



State of California - Department of Fish and Wildlife
2019 ENVIRONMENTAL FILING FEE CASH RECEIPT
 DFW 753.5a (REV. 12/01/18) Previously DFG 753.5a

Print **StartOver** **Finalize&Email**

RECEIPT NUMBER:
 36 — 03112019 — 177
 STATE CLEARINGHOUSE NUMBER (If applicable)
 2012041012

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY San Bernardino County Transportation	LEAD AGENCY EMAIL	DATE 03112019
COUNTY/STATE AGENCY OF FILING San Bernardino	DOCUMENT NUMBER	

PROJECT TITLE

Redlands Passenger Rail Project (RPRP)

PROJECT APPLICANT NAME San Bernardino County Transportation Authority (SBCTA)	PROJECT APPLICANT EMAIL	PHONE NUMBER (909) 884-8276
PROJECT APPLICANT ADDRESS 1170 W. 3rd Street, 2nd Floor	CITY San Bernardino	STATE CA
		ZIP CODE 92410

PROJECT APPLICANT (Check appropriate box)

- Local Public Agency School District Other Special District State Agency Private Entity

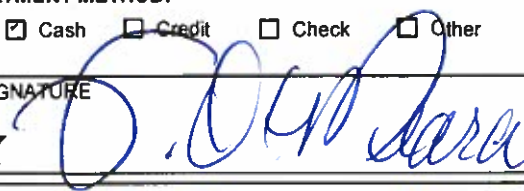
CHECK APPLICABLE FEES:

- | | | | |
|---|------------|----|------|
| <input type="checkbox"/> Environmental Impact Report (EIR) | \$3,271.00 | \$ | 0.00 |
| <input type="checkbox"/> Mitigated/Negative Declaration (MND)(ND) | \$2,354.75 | \$ | 0.00 |
| <input type="checkbox"/> Certified Regulatory Program (CRP) document - payment due directly to CDFW | \$1,112.00 | \$ | 0.00 |
|
 | | | |
| <input checked="" type="checkbox"/> Exempt from fee | | | |
| <input checked="" type="checkbox"/> Notice of Exemption (attach) | | | |
| <input type="checkbox"/> CDFW No Effect Determination (attach) | | | |
| <input type="checkbox"/> Fee previously paid (attach previously issued cash receipt copy) | | | |

- | | | | |
|---|----------|----|-------|
| <input type="checkbox"/> Water Right Application or Petition Fee (State Water Resources Control Board only) | \$850.00 | \$ | 0.00 |
| <input checked="" type="checkbox"/> County documentary handling fee | | \$ | 50.00 |
| <input type="checkbox"/> Other | | \$ | |

PAYMENT METHOD:

- Cash Credit Check Other **TOTAL RECEIVED \$ 50.00**

SIGNATURE X 	AGENCY OF FILING PRINTED NAME AND TITLE Vanessa O'Meara, Deputy Clerk
---	---

DATE FILED & POSTED

Posted On: 3.11.19

Removed On: 4.22.19

FILE FORM

Notice of Determination

Receipt No: 36-03/12019-177

Appendix D

To:

[X] Office of Planning and Research
U.S. Mail: Street Address:
P.O. Box 3044 1400 Tenth St., Rm 113
Sacramento, CA 95812-3044 Sacramento, CA 95814

From:

Public Agency: San Bernardino County Transportation
Address: 1170 W. 3rd Street, 2nd Floor
San Bernardino, CA 92410
Contact: Andres Ramirez
Phone: (909) 884-8276

[X] County Clerk
County of: San Bernardino
Address: 222 W. Hospitality Lane, 1st Floor
San Bernardino, CA 92415-0022

Lead Agency (if different from above):

Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2012041012

Project Title: Redlands Passenger Rail Project (RPRP)

Project Applicant: San Bernardino County Transportation Authority (SBCTA)

Project Location (include county): City of San Bernardino, San Bernardino County

Project Description:

RPRP is an approximately nine mile corridor extending east from the City of San Bernardino to the City of Redlands and includes local and express train service. SBCTA certified a Final EIR for the project in March of 2015. SBCTA is proposing a minor design refinement to the project in San Bernardino, south of Central Avenue and west of Waterman Avenue. The final EIR considered drainage improvements throughout the corridor; including new off-site drainage connections. SBCTA is revising the design and point of connection for a new side drain to Twin Creek to integrate with new development approved by San Bernardino between SBCTA's right-of-way and Twin Creek.

This is to advise that the San Bernardino County Transportation Authority has approved the above [X] Lead Agency or [] Responsible Agency

described project on March 6, 2019 and has made the following determinations regarding the above described project. (date)

- 1. The project [X] will [] will not] have a significant effect on the environment.
2. [X] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA. [] A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [X] were [] were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [X] was [] was not] adopted for this project.
5. A statement of Overriding Considerations [X] was [] was not] adopted for this project.
6. Findings [X] were [] were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:

1170 W. 3rd Street, 2nd Floor, San Bernardino, CA 92410

Signature (Public Agency): [Signature] Title: Director of Transportation

Date: 3/16/19 Date Received for filing at OPR:

CLERK OF THE BOARD OF SUPERVISORS
2019 MAR 11 AM 10:14
COUNTY OF SAN BERNARDINO CALIFORNIA



Addendum No. 7 to the EIR

San Bernardino County Transportation Authority |
Redlands Passenger Rail Project

SCH No. 2012041012

January 30, 2019



This page is intentionally blank.

Contents

1	Purpose and Background.....	1
1.1	Applicability and Use of an Addendum	1
1.2	Format of This Addendum.....	2
1.3	Summary of Findings	2
1.4	Lead Agency and Discretionary Approvals	2
2	Description of Refined Project.....	3
2.1	Introduction.....	3
2.2	Project Location.....	3
2.3	Description of Refined Project.....	3
2.4	Status of Currently Approved Project.....	5
3	Environmental Analysis Checklist	6
4	Mitigation Measures	33

Tables

Table 1.	Environmental Analysis Checklist Summary	6
Table 2.	Aesthetics.....	8
Table 3.	Agricultural Resources	9
Table 4.	Air Quality.....	10
Table 5.	Biological Resources	12
Table 6.	Cultural Resources.....	14
Table 7.	Geology and Soils.....	15
Table 8.	Greenhouse Gas Emissions	17
Table 9.	Hazards and Hazardous Materials.....	18
Table 10.	Hydrology and Water Quality	20
Table 11.	Land Use and Planning.....	22
Table 12.	Mineral Resources	23
Table 13.	Noise	24
Table 14.	Population and Housing.....	25
Table 15.	Public Services.....	26
Table 16.	Recreation.....	27
Table 17.	Transportation/Traffic.....	28
Table 18.	Utilities and Service Systems.....	30
Table 19.	Mandatory Findings	31

Attachments

Attachment A. Figures

Attachment B. Biological Resources Letter (Revised)

Attachment C. Cultural Resources Letter (Revised)

Attachment D. HEC-RAS Results

1 Purpose and Background

On March 4, 2015, the San Bernardino Associated Governments (now referred to as the San Bernardino County Transportation Authority [SBCTA]) certified the Final Environmental Impact Report (EIR) for the Redlands Passenger Rail Project (RPRP or Project) (State Clearinghouse No. 2012041012). The approved Project will provide passenger rail operations along an approximately 9-mile corridor extending east from the City of San Bernardino to the City of Redlands. As approved, the Project will include local and express train service via five station stops; two in the City of San Bernardino; and three in the City of Redlands.

Following additional coordination with local stakeholders, including the San Bernardino County Flood Control District (District), and engineering design for the approved Project, SBCTA is proposing a new drainage connection at Twin Creek; approximately 1,500 feet south of Central Avenue in the City of San Bernardino, California. As previously described in Section 2.4.2.13 of the EIR, SBCTA contemplated drainage improvements at multiple locations along the railroad corridor, including reconstruction of existing culverts and the placement of new drainage facilities. In general, the proposed drainage connection would be consistent with this previous description.

SBCTA approved Addendum No. 3 to the EIR in September 2017 for the approved Project (State Clearinghouse No. 2012041012) to address the potential environmental impacts associated with a new drainage connection to Twin Creek. Since SBCTA's approval, new development has been approved by the City of San Bernardino between SBCTA's right-of-way and Twin Creek. In response, SBCTA has revised the proposed side drain design and intervening conveyance infrastructure to integrate with drainage infrastructure constructed as part of the new development.

This addendum is prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code § 21000, et. seq.) and the CEQA Guidelines (California Administrative Code, Title 14, § 15000, et. seq.). Addendum No. 3, adopted by SBCTA in September of 2017 and the project's adopted mitigation monitoring and reporting program (MMRP) are incorporated by reference.

1.1 Applicability and Use of an Addendum

SBCTA's intent through preparation of this addendum is to demonstrate whether the previously adopted CEQA document (i.e., Final EIR and Addendum), including mitigation measures, are still both adequate and valid for the refined Project. Pursuant to Public Resources Code Section 21166 and the CEQA Guidelines, Sections 15162 through 15164, SBCTA as the lead agency is required to conduct a fact-based evaluation of proposed changes to a project to determine whether supplemental environmental documentation is required. CEQA Guidelines, Sections 15162(a), states that when an EIR is certified for a project, no Subsequent or Supplemental EIR shall be prepared for that project unless the lead agency determines that one of the conditions described in Section 15162(a) has occurred.

Based on the analysis set forth in this addendum, SBCTA has concluded that the refined Project does not trigger any of these circumstances, and that an addendum continues to be the appropriate form of documentation to comply with CEQA.

1.2 Format of This Addendum

The previously certified EIR serves as the initial environmental compliance document for the approved Project, and this addendum provides additional clarification and information about the refined Project. This addendum should be read together with the full text of the previously certified EIR (2015) and previously approved Addendum No. 3 (2017). All mitigation measures applicable from the EIR would be applicable to the refined Project and, therefore, are incorporated by reference into this addendum.

This addendum relies on the use of an Environmental Checklist Form (Checklist), as suggested in Section 15063(d)(3) of the CEQA Guidelines.

1.3 Summary of Findings

Based upon the Checklist prepared for the refined Project and supporting responses (Section 3), implementation of the refined Project would not result in substantial changes requiring major revisions to the EIR. Further, the refined Project would not result in any environmental impacts that have not already been addressed in the EIR, and no new mitigation measures are required for the refined Project. Since only minor additions and clarifications are required to the EIR, and none of the conditions described in Public Resources Code Section 21166 or CEQA Guideline 15162 requiring preparation of a subsequent EIR or negative declaration have occurred, SBCTA finds that the preparation of an addendum to the EIR is appropriate and consistent with Public Resources Code Section 21166 and CEQA Guidelines section 15162.

1.4 Lead Agency and Discretionary Approvals

This addendum, as revised, and the previously adopted EIR are intended to serve as the environmental documentation for the design refinements being proposed under the refined Project. SBCTA is the lead agency under CEQA and maintains authority to approve the addendum.

2 Description of Refined Project

2.1 Introduction

The approved Project will facilitate passenger rail operations along an approximately 9-mile corridor extending east from the City of San Bernardino to the City of Redlands. The approved Project will include both local and express train service. Local service would occur via five station stops: E Street and Tippecanoe Avenue¹ located in the City of San Bernardino; and New York Street, Orange Street (Downtown Redlands) and University Street (University of Redlands) located in the City of Redlands. Metrolink express service would be limited to downtown Redlands and E Street. Components approved as part of the Project include replacement of the existing railroad tracks and ties, reconstruction or rehabilitation of existing bridge structures, and construction of station platforms and train layover facility. The EIR also analyzed auxiliary improvements such as parking, at-grade roadway crossings, pedestrian access, and new and relocated utilities, including water, sewer, storm drain, power, gas, fiber optic, and telephone lines.

2.2 Project Location

The refined Project encompasses the same general Study Area as described for the approved Project in Section 2.3, which extends along existing railroad right-of-way (ROW) owned by SBCTA between the cities of San Bernardino and Redlands, San Bernardino County, California (see Attachment A, Figure 1). The proposed refinement to the approved Project would be constructed in the south-central portion of San Bernardino, south of Central Avenue, north of Orange Show Road, and west of Waterman Avenue. The proposed drainage connection would extend from an existing culvert in SBCTA's existing right-of-way (ROW) at mile post (MP) 59.35² on the east to the Twin Creek Channel on the west.

2.3 Description of Refined Project

SBCTA is proposing the replacement of an existing wooden box culvert at MP 59.35 in SBCTA's ROW with a new reinforced concrete box (RCB) culvert as part of the approved Project's final design. Historically and as documented in the Section 3.8 and Appendix J1, Existing Drainage Conditions Memo of the Final EIR, drainage runoff along the corridor from MP 59 to 59.5 flows east to west (and southwest) and towards Twin Creek. More locally and as illustrated in Figure 2 of Attachment A, runoff from an approximately 26.5-acre drainage area is funneled west through the existing culvert and towards Twin

¹ SBCTA has considered the environmental effects of relocating the station stop at Waterman Avenue, as proposed in the Final EIR, to Tippecanoe Avenue. Addendum #1 to the EIR provides an assessment of the station relocation to Tippecanoe Avenue, as considered as part of the Preferred Alternative in the EIR.

² MP 2.63, as described previously in the Final EIR and Addendum, refers to the Redlands Subdivision mileposts. Metrolink has since assumed maintenance of way responsibility and has integrated the project corridor into Metrolink's San Gabriel Subdivision. MP 59.35 is the integrated milepost reference (previously MP 2.63).

Creek. Based on a reconnaissance of the railroad (and culvert) during the approved Project's final design, the existing culvert was observed to be partially obstructed and in need of maintenance. The replacement of the existing culvert was a component of the approved Project that was contemplated and considered as part of the Final EIR.

Following more detailed drainage analysis during the approved Project's final design, SBCTA has determined that replacement of the existing culvert will require corresponding drainage improvements to the west of SBCTA's ROW in order to maintain and improve the functional hydraulic grade between the railroad and Twin Creek. SBCTA had previously approved a design for the Twin Creek side drain connection (Figure 3 in Attachment A). Since SBCTA's approval of the refined Project, the City of San Bernardino has approved a new development between SBCTA's right-of-way and Twin Creek. This new development would interfere with the planned drainage infrastructure connecting SBCTA's RCB to a new side drain at Twin Creek, thus requiring the refinements described in Addendum 7. Figure 4 in Attachment A, illustrates the updated project footprint for the proposed culvert replacement (DS-8), supporting drainage interconnection (drainage system designed by others), and side-drain connection at Twin Creek (DS-9A). Each of these improvements is discussed in more detail below.

Culvert Replacement (DS-8): SBCTA is proposing the replacement of an existing, wooden-box culvert with a new, 3-foot by 6-foot RCB that will extend approximately 28 linear feet (LF) at a slope of 0.358 (to the west). The RCB would feed into a new storm drain system constructed as part of a new commercial development. The new underground storm drain system would cross South Washington Avenue connecting the culvert replacement with a junction structure (see Figure 4 in Attachment A) before converging with Twin Creek.

Side-Drain Connection (DS-9A): SBCTA is proposing the installation of a new side-drain connection at the western end of the storm drain system contemplated for the Washington Commerce Center East and West projects prior to the confluence with Twin Creek. The storm drain system would be connected to the proposed side-drain connection through three, 36 inch reinforced concrete pipes (RCP). The RCPs would extend 91.88 linear feet (LF) underneath an access road located on the eastern bank of Twin Creek at a slope of 0.003. The RCPs would discharge into the Twin Creek Channel at a 45 degree angle downstream. A new headwall with wingwalls would be constructed immediately after the RCP. One-fourth ton concreted rock slope protection would be installed at the outlet of the RCP and embedded into the channel slope to minimize the potential for scour. The limits of grading would extend approximately 47 linear feet after the RSP. Twin Creek is an Army Corps of Engineers (USACE) constructed facility, which is maintained and operated by the San Bernardino County Flood Control District. As a result, the proposed side drain connection is subject to the USACE's authorization under the Rivers and Harbors Act.

2.4 Status of Currently Approved Project

SBCTA has completed the 100 percent plans and specifications for the approved Project. Construction of the approved Project is phased into four major construction contracts: (1) E Street Demolition; (2 and 3) Early Utilities in San Bernardino and Redlands; (4) and Mainline Construction. The E Street Demolition work is now complete. Early utility relocations in San Bernardino and Redlands will conclude in early 2019. Construction of the mainline track improvements, including station platforms, is scheduled to start in 2019 and extend into 2021.

3 Environmental Analysis Checklist

The following Environmental Analysis Checklist (Checklist) (Table 1) was developed for projects with previously certified/approved environmental documents. This Checklist takes into consideration the preparation of an environmental document prepared at an earlier stage of a project (e.g. RPRP), evaluates the adequacy of the earlier document in assessing potential environmental impacts resulting from refinements proposed to the approved Project, and is consistent with Section 21166 of the Public Resources Code and Section 15162 of the CEQA Guidelines. The results of this evaluation are summarized below with the detailed analysis provided in subsequent sections.

Table 1. Environmental Analysis Checklist Summary

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
1. Aesthetics (Table 2)	Yes	No	No	No
2. Agriculture and Forestry Resources (Table 3)	Yes	No	No	No
3. Air Quality (Table 4)	Yes	No	No	No
4. Biological Resources (Table 5)	Yes	No	No	No
5. Cultural Resources (Table 6)	Yes	No	No	No
6. Geology/Soils (Table 7)	Yes	No	No	No
7. Greenhouse Gas Emissions (Table 8)	Yes	No	No	No
8. Hazards and Hazardous Materials (Table 9)	Yes	No	No	No
9. Hydrology and Water Quality (Table 10)	Yes	No	No	No
10. Land Use and Planning (Table 11)	Yes	No	No	No
11. Mineral Resources (Table 12)	Yes	No	No	No
12. Noise (Table 13)	Yes	No	No	No
13. Population and Housing (Table 14)	Yes	No	No	No
14. Public Services (Table 15)	Yes	No	No	No
15. Recreation (Table 16)	Yes	No	No	No
16. Transportation/Traffic (Table 17)	Yes	No	No	No
17. Utilities and Service Systems (Table 18)	Yes	No	No	No

Table 1. Environmental Analysis Checklist Summary

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
18. Mandatory Findings (Table 19)	Yes	No	No	No
Note: See preceding checklist sections for detailed discussion of each environmental issue area.				

Table 2. Aesthetics

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Have a substantial adverse effect on a scenic vista?	Yes	No	No	No
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	Yes	No	No	No
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Yes	No	No	No
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as analyzed in Addendum No. 3. The refined Project would remain located within generally urbanized areas. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the Mitigation Measures VQA-1, VQA-2, VQA-3 and VQA-5 adopted as a part of SBCTA’s MMRP in the Final EIR would remain applicable. In this context the refined Project would not result in new or substantially more severe impacts to aesthetics and no new mitigation measures would be required.

Table 3. Agricultural Resources

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Yes	No	No	No
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Yes	No	No	No
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Yes	No	No	No
d) Result in the loss of forest land or conversion of forest land to non-forest use?	Yes	No	No	No
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. The refined Project would remain within land categorized as “Urban and Built Up”. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA’s MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to agricultural resources and no new mitigation measures would be required.

Table 4. Air Quality

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	Yes	No	No	No
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Yes	No	No	No
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	Yes	No	No	No
d) Expose sensitive receptors to substantial pollutant concentrations?	Yes	No	No	No
e) Create objectionable odors affecting a substantial number of people?	Yes	No	No	No

Table 4. Air Quality

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Construction activities would remain similar to the refined Project as described in the previously approved Addendum No. 3 and Final EIR. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA’s MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to air quality and no new mitigation measures would be required.

Since the adoption of the Final EIR, there have been no substantial changes to the air quality environment as described in Section 3.5, Air Quality and Climate Change, and Appendix G of the Final EIR. The EIR identified that the approved Project would generate short-term construction emissions due to construction activities that include drainage improvements. The refined Project would require additional construction activities associated with the installation of the RCP and side-drain connection at Twin Creek. These impacts were determined to be less than significant based on detailed air quality modeling completed in support of the EIR and included in Appendix G. The refined Project features would require similar construction activities of comparable duration and intensity as described for the approved Project and analyzed in the EIR. In this context, the construction of the refined Project features would not result in a substantial increase in construction activities and related emissions as analyzed in the EIR. As a result, the refined Project would not result in new or substantially more severe construction-related air quality impacts and no mitigation would be required.

Similar to the approved Project, the refined Project does not include any new trip-generating uses that would generate additional traffic on area roadways; therefore, no corresponding increase in operational air emissions would occur. Likewise, the refined Project operations would remain similar to that as described in the EIR; therefore, comparable operational emissions would result over the long-term. As a result, the refined Project would not result in new or substantially more severe operational air quality impacts and no new mitigation would be required.

Table 5. Biological Resources

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Yes	No	No	No
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Yes	No	No	No
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Yes	No	No	No
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	Yes	No	No	No
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Yes	No	No	No
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Yes	No	No	No

Table 5. Biological Resources

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection previously analyzed in Addendum No. 3. At Twin Creek, the refined Project would be extended into a small linear area mapped as non-vegetated channel. These areas include State and Federal jurisdictional areas beyond the limits of those identified in the 2013 Preliminary Jurisdictional Determination (PJD). Similar to the approved Project, compliance with Mitigation Measure BIO-6 would be required to minimize these direct impacts to a less than significant level.</p> <p>Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Attachment B includes a delineation of the State and Federal jurisdictional areas that would be directly and indirectly impacted by the refined Project. Approximately 1,894 square feet of CDFW jurisdictional unvegetated streambed would be permanently impacted. An additional 2,937 sf would be temporarily impacted for construction. CDFW streambed consisting of non-native grassland and unvegetated streambed habitats would be directly impacted by construction of the proposed drainage connection. Indirect impacts would mainly come in the form of indirect water quality impacts resulting from construction activities. These impacts are consistent with impacts identified in the previously approved Addendum No. 3 and Final EIR. Based on the conclusions of the revised biological letter report contained in Attachment B, no new or more severe biological resources impacts would occur as a result of the refined Project features. All mitigation measures adopted as part of SBCTA’s MMRP, including Mitigation Measures BIO-1, BIO-3, BIO-4, BIO-5, and BIO-6, would continue to apply to the refined Project features, as applicable, and potential impacts to biological resources would be mitigated to a less than significant level. No new mitigation would be required.</p>				

Table 6. Cultural Resources

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Yes	No	No	No
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Yes	No	No	No
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Yes	No	No	No
d) Disturb any human remains, including those interred outside of formal cemeteries?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Attachment C provides a record search and analysis of impacts resulting from the implementation of the refined Project. There have been no historical or archaeological resources identified within or adjacent to the areas identified for the refined Project improvements. However, there is ground disturbing work associated with the proposed design refinement and the possibility exists for the discovery of unanticipated archaeological resources. The recommendation of Mitigation Measures CUL-4 to implement specific measures immediately following an unanticipated discovery remains unchanged and consistent with the Final EIR

Overall, the refined Project would not be considered to have a significant impact to historical or archaeological resources under CEQA. The updated cultural resources analysis confirms that the proposed engineering refinements to the approved Project do not change the previous conclusions regarding cultural resources. No new or more severe cultural resources impacts would occur and Mitigation Measures CUL-1, CUL-3, and CUL-4 as contained in SBCTA's MMRP for the approved Project would continue to apply the refined Project features. There would be no changes required to the prior Cultural Resources Technical Memorandum (Appendix M of the Final EIR). No new mitigation is required.

Table 7. Geology and Soils

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	Yes	No	No	No
j) Strong seismic ground shaking?	Yes	No	No	No
k) Seismic-related ground failure, including liquefaction?	Yes	No	No	No
l) Landslides?	Yes	No	No	No
b) Result in substantial soil erosion or the loss of topsoil?	Yes	No	No	No
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Yes	No	No	No
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Yes	No	No	No
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Yes	No	No	No

Table 7. Geology and Soils

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Similar to the approved Project, the refined Project features would be required to be in conformance with applicable seismic standards in the Uniform Building Code and Mitigation Measure GEO-1 as contained in SBCTA's MMRP. No new or more severe geological impacts would occur and the proposed mitigation would continue to apply to the refined Project. No new mitigation would be required. Also, the mitigation measures outlined in the Final EIR would remain applicable.

Table 8. Greenhouse Gas Emissions

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have an adverse effect on the environment?	Yes	No	No	No
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Yes	No	No	No
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA’s MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe greenhouse gas emission impacts and no new mitigation measures would be required.</p>				

Table 9. Hazards and Hazardous Materials

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Yes	No	No	No
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	Yes	No	No	No
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	Yes	No	No	No
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Yes	No	No	No
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Yes	No	No	No
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	Yes	No	No	No
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Yes	No	No	No

Table 9. Hazards and Hazardous Materials

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Yes	No	No	No
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as analyzed in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, and HAZ-6 adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe hazards and hazardous material impacts and no new mitigation measures would be required.</p>				

Table 10. Hydrology and Water Quality

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	Yes	No	No	No
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Yes	No	No	No
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	Yes	No	No	No
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	Yes	No	No	No
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Yes	No	No	No
f) Otherwise substantially degrade water quality?	Yes	No	No	No
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	Yes	No	No	No
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	Yes	No	No	No

Table 10. Hydrology and Water Quality

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	Yes	No	No	No
j) Inundation by seiche, tsunami, or mudflow?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. This analysis below considers the effects to existing hydrology and channel hydraulics based on the revised design, which include input from the local flood control district and the U. S. Army Corps of Engineers (USACE).

Mitigation Measure HWQ-1 of the Final EIR requires the development of a drainage plan for all structural facilities within RPRP, including design specifications for infiltration facilities that provide sufficient temporary storage capacity to attenuate runoff to pre-project conditions. As a result of the implementation of MM HWQ-1, Refinement 3 contemplated the replacement of the culvert at MP 59.35 and the installation of supporting conveyance improvements to improve drainage west of the railroad. Consistent with Mitigation Measure HWQ-1, Refinement 3 as revised under the refined Project would integrate with new development to provide a suitable drainage system for flows from the culvert replacement to the Twin Creek Channel. As a result, no new drainage impact would result.

Similar to the approved Project, the refined Project is also required to comply with Mitigation Measure HWQ-6 (Post-Construction BMPs), which require sufficient outlet protection at new or reconstructed drainage outlets. Based on the grading required to facilitate placement of rip-rap downstream of the proposed side drain connection and corresponding increase in channel roughness, updated HEC-RAS modeling for Twin Creek as provided in Attachment D indicates a minor increase in the water surface elevation (WSE) during the 100-year flood event. Based on the conservative modeling results, the rise in WSE would be approximately 0.02 feet above the existing WSE (995.59 feet). This rise in WSE would extend approximately 3,400 feet upstream at which point WSEs would match existing conditions. Given the negligible rise in the post-project WSE combined with SBCTA's pursuit of a 408 permission for the side drain connection, which will require compliance with all permit conditions, this impact is considered less than significant. Additionally, since the rise in WSE would diminish shortly downstream of the new connection, this impact would not be cumulatively considerable.

All mitigation measures adopted as part of SBCTA's MMRP for the approved Project, including Mitigation Measures HWQ-1, HWQ-2, HWQ-3, HWQ-4, HWQ-5, and HWQ-6 would continue to apply to the refined Project, as applicable. The refined Project would not result in substantially more severe impacts to hydrology and water quality and no new mitigation measures would be required.

Table 11. Land Use and Planning

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Physically divide an established community?	Yes	No	No	No
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Yes	No	No	No
c) Conflict with any applicable habitat conservation plan or natural communities' conservation plan?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to land use and planning and no new mitigation measures would be required.

Table 12. Mineral Resources

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	Yes	No	No	No
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Yes	No	No	No
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as analyzed in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to mineral resources and no new mitigation measures would be required.</p>				

Table 13. Noise

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Yes	No	No	No
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Yes	No	No	No
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Yes	No	No	No
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Yes	No	No	No
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Yes	No	No	No
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	Yes	No	No	No
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Based on this context, no new or more severe noise impacts would occur as a result of the Refined Project. Mitigation Measures NV-1, NV-2, NV-3, NV-5, NV-6, and NV-7 as contained in SBCTA’s MMRP for the approved Project would continue to apply to the refined Project. No new mitigation measures would be required.</p>				

Table 14. Population and Housing

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	Yes	No	No	No
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	Yes	No	No	No
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to population and housing and no new mitigation measures would be required.

Table 15. Public Services

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire Protection?	Yes	No	No	No
b) Police Protection?	Yes	No	No	No
c) Schools?	Yes	No	No	No
d) Parks?	Yes	No	No	No
e) Other public facilities?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to public services and no new mitigation measures would be required.

Table 16. Recreation

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Yes	No	No	No
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	Yes	No	No	No
<p>Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA’s MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe recreation impacts and no new mitigation measures would be required.</p>				

Table 17. Transportation/Traffic

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Yes	No	No	No
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Yes	No	No	No
c) Result in a change in air traffic patterns, including either an increase in traffic levels or change in location that result in substantial safety risks?	Yes	No	No	No
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Yes	No	No	No
e) Result in inadequate emergency access?	Yes	No	No	No
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Yes	No	No	No

Table 17. Transportation/Traffic

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as analyzed in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Based on this context, no new or more severe traffic impacts would occur as a result of the refined Project features. Mitigation Measures TR-1, TR-2, TR-3, TR-4, and TR-5 as contained in SBCTA’s MMRP would continue to apply to the refined Project. No new mitigation measures would be required.

Table 18. Utilities and Service Systems

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
---------------------------	---	--	---	---

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Yes	No	No	No
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Yes	No	No	No
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Yes	No	No	No
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Yes	No	No	No
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Yes	No	No	No
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Yes	No	No	No
g) Comply with federal, state, and local statutes and regulations related to solid waste?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Impacts associated with the Twin Creek side drain connection would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Also, the mitigation measures adopted as a part of SBCTA's MMRP in the Final EIR would remain applicable. The refined Project would not result in new or substantially more severe impacts to utilities and service systems and no new mitigation measures would be required.

Table 19. Mandatory Findings

Environmental Issue Area:	Was Impact Analyzed in Prior Environmental Document(s)?	Do Project Modifications Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Requiring New Analysis or Verification?
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	Yes	No	No	No
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	Yes	No	No	No
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	Yes	No	No	No

Discussion: The refined Project under Refinement 3 would relocate the Twin Creek side drain connection approximately 300 feet south of the previously contemplated side drain connection as considered in Addendum No. 3. Cumulative impacts to Twin Creek would be similar to those analyzed in the previously approved Addendum No. 3 and Final EIR. Similar to the approved Project, the refined Project would be required to comply with mitigation requirements relating to traffic, noise, hydrology and water quality, and vibration. With mitigation and compliance with local permit conditions and USACE criteria, hydrological impacts would be minimized to a less than significant level for the refined Project features. Based on the absence of any downstream impacts to existing WSEs for the 100-year event, the refined Project would not result in any new cumulatively considerable impacts.

As discussed in the Biological and Cultural Resources Sections, the refined Project features would not create new or more severe impacts when compared to the approved Project. With the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, and BIO-6, the refined Project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Similar to the approved Project, the refined Project would not eliminate important examples of the major periods of California history or prehistory through compliance with Mitigation Measures CUL-1, CUL-3, and CUL-4.

Mitigation measures adopted by SBCTA for the approved Project would be effective in minimizing adverse environmental effects on human beings. Therefore, the refined Project would not result in substantially more severe cumulative impacts and no new mitigation measures would be required.

Environmental Determination

Based upon the evidence in light of the whole record documented in the attached environmental checklist explanation, cited incorporations and attachments, I find that the Project:

- Has previously been analyzed** as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. The proposed project is a component of the whole action analyzed in the previously adopted/certified CEQA document.
- Has previously been analyzed** as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. **Minor additions and/or clarifications** are needed to make the previous documentation adequate to cover the project which are documented in this addendum to the earlier CEQA document (CEQA §15164).
- Has previously been analyzed** as part of an earlier CEQA document (which either mitigated the project or adopted impacts pursuant to findings) adopted/certified pursuant to State and County CEQA Guidelines. However, there is important new information and/or **substantial changes have occurred** requiring the preparation of an additional CEQA document (ND or EIR) pursuant to CEQA Guidelines Sections 15162 through 15163.

Signed: _____

4 Mitigation Measures

A listing of applicable mitigation measures for the Redlands Passenger Rail Project is included in Appendix Q of the final EIR. All mitigation measures adopted as part of SBCTA's MMRP for the Project would continue to apply following the approval of the proposed Project. SBCTA, as the CEQA lead agency, is responsible for adopting and implementing the approved mitigation.

This page is intentionally blank.

Attachment A. Figures

Attachment A – Figures

Figure 1. Regional Location

Figure 2. Local Watershed Area

Figure 3. Twin Creek Side Drain Connection: Revised Footprint

Figure 4. Twin Creek Side Drain Connection: Updated January 18, 2019

Figure 1. Regional Location



LEGEND


 RPRP Project Limits



Figure 2. Local Watershed Area

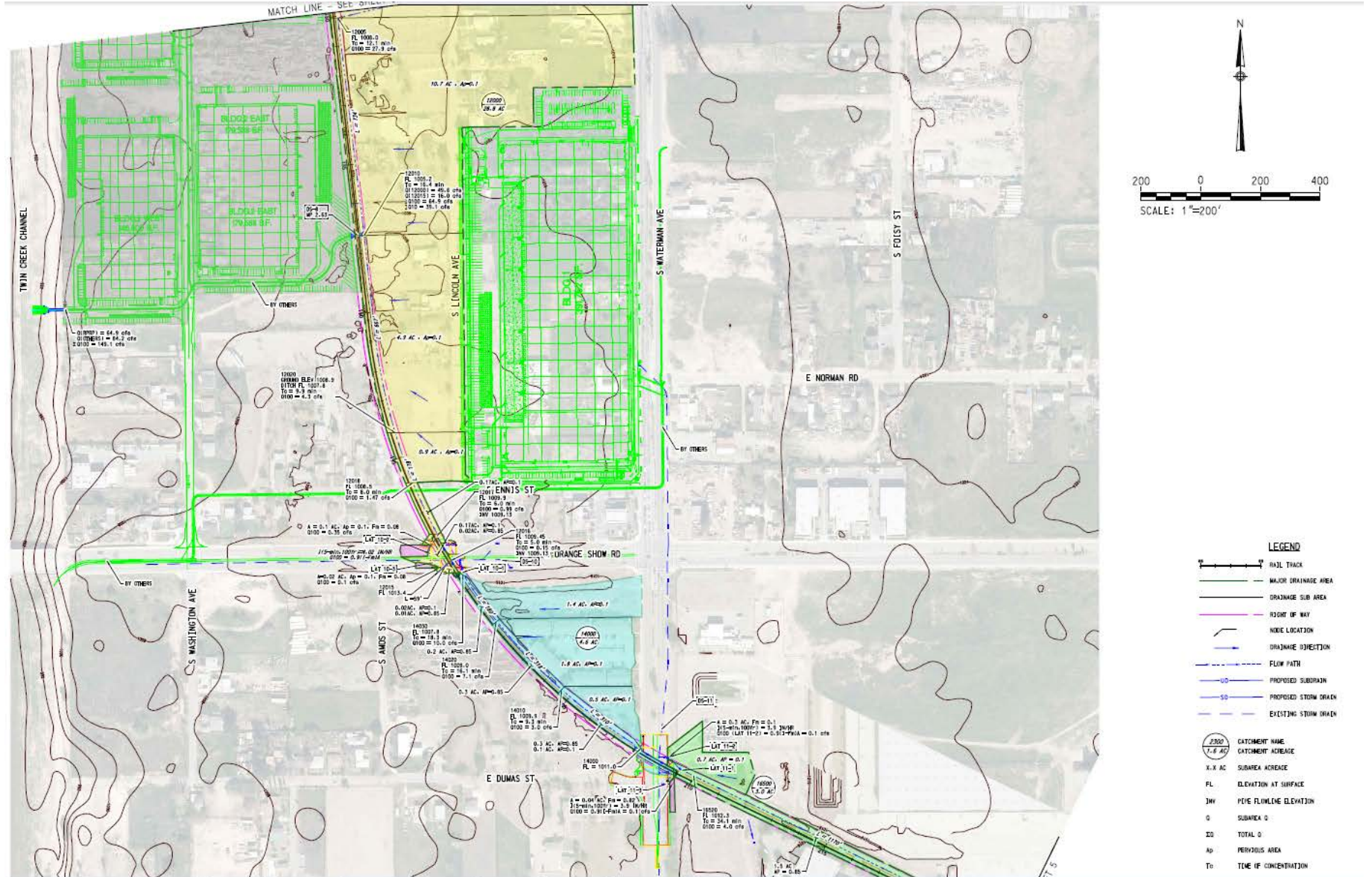


Figure 3. Twin Creek Side Drain Connection: Revised Footprint



- LEGEND
- Approved LPA (2015)
 - Perm
 - Temp
 - Drainage System By Others

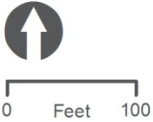







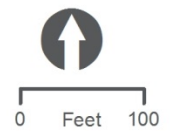


Figure 4. Twin Creek Side Drain Connection: Updated January 18, 2019



LEGEND

-  Approved Project Footprint
-  Drainage System By Others
-  Proposed Twin Creek Drainage
-  Disturbed Habitat
-  Non-native Grassland
-  Urban/Developed
-  CDFW Jurisdiction



Attachment B. Biology Resources Letter Report (Revised)

Memo

Date: Friday, January 18, 2019

Project: Redlands Passenger Rail Project – Revised Twin Creek Side Drain Connection

To: Andres Ramirez, P.M.P. Chief of Transit and Rail

From: Ingrid Eich, HDR Engineering, Inc.

Subject: Biological Letter Supporting the Revised Twin Creek Side Drain Connection for the Redlands Passenger Rail Project

1.0 Introduction

This biological memo addresses a refinement to the Redlands Passenger Rail Project (RPRP or approved Project) that has occurred since the certification of the Final Environmental Impact Report (EIR) on March 4, 2015. Specifically, this memo addresses a new drainage connection to Twin Creek that would extend west from the approved Project (near mile post [MP] 59.35¹). As previously analyzed in the EIR, improvements to existing drainage facilities would be necessary along the railroad corridor as part of the Project; including the replacement of existing culverts.

Since SBCTA's original addendum, the City of San Bernardino has approved new development for intervening areas between the railroad and Twin Creek. This new development will result in a new storm drain system that extends south on Washington Street. This new drainage infrastructure will render SBCTA's prior drainage conveyance ditch infeasible and the corresponding side drain location. In response to this new development, SBCTA is proposing to interconnect with this new drainage infrastructure and relocate the proposed side drain connection to a location approximately 300 feet south. The focus of this revised letter is on the relocated side drain within Twin Creek and not the new storm drain system being constructed by a private entity that will dedicate the drainage system to San Bernardino.

HDR biologist Sarah Barrera, conducted a biological survey of the area for the proposed drainage improvement on December 11, 2018. The proposed improvement extends just west of the original survey area covered in the Biological Technical Report (BTR) that was prepared in conjunction with the approved Project and included in Appendix of the Final EIR. The BTR included a review of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB) Rarefind program and California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California for special-status species with potential to occur in the vicinity of the approved Project. The CNDDDB, and CNPS record search results are found in the RPRP BTR (HDR 2015) and is incorporated by reference for the purposes of the memo.

¹ MP 2.63, as described in previously, refers to Metrolink's Redlands Subdivision, which has since been integrated into Metrolink's San Gabriel Subdivision. MP 59.35 is the integrated milepost reference.



The USFWS on-line Critical Habitat Mapper was used to determine potential for federally-designated critical habitat to overlay the proposed drainage improvement. Additional resources used to characterize existing site conditions included: USFWS National Wetland Inventory (NWI) dataset, Natural Resource Conservation Service (NRCS) Soil Mapping (HDR 2015), and aerial imagery available on Google Earth (www.google.com/earth).

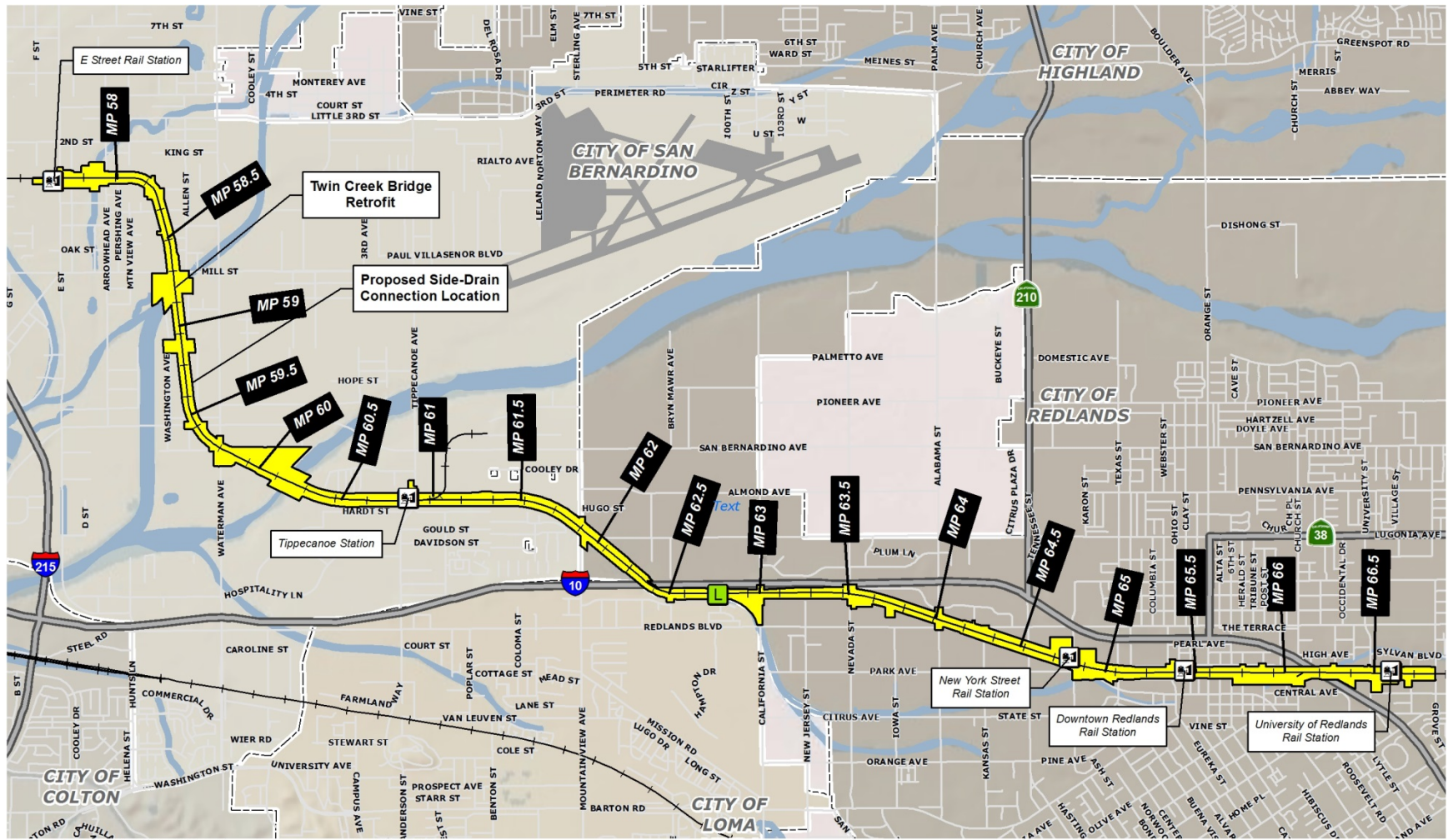
1.1 Project Location

The refined Project improvements encompass the same general Study Area as described for the approved Project, which extends along existing railroad right-of-way (ROW) owned by SBCTA between the cities of San Bernardino and Redlands, San Bernardino County, California (Figure 1). The proposed refinement to the approved Project would be constructed in the south-central portion of San Bernardino, south of Central Avenue on the north, north of Orange Show Road, and west of Waterman Avenue. The proposed side drain connection is located on the east bank of Twin Creek, approximately 1,000 feet southeast from an existing culvert on SBCTA's ROW, mile post (MP) 59.35.

Refined Project

The proposed improvements include the replacement of an existing wooden box culvert with a six foot wide by three foot high reinforced concrete box (RCB) culvert. A new storm drain system contemplated by new development approved by the City of San Bernardino would connect the culvert replacement to three 36" reinforced concrete pipes (RCP) and empty out into the Twin Creek channel at a 45 degree angle downstream. Scour protection will consist of a 22' long, 18' wide and 30" thick riprap pad and 6' deep riprap cutoff wall. Once constructed, drainage patterns within this portion of the railroad corridor would remain similar to existing conditions. Figure 2 illustrates the proposed improvements.

Figure 1. Region and Vicinity Map



G:\Temp\Ronell\130C\StudyAreaOverview.mxd-rsantos-12/17/2018

LEGEND








- RRP Study Area
- Proposed Station
- Proposed Layover

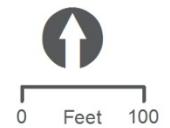


Figure 2. Proposed Drainage Improvements Overlaid on Existing Biological Resources



LEGEND

-  Approved Project Footprint
-  Drainage System By Others
-  Proposed Twin Creek Drainage
-  Disturbed Habitat
-  Non-native Grassland
-  Urban/Developed
-  CDFW Jurisdiction



2.0 Evaluation – Area of Potential Effect

Vegetation was classified using the R.F. Holland system of natural communities as described in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland R.F. 1986). Detailed descriptions of vegetation communities found within the refined Project area can be found in the 2015 BTR (HDR 2015), which is provided as Appendix I of the Final EIR. The refined Project area supports three vegetation communities: disturbed habitat (DH; Holland Code 11300), non-native grassland (NNG; Holland Code 42200) and urban developed (UD; Holland Code 12000) (see Figure 2). In reviewing the CDFW Natural Communities List (CDFW 2010), no sensitive vegetation communities occur within the refined Project area.

Several sensitive botanical and zoological species are known to occur within the vicinity of the RPRP (HDR 2015). Based on the updated survey, the refined Project area supports suitable habitat for the following sensitive species:

- Smooth tarplant (*Centromadia pungens* ssp. *laevis*; CNPS list 1B.1) - low/moderate potential to occur
- Western burrowing owl (*Athene cunicularis hypugaea*; SSC²) - low/moderate potential to occur
- Loggerhead shrike (*Lanius ludovicianus*; SSC) - low/moderate potential to occur
- Migratory Bird Treaty Act (MBTA) protected avian species

Additional information on these species can be found in the RPRP BTR (HDR 2015).

USACE and CDFW Jurisdictional Areas

A narrow band along the center of the creek is mapped as NWI riverine (USFWS 2017). Based on the updated field survey, potential U.S. Army Corps of Engineers (USACE) regulated waters of the U.S. (WoUS) occur along the centerline of the 300 foot wide channel for Twin Creek. Potential WoUS consist of a 40-foot wide, unvegetated, low-flow channel supporting a sandy substrate (Photographs 1-4). Beyond the low-flow channel, a densely vegetated floodplain extends to the edge of the channel. A soil test pit was conducted in the floodplain, and it was determined that the floodplain does not support hydric soils. The floodplain is densely vegetated with non-native grassland dominated by an unidentified annual grass [likely ripgut brome (*Bromus diandrus*) based on data from previous surveys conducted nearby in Twin Creek]. This portion of Twin Creek is regularly mowed/maintained based on a review of aerial photographs from 1994 to 2016³. The outlet and scour protection at Twin Creek do not extend into WoUS which are located almost 150 feet to the west of the proposed outlet (Figure 2).

CDFW unvegetated streambed is mapped to the top of the bank associated with Twin Creek. Within this section of Twin Creek, the creek banks are unvegetated, moderately sloped, and consist of soil and rock riprap (Photographs 1-4).

² SSC- State Species of Concern, CNPS – California Native Plant Society

³ Google Earth imagery dating from 1994 to 2016 shows annual vegetation maintenance throughout the entire Twin Creek floodplain.



Photograph 1. View east towards railroad tracks and proposed connection outfall structure.



Photograph 2. View of bank where proposed connection outfall structure would be located.



Photograph 3. View from center of Twin Creek looking south towards W. Orange Show Road.



Photograph 4: View from center of Twin Creek towards northwest, showing low flow channel surrounded by non-native grassland.

2.1 Direct Impacts

Sensitive Botanical and Zoological Species

Construction

Addition of the proposed drainage structure has the potential to directly impact suitable habitat for smooth tarplant (NNG and DH), burrowing owl (NNG), loggerhead shrike (NNG) and nesting migratory birds (NNG) (Table 1).



Table 1: Summary of Impacts to Vegetation/Land Cover Types

Vegetation/ Land Cover Types	Permanent Impacts (ac)	Temporary Impacts (ac)
Disturbed	0.02	0.07
Developed	0.01	0.03
Non-Native Grassland	0.04	0.07
Total	0.07	0.17

Potential impacts to smooth tarplant, burrowing owl, loggerhead shrike and nesting migratory birds are consistent with impacts identified in the EIR for the approved Project and would be less than significant after application of Mitigation Measures **BIO-1, BIO3, BIO-4 and BIO-5**, as identified in SBCTA’s adopted Mitigation Monitoring and Reporting Program (MMRP) and included as Attachment A.

Operation

No direct impacts would result following construction of the drainage improvements. Similar to existing conditions, future operation and maintenance activities would be conducted by the County Flood Control District, including mowing. Long-term impacts would be less than significant.

USACE and CDFW Jurisdictional Areas

Construction of the proposed side-drain structure would not directly impact potential USACE WoUS (Figure 2). Approximately 1,894 square feet (sf) of CDFW jurisdictional unvegetated streambed would be permanently impacted. An additional 2,937 sf would be temporarily impacted for construction. CDFW streambed consisting of non-native grassland and unvegetated streambed habitats would be directly impacted by construction of the proposed drainage connection (Figure 2). These impacts are consistent with impacts identified in the EIR for the approved Project and would be less than significant after application of Mitigation Measure BIO-6, as identified in SBCTA’s adopted MMRP as provided in Attachment A.

2.2 Indirect Impacts

Sensitive Botanical and Zoological Species

Construction

Should sensitive botanical or zoological species occur adjacent to the refined Project area, there is the potential to indirectly impact these species during construction. Indirect impacts to sensitive botanical and zoological species and migratory birds would generally be attributed to temporary construction-related dust and water quality effects. For example, hazardous materials leaks, such as fuel, hydraulic fluid, and/or lubricants, from equipment working in or around occupied habitat. In addition, construction-related noise levels have the potential to indirectly impact sensitive zoological species, particularly nesting avian species. These impacts are



consistent with impacts identified in the EIR for the approved Project and would be less than significant after application of Mitigation Measures **BIO-1, BIO-4, BIO-3, BIO-5, HWQ-2** and **HWQ-3** (See Attachment A).

Operation

Similar to existing conditions, Twin Creek would continue to be maintained by the County Flood Control District. No indirect impacts to special-status botanical or zoological species are expected once operational.

USACE and CDFW Jurisdictional Areas

Construction

Similar to the approved Project, the proposed improvement could indirectly impact USACE WoUS and CDFW unvegetated streambed. Indirect impacts would mainly come in the form of indirect water quality impacts resulting from construction activities. Pollutants of concern for jurisdictional areas include erosion of soil materials and corresponding increases in sedimentation and the discharge of hazardous materials or debris from construction equipment. These impacts are consistent with impacts identified in the EIR for the approved Project and would be less than significant after application of Mitigation Measures BIO-6, HWQ-2, and HWQ-3 as identified in the MMRP (see Attachment A).

Operation

Similar to the approved Project, once constructed the Project facilities would be subject to routine maintenance, which would be subject to standardized O&M practices in compliance with Mitigation Measures HWQ-6 (see Attachment A). Therefore, no indirect impacts to biological resources from adverse water quality discharges would be less than significant.

3.0 References

- CDFW 2012. California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency, Sacramento. March 7, 2012.
- CDFW 2010. List of Vegetation Alliances and Associations. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. September 2010.
- HDR 2015. HDR Engineering. Revised Biological Technical Report for the Redlands Passenger Rail Project. Prepared January 2015.
- Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, Nongame-Heritage Program. 156p (amended).
- USFWS 2010. U. S. Fish and Wildlife Service. Publication date 2010. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>

Attachment C. Cultural Resources Letter Report (Revised)



December 18, 2018

Andres Ramirez
San Bernardino County Transportation Authority
1170 W. 3rd Street, 2nd Floor
San Bernardino, CA 92410-1715

Re: Cultural Resources Survey for the Redlands Passenger Rail Project - Twin Creek Bridge and Side-Drain Connection, City of San Bernardino, San Bernardino County, California

Dear Mr. Ramirez,

This letter report delivers the results of a cultural resources survey that HDR provided for San Bernardino County Transportation Authority's (SBCTA) proposed Redlands Passenger Rail Project - Twin Creek Bridge and Side-Drain Connection located in the City of San Bernardino, San Bernardino County, California (Figures 1 and 2).

Since the adoption of the Final EIR, there have been no substantial changes to the existing environmental conditions for historic architectural and archaeological resources as described in Section 3.12, Cultural and Historic Resources, and Appendix M of the Final EIR. A portion of the refined Project is located within the previously analyzed approved Project footprint and area of potential effect (APE). Those features that would extend beyond the previously analyzed footprint (and APE), including the side-drain connection (revised APE) discussed in this report, would be constructed in previously disturbed urbanized locations (e.g., developed lots, roadways, etc.).

SBCTA requested an archaeological survey to identify any cultural resources within the revised project APE that may be impacted by the proposed project. The project consists of the replacement of an existing wooden box culvert at Mile Post 59.35 in SBCTA's right-of way (ROW) with a new reinforced concrete box (RCB) culvert, and a side-drain connection at Twin Creek. The project is located approximately 260 meters north of the intersection of West Orange Show Road and South Washington Avenue, between the railroad ROW at the east and Twin Creek at the west. The existing wooden box culvert would be replaced with a new 3-by-6 foot RCB that will extend approximately 28 linear feet at a slope of 0.358 (to the west). A new headwall would be constructed at the eastern end of the RCB culvert. A headwall with warped wingwalls would be constructed at the western end of the culvert, and will feed into a new storm drain system (designed by others) that will be constructed as part of a new commercial development. The new underground storm drain system would cross South Washington Avenue, connecting the RCB culvert with a junction structure before intersecting Twin Creek. At the western end of the storm drain system, a new side-drain connection would be installed. The storm drain system would be connected to the proposed side-drain connection through three 36-inch reinforced concrete pipes (RCP). The RCPs would extend approximately 92 linear feet underneath a dirt access road located on the eastern bank of Twin Creek at a slope of 0.003 and would discharge into the Twin Creek Channel at a 45 degree angle downstream. A new headwall with wingwalls would be constructed immediately after the RCP. One-fourth-ton concremented Rock Slope Protection (RSP) would be installed at the outlet of the RCP and embedded into the channel slope to minimize scour. The limits of grading would extend approximately 47 linear feet after the RSP. Construction activities would include excavation,



shoring, and installation of the RCB, RCP, and RSP. Installation of the RCB and side-drain connection would require up to 15 feet of excavation to enable gravity flow into Twin Creek.

On July 27, 2017, HDR archaeologist Ben Volta visited the South Central Coastal Information Center to perform a record search of all archaeological and historical resources within 0.25 mile of the revised project APE. The record search indicated that one cultural resource has been previously recorded within 0.25 mile of the revised APE (Figure 3). P-36-17668 is an historic residence built in 1938. It is located at 1176 Amos Avenue on the south side of East Orange Show Avenue, approximately 360 meters southeast of the APE. A review of historical aerial photographs from 1938 to 2012 was also completed (NETR 2017).

On August 9, 2017, HDR archaeologists Michael Connolly and Ben Volta conducted a survey of the project area. The revised APE includes the project footprint (measuring approximately 65 feet east-west by 50 feet north-south for the culvert [0.07 acres]; 120 feet east-west by 60 feet north-south for the side-drain connection [0.16 acres]), as well as a 50-foot survey area around the footprint. The eastern portion of the APE is within the SBCTA ROW. It is bordered by vacant lots and residential and commercial properties (Photographs 1 and 2). The western portion of the APE mostly overlaps a dirt access road. It is bordered by Twin Creek to the west and vacant lots to the east (Photographs 3 and 4). The topography of the revised APE is flat, and the area has been disturbed by grading to create house and commercial lots. Soils within the APE range from 10YR 7/3 very pale brown coarse grain sand to 10YR 4/4 dark yellowish brown silt with inclusions of gravel and construction debris. Vegetation was dominated by non-native grasses and Russian thistle (*Salsola australis*).

During the 2017 pedestrian survey, no artifacts, ecofacts, features, historic structures, midden soils, or other evidence of cultural resources were identified. Subsequently, the location of the western portion of the APE (side-drain connection) was shifted approximately 300 feet south. However, due to the highly disturbed nature of the western portion of the APE (being in an artificial levee) and proximity to the surveyed area, a new survey was deemed unnecessary. The potential for encountering buried cultural resources was considered and is determined to be very low based on the depth of ground disturbance, the highly disturbed nature of the APE, and lack of previously recorded resources. As there are no historic properties as defined by Section 106 of the National Historic Preservation Act [16 U.S.C. § 470w(5)] or historical resources as defined by California Environmental Quality Act (CCR, Title 14(3) § 15064.5[a] [2]) within the APE for this project feature, a determination of No Historic Properties Affected/ No Impact is appropriate and recommended for this project refinement.

Thank you for the opportunity to work on this project. If there are any questions regarding the information provided in this letter or if additional information is needed, please contact me at the HDR San Diego office at (858) 712-8262.

Sincerely,

A handwritten signature in black ink, appearing to read 'Daniel Leonard'.

Daniel Leonard
Staff Archaeologist



DL:ms

References:

Nationwide Environmental Title Research, LLC (NETR)

2017 <http://www.historicaerials.com/>. Aerial Photographs 1938-Current and Topographic Maps 1896-current.

Figure 1. Project area shown on the San Bernardino South USGS 7.5' quadrangle

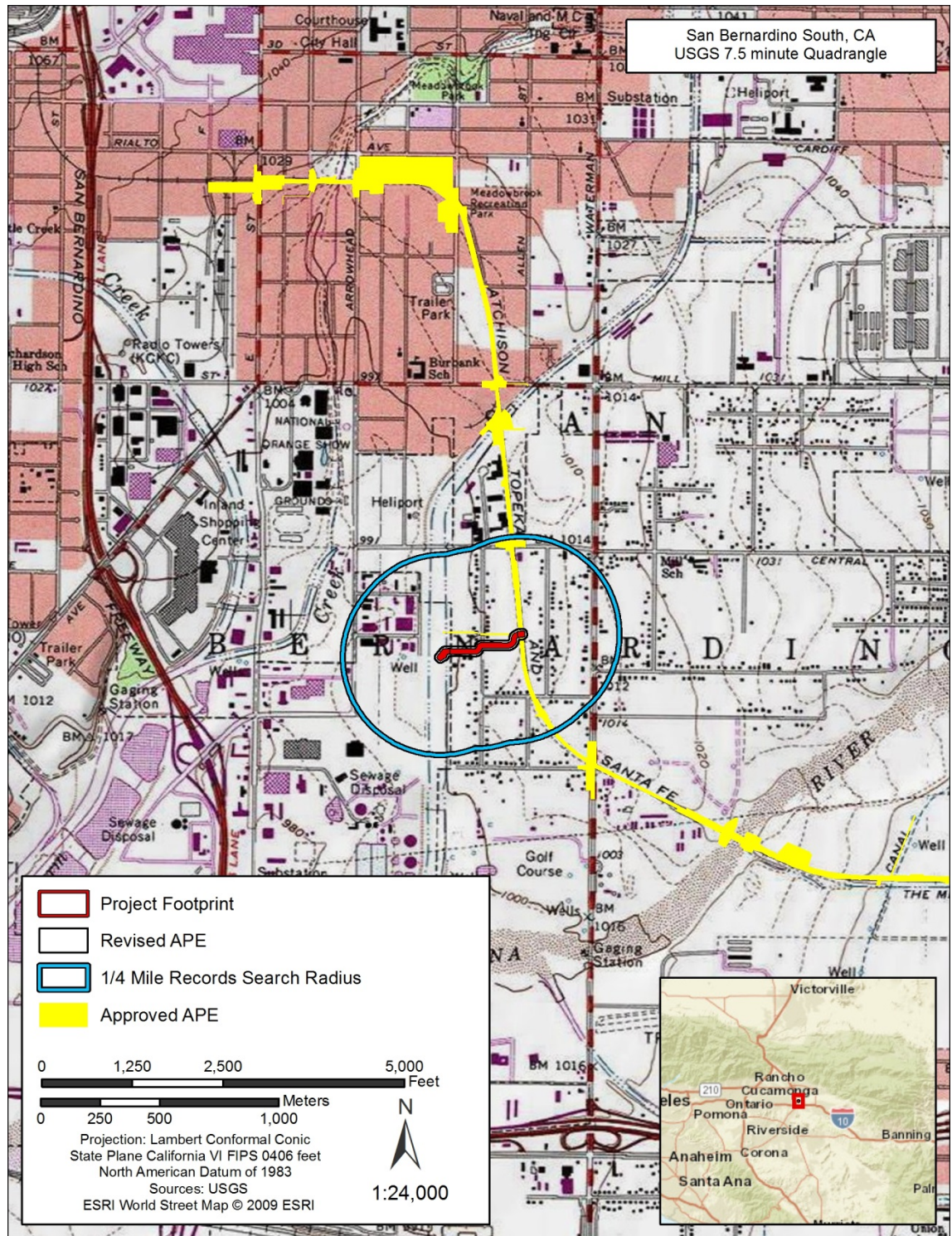


Figure 2. Aerial overview of the project area

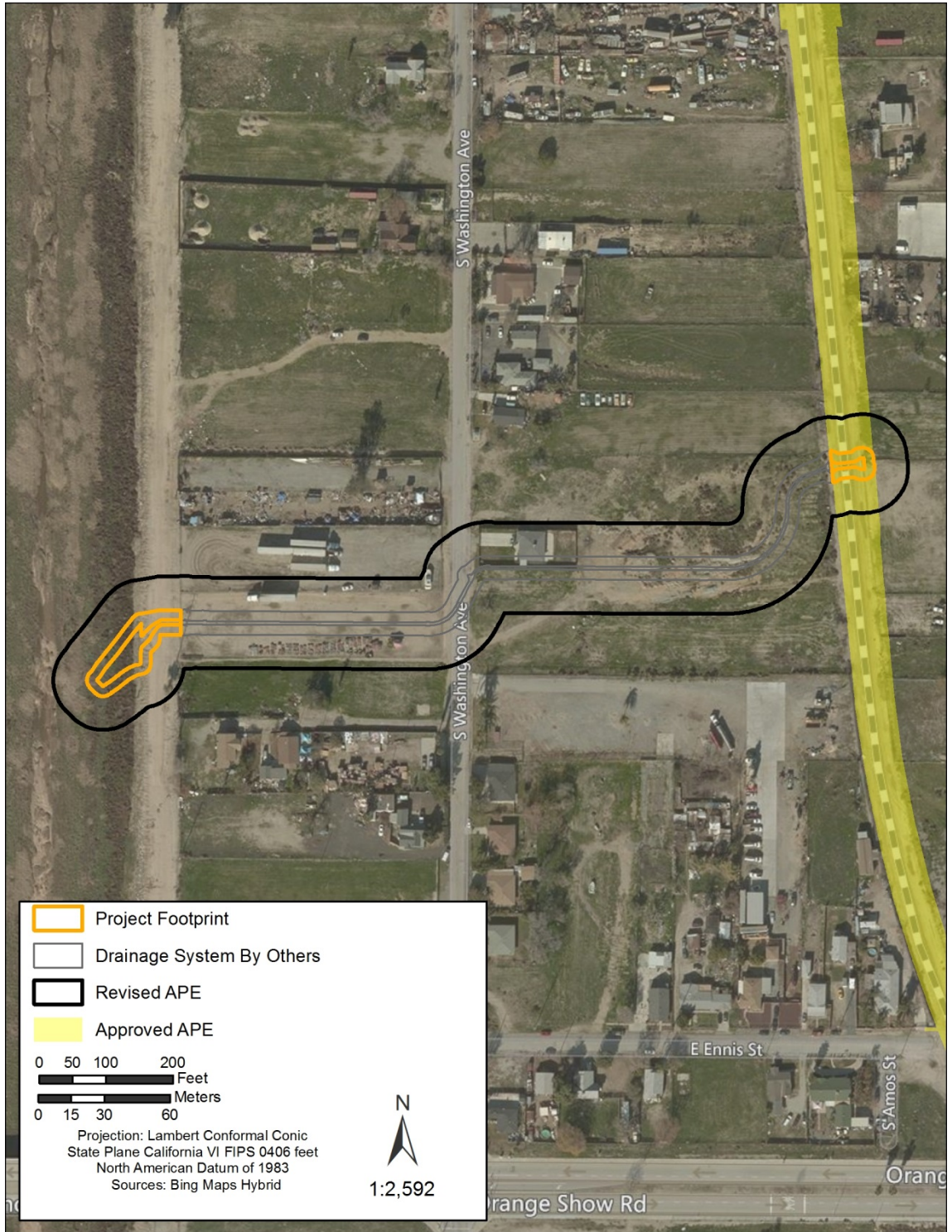
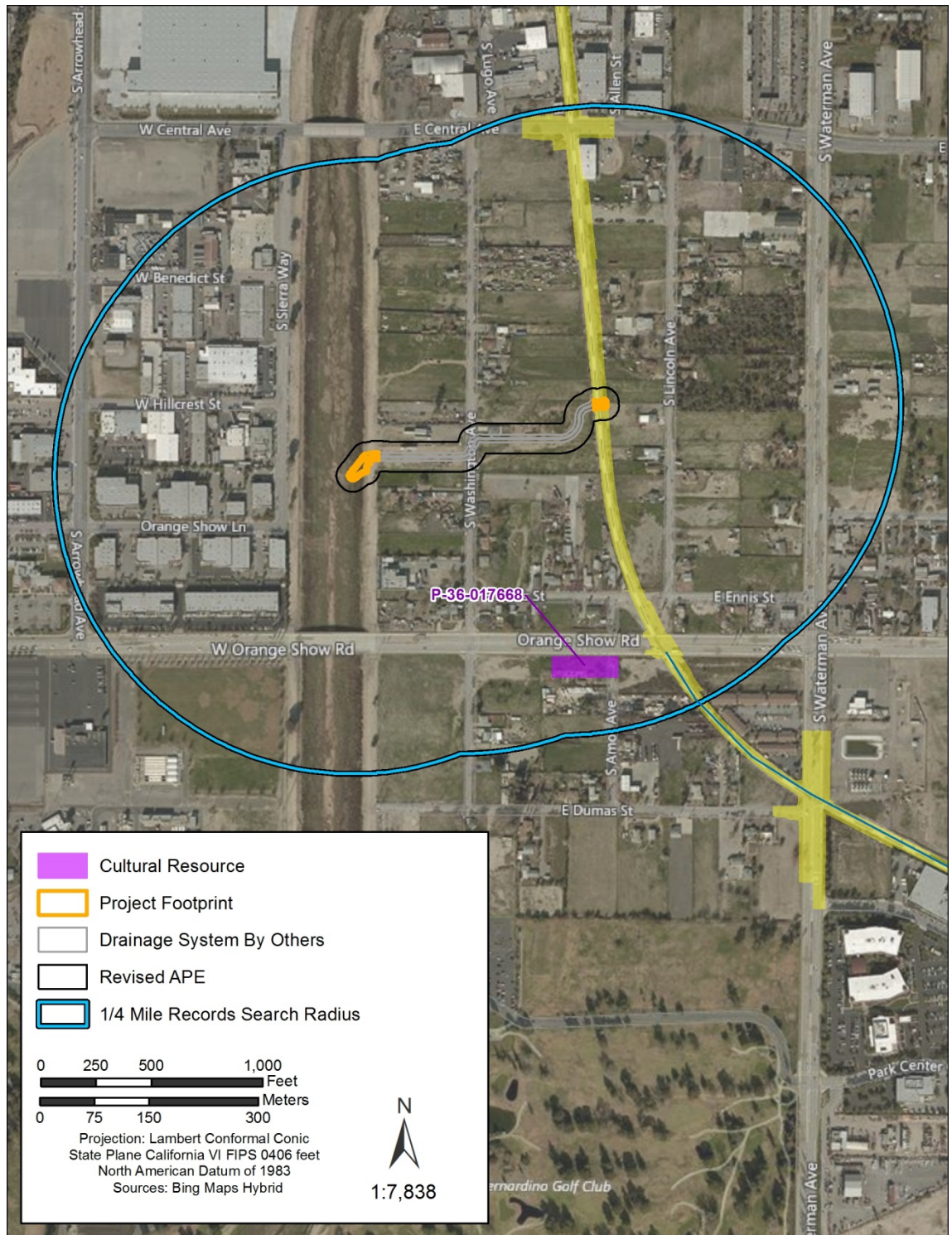


Figure 3. Overview of previously recorded cultural resources and APE



Photograph 1. Overview of eastern portion of revised APE facing west



Photograph 2. Overview of eastern portion of revised APE facing northeast



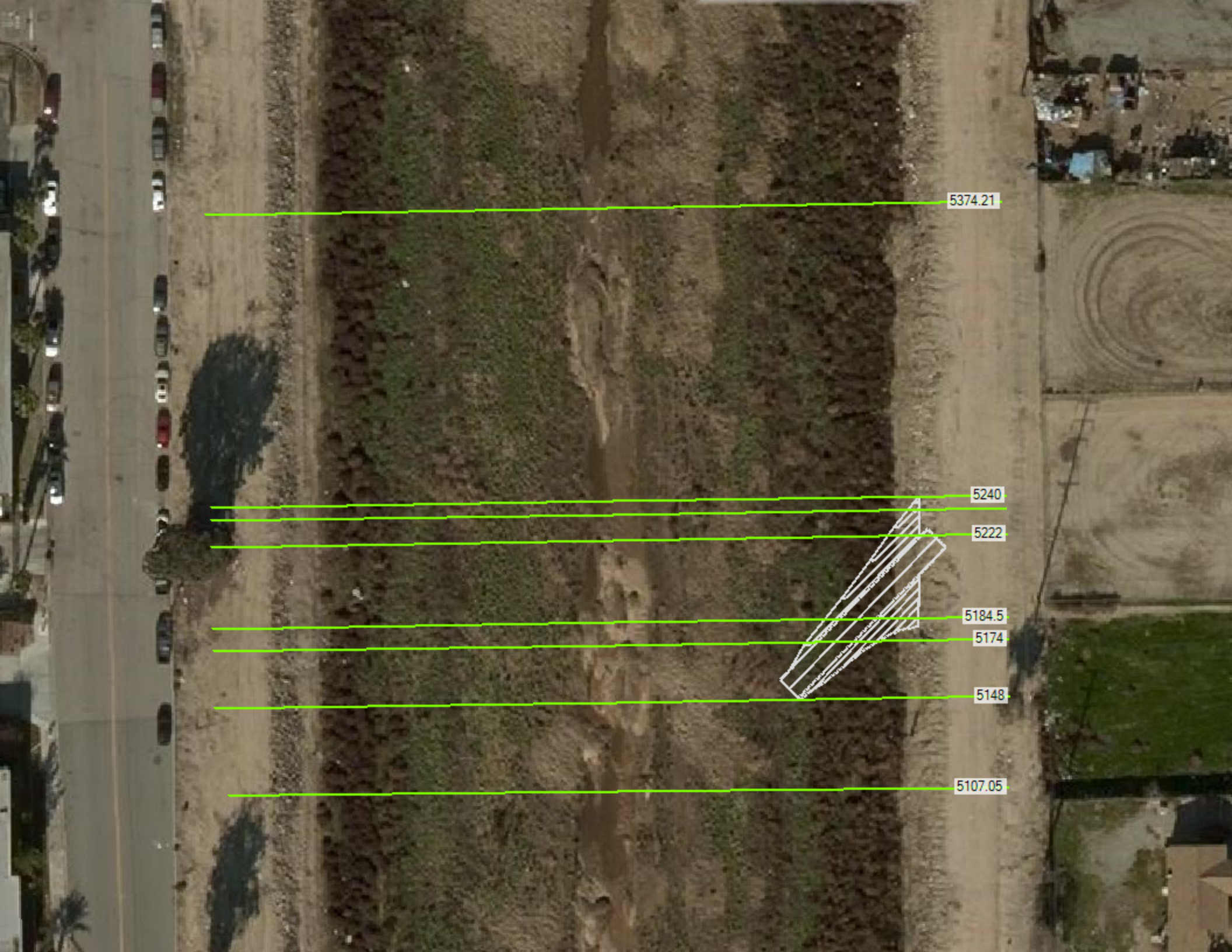
Photograph 3. Overview of western portion of revised APE, facing south



Photograph 4. Overview of western portion of revised APE, facing southwest



Attachment D. HEC-RAS Results



5374.21

5240

5222

5184.5

5174

5148

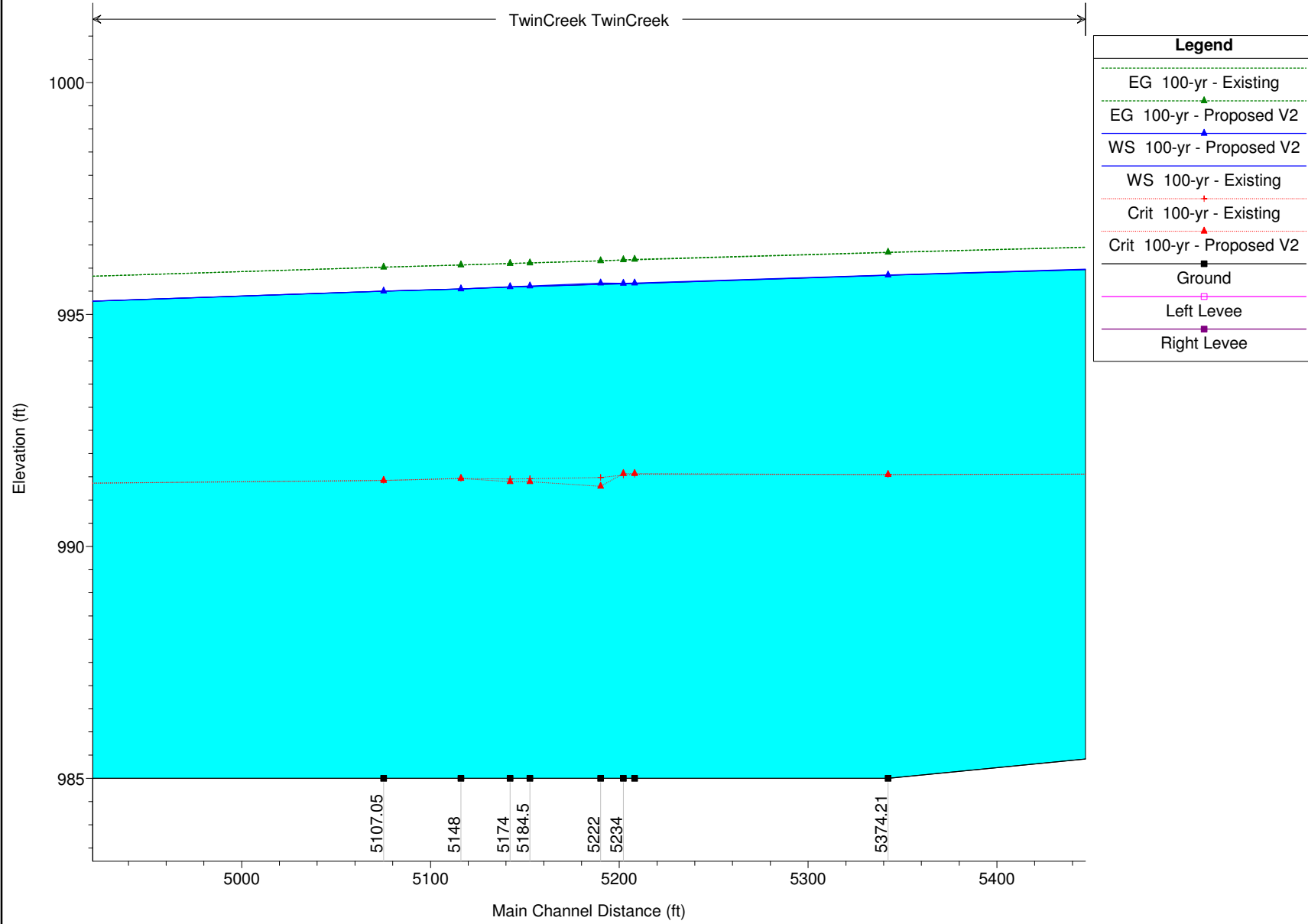
5107.05



Reach	River Sta	Profile	Plan	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
TwinCreek	6793.69	100-yr	Existing	13500.00	987.00	997.29	993.26	997.97	0.001492	6.59	2048.95	251.87	0.41
TwinCreek	6793.69	100-yr	Proposed V2	13500.00	987.00	997.30	993.26	997.97	0.001489	6.58	2050.18	251.89	0.41
TwinCreek	6654.79			Bridge									
TwinCreek	6650.20	100-yr	Existing	13500.00	986.00	997.14	992.87	997.78	0.001342	6.39	2112.65	251.21	0.39
TwinCreek	6650.20	100-yr	Proposed V2	13500.00	986.00	997.15	992.87	997.78	0.001340	6.39	2113.97	251.24	0.39
TwinCreek	6375.71	100-yr	Existing	13500.00	987.00	996.89	992.38	997.41	0.001103	5.77	2341.26	280.60	0.35
TwinCreek	6375.71	100-yr	Proposed V2	13500.00	987.00	996.90	992.38	997.41	0.001101	5.76	2342.92	280.63	0.35
TwinCreek	6130.31	100-yr	Existing	13500.00	986.00	996.68	992.11	997.13	0.000990	5.43	2486.41	300.98	0.33
TwinCreek	6130.31	100-yr	Proposed V2	13500.00	986.00	996.68	992.11	997.14	0.000988	5.43	2488.37	301.01	0.33
TwinCreek	5854.04	100-yr	Existing	13500.00	986.00	996.35	991.84	996.85	0.001079	5.62	2401.77	294.52	0.35
TwinCreek	5854.04	100-yr	Proposed V2	13500.00	986.00	996.36	991.83	996.85	0.001077	5.62	2403.94	294.61	0.35
TwinCreek	5625.02	100-yr	Existing	13500.00	986.00	996.14	991.58	996.60	0.000988	5.43	2484.08	299.66	0.33
TwinCreek	5625.02	100-yr	Proposed V2	13500.00	986.00	996.15	991.58	996.61	0.000985	5.43	2486.49	299.70	0.33
TwinCreek	5374.21	100-yr	Existing	13500.00	985.00	995.84	991.55	996.33	0.001108	5.62	2401.53	299.56	0.35
TwinCreek	5374.21	100-yr	Proposed V2	13500.00	985.00	995.85	991.55	996.34	0.001104	5.62	2404.27	299.61	0.35
TwinCreek	5240	100-yr	Existing	13500.00	985.00	995.67	991.55	996.18	0.001190	5.74	2350.72	299.84	0.36
TwinCreek	5240	100-yr	Proposed V2	13500.00	985.00	995.68	991.57	996.19	0.001185	5.74	2353.70	299.89	0.36
TwinCreek	5234	100-yr	Existing	13500.00	985.00	995.66	991.54	996.17	0.001187	5.74	2351.37	299.56	0.36
TwinCreek	5234	100-yr	Proposed V2	13500.00	985.00	995.67	991.57	996.18	0.001194	5.72	2358.73	299.61	0.36
TwinCreek	5222	100-yr	Existing	13500.00	985.00	995.65	991.49	996.16	0.001167	5.72	2361.99	299.14	0.36
TwinCreek	5222	100-yr	Proposed V2	13500.00	985.00	995.67	991.30	996.16	0.001185	5.56	2426.19	299.27	0.34
TwinCreek	5184.5	100-yr	Existing	13500.00	985.00	995.60	991.46	996.11	0.001172	5.73	2356.77	298.66	0.36
TwinCreek	5184.5	100-yr	Proposed V2	13500.00	985.00	995.61	991.39	996.11	0.001186	5.67	2381.08	298.70	0.35
TwinCreek	5174	100-yr	Existing	13500.00	985.00	995.59	991.45	996.10	0.001166	5.71	2363.55	299.44	0.36
TwinCreek	5174	100-yr	Proposed V2	13500.00	985.00	995.60	991.39	996.10	0.001151	5.69	2372.42	299.46	0.36
TwinCreek	5148	100-yr	Existing	13500.00	985.00	995.55	991.46	996.07	0.001206	5.77	2337.67	298.93	0.36
TwinCreek	5148	100-yr	Proposed V2	13500.00	985.00	995.55	991.46	996.07	0.001206	5.77	2337.67	298.93	0.36
TwinCreek	5107.05	100-yr	Existing	13500.00	985.00	995.50	991.42	996.02	0.001200	5.77	2340.12	298.35	0.36
TwinCreek	5107.05	100-yr	Proposed V2	13500.00	985.00	995.50	991.42	996.02	0.001200	5.77	2340.12	298.35	0.36

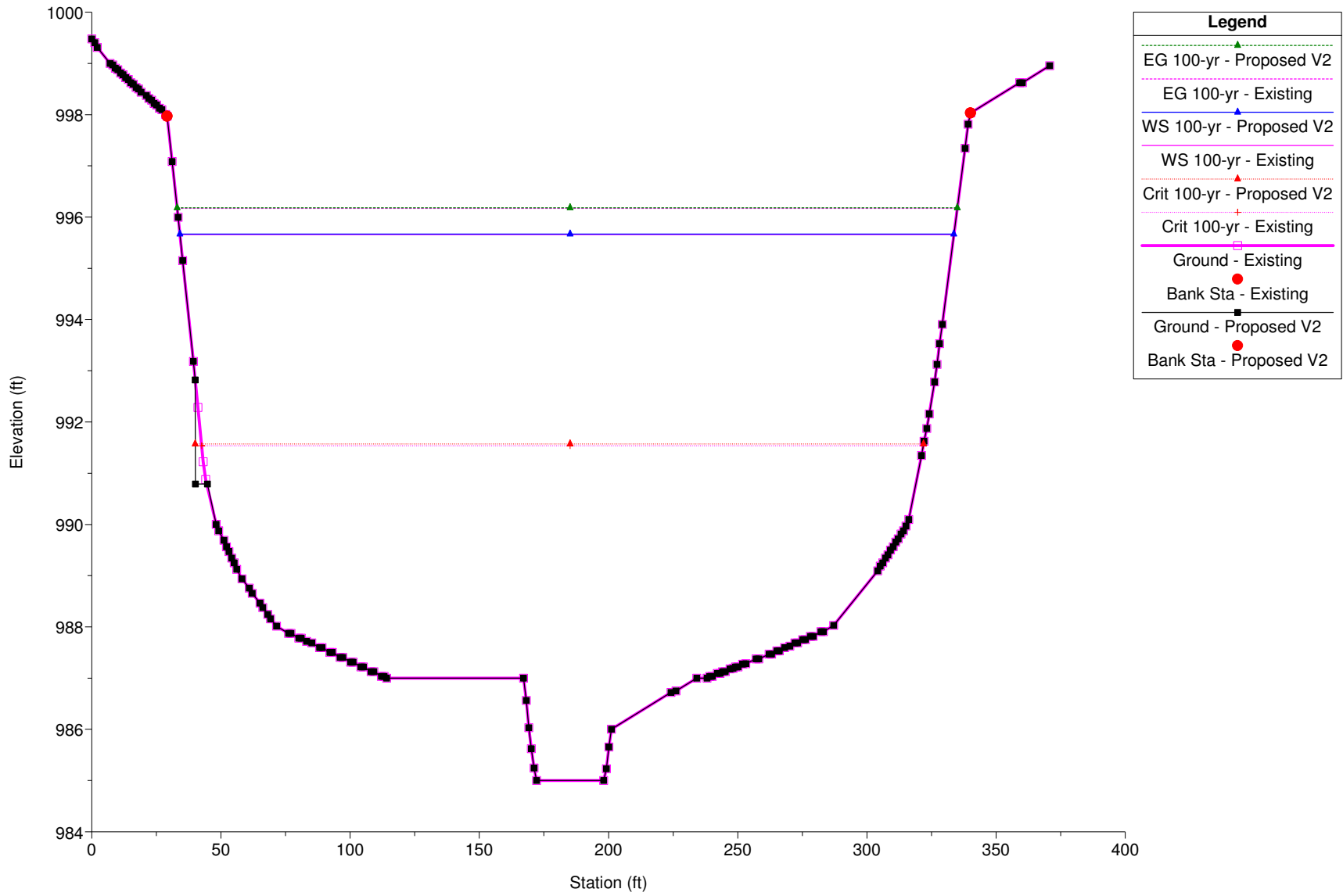
TwinCr_408_2018 Plan: 1) Existing 1/11/2019 2) Proposed V2 1/11/2019

TwinCreek TwinCreek

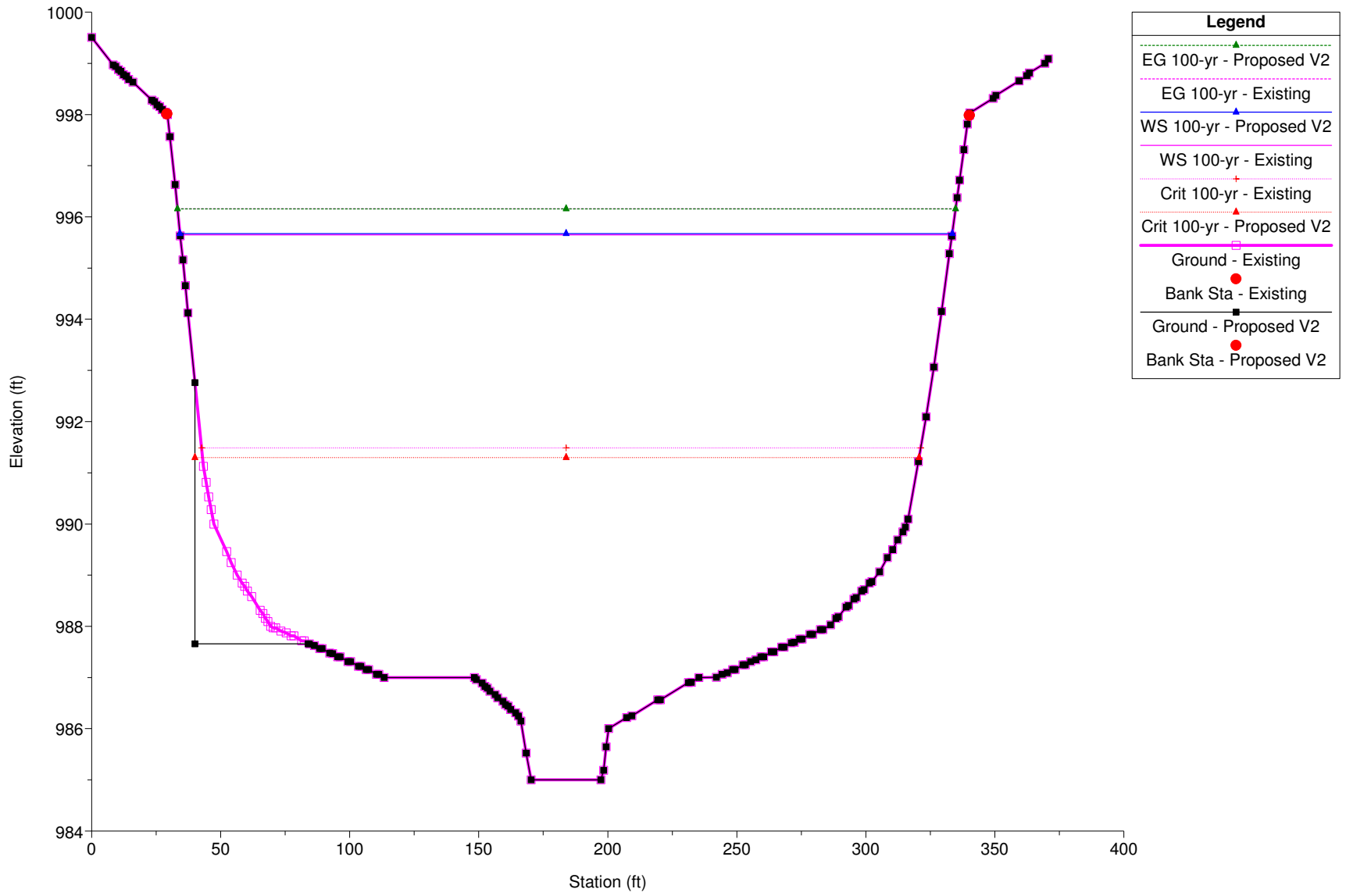


Legend	
EG 100-yr - Existing	▲ (dotted green)
EG 100-yr - Proposed V2	▲ (dotted green)
WS 100-yr - Proposed V2	▲ (solid blue)
WS 100-yr - Existing	▲ (solid blue)
Crit 100-yr - Existing	▲ (dotted red)
Crit 100-yr - Proposed V2	▲ (dotted red)
Ground	■ (black)
Left Levee	— (magenta)
Right Levee	— (purple)

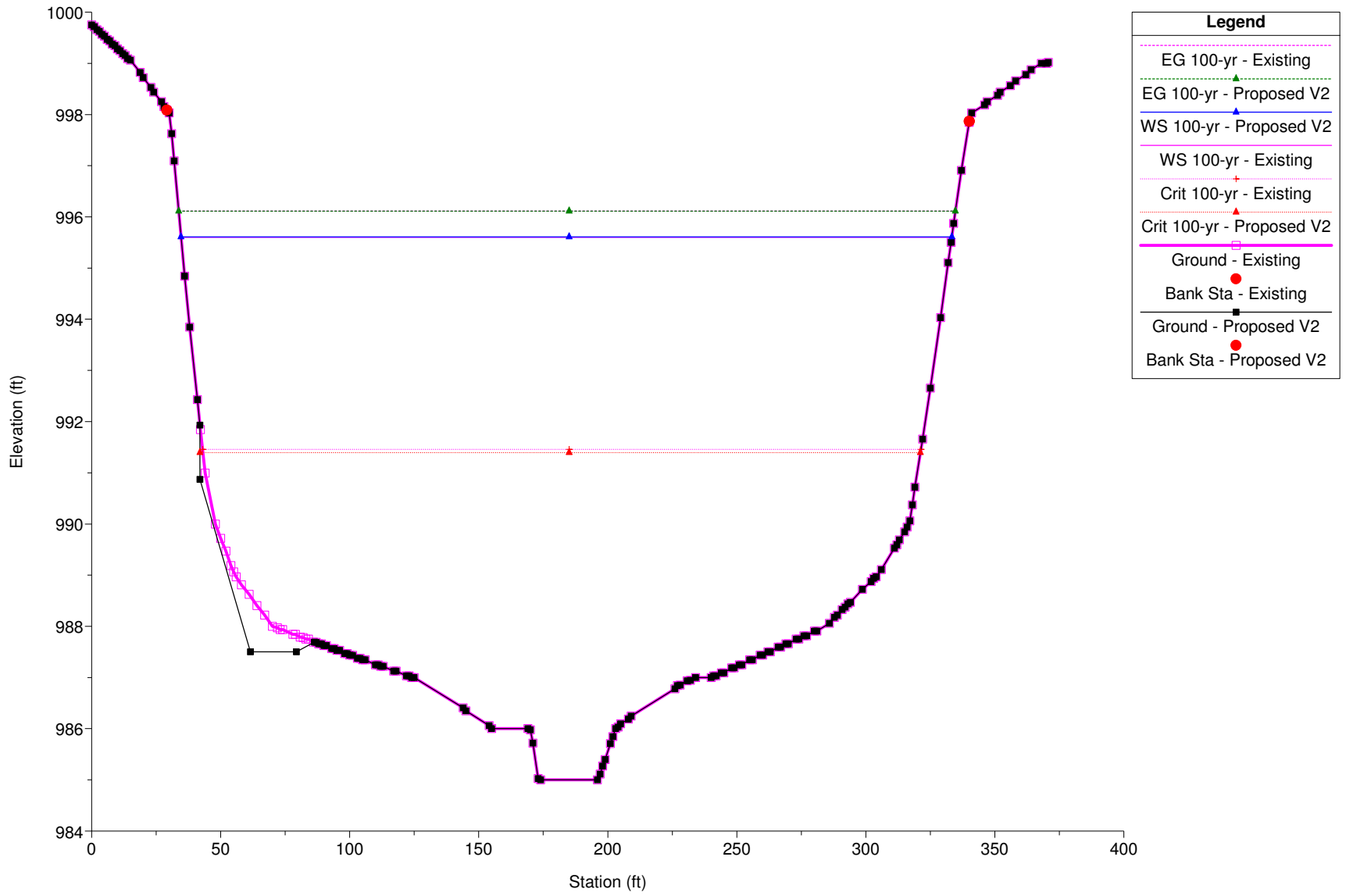
TwinCr_408_2018 Plan: 1) Proposed V2 2) Existing



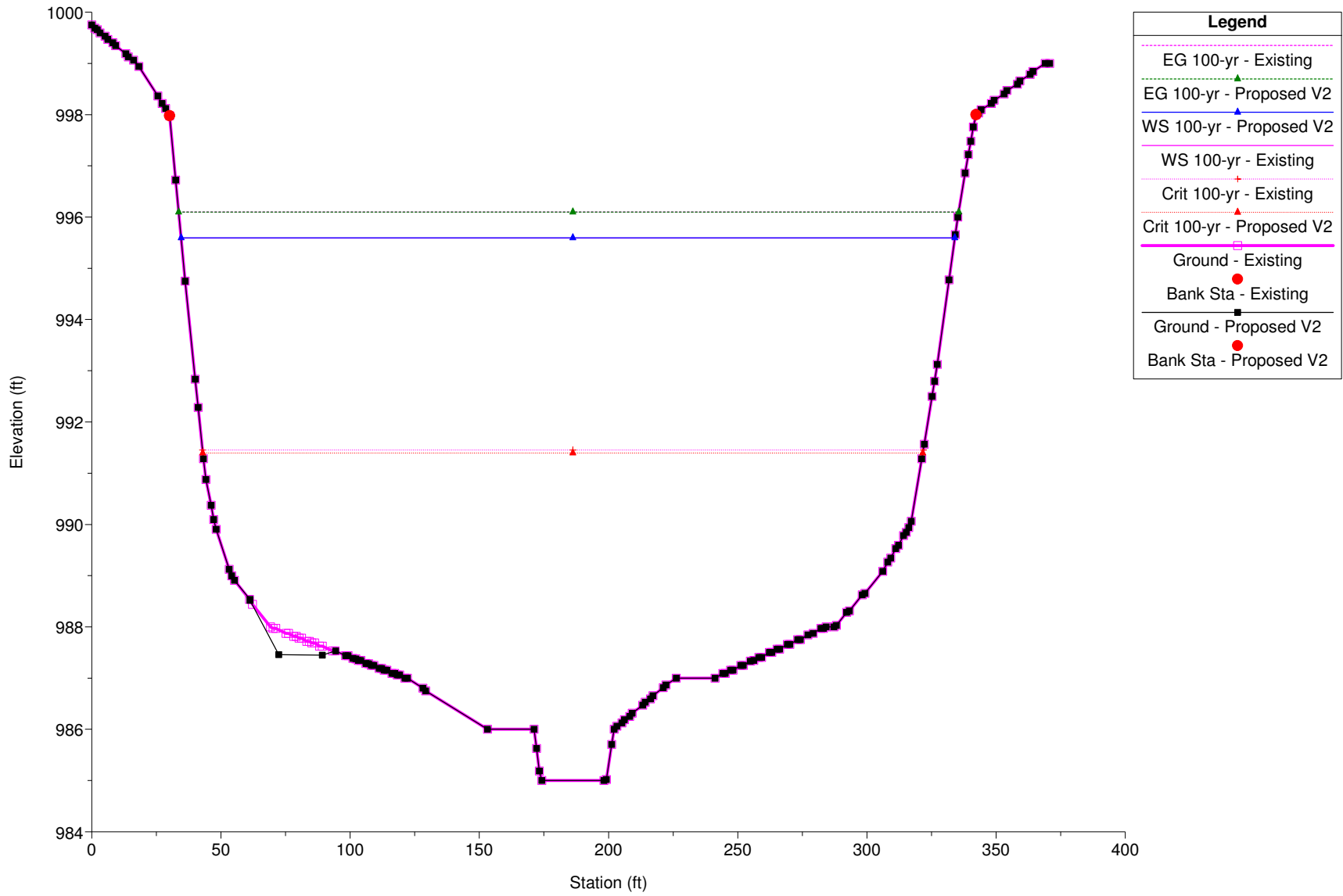
TwinCr_408_2018 Plan: 1) Proposed V2 2) Existing
 Outfall Location



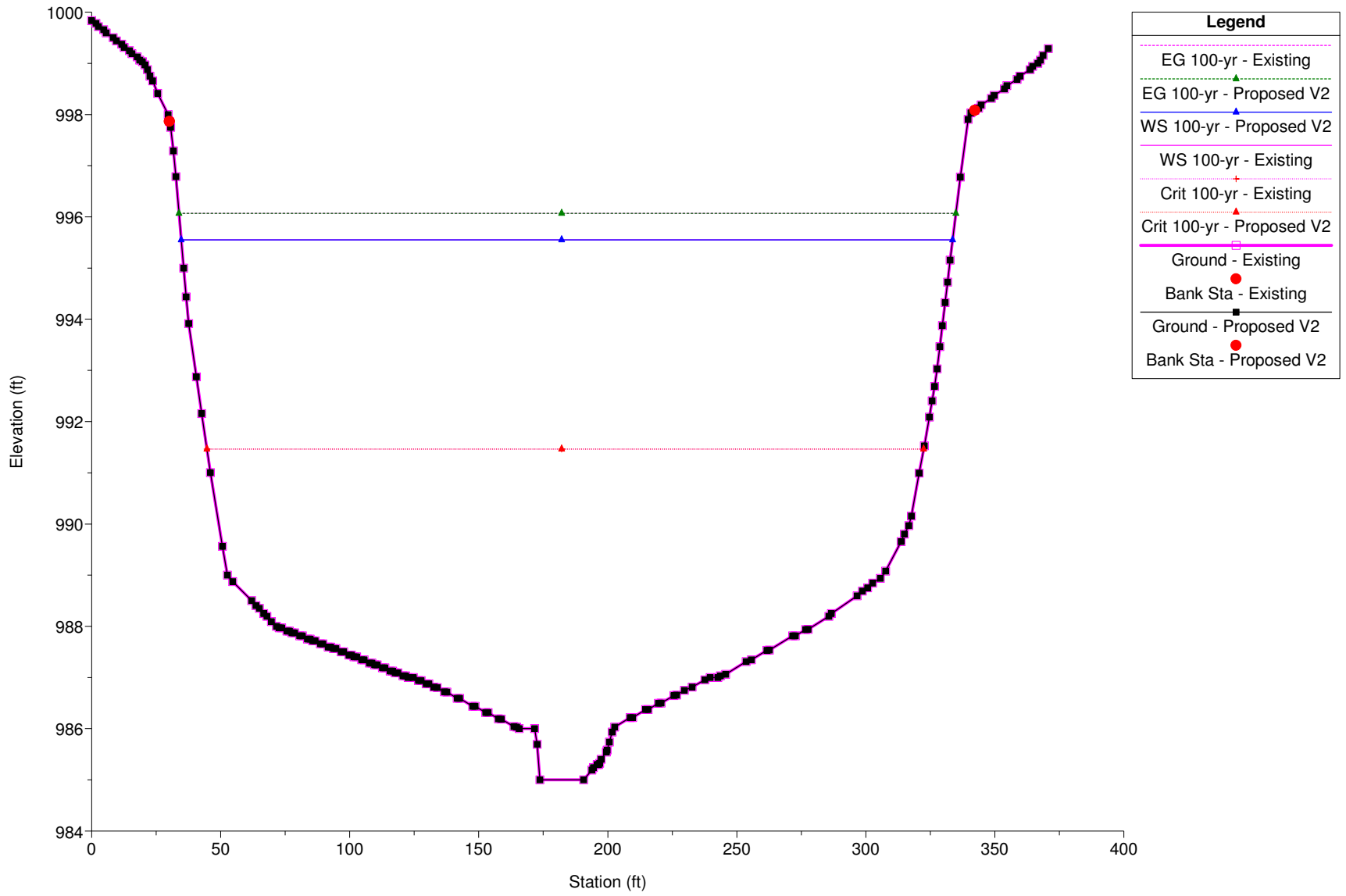
TwinCr_408_2018 Plan: 1) Proposed V2 2) Existing
End Riprap

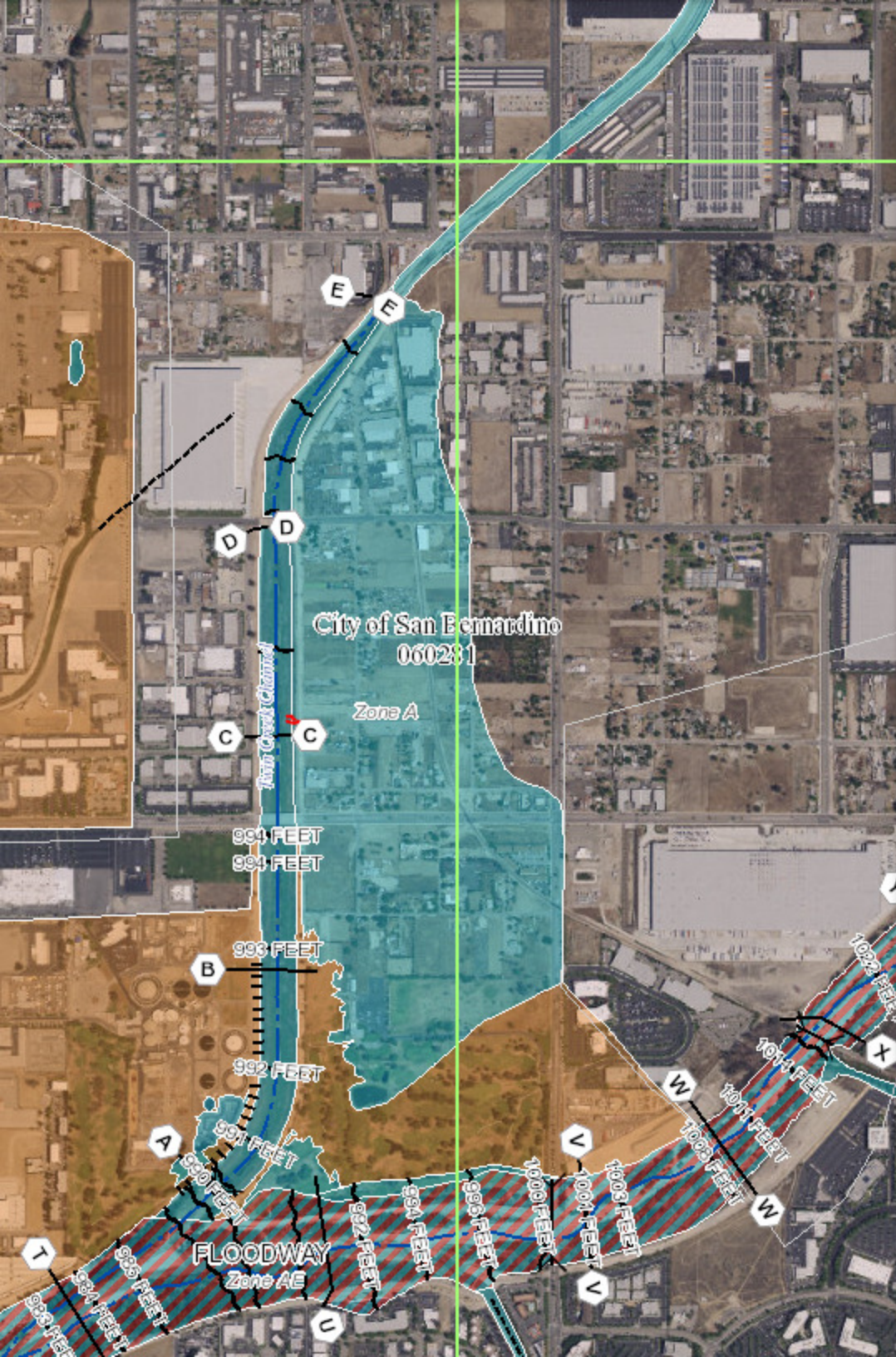


TwinCr_408_2018 Plan: 1) Proposed V2 2) Existing



TwinCr_408_2018 Plan: 1) Proposed V2 2) Existing
End of Grading





Legend ⌆

- Base Flood Elevations
 - ~
- Profile Baselines
 -
- Transect Baselines
 -
- Limit of Moderate Wave Action
 - ▲
- Coastal Barrier Resources System Area
 - ☐
- Political Jurisdictions
 - ☐
- Levees
 - ||
- General Structures
 - Flood Structure
 - ✕ Bridge
 - Dam, Weir, Jetty
 - Other Structure
- Primary Frontal Dunes
 - ▬
- Flood Hazard Boundaries
 - Limit Lines
 - SFHA / Flood Zone Boundary
 - Other Boundaries
- Flood Hazard Zones
 - 1% Annual Chance Flood Hazard
 - ▨ Regulatory Floodway
 - ▨ Special Floodway
 - Area of Undetermined Flood Hazard
 - 0.2% Annual Chance Flood Hazard
 - ▨ Future Conditions 1% Annual Chance Flood Hazard
 - ▨ Area with Reduced Risk Due to Levee