Santa Clara Valley Open Space Authority

Llagas Creek Bridge and Day Use Area Project
Initial Study/Mitigated Negative Declaration

Response to Comments Memorandum

1 INTRODUCTION

Santa Clara Valley Open Space Authority (Authority) circulated the Llagas Creek Bridge and Day Use Area Project Draft Initial Study/Mitigated Negative Declaration (IS/MND), prepared pursuant to the California Environmental Quality Act (CEQA) and State CEQA Guidelines, for public and agency comments. The Draft IS/MND was circulated for a 30-day public review and comment period, which began on January 24, 2023 and closed on February 24, 2023.

This memorandum provides responses to comments received on the Draft IS/MND. The responses address environmental issues raised by the comments and elaborate or clarify text in the IS/MND where needed. Text corrections or additions in the IS/MND are also provided, either in response to comments or due to continuing project-related planning during circulation of the IS/MND. These corrections and additions clarify or correct text in the IS/MND and do not change the findings or significance conclusions of the environmental analysis. As explained herein, in light of the whole record, the Authority finds that all potentially significant impacts would be clearly mitigated to less than significant, based on the substantial evidence in the IS/MND and this Response to Comments memorandum.

Consistent with the requirements of CEQA, the Authority has considered all comments received on the Draft IS/MND. CEQA does not require a lead agency to prepare responses to public comments received on a Negative Declaration or MND; however, the Authority has prepared this document to disclose all public and agency comment received and provide good-faith responses to those comments.

2 RESPONSES TO COMMENTS

Three comment letters were received on the Draft IS/MND during the public review period. All three of the comment letters are provided and responded to herein. Comment letters are provided and responded to in chronological order by the date they were received; refer to Table 1 for an overview. Specific comments from each comment letter are included below with responses from the Authority. Copies of the comment letters are provided in Appendix A.

Table 1 List of Commenters

Letter No.	Commenter	Date
1	Neal Weinstein	January 24, 2023
2	Santa Clara Valley Audubon Society Shani Kleinhaus, Environmental Advocate Sierra Club Loma Prieta Chapter James Eggers, Senior Chapter Director	February 21, 2023
3	Santa Clara Valley Water District Benjamin Hwang, P.E., Associate Engineer - Civil	February 23, 2023

Comment Letter #1: Neal Weinstein

Comment 1-1: Overall, the project as described looks fine. A couple of thoughts: 1. It is not clear if the area will be fenced off along the boundaries shown on the project map. I hope not!

Response 1-1: The comment indicates that it is not clear if the boundaries shown on the project map will be fenced. As discussed in Section 2.3.1, Recreational Facilities and Amenities, of the Draft IS/MND the majority of the existing barbed wire fencing would remain in place. However, a small portion of the existing barbed wire fencing would be removed and replaced with a wood rail fence to serve as an entryway to the day use area in the meadow. Additionally, approximately 210 linear feet of the barbed wire fencing would be realigned along the northwest side of the proposed bridge to allow for the expansion of riparian corridor along Llagas Creek. The boundary of the project area as shown on Figure 2-2 in the Draft IS/MND will not be fenced off. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 1-2: 2. It is very disappointing that the entirety of Blair Ranch will not be opened to the public with this project. I have been hearing about opening the ranch trails for probably 10 years now, and this beautiful property is still not open.

Response 1-2: The comment expresses disappointment that the entirety of the Blair Ranch property will not be opened to the public with this project. The opening of the Blair Ranch property is not proposed as part of the project and the comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment Letter #2: Santa Clara Valley Audubon Society; Sierra Club Loma Prieta Chapter

Comment 2-1: The Santa Clara Valley Audubon Society and the Sierra Club Loma Prieta Chapter are local environmental organizations that work to protect birds and other wildlife species and to promote the enjoyment of nature. We thank you for the opportunity to provide comments on the Llagas Creek Bridge and Day Use Area Project (Project).

The Project involves the replacement and maintenance of an existing cattle ford across Llagas Creek with a pedestrian and equestrian accessible bridge within the Rancho Cañada del Oro Open Space Preserve. The project would also extend the existing Llagas Creek Loop Trail to the new bridge and develop a new accessible loop trail on the south side of the bridge within the meadow area. Accessible seating areas, a pedestrian/equestrian connector trail, fencing, and interpretive signage would also be developed. Here are our comments:

Response 2-1: The comment confirms a shared understanding of the project and introduces the comments to follow. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 2-2: 1. General Comments:

Page 1 of the IS/MND: "PROJECT: MALECH ROAD PUBLIC ACCESS PROJECT". Please correct this error.

Response 2-2: The comment identifies an error in the project title on page 1 of the Draft MND. The error has been revised in the Final IS/MND. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 2-3: 2. Mitigation Measures: Qualifications of biologists.

a. Please provide the names of the candidate firms and/or describe the relevant experience of the qualified biologists who will be providing preconstruction surveys.

b. We are especially concerned with the experience and qualifications of a prospective biologist who will conduct surveys for Crotch Bumble Bee Nest Colonies. In our research, we have not been able to find any pictures or photographs of Crotch Bumble Bee Nest Colonies. Descriptions of where nest colonies may be found are very broad "Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees"2- basically, anywhere!

- To ensure that nests are not overlooked, biologists performing the survey should have demonstrated experience in identifying Crotch Bumble Bees in nature, and skill in locating the nests by tracking the bumble bees from foraging to their nests.

Response 2-3: The comment requests the names of candidate firms and relevant experience of qualified biologists that would provide preconstruction surveys and expresses particular concern over Crotch bumble bee nest surveys. The Authority will select qualified biologists with appropriate experience to conduct preconstruction surveys, including the surveys for Crotch bumble bee nest colonies. The specific firms and related experience and qualifications of biologists will be determined during contracting for these services prior to project construction, through the Authority's contract procurement processes. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 2-4: 3. Mitigation Measures: Biological Resources

The Llagas Creek Bridge and Day Use Area Project is a relatively small project in scope and therefore, it should be possible to provide mitigation measures that are directly relevant to the specific life history and behavior of special-status species. We ask for the following.

a. Raptors in this area may start scouting for nesting sites in December, and actively nesting in January. Please include preconstruction surveys in December and January for all species of raptors (not only "common" raptors as specified in Bio-3).

Response 2-4: This comment states that scouting for nesting sites by raptors may start in December and requests that preconstruction surveys for all species of raptors occur in December and January. The interruption of scouting behavior in December would not be a substantial adverse effect on the local or regional populations of raptors, because it would not result in the loss of eggs or young, which could have adverse effects on the population, and because nesting habitat for raptors is available elsewhere on Rancho Cañada del Oro Open Space Preserve during the time of construction. However, as disclosed in Section 3.4, "Biological Resources" checklist question (a) the Draft IS/MND, disturbance of active nests could have substantial effects on white-tailed kite (a special-status raptor), and common raptors (i.e., all raptor species not designated as special status regardless of the frequency of local occurrence). While the existing limited operating period required by Mitigation Measure BIO-3 is sufficient to avoid substantial effects, to address this comment, Mitigation Measure BIO 3 has been revised in the Final IS/MND to be more protective by extending the nesting season to begin January 1 (instead of February 1) and requiring preconstruction surveys prior to work that occurs within the nesting season (January 1 to August 31) as requested by the comment. Refer to "Text Revisions 2: Biological Resources" for the text of the revised mitigation measure.

Comment 2-5: b. Please avoid construction-related activities that involve vehicles or earthwork during the nesting season. This will provide better protection to migratory birds, Crotch bumble bees, and Pallid bats.

Response 2-5: This comment requests that construction using earthwork and vehicles be avoided during the nesting season to protect migratory birds, Crotch bumble bees, and Pallid bats. The potential impacts of the project, including construction during the proposed April to October construction window, on migratory birds, Crotch bumble bees, and Pallid bats, are disclosed in Section 3.4, "Biological Resources," checklist question (a) of the Draft IS/MND. As described in the IS/MND, the Authority will implement Mitigation Measure BIO-1, Mitigation Measure BIO-3, and Mitigation Measure BIO-4, which include preconstruction surveys for nests and roosts of these species and application of appropriate buffers around these resources to avoid and minimize disturbance during construction. With the implementation of these mitigation measures, the impacts from the project would not have a substantial adverse effect on the local or regional populations of these species.

Comment 2-6: c. Please avoid construction-related activities that involve vehicles or earthwork during rainy days and for 5 days after rainy days. This will provide better protection to amphibians. Please note that a speed limit of 15 miles per hour is not likely to be effective for amphibians. Salamanders and newts move slowly and "freeze" when they perceive a threat (like a vehicle), so specifying a slower driving speed may be inadequate to insure their survival.

Response 2-6: This comment requests that construction using earthwork and vehicles be avoided during rainy days and for 5 days after rainy days, and asserts that a speed limit of 15 miles per hour is not likely to be effective for amphibians. The potential impacts of the project on special-status amphibians are disclosed in Section 3.4, "Biological Resources," checklist question (a) of the Draft IS/MND. The Authority would be required to implement of Mitigation Measure BIO-2, which includes a speed limit of 15 miles per hour, worker awareness training, and stoppage of work if special-status amphibians are present. These measures would be applied together such that workers operating vehicles would be trained to identify amphibians that may be in the path of the vehicle, and at a travel speed of 15 mph or less, stop and avoid the individuals. In addition, Mitigation Measure BIO-2 includes preconstruction surveys for special-status amphibians, and biological monitoring if special-status amphibians are found during surveys. The analysis in the IS/MND determined that with the implementation of Mitigation Measure BIO-2, the project would not result in substantial adverse effects on the local or regional populations of amphibians. In addition, construction is planned to occur between April and October to avoid the wet season.

Comment 2-7: d. The most effective mitigation would restrict construction to occur in the months of August - October. This period would avoid the nesting season for most species, and the season when amphibians are most active. It should be feasible to construct this project, small in scope and scale, within these three months.

Response 2-7: This comment states that the most effective mitigation would be to construct the project between August and October. The comment also states that this period would avoid the nesting season for most species, and the season when amphibians are most active. As described in Section 2.4, "Construction Activities and Timing," construction would occur over a 6-month period, between April and October, and includes multiple phases, including site preparation and demolition, bridge installation, trail construction, and site cleanup. The potential impacts of the project, including construction impacts, on special-status species and nesting birds are disclosed in Section 3.4, "Biological Resources," checklist question (a) of the Draft IS/MND. As described in the IS/MND, the Authority would be required to implement Mitigation Measure BIO-1, Mitigation Measure BIO-2, Mitigation Measure BIO-3, Mitigation Measure BIO-4, Mitigation Measure BIO-5, and Mitigation Measure BIO-6, which include preconstruction surveys for special-status species, worker awareness trainings, and the application of buffers around sensitive resources (e.g., nesting birds) to avoid and minimize disturbance. With the implementation of these measures, the project would not result in substantial adverse effects on the local or regional populations of any special-status species, including amphibians and nesting species.

Comment 2-8: 4. Fencing

The project will replace and relocate some barbed wire fencing. This is an opportunity to consider wildlife-friendly fencing in locations that do not increase the likelihood of roadkill. Please specify whether the proposed "The barbed wire fence would be 4 feet in height with strands of smooth and barbed wire strung through the posts at varying heights'' will be permeable and safe for local wildlife species.

Response 2-8: The comment asks whether the relocated barbed wire fencing would be permeable and safe for local wildlife species. The Authority plans to use wildlife-friendly fencing for the fencing that will be relocated as part of the project. Section 2.3.1, "Recreational Facilities and Amenities," of the IS/MND has been revised to reflect the use of wildlife-friendly fencing as part of the project. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required. Refer to "Text Revisions 3: Project Description" below for the specific text edits that have been made to clarify that wildlife friendly fencing will be used.

Comment 2-9: 5. Trail maintenance

It is not clear why maintenance includes both "herbicide spraying within 1 foot of the trail twice per year (around February and April)" and "removal of vegetation within 3 feet of the trail around four times per year."

a. These practices would create a wide trail corridor in a natural setting where the width of man-made infrastructure should be minimized to reduce or avoid impacts to local wildlife species. We ask that the combined width of the trail and the vegetation-free shoulders should not be wider than 8 feet, equal to the width of the bridge.

Response 2-9: The comment states that herbicide use within 1 foot of the trail and removal of vegetation within 3 feet of the trail would create a wide trail corridor where the widths of infrastructure should be minimized to reduce of avoid impacts to wildlife, and that the trail and vegetation-free shoulders should not be wider than 8 feet. The Authority plans that all proposed trails be 5 feet wide, such that the trail and vegetation-free shoulders would not exceed 8 feet in width, as suggested by the comment. The Final IS/MND has been revised with this clarification regarding the loop trail width.

Comment 2-10: b. Herbicides are potentially damaging to the environment directly where they are applied, and are also implicated in their significant contribution of greenhouse gas to earth's atmosphere. Therefore, herbicides should be used only when less potentially damaging methods are not available, effective, or feasible. With vegetation clearing four times a year, the introduction of herbicides into the meadow should be avoided. Spraying herbicides in addition to removal of vegetation is unnecessary and excessive.

Response 2-10: The comment discusses the use of herbicides in general, and suggests that herbicides should only be used when other methods are not feasible. As discussed in Section 2.5, "Operations and Maintenance," of the IS/MND, the application of herbicides by the project would be done in accordance with the Authority's Integrated Pest Management Program (IPM) that guides the application of mechanical, manual, and chemical methods to address exotic and invasive plants. The Authority's IPM Program contains guidelines and best management practices for use of herbicides, including only using herbicides when other, potentially less-damaging methods, are not effective or feasible. In addition, the IPM Program includes specific measures to reduce impacts from herbicide use including requirements to minimize spills and unintended herbicide drift, properly dispose of and clean containers, lawfully store and handle herbicides, and dispose of unused herbicide and herbicide containers to adequately safeguard human, fish, and wildlife health and prevent soil and water contamination. All of these measures would apply to any herbicide use under the proposed project. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment Letter #3: Santa Clara Valley Water District

Comment 3-1: 1. Valley Water recommends the Authority to adhere to the Guidelines and Standards for the proposed bridge over Llagas Creek. More specifically, Section III of the Guidelines and Standards – Encroachments Between the Top of Bank should be considered for the proposed bridge.

Response 3-1: The Santa Clara Valley Open Space Authority contacted the Santa Clara Valley Water District (District) regarding the recommendation to adhere to the District's Guidelines and Standards – Encroachments Between the Top of Bank. Although the District confirmed that this comment is a recommendation and they do not have jurisdiction over the proposed bridge, the Authority intends to incorporate Valley Water's Guidelines and Standards, as feasible. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 3-2: Additionally, the flow capacity of the bridge should be quantified, along with the flood event (magnitude and recurrence interval) that can pass through the bridge.

Response 3-2: The comment states that the flow capacity of the bridge should be quantified, including the flood event that can pass through the bridge. The flow capacity of the bridge was quantified in Waterways Consulting, Inc.'s *Llagas Creek Bridge at Rancho Canada del Oro Open Space Preserve, Hydraulic Modeling Results* Technical Memorandum dated July 15, 2021 (Appendix B). This study informed the design and engineering of the bridge and abutments. The comment does not raise an issue regarding the environmental analysis of the project impacts in the Draft IS/MND; therefore, no additional response is required.

Comment 3-3: The IS/MND should demonstrate that the bridge will not impede, or block flows during the 100-year flood event. Section 3.10.2.C.III asserts that the proposed project will not substantially impede or redirect flows, however the IS/MND does not provide any basis for this statement.

Response 3-3: The comment asserts that the IS/MND should demonstrate that the bridge would not impede, or block flows during the 100-year flood event. As discussed on page 3-63 of the IS/MND, the project area is not within a flood hazard zone designated by the Federal Emergency Management Agency (FEMA). Flood hazards zones designated by FEMA identified on the Flood Insurance Rate Map are identified as Special Flood Hazard Areas (SFHAs). SFHAs are defined as the area subject to flooding by the 1-percent annual chance of flood, which is also referred to as the base flood or 100-year flood. Therefore, because the project area is not within a flood hazard zone designated by FEMA, it is not within a 100-year flood zone and the bridge therefore will not impede, or block flows during the 100-year flood event. In addition, the bridge has been designed by the project's consultant engineers to not impede or block flows during the 100-year flood event. Refer to Waterways Consulting, Inc.'s *Llagas Creek Bridge at Rancho Canada del Oro Open Space Preserve, Hydraulic Modeling Results* Technical Memorandum dated July 15, 2021 (Appendix B).

Comment 3-4: It should be noted that the proposed bridge is also subject to review and approval from other regulatory agencies with jurisdiction along the creek.

Response 3-4: The comment correctly states that the proposed bridge is also subject to review and approval from other regulatory agencies within jurisdiction along the creek. Table 2-1 on page 2-11 of the IS/MND discloses the potential permits and approvals that would be required to implement the project following its approval by the Authority, including the California Department of Fish and Wildlife (CDFW) for a Lake and Streambed Alteration Notification. The Authority will obtain all necessary permits and approvals prior to implementing the proposed project.

TEXT REVISIONS TO THE INITIAL STUDY

Revisions and additions to the text of the Draft IS/MND have occurred in response to comments, to correct minor errors in text, and due to continued project-related planning that occurred during the public review period. Where text edits have been made, the original text from the Draft IS/MND is provided, followed by the revised text. These corrections and additions clarify or correct text in the IS/MND and do not change the findings or significance conclusions of the environmental analysis.

Text Revision 1: Proposed Mitigated Negative Declaration

On page 1 of the IS/MND, text revisions have been made to correct error regarding the project name. The original text from the Draft IS/MND is as follows:

> PROJECT: MALECH ROAD PUBLIC ACCESS PROJECT

The text has been revised to:

> PROJECT: LLAGAS CREEK BRIDGE AND DAY USE AREA PROJECT

Text Revision 2: Biological Resources and Mandatory Findings of Significance

On pages 3-30 and 3-100 the IS/MND, text revisions have been made to extend the nesting season to begin January 1. Mitigation Measure BIO-3 has been revised to require preconstruction surveys prior to work that occurs within the nesting season (January 1 to August 31). The original text of Mitigation Measure BIO-3 on page 3-30 of the Draft IS/MND is as follows:

Mitigation Measure BIO-3: Avoid Special-Status Bird Nests, Common Raptor Nests, and Nests of Other Common Birds

To avoid or minimize impacts to special-status birds, common raptors, and other nesting birds, the Authority will implement the following measures.

- To the extent feasible, the Authority will schedule work after August 31 or before February 1 to avoid the nesting period for special-status birds, common raptors, and other nesting birds.
- If work is required during the nesting season (February 1 to August 31), a qualified biologist will conduct a preconstruction survey to identify raptor nests within 500 feet and other bird nests within 50 feet of the project area. The survey will be conducted no more than 14 calendar days before the beginning of construction.
- If non-raptor bird nests are located within 50 feet of the project area, no construction will occur within 50 feet of the nest during the nesting season or until the young have fledged, as determined by a qualified biologist. If raptor nests are located within 500 feet of the project area, no construction will occur within 500 feet of the nest during the nesting season or until the young have fledged, as determined by a qualified biologist.

The text has been revised to:

Mitigation Measure BIO-3: Avoid Special-Status Bird Nests, Common Raptor Nests, and Nests of Other Common Birds

To avoid or minimize impacts to special-status birds, common raptors, and other nesting birds, the Authority will implement the following measures.

- To the extent feasible, the Authority will schedule work after August 31 or before January 1 to avoid the nesting period for special-status birds, common raptors, and other nesting birds.
- If work is required during the nesting season (January 1 to August 31), a qualified biologist will conduct a preconstruction survey to identify raptor nests within 500 feet and other bird nests within 50 feet of the project area. The survey will be conducted no more than 14 calendar days before the beginning of construction.
- If non-raptor bird nests are located within 50 feet of the project area, no construction will occur within 50 feet of the nest during the nesting season or until the young have fledged, as determined by a qualified biologist. If raptor nests are located within 500 feet of the project area, no construction will occur within 500 feet of the nest during the nesting season or until the young have fledged, as determined by a qualified biologist.

The original text of page 3-100 from the Draft IS/MND is as follows:

> The Authority would also implement Mitigation Measure BIO-3, which requires preconstruction surveys for nesting birds and establishes non-disturbance buffers within a 500-foot radius of active nests for raptors and a 50-foot non-disturbance buffer for non-raptors if construction occurs during the nesting bird season (February 1 – August 31).

The text has been revised to:

> The Authority would also implement Mitigation Measure BIO-3, which requires preconstruction surveys for nesting birds and establishes non-disturbance buffers within a 500-foot radius of active nests for raptors and a 50-foot non-disturbance buffer for non-raptors if construction occurs during the nesting bird season (January 1 – August 31).

Text Revision 3: Project Description

On page 2-4 of the IS/MND, minor text revisions have been made to the project description within the Final IS/MND to reflect the use of wildlife-friendly fencing as part of the project. The original text from the Draft IS/MND is as follows:

> ### Fencing
> The barbed wire fence would be 4 feet in height with strands of smooth and barbed wire strung through the posts at varying heights. The wood rail fencing would be constructed out of 2x6 horizontal rails and posts spaced 6 feet apart. The fence would include three rails spaced approximately 8.5 inches apart.

The text has been revised to:

> ### Fencing
> The barbed wire fence would be approximately 4 feet in height and would utilize wildlife-friendly design to allow for safe passage of wildlife through the fence. This would include design elements such as the use of smooth wire for the top and bottom strands of the fence. The wood rail fencing would be constructed out of 2x6 horizontal rails and posts spaced 6 feet apart. The fence would include three rails spaced approximately 8.5 inches apart.

Text Revision 4: Project Description

On page 2-3 of the IS/MND, text revisions have been made to the project description of the Final IS/MND. These revisions are minor text edits to clarify that the proposed trails would be 5 feet wide.

The original text from the Draft IS/MND is as follows:

The project proposes an approximately 800 foot (0.15 mile), ABA-accessible loop trail with linear seating areas to the southwest of proposed bridge and Llagas Creek. The text has been revised to:

The project proposes an approximately 800 foot (0.15 mile), 5-foot wide, ABA-accessible loop trail with linear seating areas to the southwest of proposed bridge and Llagas Creek.

Text Revision 5: Land Use and Planning

On page 3-68 of the IS/MND, text revisions have been made to the land use and planning section of the Final IS/MND. These revisions are minor text edits to clarify the measures that apply to the project regarding protection of water quality.

The original text from the Draft IS/MND is as follows:

> Furthermore, the project would not result in harmful discharges into the ground or water as discussed in Section 3.10, "Hydrology and Water Quality". While project construction would require grading and other ground disturbing activities, the Authority would implement Environmental Protection Measure GEO-1 following rain events and when the soil is saturated and install stormwater capture elements to prevent the project from resulting in the discharges into the ground or water. No other harmful discharges of waste material would occur, as described in Section 3.9, "Hazards and Hazardous Materials".

The text has been revised to:

> Furthermore, the project would not result in harmful discharges into the ground or water as discussed in Section 3.10, "Hydrology and Water Quality". While project construction would install stormwater capture elements to prevent the project from resulting in the discharges into the ground or water. In addition, Habitat Plan Condition 3, 4 and 11 would apply to the project and include several measures to protect water quality (Table 6-2 in the Habitat Plan) from design through post-construction. No other harmful discharges of waste material would occur, as described in Section 3.9, "Hazards and Hazardous Materials".

Appendix A

Comment Letters

Letter 1

From: Neal Weinstein
Sent: Tuesday, January 24, 2023 8:50 PM
To: Lucas Shellhammer <lshellhammer@openspaceauthority.org>
Subject: Llagas Creek Bridge IS Comment

Thanks for the opportunity to comment.

Overall, the project as described looks fine. A couple of thoughts:
1. It is not clear if the area will be fenced off along the boundaries shown on the project map. I hope not! 1-1
2. It is very disappointing that the entirety of Blair Ranch will not be opened to the public with this project. I have been hearing about opening the ranch trails for probably 10 years now, and this beautiful property is still not open. 1-2

Regards,
Neal

Neal Weinstein

Letter 2

SCVAS Santa Clara Valley Audubon Society

SIERRA CLUB LOMA PRIETA CHAPTER

February 21, 2023

Lucas Shellhammer, Planning Manager
Santa Clara Valley Open Space Authority
33 Las Colinas Lane San José, CA 95119
Via email to: lshellhammer@openspaceauthority.org

Re: Llagas Creek Bridge and Day Use Area Project, SCH# 2023010436[1]

The Santa Clara Valley Audubon Society and the Sierra Club Loma Prieta Chapter are local environmental organizations that work to protect birds and other wildlife species and to promote the enjoyment of nature. We thank you for the opportunity to provide comments on the Llagas Creek Bridge and Day Use Area Project (Project).

2-1

The Project involves the replacement and maintenance of an existing cattle ford across Llagas Creek with a pedestrian and equestrian accessible bridge within the Rancho Cañada del Oro Open Space Preserve. The project would also extend the existing Llagas Creek Loop Trail to the new bridge and develop a new accessible loop trail on the south side of the bridge within the meadow area. Accessible seating areas, a pedestrian/equestrian connector trail, fencing, and interpretive signage would also be developed. Here are our comments:

2-1

2-2

1. General comments:
   Page 1 of the IS/MND: "PROJECT: **MALECH ROAD** PUBLIC ACCESS PROJECT". Please correct this error.

2-2

2-3

2. Mitigation Measures: Qualifications of biologists.
   a. Please provide the names of the candidate firms and/or describe the relevant experience of the qualified biologists who will be providing preconstruction surveys.
   b. We are especially concerned with the experience and qualifications of a prospective biologist who will conduct surveys for Crotch Bumble Bee Nest Colonies. In our research, we have not been able to find any pictures or photographs of Crotch Bumble Bee Nest

2-3

[1] https://ceqanet.opr.ca.gov/2023010436

Colonies. Descriptions of where nest colonies may be found are very broad "Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees"[2] - basically, anywhere!

- To ensure that nests are not overlooked, biologists performing the survey should have demonstrated experience in identifying Crotch Bumble Bees in nature, and skill in locating the nests by tracking the bumble bees from foraging to their nests.

2-3 cont.

3. Mitigation Measures: Biological Resources

The Llagas Creek Bridge and Day Use Area Project is a relatively small project in scope and therefore, it should be possible to provide mitigation measures that are directly relevant to the specific life history and behavior of special-status species. We ask for the following.

2-4

a. Raptors in this area may start scouting for nesting sites in December, and actively nesting in January. Please include preconstruction surveys in December and January for all species of raptors (not only "common" raptors as specified in Bio-3).

2-4

2-5

b. Please avoid construction-related activities that involve vehicles or earthwork during the nesting season. This will provide better protection to migratory birds, Crotch bumble bees, and Pallid bats.

2-5

2-6

c. Please avoid construction-related activities that involve vehicles or earthwork during rainy days and for 5 days after rainy days. This will provide better protection to amphibians. Please note that a speed limit of 15 miles per hour is not likely to be effective for amphibians. Salamanders and newts move slowly and "freeze" when they perceive a threat (like a vehicle), so specifying a slower driving speed may be inadequate to insure their survival.

2-6

2-7

d. The most effective mitigation would restrict construction to occur in the months of August - October. This period would avoid the nesting season for most species, and the season when amphibians are most active. It should be feasible to construct this project, small in scope and scale, within these three months.

2-7

4. Fencing

2-8

The project will replace and relocate some barbed wire fencing. This is an opportunity to consider wildlife-friendly fencing in locations that do not increase the likelihood of roadkill. Please specify whether the proposed "*The barbed wire fence would be 4 feet in height with strands of smooth and barbed wire strung through the posts at varying heights*" will be permeable and safe for local wildlife species.

2-8

5. Trail maintenance

2-9

It is not clear why maintenance includes both "herbicide spraying within 1 foot of the trail twice per year (around February and April)" and "removal of vegetation within 3 feet of the trail around four times per year."

2-9

[2] https://www.iucnredlist.org/species/44937582/46440211

a. These practices would create a wide trail corridor in a natural setting where the width of man-made infrastructure should be minimized to reduce or avoid impacts to local wildlife species.[3] We ask that the combined width of the trail and the vegetation-free shoulders should not be wider than 8 feet, equal to the width of the bridge.

2-9 cont.

b. Herbicides are potentially damaging to the environment directly where they are applied, and are also implicated in their significant contribution of greenhouse gas to earth's atmosphere[4]. Therefore, herbicides should be used only when less potentially damaging methods are not available, effective, or feasible.[5] With vegetation clearing four times a year, the introduction of herbicides into the meadow should be avoided. Spraying herbicides in addition to removal of vegetation is unnecessary and excessive.

2-10

2-9 cont.

2-10

Respectfully,

Shani Kleinhaus
Environmental Advocate
Santa Clara Valley Audubon Society

James Eggers
Senior Chapter Director
Sierra Club Loma Prieta Chapter

[3] https://www.fs.usda.gov/psw/publications/documents/psw_gtr191/psw_gtr191_0610-0612_holmes.pdf and https://www.researchgate.net/figure/The-relationship-between-trail-width-and-the-proportion-of-days-95-confident-intervals_fig2_322766904

[4] https://www.panna.org/sites/default/files/202212ClimateChangeEngFinal.pdf

[5] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5386111.pdf and https://www.beyondpesticides.org/assets/media/documents/infoservices/pesticidesandyou/documents/UpdatedROW.pdf

File: 30575
Llagas Creek

February 23, 2023

Lucas Shellhammer
Santa Clara Valley Open Space Authority
33 Las Colinas Lane
San Jose, CA 95119
lshellhammer@openspaceauthority.org

Subject: Notice of Intent to Adopt Initial Study/Mitigated Negative Declaration for Rancho Cañada del Oro Open Space Preserve

Dear Lucas:

The Santa Clara Valley Water District (Valley Water) received a Notice of Intent (NOI) from the Santa Clara Valley Open Space Authority (Authority) to adopt an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed project within the Authority's Rancho Cañada del Oro Preserve. Valley Water staff has reviewed the IS/MND and has the following comment:

1. Valley Water recommends the Authority to adhere to the Guidelines and Standards for the proposed bridge over Llagas Creek. More specifically, Section III of the Guidelines and Standards – Encroachments Between the Top of Bank should be considered for the proposed bridge. Additionally, the flow capacity of the bridge should be quantified, along with the flood event (magnitude and recurrence interval) that can pass through the bridge. The IS/MND should demonstrate that the bridge will not impede, or block flows during the 100-year flood event. Section 3.10.2.C.III asserts that the proposed project will not substantially impede or redirect flows, however the IS/MND does not provide any basis for this statement. It should be noted that the proposed bridge is also subject to review and approval from other regulatory agencies with jurisdiction along the creek. 3-1 3-2 3-3 3-4

If you have any further questions regarding Valley Water's comment on the IS/MND, you may contact me at (408) 630-3066, or email at bhwang@valleywater.org.

Thank you,

DocuSigned by:
Benjamin Hwang
2810C0F620844F8...

Benjamin Hwang, P.E.
Associate Engineer - Civil
Community Projects Review Unit

Cc: Y. Arroyo, B. Hwang, File

Appendix B

Llagas Creek Bridge at Rancho Canada del Oro Open Space Preserve, Hydraulic Modeling Results Technical Memorandum

WATERWAYS CONSULTING, INC.

Ecological Restoration Design ~ Civil Engineering ~ Natural Resource Management

TECHNICAL MEMORANDUM

To: Donna Plunkett – Open Space Authority

From: Denis Ruttenberg & Matt Weld

Date: July 15, 2021

Job No.: 18-079

Re: Llagas Creek Bridge at Rancho Canada del Oro Open Space Preserve, Hydralic Modeling Results

Introduction

Waterways Consulting, Inc. (Waterways) has been retained by the Santa Clara Valley Open Space Authority for design consultation services for a new pedestrian bridge at Rancho Canada del Oro Open Space Preserve, located about six miles west of Morgan Hill, California. The bridge will span over Llagas Creek. The following memorandum presents topographic data, hydrographic data, and hydraulic modeling at the project site for design considerations.

Modeling Approach

Hydraulic modeling for steady state conditions was conducted using the HEC-RAS 5.0.4 river analysis software (Corps, 2018). The model cross section geometries and plan alignment were compiled from ground survey performed by Waterways on May 15, 2019 and May 28, 2019 (Figure 1 and Appendix A). Survey data was collected using a survey grade GPS and a robotic total station, and correlated to the NAVD 88 vertical datum, as well as the California State Plane, Zone III, NAD 83 horizontal datum. Cross section data were added to the HEC-RAS hydraulic model for a minimum of several channel widths downstream of the bridge site and upstream of the bridge site, providing numerical stability at the proposed bridge site in a subcritical flow regime, as needed for bridge design.

Channel roughness values (Mannings roughness) for the model were set at 0.05 for the channel and 0.08 for the vegetated banks, based on field observations and guidelines from Barnes (1987).

Hydrologic data were calculated using the USGS Streamstats online server (USGS, 2019) which utilizes the regional regressions from Gotvald (2009) and online GIS query to delineate watersheds and relevant hydrologic statistics (see Appendix B and Table 1). The Streamstats calculation for the 100-year flow was increased by 25%, allowing a Factor of Safety for local variation in flow from regional curves, which are derived from multiple watersheds in the Bay Area.

Table 1. Summary of Peak Discharges at Rancho Canada del Oro (cfs)

Location	2-year (Steady)	10-year (Steady)	50-year (Steady)	100-year (Steady)	100-year +25% (Steady)
Llagas Creek at Proposed Bridge Site	372	1,020	1,660	1,950	2,438

Ground survey data of bed slope was used to establish the upstream and downstream boundary conditions by bed slope and normal water depth. The upstream boundary condition was set for normal depth with a channel slope of 0.007 and the downstream boundary condition was based on normal depth with a channel slope [1] of 0.010. The sensitivity of model results to these boundary conditions was evaluated by adjusting the assumed slope and running the model to evaluate changes in modeled water surface at the proposed bridge location. Results are presented in Appendix C, indicating no change in the modeled water surface elevation at the bridge from the sensitivity analysis.

Regarding other model adjustments for channel variations, based on field observations and review of aerial photogrammetry, no major channel contractions, channel expansions, or sinuous plan forms of the flow path were noted. Contraction and expansion coefficients in the model were retained at the default values of 0.1 and 0.3 throughout the project and modeled reach.

Modeling Results/Discussion

The HEC-RAS model was run in mixed mode to allow for both supercritical and subcritical flow. Results from the model are presented on Figures 2 and 3 and in Appendix C. Model results confirm flow is subcritical (controlled by the downstream water surface profiles) for all flows, with the Froude number less than 1.0 (see Appendix C). For the 100-year plus 25-percent flow (design flood), the channel velocity is 8.1 feet per second and the shear stress in the channel is 2.8 pounds per square foot at the proposed bridge site (see Appendix C). These data will assist in design of the abutments, scour protection, and channel bank stability design features, if needed.

As shown on Figure 2 and Figure 3, the estimated water surface elevation at the proposed bridge site for the design flood is 703.8 feet NAVD 88. A side calculation completed previously in Hydraflow [2] estimated the design flood water surface elevation to be 703.7 feet NAVD, which corroborates the HEC-RAS result, generally considered a more complex and robust calculation of water surface elevation.

The water surface elevation for the 50-year flow was calculated as 702.9 feet NAVD 88. Energy grade lines are also shown for reference. These data are used for considerations in bridge design (see below).

Bridge Design Recommendations

The modeled water surface elevation for the design flood of 703.8 feet can be used for design of the bridge. Local agency requirements will dictate final freeboard requirements and structural design will determine the thickness of the bridge and final deck elevation. For reference, a concept design of the bridge is shown in Appendix A on Figure A1, with a minimum freeboard 2.0 feet above the design flood, which places the soffit (low chord) of a proposed bridge at elevation 706.0 feet NAVD 88. This elevation is approximately one foot above the calculated elevation of the energy grade line from the HEC-RAS model of 704.9 feet, an additional reference point for clearing a bridge soffit elevation (see Figure 3).

[1] To evaluate normal depth as a boundary condition, HEC-RAS indicates to use energy slope, which can be approximated by channel slope. At the downstream end of the project reach a channel slope of 0.01 was used to set the boundary condition for normal depth. As shown in Appendix C, the calculated energy slope at the downstream end of the project reach was 0.01, same as the channel slope (assumed boundary condition), so the assumed slope of 0.01 for a boundary condition is a valid model parameter.

[2] Hydraflow is a hydraulic calculator provided by Autodesk CAD software for calculations of pipe and open channel flow, generally used to quickly and effectively design infrastructure.

Using the above elevation for the proposed bridge soffit, a single-span bridge approximately 90 feet long and 8 feet wide is shown schematically (Appendix A). Abutments are currently shown as shallow spread footings, based on preliminary recommendations from the Geotechnical Engineer. The selected truss style bridge results in a finished deck elevation of 708.0 feet. A preliminary design of the trail approaches and the proposed bridge is shown in Appendix A. Final design of the abutments and bridge are pending Structural Engineer review and design, as well as agency review and approvals.

The results and findings of this memorandum will next be used to develop detailed concept level plans and cost estimates for your review. Outstanding decision points currently include:

- Confirm the desired level of flood protection (freeboard)
- Confirm desired bridge width and loading criteria
- Geotechnical and structural design of abutments and structural elements
- Civil design of trail approaches and appurtenant features

References

Barnes, H., 1987, Roughness Characteristics of Natural Channels, U.S. Geological Survey Water Supply Paper 1849, 219 p.

Gotvald, A.J., Feaster, T.D., and Weaver, J.C., 2009, Magnitude and frequency of rural floods in the southeastern United States, 2006—Volume 1, Georgia: U.S. Geological Survey Scientific Investigations Report 2009–5043, 120 p.

U.S. Army Corps of Engineers (Corps). 2018, Hydrologic Engineering Center. Computer Program HEC-RAS Version 5.0.4. Davis, California.

U.S. Geologic Survey, Streamstats Online Server, accessed February 28, 2019, website located at https://streamstats.usgs.gov/ss/.

Appendices

Appendix A – Site Plan and Bridge Profile
Appendix B – Hydrology from USGS Streamstats
Appendix C - HEC-RAS Hydraulic Modeling Results

PLAN OF HYDROGRAPHIC SURVEY AND HEC-RAS CROSS SECTION LOCATIONS

SCALE: 1" = 40'

NOTES:

1. IMAGERY PROVIDED BY MICROSOFT CORPORATION, DIGITAL GLOBE, BING MAPPING FROM 2019. LOCATIONS OF IMAGE FEATURES ARE APPROXIMATE.
2. TOPOGRAPHY AND CROSS SECTIONS FROM GROUND SURVEY BY WATERWAYS IN MAY 2019.

WATERWAYS CONSULTING INC.
509A SWIFT ST.
SANTA CRUZ, CA 95060
PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

DRAFT

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
SANTA CLARA VALLEY
OPEN SPACE AUTHORITY

PLAN OF HYDROGRAPHIC SURVEY AND MODEL CROSS SECTIONS

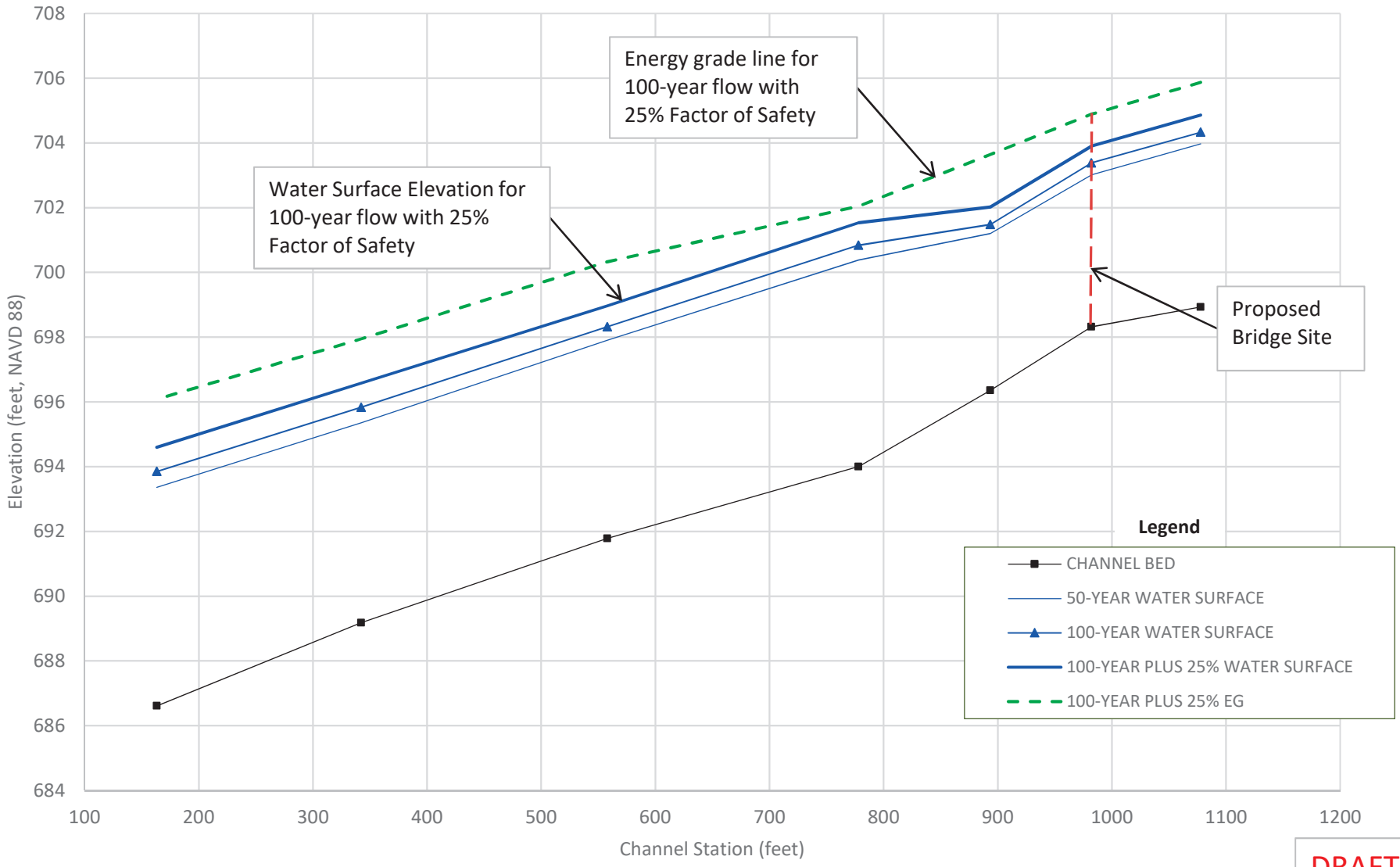
LLAGAS CREEK TRAIL
BRIDGE AT RANCHO
CANADA DEL ORO OPEN
SPACE PRESERVE

DESIGNED BY:
DRAWN BY: S.M.R./D.R.
CHECKED BY: M.W.W.
DATE: 7/31/2019
JOB NO.: 18-079

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

1

1 OF 1



DRAFT

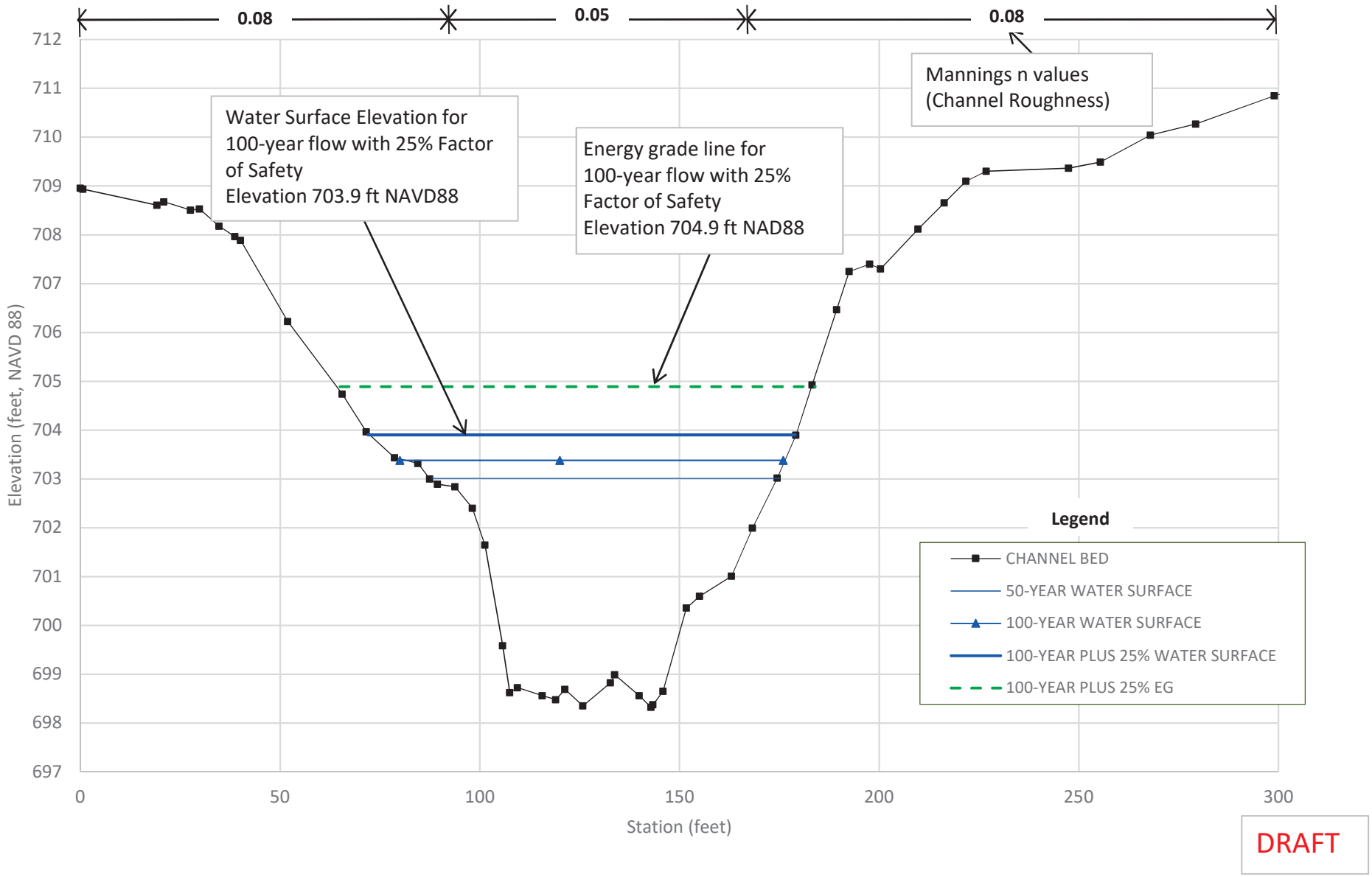
FIGURE 2

WATER SURFACE PROFILES FROM HEC-RAS MODEL

LLAGAS CREEK TRAIL

TECHNICAL MEMORANDUM
AUGUST 2019

WATERWAYS CONSULTING, INC.
Santa Cruz, CA | watways.com | Portland, OR



DRAFT

FIGURE

3

CROSS SECTION AT PROPOSED BRIDGE SITE WITH WATER SURFACE ELEVATIONS FROM HEC-RAS MODEL

LLAGAS CREEK TRAIL

TECHNICAL MEMORANDUM
AUGUST 2019

WATERWAYS CONSULTING, INC.
Santa Cruz, CA | watways.com | Portland, OR

Appendix A
Site Plan and Bridge Profile

LLAGAS CREEK TRAIL
BRIDGE AT RANCHO CANADA DEL ORO PRESERVE

CONCEPT LEVEL DESIGN SUBMITTAL

VICINITY MAP
N.T.S. (GOOGLE)

REGIONAL MAP
N.T.S. (GOOGLE)

GENERAL NOTES

1. TOPOGRAPHIC MAPPING WAS PERFORMED BY:
   WATERWAYS CONSULTING, INC.
   509A SWIFT STREET
   SANTA CRUZ, CA 95060
   SURVEY DATES: MAY 15, 2019 AND MAY 28, 2019.
2. ELEVATION DATUM: GPS TIED TO NAVD88 USING THE LEICA GEOSYSTEMS SMARTNET GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) NETWORK.
3. BASIS OF BEARINGS: GPS TIES TO NAD83 CALIFORNIA STATE PLANE, ZONE 3 USING THE LEICA GEOSYSTEMS SMARTNET GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) NETWORK.
4. AERIAL PHOTO SOURCE: BING MAPS
5. CONTOUR INTERVAL IS ONE FOOT. ELEVATIONS AND DISTANCES SHOWN ARE IN DECIMAL FEET.
6. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE NOT SHOWN HEREON.
7. TREE DIMENSIONS: TRUNK DIAMETERS SHOWN REPRESENT DIAMETER AT BREAST HEIGHT (DBH), MEASURED IN INCHES. DBH IS MEASURED 4.5 FT ABOVE GROUND FOR SINGLE TRUNKS AND TRUNKS THAT SPLIT INTO SEVERAL STEMS CLOSE TO THE GROUND. THE DBH FOR TREES THAT SPLIT INTO SEVERAL STEMS CLOSE TO THE GROUND MAY BE CONSOLIDATED INTO A SINGLE DBH BY TAKING THE SQUARE ROOT OF THE SUM OF ALL SQUARED STEM DBH'S, UNLESS OTHERWISE NOTED. WHERE TREES FORK NEAR BREAST HEIGHT, TRUNK DIAMETER IS MEASURED AT THE NARROWEST PART OF THE MAIN STEM BELOW THE FORK. FOR TREES ON A SLOPE, BREAST HEIGHT IS REFERENCED FROM THE UPPER SIDE OF THE SLOPE. FOR LEANING TREES, BREAST HEIGHT IS MEASURED ON THE SIDE THAT THE TREE LEANS TOWARD. TREES WITH DBH LESS THAN 8" ARE TYPICALLY NOT SHOWN.

   36"O = 36" DBH OAK

8. TREE SPECIES ARE IDENTIFIED WHEN KNOWN. HOWEVER, FINAL DETERMINATION SHOULD BE MADE BY A QUALIFIED BIOLOGIST. REFER TO THE LEGEND FOR TREE SPECIES SYMBOLS.

** CALL BEFORE YOU DIG **

CONTACT UNDERGROUND SERVICE ALERT (USA)
PRIOR TO ANY CONSTRUCTION WORK 1-800-227-2600

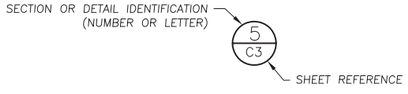
ABBREVIATIONS

AVG.	AVERAGE
CC	CONCRETE
CY	CUBIC YARDS
DIA.	DIAMETER
E	EXISTING
EG	EXISTING GROUND
ELEV.	ELEVATION
DI	DRAINAGE INLET
FG	FINISHED GRADE
FT	FEET
INV	INVERT
MIN	MINIMUM
N	NEW
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
RC	RELATIVE COMPACTION
RSP	ROCK SLOPE PROTECTION
SPK	SPIKE
SQ.FT.	SQUARE FOOT
T	TREE
T.B.D.	TO BE DETERMINED
TYP	TYPICAL
UNK	UNKNOWN
WSE	WATER SURFACE ELEVATION
YR	YEAR

TREE SPECIES

A	ALDER
BM	BIGLEAF MAPLE
C	COTTONWOOD
CYP	CYPRESS
DF	DOUGLAS FIR
EUC	EUCALYPTUS
M	MAPLE
MAD	MADRONE
O	OAK
R	REDWOOD
RC	RED CEDAR
T	TREE (SPECIES UNKNOWN)
W	WILLOW
WF	WHITE FIR

SECTION AND DETAIL CONVENTION



PROJECT DESCRIPTION

THESE DRAWINGS PROVIDE CONCEPT LEVEL DESIGN DETAILS FOR THE INSTALLATION OF NEW BRIDGE FOR THE LLAGAS CREEK TRAIL AT THE RANCHO CANADA DEL ORO PERSERVE IN SANTA CLARA COUNTY, CALIFORNIA.

WORK SHALL CONSIST OF CONSTRUCTING NEW TRAIL APPROACHES TO THE BRIDGE AND INSTALLATION OF A NEW BRIDGE, INCLUDING ABUTMENTS, FOUNDATION, BRIDGE DECK, AND APPURTENANT MATERIALS.

SHEET INDEX

WATERWAYS CONSULTING INC.
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SANTA CRUZ, CA 95060
PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

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NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
SANTA CLARA VALLEY
OPEN SPACE AUTHORITY

COVER

LLAGAS CREEK TRAIL
BRIDGE AT RANCHO
CANADA DEL ORO OPEN
SPACE PRESERVE
CONCEPT DESIGN

DESIGNED BY: M.W.W.
DRAWN BY: S.M.R./D.R.
CHECKED BY: M.W.W.
DATE: 10/21/2019
JOB NO.: 18-079

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C1

1 OF 4

LEGEND

- 705 / 706 — EXISTING CONTOURS
- SURVEY CONTROL POINT
- EXISTING FLOW LINE
- EXISTING FENCE
- EDGE OF PAVEMENT
- 36"O — EXISTING TREE
- SIGN POST
- HIGH WATER MARK ESTIMATED FROM HYRAULIC MODEL
- ORDINARY HIGH WATER MARK ESTIMATED FROM DATA BY OTHERS

APN 74212008

APN 74212008

APN 74218007

APN 74219001

APN 74218007

(N) TRAIL

(N) BRIDGE

(N) TRAIL

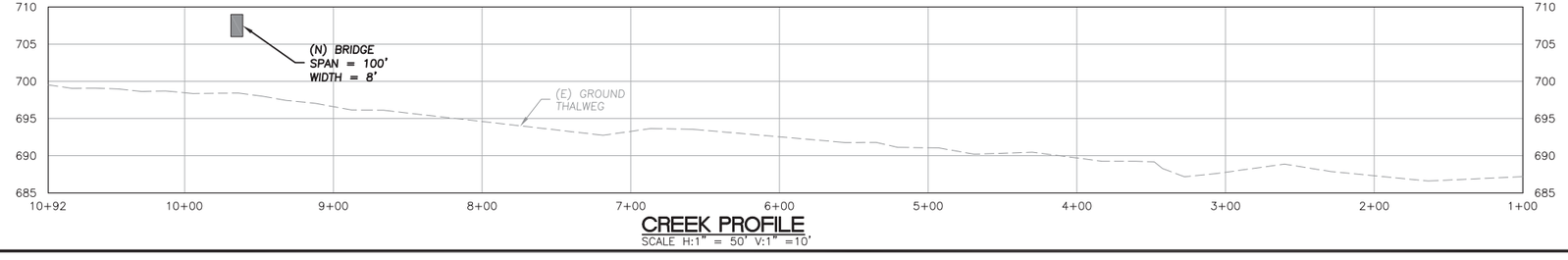
LLAGAS C.R.

CONTROL POINTS:

POINT ID	NORTHING FEET	EASTING FEET	ELEVATION NAVD88 FEET	DESCRIPTION
1	1878031.94	6189439.16	703.03	SPIKE
2	1878108.16	6189474.41	708.63	MAG NAIL
4	1877986.17	6189440.01	698.62	SPIKE
6	1878202.21	6189509.39	713.50	SPIKE
7	1878252.47	6189584.39	710.58	SPIKE
10	1877866.75	6189411.80	709.81	SPIKE
11	1878004.31	6189363.40	700.41	SPIKE
20	1878210.53	6189939.64	699.48	MAG NAIL
21	1878063.91	6189802.29	702.34	SPIKE
22	1878309.42	6190078.60	696.80	SPIKE

SITE OVERVIEW

SCALE: 1" = 50'



CREEK PROFILE

SCALE H:1" = 50' V:1" =10'

NOTES

1. HIGH WATER MARK (HWM) IN PLAN AND SECTION ESTIMATED FROM THE 100-YEAR WATER SURFACE ELEVATION, AS CALCULATED IN THE HEC-RAS HYDRAULIC MODEL.
2. THE FLOW USED IN THE HEC-RAS MODEL FOR THE HWM WAS THE 100-YEAR FLOW FROM REGIONAL CURVES, PLUS AN ADDITIONAL 25%, TO ACCOUNT FOR LOCAL VARIATION IN FLOW.
3. 100-YEAR WATER SURFACE WAS INTERPOLATED AND DELINEATED AT THE BRIDGE SITE WHERE SURVEYED TOPOGRAPHY BY WATERWAYS WAS AVAILABLE, AND IS OTHERWISE SHOWN AS MARKERS ON CROSS SECTIONS.
4. ORDINARY HIGH WATER MARK (OHWM) ESTIMATED AT ABOUT 1.5-FEET ABOVE THE EXISTING CREEK THALWEG AND NEAR THE TOE OF THE CREEK BANKS, AS INTERPRETED FROM "AQUATIC RESOURCE DELINEATION REPORT" BY ASCENT ENVIRONMENTAL IN AUGUST 2019.
5. OHWM WAS INTERPOLATED AND DELINEATED AT THE BRIDGE SITE WHERE SURVEYED TOPOGRAPHY BY WATERWAYS WAS AVAILABLE, AND IS OTHERWISE SHOWN AS MARKERS ON CROSS SECTIONS.

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PREPARED AT THE REQUEST OF:
SANTA CLARA VALLEY
OPEN SPACE AUTHORITY

SITE OVERVIEW AND ACCESS

LLAGAS CREEK TRAIL BRIDGE AT RANCHO CANADA DEL ORO OPEN SPACE PRESERVE CONCEPT DESIGN

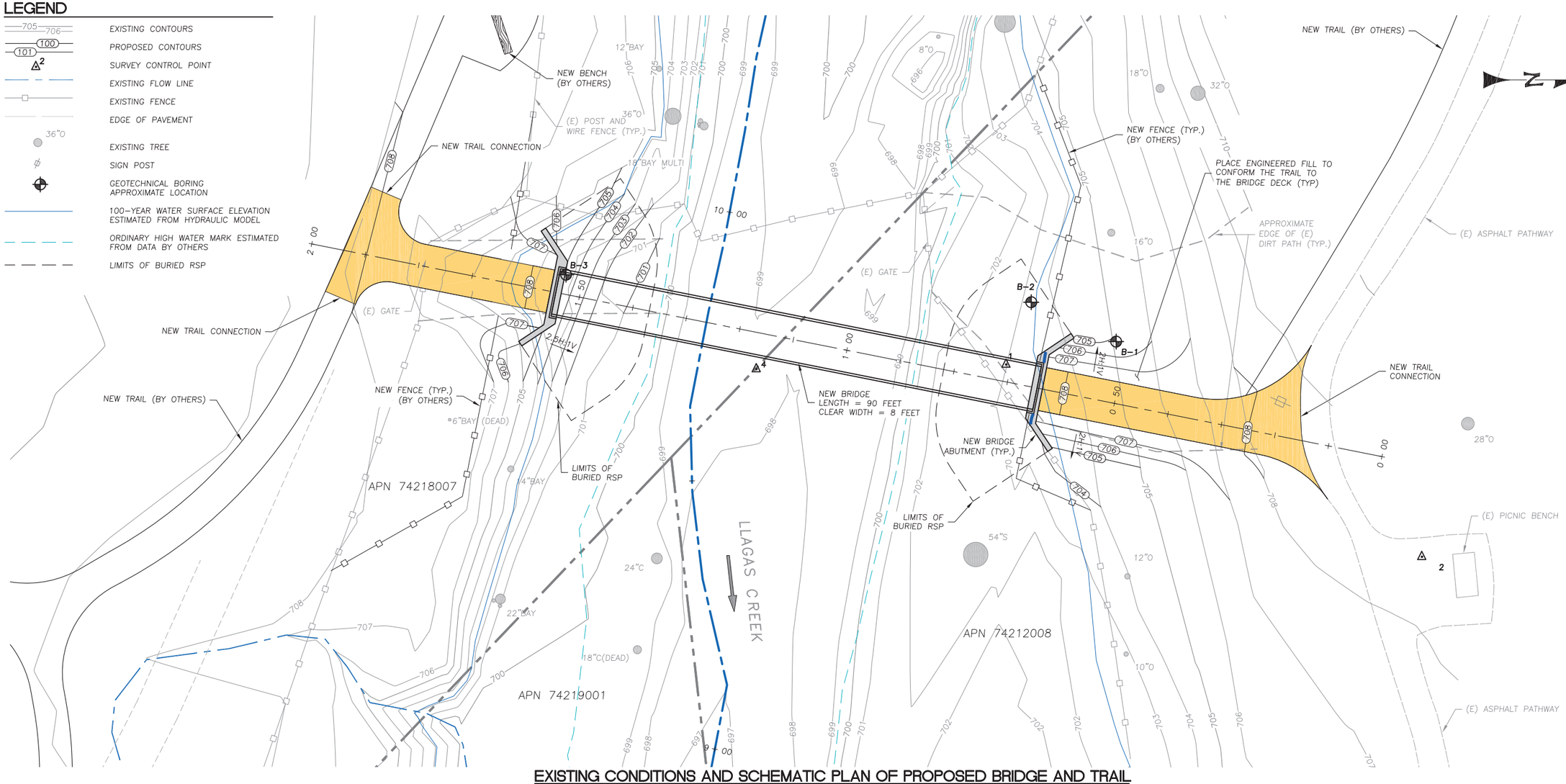
DESIGNED BY: M.W.W.
DRAWN BY: S.M.R./D.R.
CHECKED BY: M.W.W.
DATE: 10/21/2019
JOB NO.: 18-079

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS

0 — 1"

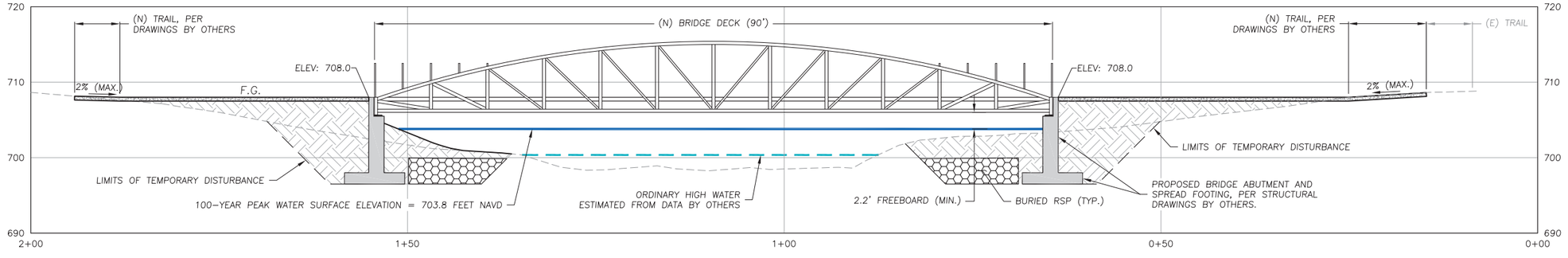
LEGEND

- EXISTING CONTOURS (705 / 706)
- PROPOSED CONTOURS (100 / 101)
- SURVEY CONTROL POINT (△2)
- EXISTING FLOW LINE
- EXISTING FENCE
- EDGE OF PAVEMENT
- EXISTING TREE (36"O)
- SIGN POST
- GEOTECHNICAL BORING APPROXIMATE LOCATION
- 100-YEAR WATER SURFACE ELEVATION ESTIMATED FROM HYDRAULIC MODEL
- ORDINARY HIGH WATER MARK ESTIMATED FROM DATA BY OTHERS
- LIMITS OF BURIED RSP



EXISTING CONDITIONS AND SCHEMATIC PLAN OF PROPOSED BRIDGE AND TRAIL

SCALE: 1" = 10'



PROFILE OF DESIGN AT PROPOSED BRIDGE

SCALE: 1" = 8'

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PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

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PREPARED AT THE REQUEST OF:
SANTA CLARA VALLEY
OPEN SPACE AUTHORITY

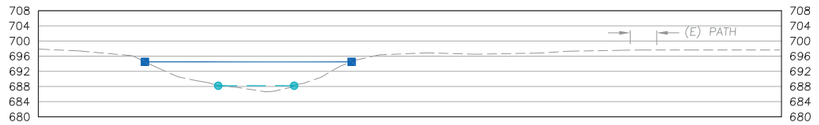
SITE PLAN AND BRIDGE PROFILE CONCEPT DESIGN

LLAGAS CREEK TRAIL BRIDGE AT RANCHO CANADA DEL ORO OPEN SPACE PRESERVE CONCEPT DESIGN

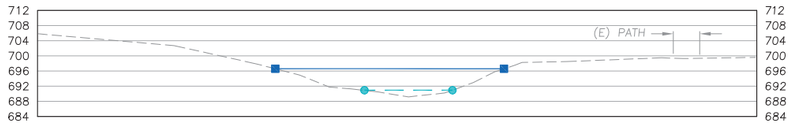
DESIGNED BY:	M.W.W.
DRAWN BY:	S.M.R./D.R.
CHECKED BY:	M.W.W.
DATE:	4/26/2021
JOB NO.:	18-079

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS

0 1"



SECTION F C4
SCALE: 1" =20'



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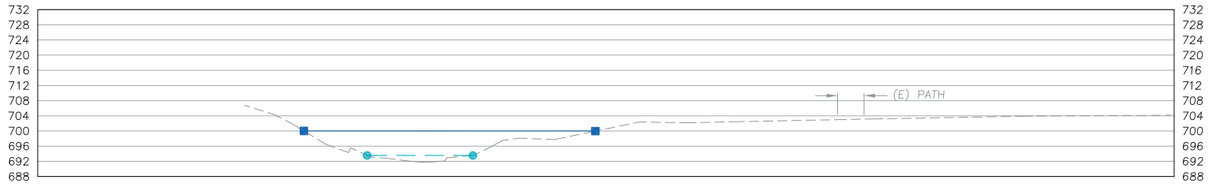
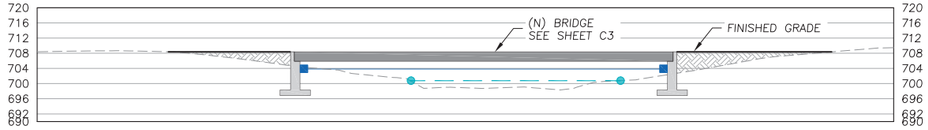


SECTION D C4
SCALE: 1" =20'

SECTION C C4
SCALE: 1" =20'



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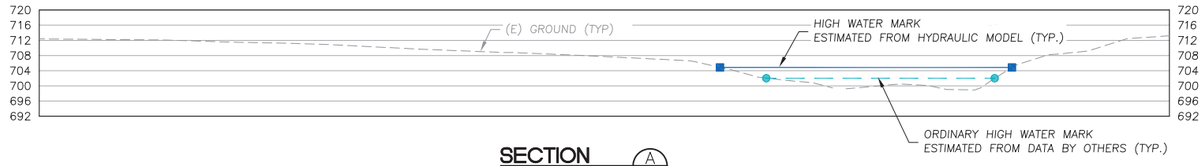

SECTION A C4
SCALE: 1" =20'

WATERWAYS CONSULTING INC.
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PH:(831)421-9291 // FAX:(888)819-6847
WWW.WATWAYS.COM

DRAFT
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
SANTA CLARA VALLEY
OPEN SPACE AUTHORITY

SECTIONS

LLAGAS CREEK TRAIL
BRIDGE AT RANCHO
CANADA DEL ORO OPEN
SPACE PRESERVE
CONCEPT DESIGN

DESIGNED BY: M.W.W.
DRAWN BY: S.M.R./D.R.
CHECKED BY: M.W.W.
DATE: 10/21/2019
JOB NO.: 18-079

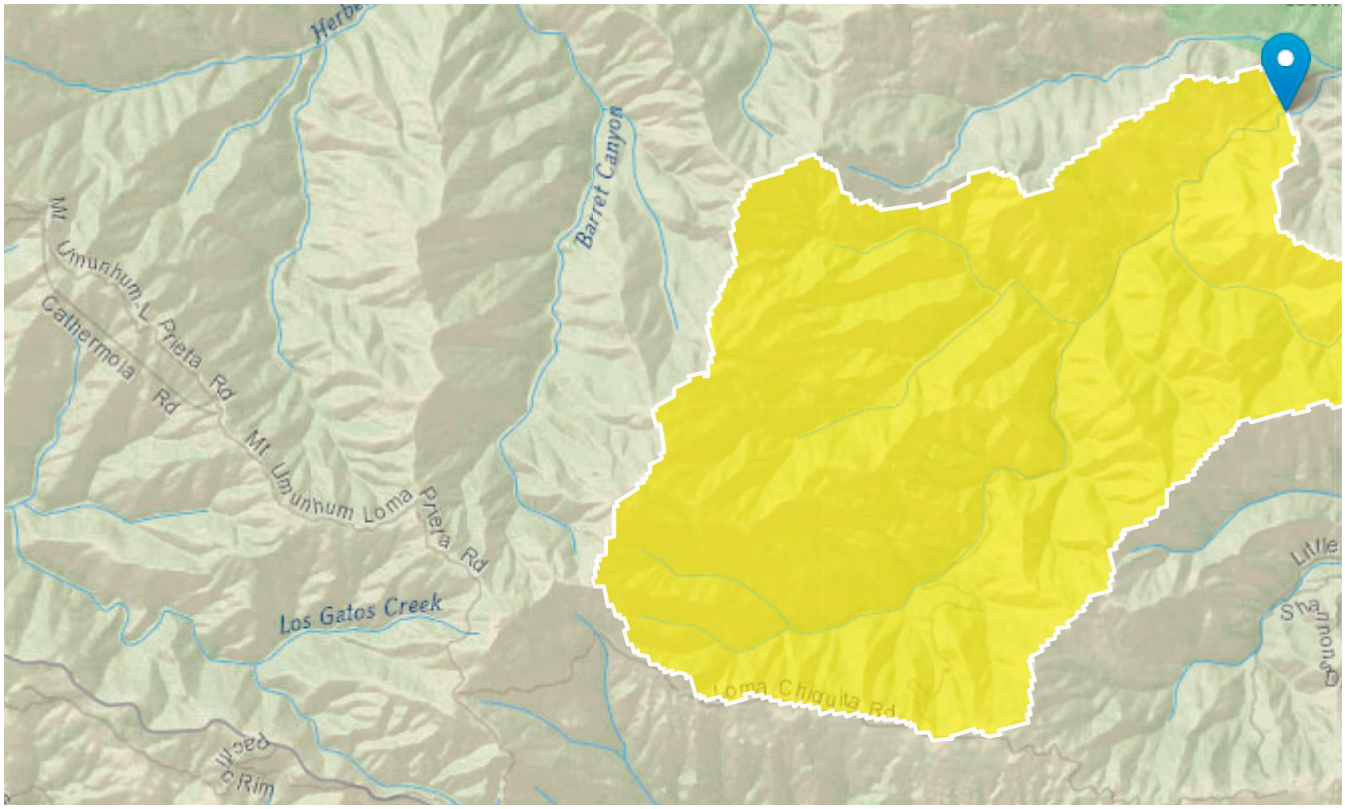
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C4

Appendix B
Hydrology from USGS Streamstats

StreamStats Report - 18-079 Llagas Creek Bridge, Rancho Canada del Oro

Region ID: CA
Workspace ID: CA20190228171636264000
Clicked Point (Latitude, Longitude): 37.14528, -121.77675
Time: 2019-02-28 09:16:52 -0800



Hydrology for new bridge site over Llagas Creek for new trail in Rancho Canada del Oro OSD near Morgan Hill

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.9	square miles
PRECIP	Mean Annual Precipitation	37.9	inches

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	15.5	thousand feet
BSLDEM30M	Mean basin slope computed from 30 m DEM	43.6	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	-2243253.5	feet
CENTROIDY	Basin centroid vertical (y) location in state plane units	1871190.4	feet
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	1624	feet
ELEVMAX	Maximum basin elevation	3597	feet
FOREST	Percentage of area covered by forest	44.1	percent
JANMAXTMP	Mean Maximum January Temperature	55.7	degrees F
JANMINTMP	Mean Minimum January Temperature	41.93	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	2.3	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0	percent
LFPLENGTH	Length of longest flow path	5	miles
MINBELEV	Minimum basin elevation	711	feet
OUTLETELEV	Elevation of the stream outlet in thousands of feet above NAVD88.	712	feet
RELIEF	Maximum - minimum elevation	2887	feet
RELRELF	Basin relief divided by basin perimeter	187	feet per mi

Peak-Flow Statistics Parameters [2012 5113 Region 1 North Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.9	square miles	0.04	3200
PRECIP	Mean Annual Precipitation	37.9	inches	20	125

Peak-Flow Statistics Flow Report [2012 5113 Region 1 North Coast]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

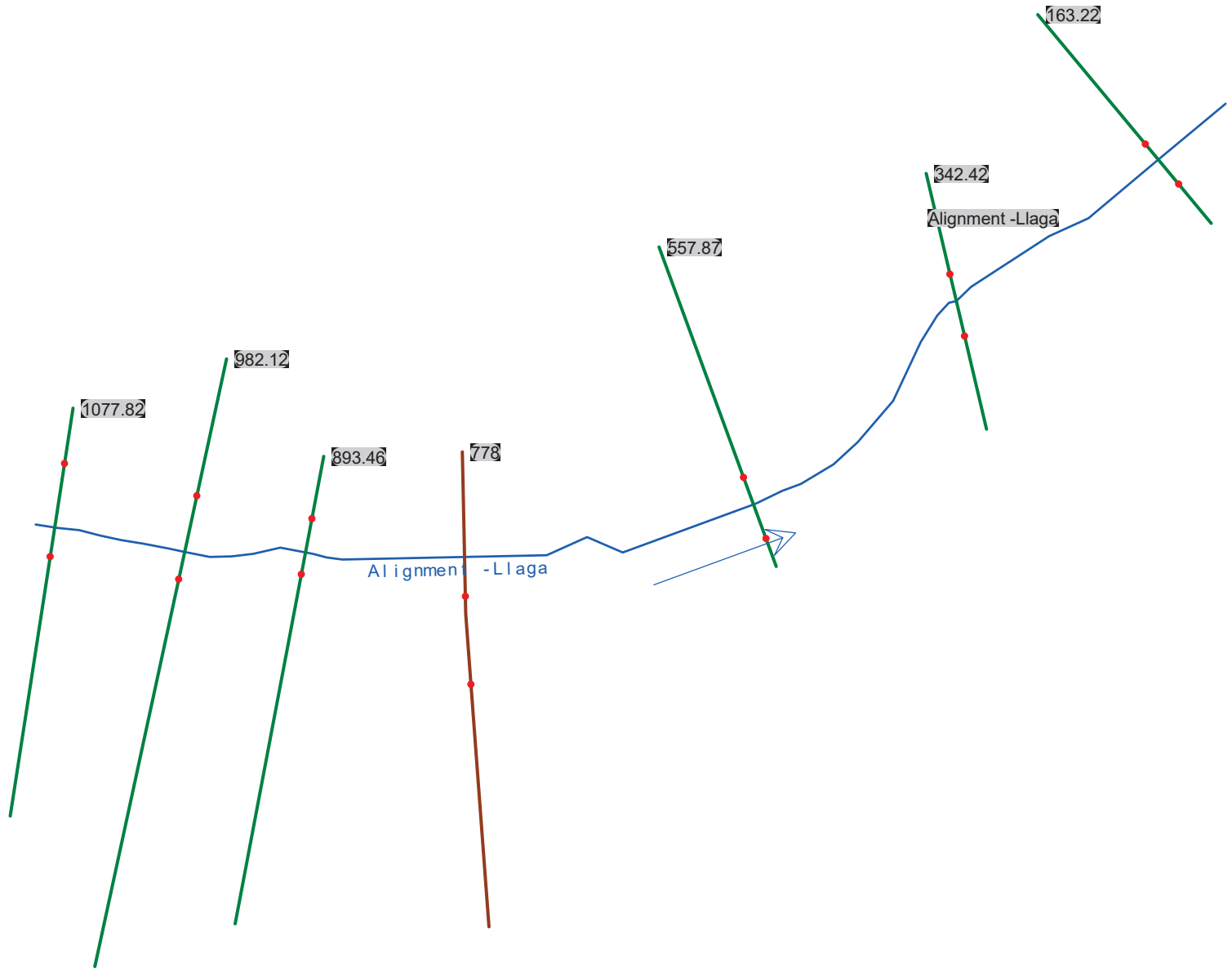
Statistic	Value	Unit	PIl	PIu	SEp
2 Year Peak Flood	372	ft^3/s	152	908	58.6
5 Year Peak Flood	744	ft^3/s	355	1560	47.4
10 Year Peak Flood	1020	ft^3/s	503	2050	44.2
25 Year Peak Flood	1380	ft^3/s	704	2700	42.7
50 Year Peak Flood	1660	ft^3/s	844	3260	42.7
100 Year Peak Flood	1950	ft^3/s	969	3920	44.3
200 Year Peak Flood	2230	ft^3/s	1100	4490	44.4
500 Year Peak Flood	2600	ft^3/s	1260	5370	46

Peak-Flow Statistics Citations

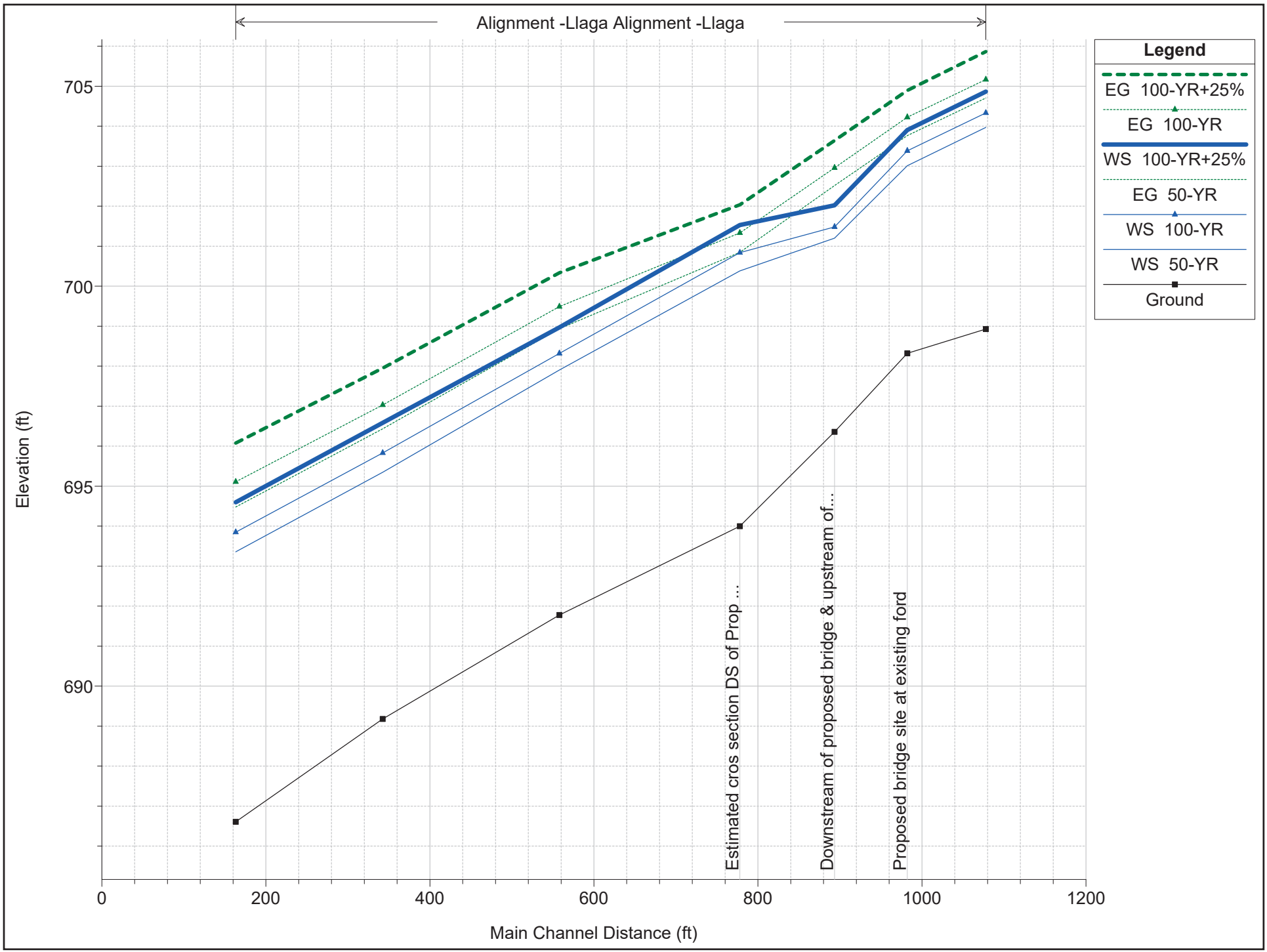
Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

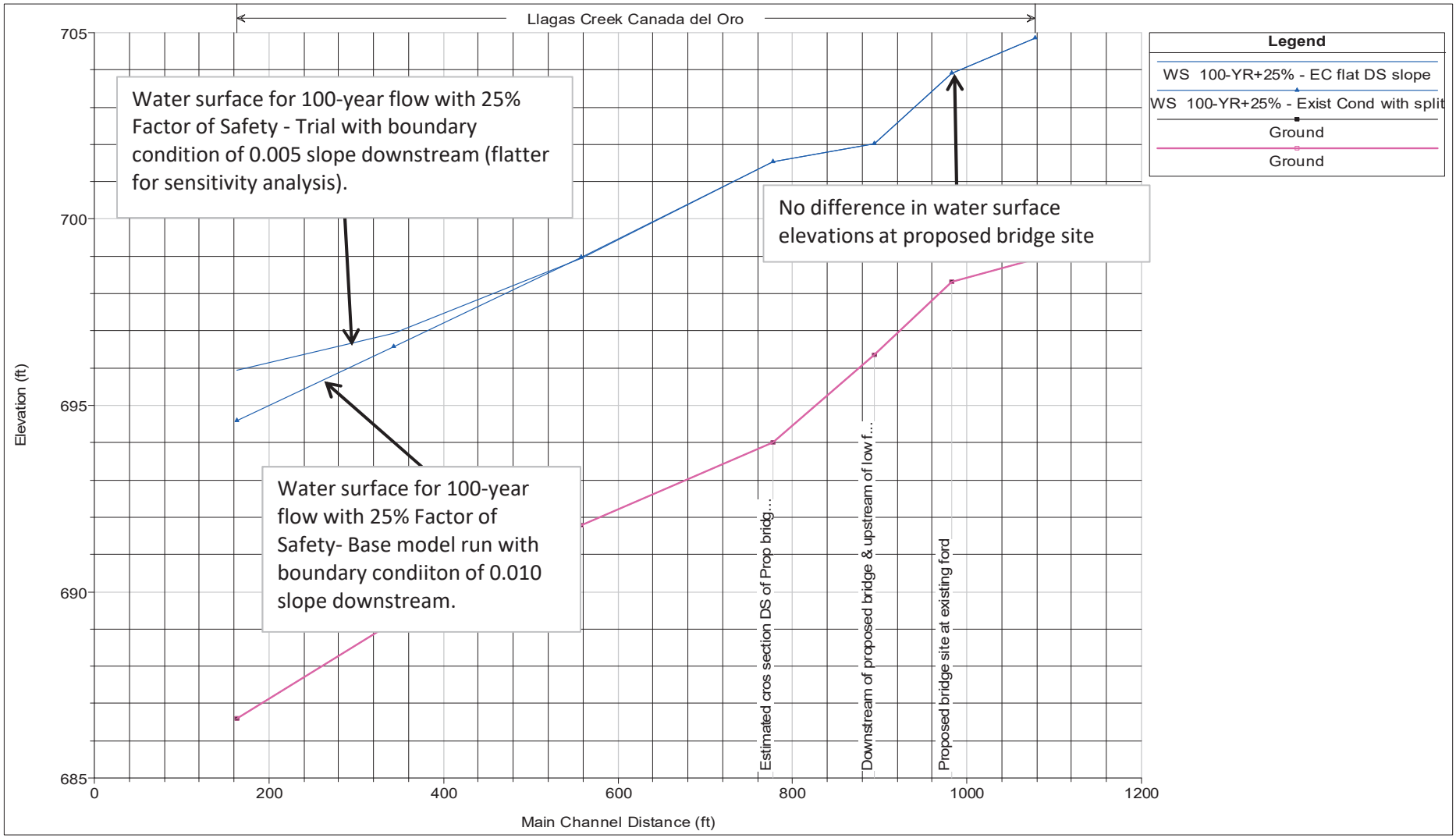
Application Version: 4.3.0

Appendix C
HEC-RAS Hydraulic Modeling Results



Plan Schematic of HEC-RAS Model


Alignment -Llaga Alignment -Llaga
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Elevation (ft)
705
700
695
690
0
200
400
600
800
1000
1200
Main Channel Distance (ft)
Estimated cros section DS of Prop ...
Downstream of proposed bridge & upstream of...
Proposed bridge site at existing ford



DRAFT

FIGURE

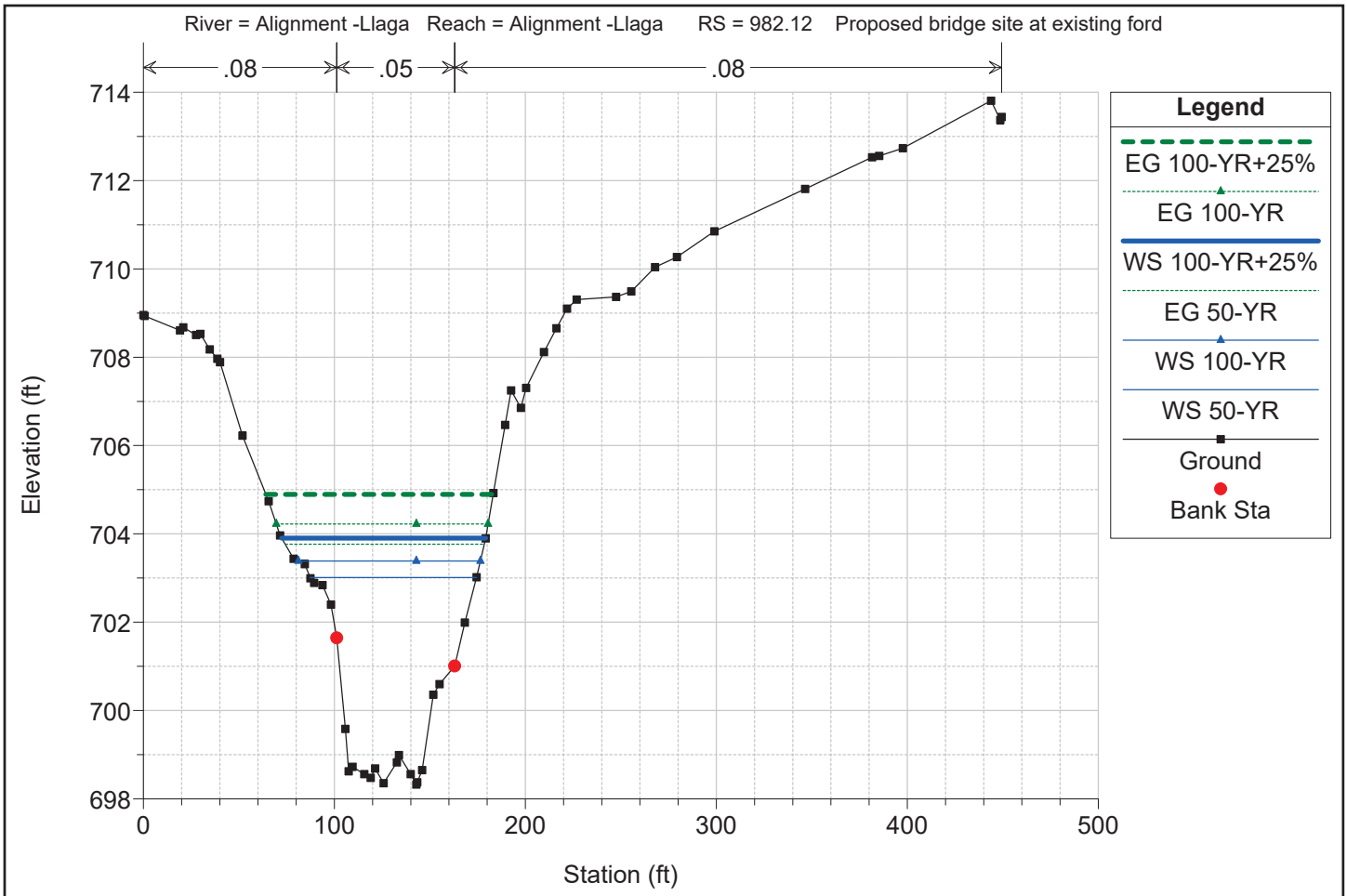
A

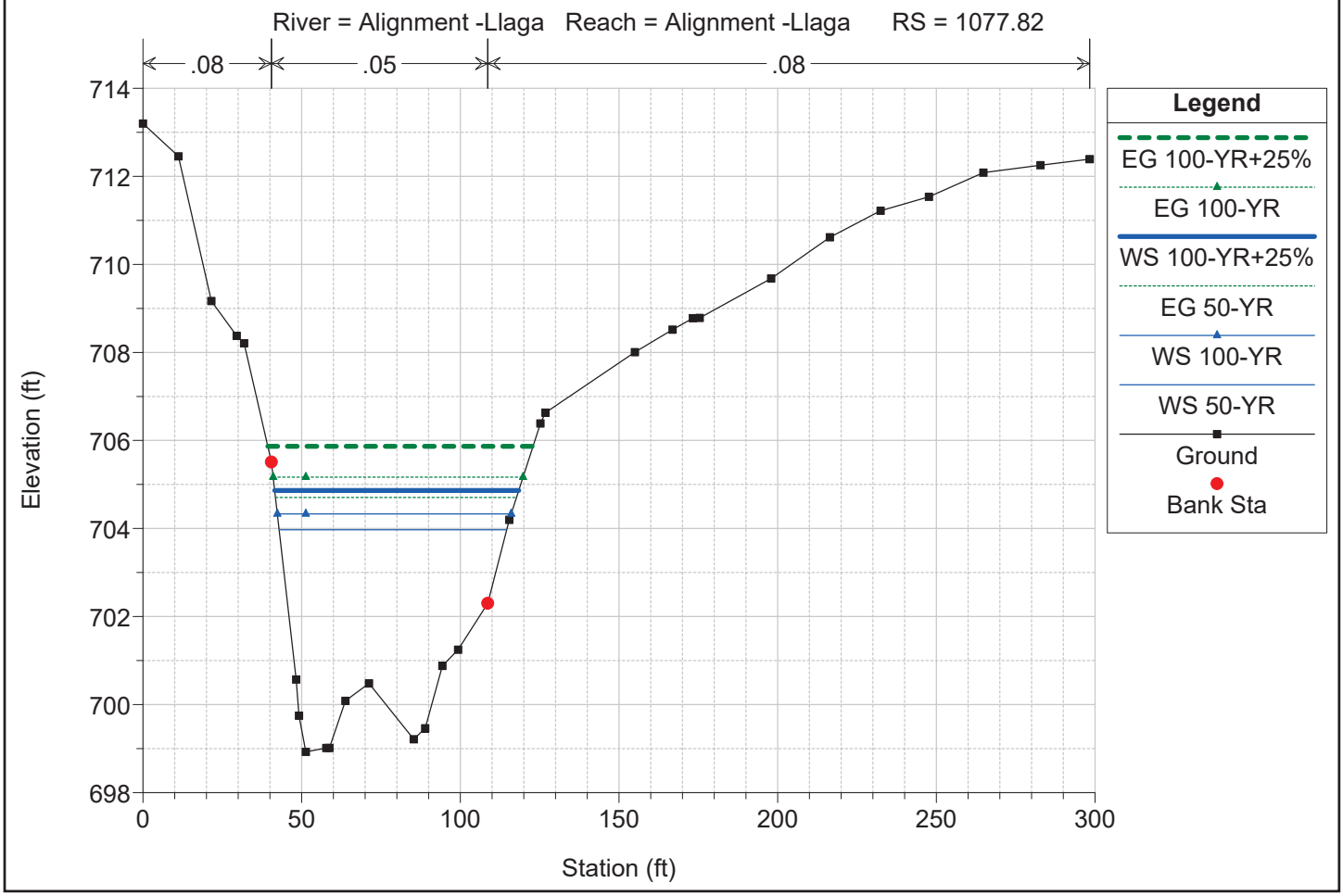
100-YEAR WATER SURFACE PROFILES FROM HEC-RAS MODEL FOR SENSITIVITY ANALYSIS OF BOUNDARY CONDITIONS

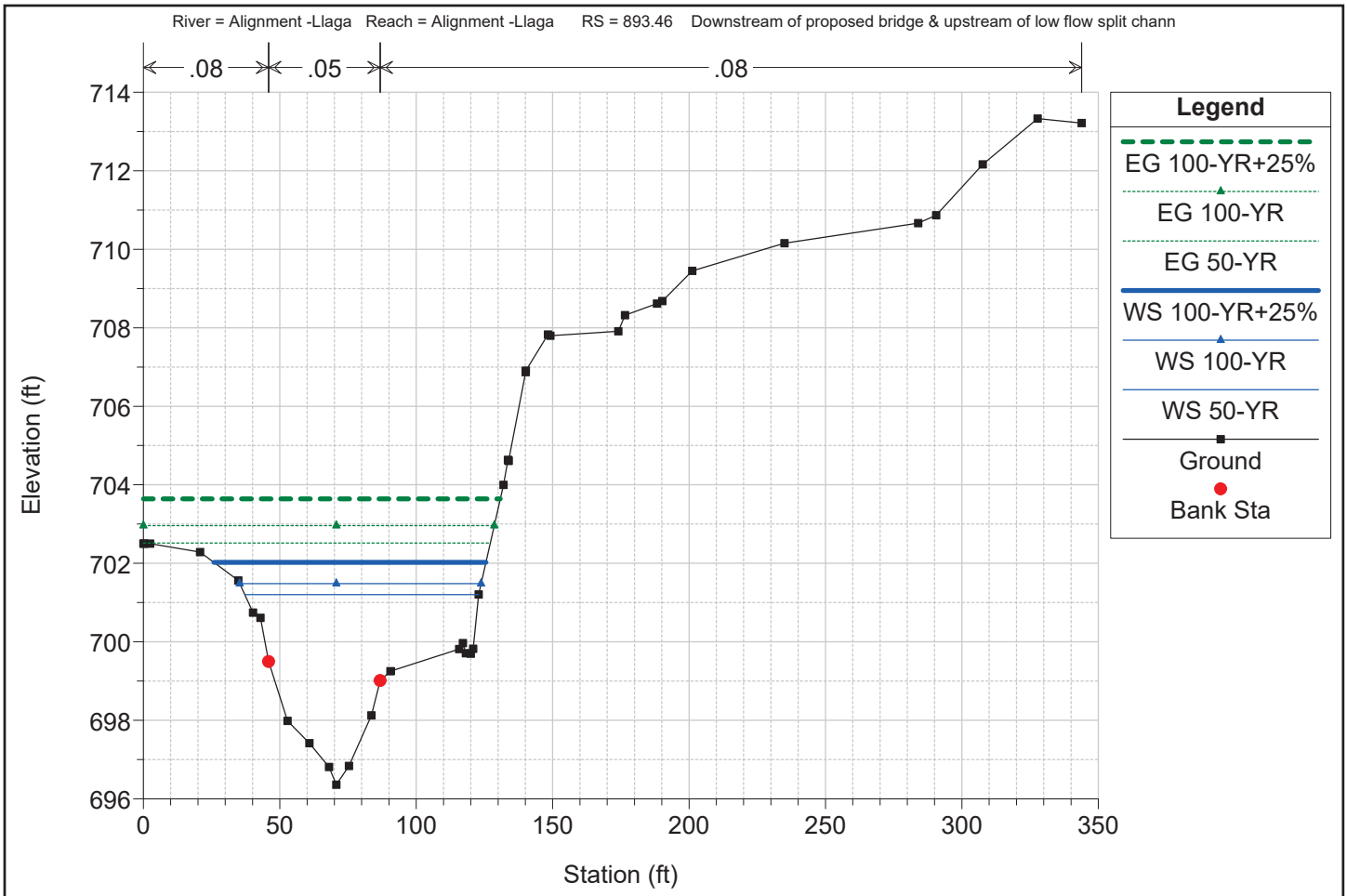
LLAGAS CREEK TRAIL

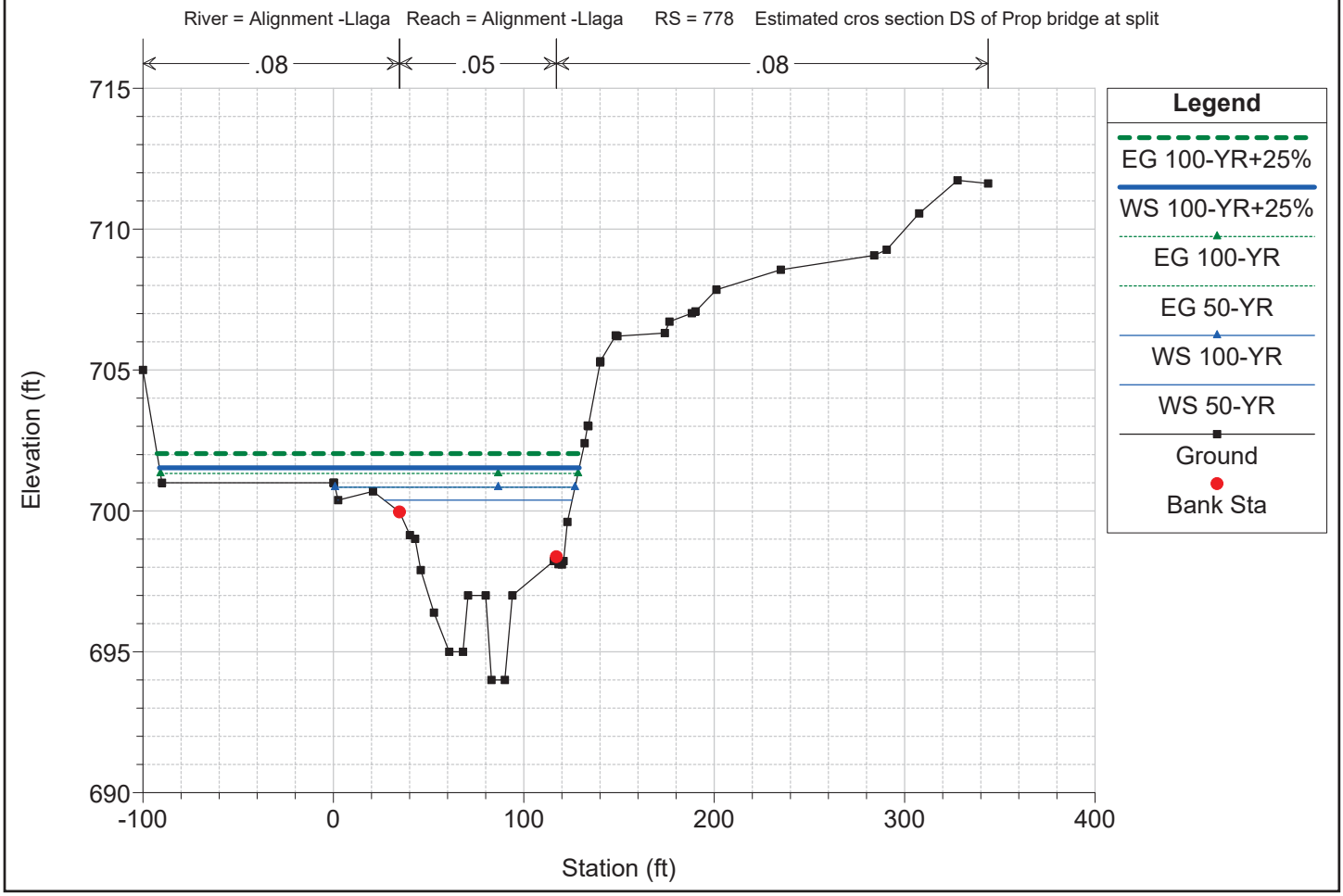
TECHNICAL MEMORANDUM
AUGUST 2019

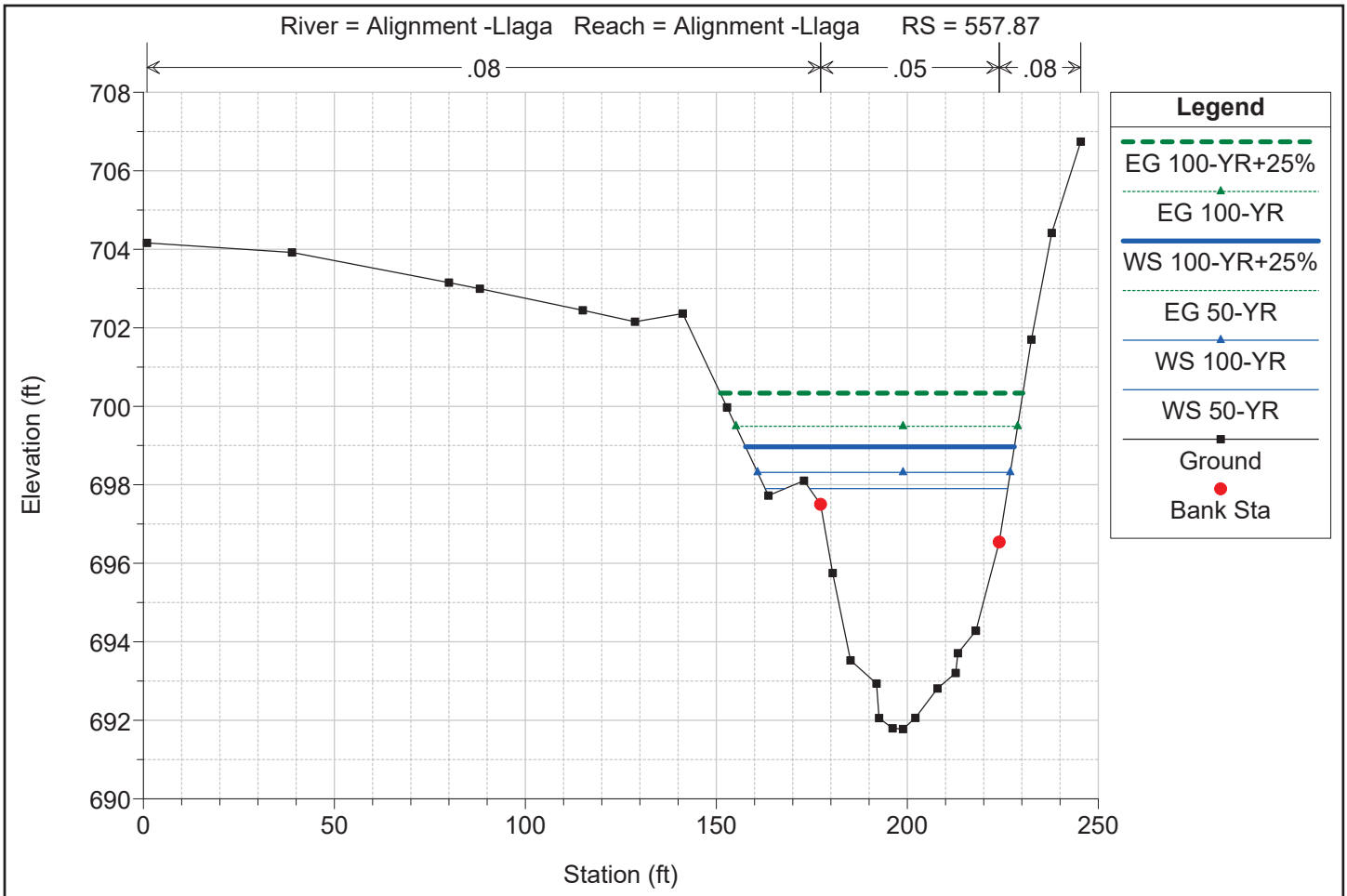
WATERWAYS CONSULTING, INC.
Santa Cruz, CA | watways.com | Portland, OR

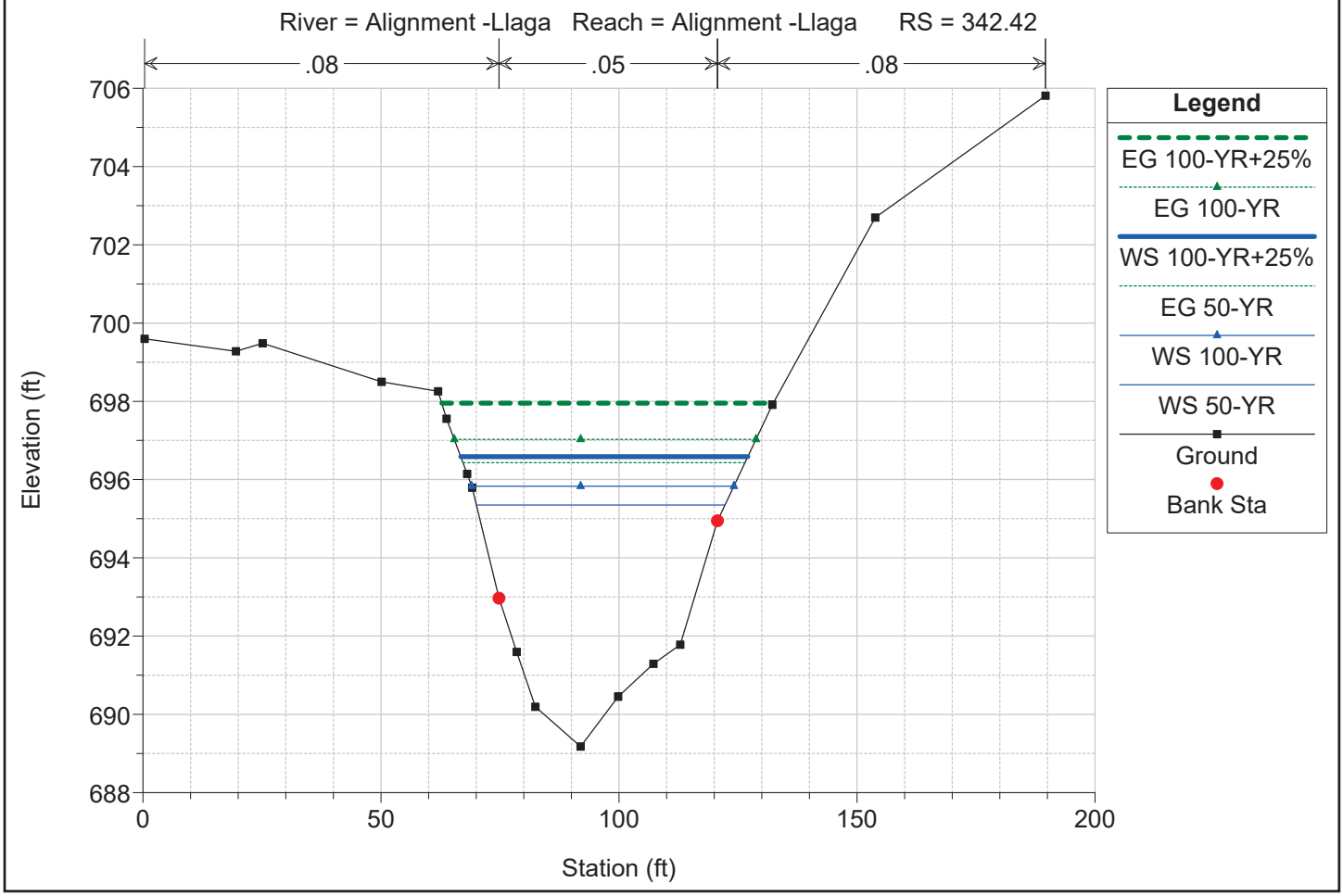

River = Alignment -Llaga Reach = Alignment -Llaga RS = 982.12 Proposed bridge site at existing ford
.08
.05
.08
Elevation (ft)
714
712
710
708
706
704
702
700
698
0
100
200
300
400
500
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta

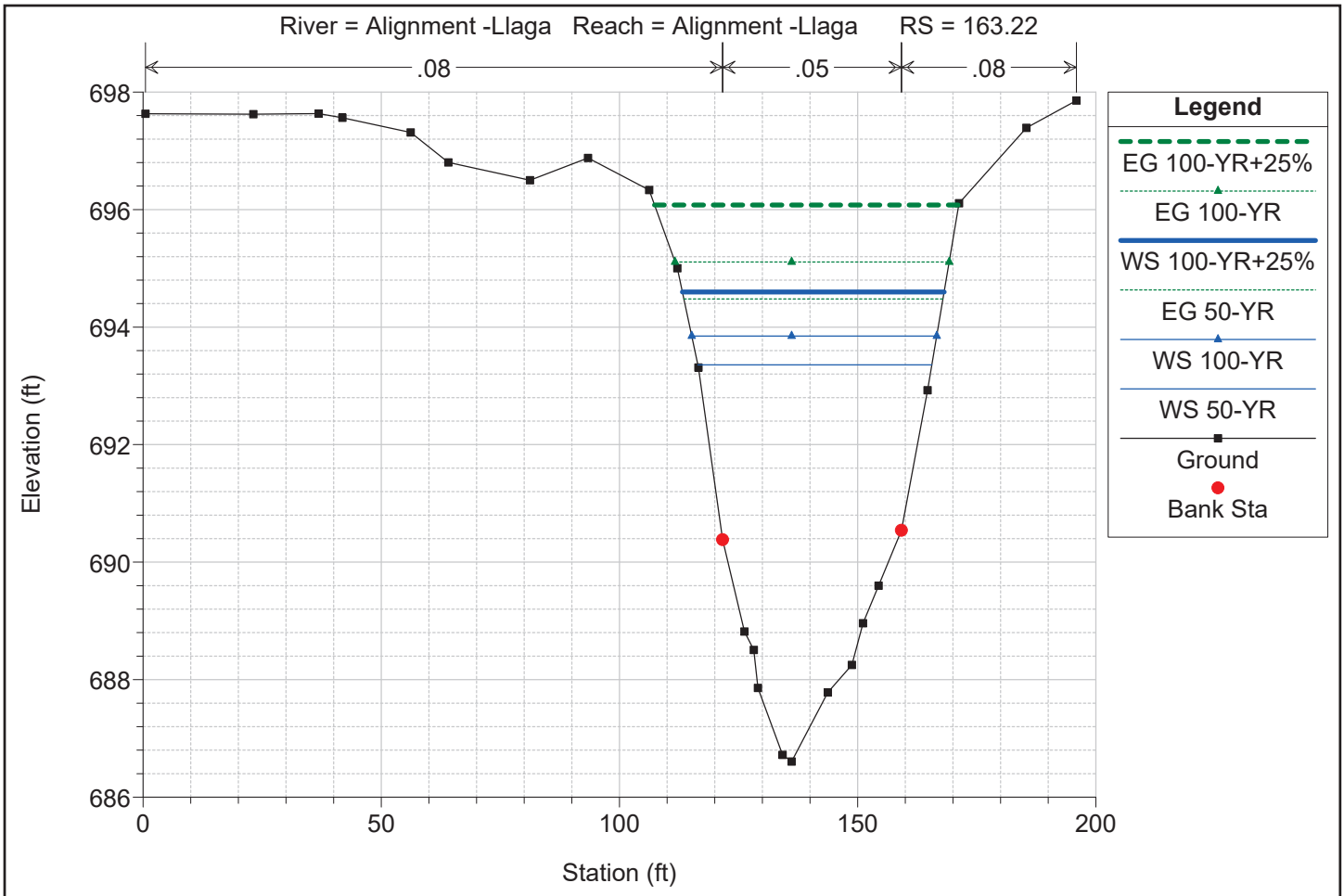

River = Alignment -Llaga Reach = Alignment -Llaga RS = 1077.82
.08
.05
.08
Elevation (ft)
714
712
710
708
706
704
702
700
698
0
50
100
150
200
250
300
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta


River = Alignment -Llaga Reach = Alignment -Llaga RS = 893.46 Downstream of proposed bridge & upstream of low flow split chann
.08
.05
.08
Elevation (ft)
714
712
710
708
706
704
702
700
698
696
0
50
100
150
200
250
300
350
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
EG 50-YR
WS 100-YR+25%
WS 100-YR
WS 50-YR
Ground
Bank Sta


River = Alignment -Llaga Reach = Alignment -Llaga RS = 778 Estimated cros section DS of Prop bridge at split
.08
.05
.08
Elevation (ft)
715
710
705
700
695
690
-100
0
100
200
300
400
Station (ft)
Legend
EG 100-YR+25%
WS 100-YR+25%
EG 100-YR
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta


River = Alignment -Llaga Reach = Alignment -Llaga RS = 557.87
.08
.05
.08
Elevation (ft)
708
706
704
702
700
698
696
694
692
690
0
50
100
150
200
250
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta


River = Alignment -Llaga Reach = Alignment -Llaga RS = 342.42
.08
.05
.08
Elevation (ft)
706
704
702
700
698
696
694
692
690
688
0
50
100
150
200
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta


River = Alignment -Llaga Reach = Alignment -Llaga RS = 163.22
.08
.05
.08
698
696
694
692
690
688
686
0
50
100
150
200
Elevation (ft)
Station (ft)
Legend
EG 100-YR+25%
EG 100-YR
WS 100-YR+25%
EG 50-YR
WS 100-YR
WS 50-YR
Ground
Bank Sta

HEC-RAS Plan: Exist Cond with split River: Alignment -Llaga Reach: Alignment -Llaga

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Shear Chan
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(lb/sq ft)
Alignment -Llaga	1077.82	50-YR	1660.00	698.93	703.97		704.71	0.009960	6.89	244.63	71.71	0.64	2.20
Alignment -Llaga	1077.82	100-YR	1950.00	698.93	704.33		705.17	0.010099	7.35	270.97	73.70	0.65	2.43
Alignment -Llaga	1077.82	100-YR+25%	2438.00	698.93	704.86		705.87	0.010485	8.07	311.05	76.93	0.67	2.83
Alignment -Llaga	982.12	50-YR	1660.00	698.32	703.01		703.76	0.009672	7.01	249.91	87.10	0.64	2.24
Alignment -Llaga	982.12	100-YR	1950.00	698.32	703.38		704.22	0.009588	7.43	283.50	95.33	0.64	2.44
Alignment -Llaga	982.12	100-YR+25%	2438.00	698.32	703.90		704.89	0.009794	8.12	336.46	106.84	0.66	2.81
Alignment -Llaga	893.46	50-YR	1660.00	696.36	701.20	701.20	702.52	0.019934	9.78	211.21	85.73	0.91	4.43
Alignment -Llaga	893.46	100-YR	1950.00	696.36	701.48	701.48	702.96	0.020578	10.44	235.63	88.49	0.93	4.93
Alignment -Llaga	893.46	100-YR+25%	2438.00	696.36	702.02	702.02	703.64	0.019448	11.08	286.28	99.67	0.93	5.30
Alignment -Llaga	778	50-YR	1660.00	694.00	700.38		700.85	0.006520	5.50	311.64	98.84	0.51	1.41
Alignment -Llaga	778	100-YR	1950.00	694.00	700.84		701.33	0.005972	5.69	364.61	126.01	0.50	1.46
Alignment -Llaga	778	100-YR+25%	2438.00	694.00	701.53		702.04	0.005158	5.87	500.74	220.44	0.47	1.47
Alignment -Llaga	557.87	50-YR	1660.00	691.78	697.90		698.94	0.011284	8.16	205.73	57.15	0.69	2.93
Alignment -Llaga	557.87	100-YR	1950.00	691.78	698.32		699.49	0.011390	8.71	231.97	66.19	0.70	3.24
Alignment -Llaga	557.87	100-YR+25%	2438.00	691.78	698.97		700.33	0.011320	9.46	276.44	70.39	0.72	3.66
Alignment -Llaga	342.42	50-YR	1660.00	689.18	695.35		696.43	0.011898	8.39	202.48	52.23	0.71	3.09
Alignment -Llaga	342.42	100-YR	1950.00	689.18	695.83		697.03	0.011426	8.82	228.35	55.11	0.71	3.30
Alignment -Llaga	342.42	100-YR+25%	2438.00	689.18	696.58		697.95	0.010802	9.46	271.78	60.32	0.71	3.62
Alignment -Llaga	163.22	50-YR	1660.00	686.61	693.36	692.27	694.48	0.010005	8.58	205.87	49.12	0.67	3.06
Alignment -Llaga	163.22	100-YR	1950.00	686.61	693.85	692.74	695.11	0.010007	9.13	230.46	51.42	0.68	3.36
Alignment -Llaga	163.22	100-YR+25%	2438.00	686.61	694.60	693.43	696.08	0.010008	9.94	270.38	54.95	0.70	3.82