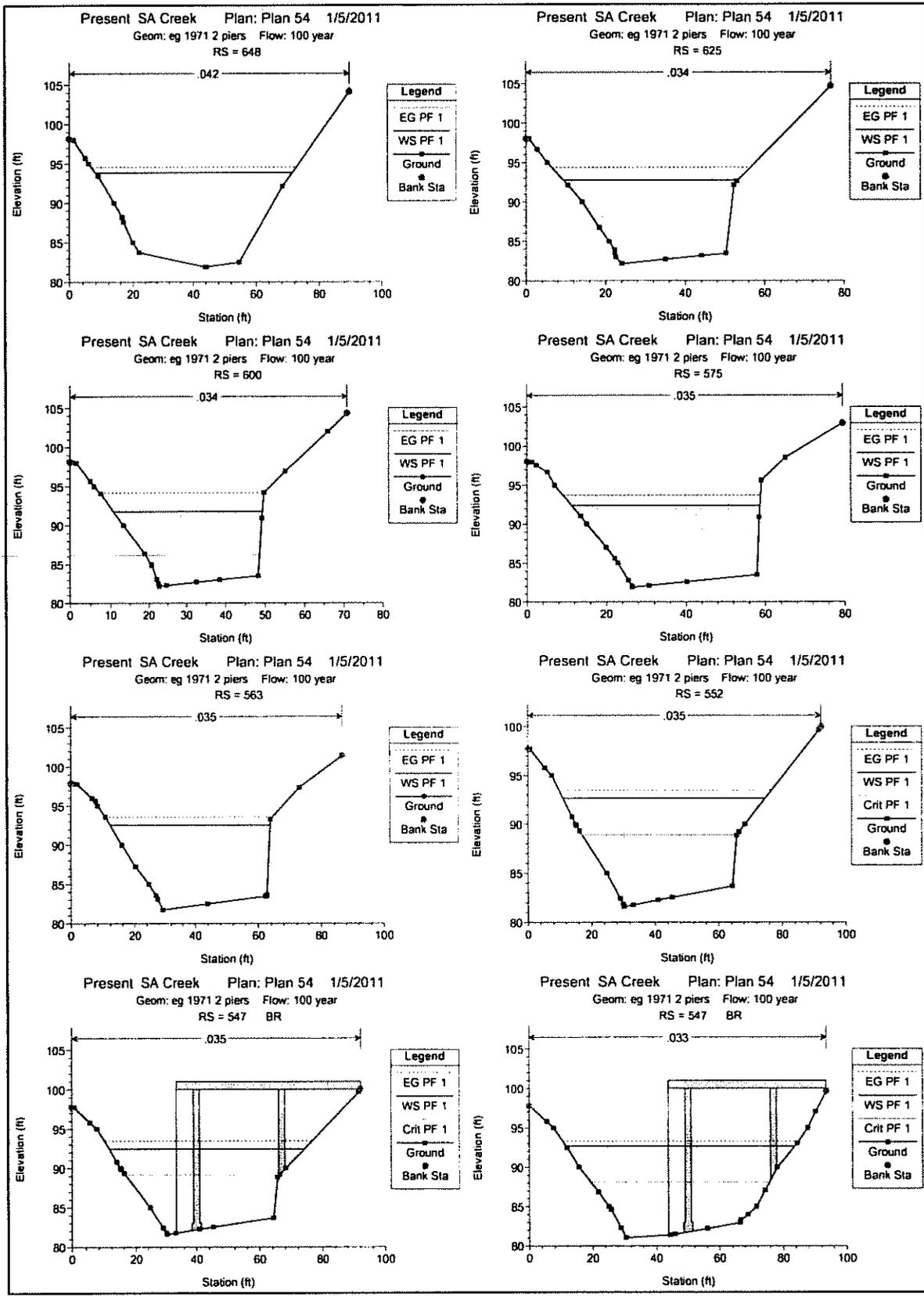
APPENDIX B

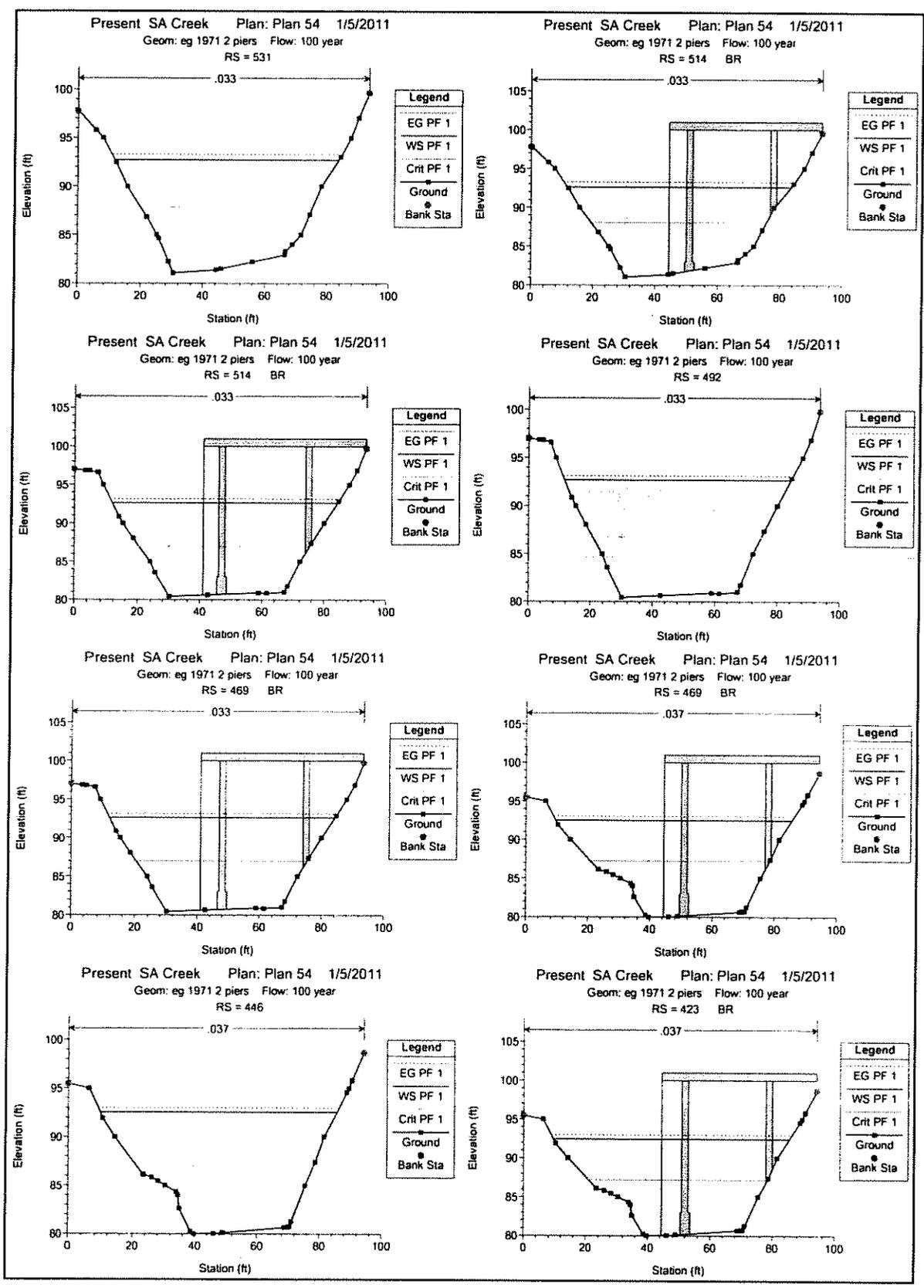
1971 Conditions - HEC-RAS results

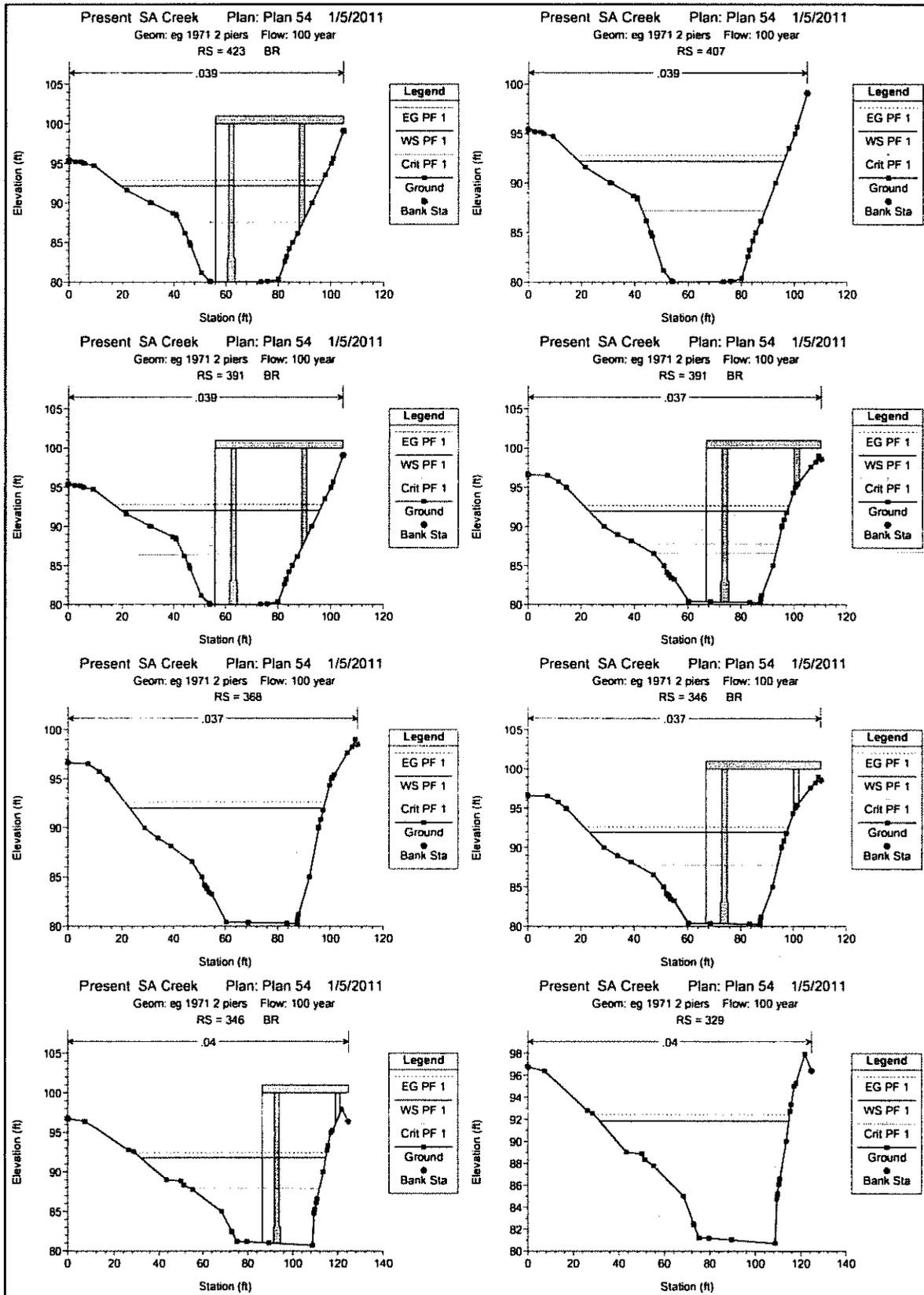
River	Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
San Anselmo Cree	San Anselmo Cree	648	PF 1	3500.00	81.91	93.98		94.64	0.002094	6.54	535.01	63.88	0.40
San Anselmo Cree	San Anselmo Cree	625	PF 1	3500.00	82.18	92.91		94.47	0.006266	10.04	348.51	44.41	0.63
San Anselmo Cree	San Anselmo Cree	600	PF 1	3500.00	82.18	91.86		94.20	0.010483	12.22	286.32	38.78	0.79
San Anselmo Cree	San Anselmo Cree	575	PF 1	3500.00	81.88	92.42		93.72	0.004876	9.13	383.45	47.46	0.57
San Anselmo Cree	San Anselmo Cree	563	PF 1	3500.00	81.74	92.56		93.59	0.003715	8.14	430.02	51.82	0.50
San Anselmo Cree	San Anselmo Cree	552	PF 1	3500.00	81.61	92.64	88.93	93.49	0.003192	7.40	473.03	63.66	0.48
San Anselmo Cree	San Anselmo Cree	547	Bridge										
San Anselmo Cree	San Anselmo Cree	531	PF 1	3500.00	81.07	92.68	87.85	93.24	0.001798	6.01	582.85	72.07	0.37
San Anselmo Cree	San Anselmo Cree	514	Bridge										
San Anselmo Cree	San Anselmo Cree	482	PF 1	3500.00	80.45	92.60	86.76	93.06	0.001311	5.42	645.85	72.54	0.32
San Anselmo Cree	San Anselmo Cree	469	Bridge										
San Anselmo Cree	San Anselmo Cree	446	PF 1	3500.00	80.00	92.43	86.99	92.89	0.001432	5.47	538.69	75.78	0.33
San Anselmo Cree	San Anselmo Cree	423	Bridge										
San Anselmo Cree	San Anselmo Cree	407	PF 1	3500.00	80.00	92.04	87.23	92.68	0.002407	6.41	546.41	76.06	0.42
San Anselmo Cree	San Anselmo Cree	391	Bridge										
San Anselmo Cree	San Anselmo Cree	368	PF 1	3500.00	80.24	91.81	87.46	92.45	0.002343	6.40	547.10	73.92	0.41
San Anselmo Cree	San Anselmo Cree	346	Bridge										
San Anselmo Cree	San Anselmo Cree	329	PF 1	3500.00	80.72	91.63	87.60	92.24	0.002527	6.27	558.23	82.16	0.42
San Anselmo Cree	San Anselmo Cree	313	Bridge										
San Anselmo Cree	San Anselmo Cree	289	PF 1	3500.00	80.90	91.62		92.02	0.001528	5.03	686.50	102.38	0.34
San Anselmo Cree	San Anselmo Cree	274	PF 1	3500.00	80.59	91.36		91.97	0.002652	6.24	561.05	89.83	0.44
San Anselmo Cree	San Anselmo Cree	250	PF 1	3500.00	80.50	91.07		91.87	0.003565	7.17	488.00	77.59	0.50
San Anselmo Cree	San Anselmo Cree	225	PF 1	3500.00	80.39	91.04		91.77	0.003013	6.87	509.10	75.32	0.47
San Anselmo Cree	San Anselmo Cree	200	PF 1	3500.00	80.12	90.76		91.67	0.003442	7.66	456.81	60.83	0.49
San Anselmo Cree	San Anselmo Cree	175	PF 1	3500.00	78.47	90.39		91.55	0.004296	8.67	403.88	49.99	0.54
San Anselmo Cree	San Anselmo Cree	150	PF 1	3500.00	78.51	90.36		91.42	0.003875	8.27	423.24	52.67	0.51
San Anselmo Cree	San Anselmo Cree	125	PF 1	3500.00	78.18	90.24		91.32	0.004178	8.35	419.28	54.41	0.53
San Anselmo Cree	San Anselmo Cree	100	PF 1	3500.00	78.26	90.46		91.12	0.002175	6.52	538.88	65.16	0.40
San Anselmo Cree	San Anselmo Cree	75	PF 1	3500.00	78.83	90.33		91.05	0.002368	6.82	513.06	63.66	0.42
San Anselmo Cree	San Anselmo Cree	45	PF 1	3500.00	79.22	90.26		90.88	0.002306	6.82	513.13	61.37	0.42
San Anselmo Cree	San Anselmo Cree	32.5	PF 1	3500.00	78.86	89.98	85.19	90.94	0.000850	7.86	444.14	42.79	0.43
San Anselmo Cree	San Anselmo Cree	32	Int Struct										
San Anselmo Cree	San Anselmo Cree	24	PF 1	3500.00	77.17	83.54	83.54	86.68	0.004609	14.24	245.85	39.44	1.00
San Anselmo Cree	San Anselmo Cree	14	PF 1	3500.00	75.19	81.56	81.56	84.66	0.004526	14.14	247.57	39.81	1.00
San Anselmo Cree	San Anselmo Cree	0	PF 1	3500.00	73.00	80.64	79.13	81.85	0.006005	8.84	395.94	70.23	0.66

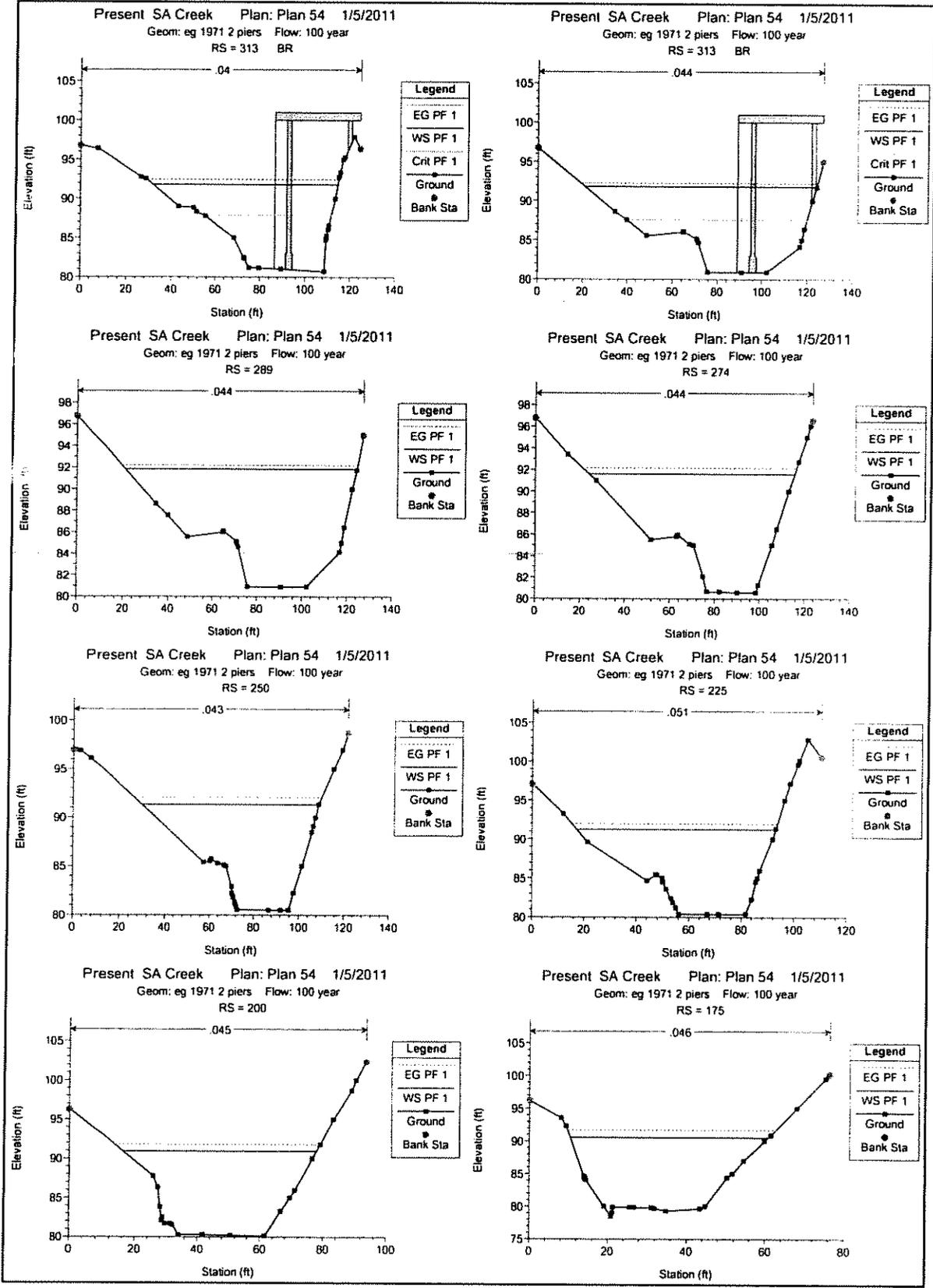
Plan: Plan 34 San Anselmo Cree San Anselmo Cree RS: 32 Inl Struct: Profile: PF 1

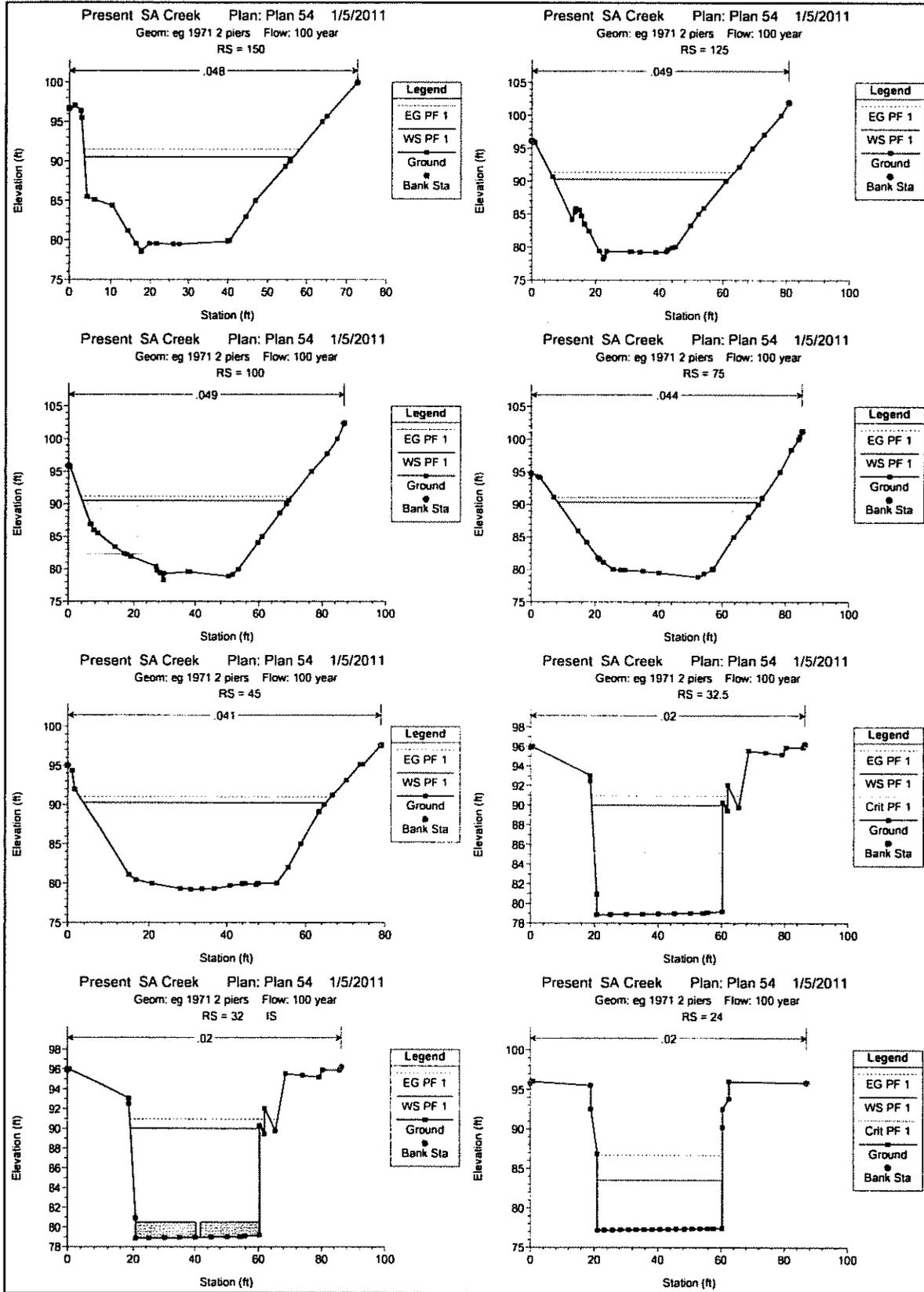
E.G. Elev (ft)	90.94	Q Gates (cfs)	
W.S. Elev (ft)	89.98	Q Gate Group (cfs)	0.00
Q Total (cfs)	3500.00	Gate Open Ht (ft)	83.54
Q Weir (cfs)	3500.00	Gate #Open	
Weir Flow Area (sq ft)	428.57	Gate Area (sq ft)	1.00
Weir Sta Lft (ft)	18.87	Gate Submerg	0.00
Weir Sta Rgt (ft)	66.02	Gate Invert (ft)	0.00
Weir Max Depth (ft)	11.99	Gate Weir Coef	0.000
Weir Avg Depth (ft)	9.42		
Weir Coef	2.600	Q Breach (cfs)	
Weir Submerg	0.29	Breach Avg Velocity (ft/s)	
Min El Weir Flow (ft)	78.96	Breach Flow Area (sq ft)	
Wr Top Wdth (ft)	45.49		





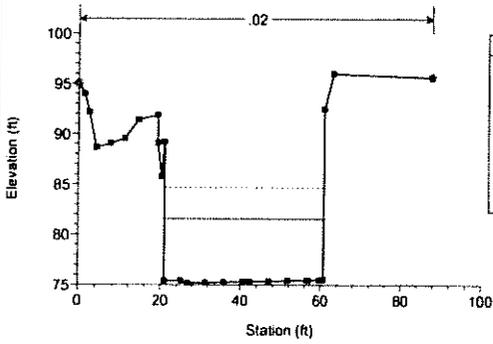






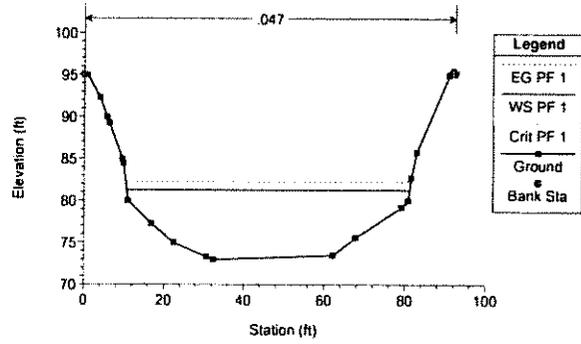
Present SA Creek Plan: Plan 54 1/5/2011

Geom: eg 1971 2 piers Flow: 100 year
RS = 14



Present SA Creek Plan: Plan 54 1/5/2011

Geom: eg 1971 2 piers Flow: 100 year
RS = 0



1971 Condition

Section Line (SL)	River Station	Left Bank "n"	Left Bank Length	Channel bottom "n"	Channel bot. Length	Right Bank "n"	Right Bank Length	Composite	River Station
34	6+48	0.06	13	0.025	37	0.06	20	0.042	6+48
33	6+25	0.06	17	0.025	26	0.025	20	0.034	6+25
32	6+00	0.06	15	0.025	25	0.025	18	0.034	6+00
31	5+75	0.06	20	0.025	30	0.025	20	0.035	5+75
30	5+63	0.06	20	0.025	33	0.025	20	0.035	5+63
29	5+52	0.06	21	0.025	34	0.025	20	0.035	5+52
28	5+47	0.06	22	0.025	23	0.025	38	0.034	5+47
27	5+31	0.06	20	0.025	34	0.025	32	0.033	5+31
26	5+14	0.06	20	0.025	26	0.025	39	0.033	5+14
25	4+92	0.06	19	0.025	24	0.025	42	0.033	4+92
24	4+69	0.06	18	0.025	48	0.025	19	0.032	4+69
23	4+46	0.06	28	0.025	34	0.025	23	0.037	4+46
22	4+23	0.06	35	0.025	32	0.025	22	0.039	4+23
21	4+07	0.06	35	0.025	40	0.025	15	0.039	4+07
20	3+91	0.06	25	0.025	36	0.025	14	0.037	3+91
19	3+68	0.06	26	0.025	25	0.025	22	0.037	3+68
18	3+46	0.06	27	0.025	23	0.025	19	0.039	3+46
17	3+29	0.06	38	0.025	32	0.025	21	0.040	3+29
16	3+13	0.06	54	0.025	30	0.025	21	0.043	3+13
15	2+89	0.06	60	0.025	28	0.025	22	0.044	2+89
14	2+74	0.06	56	0.025	20	0.025	26	0.044	2+74
13	2+50	0.06	45	0.025	29	0.025	13	0.043	2+50
12	2+25	0.06	40	0.025	22	0.06	20	0.051	2+25
11	2+00	0.06	20	0.025	30	0.06	18	0.045	2+00
10	1+75	0.06	15	0.025	22	0.06	18	0.046	1+75
9	1+50	0.06	20	0.025	22	0.06	22	0.048	1+50
8	1+25	0.06	18	0.025	18	0.06	22	0.049	1+25
7	1+00	0.06	27	0.025	21	0.06	21	0.049	1+00
6	0+75	0.06	21	0.025	30	0.06	16	0.044	0+75
5	0+45	0.06	14	0.025	37	0.06	16	0.041	0+45
4	0+32.5	0.02		0.02		0.02		0.02	0+32.5
3	0+24	0.02		0.02		0.02		0.02	0+24
2	0+14	0.02		0.02		0.02		0.02	0+14
1	0+00	0.06	22	0.025	28	0.06	23	0.047	0+00

APPENDIX C

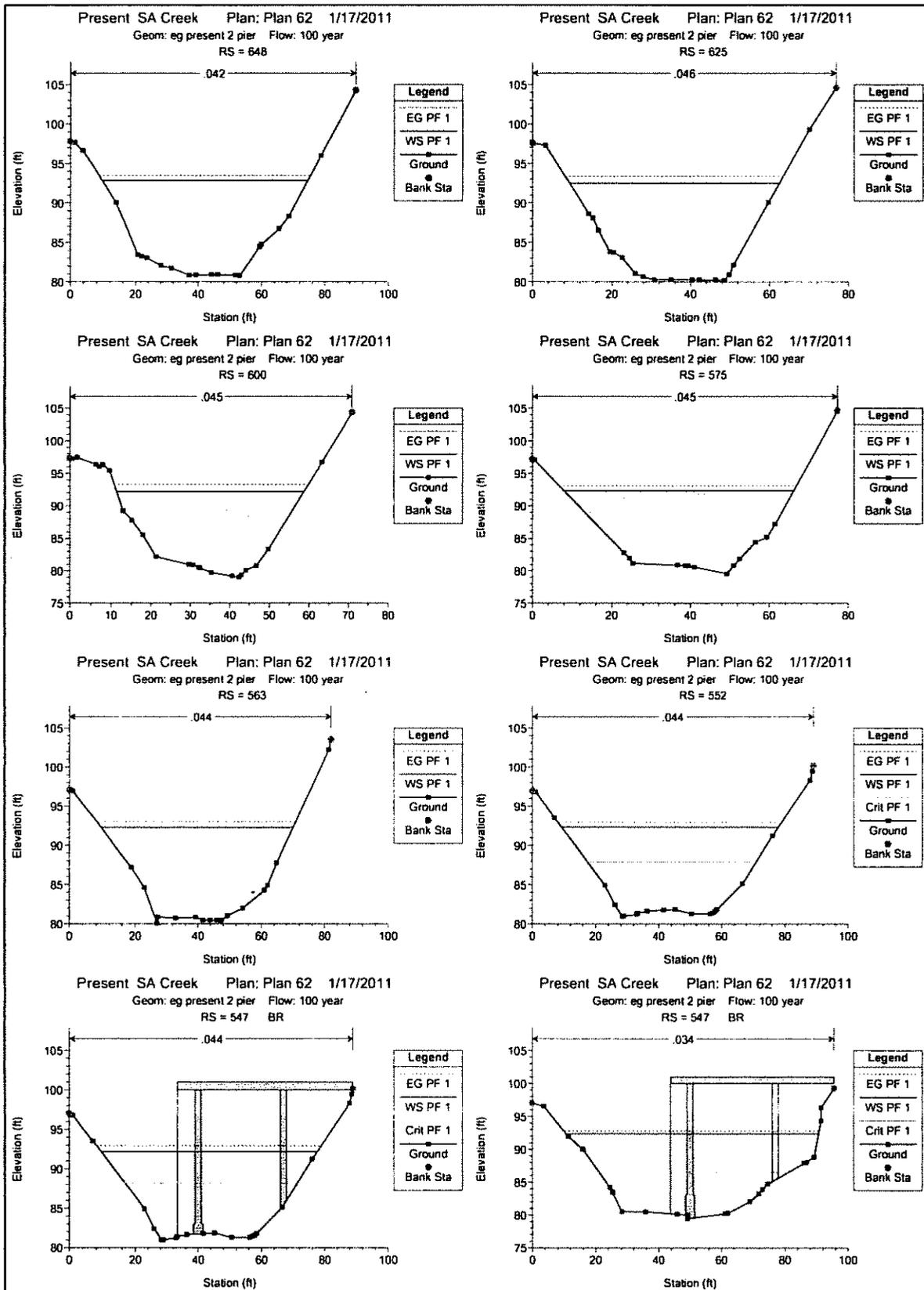
Present Day Conditions - HEC - RAS results

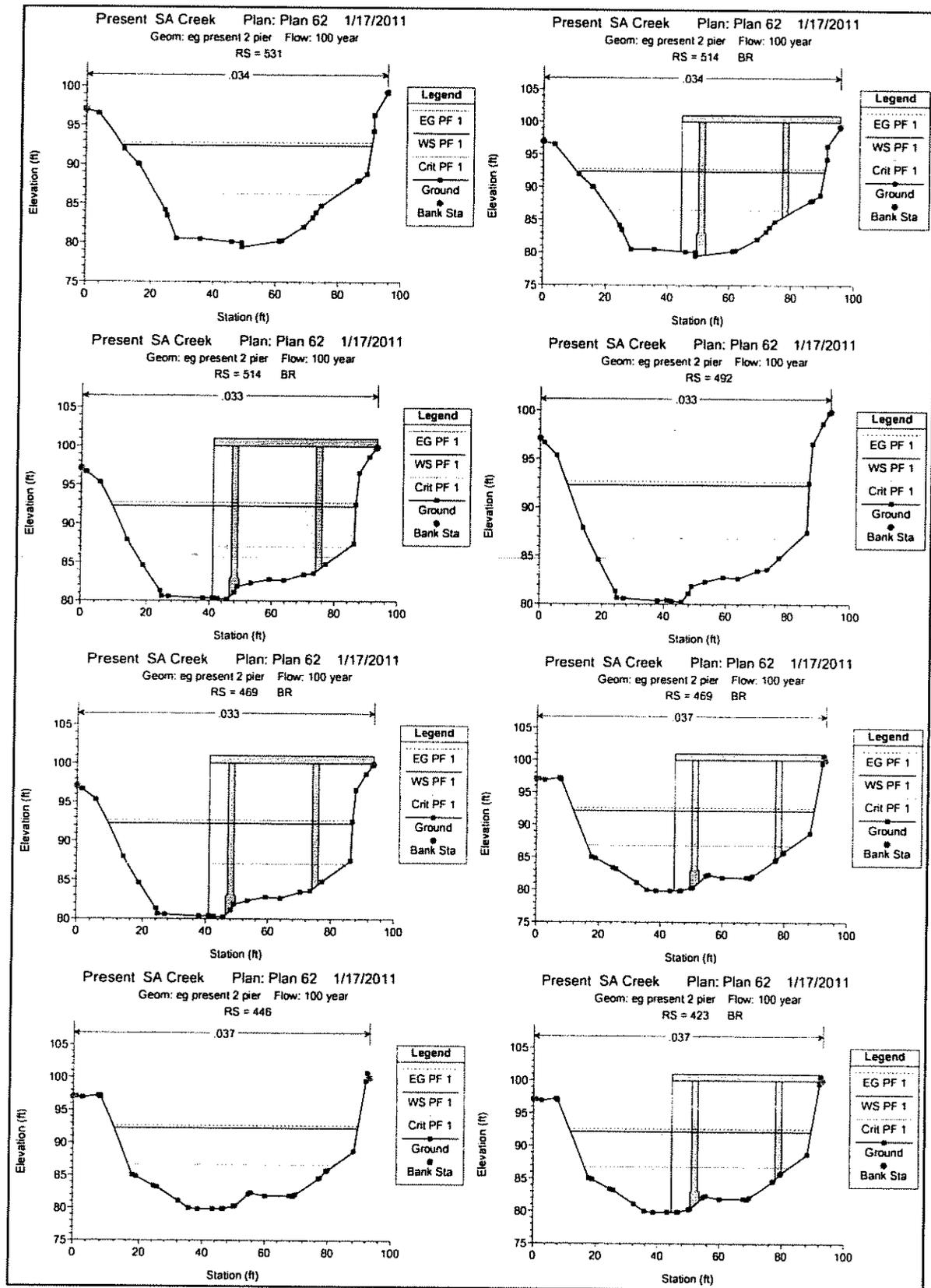
HEC-RAS Plan: Plan 58 River: San Anselmo Cree Reach: San Anselmo Cree Profile: PF 1

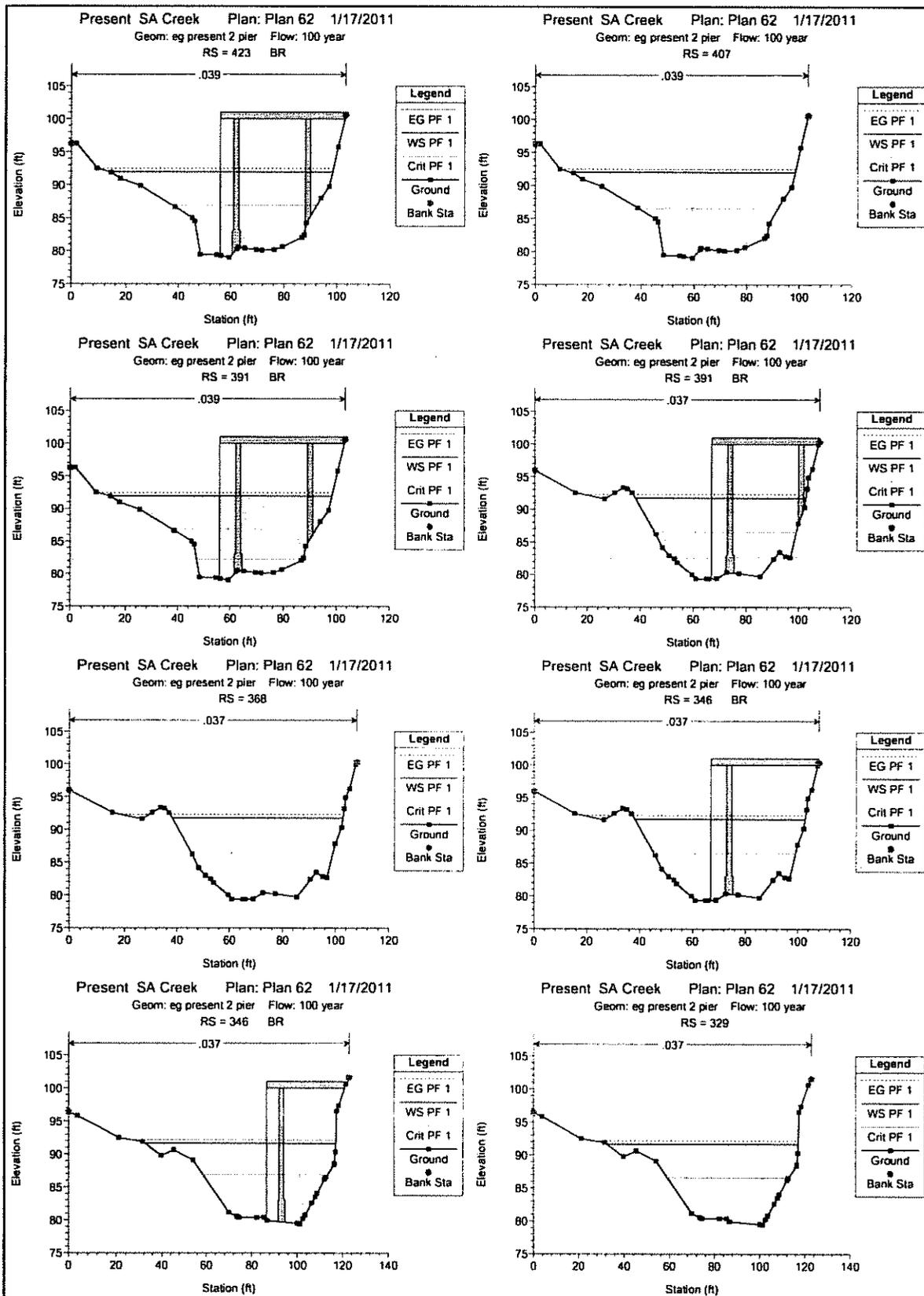
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
San Anselmo Cree	648	PF 1	3500.00	80.78	92.85		93.47	0.002102	6.32	553.98	65.00	0.38
San Anselmo Cree	625	PF 1	3500.00	80.21	92.51		93.38	0.003631	7.49	467.08	53.10	0.45
San Anselmo Cree	600	PF 1	3500.00	79.02	92.20		93.26	0.004335	8.27	423.11	47.41	0.49
San Anselmo Cree	575	PF 1	3500.00	79.58	92.30		93.08	0.003161	7.09	493.32	58.02	0.43
San Anselmo Cree	563	PF 1	3500.00	80.06	92.28		93.04	0.003029	6.98	501.34	60.53	0.43
San Anselmo Cree	552	PF 1	3500.00	80.96	92.32	87.93	92.97	0.002616	6.47	541.96	68.65	0.41
San Anselmo Cree	547		Bridge									
San Anselmo Cree	531	PF 1	3500.00	79.43	92.41	86.24	92.76	0.000755	4.86	720.06	80.09	0.29
San Anselmo Cree	514		Bridge									
San Anselmo Cree	492	PF 1	3500.00	80.22	92.31	86.82	92.69	0.000752	4.97	704.50	77.87	0.29
San Anselmo Cree	469		Bridge									
San Anselmo Cree	446	PF 1	3500.00	79.82	92.21	86.60	92.59	0.000930	4.98	703.33	77.67	0.29
San Anselmo Cree	423		Bridge									
San Anselmo Cree	407	PF 1	3500.00	79.01	92.00	86.54	92.46	0.001546	5.41	646.36	85.01	0.35
San Anselmo Cree	391		Bridge									
San Anselmo Cree	368	PF 1	3500.00	79.36	91.76	86.31	92.30	0.001411	5.89	594.18	67.34	0.35
San Anselmo Cree	346		Bridge									
San Anselmo Cree	328	PF 1	3500.00	79.41	91.66	86.57	92.16	0.001615	5.71	613.32	84.59	0.37
San Anselmo Cree	313		Bridge									
San Anselmo Cree	289	PF 1	3500.00	78.79	91.64		91.98	0.001529	4.72	741.42	100.95	0.31
San Anselmo Cree	274	PF 1	3500.00	78.21	91.52		91.95	0.001949	5.24	668.54	93.62	0.35
San Anselmo Cree	250	PF 1	3500.00	78.38	91.35		91.89	0.002321	5.87	596.39	83.00	0.39
San Anselmo Cree	225	PF 1	3500.00	78.12	91.29		91.82	0.002916	5.85	598.77	75.91	0.37
San Anselmo Cree	200	PF 1	3500.00	79.13	90.92		91.72	0.003474	7.16	488.95	60.49	0.44
San Anselmo Cree	175	PF 1	3500.00	77.94	90.63		91.60	0.004207	7.89	443.56	51.53	0.47
San Anselmo Cree	150	PF 1	3500.00	78.49	90.59		91.47	0.004384	7.51	466.11	56.13	0.46
San Anselmo Cree	125	PF 1	3500.00	78.05	90.39		91.34	0.005353	7.83	447.28	56.64	0.49
San Anselmo Cree	100	PF 1	3500.00	77.87	90.52		91.14	0.002885	6.31	554.56	64.07	0.38
San Anselmo Cree	75	PF 1	3500.00	78.68	90.37		91.07	0.002644	6.70	522.45	61.04	0.40
San Anselmo Cree	45	PF 1	3500.00	78.27	90.30		90.99	0.002439	6.65	526.09	62.00	0.40
San Anselmo Cree	32.5	PF 1	3500.00	78.86	89.96	85.22	90.94	0.000847	7.93	441.13	41.87	0.43
San Anselmo Cree	32		Inl Struct									
San Anselmo Cree	24	PF 1	3500.00	77.17	83.54	83.54	86.68	0.004609	14.24	245.85	39.44	1.00
San Anselmo Cree	14	PF 1	3500.00	75.19	81.56	81.56	84.66	0.004531	14.14	247.50	39.92	1.00
San Anselmo Cree	0	PF 1	3500.00	73.00	81.09	79.95	82.08	0.006001	7.97	438.94	70.55	0.56

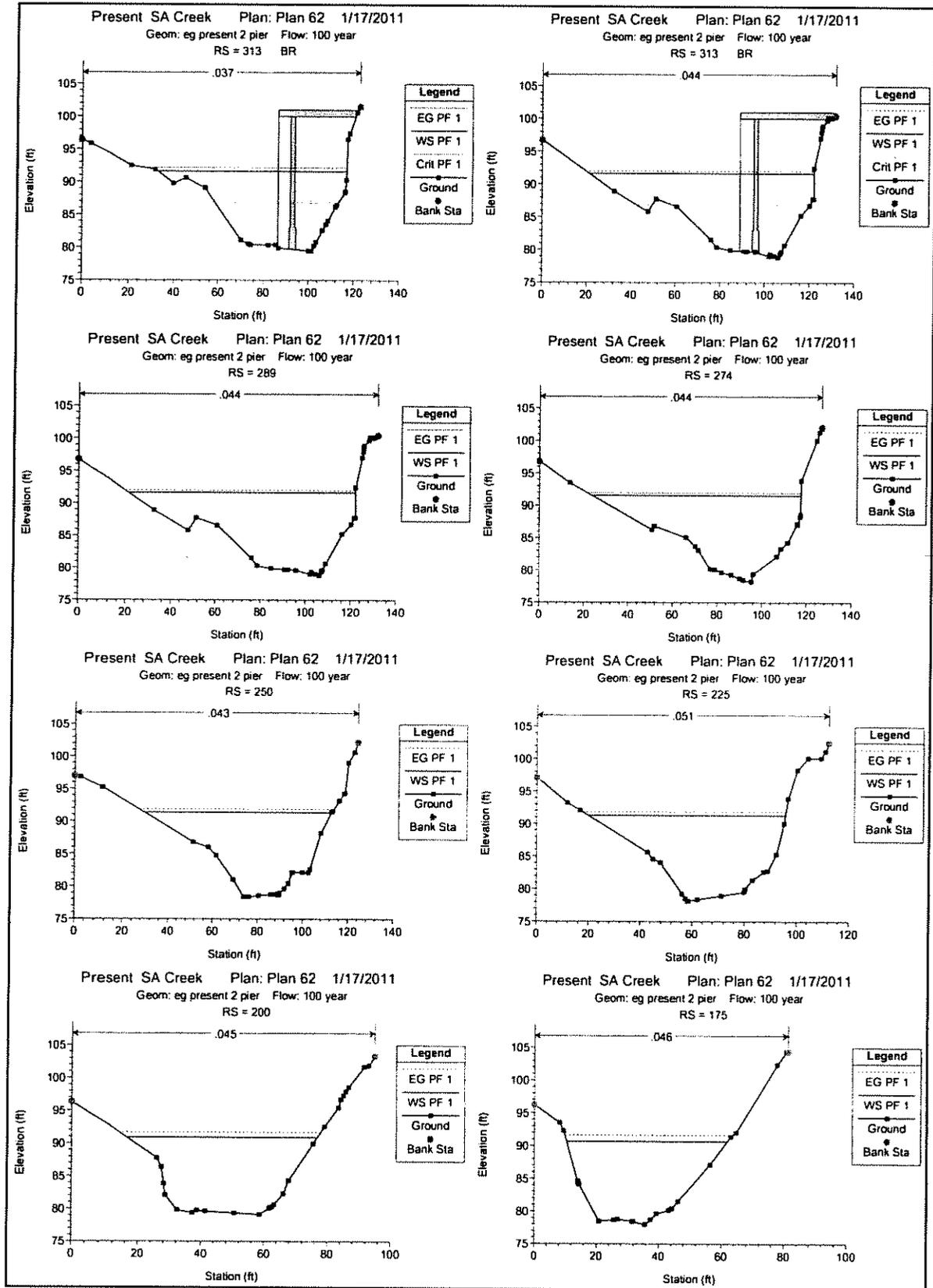
Plan: Plan 58 San Anselmo Cree San Anselmo Cree RS: 32 Inl Struct: Profile: PF 1

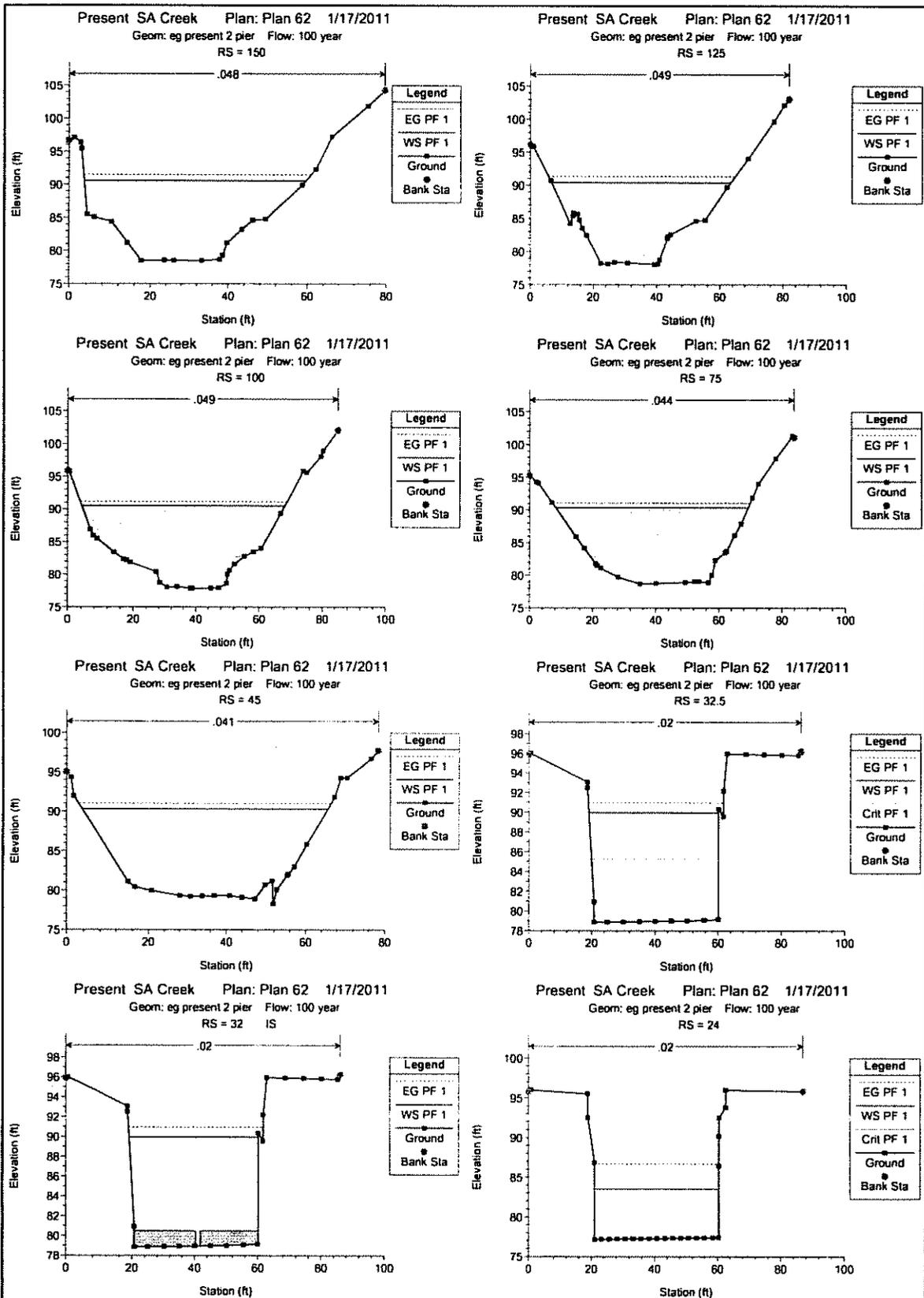
E.G. Elev (ft)	90.94	Q Gates (cfs)	
W.S. Elev (ft)	89.96	Q Gate Group (cfs)	0.00
Q Total (cfs)	3500.00	Gate Open Hl (ft)	83.54
Q Weir (cfs)	3500.00	Gate #Open	
Weir Flow Area (sq ft)	424.64	Gate Area (sq ft)	1.00
Weir Sta Lft (ft)	18.87	Gate Submerg	0.00
Weir Sta Rgt (ft)	61.66	Gate Invert (ft)	0.00
Weir Max Depth (ft)	11.99	Gate Weir Coef	0.000
Weir Avg Depth (ft)	9.92		
Weir Coef	2.600	Q Breach (cfs)	
Weir Submerg	0.29	Breach Avg Velocity (ft/s)	
Min El Weir Flow (ft)	78.96	Breach Flow Area (sq ft)	
Wr Top Wdth (ft)	42.79		



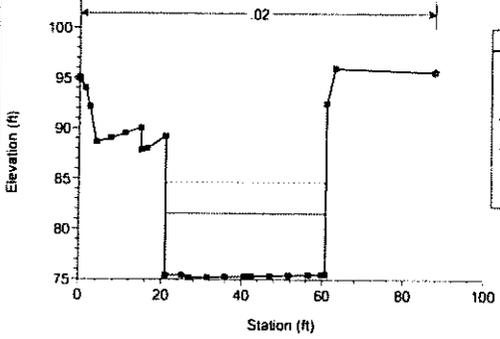




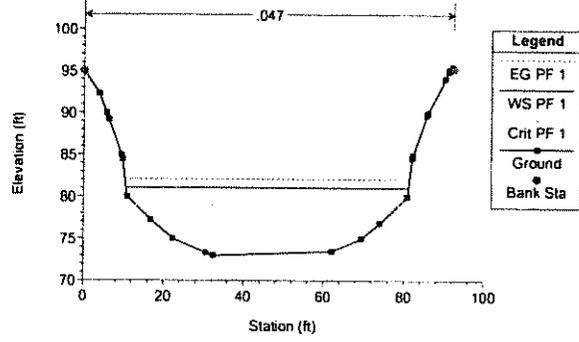




Present SA Creek Plan: Plan 62 1/17/2011
 Geom: eg present 2 pier Flow: 100 year
 RS = 14



Present SA Creek Plan: Plan 62 1/17/2011
 Geom: eg present 2 pier Flow: 100 year
 RS = 0



Ex. Present Day Condition

Section Line (SL)	River Station	Left Bank "n"	Left Bank Length	Channel bottom "n"	Channel bot. Length	Right Bank "n"	Right Bank Length	Composite	River Station
34	6+48	0.06	13	0.025	37	0.06	20	0.042	6+48
33	6+25	0.06	17	0.025	26	0.06	20	0.046	6+25
32	6+00	0.06	15	0.025	25	0.06	18	0.045	6+00
31	5+75	0.06	20	0.025	30	0.06	20	0.045	5+75
30	5+63	0.06	20	0.025	33	0.06	20	0.044	5+63
29	5+52	0.06	21	0.025	34	0.06	20	0.044	5+52
28	5+47	0.06	22	0.025	23	0.025	38	0.034	5+47
27	5+31	0.06	20	0.025	34	0.025	32	0.033	5+31
26	5+14	0.06	20	0.025	26	0.025	39	0.033	5+14
25	4+92	0.06	19	0.025	24	0.025	42	0.033	4+92
24	4+69	0.06	18	0.025	48	0.025	19	0.032	4+69
23	4+46	0.06	28	0.025	34	0.025	23	0.037	4+46
22	4+23	0.06	35	0.025	32	0.025	22	0.039	4+23
21	4+07	0.06	35	0.025	40	0.025	15	0.039	4+07
20	3+91	0.06	25	0.025	36	0.025	14	0.037	3+91
19	3+68	0.06	26	0.025	25	0.025	22	0.037	3+68
18	3+46	0.06	27	0.025	23	0.025	19	0.039	3+46
17	3+29	0.06	38	0.025	32	0.025	21	0.040	3+29
16	3+13	0.06	54	0.025	30	0.025	21	0.043	3+13
15	2+89	0.06	60	0.025	28	0.025	22	0.044	2+89
14	2+74	0.06	56	0.025	20	0.025	26	0.044	2+74
13	2+50	0.06	45	0.025	29	0.025	13	0.043	2+50
12	2+25	0.06	40	0.025	22	0.06	20	0.051	2+25
11	2+00	0.06	20	0.025	30	0.06	18	0.045	2+00
10	1+75	0.06	15	0.025	22	0.06	18	0.046	1+75
9	1+50	0.06	20	0.025	22	0.06	22	0.048	1+50
8	1+25	0.06	18	0.025	18	0.06	22	0.049	1+25
7	1+00	0.06	27	0.025	21	0.06	21	0.049	1+00
6	0+75	0.06	21	0.025	30	0.06	16	0.044	0+75
5	0+45	0.06	14	0.025	37	0.06	16	0.041	0+45
4	0+32.5	0.02		0.02		0.02		0.02	0+32.5
3	0+24	0.02		0.02		0.02		0.02	0+24
2	0+14	0.02		0.02		0.02		0.02	0+14
1	0+00	0.06	22	0.025	28	0.06	23	0.047	0+00

APPENDIX D

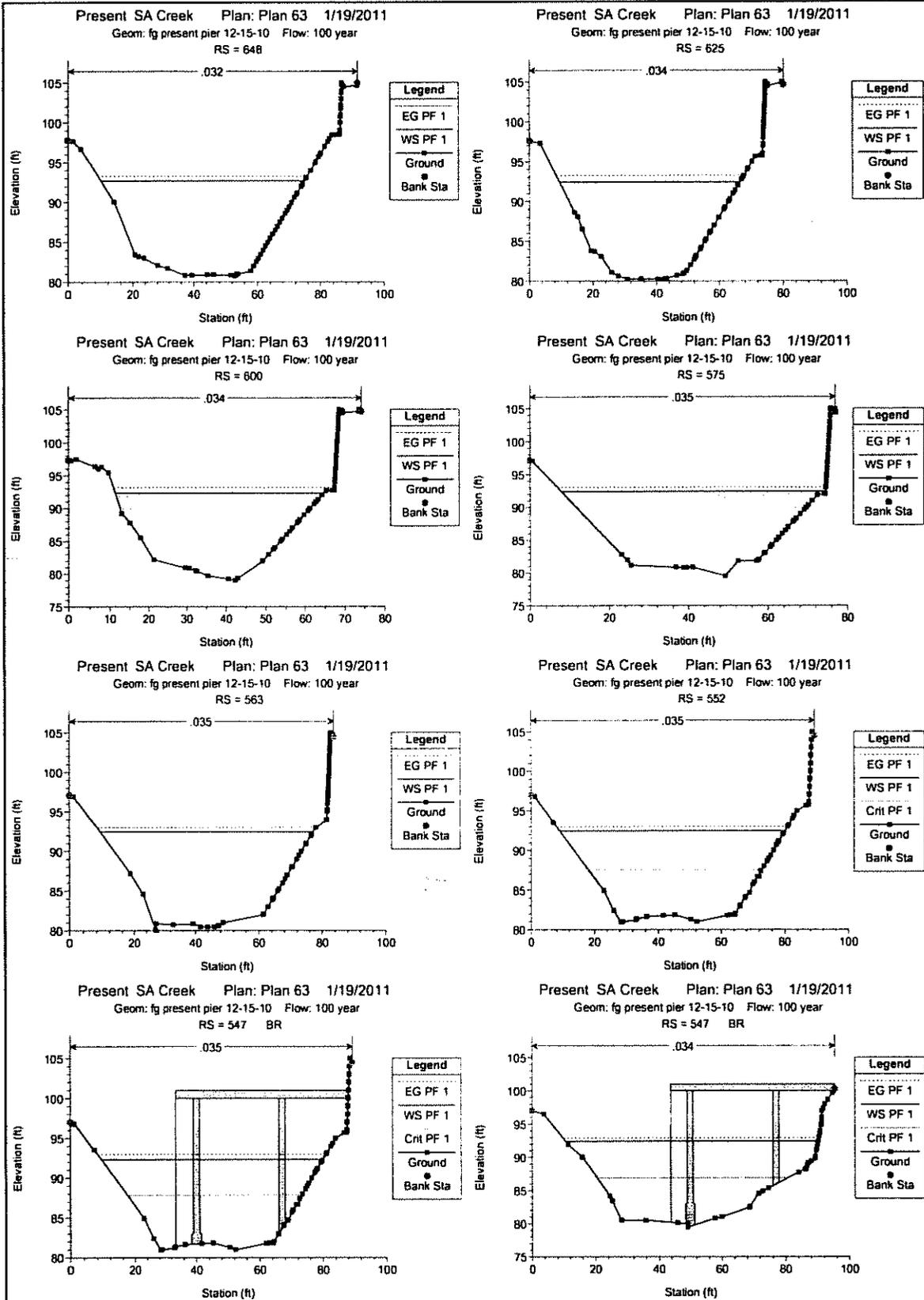
Proposed Conditions - HEC - RAS results

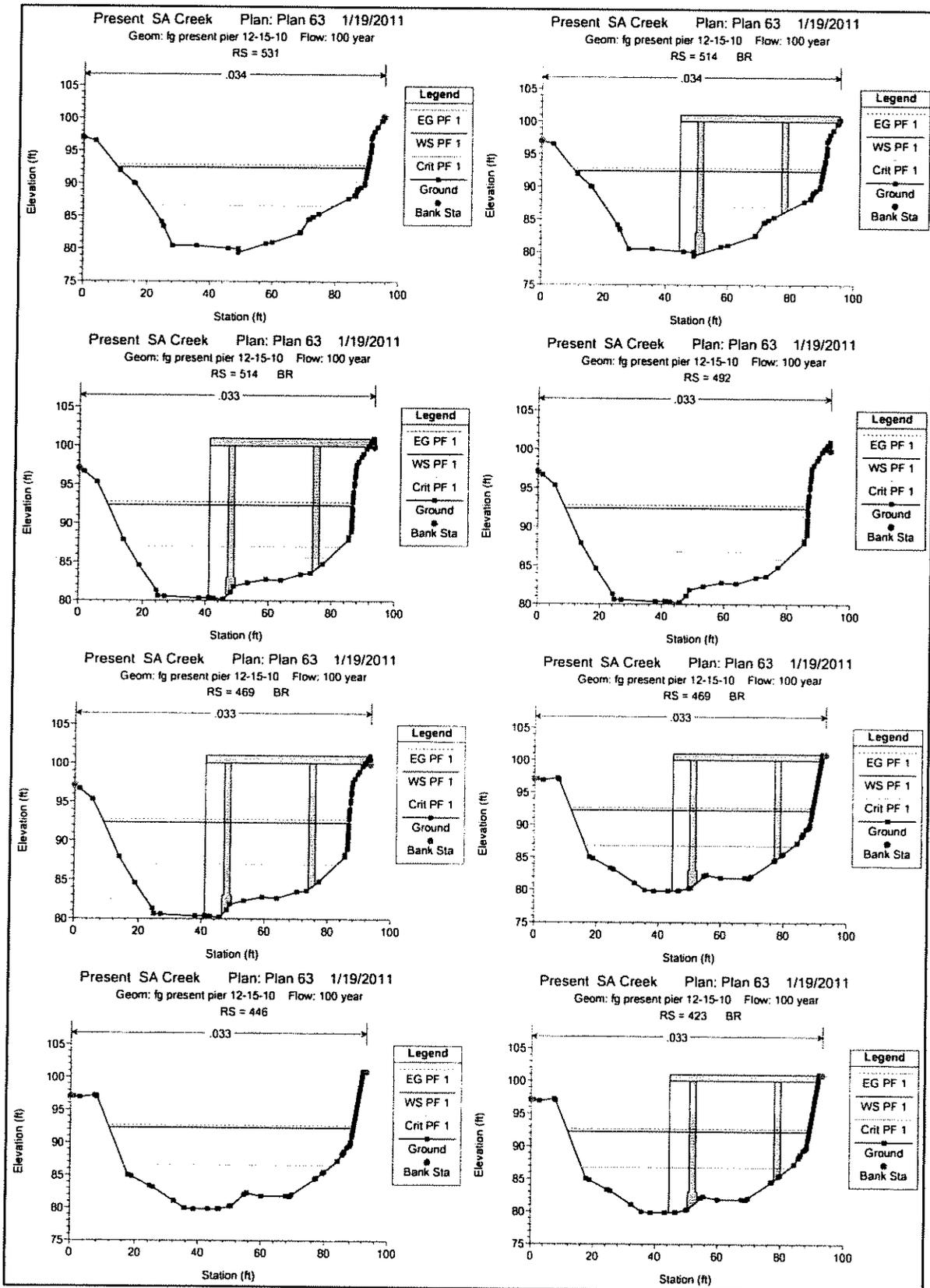
HEC-RAS Plan: Plan 58 River: San Anselmo Cree Reach: San Anselmo Cree Profile: PF 1

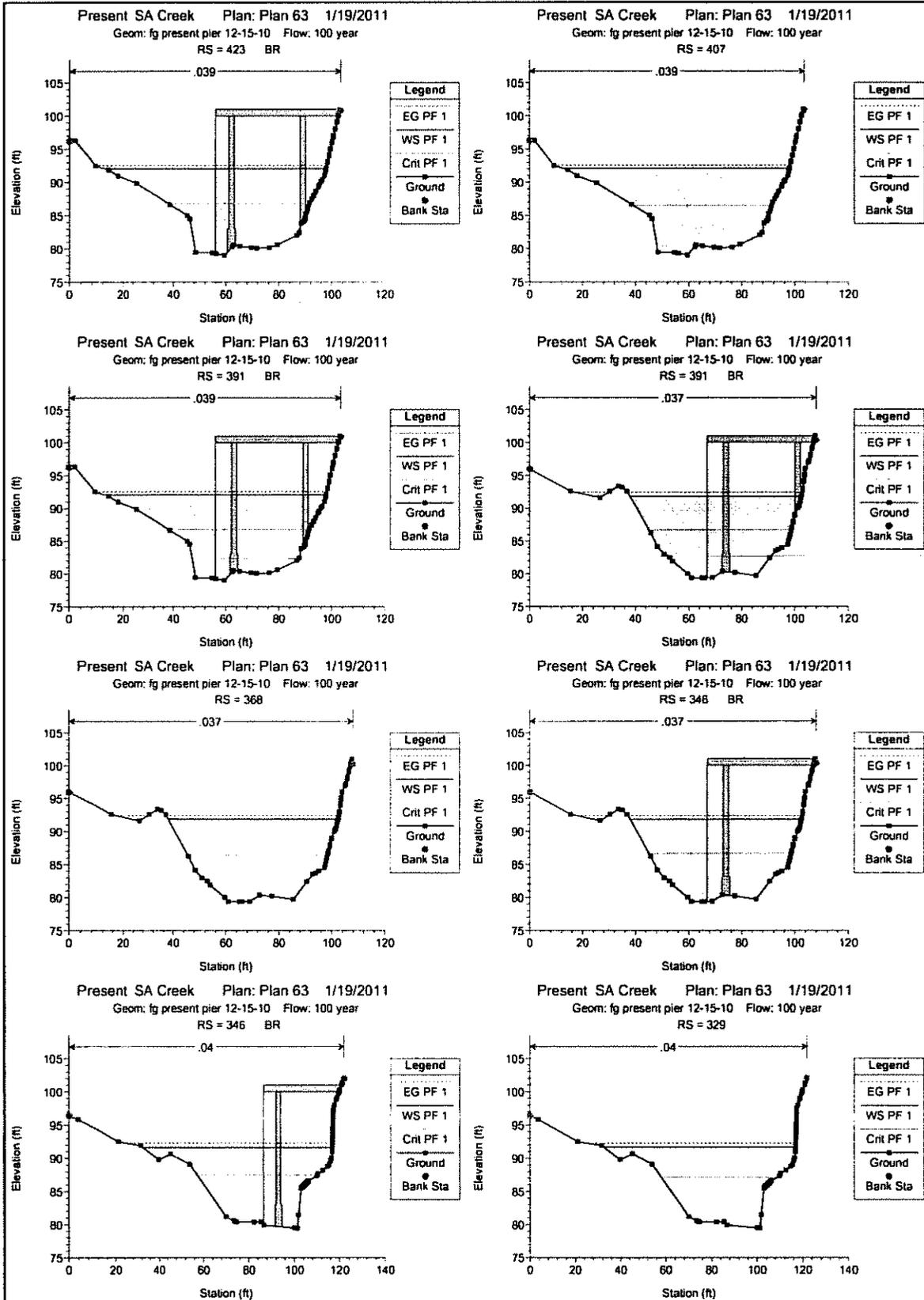
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
San Anselmo Cree	648	PF 1	3500.00	80.78	92.69		93.29	0.001183	6.25	559.75	65.08	0.38
San Anselmo Cree	625	PF 1	3500.00	80.23	92.41		93.24	0.001908	7.29	480.00	56.89	0.44
San Anselmo Cree	600	PF 1	3500.00	79.02	92.29		93.18	0.002045	7.56	482.78	53.36	0.45
San Anselmo Cree	575	PF 1	3500.00	78.58	92.43		93.06	0.001537	6.34	551.91	66.67	0.39
San Anselmo Cree	563	PF 1	3500.00	80.06	92.44		93.03	0.001416	6.13	571.15	68.07	0.37
San Anselmo Cree	552	PF 1	3500.00	80.96	92.44		93.00	0.001370	6.01	582.40	71.11	0.37
San Anselmo Cree	547	Bridge										
San Anselmo Cree	531	PF 1	3500.00	79.43	92.47		92.86	0.000840	5.03	696.26	79.82	0.30
San Anselmo Cree	514	Bridge										
San Anselmo Cree	492	PF 1	3500.00	80.22	92.39		92.77	0.000741	4.96	705.95	77.86	0.29
San Anselmo Cree	469	Bridge										
San Anselmo Cree	446	PF 1	3500.00	79.92	92.29		92.67	0.000720	4.94	707.95	77.42	0.29
San Anselmo Cree	423	Bridge										
San Anselmo Cree	407	PF 1	3500.00	79.01	92.10		92.55	0.001522	5.38	651.07	85.36	0.34
San Anselmo Cree	391	Bridge										
San Anselmo Cree	368	PF 1	3500.00	79.36	91.85		92.40	0.001445	5.93	590.35	88.44	0.36
San Anselmo Cree	346	Bridge										
San Anselmo Cree	329	PF 1	3500.00	79.41	91.65		92.24	0.002459	6.14	570.49	84.48	0.42
San Anselmo Cree	313	Bridge										
San Anselmo Cree	288	PF 1	3500.00	78.79	91.60		92.00	0.002005	5.08	689.41	100.76	0.34
San Anselmo Cree	274	PF 1	3500.00	78.21	91.47		91.96	0.002380	5.58	627.78	93.28	0.38
San Anselmo Cree	250	PF 1	3500.00	78.38	91.34		91.89	0.002419	5.97	586.20	81.45	0.39
San Anselmo Cree	225	PF 1	3500.00	78.12	91.27		91.82	0.003090	5.97	586.06	75.42	0.38
San Anselmo Cree	200	PF 1	3500.00	78.13	90.92		91.72	0.003474	7.16	488.95	60.49	0.44
San Anselmo Cree	175	PF 1	3500.00	77.94	90.63		91.60	0.004207	7.89	443.56	51.53	0.47
San Anselmo Cree	150	PF 1	3500.00	78.49	90.59		91.47	0.004384	7.51	466.11	56.13	0.46
San Anselmo Cree	125	PF 1	3500.00	78.05	90.39		91.34	0.005353	7.83	447.28	56.64	0.49
San Anselmo Cree	100	PF 1	3500.00	77.87	90.52		91.14	0.002885	6.31	554.56	64.07	0.38
San Anselmo Cree	75	PF 1	3500.00	78.68	90.37		91.07	0.002644	6.70	522.45	61.04	0.40
San Anselmo Cree	45	PF 1	3500.00	78.27	90.30		90.99	0.002439	6.65	525.09	62.00	0.40
San Anselmo Cree	32.5	PF 1	3500.00	78.86	89.86		90.84	0.000847	7.93	441.13	41.87	0.43
San Anselmo Cree	32	Inl Struct										
San Anselmo Cree	24	PF 1	3500.00	77.17	83.54		86.68	0.004608	14.24	245.85	39.44	1.00
San Anselmo Cree	14	PF 1	3500.00	75.19	81.56		84.86	0.004531	14.14	247.50	39.92	1.00
San Anselmo Cree	0	PF 1	3500.00	73.00	81.08		82.08	0.006001	7.97	438.94	70.55	0.56

Plan: Plan 58 San Anselmo Cree San Anselmo Cree RS: 32 Inl Struct: Profile: PF 1

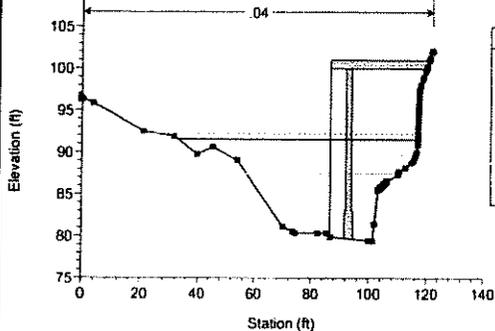
E.G. Elev (ft)	90.94	Q Gates (cfs)	
W.S. Elev (ft)	89.96	Q Gate Group (cfs)	0.00
Q Total (cfs)	3500.00	Gate Open Ht (ft)	83.54
Q Weir (cfs)	3500.00	Gate #Open	
Weir Flow Area (sq ft)	424.64	Gate Area (sq ft)	1.00
Weir Sta Lft (ft)	18.87	Gate Submerg	0.00
Weir Sta Rgt (ft)	61.66	Gate Invert (ft)	0.00
Weir Max Depth (ft)	11.99	Gate Weir Coef	0.000
Weir Avg Depth (ft)	9.92		
Weir Coef	2.600	Q Breach (cfs)	
Weir Submerg	0.29	Breach Avg Velocity (ft/s)	
Min El Weir Flow (ft)	78.96	Breach Flow Area (sq ft)	
Wr Top Wdth (ft)	42.79		



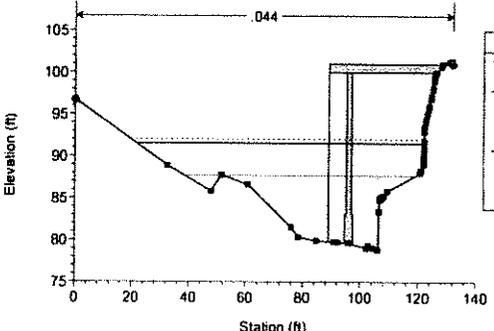




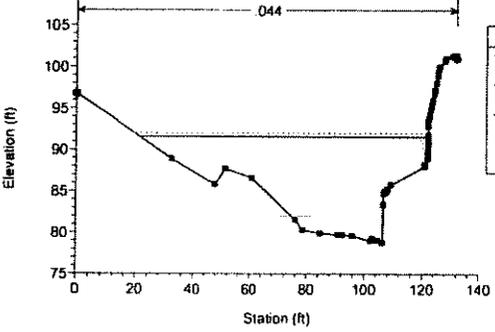
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 313 BR



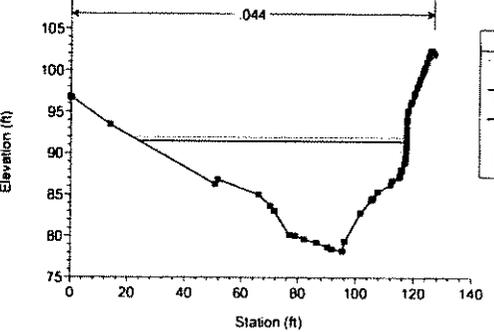
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 313 BR



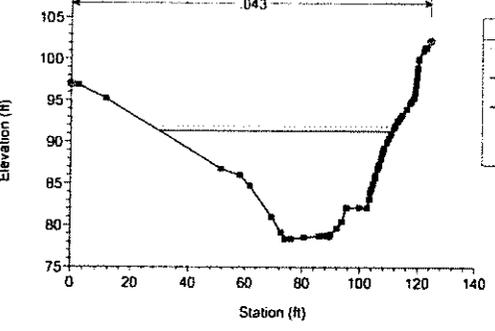
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 289



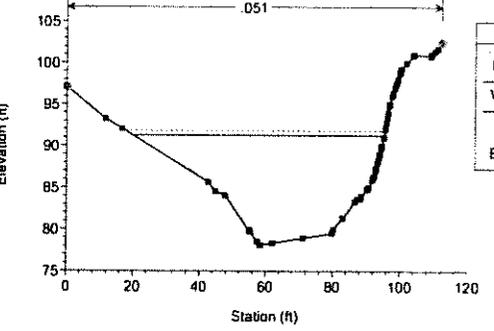
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 274



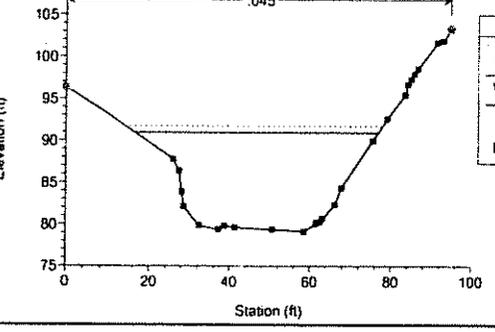
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 250



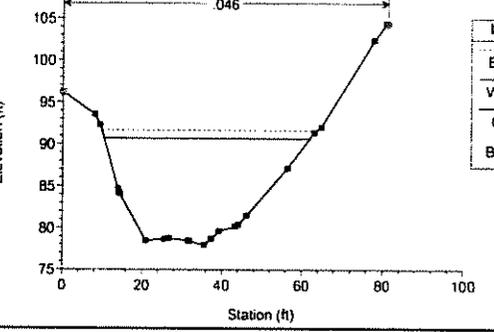
Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 225

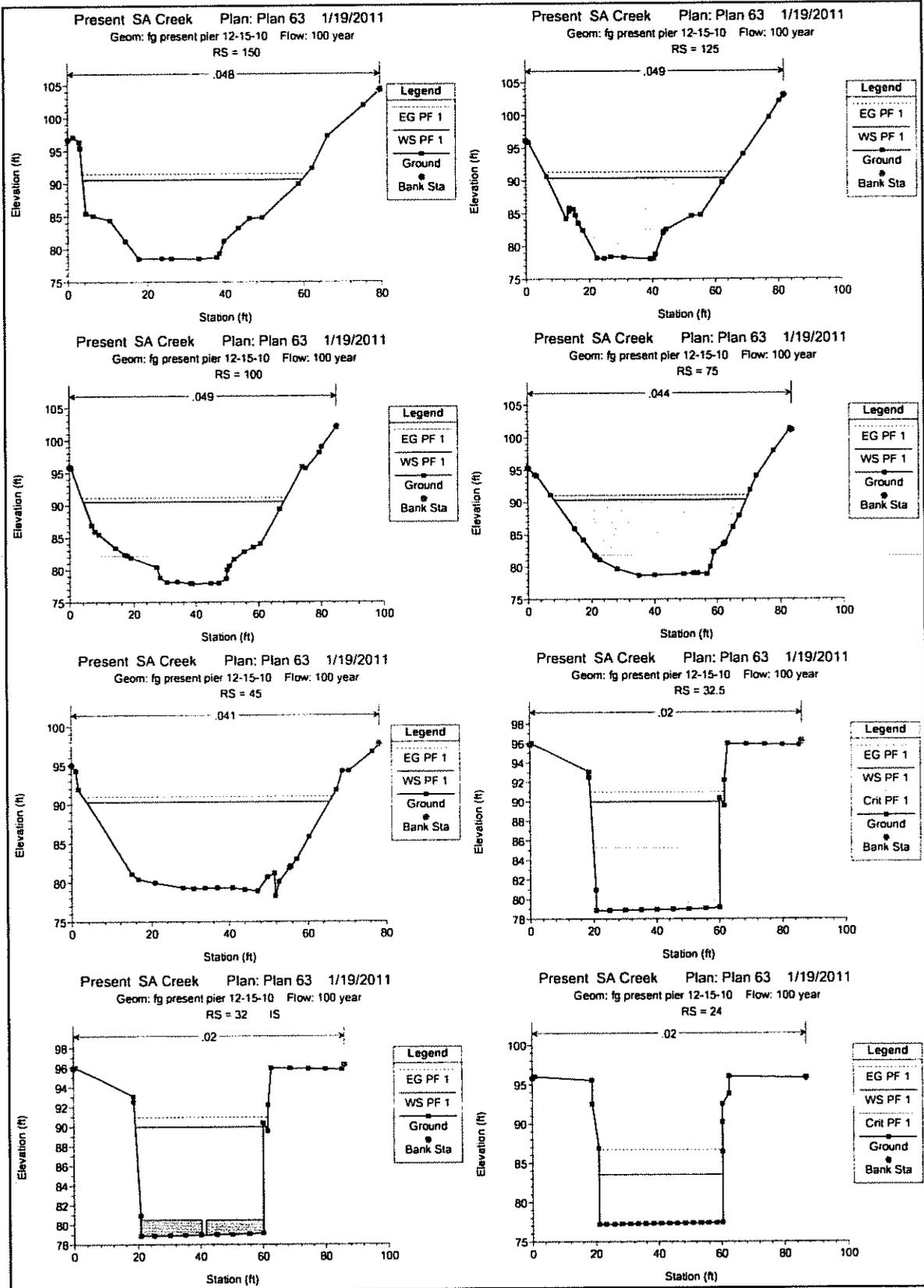


Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 200

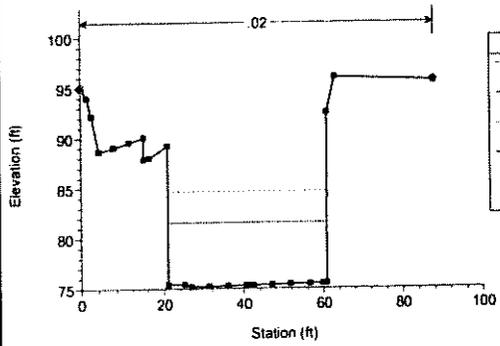


Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 175



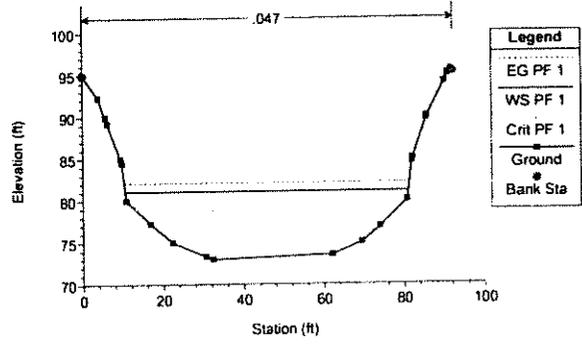


Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 14



Legend
 EG PF 1
 WS PF 1
 Crit PF 1
 Ground
 Bank Sta

Present SA Creek Plan: Plan 63 1/19/2011
 Geom: fg present pier 12-15-10 Flow: 100 year
 RS = 0



Legend
 EG PF 1
 WS PF 1
 Crit PF 1
 Ground
 Bank Sta

Proposed Condition

Section Line (SL)	River Station	Left Bank "n"	Left Bank Length	Channel bottom "n"	Channel bot. Length	Right Bank "n"	Right Bank Length	Composite	River Station
34	6+48	0.06	13	0.025	37	0.025	20	0.032	6+48
33	6+25	0.06	17	0.025	26	0.025	20	0.034	6+25
32	6+00	0.06	15	0.025	25	0.025	18	0.034	6+00
31	5+75	0.06	20	0.025	30	0.025	20	0.035	5+75
30	5+63	0.06	20	0.025	33	0.025	20	0.035	5+63
29	5+52	0.06	21	0.025	34	0.025	20	0.035	5+52
28	5+47	0.06	22	0.025	23	0.025	38	0.034	5+47
27	5+31	0.06	20	0.025	34	0.025	32	0.033	5+31
26	5+14	0.06	20	0.025	26	0.025	39	0.033	5+14
25	4+92	0.06	19	0.025	24	0.025	42	0.033	4+92
24	4+69	0.06	18	0.025	48	0.025	19	0.032	4+69
23	4+46	0.06	28	0.025	34	0.025	23	0.037	4+46
22	4+23	0.06	35	0.025	32	0.025	22	0.039	4+23
21	4+07	0.06	35	0.025	40	0.025	15	0.039	4+07
20	3+91	0.06	25	0.025	36	0.025	14	0.037	3+91
19	3+68	0.06	26	0.025	25	0.025	22	0.037	3+68
18	3+46	0.06	27	0.025	23	0.025	19	0.039	3+46
17	3+29	0.06	38	0.025	32	0.025	21	0.040	3+29
16	3+13	0.06	54	0.025	30	0.025	21	0.043	3+13
15	2+89	0.06	60	0.025	28	0.025	22	0.044	2+89
14	2+74	0.06	56	0.025	20	0.025	26	0.044	2+74
13	2+50	0.06	45	0.025	29	0.025	13	0.043	2+50
12	2+25	0.06	40	0.025	22	0.06	20	0.051	2+25
11	2+00	0.06	20	0.025	30	0.06	18	0.045	2+00
10	1+75	0.06	15	0.025	22	0.06	18	0.046	1+75
9	1+50	0.06	20	0.025	22	0.06	22	0.048	1+50
8	1+25	0.06	18	0.025	18	0.06	22	0.049	1+25
7	1+00	0.06	27	0.025	21	0.06	21	0.049	1+00
6	0+75	0.06	21	0.025	30	0.06	16	0.044	0+75
5	0+45	0.06	14	0.025	37	0.06	16	0.041	0+45
4	0+32.5	0.02		0.02		0.02		0.02	0+32.5
3	0+24	0.02		0.02		0.02		0.02	0+24
2	0+14	0.02		0.02		0.02		0.02	0+14
1	0+00	0.06	22	0.025	28	0.06	23	0.047	0+00

APPENDIX E

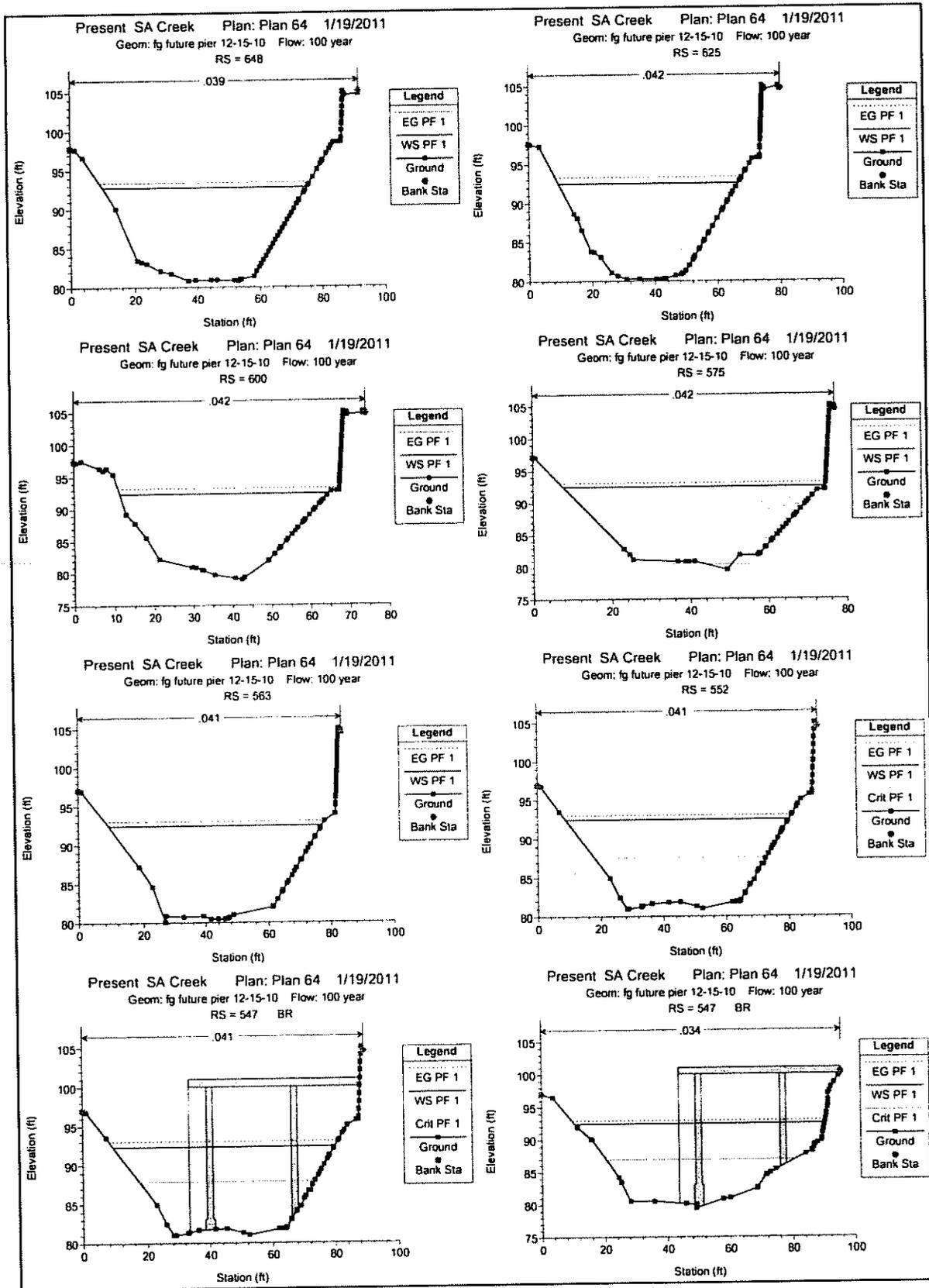
Future Conditions - HEC - RAS results

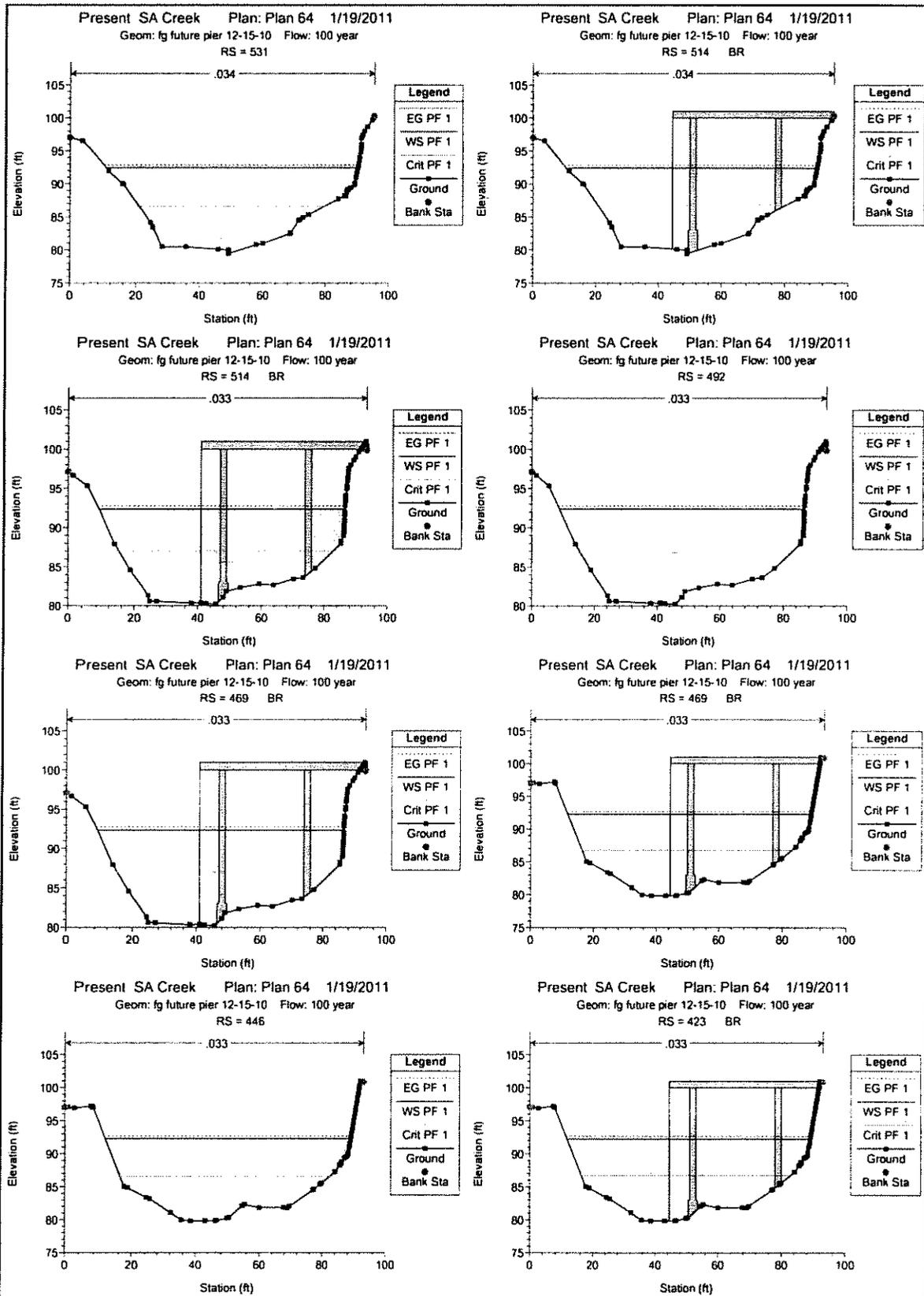
HEC-RAS Plan: Plan 58 River: San Anselmo Cree Reach: San Anselmo Cree Profile: PF 1

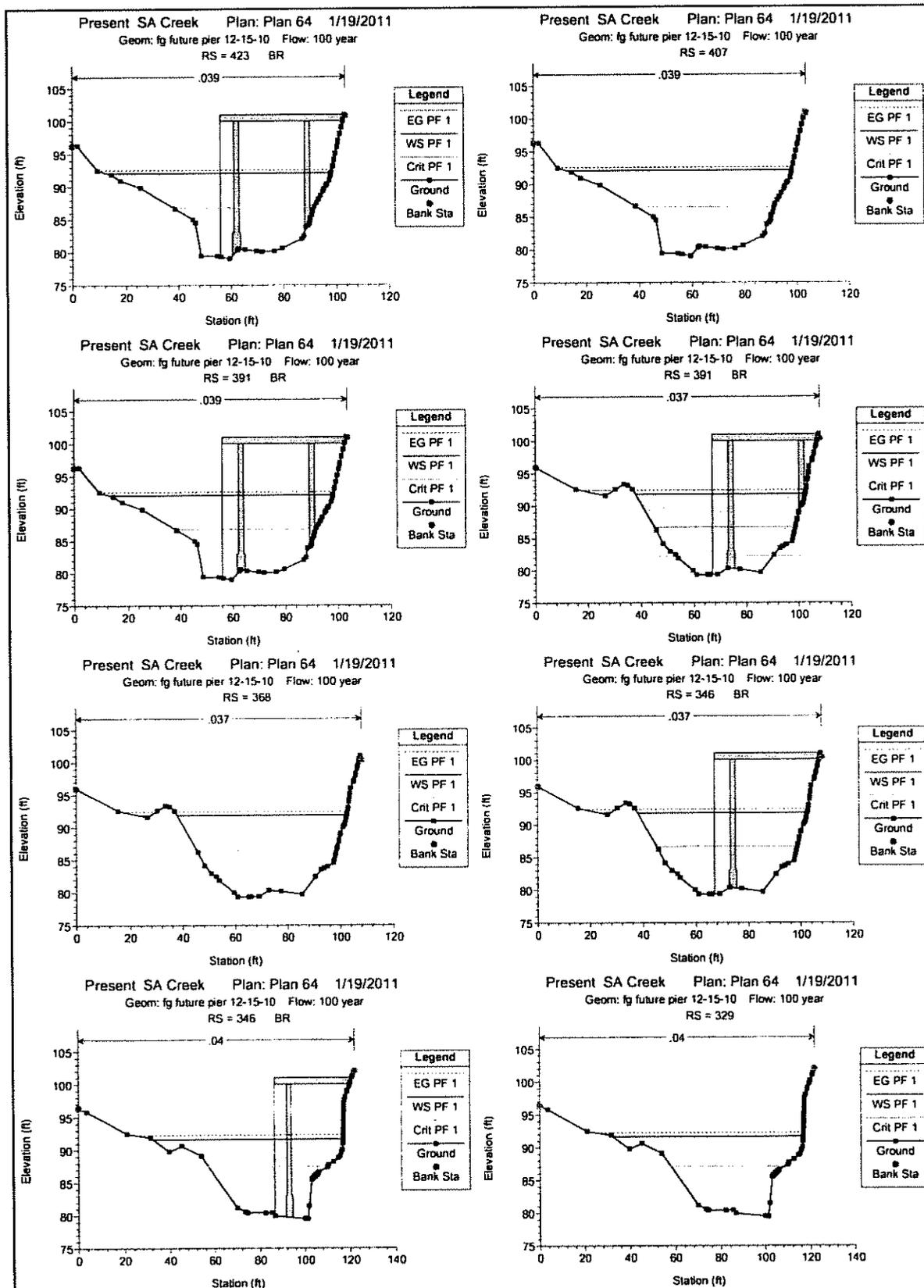
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
San Anselmo Cree	648	PF 1	3500.00	80.78	92.78		93.37	0.001707	6.19	565.62	65.34	0.37
San Anselmo Cree	625	PF 1	3500.00	80.23	92.49		93.30	0.002842	7.23	484.38	57.10	0.44
San Anselmo Cree	600	PF 1	3500.00	79.02	92.34		93.22	0.003074	7.52	465.26	53.45	0.45
San Anselmo Cree	575	PF 1	3500.00	78.58	92.46		93.08	0.002197	6.33	553.36	66.71	0.39
San Anselmo Cree	563	PF 1	3500.00	80.06	92.46		93.04	0.001935	6.12	572.09	68.12	0.37
San Anselmo Cree	552	PF 1	3500.00	80.96	92.45		93.01	0.001875	6.00	582.93	71.14	0.37
San Anselmo Cree	547	Bridge										
San Anselmo Cree	531	PF 1	3500.00	79.43	92.47		92.86	0.000840	5.03	696.26	79.82	0.30
San Anselmo Cree	514	Bridge										
San Anselmo Cree	492	PF 1	3500.00	80.22	92.39		92.77	0.000741	4.96	705.95	77.86	0.29
San Anselmo Cree	469	Bridge										
San Anselmo Cree	446	PF 1	3500.00	79.82	92.29		92.67	0.000720	4.94	707.95	77.42	0.29
San Anselmo Cree	423	Bridge										
San Anselmo Cree	407	PF 1	3500.00	79.01	92.10		92.55	0.001522	5.38	651.07	85.36	0.34
San Anselmo Cree	381	Bridge										
San Anselmo Cree	368	PF 1	3500.00	79.36	91.85		92.40	0.001445	5.93	590.35	68.44	0.36
San Anselmo Cree	346	Bridge										
San Anselmo Cree	329	PF 1	3500.00	79.41	91.65		92.24	0.002459	6.14	570.49	84.48	0.42
San Anselmo Cree	289	Bridge										
San Anselmo Cree	274	PF 1	3500.00	78.78	91.60		92.00	0.002005	5.08	689.41	100.76	0.34
San Anselmo Cree	250	PF 1	3500.00	78.21	91.47		91.96	0.002380	5.58	627.78	93.28	0.38
San Anselmo Cree	225	PF 1	3500.00	78.38	91.34		91.89	0.002419	5.97	586.20	81.45	0.39
San Anselmo Cree	200	PF 1	3500.00	78.12	91.27		91.82	0.003090	5.97	586.06	75.42	0.38
San Anselmo Cree	175	PF 1	3500.00	79.13	90.92		91.72	0.003474	7.16	488.95	60.48	0.44
San Anselmo Cree	150	PF 1	3500.00	77.94	90.63		91.60	0.004207	7.89	443.56	51.53	0.47
San Anselmo Cree	125	PF 1	3500.00	78.49	90.59		91.47	0.004384	7.51	466.11	56.13	0.46
San Anselmo Cree	100	PF 1	3500.00	78.05	90.39		91.34	0.005353	7.83	447.28	56.64	0.49
San Anselmo Cree	75	PF 1	3500.00	77.87	90.52		91.14	0.002885	6.31	554.56	64.07	0.38
San Anselmo Cree	45	PF 1	3500.00	78.68	90.37		91.07	0.002644	6.70	522.45	61.04	0.40
San Anselmo Cree	32.5	PF 1	3500.00	78.27	90.30		90.99	0.002439	6.65	526.09	62.00	0.40
San Anselmo Cree	32	Int Struct					90.84	0.000847	7.93	441.13	41.87	0.43
San Anselmo Cree	24	PF 1	3500.00	77.17	83.54		86.68	0.004609	14.24	245.85	39.44	1.00
San Anselmo Cree	14	PF 1	3500.00	75.19	81.56		84.66	0.004531	14.14	247.50	39.92	1.00
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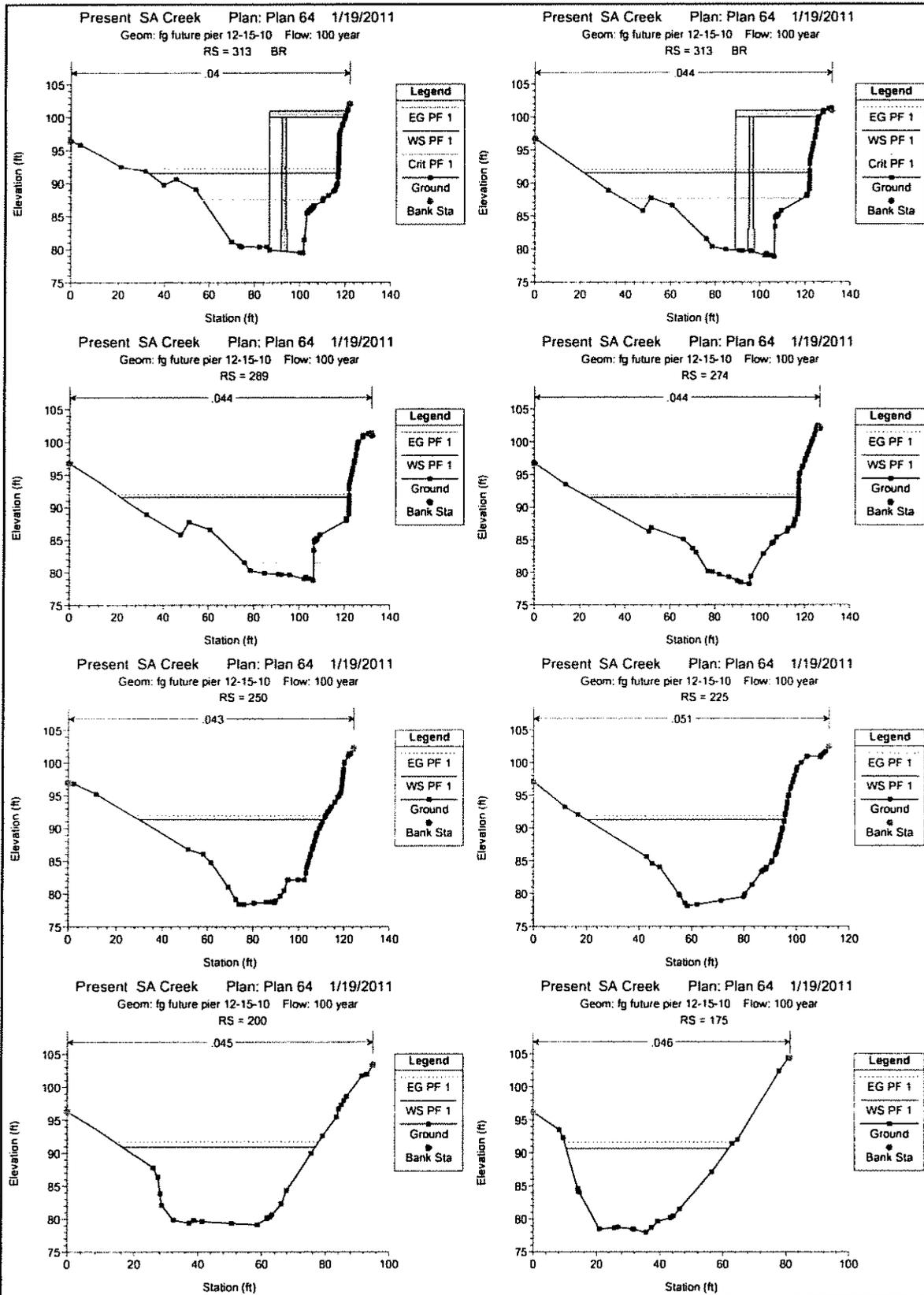
Plan: Plan 58 San Anselmo Cree San Anselmo Cree RS: 32 Inl Struct: Profile: PF 1

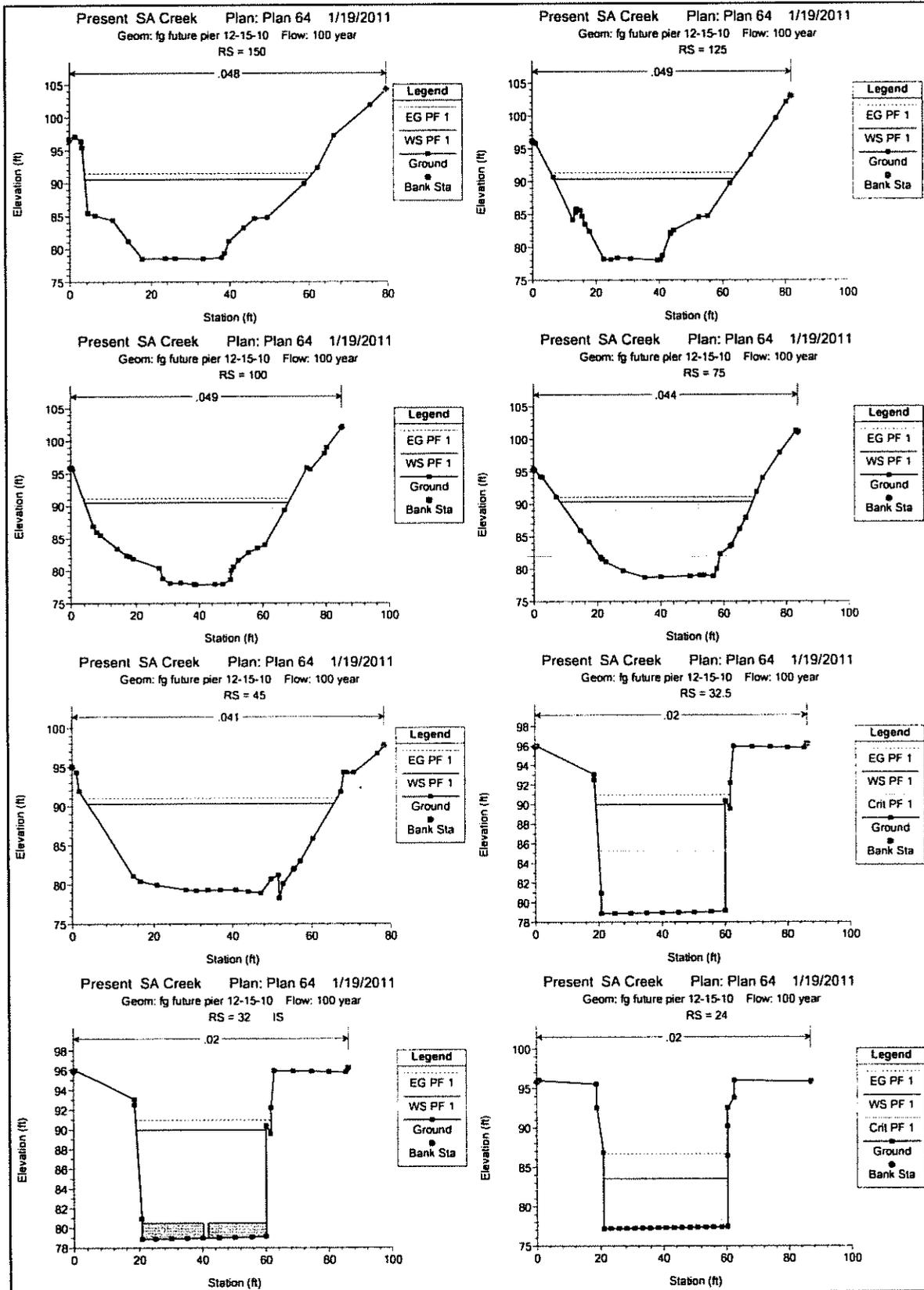
E.G. Elev (ft)	90.94	Q Gates (cfs)	
W.S. Elev (ft)	89.96	Q Gate Group (cfs)	0.00
Q Total (cfs)	3500.00	Gate Open Ht (ft)	83.54
Q Weir (cfs)	3500.00	Gate #Open	
Weir Flow Area (sq ft)	424.64	Gate Area (sq ft)	1.00
Weir Sta Lft (ft)	18.87	Gate Submerg	0.00
Weir Sta Rgt (ft)	61.66	Gate Invert (ft)	0.00
Weir Max Depth (ft)	11.99	Gate Weir Coef	0.000
Weir Avg Depth (ft)	9.92		
Weir Coef	2.600	Q Breach (cfs)	
Weir Submerg	0.29	Breach Avg Velocity (ft/s)	
Min El Weir Flow (ft)	78.96	Breach Flow Area (sq ft)	
Wr Top Wdth (ft)	42.79		



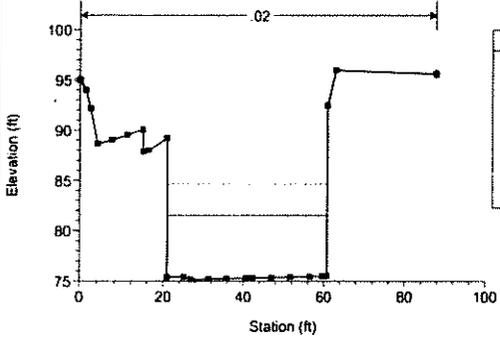




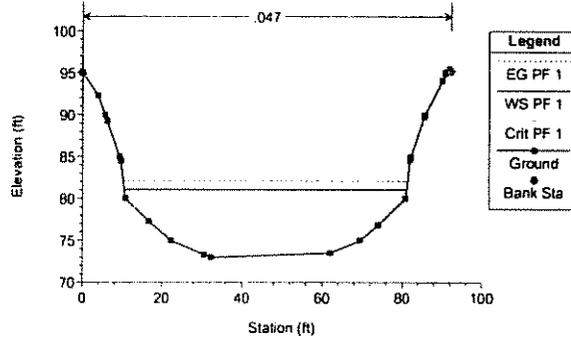




Present SA Creek Plan: Plan 64 1/19/2011
 Geom: fg future pier 12-15-10 Flow: 100 year
 RS = 14



Present SA Creek Plan: Plan 64 1/19/2011
 Geom: fg future pier 12-15-10 Flow: 100 year
 RS = 0



Future Condition

Section Line (SL)	River Station	Left Bank "n"	Left Bank Length	Channel bottom "n"	Channel bot. Length	Right Bank "n"	Right Bank Length	Composite	River Station
34	6+48	0.06	13	0.025	37	0.05	20	0.039	6+48
33	6+25	0.06	17	0.025	26	0.05	20	0.042	6+25
32	6+00	0.06	15	0.025	25	0.05	18	0.042	6+00
31	5+75	0.06	20	0.025	30	0.05	20	0.042	5+75
30	5+63	0.06	20	0.025	33	0.05	20	0.041	5+63
29	5+52	0.06	21	0.025	34	0.05	20	0.041	5+52
28	5+47	0.06	22	0.025	23	0.025	38	0.034	5+47
27	5+31	0.06	20	0.025	34	0.025	32	0.033	5+31
26	5+14	0.06	20	0.025	26	0.025	39	0.033	5+14
25	4+92	0.06	19	0.025	24	0.025	42	0.033	4+92
24	4+69	0.06	18	0.025	48	0.025	19	0.032	4+69
23	4+46	0.06	28	0.025	34	0.025	23	0.037	4+46
22	4+23	0.06	35	0.025	32	0.025	22	0.039	4+23
21	4+07	0.06	35	0.025	40	0.025	15	0.039	4+07
20	3+91	0.06	25	0.025	36	0.025	14	0.037	3+91
19	3+68	0.06	26	0.025	25	0.025	22	0.037	3+68
18	3+46	0.06	27	0.025	23	0.025	19	0.039	3+46
17	3+29	0.06	38	0.025	32	0.025	21	0.040	3+29
16	3+13	0.06	54	0.025	30	0.025	21	0.043	3+13
15	2+89	0.06	60	0.025	28	0.025	22	0.044	2+89
14	2+74	0.06	56	0.025	20	0.025	26	0.044	2+74
13	2+50	0.06	45	0.025	29	0.025	13	0.043	2+50
12	2+25	0.06	40	0.025	22	0.06	20	0.051	2+25
11	2+00	0.06	20	0.025	30	0.06	18	0.045	2+00
10	1+75	0.06	15	0.025	22	0.06	18	0.046	1+75
9	1+50	0.06	20	0.025	22	0.06	22	0.048	1+50
8	1+25	0.06	18	0.025	18	0.06	22	0.049	1+25
7	1+00	0.06	27	0.025	21	0.06	21	0.049	1+00
6	0+75	0.06	21	0.025	30	0.06	16	0.044	0+75
5	0+45	0.06	14	0.025	37	0.06	16	0.041	0+45
4	0+32.5	0.02		0.02		0.02		0.02	0+32.5
3	0+24	0.02		0.02		0.02		0.02	0+24
2	0+14	0.02		0.02		0.02		0.02	0+14
1	0+00	0.06	22	0.025	28	0.06	23	0.047	0+00

APPENDIX F

Flood Insurance Rate Map - 06085C0756H

APPENDIX G

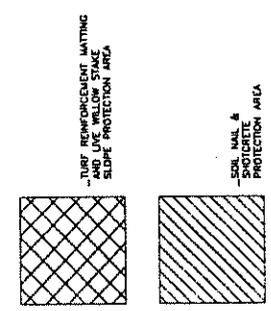
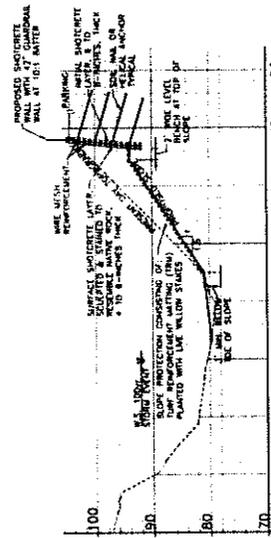
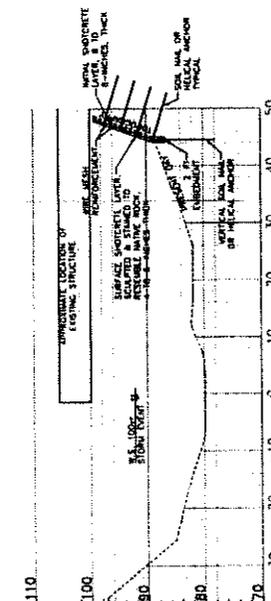
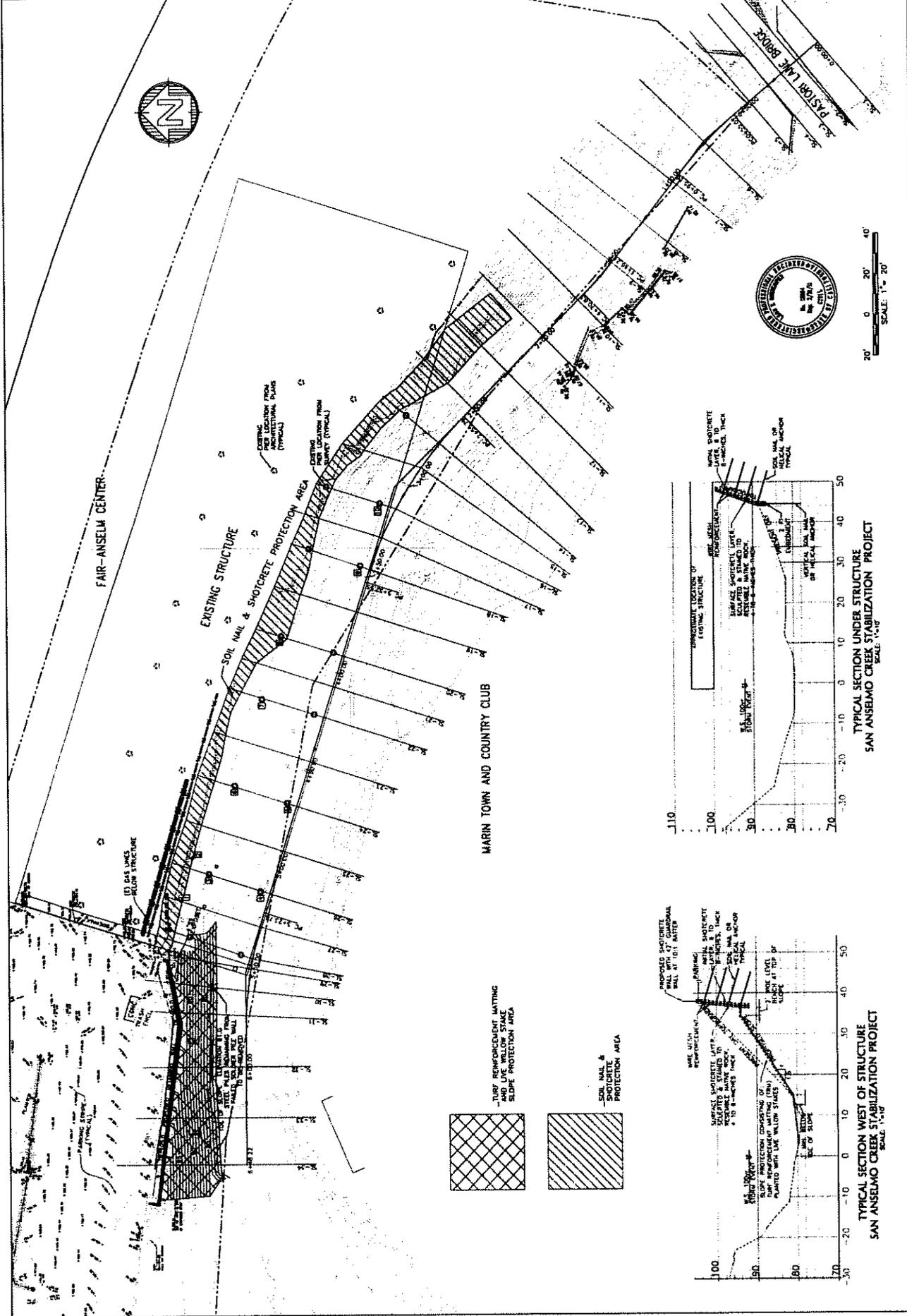
Project Stabilization Plans

NO.	DATE	REVISION
1		
2		
3		
4		
5		

OBERKAMPER & ASSOCIATES
 CIVIL ENGINEERS INC.
 7200 REDWOOD BLVD. NOVATO, CA 94945
 PHONE (415) 897-2800 FAX (415) 897-2020
 WWW.OA.CALIFORNIA

FAR-ANSELM CENTER
 SAN ANSELMO CREEK STABILIZATION PROJECT
 PLAN VIEW - 20 SCALE
 FARMS, CALIFORNIA

DATE	1-12
DESIGNED BY	MS
CHECKED BY	MS
DATE	March 3, 2011
SHEET	
C2	
OF 11	
10'-0"	



TYPICAL SECTION UNDER STRUCTURE
 SAN ANSELMO CREEK STABILIZATION PROJECT
 SCALE: 1" = 10'

TYPICAL SECTION WEST OF STRUCTURE
 SAN ANSELMO CREEK STABILIZATION PROJECT
 SCALE: 1" = 10'

Environmental Consulting Services
Phone: 408 257-1045

18488 Prospect Road – Suite 1 Saratoga, CA 95070
FAX: 408 257 7235

July 29, 2011

Mr. Michael G. Watkins, PE.
Ballard & Watkins Construction Services
174 Pine Street
San Anselmo, CA 94960

Re: Noise Study for Fair-Anselm Center Creek Stabilization Project,
731 Center Boulevard, Fairfax, CA

Dear Mr. Watkins,

I have reviewed the planned demolition and construction tasks relative to completing the subject creek bank project in Fairfax. This study evaluates the potential noise impacts on nearby sensitive receptors produced by temporary demolition and construction activities, which includes on-site noise monitoring, projection of expected construction noise levels, and general recommendations for compliance with Town of Fairfax noise requirements, if required.

PROJECT DESCRIPTION

The project site is on the north bank of Fair Anselm Creek at the Fair Anselm Shopping Center at 720 Center Blvd-- south of Center Boulevard and west of the Pastori Avenue bridge over the creek. The scope of the project is to remove the existing retaining wall west of the shopping center that is no longer structurally sound and stabilize the north bank of Fair Anselm Creek adjacent to and beneath the shopping center structure. The area around the project is presently a mix of residential and commercial uses.

SUMMARY OF FINDINGS

The primary sources of noise associated with the project are motorized equipment use in the parking lot west of the shopping center and material haul trucks traveling on Sir Francis Drake, Pastori Avenue and Center Boulevard to and from the site. All noise levels generated by the project will occur during daytime hours, with sporadic maximum levels of 80 dBA at nearby receptors. However, these temporary impacts will have a limited duration during active phases. There are no noise impacts associated with the project site once construction is complete.

To minimize potential temporary project noise impacts on nearby residences and businesses, a number of construction noise mitigation measures are recommended on page 5.

EXISTING SETTING AND NOISE SOURCES

The primary source of noise at the project site is traffic on Center Boulevard, a two-lane street bounding the project on the south side, and to a lesser extent traffic on Sir Francis Drake Boulevard one block north of the site. Typical Center Blvd vehicle passby noise levels are in the 55 -65 dBA range at 50 feet. Trucks, buses, motorcycles, and poorly-muffled vehicles produce peak noise levels 5 to 15 dBA higher on passby. Infrequent small aircraft overflights create noise incidents of 60 70 dBA. Other than normal sporadic noise from trash pickup trucks, there are no other significant noise sources in the project area.

SENSITIVE RECEPTOR LOCATIONS AND DESCRIPTIONS

Nearby sensitive receptor areas that could potentially experience temporary noise impacts by the project include a number residences on Pastori Avenue from Sir Francis Drake Blvd to the Creek, several residences adjacent to the project on Mono Avenue, the Marin Town and Country Club and several residences across the Creek to the south, as well as a number of commercial tenants of the Fair-Anselm Shopping Center. Trucks hauling materials to and from the site during the project will potentially affect residential properties on Sir Francis Drake Boulevard east of Pastori Avenue. This study investigates the extent to which the closest receptors could be impacted by noise during the demolition and construction phases of the project. Receptor areas other than those discussed would have less project noise impacts because of additional distance to the project and/or protection by structural obstruction.

AMBIENT NOISE LEVELS

Field noise measurements were made during the mornings of February 4 and July 20, 2011, with a CEL-440 Precision Noise Meter and Analyzer, calibrated with a B & K Model 4230 Sound Level Calibrator. The measurement locations were chosen to represent key nearby receptor locations, as described below:

- Location 1 – at the corner of the residential property at the northeast corner of the intersection of Center and Pastori Avenue, approximately 50 feet from the nearest Center traffic lane
- Location 2 – in the front yard of an apartment on the north side of Sir Francis Drake Boulevard two blocks east of Pastori Avenue, approximately 35 feet from the nearest traffic lane.
- Location 3 – Pastori Avenue residence at the entrance to the Marin Town and Country Club
- Location 4 – apartments on Mono Avenue with back yards toward the site, about 250 feet west of the project
- Location 5 – behind the retail space at the west end of Fair-Anselm Shopping Center near the existing retaining wall.

Noise levels were measured and are reported using percentile noise descriptors as follows: L₉₀ (the background noise level exceeded 90 % of the time), L₅₀ (the median noise level exceeded 50% of the time), L₁ (the peak level exceeded 1% of the time), and L_{eq} (the average energy-equivalent noise level for the measurement period). Measured noise levels are presented in Exhibit 1 following. The DNL/Ldn noise levels were computed as the long-term average of the L_{eq} using the daily traffic distribution in the area, with standard weighted penalties for the nighttime hours, and modeled with an enhanced version of the National Cooperative Highway Research Board traffic noise model [3].

EXHIBIT 1

EXISTING NOISE LEVELS (dBA)

Fair Anselm Creek Stabilization Project Area– Fairfax

Location	L90	L50	Leq	L1	Ldn
1. Pastori Avenue and Center Blvd	52	57	60.0	68	63
2. Northeast of site on Sir Francis Drake Blvd	55	65	66.0	73	69
3. Pastori Avenue near Creek	50	52	53.3	60	55
4. Mono Ave apartments near site	40	43	44.6	52	47
5. Back of Shopping Center	46	51	55.3	65	57

Center Blvd traffic is the dominant noise source near the project site. Noise levels at any location depend almost entirely upon the nearby traffic volume, average vehicle speed, and distance to the nearest lane of the dominant traffic flow. The Exhibit 1 monitored levels indicate those relationships at each monitoring location.

FAIRFAX NOISE ORDINANCE STANDARDS

Exhibit 2 presents the Town of Fairfax Exterior Noise Limits, Section 8.20.040 of the Town code [4] for key types of community land uses. Note that the Fairfax Noise Ordinance does not apply directly to excavation and construction noise activities. Many communities have general exemptions for temporary construction activities, or higher noise limits, because this type of noise exposure is temporary in nature.

EXHIBIT 2

Fairfax Exterior Noise Limits [4]

Noise Zone	Noise limit not be exceeded more than 7.5 min. in any 15 min. period at receiving land use	
	Time period	Noise Level (dBA)
A. Single Family Residences	Night : 10pm to 7am	40
	Day: 7am to 10pm	50
B. Multiple-family Residences	Night : 10pm to 7am	50
	Day: 7am to 10pm	55
C. Commercial uses	Night : 10pm to 7am	55
	Day: 7am to 10pm	60

FAIRFAX LAND USE NOISE PLANNING STANDARDS

Exhibit 3 presents general noise planning guidelines adopted in the Fairfax Noise Element [5] for various types of community land uses.

EXHIBIT 3

Fairfax Noise Planning Guidelines [5] – L_{dn} (dBA)

Land Use	"Normally Acceptable" Noise Level
Single -family Residential	60
Multiple-family Residential, Motels, Hotels	65
Schools, Libraries, Museums, Meeting halls, Hospitals, Churches	60
Outdoor Sports and Recreation, Neighborhood parks, Playgrounds	65
Commercial, Office, Business, and Professional buildings	70

EXPECTED PROJECT NOISE LEVELS

The Fair-Anselm Creek Stabilization project involves several phases of work, with different types of equipment and noise levels associated with each one, as described in the following paragraphs. The total duration of the project is expected to be about 6 weeks, working weekdays between 8 am and 5 pm. The work will be staged from the parking lot between the Fair-Anselm Shopping Center and the Post Office on Center Boulevard in Fairfax.

1. Demolish existing retaining wall, excavate excess soil, and haul away (3-4 days)

The existing wood and metal retaining wall, as well as the excess soil on the creek bank west of the Shopping Center, must be demolished using small diesel excavation equipment to be located in the parking lot above the bank (west of the Shopping Center). This equipment generates 70-75 dBA at 50 feet.

The structural and soil waste of the existing retaining wall will be loaded onto 10-yard trucks parked in the west parking lot above the creek bank. The trucks will haul away approximately 250 cubic yards of excavated materials, on Center Blvd, Pastori Avenue, and Sir Francis Drake Blvd, and will generate noise levels of 75 – 80 dBA at 50 feet.

2. Install helical piers (5 days)

To provide structural stability for the upper areas of the creek bank, about 50 steel helical piers ("soil nails") will be driven into the ground in a distributed pattern along a strip under the Shopping Center and form a new retaining wall at the west end of the building. The piers will be installed by rotating them into the ground with an electrical motor powered by a small gas generator. This equipment generates noise levels of 60 to 65 dBA at 50 feet.

3. Tie rebar to helical piers (several days)

Steel rebar will be attached to the protruding sections of the helical piers to form a mesh pattern about 6" above the soil to hold shotcrete surface treatment. This procedure is performed with hand tools and generates no significant noise.

4. Install shotcrete on banks (3-4 days)

Concrete will be pumped into the rebar mesh pattern in the upper portions of the creek bank to stabilize the soil. A diesel engine pneumatic concrete pump truck located in the parking lot will be used for this task, which generates a noise level of 70-75 dBA at 50 feet.

5. Install matting and plant (several days)

In the part of the creek bank area between the shotcrete protection and the creek, but not under the Shopping Center structure, a special mat of coconut fronds will be unrolled to cover the ground. A distributed pattern of holes will be made in the coconut matting, and willow shoots then planted to give a natural look, as well as offer effective soil stabilization. This task is performed with manual or small battery-powered hand tools that generate no significant noise.

RECEPTOR NOISE LEVELS

1. Residences along the truck haul route – Sir Francis Drake Blvd, Pastori Avenue, Center Blvd

These residences could experience a number of daytime truck passbys creating typical truck noise levels of 75-80 dBA at 50 feet. On the busiest days, potentially 10 to 15 large trucks could use the haul route during the workday.

2. Residences near construction areas – across the creek and on Mono Avenue

The residences across the creek that are closest to the motorized equipment in the parking lot are about 100 feet away, and could experience intermittent noise levels of 60 to 70 dBA.

The closest residences on Mono Avenue are approximately 250 feet away from the motorized equipment, and could experience intermittent noise levels of 50 to 60 dBA.

Residences on the south end of Pastori Avenue are approximately 600 feet from the motorized equipment and are partially obstructed by the Shopping Center building, and hence would not be expected to have noticeable noise from the project.

3. Tenants and customers at the west end of Fair-Anselm Shopping Center

The businesses at the west end of the shopping center would be within 50 to 100 feet of the motorized equipment be used in the parking lot, and hence could be exposed to relatively high noise levels during some tasks, such as 70 to 80 dBA. These noise levels could be reduced with temporary noise barriers between building and the parking lot.

RECOMMENDED NOISE MITIGATION MEASURES

Recommendations for minimizing construction noise of the Fair Anselm Creek project are:

1. Diesel trucks used to haul excavated and project materials should stay as far from the creek bank and shopping center as feasible, and they should be turned off during waiting and material loading in the parking lot.
2. Choose construction equipment that is of quiet design, has a high-quality muffler system, and is well maintained. This includes trucks used to haul materials.
3. Install superior mufflers and engine enclosure panels as needed on gas, diesel or pneumatic machines.
4. Erect temporary plywood enclosures between the parking lot motorized equipment area and the west end of the Fair-Anselm Shopping Center.
5. Restrict construction hours to 8 am to 5 pm.
6. Eliminate idling of machines when not in use.
7. Locate motorized equipment as far from sensitive receptors as possible.

If I may be of further assistance on this project, please do not hesitate to contact me.

Respectfully submitted,

Stan Shelly

H. Stanton Shelly
Acoustical Consultant
Board Certified Member (1982),
Institute of Noise Control Engineering

REFERENCES

1. Project site and design drawings, San Anselmo Creek Stabilization Project, Fairfax; Oberkamper & Associates Civil Engineers. dated June 7 2011.
2. Discussions and descriptions of planned Fair Anselm Creek project construction, Michael Watkins, Project Manager, July 2011.
3. Highway Noise - A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117, Highway Research Board, National Academy of Sciences, Washington, D.C., 1971 (model enhanced and field validated by ECS).
4. "Exterior Noise Limits", Code Section 8.20.050; Town of Fairfax; 1981.
5. "Land Use Compatibility for Transportation Noise", Noise Element, Town of Fairfax General Plan, Department of Planning and Building Services, December 2010.
6. "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances", U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, D.C., December 1971.

**BALLARD AND WATKINS
CONSTRUCTION SERVICES**

TRAFFIC/ PARKING IMPACT STUDY

for

Fair-Anselm Creek Bank Stabilization Project
Fairfax, California

Prepared For:

FAIRFAX CENTER PROPERTIES, LLC
P.O. Box 633
Ross, CA 94957

Prepared By:

Ballard & Watkins Construction Services
174 Pine Street
San Anselmo, CA 94960
415-457-3257
Mgwatkins@aol.com

April 19, 2012



INTRODUCTION

The proposed project involves replacement of an existing failed retaining wall and installation of shotcrete creek bank protection adjacent and under the Fair-Anselm Center structure. Staging for the project will affect approximately 8 parking spaces on the west side of the north parking lot of Fair-Anselm Center. Also affected will be traffic flow to and within this parking lot, particularly during the time during excavation of the existing creek bank to facilitate the new shotcrete retaining wall, delivery of materials for helical pier supports and tiebacks, and delivery of materials for shotcrete placement.

The purpose of this traffic study is to evaluate the impact of the Fair-Anselm Creek Stabilization Project on the current traffic flow and parking in the immediate area of the project. The project is a short duration project- less than two months, and as a result will have no long term impact on the area. The significant traffic impacts appear to result from truck traffic during deliveries and off haul, and worker vehicle traffic during arrival and departure. Parking will be impacted to the extent that a lay down area and truck staging area during delivery and off haul will result in the loss of some parking spaces at the rear of the parking lot during the course of the project. Mitigation measures have been integrated into the construction plans which will minimize the impacts of these activities.

The access to the site will be along the adjacent surface streets. A brief description of these streets is as follows:

Pastori Avenue is a two lane street to the south east of the project. Sidewalks are limited to the area immediately adjoining Center Blvd, although an unpaved area on the east side of the street is available. The street is too narrow for striped bike lanes, and on-street parking is prohibited. The prima facia speed limit on Pastori Avenue is 25 mph.

Pacheco Avenue is a collector / local street which connects Sir Francis Drake Blvd. with Center Blvd in the area immediately east of the project site. This connection is only 40 feet long, but two lanes are provided in each direction. Pacheco Avenue continues southerly from Center Blvd into an existing residential neighborhood.

Center Blvd. is the local/collector street which is immediately adjacent to the project on the east side of the Fair-Anselm parking lot. This is one of the main thoroughfares into the Town of Fairfax from the adjacent Town of San Anselmo. Traffic on this street is highest during the morning and evening commutes. Project traffic should be minimal during these hours, so should not affect the traffic flow during commute times.

Sir Francis Drake Blvd. is the regional arterial roadway for all traffic from West Marin through the Town of Fairfax. The boulevard is two lane, with bike lanes in each direction. Traffic on this street is highest during the morning and evening commutes. Project traffic should be minimal during these hours, so should not affect the traffic flow during commute times.

DISCUSSION

24 hour weekday traffic counts were made by KD Anderson & Associates, Inc. for study area streets in January 2011 as part of the Good Earth Project . The results of these traffic counts are noted in Table 1. Daily traffic volumes can vary from day to day, and the actual volumes are often rounded off to account for this variation. In this case, the counts have only been rounded to the nearest 5 vehicles rather than to the nearest 100 vehicles to best address the incremental change associated with the project.

**TABLE 1
 DAILY TRAFFIC VOLUMES**

Street	From	To	Daily Traffic Volume
Sir Francis Drake Blvd	Claus Drive	Pacheco Avenue	16,215
Sir Francis Drake Blvd	Pacheco Avenue	Pastori Avenue	19,015
Sir Francis Drake Blvd	Pastori Avenue	Butterfield Road	20,460
Center Blvd	Pacheco Avenue	Pastori Avenue	9,985
Center Blvd	Pastori Avenue	San Anselmo Avenue	9,380
Pastori Avenue	Sir Francis Drake Blvd	Center Blvd	1,950

Traffic Impact Analysis, KD Anderson & Associates, Inc., Good Earth Market, Fairfax, CA (March 1, 2011)

In their Traffic Impact Analysis for the Good Earth Market, Fairfax, CA (March 1, 2011) KD Anderson & Associates, Inc., does an adequate job of analyzing the impacts of that project on the surrounding streets. The projected traffic levels are currently the existing traffic levels, as the Good Earth Market has opened and is a rousing success. Levels of traffic do not appear to have significantly increased, but the number of stops and parking associated with the store has resulted in a great increase in activity immediately around the store. Traffic associated with the Creek Bank Stabilization Project should be less than 30 round trips on any given day. Increases of this magnitude are not significant, as they are well within the standard deviation for the daily traffic volumes.

As a result of the Good Earth store, parking in the store parking lot and adjacent parking lots has become at a premium, with most parking spots occupied during high activity times at the mid day, and early evening. Parking spots are usually available, but not directly adjacent to the store. Some of the Good Earth overflow parking utilizes the parking lot to the north of the Fair-Anselm Center, which is the area which will be impacted by staging of the Creek Stabilization Project.

The project documents for the Creek Bank Stabilization Project have been prepared to address the significant parking concerns in the immediate area of the project. The staging area is in the rear of the parking lot, so that traffic can still flow through the front parking aisle. The number of parking spaces lost to the project will be controlled by having the contractor stage the construction materials offsite, and store equipment onsite only during periods when it will be directly utilized on the site on a daily basis. Additionally, the documents require that worker vehicles be parked offsite, with the Fairfax Pavilion indicated as the location for offsite parking. Surveys of the Pavilion parking lot indicate that the lot is under utilized during the working hours for this project.

CONCLUSIONS

While this project will have minimal impacts on traffic, and significant impacts on parking during the course of the project, there will be no lasting impacts once the project is complete. Mitigation measures during the course of the project which have been integrated into the project documents should minimize the impacts during the project. Controlling the staging of equipment and materials on the job site, and insuring that worker parking is located away from the critical parking areas will minimize the impacts during the project. The short term of the project will insure that any impacts will quickly be resolved by the project completion.