STATE OF CALIFORNIA

CITY OF PLACERVILLE

ENGINEERING DEPARTMENT

SPECIAL PROVISIONS

BOOK 2 OF 2

FOR CONSTRUCTION OF

UPPER BROADWAY BIKE LANES PROJECT
(INCLUDING UPPER BROADWAY PEDESTRIAN CONNECTION)
PROJECT NO. CML – 5015 (027 & 029)
CIP# 41508 and 41582
and
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
CIP# 42004

OCTOBER 2019

For use in Connection with California Department of Transportation, Standard Specifications Dated **2018** and Revised Standard Specifications current as of September 1st, 2019, Caltrans Standard Plans Dated **2018**, City of Placerville Standard Plans, State of California Labor Surcharge and Equipment Rental Rates, and Director of Industrial Relations General Prevailing Wage Rates.

Bids Open: 2:00 PM
November 21st, 2019

Location: City Hall
Engineering Department
3101 Center Street,
3rd Floor
Placerville, CA 95667

CITY OF PLACERVILLE, CALIFORNIA
ENGINEERING DEPARTMENT

UPPER BROADWAY BIKE LANES PROJECT
(INCLUDING UPPER BROADWAY PEDESTRIAN CONNECTION)
PROJECT NO. CML – 5015 (027 & 029)
CIP# 41508
and
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
CIP# 42004

The Special Provisions contained herein have been prepared by or under the direction of the following Registered Persons:

ROADWAY

Registered Professional Engineer (Civil)

STRUCTURAL

Registered Professional Engineer (Structural)

CITY OF PLACERVILLE, CALIFORNIA
ENGINEERING DEPARTMENT

UPPER BROADWAY BIKE LANES PROJECT
(INCLUDING UPPER BROADWAY PEDESTRIAN CONNECTION)
PROJECT NO. CML – 5015 (027 & 029)
CIP# 41508
and
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
CIP# 42004

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ORGANIZATION

Special provisions are under headings that correspond with the main-section headings of the Standard Specifications. A main-section heading is a heading shown in the table of contents of the Standard Specifications.

Each special provision begins with a revision clause that describes or introduces a revision to the Standard Specifications as revised by any revised standard specification.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the Standard Specifications for any other reference to a paragraph of the Standard Specifications.

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DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to section 1-1.01:

The work embraced herein shall be done in accordance with the Standard Specifications of the Department of Transportation dated 2018, hereinafter referred to as the Standard Specifications, and the Standard Plans of the Department of Transportation dated 2018 supplemented by the Revised Standard Plans of the Department of Transportation as of September 1st, 2019, hereinafter referred to as the Standard Plans, insofar as the same may apply and in accordance with the following Special Provisions.

The components of the Contract Documents are intended to supplement each other. In the event of a conflict in the Contract Documents, the following order of precedence will govern interpretation of the Contract:

1. Field instruction or other written directives
2. Addenda
3. Special Provisions
4. Upper Broadway Bike Lanes CIP# 41508 (Including Upper Broadway Pedestrian Connection) Project Plans
5. Upper Broadway Storm Drain Replacement Project CIP# 42004 Project Plans
6. Standard Specifications
7. Standard Plans

Add to section 1-1.07B:

A term not defined in the Contract Documents or Standard Specifications has the meaning defined in Means Illustrated Construction Dictionary, Condensed Version, Second Edition.

Approval of the Contract: Execution of the Contract by the City Council of the City of Placerville.

Caltrans/Department of Transportation: Department of Transportation as defined in the St & Hwy Code § 20 and authorized in St & Hwy Cod § 90; its authorized representatives.

City: The City of Placerville, a municipal corporation of the State of California.

CCTV: Closed-circuit television.

City Council: City Council of the City of Placerville, State of California.

Contract: Written and executed Contract as approved by the City Council between the City of Placerville and the Contractor.

Contract Documents: Plans, Notice to Bidders, Special Provisions, and Proposal and Agreement

Contractor: Person of business or its legal representative approved by the City Council and entering into a Contract with the City of Placerville for performance of the work.

Department: The City of Placerville except that any reference to the Department's forms, websites, manuals, guides, and test methods. These shall be defined as forms, websites, manuals, guides, and test methods of Caltrans.

Design Engineer: R.E.Y. Engineers, Inc. and their subconsulting engineers.

Director: The City Engineer for the City of Placerville.

EID: El Dorado Irrigation District.

Engineer: The Resident Engineer of the City acting either directly or through properly authorized agents; such agents acting within the scope of the particular duties delegated to them.

Inspector or City Inspector: An authorized agent acting on behalf of the City Engineer and within the scope of the particular duties delegated to him/her.

Plans: The Plans are specific details and dimensions particular to the work and are supplemented by the Standard Plans insofar as they may apply. The term is used interchangeably for both the Upper Broadway Bike Lanes CIP # 41508 (Including Upper Broadway Pedestrian Connection) plans and Upper Broadway Storm Drain Replacement Project CIP# 42004 plans.

Project Plans: The Project Plans are specific details and dimensions particular to the work and are supplemented by the Standard Plans insofar as they may apply. The term is used interchangeably for both the Upper Broadway Bike Lanes CIP # 41508 (Including Upper Broadway Pedestrian Connection) plans and Upper Broadway Storm Drain Replacement Project CIP# 42004 plans.

Special Provisions: The Special Provisions are specific clauses required by the City setting forth conditions of requirements peculiar to the work and supplementary to the Standard Specifications of the State of California.

Standard Plans: 2018 Standard Plans of the State of California, Department of Transportation and the current Revised Standard Plans as of September 1st, 2019.

Standard Specifications: 2018 Standard Specifications of the State of California, Department of Transportation (Caltrans) and the current Revised Standard Specifications as of September 1st, 2019.

State: The State of California, including its agencies, departments or divisions whose conduct or action is related to the work or when referenced in the Standard Specifications "State" shall mean the City of Placerville, including its authorized officers, agents, consultants, and volunteers.

Project: The work as contemplated in these documents and Project Plans.

Proposal: The un-approved offer as submitted to the City for contemplation for the completion of the Project.

USDOT: The United States of America Department of Transportation.

Add to section 1-1.09:

This project is in a freeze-thaw area.

Add to section 1-1.11:

Web Sites, Addresses, and Telephone Numbers

Reference or agency or department unit	Web site	Address	Telephone no.
Public Purchase	http://www.publicpurchase.com	--	-
El Dorado County Fire Protection	http://www.eldoradocountyfire.com	4040 Carson Road Camino, CA	(530) 644-9630
Placerville Police Department	http://www.cityofplacerville.org/depts/police	730 Main Street Placerville, CA	(530) 642-5210
Placerville Downtown Association	http://www.placerville-downtown.org	--	(530) 672-3436
El Dorado Transit Authority	http://www.eldoradotransit.com/	6565 Commerce Way Diamond Springs, CA	(530) 642-5383

Replace the paragraph in section 1-1.12 with:

Make checks and bonds payable to the City of Placerville.

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2 BIDDING

Replace section 2-1.05 with:

2-1.05 FEDERAL LOBBYING RESTRICTIONS

Section 1352, Title 31, United States Code prohibits Federal funds from being expended by the recipient or any lower tier sub recipient of a Federal-aid contract to pay for any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal aid contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement.

If any funds other than Federal funds have been paid for the same purposes in connection with this Federal-aid contract, the recipient shall submit an executed certification and, if required, submit a completed disclosure form as part of the bid documents.

A certification for Federal-aid contracts regarding payment of funds to lobby Congress or a Federal agency is included in the Bid book. Standard Form - LLL, “Disclosure of Lobbying Activities,” with instructions for completion of the Standard Form is also included in the Bid book. Signing the Bid book shall constitute signature of the Certification.

The above referenced certification and disclosure of lobbying activities shall be included in each subcontract and any lower-tier contracts exceeding $100,000. All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the Engineer.

The Contractor, subcontractors and any lower-tier contractors shall file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by the Contractor, subcontractors and any lower-tier contractors. An event that materially affects the accuracy of the information reported includes:

(1) A cumulative increase if $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employees(s), or Member(s) contacted to influence or attempt to influence a covered Federal Action.

Replace the paragraphs in section 2-1.06A with:

Standard Specifications and Standard Plans may be viewed at the Caltrans Office Engineer Web Site and may be purchased at the Publication Distribution Unit.

The Notice to Bidders, Special Provisions, Proposal and Agreement, and any Project Plans may be viewed and obtained at the locations stated in the Notice to Bidders.

Replace Section 2-1.12B (2) with:

2-1.12B(2) Disadvantaged Business Enterprises Commitment submittal

Submit DBE information on the Local Agency Bidder - DBE - Commitment form (DBE commitment form) included in the Proposal and Agreement Section. If the form is not submitted with the bid, remove the form from the Proposal and Agreement Section before submitting your bid.

If the DBE commitment form is not submitted with the bid, the apparent low bidder, the 2nd low bidder, and the 3rd low bidder must complete and submit the form to the City of Placerville. The DBE commitment forms must be received by Rebecca Neves, City of Placerville Division of Engineering or email rneves@cityofplacerville.org no later than 4:00 p.m. on the 4th business day after bid opening.

Other bidders are not required to submit the DBE commitment form unless the Department requests it. If the Department requests a DBE commitment form from you, submit the completed form within 4 business days of the request.

Submit written confirmation from each DBE shown on the form stating that it will be participating in the Contract. Include confirmation with the DBE commitment form. A copy of a DBE's quote will serve as written confirmation that the DBE will be participating in the Contract.

If you do not submit the DBE commitment form by the specified time, your bid is nonresponsive.

Replace the second and third paragraph of Section 2-1.12B(3) with:

If you have not met the DBE goal, complete and submit the Good Faith Efforts Documentation form with the bid showing that you made adequate good faith efforts to meet the goal. Only good faith efforts directed toward obtaining participation by DBEs are considered. If good faith efforts documentation is not submitted with the bid, it must be received by Rebecca Neves, City of Placerville Division of Engineering or email rneves@cityofplacerville.org no later than 4:00 p.m. on the 4th business day after bid opening.

Replace the paragraphs in section 2-1.33A with:

Complete forms in Bid book. Submit forms with your bid.

Except where stated acceptable elsewhere, do not fax submittals.

Failure to submit the forms and information as specified may result in a non-responsive bid.

Add to section 2-1.33A:

On the Subcontractor List, you must submit each subcontractor's license number, each subcontracted bid item number and corresponding percentage with your bid or email these numbers and percentages to Rebecca Neves, City of Placerville Division of Engineering or email Rneves@cityofplacerville.org. Failure to do so results in a nonresponsive bid.

You must either submit with your bid the BIDDER'S LIST OF SELECTED SUBCONTRACTORS and BIDDER'S LIST OF NON-SELECTED SUBCONTRATORS or email to Rebecca Neves, City of Placerville Division of Engineering or email Rneves@cityofplacerville.org within 24 hours after bid opening. Failure to do so results in a nonresponsive bid.

Replace the last paragraph of section 2-1.34 with:

If using a bidder's bond, you must use the form in the Proposal section.

Replace the paragraph in section 2-1.47 with:

The Department my grant bid relief under Public Contracts Code § 5100 et seq. Submit any request for bid relief to Rebecca Neves, City of Placerville Division of Engineering or email rneves@cityofplacerville. The Relief of Bid Request form is available at the Caltrans Web site.

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3 CONTRACT AWARD AND EXECUTION

Replace the paragraphs in section 3-1.04 with:

The Department reserves the right to reject any or all bids or any parts thereof and waive any irregularities or informalities in any bid or in the bidding to the extent permitted by law and to make awards in all or part of the best interest of the Department. No bidder may withdraw his/her bid for a period of sixty (60) days after the date set for the bid opening. Bid protests must be submitted in writing to the attention of the City Clerk before 4:00 pm of the 3rd calendar day following the bid opening.

If the Department awards the contract, the award is made to the lowest responsible bidder for the total of all the base bid items within 60 days after bid opening. The Department may extend the specified award period if the bidder agrees. The Department retains the right to remove any and/or all additive alternative to or from the plans as they see fit.

Barring some unforeseen irregularity, Notice of Award will be sent to the lowest responsive bidder after approval by the City Council.

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4 SCOPE OF WORK

Replace the paragraphs in section 4-1.13 with:

4-1.13 CLEANUP
4-1.13A General

Section 4-1.13 includes specifications for daily, weekly, and final cleanup.

The Contractor must locate and negotiate terms of use for their staging area. Potential staging areas are shown in Appendix A.

If staging areas are designated "daily staging areas", these areas are permitted for use Monday through Friday only.

If at any time the cleaning of the job site and/or staging area(s) is not performed to the satisfaction of the City and the Engineer, the Contractor will be notified and shall immediately return to the project site and perform satisfactory cleaning. If the Contractor is unable to perform cleaning activities in a timely matter as determined by the City, the cleaning may be performed for the Contractor at their expense.

4-1.13A(1) Daily Cleanup

At the end of each working day, return all materials and equipment to approved staging areas. All rubbish and debris shall be completely removed from the project site. If pedestrian and/or vehicular signage is required during non-working hours, signage shall be placed to the satisfaction of the City and Engineer.

If Contractor utilizes cold mix asphalt (CMA) for temporary ramping or paving, the Contractor is responsible for maintaining the cold mix during non-working hours. Cold mix shall be properly compacted by an approved compaction device. Equipment tires or vehicle tires shall not be used for compaction of CMA, unless otherwise approved by the engineer.

Contractor shall use vactor trucks or other approved equipment to prevent domestic water from entering the storm drain system.

The Contractor is responsible for maintaining vehicular and pedestrian traffic equal to or better than pre-construction conditions at all time. Repair and replace all striping affected by the day's work. Crosswalk and lane striping must be visible at all times.

All cleaning activities must be completed prior to opening of lane and/or roadway. The Contractor shall schedule work and cleaning activities to ensure streets can be reopened within the timeframes specified in the Contract Documents.

4-1.13A(2) Weekly Cleanup

Contractor Shall perform Daily Cleanup per Section 4-1.13A(1).

At the end of each work week, remove all equipment and materials from daily staging area(s) and transport them to an approved staging area.

All staging areas shall be cleaned to the satisfaction of the City and Engineer.

4-1.13A(3) Final Cleanup

Contractor Shall perform Daily Cleanup per Section 4-1.13A(1) and Weekly Cleanup per Section 4-1.13A(2).

Before final inspection, leave the job site neat and presentable and dispose of:

1. Rubbish and debris
2. Excess materials
3. Falsework
4. Temporary structures
5. Equipment

Do not remove warning, regulatory, or guide signs until Contract acceptance unless otherwise directed by the Engineer.

4-1.13A(4) Payment

There is no specific bid item for Cleanup. Cleanup shall be considered included in the Job Site Management bid item and no additional payment will be made therefore.

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5 CONTROL OF WORK

Replace section 5-1.20D with:

5-1.20D Permits

1. The Contractor shall be responsible for the application process and fees associated with obtaining all permits required for the commencement and execution of the project, including but not limited to, work within any street right of way, storm water pollution prevention, discharge of construction water into the local drainage system, right-of-entry, excavation and trench safety. Any work performed within the City right-of-way will require encroachment permits. The Contractor shall obtain a no-fee encroachment permit from the City. *Any work performed within Caltrans right-of-way will require an encroachment permit. The Contractor is responsible for any forms, submittals, and fees necessary to obtain encroachment permit.*

2. The Contractor must obtain a water use permit for construction water. Construction meters require a one-thousand dollars ($1,000) deposit. The monthly rental fee for the construction meter is one-hundred dollars ($100) per month and is billed bimonthly. The usage fee is a tiered rate as shown in the table below.

Water Usage	Price per 100 Cubic Feet
0-4000 cubic feet	$2.94
4001-20,000 cubic feet	$3.52
Over 20,000 cubic feet	$3.81

The payment for the cost for this permit and water usage shall be included with the various items of the proposal and no separate payment will be made.

Replace the paragraphs in section 5-1.23A with:

5-1.23A GENERAL
5-1.23A(1) Submittal Procedure

Section 5-1.23 includes specifications for action and informational submittals.

Any submittal not specified as an informational submittal is an action submittal.

Accompany each submittal with a Submittal form, which contains the following information:

1. Contractor's name and the name of Subcontractor or supplier who prepared the submittal.
2. The project name and identifying number.
3. Description of the submittal and reference to the Contract requirement or technical specification section and paragraph number being addressed.

Electronic submittals are preferred. Provide original hard copies to the Engineer upon request. If hard copies are submitted in lieu of an electronic submittal, submit the number and type of copies for each submittal and follow the procedures described below or in other paragraphs in this Section. Submit three copies of submittals not covered in this Section.

1. Designation of Superintendent: Submit three copies for information. Include name, address, home telephone number, and a brief resume.
2. List of Subcontractors and Major Suppliers: Submit three copies for information. Include address, telephone number, and name of responsible party.
3. Subcontractors'/Suppliers'/Manufacturers' Affidavits. Submit three copies for items specified in the Technical Specifications.

The City or Engineer rejects a submittal if it has any error or any omission.

Failure to provide submittals requested by the Engineer constitutes contract noncompliance on that item of work and may be deducted in accordance with Sections 5-1.30 and 9-1.16E.

Convert foreign language documents to English and U.S. customary units.

5-1.23A(2) Schedule of Submittals

Submit three (3) copies for information. No copy will be returned.

At the pre-construction meeting, submit a Schedule of Submittals showing the date by which each submittal required for Product Review or Product Information will be made. Identify the items that will be included in each submittal by listing the item or group of items and the Specification Section and paragraph number under which they are specified. Indicate whether the submittal is required for Product Review of Proposed Equivalents, Shop Drawings, Product Data or Samples or required for Product Information only.

5-1.23A(3) Plan of Operations

Submit three (3) copies.

Before beginning on site work, submit a plan showing Contractor's intended use of the Work site, including on site storage of materials, on site handling of materials, and field offices.

5-1.23A(5) Shop Drawing, Product Data and Sample Submitted for Product Review

This paragraph covers submittal of Shop Drawings, Product Data and Samples required for the Engineer's review referred to as Product Review submittals for the Technical Specifications of the contract documents. Submittals required for information only are referred to as Product Information submittals in the Technical Specifications and are covered in section 5-1.23A(7).

Number and type of submittals:

1. Shop Drawings: Submit three (3) clear, sharp high contrast copies one of which will be marked, stamped and returned to the Contractor. The Contractor shall make and distribute the required number of additional copies to its superintendent, subcontractors and suppliers. Shop drawings must comply with section 5-1.23B(2).
2. Product Data: Submit three (3) clear copies. One copy will be marked, stamped and returned. The Contractor shall make and distribute the required number of additional copies to its superintendent, subcontractors and suppliers.

The Contractor shall make all Product Review submittals early enough to allow adequate time for the Engineer's review, for manufacture and for delivery at the construction site without causing delay to the Work. Submittals shall be made early enough to allow for unforeseen delays such as:

1 Failure to obtain Favorable Review because of inadequate or incomplete submittal or because the item submitted does not meet the requirements of the Contract Documents.
2 Delays in manufacture.
3 Delays in delivery.

Content of Submittals:

1. Each submittal shall include all of the items and material required for a complete assembly, system or Specification Section.
2. Submittals shall contain all of the physical, technical and performance data required by the specifications or necessary to demonstrate conclusively that the items comply with the requirements of the Contract Documents.
3. Provide verification that the physical characteristics of items submitted, including size, configuration, clearances, mounting points, utility connection points and service access points, are suitable for the space provided and are compatible with other interrelated items that are existing or have or will be submitted.
4. Label each Product Data Submittal, Shop Drawing and Sample with the information required in paragraph 5-1.23A(1)1. of this Section. Highlight or mark every page of every copy of all
5. Product Data submittals to show the specific items being submitted and all options included or choices offered.
6. Additional requirements for Product Review submittals are contained in the Technical Specification sections.
7. Designation of work as "by others," shown on Shop Drawings, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who has prepared the Shop Drawings.

Requirements for Contractor Designed Items:

Verify that products delivered meet requirements of Contract Documents.

Compatibility of Equipment and Material:

1. Similar items, equipment, devices or products furnished under a single specification section shall all be made by the same maker and have interchangeable parts.
2. In addition, but only if so stated in each affected Specification Section, similar items furnished under two or more Specification Sections shall be made by the same maker and have interchangeable parts.
3. All similar materials or products that are interrelated or used together in an assembly shall be compatible with each other.

Requirements for the Contractor's review and stamping of submittals prepared by the Contractor or by Subcontractors or suppliers prior to submitting them to the Engineer. The Contractor warrants:

1. Work or items submitted are complete, accurate and meet the requirements of the Contract Documents, or else any deviations are identified and described in a separate letter accompanying the submittal form.
2. Work or items submitted have been coordinated with and meet the requirements of other submittals, field conditions and the Work as a while and quantities and dimensions are correct.
3. Proposed Equivalent items are at least equal in quality, utility and appearance to the first specified item, or else any deviations are identified in a separate letter accompanying the submittal form.
4. Adjustments to other work required to accommodate Proposed Equivalent items including second named items have been delineated on the submittal and will be made at the Contractor’s expense.
5. This submittal includes all items needed for a particular specification section or assembly for which submittals are required.

Submittals that contain deviations from the requirements of the Contract Documents shall be accompanied by a separate letter explaining the deviations. The Contractor's letter shall:

1. Cite the specific Contract requirement including the Specification Section and paragraph number for which approval of a deviation is sought.
2. Describe the proposed alternate material, item or construction and explain its advantages and/or disadvantages to the Owner.
3. State the reduction in Contract Price if any that is offered to the Owner.

Engineer's Review Procedure and Meaning:

The Engineer will stamp and mark each Product Review submittal prior to returning it to the Contractor. The stamp will indicate whether or not the review was favorable and what action is required of the Contractor. Review categories" Approved" and "Approved as Corrected" both indicate Favorable Review.

The Engineer's Favorable Review is contingent on the Contractor's warranties. Favorable Review is also contingent on:

1. The compatibility of items included in a submittal with other related or interdependent items included in previous or future submittals.
2. Future submittal of items related to or required to be part of this submittal that were not included with this submittal.

Favorable Review of a submittal does not constitute approval or deletion of items required as part of the submittal but not included with the submittal. Favorable Review of items included in the submittal does not constitute deletion of specified features, options or accessories that were not included in the submittal or that are included as part of the contract.

The action required by the Contractor for each category of review is as follows:

1. **APPROVED**. NO RESUBMITTAL REQUIRED.
2. **APPROVED AS CORRECTED**. The submittal is approved as corrected by the reviewer. The contractor is responsible for incorporating the reviewer’s corrections. The corrected submittal complies with the Contract Documents.
3. **REVISE & RESUBMIT**. The Contractor shall revise and resubmit the submittal as noted or required to comply with the Contract Documents.

4. **REJECTED**. The item submitted does not comply with the Contract Documents in a major way. Resubmit items that comply with the requirements of the Contract Documents.

The letter of transmittal accompanying the returned Product Review submittal may contain numbered notes. Marking a corresponding number on a Shop Drawing or Product Data submittal shall have the same effect as applying the entire note to the submittal.

Re-submittals that contain changes that were not requested by the Engineer on the previous submittal shall be accompanied by a letter explaining the revised items.

Favorable Review required prior to proceeding. Proceeding without a Favorable Review will be considered unauthorized work per section 5-1.30.

Do not proceed with manufacture, fabrication, delivery or installation of items prior to obtaining the Engineers Favorable Review of Product Review submittals.

Any work performed by the Contractor in advance of an approved submittal for said work is done so at the Contractor's sole risk.

Intent and Limitation on Engineer's Review:

The Contractor has primary responsibility for submitting and providing work that complies with the requirements of the Contract Documents. That responsibility cannot be delegated in whole or in part to subcontractors or suppliers. Neither the Engineer's Favorable Review nor the Engineer's failure to notice or comment on deficiencies in the Contractor's submittals shall relieve the Contractor from the duty to provide work, which complies with the requirements of the Contract Documents.

5-1.23A(6) Proposed Equivalents

Submittal for Proposed Equivalent products or materials shall comply with the submittal requirements for Shop Drawings, Product Data, and Samples submitted for Product Review in this Section. Bidders wanting to use "or approved equal items" may submit a Substitution Request Form no later than five (5) days after the issuance of the Notice to Proceed.

Time of Submittal:

1. Submittal of Proposed Equivalents shall be received within five (5) days of the Notice to Proceed. The Engineer may agree to a later submittal date if requested in writing within five (5) days of the Notice to Proceed. The request shall identify the item, providing the Specification reference, and proposed manufacturer and model number of the item that will be submitted and the proposed submittal date.
2. The Engineer's agreement to a later submittal date shall be in writing and shall not be construed as Favorable Review or acceptance of the manufacturer or item proposed.

Content of submittals shall be the same as that required for Product Data, Shop Drawings and Samples submitted for Product Review in another paragraph of this Section. In addition, the Contractor shall provide information on several recent similar installations of the item to verify its suitability. The information shall include the project name and location, the Owner's name, address, telephone number and name of a knowledgeable person to contact for information on performance of the product.

When the Contractor has listed specific maker's products submitted with its Bid no changes will be permitted without submittal of acceptable evidence justifying the change and the Engineer's written approval.

If a non-equivalent substitute is submitted for review, it shall be accompanied by a proposed reduction in Contract Price which shall include the increased cost of Engineering service required to evaluate the proposed substitute (which shall be paid to the Owner whether or not the substitute is accepted) plus the greater of 1) the difference in price between the first specified item and the item submitted and 2) the difference in value to the Owner between the two items.

5-1.23A(7) Product Information Submittals

1. Submit three (3) copies. No copies will be returned.
2. Product Information submittals are required for the Owner's permanent records and will be used for future maintenance, repair, modification or replacement work. Product Information submittals will be examined only to verify that the required submittals have been made; they will NOT be reviewed for compliance with the Contract Documents.
3. Make Product Information submittals prior to delivering material, products or items for which Product Information submittals are required.
4. The Contractor has the sole and exclusive responsibility for furnishing products and work that meets the requirements of the Contract Documents.
5. The Engineer reserves the right to comment on any submittal and to reject any product or work delivered, installed or otherwise at any time that the Engineer become aware that it is defective or does not meet the requirements of the Contract Document.

5-1.23A(8) Manufacture Certificates

1. Submit three (3) copies.
2. When specified in Technical Specification section, submit manufacturers' certificate to Engineer for review. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate. Certificates may be recent or previous test results on material or Product, but must be acceptable to the Engineer.

Replace Section 5-1.26 with:

5-1.26 CONSTRUCTION SURVEYS
5-1.26A General

The contractor must set construction stakes and markers to establish the lines and grades required for the completion of the work on the plans and as specified in the Standard Specifications and these Special Provisions and as necessary for the Engineer to check lines, grades, alignment and elevations.

All procedures, methods, and typical stake markings shall be in accordance with Chapter 12, Construction Surveys, of the Caltrans “Survey Manual.” Copies of the “Survey Manual” may be purchased from Caltrans Publications Unit, 1900 Royal Oaks Drive, Sacramento, and California 95815, (916) 445-3520.

Staking must be performed under the direction of a licensed surveyor or registered civil engineer with the authority to perform land surveying.

5-1.26B Grade Quality Control

Use a GNSS rover, robotic total station equipment, or a level to check the grades at the frequencies shown in the following table: **Grade Checking Requirements**

Type of work	Area or distance represented by the grade checking	Frequency (number of grade points)
Earthwork for cut and fill slopes ≤15 feet	200 feet	2
Earthwork for cut and fill slopes >15 feet	1,000 sq yd	1
Rough grading	1,000 sq yd	1
Trenching	100 feet	6
Subgrade	1 mi	30
Subbase layer	1 mi	50
Base layer	1 mi	100
Curb and gutter	100 feet	6
Concrete barrier	100 feet	5
Finishing roadway	1,000 sq yd	2

Increase the frequency of grade checking of a roadway:

1. Wherever its curve radius is 500 feet or less
2. In areas of a superelevation transition
3. At intersections

Notify the Engineer when an area is ready for line and grade inspection. Submit the grade checking results on a Grade Checking Report form as an informational submittal.

5-1.26C Payment

Construction surveys (contractor provided construction staking) shall be paid for under the Construction Staking bid item. Progress payments will be made based upon the percentage of work items requiring staking staked by that point. No additional compensation will be made for resetting stakes.

Replace the paragraphs in section 5-1.27E with:

Maintain separate records for change order work costs.

Submit change order bills to the Engineer.

Add to the end of section 5-1.32:

Personal vehicles of the Contractor's employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

Add between the 2nd and 3rd paragraphs of section 5-1.36C(3):

Utilities shown on the Project Plans as being relocated or rearranged by others will be relocated or rearranged by others, but the Contractor shall coordinate those efforts with the utility owner(s) to ensure no schedule impacts or delays.

The utilities attached to utility pole adjacent to Retaining Wall 3 (Soldier Pile) at station 35+95 will be deactivated and coiled up by others (PG&E and AT&T), but the Contractor shall coordinate timing of those efforts with the utility owners to ensure no schedule impacts or delays.

The utility pole and guy anchor at station 38+78 will be removed and temporarily relocated or rearranged by others (AT&T) as to not conflict with the work zone, but the Contractor shall coordinate timing of those efforts with the utility owners to ensure no schedule impacts or delays.

The utilities shown in the following table will not be rearranged. These utilities may interfere with construction activities including, but not limited to, pile driving, drilling activities, or substructure construction. If the Contractor wants any of the other utilities rearranged or temporarily deactivated, they must make separate arrangements with the utility owner. Otherwise, they must be protected in place.

Utilities Not Rearranged for Construction

Utility	Location
Communication Conduits	Under culvert extension at Retaining Wall 2 (Concrete)
Electrical Conduits	Under culvert extension at Retaining Wall 2 (Concrete)
Utility Pole	Adjacent to Retaining Wall 3 (Soldier Pile) at Sta. 35+95
Utility Pole	Sta. 37+30
Utility Pole	Sta. 39+81
Guy Anchor	Sta. 54+70
Utility Pole	Sta. 63+93
Utility Pole	Sta. 66+12
Utility Pole	Sta. 68+98
Utility Pole	Sta. 70+93
Utility Pole & Guy Anchor	Sta. 72+59
Guy Anchor	Sta. 74+88

Replace the paragraphs in section 5-1.46 with:

When you complete the work, request the Engineer's final inspection. You will be notified, in writing, of any defects or deficiencies to be remedied. Correct all defects and deficiencies within 5 working days of notification and notify the Engineer all defects and deficiencies have been addressed. When notified that the work is complete, the Engineer will again inspect the work to ensure compliance with the Contract Documents.

If the Engineer determines that the work is complete, the Engineer recommends to the City Council that the Contract be accepted and the Notice of Completion be recorded to accept the Contract. Immediately after Contract acceptance, you are relieved from:

1. Maintenance and protection duties
2. Responsibility for injury to persons or property or damage to the work occurring after Contract acceptance expect as specified in section 6-3.06.

^^

6 CONTROL OF MATERIALS

Add to section 6-1.01:

No materials are allowed to be stockpiled in the State or City Right of Way unless a written request is made to Caltrans or the City in advance. The Contractor is responsible for maintaining and final cleaning after work and restoring the Right of Way to its original condition.

The Contractor shall provide a list of all hazardous materials to be used within the State Right of Way to Caltrans before materials are used.

The Contractor shall provide a list of all hazardous materials to be used within the City Right of Way to the City before materials are used.

Replace section 6-1.04A:

This Project is subject to the "Buy America" provisions of the Surface Transportation Assistance Act of 1982, as amended by the Intermodal Surface Transportation Efficiency Act of 1991.

^^

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Replace the 11th paragraph of section 7-1.02K(3) with:

Submit certified payroll records to the Engineer and upload to the Department of Industrial Relations.

Add to section 7-1.02K(6)(a):

All Personnel shall wear hard hats and ANSI Class II or higher visibility garments as appropriate.

Add to section 7-1.02K(6)(b):

All trenches shall be securely covered or paved with temporary paving between the hours of 7 pm and 7 am unless otherwise approved by the Engineer.

Add to section 7-1.03:

Contractor to pay special attention to any scheduled events in the Project area. Contractor to coordinate with the Highway 50 Association Wagon Train event (www.hwy50wagontrain.com) and ensure Project area is clean, safe, and available for the scheduled event which occurred in early June in previous years. The Highway 50 Association's contact number is (530) 677-2871.

Contractor shall notify the City, El Dorado Disposal, El Dorado County Fire District, Placerville Police Department, Placerville Downtown Association, El Dorado County Transit Authority, local US Post Office, Upper Room Dining Hall, and El Dorado Adventist School three (3) weeks prior to start of construction and two (2) weeks prior to any partial or full road closures. Notifications shall be by E-mail and copies of the notifications shall be provided to the City.

Any interruption of a transit route or temporary relocation of a transit stop shall be coordinated with El Dorado Transit Authority one (1) week prior.

The transit stop at the Upper Room Dining Hall may be temporarily relocated in-kind to the opposite side of the Upper Room Dining Hall's driveway. Once construction of the improvements requiring the relocation is complete, the transit stop shall be relocated back to the location shown on the Project Plans. Temporary signage must be provided to delineate the transit stop at all times. There is no separate bid item for this work and no additional payment will be allowed therefore.

Each day, the Contractor is to leave the site in a condition that is acceptable as directed by the Engineer.

Add to section 7-1.04:

At all times, Contractor shall maintain pedestrian, local vehicular traffic, and emergency vehicle traffic and maintain all ADA paths of travel per ADA regulations for access to all residential and commercial property, unless written approval is otherwise obtained from the City allowing for reduced access.

Public traffic shall be allowed to pass through the work area at all times, unless a closure plan has been approved in writing by the City.

Contractor shall allow for passage of emergency vehicles at all times.

See Section 12 for traffic control requirements.

Add to section 7-1.06F:

New certificates of insurance are subject to City approval.

^^

8 PROSECUTION AND PROGRESS

Add to section 8-1.02C(1):

Before or at the preconstruction conference, submit a CPM baseline schedule.

Replace the 1st paragraph of section 8-1.02C(6) with:

Submit an updated schedule at all weekly construction meetings that includes the status of work completed to date and the work yet to be performed as planned. Each updated schedule must comply with section 8-1.02B(3).

Replace the paragraphs in section 8-1.02D(10) with:

There is no specific bid item for project schedules and no additional payment will be made therefore.

Replace the 3rd sentence of the 1st paragraph of section 8-1.03 with:

You may not start work prior to the preconstruction conference.

Replace the 1st and 2nd paragraphs of section 8-1.04B with:

The contractor shall begin construction on the date specified on the Notice to Proceed (NTP), which is anticipated to be April 13th, 2020 with an allowance to begin tree removal activities in January 2020, prior to the nesting season. All preconstruction submittals must be approved prior to starting job site activities, with the exception of tree removal. The Contractor is encouraged to submit preconstruction submittals prior to receiving the NTP to allow for proper review and approval of the submittals.

Tree removal must adhere to all applicable project permits. The six (6) items listed below must be received prior to beginning tree removal. In addition, a SWPPP, staging/sequencing plan, and all applicable traffic control plans and bicycle and pedestrian handling plans must be submitted and approved and prior to beginning tree removal activities. Working days will be counted during tree removal and will be suspended once tree removal is complete.

Add to section 8-1.06:

This project includes tree removal activities which may be performed prior to beginning construction to avoid the nesting season. Tree removal activities are anticipated to occur in January of 2020 and a suspension of working days is anticipated to occur once tree removal activities are complete.

Add to section 8-1.10C:

Tree removal activities shall be completed prior to February 15th, 2020, prior to the start of the nesting season.

^^

9 PAYMENT

Delete section 9-1.11.

Add to section 9-1.16D(1):

Mobilization is part of the Mobilization/Demonization bid item and includes, but is not limited to, preparing and maintaining a schedule per the Standard Specifications and these Special Provisions and construction and maintenance of staging area(s) and laydown yards(s). Demobilization is part of the Mobilization/Demobilization bid item and includes, but is not limited to, issuing a hard copy and/or digital set of

as-built plans to the Engineer within 10 working days after substantial completion notification and restoring staging area(s) and laydown yard(s) to pre-construction conditions.

Add to section 9-1.16D(2):

Final compensation will be delayed until as-built plans are submitted and approved.

Add to section 9-1.16E(3):

The City returns performance-failure withholds in the progress payment following the correction of non-compliance.

Replace the paragraphs in section 9-1.16F with:

The City will withhold 5 percent of all progress payments as retention. Retention will be paid to the Contractor on Final Payment.

In accordance with Part 5 (§ 22300), Division 2 of the Public Contract Code, a Contractor may substitute securities for retention moneys withheld by a public agency to ensure performance under this Contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the City of Placerville, or with a state or federally chartered bank, as the escrow agent, who shall then pay such moneys to the Contractor, and upon satisfactory completion of the Contract, the securities shall be returned to the Contractor. No substations will be accepted until:

1. the City approves the securities and their value,
2. the parties have entered into an escrow agreement (if the securities are to be held in escrow) in a form substantially similar to that under § 22300,
3. all documentation necessary for assignment of the securities to the City or to the escrow agent are delivered in a form satisfactory to the City.

If the Contractor has substituted securities for any of the retention, the City may request that such securities be revalued from time to time, but not more often than monthly, at the expense of the Contractor. Such revaluation will be made by a person or entity designated by the City and approved by the Contractor. If such a revaluation results in a determination that the securities have a market value less than the amount of retention for which they were substituted, then the amount of the retention required under the Contract will be increased by such difference in market value.

Such increased retention will be withheld from the next progress payment(s) due to the Contractor under the Contract.

The City shall hold retainage from the Contractor and shall make prompt and regular incremental acceptances of portions, as determined by the City, of the contract work, and pay retainage to the Contractor based on these acceptances. The Contractor, or subcontractor, shall return all monies withheld in retention from a subcontractor within 30 days after receiving payment for work satisfactory completed and accepted including incremental acceptances of portions of the contract work by the City. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30 days may take place only for good cause and with the City's prior written approval. Any violation of this provision shall subject the violating Contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial, remedies otherwise available to the Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor, deficient subtract performance, or noncompliance by a subcontractor.

^^

DIVISION II GENERAL CONSTRUCTION

12 TEMPORARY TRAFFIC CONTROL

Add to the section 12-1.01:

Along with the project schedule, the Contractor shall submit a construction staging/sequencing plan for review and obtain approval by the Engineer prior to the start of construction.

The staging/sequencing plan must:

1. Take into account material ordering and lead times.
2. Break work impacting the flow of traffic and/or access to residents or businesses into stages. Each stage must be a maximum length of 2,200 feet, measured along the centerline of the roadway, unless otherwise approved by the Engineer (implementation and maintenance of temporary erosion control measures, TPZ/ESA fencing, tree removal, placement of permanent erosion control measures, final HMA paving lift, slurry sealing activities, and permanent striping and pavement marking activities are excluded from the 2,200-foot limit).
3. Only allow one stage to be under active construction at a time (with the exception of the work for Upper Broadway Storm Drain Replacement Project, which can be performed current with any stage of construction).
4. Identify any impacted bicycle or pedestrian facilities.
5. Identify any impacted driveways, businesses, or residences.
6. Ensure a minimum of one driveway to each parking lot or parcel remains open at all times.
7. Ensure a minimum of one-half of a driveway remains open at all times where only one driveway to a business or residence exists, unless otherwise approved by the Engineer.
8. Require notice to parcel owners, businesses, and residents one (1) week in advance when vehicle access is altered.

The Contractor shall submit traffic control plans, including closure plans, for review and obtain approval prior to any construction activities requiring temporary traffic control. The Engineer shall review and approve all traffic control systems, including hardware and location/placement, prior to beginning construction activities each workday. Public traffic shall be allowed to pass through the work area at all times unless a full road closure plan has been previously approved.

The contractor's bid shall include a per month cost per Portable Changeable Message Sign (PCMS). The Engineer will work with the Contractor to determine the appropriate location, message, and duration of use for each PCMS during construction.

Full road closures will only be allowed during normal working hours and at the locations identified in Appendix B, unless otherwise approved by the Engineer. The roadway must be re-opened at the end of each day of construction. Full road closures must be approved a minimum of 15 working days in advance and each approval will only last for a maximum of ten (10) consecutive working days. Full road closure plans shall include a detour plan, a bicycle and pedestrian circulation plan, hours in which the closure will take place, and any other pertinent information. Full road closures will only be allowed for one of the locations shown in Appendix B at a time.

Half road closures, up to a maximum length of 1,000 feet measured parallel to the ground surface along the centerline of the road, are permitted for this project and must comply with Caltrans 2018 Standard Plan T13, unless otherwise approved by the Engineer. Only one (1) half road closure will be allowed at a time, unless otherwise approved by the Engineer. Allowances will be made for the final HMA paving lift, slurry sealing activities, and permanent striping and pavement marking activities which may require longer half road closures to improve efficiency and quality of final product. Half road closures must be approved a minimum of ten (10) working days in advance. Should the Contractor desire to leave the half road closure up outside of normal working hours, a temporary signal or full-time flaggers must be employed at all times. A half road closure at a single location must not extend longer than four (4) consecutive weeks, including no more than three (3) consecutive weekends.

Contractor shall provide and maintain traffic control devices, flaggers and all other necessary items per this section, the Caltrans Traffic Manual, and California MUTCD where applicable. The Contractor will be responsible for the maintenance of all traffic control items and equipment during and outside of working hours.

When practical, the full width of the roadway must be open to pedestrian and vehicular traffic outside of working hours. When not practical, the Contractor must make every effort to open the maximum number of lanes possible. The full width of the roadway must be open for all planned City of Placerville Events and holidays. At the completion of each workday, all existing lanes of traffic shall be opened to traffic unless advanced approval is given to the Contractor by the City. Provisions must be made for the uninterrupted passage of emergency vehicles through the project limits at all times, regardless of the controlled traffic conditions existing at that time. Additionally, provisions shall be in place to allow residents to have safe access to their houses at all times.

The Contractor must provide a bicycle and pedestrian circulation plan along with the staging/sequencing plan and all traffic control plans as a submittal for approval by the Engineer. Pedestrians regularly use the existing roadway shoulders and may continue to travel through this area during construction. The expectation is that the pre-construction bicycle and pedestrian circulation will be maintained during construction and any temporary facilities to accommodate the flow of bicyclists and pedestrians will be equal to or better than the existing conditions.

Temporary pedestrian access routes per section 12-4 are only required where existing pedestrian facilities that meet those requirements are being affected by construction. Should the Engineer request a temporary access route per section 12-4 where none currently exists, that work is change order work and will be compensated per section 9.

Replace the paragraph in section 12-1.04 with:

There is no separate bid item for flagging, so that work shall be included within the Traffic Control System bid item and no additional compensation will be allowed therefore. The Contractor shall be responsible for the entire cost of flagging and is responsible for including that cost in the Traffic Control System bid item.

The development of all staging/sequencing plans, traffic control plans, and bicycle and pedestrian handling plans shall be paid for under the Traffic Control System bid item and no additional compensation will be allowed therefore.

The Traffic Control System bid item includes all tools, equipment, materials, and labor necessary to implement the contractor developed traffic control plan(s) and bicycle and pedestrian circulation plan(s), install and remove all temporary construction area signage, and install and remove up to two 4-ft x 2.5-ft C48 (CA) signs. This includes, but is not limited to, all temporary and semi-permanent construction area signs, up to two 4-ft x 2.5-ft C48 (CA) signs, temporary signals, flaggers, temporary signal control and maintenance, barricades, cones, and K-rail concrete barriers used in the implementation of the traffic control plans and bicycle and pedestrian circulation plans and all other incidental work associated with the Traffic Control System.

Replace the paragraph in section 12-3.11B(5) with:

A 4-ft x 2.5-ft C48 (CA) sign must comply with the details shown on the Department's Traffic Operations website. The upper left logo shall be City of Placerville, lower left logo shall be Caltrans, upper right logo shall be EDCTA, and lower right logo shall be FHWA. The sign and post must comply with Section 82.

Replace the paragraph in section 12-3.11D with:

There is no separate bid item for construction area signs, including the two C48 (CA) signs. Payment for all construction area signs shall be included in the Traffic Control System bid item and no additional compensation will be allowed therefore.

Replace the paragraph in section 12-3.32D with:

The payment quantity for the Portable Changeable Message Sign is the number of per month PCMS used. The quantity of one (1) Portable Changeable Message Sign is one (1) PCMS for one (1) month duration. The

cost to relocate the sign and/or change the message during the month shall be included in this bid item and no additional compensation will be allowed therefore.

Add to the 1st paragraph of section 12-4.02A(1):

Full road closures are only allowed during the hours of 7 am to 7 pm unless otherwise approved by the Engineer. No full road closures will be permitted on Saturdays, Sundays, or City observed Holidays.

Add to section 12-4.02A(2):

Martin Luther King Jr. Day is a designated holiday that is observed on the 3rd Monday in January. The day after Thanksgiving is a designated holiday that is observed the day after Thanksgiving Day. Christmas Eve is a designated holiday that is observed on December 24th.

Replace "Reserved" in section 12-5 with:

12-5.01 GENERAL

Contractor shall notify the City, El Dorado Disposal, El Dorado County Fire District, Placerville Police Department, Placerville Downtown Association, El Dorado County Transit Authority, local US Post Office, Upper Room Dining Hall, and El Dorado Adventist School 48 hours prior to any lane closures, including full or partial road closures.

Replace "Reserved" in section 12-6.03D(1) with:

Temporary markers and/or markings shall be installed by the Contractor for any existing crosswalk line, limit line, arrow, and other legend or traffic lane line removed or damaged by the work activity prior to the end of the work shift and before opening the lanes for traffic.

Requirements for Placing Temporary Pavement Markings

Existing Striping	Temporary Striping
12-inch crosswalk line	3 – 4 inch white stripes appearing as 1– 12 inch stripe
8-inch solid line	1 – 4 inch white solid stripe
4-inch broken white	1 – 4 inch white stripe (typically 7' long, 17' gaps*)
4-inch broken yellow	1 – 4 inch yellow stripe (typically 7' long, 17' gaps*)
Double yellow	2 – 4 inch yellow solid stripes 3 inches apart

* Consult Chapter 3 of the California MUTCD for further details. The dimensions for broken lines apply for streets with posted speed limits of 35 MPH or less. For speed limits of 40 MPH or more, the dimensions are for 12' long stripes with 36' gaps.

Replace the 2nd and 3rd paragraphs of section 12-6.04 with:

There is no specific bid item for temporary traffic stripes or pavement markings and no additional compensation will be made therefore.

Replace Section 12-8 with:

12-8 CONSTRUCTION ZONE STANDARDS

12-8.01 GENERAL
12-8.01A Summary

Contractor is responsible for maintaining a safe work area during and after working hours.

12-8.02 Maintaining Traffic
12-8.02A Tow-Away Lanes

Contractor shall be responsible for keeping "Tow-Away No Stopping" traffic lanes clear during the effective hours posted.

12-8.02B Metal Plating

Any temporary metal plating and metal bridging shall be coated with a non-skid and rust inhibitive product. Examples of non-skid metal plating are surfaces with waffle or herringbone pattern undulations. Plating shall

be installed with no edges or corners sticking up and with no bouncing or shifting. Plates shall be secured against shifting by tack welding, or fasteners. Any non-skid product shall have a friction factor of 0.35 or greater as measured by the California Test 342.

Plates shall be free of any openings greater than ¼ inch.

12-8.02C Transitioning (Ramping)

Whenever the grade difference between the existing pavement and the excavated area is greater than ¼ inch, Contractor shall provide longitudinal and transverse transitions prior to opening the lanes to traffic. The maximum slope on these transitions shall be 1:18. Transitions shall be installed with hot mix asphalt. This section applies to newly constructed roadway base, manholes, metal plating, bridging, trenching etc.

Cold mix asphalt may be used in lieu of hot mix asphalt for temporary ramping. The contractor is responsible for maintaining cold mix asphalt at all times and complying with ADA regulations if applicable. Cold mix shall comply with Sections 4-1.13 and 7-1.04.

12-8.03 Security and Contractor Property

The Contractor shall be responsible for the security of all Contractor property including, but not limited to, equipment, material that has not yet been installed, and tools. If the Contractor fails to properly lock, store, and secure equipment, tools, materials, etc., his property may be stolen. This area has a higher risk of theft than most areas within the City. The Contractor should expect transient trespassing within the project and staging areas. The Contractor shall do his best to deter trespassing onto the project and staging areas. No additional payment shall be made for added security measures. No additional payment shall be made for equipment, tools, materials, or any other property of the Contractor that is lost or stolen.

^^

13 WATER POLLUTION CONTROL

Add to section 13-1.01A:

This project is anticipated to be Risk Level 2.

Replace section 13-2 with:

A Stormwater Pollution Prevention Plan shall be prepared by the contractor for this project, see section 13-3.

Replace paragraphs in section 13-3.04 with:

Fugitive Dust Control, Street Sweeping, and Temporary Concrete Washout are included within the Storm Water Pollution Prevention Plan, Implementation, & Maintenance bid item and no additional compensation shall be allowed therefore.

BMP's shown on the contractor's approved SWPPP that differ from those shown on the Temporary Erosion Control Plans and do not have a specific bid item shall be paid for under the Storm Water Pollution Prevention Plan, Implementation, & Maintenance bid item and no additional compensation shall be allowed therefore.

Payment for maintenance of all installed temporary erosion control measures covered under Section 13 shall be included in the Storm Water Pollution Prevention Plan, Implementation, & Maintenance bid item and no additional compensation shall be allowed therefore.

The City pays for the Storm Water Pollution Prevention Plan, Implementation, & Maintenance bid item as follows:

1. Total of 50 percent of the item total upon authorization of the SWPPP.
2. Total of 90 percent of the item total upon work completion.
3. Total of 100 percent of the item total upon Contract acceptance.

The City does not pay for the preparation, collection, laboratory analysis, and reporting of stormwater samples for nonvisible pollutants if WPC practices are not implemented before precipitation or if you fail to correct a WPC practice before precipitation.

The City pays:

1. $250 for each authorized rain event action plan.
2. $2,000 for each authorized stormwater annual report.

The City will not adjust the unit price for an increase or decrease in the quantity of:

1. Rain event action plan.
2. Storm water sampling and analysis day.
3. Storm water annual report.
4. Any temporary erosion control measures under Section 13.

Add to section 13-4.03G:

Dewatering must comply with the provisions of Order No. 2003-0003-DWQ adopted by the State Water Resource Control Board (Statewide General Waste Discharge Requirement for Discharges To Land With A Low Threat To Water Quality) or Resolution R5-2013-0145 adopted by the Central Valley RWQCB (Waiver Of Reports Of Waste Discharge And Waste Discharge Requirements For Specific Types Of Discharge Within The Central Valley Region), whichever is applicable. This permit or resolution is available at the State Water Resource Control Board or Central Valley RWQCB Web site.

Delete the last paragraph in section 13-5.04

Replace the paragraphs in section 13-6.04 with:

The payment quantity for temporary sediment control bid items paid for by the length is the length measured along the centerline of the installed material.

The payment quantity for temporary fiber roll does not include the additional quantity used for overlaps.

The Department does not pay for the relocation of temporary drainage inlet protection during work progress. The payment quantity for the Temporary Drainage Inlet Protection bid item is the number of inlets protected per the approved SWPPP. A single inlet with multiple openings is still counted as one (1) inlet.

The payment quantity for the Temporary Check Dam bid item is the number of check dams installed per the approved SWPPP. Each check dam, no matter the length/width, shall be counted as one (1) check dam.

Replace the paragraphs in section 13-7.03D with:

The payment quantity for the Temporary Construction Entrance bid item is the number of construction entrances per the approved SWPPP. The City does not pay for the relocation of temporary construction entrances or roadways during work progress.

^^

14 ENVIRONMENTAL STEWARDSHIP

Add to section 14-1.01:

The Contractor shall comply will all applicable permits and their requirements, including, but not limited to, the Project's 401, 404, and 1602 permits.

The following measures have been identified to be performed for this Project as part of the Mitigation Monitoring and Reporting Program (MMRP). Unless superseded by a permit, the Contractor shall comply with these requirements:

Mitigation Measure BIO-1: The following avoidance and minimization efforts shall be implemented in order to reduce potential project effects to the foothill yellow-legged frog (FYLF):

3. Notify the Engineer so that a qualified biologist can conduct a preconstruction survey within 24 hours prior to the start of construction activities within the riparian and aquatic habitat in the project area.
4. If dewatering is necessary, the construction area shall be dewatered prior to construction activities.
5. Notify the Engineer so that a qualified biologist can monitor any vegetation removal in Hangtown Creek. The biologist shall also monitor the installation of water diversion structures placed in Hangtown Creek.
6. The upstream and downstream limits of the project shall be flagged and/or signed to prevent the encroachment of construction personnel and equipment into any sensitive areas during project work. Prior to construction, environmental awareness training shall be conducted for construction personnel to brief them on how to recognize FYLF. Construction personnel should also be informed that if a FYLF is encountered in the work area, construction should stop and California Department of Fish and Wildlife (CDFW) should be contacted for guidance. A training log sign-in sheet shall be maintained.
7. If FYLF are found at any time during project work, construction shall stop and CDFW shall be contacted immediately for further guidance.
8. Staging areas as well as fueling and maintenance activities shall be a minimum of 100 feet from riparian or aquatic habitats. The City's construction contractor shall prepare a spill prevention and clean-up plan.
9. The City's construction contractor shall administer Best Management Practices (BMPs) to protect water quality and control erosion.
10. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

Mitigation Measure BIO-2: The following avoidance and minimization efforts shall be implemented in order to reduce potential project effects to western pond turtle:

1. If dewatering is necessary, the construction area shall be dewatered prior to construction activities.
2. Notify the Engineer so that no more than two weeks prior to the commencement of ground-disturbing activities, the City can retain a qualified biologist to perform surveys for western pond turtle within suitable aquatic and upland habitat within the project site. Surveys shall include western pond turtle nests as well as individuals. The biologist (with the appropriate agency permits) shall temporarily move any identified western pond turtles upstream of the construction area, and temporary barriers shall be placed around the construction area to prevent ingress. Construction shall not proceed until the work area is determined to be free of western pond turtles. The results of these surveys shall be documented in a technical memorandum that shall be submitted to CDFW (if turtles are documented).
3. Standard construction BMPs shall be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project area.

Mitigation Measure BIO-3: The following avoidance and minimization measures shall be used when work occurs in the vicinity of locations that may be subject to nesting by migratory birds:

1. Avoid Active Nesting Season. To avoid and minimize impacts to tree and shrub nesting species conduct all tree and shrub removal and grading activities during the non-breeding season (generally September 1 through February 14). If grading and tree removal activities are scheduled to occur during the breeding and nesting season (February 15 through August 31), then preconstruction surveys shall be performed by the City prior to the start of project activities.
2. Conduct Preconstruction Nesting Bird Surveys. If construction, grading or other project-related activities are scheduled during the nesting season (February 15 to August 31), then preconstruction surveys for other migratory bird species shall take place no less than 14 days and no more than 30 days prior to the beginning of construction within 250 feet of suitable nesting habitat. If the preconstruction surveys do not identify any nesting migratory bird species within areas potentially affected by construction

activities, then no further mitigation shall be required. If the preconstruction surveys do identify nesting bird species within areas that may be affected by site construction, then project-related construction impacts shall be avoided by establishment of appropriate no-work buffers to limit project related construction activities near the nest site. A 300-foot buffer shall be used when possible for raptors and 50-foot buffer for passerines. The no-work buffer zone shall be delineated by highly visible temporary construction fencing. No project-related construction activity shall commence within the no-work buffer area until a qualified biologist confirms that the nest is no longer active.

Mitigation Measure BIO-4: Although this species has not previously been observed in the project area, it is known to occur within 0.3 miles of the project area, therefore, it could potentially disperse into the project area prior to construction from populations in the vicinity. Thus, the following measures shall be implemented:

1. Notify the Engineer so a qualified biologist can conduct a preconstruction survey for Nissenan manzanita within 30 days prior to construction. If Nissenan manzanita is not found, then no further measures are necessary.
2. If Nissenan manzanita is found in the project area, CDFW shall be notified at least 10 days prior to construction impacts in the vicinity of Nissenan manzanita in accordance with the California Native Plant Protection Act of 1977 (CDFG Code Section 1900-1913) to allow sufficient time to transplant the individuals to a suitable location or develop other mitigation measures in coordination with CDFW.

Mitigation Measure BIO-5: The following avoidance and minimization measures shall be implemented prior to construction of the Project to avoid and minimize potential impacts on riparian habitat:

1. Prior to removal of any trees, notify the Engineer so that an International Society of Arboriculture (ISA) Certified Arborist can conduct a tree survey in areas that may be impacted by construction activities. This survey shall document tree resources that may be adversely impacted by implementation of the project. The survey shall follow standard professional practices.
2. Existing riparian vegetation, oaks, and other native tree species shall be retained to the extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be avoided. The TPZ shall be delineated by an ISA Certified Arborist provided by the City. The TPZ shall be defined by the radius of the dripline of the tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that shall remain in place for the duration of construction activities.
3. Construction-related activities shall be limited within the TPZ to those activities that can be done by hand. No heavy equipment or machinery shall be operated within the TPZ. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ.
4. The Contractor shall protect other wetlands, riverine and associated riparian habitats located in the vicinity of the project area by installing protective fencing.
5. Protective fencing shall be installed along the edge of construction areas including temporary and permanent access roads where construction shall occur within 200 feet of the edge of wetland and riverine habitat (as determined by a qualified biologist). The location of fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment designated construction area. Signs shall be erected along the protective fencing at a maximum spacing of one sign per 50 feet of fencing. The signs shall state: “This area is environmentally sensitive; no construction or other operations may occur beyond this fencing. Violators may be subject to prosecution, fines, and imprisonment.” The signs shall be clearly readable at a distance of 20 feet, and shall be maintained for the duration of construction activities in the area.
6. Where riparian vegetation occurs along the edge of the construction easement, the Contractor shall minimize the potential for long-term loss of riparian vegetation by trimming vegetation rather than removing the entire plant. Trimming shall be conducted per the direction of a biologist and/or Certified Arborist supplied by the City.

CUL-1: In the event cultural resources are encountered during construction, ground-disturbing activity shall cease in the immediate area. The City shall have the authority to temporarily halt or divert construction equipment. The City shall consult with a qualified archeologist who shall examine materials encountered, assess significance, and recommend a course of action to further investigate and/or mitigate adverse impacts

to those resources that have been encountered. A cultural resources technical report would then be prepared by a qualified cultural resources specialist and filed with the Office of Historic Preservation and/or the North Central Information Center. This report would document the importance of all significant cultural resources found at the site. This mitigation measure shall be noted on all construction plans and specifications prepared for the Project.

CUL-2: In the event that unanticipated discovery of human remains occurs during project construction, the procedures outlined in §15064.5(e) of the CEQA Guidelines shall be strictly followed. These procedures specify that upon discovery, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains can occur. The City or its agent shall immediately be notified. The County coroner must be contacted to determine if the remains are Native American. If the remains are determined to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC shall identify the Most Likely Descendent (MLD). The MLD shall make recommendations for the appropriate treatment and disposition of the remains and any associated grave goods in accordance with Public Resources Code (PRC) §5097.98.

All project personnel shall be instructed that any human remains encountered should always be treated with sensitivity and respect and their discovery and location kept confidential. Construction personnel shall be briefed prior to construction activities regarding procedures to follow if buried human remains are encountered.

Replace section 14-1.03 with:

14-1.03 PAYMENT

With the exception of the Environmental Awareness Training and TPZ/ESA Fencing, there is no separate bid item for complying with the applicable permits and MMRP. The work required to comply with all applicable permits and the MMRP shall be considered included in all bid items and no additional compensation will be allowed therefore.

The Contractor attending the environmental awareness training required by the applicable permits and MMRP shall be paid for under the Environmental Awareness Training bid item. The payment quantity for the Environmental Awareness Training is lump sum and shall be paid in full once all applicable training has been completed.

Replace section 14-3 with:

14-3 BIOHAZARD REMEDIATION PLAN

14-3.01 GENERAL

14-3.01A Summary

This section governs the work to prepare a plan to safely identify and dispose of human waste.

14-3.01B Submittals

The Contractor shall prepare and submit a Biohazard Remediation Plan that addresses the identification and removal of human waste including the safe disposal of bloodborne pathogens and fecal matter hazards. The Biohazard Remediation Plan shall be prepared by a Certified Industrial Hygienist (CIH) and the plan shall conform to Cal/OSHA standards.

The Contractor shall submit a list of employees and subcontractors who attended the training signed by the CIH.

14-3.02 CONSTRUCTION

Prior to construction, the Contractor shall attend a training session performed by the CIH who prepared the plan. During construction, human waste must be safely disposed of per the approved Biohazard Remediation Plan.

14-3.03 PAYMENT

The payment quantity for the Biohazard Remediation Plan is lump sum and shall be paid in full once the plan is approved by the Engineer, training has been completed, and list of employees and subcontractors who

attended the training signed by the CIH is submitted to the Engineer. Removal and disposal of human waste during construction shall be considered change order work and paid for per Section 9.

Add to section 14-6.03B:

Tree removal activities must be scheduled outside of bird nesting season (typically February 15 to August 31).

^^

15 EXISTING FACILITIES

Add to section 15-1.01:

The types, locations, sizes and/or depths of existing underground utilities as shown on the Contract Documents were obtained from sources of varying reliability. The Contractor is cautioned that only actual excavation will reveal the types, extent, sizes, locations and depths of such underground utilities. A reasonable effort has been made to locate and delineate all known underground utilities. However, the City can assume no responsibility for the completeness or accuracy of its delineation of such underground utilities nor for the existence of other buried objects or utilities which may be encountered but which are not shown on these Plans. The majority of the utilities shown on the Plans were originally located using ground penetrating radar. Additionally, survey crews collected manhole, pipe sizes, and pipe invert information for the storm drain and sanitary sewer. This information was further supplemented by cleaning and CCTVing the majority of the storm drain lines in the Project area.

The Contractor shall contact the Underground Service Alert (U.S.A.) two working days in advance of performing any excavation work by calling the toll-free number 1-800-227-2600. Contractor shall verify all pipeline alignments are conflict free prior to any pipeline installation.

Locations of utility services and laterals are not always provided by utility companies and when shown are approximate (unless potholed). Nothing herein shall be deemed to require the City to indicate the presence of existing utility services, laterals, or appurtenances whenever their presence can be inferred from other visible facilities such as buildings, meters, junction boxes, valves, service facilities, identification markings and other indicators on or adjacent to the work. Potholing to locate services, laterals, and related appurtenances will be at the discretion of the Contractor and no separate bid item will be included for such pothole excavations.

Payment will not be made for potholes performed by the Contractor to “locate and protect” known utilities.

Add to section 15-1.02:

Materials used for the Storm Drain Spot Repair must be similar in character to the existing corrugated metal pipe.

Replace section 15-1.03D with:

15-1.03D Adjust Frames, Covers, Grates, and Manholes

Adjust frames, covers, grates and manholes by lowering before cold planing and raising after final paving or surfacing. Before opening the lane to traffic, either (1) complete permanent paving or surfacing or (2) temporarily fill any depressions with HMA or cold mix asphalt.

Where paving or surfacing work is shown, do not adjust to final grade until the adjacent pavement or surfacing is complete. For a structure that is to be raised, remove the cover or frame and trim the top of the structure to provide a suitable foundation for the new material. Instead of using new materials similar in character to those in the existing structure, you may use raising devices to adjust a manhole to grade. Before starting paving work, measure, fabricate, and install raising devices. Raising devices must:

1. Comply with the specifications for section 75 except that galvanizing is not required
2. Have a shape and size that matches the existing frame

3. Be match marked by painting identification numbers on the device and corresponding structure
4. Result in an installation that is equal to or better than the existing one in stability, support, and nonrocking characteristics
5. Be fastened securely to the existing frame without projections above the surface of the road or into the clear opening

Manholes, valve boxes, monument boxes, etc., shall be brought to grade, as shown on the plans, after final pavement lift has been placed.

All existing manhole frames, lids or gates, valve boxes, monument boxes, and any other style of box or lid shall be reused. If any damages occur in the process of adjusting iron to grade then at Contractor's expense must supply new manhole frames, lids or gates, valve boxes, monument boxes, and any other style of box or lid.

Concrete collars must comply with section 90 and the Project Plans.

Where manholes are to be lowered, remove the facility to 3.5 feet below finished grade or to an authorized depth. Adjust the manhole using the taper needed to match the finished grade.

If a manhole cover is unstable or noisy under traffic, place a coil of asphalt-saturated rope, a plastic washer, or asphaltic compound on the cover seat. Before placement, obtain authorization for use of the material.

Eccentric manhole cone installed on and connected to existing manhole barrels must pass the Low-Pressure Air Test. Any lining of the manhole (existing or new portion) required to pass the air test shall be performed at the contractor's expense and no additional payment will be allowed therefore.

Low Pressure-Air Test shall comply with section 61-1.01.

Replace section 15-1.03E with:

15-1.03E Storm Drain Spot Repair

At the location shown on the Project Plans, repair damage to the top of the corrugated metal pipe by removing the debris that caused the damage and repairing the damage to the satisfaction of the Engineer. Prior to commencing repair work, the Contractor to verify exact location of damage and submit a repair plan for review and approval by the Engineer.

Replace section 15-1.03F with:

15-1.03F Relocate Street Light

At the locations shown on the Project Plans, relocate the existing street light and rewire, if necessary. This work includes all tools, equipment, materials, and labor necessary for the relocation of the street light including, but not limited to, excavation, backfill of voids, anchoring, installing the base, and all other incidental work associated with relocating the street light as shown on the Project Plans. The Contractor shall repair or replace any damaged poles, bases, or street lights caused by the Contractor's operations to the satisfaction of the Engineer.

Replace paragraph in 15-1.04 with:

There is no separate bid item for saw cutting, so the payment for saw cutting shall considered included in the various bid items on the Bid Schedule and no additional compensation will be allowed therefore.

The payment quantity for the Adjust Utility to Grade bid item is the number of utilities adjusted to grade.

Additional payment will not be made for new iron or utility boxes installed as a result of contractor damage during initial removal.

No payment will be made for adjusting frames, covers, boxes, grates, or manholes not indicated for adjustment on the Project Plans.

If adjusting frames, covers, boxes, grates, or manholes not indicated for adjustment on the Project Plans is required, then payment for adjusting these materials is included in the payment for the type of pavement or type of surfacing involved.

If adjusting frames, covers, boxes, grates, or manholes not indicated for adjustment on the Project Plans is required, and if pavement or surfacing is not involved, payment for adjusting these materials is included in the payment of various other bid items, and no additional payment will be made therefore.

The payment quantity for the Eccentric Manhole Cone bid item is the number of cones installed.

The payment quantity for the Storm Drain Spot Repair bid item is lump sum and shall be paid in full once the repair is made to the satisfaction of the Engineer and surface restored to pre-construction conditions.

The payment quantity for the Relocate Street Light bid item is the number of street lights relocated.

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DIVISION III EARTHWORK AND LANDSCAPE

17 GENERAL

Add to section 17-1.04:

There is no specific pay item for grading. Payment for grading is included in the payment of various other bid items and no additional compensation will be made therefore.

Replace the paragraphs in section 17-2.03A with:

Complete the work specified in section 20-10.02C(2) before clearing and grubbing.

Clear and grub before performing earthwork in an area.

Do not injure standing trees, plants, and improvements shown to be protected.

Clear and grub the entire length of the job site to the following limits:

1. Outside limits of proposed excavation and embankment slope lines
2. Edge of proposed structures
3. Outside limits of proposed slope lines for swales, ditches, and channels

Replace section 17-2.03D with:

Dispose of objectionable materials resulting from clearing and grubbing activities.

Do not leave objectionable material in or under embankments, including dikes.

Accumulation of flammable material is not allowed.

Clear and grub roadside ditches within the Project Limits on the North side of Broadway as shown on the Project Plans.

Replace paragraph in section 17-2.04 with:

The payment quantity for the Clearing & Grubbing bid item is lump sum to be paid for based on the percent complete of the clearing and grubbing.

^^

19 EARTHWORK

Add to section 19-1.01A:

Contractor is to conform to the grades as indicated on the Project Plans.

Roadway excavation only includes the excavation required for widening the roadway where no new structures are being proposed. Excavation, embankment, and export required other bid items shall be included in those bid items.

Replace paragraph in section 19-1.04 with:

Regrading ditches as shown on the Project Plans shall be paid for under the Regrade Ditch bid item. The payment quantity the Regrade Roadside Ditch bid item is the length measured along the centerline of the ditch measured parallel to the ground surface.

Replace section 19-2.03E with:

Only excavation tools and equipment will be permitted for roadway excavation. Other methods of excavation including blasting, chemical expanders, or hydraulic splitters will not be allowed, unless permitted under Rock Excavation.

Add to section 19-2.04 with:

Excavation, embankment, and export required for other bid items shall be included in those bid items.

Roadway excavation requiring rock excavation shall be paid for under the Rock Excavation bid item as specified under section 19-4.

Excess roadway excavation not placed within the project limits shall be exported to and disposed of at an approved disposal site and paid for under the Export bid item. The payment quantity for the Export bid item is the volume of excess roadway excavation not used for embankment within the project limits.

The payment quantity for the Roadside Ditch bid item is the length measured parallel to the ground surface along the flowline of the ditch.

Add to section 19-3.01A:

Retaining Wall 2 (Concrete) shall include the work necessary to remove and dispose of a portion of the existing headwall to below the grade of the proposed road section and a portion of the existing concrete channel. Retaining Wall 3 (Soldier Pile) shall include the work necessary to remove and dispose of a portion of the existing headwall as shown on the Project Plans. Retaining Wall 2 (Concrete), Retaining Wall 3 (Solider Pile), and Retaining Wall 6 (Concrete) shall include the work necessary to extend the existing culvert to the face of wall as shown on the Project Plans.

There was no boring performed at Retaining Wall 3 (Soldier Pile) due to conflicting utilities. Based on site review, field exploration, and testing within the project limits, encountered fill, soil, and rock materials are considered generally drillable by typical heavy foundation drilling equipment. However, cobbles were observed at the site and were encountered in the other borings, so cobbles and boulders will likely be encountered in excavations. Weathered rock will likely become harder and less-weathered with depth, which may require the use of coring equipment, downhole hammers, or other means to allow reaching indicated pile tip elevations.

Replace paragraphs in section 19-3.04 with:

There is no separate bid item for structure excavation and backfill, but all structure excavation and backfill must still meet the requirements of Section 19-3.

The construction of all structures may require control, diversion, and removal of water, but the Contractor shall pay special attention to Retaining Wall 2 (Concrete), Retaining Wall 3 (Solider Pile), Retaining Wall 4 (Concrete), Retaining Wall 7 (MSE), and Straight Headwall Double Circular Pipe which are all along or within creeks, roadside ditches, and/or drainage areas.

Structure excavation and backfill required for Retaining Wall 1 (Soil Nail), Retaining Wall 2 (Concrete), Retaining Wall 3 (Solider Pile), Retaining Wall 4 (Concrete), Retaining Wall 5 (Concrete), Retaining Wall 6 (Concrete), Retaining Wall 7 (MSE), and Straight Headwall Double Circular Pipe shall be paid for under each of those bid items and no additional compensation will be allowed therefore.

Structure excavation and backfill required for trenches for culverts, pipes, rods, deadmen, cutoff walls, and other facilities shall be paid for under those bid items and no additional compensation will be allowed therefore.

Add to section 19-3.01D(2):

The wall zones for the Retaining Wall bid items are as shown in the plan views, profile views, and sections throughout the Project Plans and Standard Plans. This includes the area necessary for the temporary and permanent excavation and backfill for construction of each wall, including their footings, at the locations shown on the Project Plans and Standard Plans.

Replace Section 19-4 with:

19-4 ROCK EXCAVATION

12-4.01 GENERAL

12-4.01A Summary

Section 19-4 includes specifications for performing rock excavation and presplitting rock to form rock excavation slopes where roadway excavation is shown on the Project Plans. Rock excavation required for the construction of other bid items shall conform with this section but be considered included in those bid items.

You may use hydraulic splitters, pneumatic hammers, blasting, or other authorized roadway excavation techniques to fracture rock and construct stable final rock cut faces.

Comply with section 12.

If you choose to use blasting, comply with federal, state, and local blasting regulations. Regulations containing specific Cal-OSHA requirements for blasting activities include 8 CA Code of Regs, Ch 4, Subchapter 7, Group 18, "Explosive Materials." You must also prepare and implement detour routes and vibration monitoring plans.

The Contractor is liable for damages resulting from blasting activities.

12-4.01B Definitions

presplitting: Establishment of a free surface or shear plane in rock along the specified excavation slope by the controlled use of explosives and blasting accessories in appropriately aligned and spaced drill holes.

12-4.01C Submittals

Submit 3 copies of a blasting safety plan for review. The plan must include:

4. References to applicable federal, state, and local codes and regulations
5. Copies of permits required for blasting activities
6. Business name, contractor license number, address, and telephone number of the blasting subcontractor
7. Proof of current liability insurance and bonding
8. Name, address, telephone number, copies of applicable licenses, and resume of:

5.1. Blaster-in-charge
5.2. Personnel responsible for blast design, loading, and conducting blasting operations
5.3. Safety officer for blasting subcontractor

9. Name, address, and telephone number of the local fire station and law enforcement agencies
10. Detailed description of:
7.1. Location where explosives will be stored
7.2. Security measures to protect and limit access to the explosives
7.3. Transportation means for explosives
7.4. List of personnel permitted to handle the explosives
11. Exclusion zone and limited-entry zone for nonblast related operations and personnel surrounding loading and blasting operations
12. Details of warning signals used to alert employees on the job site of an impending blast and to indicate the blast is completed and the area is safe to enter
13. How blasting operations will be conducted
14. Measures to protect blasting operations and personnel from lightning
15. Emergency evacuation procedures for areas where explosives may be present
16. How misfires will be recognized, handled, and resolved including:
13.1. Who will be notified
13.2. How blast zone will be secured until misfire is resolved
13.3. Identification of equipment that may be needed to resolve misfires
17. Details of signs to be used around blasting zones including:
14.1. Timing of when signs will be posted relative to a specific blast
14.2. Name and telephone number of person responsible for placing signs
14.3. Roadway signs for compliance with Chapter 6, Typical Application 2, of the California MUTCD
18. Traffic control details for:
15.1. Loading and blasting operations
15.2. Misfire event or other blast related phenomenon that causes a transportation corridor to remain closed to the public
19. Description of possible noxious gas generation and details of safeguards to be used to protect employees, work zones adjacent to the shot, private property, and the public
20. Procedure to report and resolve complaints for blast related accidents
21. Copies of each MSDS and manufacturer data sheets of explosives, caps, primers, initiators, and other compounds

After the plan is authorized, submit 3 additional copies of the authorized plan.

19-4.02 MATERIALS

The maximum diameter of explosives used in presplit holes must not be greater than 50 percent of the diameter of the presplit hole.

Only standard cartridge explosives prepared and packaged by explosive manufacturing firms must be used in the presplit holes. These must consist of one of the following:

1. Fractional portions of standard cartridges to be affixed to the detonating cord in the field
2. Solid column explosives joined and affixed to the detonating cord in the field.

Stemming materials must be dry free-running material meeting the grading requirements shown in the following table:

Sieve Size	Percent Passing
3/8”	100
No. 8	90

19-4.03 CONSTRUCTION

Before drilling the presplitting holes, remove overburden soil and weathered rock along the top of the excavation for a distance of at least 50 feet beyond the drilling limits or to the end of the excavation. Ensure removal of overburden soil and weathered rock and expose fresh rock to an elevation equal to the bottom of the adjacent lift of the presplitting holes being drilled.

Drill slope holes for presplitting along the line of the planned slope within the tolerances specified. The drill holes must be at least 2-1/2 inches, but not more than 3 inches in diameter. Control the drilling operations by the use of proper equipment and techniques to ensure that no hole deviates from the plane of the planned slope by more than 12 inches or from being parallel to an adjacent hole by more than 67 percent of the planned horizontal spacing between holes.

The length of presplit holes for an individual lift must not exceed 30 feet unless you can demonstrate to the Engineer that you can stay within the tolerances and produce a uniform slope. The length of holes may then be increased to a maximum of 60 feet if authorized.

The spacing of presplit holes must not exceed 3 feet on centers and must be adjusted to produce a uniform shear face between holes.

The Engineer may order you to drill auxiliary holes along the presplit line. These holes must not be loaded or stemmed. Except for spacing, auxiliary drill holes must comply with the specifications for presplit holes. Drilling auxiliary drill holes along the presplit line is change order work.

Place the adjacent line of production holes inside the presplit lines in such a manner that avoids damage to the presplit face.

If necessary to reduce shatter and overbreak of the presplit surface, the 1st line of production holes must be drilled parallel to the slope line at the top of the cut and at each bench level thereafter.

Blasting techniques that result in damage to the presplit surface must be immediately discontinued.

No portion of the production holes may be drilled within 8 feet of a presplit plane unless authorized. The bottom of the production holes must not be lower than the bottom of the presplit holes.

A maximum offset of 24 inches will be permitted for a construction working bench at the bottom of each lift for use in drilling the next lower presplitting pattern.

Adjust the drilling operations to compensate for drift of previous levels and for the offset at the start of a new level to maintain the specified slope plane.

If the methods of drilling and blasting do not produce a uniform slope and shear face without overbreak and within the tolerances specified, then drill, blast, and excavate in short sections, up to 100 feet, until a technique produces the desired results.

If a fractional portion of a standard explosive cartridge is used, the cartridge must be firmly affixed to a length of detonating cord. The cord must be equal to the depth of the drill hole so that the cartridge does not slip down the detonating cord nor cock across the hole and bridge the flow of stemming material. Spacing of cartridges along the length of the detonating cord must not exceed 30 inches center to center and must be adjusted to give the desired results.

If a solid column type explosive is used, the column must be assembled and affixed to the detonating cord complying with the explosive manufacturer's instructions. Submit as an informational submittal a copy of the explosive manufacturer's instructions before using the column type explosive.

The bottom charge of a presplit hole may be larger than the line charges but must not cause overbreak. The top charge of the presplitting hole must be placed far enough below the collar to avoid overbreaking the surface.

Before placing the charge, the hole must be free of obstructions for the hole's entire depth. Ensure placing of the charge does not cause caving of material from the walls of the holes.

The Engineer may order the use of stemming materials as necessary to achieve a satisfactory presplit face. Stemmed presplit holes must be completely filled to the collar.

Detonate charges in each presplitting pattern simultaneously.

The tolerances in section 19-2.03G do not apply to presplit surfaces of excavation slopes where presplitting is required. The presplit face must not deviate more than 1 foot from the plane passing through adjacent drill holes except where the character of the rock has irregularities that are unavoidable. The average plane of the completed slopes must not deviate more than 1 foot from the plan slopes measured perpendicular to the plane of the slope. No portion of the slope may encroach on the roadbed.

If equally satisfactory presplit slopes are obtained, you may either presplit the slope face before drilling for production blasting or presplit the slope face and production blast at the same time, provided that the presplitting drill holes are fired with zero delay. The production holes must be delayed by at least 50 milliseconds starting at the row of holes farthest from the slope and progressing in steps to the row of holes nearest the presplit line. The presplitting holes must extend either to the end of the excavation or for a distance of not less than 50 feet beyond the limits of the production holes to be detonated.

19-4.04 PAYMENT

Rock excavation required for areas within the roadway excavation areas is measured as specified for roadway excavation in section 19-2.04. Rock excavation required for the construction of other bid items shall be considered included in those bid items and no additional compensation is allowed therefore.

^^

20 LANDSCAPE

Add to section 20-1.01A:

At the locations shown on the Project Plans, install landscaping that matches the adjacent, existing landscaping. Any existing irrigation systems damaged during the installation of the landscaping or other improvements shall be replaced in-kind to the satisfaction of the Engineer at the Contractor's expense.

Add to section 20-1.04:

The payment quantity for the Landscaping bid item is lump sum paid for once the landscape improvements are complete and accepted by the Engineer.

Replace Section 20-15 with:

20-15 TREE REMOVAL

20-15.01 GENERAL
20-15.01A Summary

Section 20-15 includes specifications for remove tree. Remove tree includes trees 6 inches in diameter at breast height and larger. Trees smaller than 6 inches in diameter at breast height shall be removed under clearing and grubbing.

Trees shall be removed in a manner that will not jeopardize the public safety or damage structures including utility lines, utility services, or adjacent trees. In most cases, trees shall be entirely removed. Contractor is to

submit a report to the City detailing the trees removed that have a trunk 6 inches or greater in diameter at breast height and shall mark those trees in the field for approval by the Engineer prior to tree removal.

20-15.02 MATERIALS

Not used.

20-15.03 CONSTRUCTION
20-15.03A Completion

To prevent the creation of hazards from partially removed trees, once work has commenced to remove a tree, this work shall be completed in a timely manner.

A tree will be considered completely removed when the stump is ground out up to 18 inches below grade.

20-15.03B Disposal of Wood

Disposal, use, or reuse of wood and woody debris from trees is at the sole discretion of the City of Placerville including specific disposal methods for infected wood. Payment for tree disposal is included in the payment for Remove Tree.

20-15.04 PAYMENT

The payment quantity for the Remove Tree bid item is the number of trees removed which were marked for removal and approved by the Engineer.

^^

21 EROSION CONTROL

Replace section 21-2.02K with:

21-2.02K Compost

Compost must be derived from one or a combination of the following types of materials:

1. Green material consisting of chipped, shredded, or ground vegetation or clean, processed, recycled wood products
2. Biosolids
3. Manure
4. Mixed food waste

Compost must not be derived from mixed municipal solid waste and must not contain paint, petroleum products, pesticides, or other chemical residues harmful to plant or animal life. Metal concentrations in compost must not exceed the maximum listed under 14 CA Code of Regs § 17868.2.

Process compost materials under 14 CA Code of Regs § 17868.3.

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DIVISION IV SUBBASES AND BASES

26 AGGREGATE BASES

Replace 2nd paragraph of section 26-1.02A with:

Unless otherwise noted on the plans or in these special provisions, aggregate used for Class 2 AB shall be ¾" and must comply with the ¾" maximum gradation in Section 26-1.02B.

Recycled AB and/or appropriately ground and blended material generated from remove base and surfacing activities can be used in lieu of Class 2 AB under the minor concrete items, as approved by the Engineer.

Add to section 26-1.04:

Payment will not be made for any Class 2 AB outside of the limits determined by the Engineer. No additional payment will be made for Class 2 AB depths greater than what is indicated on the Project Plans unless otherwise directed or approved by the Engineer.

Class 2 AB placed under HMA for the construction of roadways shall be paid for under the AB bid item. Scarification and recompaction of the subgrade material, where necessary, to place the Class 2 AB under the HMA shall be included in the AB bid item. The payment quantity for the AB bid item is the theoretical volume of Class 2 AB placed under the HMA measured in cubic yards. Class 2 AB used for the construction of all other bid items is included in those bid items and no additional compensation shall be made therefore.

Add to section 28-2.04:

Lean concrete base placed under JPCP for the construction of the bus pad shall be paid for under the Lean Concrete Base bid item. Scarification and recompaction of the subgrade material, where necessary, to place the lean concrete base under the JPCP shall be included in the Lean Concrete Base bid item. The payment quantity for the Lean Concrete Base bid item is the theoretical volume of lean concrete base placed under the JPCP measured in cubic yards. Lean concrete base used for the construction of all other bid items is included in those bid items and no additional compensation shall be made therefore.

^^

DIVISION V SURFACINGS AND PAVEMENTS

37 BITUMINOUS SEALS

Add to section 37-3.01C(4):

Contractor is to clean all cracks within the area to receive a slurry seal. Cracks shall be clear of all weeds, dirt, and debris before being slurry sealed. Cracks wider than 1/4 inch shall be sealed with an approved crack treatment prior to application of the slurry seal. Sealed cracks shall be allowed to cure prior to applying the slurry seal, and cracks shall not be overfilled in order to avoid bumps in the slurry seal.

Add to section 37-3.02A(1):

Slurry seal shall be Type II.

Replace paragraph in section 37-3.02D with:

The payment quantity for the Slurry Seal bid item is the area measured parallel to the ground surface, not including additional quantity used for overlaps. Crack filling prior to slurry sealing shall be paid for under the Slurry Seal bid item and no additional payment will be allowed therefore.

Replace section 37-6.02A with:

Crack treatment material may not be rubberized.

Add to section 37-6.03:

Cracks wider than 1/4 inch shall be treated and allowed to cure prior to placing slurry seal.

Replace paragraph in section 37-6.04 with:

The Contractor shall visit the site and develop their own quantity for crack treatment prior to bidding, and no additional compensation will be provided for a change in the quantity of crack treatment from the Contractor's original estimate. Crack treatment shall be included in the unit price for Slurry Seal and no additional compensation will be allowed therefore.

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39 ASPHALT CONCRETE

Delete items 2, 3, 4, and 5 in section 39-2.01A(1).

Add to section 39-2.01A(1):

Hot mix asphalt (HMA) for this Project will be Type A HMA.

Add to 1st paragraph of section 39-2.01C(4)(a):

If it is impractical or impossible for longitudinal joints to match the lane lines, then the Contractor shall limit the paving seems to the least amount practical.

Replace section 39-2.01D with:

39-2.01D Payment
Payment for tack coat is included in the payment for hot mix asphalt (HMA).

Type A HMA for the roadway shall be paid for under the HMA bid item. The payment quantity for HMA shown on the Bid Item List is measured based on the combined mixture weight. If recorded batch weights are printed automatically, the bid item for HMA is measured by using the printed batch weights, provided:

1. Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighed cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.
2. Total virgin asphalt binder weight per batch is printed.
3. Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.
4. Time, date, mix number, load number and truck identification is correlated with a load slip.
5. Copy of the recorded batch weights is certified by a licensed weigh master and submitted.

Payment will not be made for any HMA outside of the limits determined by the Engineer. No additional payment will be made for HMA depths greater than what is indicated on the plans unless otherwise directed or approved by the Engineer.

Installation of HMA dikes shall be paid under the HMA dike type shown on the Bid Item List. The payment quantity for the HMA Dike bid items is the length measured parallel to the ground surface along the flowline of the dike. Payment for the HMA used to construct the HMA dike is included in the payment for the HMA Dike bid items and is not included in the HMA bid item.

The Engineer does not adjust the unit price for an increase or decrease in the pre-paving grinding day quantity.

Payment will not be made for any HMA used as a temporary paving surface.

Replace section 39-2.02B(3) with:

Asphalt binder used in HMA Type A must be PG 64-16.

Add to section 39-2.02B(4)(b):

Aggregate used in HMA Type A must comply with the ½" HMA Type A gradation.

Replace paragraph in section 39-3.03C with:

AC dikes marked for removal on the Project Plans shall be removed completely and all removed AC is to be loaded, off-hauled, and disposed of in a safe and legal manner.

Replace section 39-3.03D with:

The payment quantity for the Remove AC Dike bid item is the length measured parallel to the ground along the flowline of the AC dike.

Replace section 39-3.04B with:

Temporary tapers must be either HMA or CMA. No additional payment will be made for the placement of temporary tapers.

Replace section 39-3.04C(1) with:

Do not use a heating device to soften the pavement.

The cold planing machine must be:

1. Equipped with a cutter head width that matches the planing width unless a wider cutter head is authorized.
2. Equipped with automatic controls for the longitudinal grade and transverse slope of the cutter head and:
   2.1. If a ski device is used, it must be at least 30 feet long, rigid, and a 1-piece unit. The entire length must be used in activating the sensor.
   2.2. If referencing from existing pavement, the cold planing machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the roadway. On the adjacent pass with the cold planing machine, a joint-matching shoe may be used.
3. Equipped to effectively control dust generated by the planing operation
4. Operated such that no fumes or smoke is produced.

Replace broken, missing, or worn machine teeth.

If you do not complete placing the HMA surfacing before opening the area to traffic, you must:

1. Ensure the surface is safe for vehicular, bicycle, and pedestrian travel, as applicable.
2. Construct a temporary HMA or CMA taper to the level of the existing pavement.

Replace the 2nd paragraph of 39-3.04A with:

Cold plane asphalt concrete pavement includes the removal of pavement markers, traffic stripes, pavement markings, and any encountered paving fabric within the area of cold planing. The contractor should take note that paving fabric is visible along the edges of the roadway in several locations and shall be taken into account with their bid.

Add to section 39-3.04C(4):

Remove, transport, and appropriately dispose of cold planed material.

Replace the paragraph in section 39-3.04D with:

Payment for cold planing asphalt concrete as shown on the Project Plans will be paid for under the Cold Plane bid item. The payment quantity for the Cold Plane bid item is the area (regardless of depth) measured parallel to the ground surface. No additional payment will be made for cold planing depths different from what are shown on the Project Plans or the discovery and/or removal of paving fabric.

Replace paragraph in section 39-3.05A with:

Section 39-3.05 includes specifications for removing base and asphalt concrete surfacing including any existing paving fabric and subgrade material below the existing roadway as shown on the Project Plans.

Replace paragraph in section 39-3.05C with:

Where base and surfacing are described to be removed, remove subbase, base, and surfacing to the depth shown on the Project Plans. Backfill resulting holes and depressions with embankment material under section 19 and recompact area.

Material generated from remove base and surfacing can be re-used in lieu of the Class 2 AB under the minor concrete items if material is ground and blended to the satisfaction of the Engineer. Material not re-used onsite shall be off hauled and disposed of in a safe and legal manner.

Add to section 39-3.05D:

No additional payment will be made for discovery and/or removal of paving fabric. No additional payment will be made for backing resulting holes and depressions.

There is no separate bid item for re-using the ground material from remove base and surfacing in lieu of the Class 2 AB un the minor concrete items. This work shall be considered included in the various other bid items and no additional compensation will be allowed therefore.

^^

40 CONCRETE PAVEMENT

Replace paragraph in section 40-4.04 with:

The payment quantity for the JPCP bid item is the theoretical volume measured in cubic yards.

^^

DIVISION VI STRUCTURES

46 GROUND ANCHORS AND SOIL NAILS

Replace the 3rd paragraph of section 46-2.02B with:

The permanent bearing plate must effectively distribute the design force, T, uniformly to the shotcrete such that:

1. Shotcrete bearing stress does not exceed 1,600 psi
2. Bending stress of the plate does not exceed:
   - 2.1. 0.55 of the yield strength for steel
   - 2.2. 0.36 of the yield strength for cast steel or cast iron

Add to the 2nd paragraph of section 46-3.01D(2)(b)(ii)(3):

In addition to the proof test soil nails shown, install and test two proof test soil nails at locations determined by the Engineer.

Add to section 46-3.03A:

Expect difficult soil nail installation at Retaining Wall 1 (Soil Nail) due to the presence of the following conditions:

1. Fractured and hardrock

Replace all paragraphs in section 46-3.04 with:

Soil nails, including verification and proof test nails, shall be paid for under Retaining Wall 1 (Soil Nail) and no additional compensation will be allowed therefore. The payment quantity for the Retaining Wall 1 (Soil Nail) bid item is the area of the exposed face of the wall measured parallel to the face of the wall.

^^

47 EARTH RETAINING SYSTEMS

Add to section 47-2.01A:

Retaining Wall 7 (MSE) shall be Verdura 40, or approved equal, plantable modular block retaining wall.

Add to section 47-2.02B:

Modular blocks shall be Verdura 40, or approved equal. The Retained Zone soil is Class 4. Blocks shall be plantable with nominal dimensions of 8” height, 18” width, and 12” depth with provisions for geogrid anchoring. The face color shall be Buff/tan and the face finish shall be Smooth.

Add to section 47-2.03A:

Wall shall be constructed per the Project Plans, Verdura Retaining Wall Standard Plans approved by Caltrans (or approved equal manufacturer’s standard plans), and Verdura Master Specifications (or approved equal manufacture’s specifications). Wall face shall be filled with appropriate plant media and planted with vegetation to match adjacent, existing vegetation.

Replace paragraphs in section 47-2.04 with:

The payment quantity for the Retaining Wall 7 (MSE) bid item shall be area of the exposed face of wall measured parallel to the face of the wall per the dimensions shown on the Project Plans. The Retaining Wall 7 (MSE) bid item shall include all tools, equipment, materials, and labor necessary to construct Retaining Wall 7 (MSE) including, but not limited to, excavation, structural backfill, placing and compacting Class 2 AB, installing the drainage system behind the wall (if applicable), installing geogrid and plantable modular blocks, and all other incidental work for constructing Retaining Wall 7 (MSE).

^^

49 PILING

Add to section 49-4.03B:

Rock subsurface foundation material is anticipated at the Retaining Wall 3 (Soldier Pile). Conventional drilling equipment for drilling in soils may not be suitable for drilling holes for the steel soldier piling.

Difficult pile installation for steel soldier piles is anticipated by the presence of steep slopes adjacent to the wall construction and shallow groundwater in drilled holes. The Contractor shall protect slopes from caving as much as feasible. The Contractor shall not be reimbursed for additional excavation of failed slope material nor additional backfill to fill voids created relative to the existing slope topography at project start. The Contractor shall be prepared for the presence of groundwater during drilling and placement of reinforcing and structural steel sections and concrete.

If the Contractor substitutes piles with a larger diagonal dimension for the piles shown, ream or enlarge the drilled hole to provide a hole diameter at least 4 inches larger than the diagonal dimension of the pile.

Replace paragraph in section 46-4.04 with:

The payment quantity for the Retaining Wall 3 (Soldier Pile) bid item is lump sum. The Retaining Wall 3 (Solider Pile) bid item shall include all tools, equipment, materials, and labor necessary to construct Retaining Wall 3 (Solider Pile) including, but not limited to, drilled holes, excavation, structural backfill, placing and compacting Class 2 AB, structural steel, structural concrete, precast concrete panels, timber lagging, reinforcing bars, installing the drainage system behind the wall (if applicable), partial removal of the existing headwall, extension of the existing culvert, and all other incidental work for constructing Retaining Wall 3 (Soldier Pile). Progress payments shall be made based on the percent of work complete as approved by the Engineer.

^^

51 CONCRETE STRUCTURES

Add to Section 51-1.02E:

The stained and carved shotcrete facing for Retaining Wall 1 (Soil Nail) shall resemble the facing shapes and colors represented in the photo included in Appendix F. The Contractor shall construct a test panel for review and approval by the Engineer, prior to construction.

Add to section 51-4.01A:

Precast concrete members shall include all tools, equipment, materials, and labor necessary for installing the member, including, but not limited to, freighting; installing; fabricating; furnishing; backfilling and compacting backfill; sawcutting; excavation; spoiling; dewatering; shoring; temporary plating; structural backfill; temporary pavement; furnishing, placing, and compacting Class 2 AB; preparing and compacting subgrade; connecting storm drain pipes; formwork; and all incidental work for installing the precast concrete member.

Add to section 51-4.02D(8):

Bike safe grate material shall be per Caltrans Standard Plan D77B with Type 24-12x grate.

Add to section 51-4.03H:

Bike safe grates shall be constructed per Caltrans Standard Plan D77B.

Add to section 51-4.04:

Metal frames and covers or frames and grates are included in the payment for precast concrete members.

Type “GO” DI shall be constructed in accordance with Caltrans Standard Plan D73E and per the Project Plans. The payment quantity for the Type “GO” DI with Bike Safe Grate bid item is the number of inlets constructed.

Type “G1” DI shall be constructed in accordance with Caltrans Standard Plan D73B and per the Project Plans. The payment quantity for the Type “G1” DI with Bike Safe Grate bid item is the number of inlets constructed.

Type F DI shall be constructed in accordance with the manufacturer’s specifications and per the Project Plans. The payment quantity for the Type F DI bid item is the number of inlets constructed.

Add to section 51-7.01A:

Minor structures shall include all tools, equipment, materials, and labor necessary for installing the structure, including, but not limited to, freighting; installing; fabricating; furnishing; backfilling and compacting backfill; sawcutting; excavation; spoiling; dewatering; shoring; temporary plating; structural backfill; temporary pavement; furnishing, placing, and compacting Class 2 AB; preparing and compacting subgrade; extending and connecting storm drain pipes; formwork; and all incidental work for installing the structure.

Add to section 51-7.01B:

Under sidewalk drains shall include 4”x4” woven wire mesh and 3”x5” Alhambra A-470 or approved equal rectangular cast iron pipe.

Bike safe grate material shall be per Caltrans Standard Plan D77B with Type 24-12x grate.

Add to section 51-7.01C:

Under sidewalk drains shall be constructed in accordance with the Project Plans.

Bike safe grates shall be constructed per Caltrans Standard Plan D77B.

Replace paragraphs in section 51-7.01D with:

The City does not adjust the payment quantity for minor structures designated as final pay on the Bid Item List if the constructed height of the minor structure is within 6 inches of the vertical dimensions shown.

Metal frames and covers or frames and grates are included in the payment for minor structures.

Saddle DI shall be constructed per the Project Plans, Special Provisions, and Standard Specifications. The payment quantity for the Saddle DI with Bike Safe Grate bid item is the number of inlets constructed.

Under Sidewalk Drain shall be constructed per the Project Plans, Special Provisions, and Standard Specifications. The payment quantity for the Under Sidewalk Drain bid item is the number of drains constructed, regardless of length.

48” OCPI shall be constructed per the Project Plans, Standard Plans, Special Provisions, and Standard Specifications. The payment quantity for the 48” OCPI bid item is the number of inlets constructed. Aprons, fabric, and RSP around the OCPI shall be paid for under the 48” OCPI bid item and no additional compensation will be allowed therefore.

48” and 60” SDMH shall be constructed per the Project Plans, Special Provisions, and Standard Specifications. The payment quantity for the 48” SDMH and 60” SDMH bid items is the number of manholes constructed.

Storm Drain Junction Box shall be constructed per the Project Plans, Special Provisions, and Standard Specifications. The payment quantity for the Storm Drain Junction Box bid item is the number of junction boxes constructed. Aprons, fabric, and RSP around the junction box shall be paid for under the Storm Drain Junction Box bid item and no additional compensation will be allowed therefore.

The payment quantity for the concrete retaining wall bid items (Retaining Wall 2, 4, 5, and 6) is the volume of concrete per the dimensions shown on the Project Plans, including the footings, measured in cubic yards. The various concrete retaining wall bid items shall include all tools, equipment, materials, and labor necessary to construct the wall including, but not limited to, excavation, structural backfill, placing and compacting Class 2 AB, reinforcing bars, installing the drainage system behind the wall (if applicable), partial removal of existing

headwalls (if applicable), extension of storm drain pipes (if applicable), and all other incidental work for constructing the concrete retaining walls.

Straight Headwall Double Circular Pipe shall be constructed per the Project Plans, Standard Plans, Special Provisions, and Standard Specifications. The payment quantity for the Straight Headwall Double Circular Pipe bid item is the volume of concrete per the dimensions shown on the Project Plans and Standard Plans, including footings, measured in cubic yards.

^^

52 REINFORCEMENT

Replace paragraphs in section 52-1.04 with:

There is no separate bid item for reinforcing steel. Reinforcing steel shall be considered included in the various bid items that require it and no additional compensation will be allowed therefore.

^^

60 EXISTING STRUCTURES

Replace last paragraph in section 60-2.01C with:

Footings shall be completely removed and material backfilled to fill the void, where applicable, with retaining wall removal activities.

Replace paragraph in section 60-2.01D with:

The payment quantity for Remove Retaining Wall bid item is paid for by the length measured parallel to the ground surface along the bottom face of wall.

^^

DIVISION VII DRAINAGE FACILITIES

64 PLASTIC PIPE

Replace the 1st paragraph of section 64-2.02A with:

All HDPE pipes must be Type S and all sanitary sewer pipes shall be per section 77.

Add to section 64-2.04:

HDPE pipes shall be paid under the various bid items for HDPE Pipe delineated by pipe size. The payment quantity for the HDPE Pipe bid items is the length of pipe measured parallel to the ground surface along the centerline of the trench at the finished grade. The HDPE Pipe bid items include all equipment, tools, materials, and labor to install HDPE pipes including, but not limited to, trench excavation; shoring; bracing; dewatering; placing and compacting bedding, pipe zone, initial backfill and final backfill material; installing the pipe; connecting to the existing and proposed storm drain systems (pipes, manholes, inlets, structures, etc.); testing; temporary and permanent surface restoration, including temporary striping; and all other incidental work to install HDPE pipes.

^^

70 MISCELLANEOUS DRAINAGE FACILITIES

Add to section 70-5.02A(1):

Flared end sections (FES) shown on the Project Plans shall be plastic flared end sections.

Replace paragraph in section 70-5.02D:

The payment quantity for the FES bid items is the number of flared end sections installed per the Project Plans.

Replace paragraph in section 70-5.05D:

Drainage inlet markers installed per Standard Plan D71 and as shown on the Project Plans shall be paid for under the DI Marker bid item. The payment quantity for DI Marker bid item is the actual number of drainage inlet markers installed.

Replace section 70-8 with:

70-8 BIOFILTRATION SWALE

70-8.01 GENERAL

70-8.01A Summary

This section governs the work for constructing the biofiltration swale as shown on the Project Plans. Biofiltration Swale includes all equipment, tools, materials, and labor necessary to construct biofiltration swales, including, but not limited to, importing and placing the compost, class 2 permeable material, and underdrain; grading; and all other incidental work for construction of the biofiltration swales as shown on the Project Plans.

70-8.02 MATERIAL

70-8.02A Compost

The compost material shall comply with section 21-2.02K.

70-8.02A Permeable Material

The permeable material shall be conform to Caltrans Class 2 Permeable Material per section 68-2.02F(3).

70-8.03 PAYMENT

The payment quantity for the Biofiltration Swale bid item is the area within the limits shown on the Project Plans measured parallel to the ground surface.

^^

71 EXISTING DRAINAGE FACILITIES

Add to section 71-1.03:

Existing drainage facilities not scheduled for removal shall be protected in place. Any damage done to existing drainage facilities not scheduled for removal due to the Contractor's operations shall be repaired to the satisfaction of the City Engineer at the Contractor's expense.

Replace "Not Used" in section 71-1.03 with:

There is no separate bid item for the material used to backfill the trenches, holes, depressions, pits, etc. caused by removing, salvaging, reconstructing, abandoning, destroying, modifying, resetting, relocating, adjusting, relaying, remodeling, and rehabilitating existing drainage facilities and no additional compensation will be allowed therefore.

Add to section 71-2.04:

The payment quantity for the Remove DI bid item is the number of drainage inlets removed per the Project Plans. The Contractor shall return the drainage inlet frame and grate to the City if requested by the Engineer.

The payment quantity for the Remove Storm Drain Pipe bid item is the length of removed pipe measured parallel to the ground surface along the centerline of the trench at the finished grade.

The payment quantity for the Remove Storm Drain Manhole bid item is the number of storm drain manholes removed per the Project Plans. The Contractor shall return the manhole lid and frame to the City if requested by the Engineer

Add to section 71-3.01D:

Cleaning, inspecting, and preparing the culvert (storm drain pipes) as shown on the Project Plans shall be paid for under the Clean Storm Drain Pipe bid item.

Replace "Reserved" in section 71-6.03 with:

71-6.03A General

This section governs abandonment of culverts and pipelines.

71-6.03B Submittals

Upon request, schedules and method of abandonment shall be submitted to the Engineer for approval.

71-6.03C Materials

Concrete, fittings, backfill material and other material used for abandonment shall comply with the Standard Specifications and these Special Provisions and be per the Project Plans.

71-6.03D Construction

Pipelines to be abandoned in place by either plugging the ends or filling the entire pipeline with 1-sack light weight sand slurry as shown on the Project Plans. No pipeline shall be abandoned until the new pipeline and all services, if applicable, are installed, tested, and in service.

Pipelines to be abandoned shall be securely closed at all pipe ends by an approved cap, blind flange, or, at manhole entries, by a watertight plug of concrete, or brick and cement mortar, not less than 2-feet thick. When laterals are abandoned, they shall be capped with an approved fitting at the property line.

For pipelines to be completely filled, the pumping pressure within the pipe shall not exceed 20 PSI. The Contractor's equipment shall be capable of pumping between 0-20 psi. In the event pump pressures are exceeded and the pipe fails, the Contractor shall be responsible for providing all labor, material, and equipment necessary to clean up any slurry. Contractor is made aware that where necessary multiple slurry insertion and monitoring locations will be required to ensure adequate abandonment.

The Contractor shall be responsible for the cutting, removing, and legally disposing of all materials and for the dismantling of any fittings and valves necessary to perform the abandonment. The Contractor shall anticipate the need for removal of sections of the existing pipeline during tie-ins to the existing system and abandonment of the existing pipelines where indicated on the plans.

All Asbestos Concrete Pipe shall be handled and disposed of according to California Code of Regulations (CCR) Tile 8, Section 1529; or most current regulations. Contractor shall provide a plan for disposal of the Asbestos Cement pipe and provide evidence of proper disposal to the Engineer.

71-6.03E Payment

The payment quantity for the Abandon Storm Drain Pipe bid item is the length measured per the dimensions shown on the Project Plans.

^^

DIVISION VIII MISCELLANEOUS CONSTRUCTION

73 CONCRETE CURBS AND SIDEWALKS

Add to section 73-1.01:

Project is in a freeze thaw area and requires air entrained concrete.

Add to section 73-1.02A:

Recycled AB and/or appropriately ground and blended material generated from remove base and surfacing activities can be used in lieu of Class 2 AB under the minor concrete items, as approved by the Engineer.

Replace paragraph in section 73-1.02B with:

Detectable warning surface shall be Armor Tile Brick Red (Federal Color No. 22144) or approved equal unless otherwise shown on the Project Plans.

If a utility box is located within detectable warning surface, detectable warning surface shall be neatly trimmed around utility box to allow access to utility. Contractor is responsible for maintaining ADA compliance.

Detectable warning surfaces shall be wet set in concrete. Surface applied Detectable Warning Surfaces, such as those attached by adhesives, are not authorized.

Add to Section 73-1.03A:

Detectable Warning Surfaces shall be installed per the manufacturer's specifications.

Replace paragraph in section 73-2.04 with:

Minor concrete shall be paid under the Minor Concrete types shown on the Bid Item List. Class 2 aggregate base (or approved recycled material) required for the construction of Minor Concrete types shown on the Bid Item List shall be included in the unit price for each type. Recompaction of the existing base and/or subbase material below the Class 2 aggregate base required for the construction of Minor Concrete types shown on the Bid Item List shall be included in the unit price for each type.

Add to section 73-3.03:

All concrete used for curb ramps, driveways, sidewalks, and landings shall be broom finished.

Concrete used for Minor Concrete (Driveway) shall be 3,600 PSI with Solomon UltraFiber 500 or approved equal. Minor Concrete (Driveway) shall extend up to the top of adjacent curb ramps as shown on the Project Plans.

Replace paragraph in section 73-3.04 with:

Minor concrete shall be paid under the Minor Concrete types shown on the Bid Item List. Class 2 aggregate base (or approved recycled material) required for the construction of Minor Concrete types shown on the Bid Item List shall be included in the unit price for each type. Recompaction of the existing base and/or subbase material below the Class 2 aggregate base required for the construction of Minor Concrete types shown on the Bid Item List shall be included in the unit price for each type.

The payment quantity for the Detectable Warning Surface bid item is the number of locations detectable warning surfaces are installed per the Project Plans. Each location is considered a measurement of one (1), independent of the number of panels required at that location.

Add paragraphs to section 73-10.04:

The payment quantity for the Remove Concrete Curb bid item is the length measured parallel to the ground surface along the face of the curb.

The payment quantity for the Remove Concrete Curb & Gutter bid item is the length measured parallel to the ground surface along the flowline of the gutter.

These bid items only include the removal and disposal of concrete at the locations shown on the Project Plans. Concrete removed and disposed of as part of other items of work are not included in these bid items.

^^

75 MISCELLANEOUS METAL

Replace section 75-1.04 with:

There is no specific bid item for miscellaneous metal material. Miscellaneous metal materials shall be paid under the various bid items requiring miscellaneous metal materials and no additional compensation will be allowed therefore.

Replace section 75-2.04 with:

There is no specific bid item for manhole frames or drainage inlet frames and grates. Manhole frames and drainage inlet frames and grates shall be paid under the various bid items requiring manhole frames and drainage inlet frames and grates and no additional payment shall be made therefore.

^^

77 LOCAL INFRASTRUCTURE

Replace "Reserved" in section 77-1 with:

77-1 TRENCH EXCAVATION, BACKFILL, AND COMPACTION

77-1.01 GENERAL

77-1.01A Summary

This section governs the work for trench excavation, backfill, and compaction for underground pipeline work including, but not limited to, the installation of various sizes of HDPE pipe and removal and replacement of sanitary sewer pipes and services.

77-1.01B Submittals

The following items shall be submitted and approved by the Engineer:

1. Test results showing gradation, durability, and sand equivalent of pipe zone material.
2. Permit and notification form for excavations 5 feet or more in depth as required by Cal-OSHA, including any trench excavation or shoring plans.

The testing frequency and location shall be approved by the Engineer.

77-1.02 MATERIALS

77-1.02A Trench Excavation

Excavation is unclassified. The Contractor shall complete all excavations regardless of the type of materials encountered. The Contractor shall make his own estimate of the kind and extent of the various materials which will be encountered in the excavation.

77-1.02B Pipe Zone

Unless otherwise specified on the Project Plans, material for the pipe zone shall be 3/8 inch minus imported screened sand with minimum SE of 50 per Cal Test 217-G. If groundwater is encountered, use 1 inch uniform crushed or non crushed drain rock free of organic matter. Drain rock to be wrapped in geotextile fabric.

Where there is less than 6 inches of clearance to a crossing pipe, install 1.5" minimum thick polyethylene foam plank, position pipe on concrete blocks/bricks, and use slurry cement backfill for pipe zone per detail on Project Plans.

77-1.02C Backfill

Material for the initial backfill from 12 inches above the top of the pipe to subgrade shall be ¾ inch Class 2 Aggregate Base. The aggregate size gradation shall comply with Caltrans Specifications. The sand equivalent shall be 30 minimum. The durability index shall be 35 minimum.

77-1.03 CONSTRUCTION

77-1.03A Excavation

77-1.03A(1) General

Excavation for pipelines, fittings, and appurtenances shall be open trench to the depth and in the direction necessary for the proper installation of the same as shown on the contract drawings or as otherwise approved by the Engineer. Excavation shall only proceed when the necessary materials have been delivered to the site.

The Contractor shall bear all costs of disposing of roots and all other waste materials from the excavation. Material shall be disposed of in such a manner as to meet all requirements of the state, county, and local regulations regarding health, safety, and public welfare. Non-flammable material and flammable material, when burning is not permitted, shall be disposed of off the construction site in an approved location at the Contractor's expense.

The Contractor shall remove obstructions within the trench area or adjacent thereto, such as abandoned concrete structures, logs, and debris of all types, without additional compensation. The Engineer may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment can be made without adversely affecting the intended function of the facility.

77-1.03A(2) Existing Pavement Removal

Pavement to be removed shall be removed and replaced in the manner prescribed by the Standard Specifications and these Special Provisions.

Existing pavement, curbs, gutters, sidewalks and driveways to be removed in connection with construction shall be neatly saw cut prior to removal. Saw cuts shall have a minimum depth of one inch in concrete sidewalk.

If the saw cut in a sidewalk or driveway would fall within 12 inches of a construction joint, expansion joint, or edge, the concrete shall be removed and replaced to the joint or edge. If the saw cut would fall within 6 inches of a score mark, the concrete shall be removed and replaced to the score mark. Concrete shall be removed by jackhammer.

77-1.03A(3) Grading and Stockpiling

The Contractor shall control grading in a manner to prevent water running into excavations. Obstructions of surface drainage shall be avoided and means shall be provided whereby storm and wastewater can be uninterrupted in existing gutters, other surface drains, or temporary drains. Material for backfill or for

protection of excavation in public roads from surface drainage shall be neatly placed and kept shaped so as to cause the least possible interference with public travel. Free access must be provided to all fire hydrants, water valves, meters and private drives.

77-1.03A(4) Line and Grade

The Contractor shall excavate the trench to the lines and grades shown on the plans. Any deviations shall first be approved by the Engineer.

The trench shall be excavated to a minimum depth of 6 inches below the bottom of the pipe. The sides of the trench shall be excavated and maintained as nearly vertical as is practical.

77-1.03A(5) Trench Support

The trench shall be adequately supported and the safety of workers provided for as required by the standard of the appropriate regulatory agency.

All shoring for open excavations shall conform to the State of California, Department of Industrial Relations, Division of Industrial Safety "Construction Safety Orders."

The Contractor shall be responsible for adequately shored and braced excavations so that the earth will not slide, move or settle, and so that all existing improvements of any kind will be fully protected from damage.

No shoring once installed, shall be removed until the trench has been approved for backfill operations. Removal of shoring shall only be accomplished during backfill operations and in such a manner as to prevent any movement of the ground or damage to the pipe or other structures.

The Contractor shall obtain all permits for any excavations over five feet in depth into which a person is required to descend or any excavation less than five feet in depth in soils where hazardous ground movement may be expected and into which a person is required to descend.

Excavated material shall not be placed closer than two feet from the top edge of the trench. Heavy equipment should not be used or placed near the sides of the trench unless the trench is adequately braced.

77-1.03A(6) Use of Explosives

Blasting is not permitted for trenching unless approved by the Engineer.

77-1.03A(7) Preservation of Trees

Excavation within the dripline of any tree shall be performed by hand digging. Trees shall not be removed outside of fill or excavated areas, except as authorized by the Engineer.

Tree roots larger than 2 inches in diameter shall not be cut and shall be kept moist during exposure. For damaged or severed root systems, trees shall be trimmed to compensate for the decreased root system. Trimming shall be done to the satisfaction of the Inspector. All roots shall be neatly cut with saw or sharp cutter.

77-1.03A(8) Dewatering

The Contractor shall provide and maintain, at all times during construction, ample means and devices with which to promptly remove and properly dispose of all water from any source entering the excavations or other parts of the work. Dewatering shall be accomplished by methods which will ensure a dry excavation and preservation of the final lines and grades of the bottoms of excavations. Said methods may include well points, cofferdams, sump pumps, suitable rock or gravel placed below the required bedding for drainage and pumping purposes, temporary pipelines and other means, all subject to the approval of the Engineer.

Dewatering for the structures and pipelines shall commence when groundwater is first encountered and shall continue until the backfill at the pipe zone has been completed.

The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property. No water shall be drained into work built or under construction without prior consent of the Engineer. Water shall be disposed in such a manner as not to be a menace to public health.

The Contractor shall be responsible to obtain all required Local and State Permits.

77-1.03A(9) Correction of Faulty Grades

Any over-excavation carried below the grade as specified or shown, shall be rectified by backfilling with approved sand and/or graded gravel, and shall be compacted to provide a firm and unyielding subgrade and/or foundation, as directed by the Engineer.

77-1.03A(10) Structure Protection

Temporary support, adequate protection, and maintenance of all underground and surface structures, drains, sewers, and other obstructions encountered in the progress of the work shall be furnished by the Contractor at his expense and subject to the approval of the Engineer. Any structure that has been disturbed shall be restored upon completion of the work.

77-1.03A(11) Trench Width and Grade

The width of the trench within the pipe zone shall be such that the clear space between the barrel of the pipe and the trench wall shall not exceed the amount shown in the standard details. In general, the following shall be adhered to:

Nominal Pipe Diameter	Trench Width Minimum	Trench Width Maximum
12” or less	O.D. + 12”	O.D. + 18”
greater than 12”	O.D. + 18”	O.D. + 24”

Trench widths in excess of those specified must have prior written approval.

77-1.03A(12) Maximum Length of Open Trench

Unless otherwise specified or directed by the Engineer, the maximum length of open trench during working hours shall be 500 feet, or the distance necessary to accommodate twice the amount of pipe installed in a single day, whichever is greater. The maximum length of open trench appropriately covered during non-working hours is the distance necessary to accommodate the amount of pipe installed in a single day. The distance is the collective length of any location, including open excavation, pipe laying and appurtenant construction, and backfill, which has not been temporarily resurfaced. Failure by the Contractor to comply with the limitations specified herein may result in an order to halt progress of the work until compliance has been achieved. The Contractor shall provide proper barricades for excavated areas.

Open trenches must be appropriately covered during non-working hours. Open trenches are not allowed during the scheduled events listed in section 7-1.03. Prior to those events, all trenches must be temporarily resurfaced to the satisfaction of the Engineer.

77-1.03B Trench Foundation

77-1.03B(1) General

The trench bottom shall be graded to provide a smooth, firm and stable foundation at every point throughout the length of the pipe. Should large gravel and cobbles be encountered at the trench bottom or pipe subgrade, they shall be removed from beneath the pipe and replaced with clean imported sand which shall be compacted to provide uniform support and a firm foundation.

77-1.03B(2) Foundations in Poor Soil

If excessively wet, soft, spongy, unstable, or similarly unsuitable material is encountered at the surface upon which the bedding material is to be placed, the unsuitable material shall be removed to a depth as determined in the field by the Engineer. The Contractor's attention is called to section 77-1.03A(8), regarding his/her responsibilities in maintaining adequate dewatering procedures to ensure that an otherwise stable foundation will not be rendered unfit due to accumulation of water and no additional compensation will be allowed therefore.

77-1.03C Backfill and Compaction

77-1.03C(1) General

Backfill shall be completed within the shortest possible time so that the construction area or street can be opened to traffic. If for any reason construction of the pipeline or appurtenances thereto is delayed, the City may require that the trench be backfilled and such areas or streets opened to traffic.

77-1.03C(2) Pipe Zone

After completion of the trench excavation and proper preparation of the foundation, 6 inches of bedding material shall be placed on the trench bottom for support under the pipe. Bell holes shall be dug to provide adequate clearance between the pipe bell and the bedding material. All pipes shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade and the joint is made, the remainder of the pipe bedding shall be placed to the limits as shown on the Drawings. All bedding material shall be compacted 90% as measured by Test Method California 231, prior to placement of subsequent backfill.

When bedding material is selected material or imported sand, the pipe bedding backfill shall be brought to optimum moisture content and shall be placed by hand in layers not exceeding 3 inches in thickness to the centerline (string line) of the pipe and each layer shall be solidly tamped with the proper tools so as not to injure, damage, or disturb the pipe. Backfilling shall be carried on simultaneously on each side of the pipe to assure proper protection of the pipe.

Each lift shall be "walked in" and supplemented by slicing with a shovel to ensure that all voids around the pipe have been completely filled. Mechanical compaction such as "pogo sticks" or "wackers", as approved, shall be used for compaction of pipe zone.

77-1.03C(3) Initial Backfill

The remaining portion of the trench shall be backfilled, compacted, and/or consolidated by approved methods to obtain a 90% compaction as measured by Test Method 231F. Backfill shall be good sound earth, sand or gravel. Bituminous pavement, concrete, rock, or other lumpy material shall not be used in the backfill unless these materials are scattered and do not exceed 6 inches in any dimension and are not placed within 1½ feet of the surface. Material of perishable, organic matter, spongy or otherwise improper nature, shall not be used.

When backfill is placed mechanically, the backfill material shall be pushed onto the slope of the backfill previously placed and allowed to slide down into the trench. The Contractor shall not push backfill into the trench in such a way as to permit free fall of the material until at least 18 inches of cover is provided over the top of the pipe. Under no circumstances shall sharp, heavy pieces of materials be allowed to be dropped directly onto the pipe or the tamped material around the pipe. Backfill shall be placed in layers not exceeding 8 inches and compacted by an approved method.

Heavy duty compacting equipment having an overall weight in excess of 125 pounds shall not be used until backfill has been completed to a depth of 2 feet over the top of the pipe.

If hydro-hammer is used for compaction of overlying materials, at least 4 feet of backfill must be placed over the top of pipe prior to its use. This is required to ensure that the pipe is not damaged.

77-1.03C(4) Final Backfill

Final backfill placed in trenches shall be compacted to a density of not less than 95%.

Backfill shall be placed in layers not exceeding 8 inches, compacted and brought up to the subgrade.

77-1.03D Excess Excavated Material

The Contractor shall make the necessary arrangements for, and shall remove and dispose of all excess excavated material. It is the intent of these specifications that all surplus material not required for backfill or fill shall be disposed of by the Contractor outside the limits of the public right-of-way and/or easements at no liability to the City.

No excavated material shall be deposited on private property unless written permission from the owner thereof is secured by the Contractor. Before the City will accept the work as being completed, the Contractor shall file a written release signed by all property owners with whom he has entered into agreements for disposal of excess excavated material absolving the City from any liability connected therewith.

77-1.03E Restoration of Damaged Surfaces or Property

If any pavement, trees, shrubbery, fences, poles, or other property and surface structures have been damaged, removed, or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the contract documents, state laws, municipal ordinances, or the specific direction of the City, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the Contractor.

77-1.03F Final Clean-Up

After backfill has been completed, the right-of-way shall be dressed smooth and left in a neat and presentable condition to the satisfaction of the Engineer.

77-1.04 PAYMENT

Not Used

Replace "Reserved" in section 77-2 with:

77-2 SANITARY SEWER MANHOLE STRUCTURAL LINING

77-2.01 GENERAL
77-2.01A Summary

Section 77-2 includes specifications for applying structural lining to the existing sanitary sewer manhole with a cured-in-place manhole (CIPM) liner system.

Furnish all materials, labor, equipment, tools and required incidentals for providing and installing a resin impregnated custom fabricated liner by means of air inflation into an existing manhole, wet well, pump station, or catch basin. The liner is installed from the top of the casting to the top of the channel which includes; shim rings, casting chimney interface, chimney, cone, wall and bench. The channel can be included as directed by the City. When cured, the liner will provide a durable monolithic chemical resistant barrier that will protect the existing substrate from further deterioration. The finished liner will also stop any water from either entering or exiting from the lined surfaces of the original substrate.

77-2.01B Submittals

Furnish the following to the owner when required:

1. Detailed installation procedures, including substrate preparation, liner wet out, resin mixing, liner insertion, curing, cut-out, and edge sealing.
2. Shop Drawing showing structure configuration, diameter, and length.
3. Resin information including, Technical Data Sheets (TDS), Safety Data Sheets (SDS), and published physical properties.
4. Liner information including, TDS, SDS, and composition of the respective layers.
5. Certified independent laboratory tests on the proposed resin impregnated Liner showing values for Flexural Modulus of Elasticity, Flexural Strength, Tensile Strength, and Adhesion Testing.
6. PH of the original substrate shall be taken. Third Party Chemical Resistance test results shall be submitted showing acceptable results of the Liner's ability withstand the determined PH. For lined channels testing must be in accordance with ASTM F1216 Appendix X2.1.
7. Stamped design for wall thickness. See Section 1.05.
8. A warranty certificate provided by the installer for material and labor.

77-2.01C Design

In order to maintain its water tightness, the liner shall be bonded to the original substrate in a way that does not allow water to find a pathway behind the liner and enter into the waste stream. For the areas that are bonded the bond strength must be greater than the hydrostatic pressure. For areas that are not bonded a

maximum radius of unbonded area and maximum distance (height) the liner can be pushed off the substrate shall be established. It is recommended that the maximum radius of any one unbonded area be 6 inches and the maximum height be 1 inch. Therefore, the minimum thickness can be determined by the following Roark's Formula for Stress and Strain 7th Edition Table 11.2, 10b.

In order to prevent cracking in the chimney portion of the Liner in geographical areas of freeze thaw and/or areas of traffic loading, at least one layer of 24oz per square yard woven roving fiberglass shall be incorporated into the chimney portion of the Liner. The fiberglass shall extend 4 inches below the last joint of the chimney.

77-2.02 MATERIALS
77-2.02A Liner

The Liner shall be composed in one of the following two configurations:

1. Single Layer - Non-Porous Membrane
   a. Non-Porous Membrane is to be a gas and liquid impermeable membrane of special non-porous materials with felt mechanically embedded on both sides. Membrane is to be custom fabricated to fit to the inside dimensions of each structure.

2. Multiple Layers - Non-Porous Membrane and fiberglass.
   a. Non-Porous Membrane is to be a gas and liquid impermeable membrane of special non-porous materials with felt mechanically embedded on both sides. Membrane is to be custom fabricated to fit to the inside dimensions of each structure.
   b. Fiberglass shall be a coated woven roving style to allow for resin adherence. The weight of the fiberglass and number of layers required shall be based on the manufactured published data and the stamped design for minimum wall thickness.

77-2.02B Resin System

Resin shall be 100% solids epoxy formulated to withstand a typical domestic wastewater sewer system including high sulfide areas near force mains and wet wells. The resin must be compatible with both the non-porous membrane and the fiberglass. The resin must have a minimum of 250psi bond strength to wet or dry brick and concrete surfaces.

77-2.03 CONSTRUCTION
77-2.03A Preparation Procedures

pH of the original substrate shall be determined.

Contractor will perform preliminary cleaning of the structure with high-pressure water-blasting at a minimum of 4000psi and 4gpm to obtain the desired concrete surface profile (CSP) of 3 or greater.

If the desired CSP is not achieved by high-pressure water-blasting other methods of obtaining the surface profile such as abrasive blasting and acid etching shall be used.

The Contractor shall remove all the existing manhole steps. The metal portion of all steps will be removed to within ½" of the manhole interior wall surface. The remaining protruding metal portion of the step shall be covered with a cementitious material to provide a smooth surface on and around the protrusion for the liner to bond.

All open joints, voids, holes, cracks, and missing bricks larger than 3 inches in diameter or equivalent shall be patched with a cementitious material to provide a smooth surface for the liner to bond. All loose, cracked or disintegrated material shall be removed from the area to be patched exposing a sound substrate. The cementitious patch material shall be allowed to cure according to the manufacturer's specifications before continuing with the Liner installation process.

Bench shall be sloped so that water will flow back into channel.

All active water leakage shall be stopped for a minimum of 30 minutes prior to installation to allow time to insert and pressurize the liner. This prevents resin washout and allows proper curing and bonding. Leaks may be stopped with fast setting cement or chemical grout injection.

When the channel is required to be lined the Contractor shall plug the inlet pipe, inspect for infiltration leaks around the inlet and outlet pipes and in the channel. All leaks present shall be stopped by the use of chemical grout injection and/or by the use of fast-setting cement.

Contractor shall remove any incoming pipes to within 2 inches of the wall. The pipe outside circumference shall be cemented with an approximate 60º taper, forming a filet between the structure wall and the pipe making a smooth transition for the liner to bond.

The final prepared surface shall have a concrete surface profile of 3 or greater and have a smooth uniform appearance.

After the above-mentioned procedures the surface shall be cleaned with degreaser or other solvents, as needed, in order to remove any film, grease, loose patching material, chemical grout or residue on the surface. Structure shall then be pressure rinsed with water.

77-2.03B General Installation

Contractor shall verify that the liner intended for the structure matches the dimensions of the structure by measuring the dimensions of the structure and the liner prior to installation.

All resin intended for the liner shall be mixed properly.

Contractor shall apply mixed resin evenly onto both the inside and outside of the entire liner with rollers. There shall be no white spots (dry liner) on either side of the liner including seams and bottom disk(s). Areas of heavily saturated resin shall be spread out to cover areas that are deficient of resin.

Liner can be installed to include or omit the structure channel depending upon the intention of the owner.

For liner installation that does not include the channel, a temporary subfloor shall be constructed to keep liner from inflating into the channel and to allow the sewer to flow unobstructed without bypass pumping. A saturated bottom disk or disks are installed onto the subfloor, bench, and up the wall about 6 inches.

For channel lining the incoming and outgoing pipes are plugged. This may require bypass pumping. Two or more bottom disks are placed into the channel, onto the bench, and 6 inches up the wall.

Resin saturated liner is lowered into the structure and positioned properly to line up any offsets.

Liner is pressurized with air or water to a minimum of 3psi. Contractor shall verify proper position of the liner from the inspection portal located on the installation canister. If liner is not positioned properly the liner can be raised, lowered or rotated to desired position. In some cases, it may be necessary to enter the structure to hand position portions of the liner.

The liner is cured with steam, hot water, or ambiently. Cure times vary according to, cure method, liner thickness, structure size, ambient temperatures, and resin formulation. Typically, curing takes about an hour with steam. Contractor may use the exposed portion of the liner above the frame as an indicator. When steam is used a cool down period is needed equaling about 25% of cure time.

Liner shall be cut and trimmed to allow for all incoming and outgoing pipe to flow without obstruction. If channel is unlined the subfloor shall be removed.

All cut edges shall be sealed with an epoxy mastic material that is compatible with the liner system.

77-2.03C Finished Liner

The finished CIPM liner system shall be continuous over the entire length of the structure from the cover seat to the top of the channel, or shall include the channel as required. The liner shall be smooth with minimal wrinkling.

Liner shall be bonded to the structure, as required by design, and in such a way as to not allow any water to flow behind the liner and enter back into the waste stream.

77-2.03D Quality Assurance

The Contractor shall visually inspect the liner from inside the structure and report to the City any defects that may affect performance of the liner. All defects shall be fixed to conform with these specifications.

The Contractor shall spark test the entire liner in accordance with the spark testing equipment specifications. All defects must be repaired using an epoxy mastic that is compatible to the liner system.

Adhesion testing shall be performed on the first manhole of the Project in two locations; a location on the wall within 6 inches from the bench and a location on the bench.

77-2.04 PAYMENT

The payment quantity for the SSMH Structural Lining bid item is the number of manholes lined. There is no separate bid item for ancillary work associated with designing, dimensioning, and installing the liner including, but not limited to, taking measurement, cleaning the manhole, removing and replacing manhole steps, patching and plugging, testing, and by-pass pumping and there will be no additional compensation therefore.

Replace "Reserved" in section 77-3 with:

77-3 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (GRAVITY SEWER FLOW)

77-3.01 GENERAL

77-3.01A Summary

This section of the specifications will govern the furnishing and installation of PVC pipe material and fittings; including laying, jointing, bedding, testing and approvals. All incidentals and appurtenant operations necessary for the construction of pipelines shall be done in strict accordance with the drawings and other terms and conditions of the contract.

The contractor shall also furnish all equipment, tools, labor and materials required to rearrange sewers, conduits, ducts, pipes, or other structures as may be necessary to provide installation as shown and specified.

All standard specifications, i.e., ASTM, etc., made a portion of these specifications by reference shall be the latest edition and revision thereof.

The contractor shall be responsible for all material furnished by him and shall replace it at his own expense, should the material be defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required to replace defective material discovered prior to final acceptance of the work.

Pipe surfaces shall be free from nicks, scratches and other blemishes. The joining surfaces of pipe spigots and of integral bell and sleeve reinforced bell sockets shall be free from gouges or other imperfections that might cause leakage.

77-3.01B Storage and Care

The contractor shall be responsible for the safe storage of material furnished by or to him and accepted by him, and intended for the work, until it has been incorporated in the completed project. The interior of all pipe and fittings shall be kept free from dirt and foreign matter at all times.

Pipe shall be stored at the job site in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression, damage or deformation to bell ends of the pipe. If pipe is to be exposed to direct sunlight for more than 14 days, pipe must be covered with an opaque material while permitting adequate air circulation above and around the pipe to prevent excessive heat accumulation.

Gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease. Solvent cement when used shall be stored in tightly sealed containers away from excessive heat.

77-3.01C Submittals

Submittals shall be provided for the following items plus all additional items required in the specifications for the particular type of pipe:

1. Pipe and jointing material
2. Fittings
3. Specialties

77-3.02 MATERIALS

77-3.02A Polyvinyl Chloride (PVC) Pipe

77-3.02A(1) General

PVC pipe and fittings shall be made in accordance to ASTM D-3034 or ASTM F679, and ASTM D1784 in both physical, dimensional and chemical requirements. Pipe shall be green unless otherwise approved.

77-3.02A(2) Markings

Each standard or random length of pipe shall be clearly marked with the following:

1. Manufacturer's name
2. Nominal pipe size, i.e. 6-inch
3. Cell classification or material code; i.e. 12454-B
4. Dimension ratio; i.e. SDR35
5. Product type; i.e. Type PSM
6. Standard specification designation; i.e. 03034
7. Production code

77-3.02A(3) Pipe Class

The SDR shall be 26, unless otherwise stated on the Project Plans.

77-3.02A(4) Laying Length

The standard laying length shall be 20 feet (plus/minus) 1 inch. A maximum of 15% may be furnished in random lengths of not less than 10 feet each.

77-3.02A(5) Joint Type

Pipe joints shall be constructed with an integral bell and spigot with an elastomeric gasket push-on-type joint. Each spigot shall have a reference mark to facilitate pipe assembly. The gasket shall be contained in a machined groove on the pipe spigot such that when compressed the gasket will not displace and will form a positive seal. The gasket shall meet all requirements of ASTM F-477; pipe lubricant shall be listed with NSF (National Sanitation Foundation).

Solvent cement joints are strictly prohibited.

77-3.02A(6) Physical Test Requirements

Material samples shall be taken at the beginning of production and tested for compliance to ASTM D-3034 or ASTM F794.

Product Quality - The following tests shall be performed on a sample of pipe.

1. Flattening - Three specimens of pipe per pipe size furnished, minimum of 6 inches long, shall be flattened between parallel plates in a suitable press until the distance between the plates is 40% of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within 2-5 minutes. Remove the load, and examine the specimens for splitting, cracking, or breaking.

2. Pipe Stiffness - The pipe stiffness shall be determined utilizing procedures similar to those outlined in ASTM D2412. The stiffness of pipe shall be determined at a 5% deflection datum. Test specimens shall be a minimum of two pipe diameters or 4 feet in length, whichever is less.

3. Joint Tightness - Joint tightness shall be tested in accordance with ASTM D3212.

The manufacturer shall provide a certificate of conformance for the above tests. Tests shall be performed on materials and products from the same lot of those furnished to the project.

4. Plant Inspection - The District may require inspection of production of the pipe. When requested, the manufacturer shall provide advance notice of when and where production of materials will begin.

77-3.02A(7) Struts

All pipe, 24 inches in diameter and greater, shall be strutted prior to placement in the trench. Each strut shall consist of two 2x4's placed in a perpendicular cross. A minimum of four struts equally spaced shall be placed per pipe length. Struts are to be removed prior to backfill above the pipe zone.

77-3.02A(8) Warning Tape

Warning tape shall be two-inch wide green non-metallic tape marked “sewerline.”

77-3.02A(9) Fittings

All fittings shall be as manufactured and furnished by the pipe supplier or approved equal and have bell and/or spigot configurations compatible with the pipe.

77-3.03 CONSTRUCTION

77-3.03A Handling and Transportation

77-3.03A(1) General

Handling and transportation of pipe shall be in accordance with the pipe manufacturer's published instructions.

Heavy canvas or nylon slings of suitable strength shall be used for lifting and supporting materials. Chains or cables shall not be used.

Pipe and fittings shall not be stored on rocks or gravel, or other hard material which might damage the pipe.

77-3.03A(2) Rubber Gasket Storage

All rubber gaskets shall be stored in a cool, well-ventilated place and should not be exposed to the direct rays of the sun. Gaskets shall not be allowed in contact with oils, fuels, petroleum, or solvents.

77-3.03B Pipe Laying

77-3.03B(1) General

Pipe shall be laid in accordance with the pipe manufacturer's published instructions, as complimented and modified herein and in the Project Plans.

77-3.03B(2) Cleanliness

The interior of pipes shall be clean of foreign materials before sections of pipe are installed and shall be protected to prevent entry of foreign materials after installation.

Open ends of installed pipe shall be sealed with watertight plugs or other approved means at times when pipe installation is not in progress.

Ground water shall not be allowed to enter the pipe.

77-3.03B(3) Inspection Before Installation

All pipe and fittings shall be carefully examined for cracks and other defects just prior to installation. Spigot ends shall be examined with particular care as this area is the most vulnerable to damage from handling. Defective pipe or fittings shall be laid aside for inspection by the Engineer, who will prescribe corrective repairs or rejection.

77-3.03B(4) Lowering of Pipe Material into Trench

Proper implements, tools, and equipment, satisfactory to the City, shall be provided and used by the Contractor, for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be carefully lowered into the trench piece by piece in such a manner as to prevent damage to the water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

If damage occurs to any pipe, fittings, valves, hydrants or water main accessories in handling, the damage shall be immediately brought to the Engineer's attention.

77-3.03B(5) Laying of Pipe

Pipe laying shall proceed upgrade with spigot ends pointing in the direction of flow. After a section of pipe has been lowered into the prepared trench, the Contractor shall clean the end of the pipe to be joined, the inside of the joint, and the rubber ring immediately before joining the pipe. The assembly of the joint shall be made in accordance with the recommendations of the manufacturer of the type of joint used. The bell and spigot joint shall be pushed "home" in line with the installation band. If a piece has been cut, the usable end shall be clearly marked to show the proper amount of installation distance. All special tools and appliances required for jointing assembly shall be provided by the Contractor.

After the joint has been made, the Contractor shall check pipe for alignment and grade. The trench bottom shall form a continuous and uniform bearing and support along the length of the pipe between joints. Sufficient pressure in making the joint shall be applied to assure proper pipe alignment and joint makeup. Sufficient pipe zone material shall be placed to secure the pipe and prevent movement before the next joint is installed.

When pipe is laid within a movable trench shield, all necessary precautions shall be taken to prevent pipe joints from pulling apart when moving the shield ahead.

Precautions shall be taken to prevent excavated or other foreign material from getting into the pipe during the laying operation. At all times, when laying operations are not in progress, or whenever the workers are absent from the job, the Contractor shall close and block the open end of the last laid section of pipe to prevent entry of foreign material or creep of the gasketed joints.

Pipes which are stubbed off for manhole construction or for connection by others shall be plugged or closed off with temporary plugs as specified in the manhole specifications.

The Contractor shall take all precautions necessary to prevent the "uplift" or floating of the line prior to the completion of the backfilling operation.

Where pipe is connected to manholes or concrete structures without using a flexible connector, connections shall be made so that the standard pipe joint is located not more than 2 feet from the outside edge of the structure unless otherwise shown.

77-3.03B(6) Cutting of Pipe

Field cuts and connections shall be in accordance with the pipe manufacturer's published instructions.

The cutting of pipe for fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe so as to leave a smooth end at right angles to the axis of the pipe. The pipe shall be marked around its entire circumference prior to cutting to assure a square cut. A factory-finished beveled end shall be used as a guide for proper bevel angle and depth of bevel plus the distance to the insertion reference mark. The end shall be beveled using manufacturer recommendations. Sharp edges on the leading edge of the bevel shall be rounded off with a pocket knife or a file.

77-3.04 PAYMENT

The payment quantity for the Remove and Replace Sanitary Sewer Pipe and Remove and Replace Sanitary Sewer Service bid items is the length of the pipe installed measured parallel to the ground surface along the centerline of the trench at the finished grade. The bid items include the removal and appropriate disposal of the existing pipe per the Standard Specifications and these Special Provisions.

The Remove and Replace Sanitary Sewer Pipe and Remove and Replace Sanitary Sewer Service bid items shall include all tools, equipment, materials, and labor necessary to remove the existing pipe and install the pipe including, but not limited to, fabrication, freighting, and furnishing of the pipe; sawcutting; excavation; spoiling; dewatering; shoring; removal and disposal of the existing pipe and trench material; temporary plating; bedding; placement; fittings; connecting to the existing sanitary sewer system (service line, pipe, manhole, etc.); restrained joints; backfilling; compacting of backfill; testing; temporary and permanent surface restoration, as necessary; and all incidental work in the removal of the existing pipe and installation of the new pipeline.

Replace "Reserved" in section 77-4 with:

77-4 COMMUNICATION CONDUITS

77-4.01 GENERAL

77-4.01A Summary

This section governs the work for installing the pair of communication conduits shown on the Project Plans.

77-4.02 CONSTRUCTION

Install a pair of 3" PVC (Schedule 40) pipes as shown on the Project Plans. The minimum depth of the conduits shall be 30" from the top of pipe to finished grade. This work includes supplying all tools, equipment, materials, and labor necessary for installing the conduits including, but is not limited to, the excavation, backfill, temporary resurfacing, permanent resurfacing, and all other incidental work associated with installing the pair of 3" PVC (Schedule 40) conduits.

77-4.03 PAYMENT

The payment quantity for the 2 – 3" Communication Conduits bid item is the length of the dual conduits installed measured parallel to the ground surface along the centerline of the trench at the finished grade.

Replace "Reserved" in section 77-5 with:

77-5 BOLLARD

77-5.01 GENERAL

77-5.01A Summary

This section governs the work for constructing the bollards shown on the Project Plans.

77-5.02 CONSTRUCTION

Construct the bollard as shown on the Project Plans including supplying all tools, equipment, materials, and labor necessary for constructing the bollard. This work includes, but is not limited to, excavation, backfill, installing the concrete base, furnishing and installing ductile iron post, filling the post, installing the warning tape, and all other incidental work associated with installing the bollard.

77-5.03 PAYMENT

The payment quantity for the Bollard bid item is the number of bollards installed.

Replace “Reserved” in section 77-6 with:

77-6 ADA PEDESTRIAN GRATE AND FRAME

77-6.01 GENERAL

77-6.01A Summary

This section governs the work for constructing the ADA pedestrian grate and frame shown on the Project Plans.

77-6.02 SUBMITTALS

Prior to ordering material and installing the ADA compliant pedestrian and bicycle safe grate and frame, the Contractor shall provide shop drawing(s) for approval by the Engineer. The shop drawing(s) shall convey the material necessary and approach to modifying the existing drain inlet and installing an ADA compliant pedestrian and bicycle safe grate and frame necessary to support the grate.

77-6.03 MATERIALS

The frame shall be Grating Pacific EZ – 225 or approved equal. The grate shall be Grating Pacific HA – 7218 – EZ or approved equal. The frame and grate must be ADA compliant, pedestrian and bicycle safe, and support traffic loading.

77-6.04 CONSTRUCTION

Modify the existing drainage inlet as necessary to install the new ADA compliant and pedestrian and bicycle safe grate and frame and, if necessary, restore the adjacent, affected area with a road section that matches the proposed road section shown on the Project Plans. The construction shall conform to the approved manufacturer’s specifications, the Standard Specifications, and these Special Provisions and be per the Project Plans.

77-6.05 PAYMENT

The payment quantity for the ADA Pedestrian Grate & Frame bid item is lump sum and shall include all tools, equipment, materials, and labor necessary for installing the new grate and frame as shown on the Contractor submitted and Engineer approved shop drawing(s).

^^

80 FENCES

Replace “Reserved” in section 80-11 with:

80-11 ROCKFALL DRAPERY MESH

80-11.01 General
80-11.01A Summary

Section 80-11 includes specifications for constructing Rockfall Drapery Mesh.

80-11.01B Submittals

The Contractor shall submit the manufacturer for Rockfall Drapery Mesh to the City no later than 10 business days prior to installation of Rockfall Drapery Mesh.

80-11.02 Materials

The Contractor shall use High-Tensile Steel Wire Mesh TECCO® G65/3 by Geobrugg AG or approved equal.

80-11.03 Construction

Contractor shall install Rockfall Drapery Mesh per the TECCO® System Product Manual dated January 18, 2019 or approved equal’s manufacturer’s specifications.

80-11.04 Payment

The payment quantity for the Rockfall Drapery Mesh bid item is the area measured parallel to the ground surface, not including the additional quantity used for overlap.

Replace "Reserved" in section 80-12 with:

80-12 TEMPORARY PROTECTIVE FENCING

80-12.01 General
80-12.01A Summary

Section 80-12 includes specifications for constructing temporary protective fences. The Contractor shall comply the with MMRP's listed in section 14.

80-12.01B Submittals

The Contractor shall submit the manufacturer and model for temporary protective fences to the City no later than 10 business days before installation of temporary protective fences.

80-12.03 Construction

Contractor shall install tree protective fencing (TPZ Fencing) per the MMRP and Project Plans around all trees within 10 feet of the project area not designated for removal on the Project Plans. Contractor shall install protective fencing along all environmentally sensitive areas (ESA Fencing) per the MMRP and Project Plans.

80-12.04 Payment

Temporary protective fencing shall be paid under the TPZ/ESA Fencing bid item. The payment quantity for the TPZ/ESA Fencing bid item is the length measured parallel to the ground surface along the centerline of the fence, not including the additional quantity used for overlap.

^^

DIVISION IX TRAFFIC CONTROL DEVICES

81 MISCELLANEOUS TRAFFIC CONTROL DEVICES

Replace section 81-1.04 with:

All miscellaneous traffic control devices shall be paid under the Traffic Control System bid item.

^^

82 SIGNS AND MARKERS

Replace the paragraphs in section 82-3.04 with:

Each sign installation is one (1) measurement unit, regardless of the number of posts or sign panels involved. Installation of new roadside signs shall be paid for under the Install Roadside Sign bid item and includes the work necessary to furnish and install the new sign(s) and post(s).

Add to section 82-9.04:

Each sign removal is one (1) measurement unit, regardless of the number of posts or sign panels involved. Sign removal shall be paid for under the Remove Roadside Sign bid item.

Each sign relocation is one (1) measurement unit, regardless of the number of posts or sign panels involved. Sign relocations shall be paid for under the Relocate Roadside Sign bid item. Any damaged signs or posts identified for relocation caused by the Contractor shall be replaced at the Contractor's expense.

^^

83 RAILINGS AND BARRIERS

Replace Section 83-5 with:

83-5 PEDESTRIAN RAILINGS

83-5.01 General

Section 83-5 includes specifications for constructing pedestrian railings and barriers.

83-5.02 Materials

The Pedestrian Railing shall be 6-A Style by ATR Technologies, Inc. or approved equal. The Contractor shall submit to the City the make and model of their proposed pedestrian hand railings no less than 15 days prior to ordering the material.

83-5.03 Construction

Posts shall be anchored in concrete and structures as shown on the Project Plans and in accordance with the manufacturer's specifications.

83-5.04 Payment

The payment quantity for the Pedestrian Railing (Ground Mounted) and Pedestrian Railing (Wall Mounted) bid items is the length measured parallel to the ground surface along the centerline of the railing. The pedestrian railing bid items shall include all tools, equipment, materials, and labor necessary to install the pedestrian railings including, but not limited to assembling and installing the mounts and railing and all other incidental work in constructing the pedestrian railings.

Replace Section 83-6 with:

83-6 CABLE BARRIERS

83-6.01 General

Section 83-6 includes specifications for constructing cable barrier systems.

83-6.02 Materials

The Cable Barrier (Wall Mounted) shall be Gibraltar TL-4 with maximum post spacing of 7-ft or approved equal. The cable barrier system shall include all base plates and anchor systems required by the manufacturer. The Contractor shall submit to the City the make and model of their wall mounted proposed cable barrier system no less than 15 days prior to ordering the material.

83-6.03 Construction

The Cable Barrier (Wall Mounted) system shall be constructed and anchored as shown on the Project Plans and in accordance with the manufacturer's specifications.

83-6.04 Payment

The payment quantity for the Cable Barrier (Wall Mounted) bid item is the length measured parallel to the ground surface along the centerline of the cable. The Cable Barrier (Wall Mounted) bid item shall include all tools, equipment, materials, and labor necessary to install the cable barrier system including, but not limited to installing posts, railings, cables; installing all base plates, anchor systems, and end treatments; and all other incidental work in constructing the wall mounted cable barrier system.

^^

84 MARKINGS

Add to section 84-2.02A:

Pavement Markings, Traffic Stripes, and Green Bike Lane shall be thermoplastic, unless otherwise specified on the Project Plans. Pavement Paint shall be white paint, unless otherwise specified on the Project Plans.

Add to section 84-2.02B:

Green Bike Lane striping shall conform to the California Manual on Uniform Traffic Control Devices 2014 Edition Revision 4 (Mach 29, 2019), including the Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14) which specifies design parameters for the green color.

Add to section 84-2.04:

Green bike lane striping shown on the Project Plans shall be paid for under the Green Bike Lane bid item. The payment quantity for the Green Bike Lane bid item is the area measured parallel to the ground surface, not including the additional quantity used for overlap.

The payment quantity for the Pavement Paint bid item is the length measured parallel to the ground surface along the centerline of the stripe.

^^

DIVISION XI MATERIALS

90 CONCRETE

Add to section 90-1.01A:

All concrete shall be air entrained as this project is located within a freeze-thaw area.

Replace “Reserved” in section 90-1.01C(1) with:

For each load of concrete delivered to the job site, the contractor shall submit quality control records from the concrete supplier identifying air content per California Test 504 or comparable ASTM test method. The concrete supplier shall have an authorized representative on-site during concrete pours to check and/or dose the concrete to ensure air content meets project specifications.

Replace the 4th sentence in the 1st paragraph of section 90-4.01C(3) with:

Allow 15 days for review.

APPENDIX A

POTENTIAL STAGING AREAS

UPPER BROADWAY BIKE LANES PROJECT (INCLUDING BROADWAY PEDESTRIAN CONNECTION) AND
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
POTENTIAL STAGING AREAS EXHIBIT

LEGEND:

PROJECT LIMITS

POTENTIAL STAGING AREA

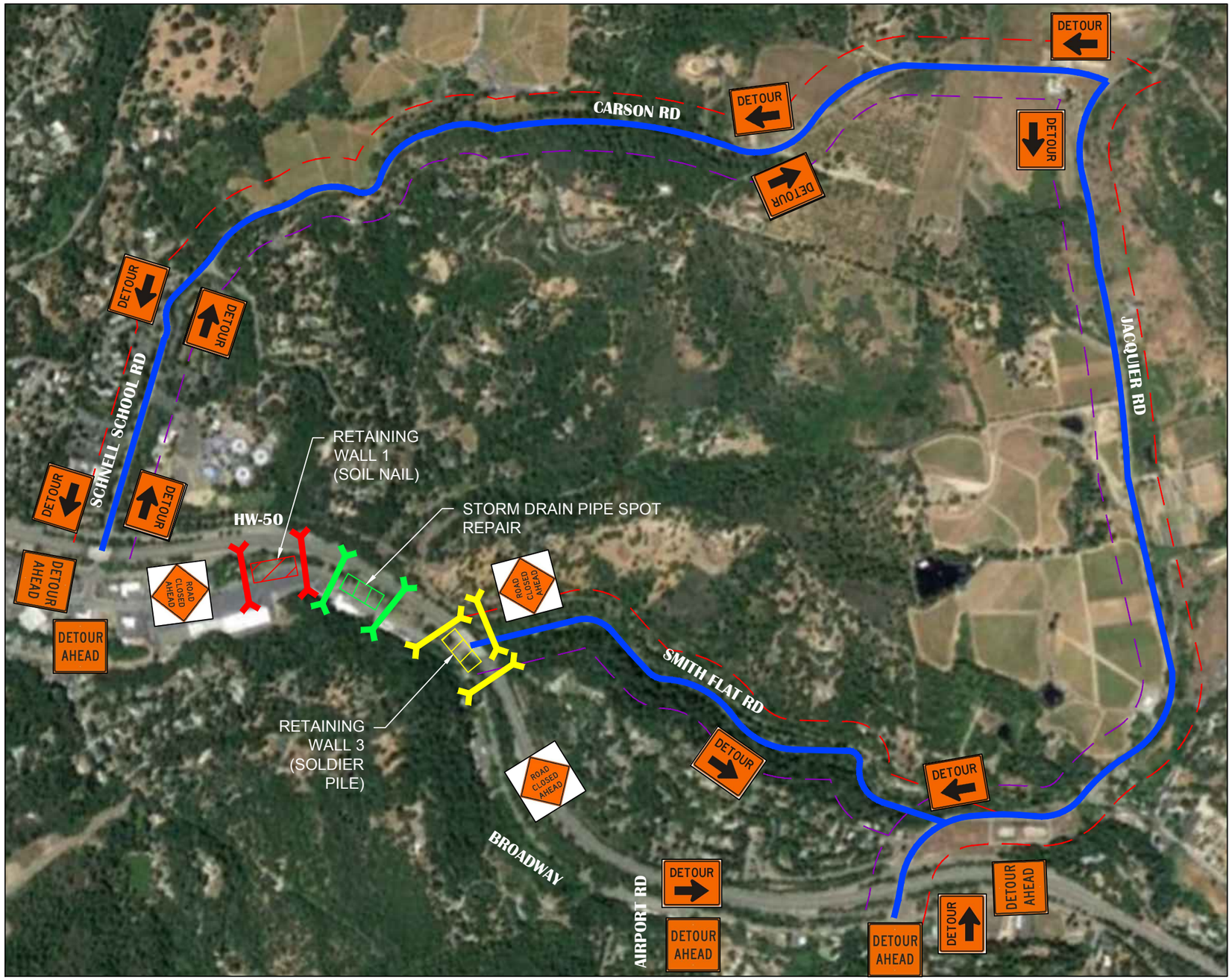
R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

APPENDIX B

POTENTIAL FULL ROAD CLOSURES & DETOURS

UPPER BROADWAY BIKE LANES PROJECT (INCLUDING BROADWAY PEDESTRIAN CONNECTION) AND
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
POTENTIAL FULL ROAD CLOSURES & DETOURS EXHIBIT

RETAINING WALLS 1 & 3 AND STORM DRAIN SPOT REPAIR



LEGEND:

- DETOUR ROUTE
- ROAD CLOSED DURING CONSTRUCTION OF RETAINING WALL 1 (SOIL NAIL)
- ROAD CLOSED DURING CONSTRUCTION OF STORM DRAIN PIPE SPOT REPAIR
- ROAD CLOSED DURING CONSTRUCTION OF RETAINING WALL (SOLDIER PILE)
- POTENTIAL DETOUR SIGN LOCATIONS
- WESTBOUND DIRECTION OF TRAVEL
- EASTBOUND DIRECTION OF TRAVEL
- TRAFFIC BARRICADE FOR RETAINING WALL 1 (SOIL NAIL)
- TRAFFIC BARRICADE FOR STORM DRAIN SPOT REPAIR
- TRAFFIC BARRICADE FOR RETAINING WALL 3 (SOLDIER PILE)

NOTES:
-LAYOUT OF ALL DETOUR SIGNAGE MUST BE DETERMINED AND PROVIDED BY THE CONTRACTOR. SIGNAGE MUST COMPLY WITH CALTRANS TRAFFIC OPERATIONS MANUAL, CALIFORNIA MANUAL ON UNIFORM TRAFFIC DEVICES (CAMUTCD), AND CALTRANS STANDARD PLANS.

-ACCESS FOR EMERGENCY VEHICLES MUST BE AVAILABLE AT ALL TIME.

-ACCESS TO RESIDENCES AND BUSINESSES MUST BE AVAILABLE AT ALL TIME.

R.E.Y. ENGINEERS, INC.
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905 Sutter Street, Suite 200 Folsom, CA 95630
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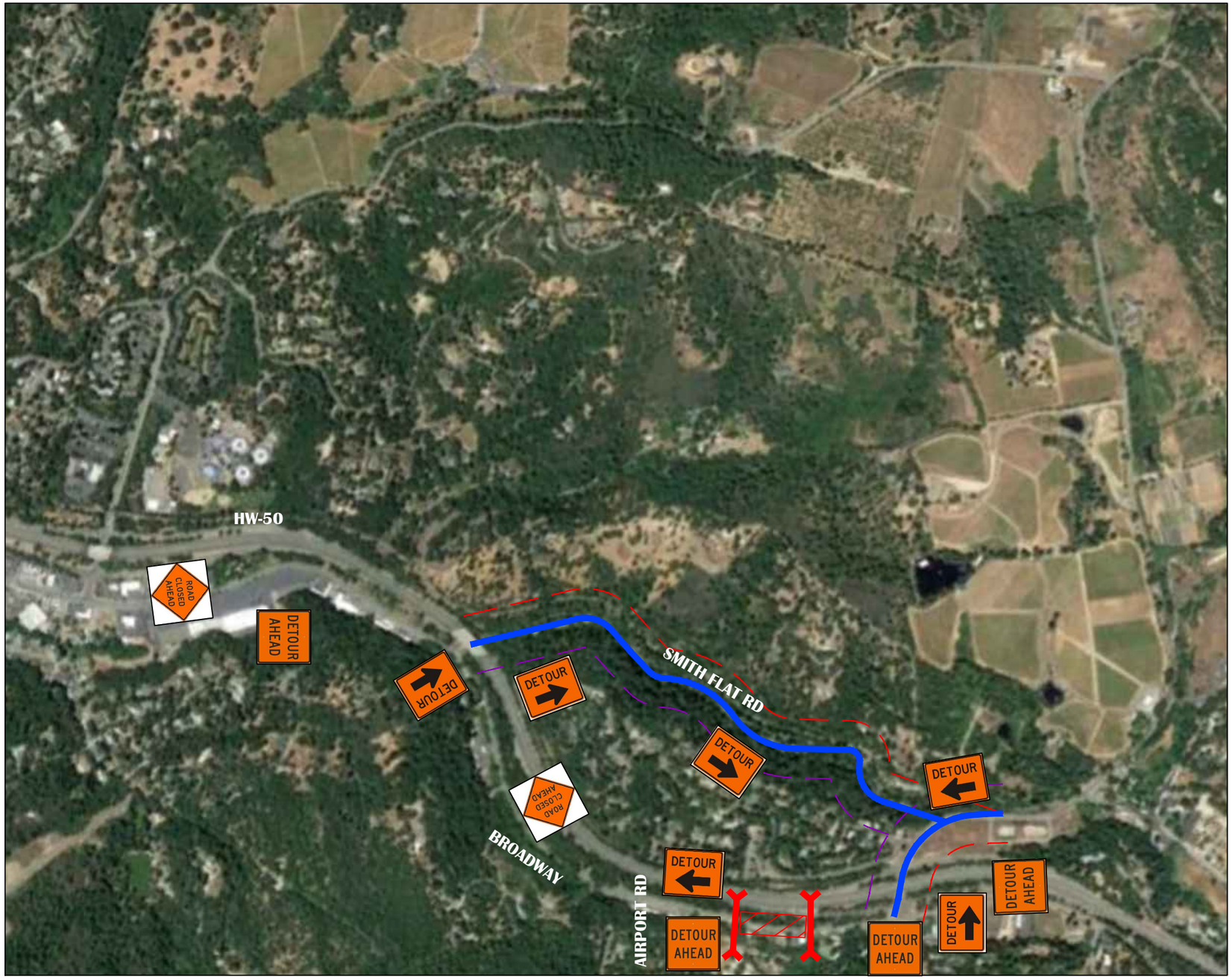
UPPER BROADWAY BIKE LANES PROJECT (INCLUDING BROADWAY PEDESTRIAN CONNECTION) AND
UPPER BROADWAY STORM DRAIN REPLACEMENT PROJECT
POTENTIAL FULL ROAD CLOSURES & DETOURS EXHIBIT

REMOVE & REPLACE HALF ROADWAY BETWEEN STATION 63+50 - 70+75



LEGEND:

- DETOUR ROUTE
- ROAD CLOSED DURING CONSTRUCTION
- POTENTIAL DETOUR SIGN LOCATIONS
- WESTBOUND DIRECTION OF TRAVEL
- EASTBOUND DIRECTION OF TRAVEL
- TRAFFIC BARRICADE

NOTES:

-LAYOUT OF ALL DETOUR SIGNAGE MUST BE DETERMINED AND PROVIDED BY THE CONTRACTOR. SIGNAGE MUST COMPLY WITH CALTRANS TRAFFIC OPERATIONS MANUAL, CALIFORNIA MANUAL ON UNIFORM TRAFFIC DEVICES (CAMUTCD), AND CALTRANS STANDARD PLANS.

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APPENDIX C

GEOTECHNICAL REPORT

GEOTECHNICAL REPORT
UPPER BROADWAY BIKE LANES,
CITY OF PLACERVILLE, CALIFORNIA

Prepared for:

R.E.Y. ENGINEERS, INC.
905 Sutter Street, Suite 200
Folsom, CA 95630

Prepared by:

7807 Laguna Blvd., Suite 400
Elk Grove, CA 95758
Tel. (916) 513-7428

WRECO Project No. P15055
October 2019

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October 11, 2019

R.E.Y. ENGINEERS, INC.
905 Sutter Street, Suite 200
Folsom, CA 95630

Attention: Jim Fisher
Project Manager

Subject: Geotechnical Report
Upper Broadway Bike Lanes
City of Placerville, California
WRECO Project No. P15055

WRECO is pleased to submit this *Geotechnical Report* for the Upper Broadway Bike Lanes Project. This report was prepared in general conformance with the Scope of Work prepared by WRECO for the subject project.

We would like to thank Jim Fisher, R.E.Y Engineering, and the City of Placerville for the opportunity to prepare this *Geotechnical Report*.

If you have any questions or wish to discuss this report in greater detail, please contact us at (916) 513-7428.

Sincerely,
WRECO

PROFESSIONAL GEOLOGIST
DAVID A. KITZMANN
NO. 2412
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
FRANKLIN P. TABER
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STATE OF CALIFORNIA

David Kitzmann, PE, PG, CEG
Senior Engineering Geologist

Franklin Taber, PE, GE
Senior Geotechnical Engineer

Distribution: Addressee, P15055-file

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GEOTECHNICAL REPORT
UPPER BROADWAY BIKE LANES
CITY OF PLACERVILLE, CALIFORNIA

1 INTRODUCTION

WRECO completed subsurface investigation on July 24, 2018 at Upper Broadway to provide recommendations for the construction or modification of retaining walls to support the construction of the proposed bike lanes. The subsurface investigation at Upper Broadway included four borings at different locations. To understand the subsurface conditions better, representative soil samples were tested to determine the soil and rock index properties, strength properties, and subgrade modulus for pavement design. Based on the results of the boring testing and site reviews, WRECO has developed some conclusions regarding the construction and modifications of the bike lanes.

1.1 Scope of Work

WRECO's Scope of Work for the proposed Upper Broadway Bike Lanes Project (Project) consisted of the following:

- Perform a literature search for all readily available published geologic and geohazard information at and in the near vicinity of the Project site.
- Visit the site and mark out in white paint and with stakes the proposed boring locations and call USA utilities service 48 hours prior to the start of field investigation work to identify potential underground utility conflicts.
- Obtain an environmental health and encroachment permit from the County of El Dorado (County) to perform drilling work along Upper Broadway where our intended borings will be.
- Contact the traffic control services to direct traffic during drilling/ field work due to the lane closure on Upper Broadway.

The tasks listed above were completed in accordance with the Scope of Work.

This report includes a Project summary, description of proposed improvements, description of geotechnical work performed, and the following information:

- A discussion of regional and local geology as it pertains to the Project.
- A summary of the identified site soil, rock, and groundwater conditions observed at the site; laboratory testing results; and boring records.
- A discussion of the regional seismology and seismic design parameters for the proposed Project site in accordance with the Caltrans 2009 ARS Online Design Tool and the Caltrans *Seismic Design Criteria*, Version 1.7, April 2013.
- A discussion of the foundation recommendations for the proposed retaining walls and culvert headwall taking into consideration loading demands, site soil/rock conditions, environmental constraints, and cost.
- Other recommendations with regard to construction considerations.

2 PROJECT DESCRIPTION

The Project improves Broadway from Schnell School Road to Point View Drive to include a Class II bike lane in the eastbound (uphill) direction and Class III bike lane in the westbound

(downhill) direction. For the Project, WRECO was responsible for the Location Hydraulic Study, Water Quality Study, Drainage and Stormwater Report, and Geotechnical Engineering Study. WRECO designed the construction and modification of roughly 400 feet of retaining walls to support the construction of the proposed bike lanes.

2.1 Project Location

The Project is located between U.S. Route 50 to the north and Hangtown Creek, and a tributary to Hangtown Creek, to the south. The Project extends from Schnell School Road to the west to Point View Drive at the eastern end.

2.2 Existing and Proposed Structures

The existing structures in the surrounding site area include several parking lots and businesses on the west end of Broadway, as well as narrow shoulders along the road. A creek runs along the south side of Upper Broadway for a portion of the Project alignment. There is also an existing steel crib / bin wall of up to approximately 11.5-foot height along the north side of Upper Broadway. Some of the proposed structures for this Project include retaining walls, new pavement structures, and a bus pad.

3 FIELD INVESTIGATION AND TESTING PROGRAM

The field investigation involved completion of four exploratory borings drilled on July 23, 2018 by V&W Drilling under the supervision of WRECO personnel. Boring A-18-001 was drilled north of Upper Broadway, while A-18-002, A-18-003, and A-18-004 were drilled south of Upper Broadway. WRECO personnel visually classified soil samples and cuttings at the time of drilling using the Caltrans *Soil and Rock Logging, Classification, and Presentation Manual,* 2010 Edition. Detailed visual descriptions of the recovered soil samples, Standard Penetration Test results, and the boring locations are shown in the Borings Records in Appendix II.

The boreholes were advanced using a 6-inch-diameter hollow-stem auger and a Standard Penetration Test (SPT) sampler until the targeted depth was reached. A bulk soil sample was collected from the near surface and soil samples at depth were collected from the borings at approximate 5-foot intervals.

An SPT sampler without liners was used. The soil sampler was advanced/driven using a 140-pound auto-trip hammer, free falling 30-inches, in general conformance with conducting the Standard Penetration Test (ASTM D1586). The hammer efficiency of the automatic hammer used for this Project was 63.9%, as provided by V&W Drilling.

Sampler penetration resistance was recorded to provide a field measure of soil consistency and can be correlated to soil strength and bearing characteristics. The field blow counts were recorded as the number of hammer blows required to drive the sampler the final 12 inches of an 18-inch drive. The subsurface conditions determined by the field investigation are discussed in Section 4.3.

Table 1. Summary of Laboratory Testing

Boring ID	Sample Depth/Interval (feet)	Test	Test Standard
A-18-001	0.0 – 5.0	Corrosive Potential	CTM 643, CTM 417, CTM 422
	5.0 -6.4	Grain Size Distribution, Atterberg Limits	ASTM D6913, D4318
A-18-002	0.0 – 5.0	Corrosive Potential	CTM 643, CTM 417, CTM 422
	5.0 – 6.5	Grain Size Distribution, Atterberg Limits	ASTM D6913, D4318
A-18-003	0.0-5.0	Corrosive Potential	CTM 643, CTM 417, CTM 422
	5.0-6.5	Grain Size Distribution, Atterberg Limits	ASTM D6913, D4318
A-18-004	0.0 – 5.0	Corrosive Potential	CTM 643, CTM 417, CTM 422
	5.0 – 6.5	Grain Size Distribution, Atterberg Limits	ASTM D6913, D4318
HA-18-005	0.0 – 3.0	R- Value	ASTM D2844, CT301

Notes:
ASTM: American Society for Testing and Materials
CTM: California Test Method

4 SITE GEOLOGY AND SUBSURFACE CONDITIONS

4.1 Regional Geology

Within the Sierra Nevada foothills of El Dorado County lies Placerville District, where north trending tectonostratigraphic belts make up most of the bedrock. There are metamorphosed sedimentary, volcanic, and intrusive rocks that range in age from late Paleozoic to Mesozoic. The local Mesozoic rocks are capped by erosional remnants of Eocene auriferous gravels and once extensive volcanic rocks of Tertiary age.

The structural belts cover a span of about 235 miles along the western side of the Sierra and are flanked to the east by the Sierra Nevada Batholith, to the west by sedimentary rocks of the Cretaceous and Jurassic Great Valley sequence. The structural belts are internally bounded by the Melones and Bear Mountains fault zones and are characterized by extensive faulting, shearing, and folding (Earhart, 1988). The oldest of the Tertiary units are basal Eocene auriferous gravels, which were preserved in paleochannels eroded into basement and adjacent bench gravels deposited by the predecessors of the modern Yuba and American Rivers.

Placerville is situated on a ridge between the South Fork of the American River and Weber Creek, on which occur remnants of channel gravels deposited by southward flowing tributaries to the ancestral South Fork of the American River. Gravels deposited within the main channel of the American River, which approximately followed the course of Weber Creek, have been largely lost to erosion. The gravel deposits are largely overlain by overlain by thick beds of rhyolite tuff and andesite.

In the Placerville area, the Valley Springs Formation consist of generally flat lying beds of rhyolite tuff. The tuff usually is fine grained and contains small crystals of black biotite. Smaller amounts of breccia, conglomerate, and siltstone are present (Clark and Carlson, 1956). The overlying Mehrten Formation occupies many of the interstream ridges and consists chiefly of andesitic volcanic debris composed of boulders, cobbles, and pebbles. Placerville District gravels are generally composed of pebbles and boulders of quartz, chert, granitic, and volcanic rocks interbedded with clay and sand.

4.2 Site Geology

Based on the *Geologic Map of the Sacramento Quadrangle, California* (California Geological Survey, 1981) the geology in the general vicinity of the site consists of Paleozoic-aged metasedimentary rocks of the Calaveras Complex.

4.3 Subsurface conditions

The borings encountered a sequence of fill and soil/slide debris over decomposed to weathered rock. The earth materials encountered are summarized in the following table:

Table 2. Summary of Earth Materials

Boring	A-18-001	A-18-002	A-18-003	A-18-004
Top of Boring Elev. (ft)	1993.2	2061.4	2191.0	2200.5
Fill/Slide Debris/Topsoil	0-10 ft	0-15 ft	0-5 ft	0-10 ft
Decomposed Rock / Weathered Rock	10-31.5 ft (BOH)	15- 31.5 ft (BOH)	5-26.5 ft (BOH)	10-26 ft (BOH)
Notes: BOH – bottom of hole				

Fill / Topsoil

Each of the borings encountered approximately 3 to 4 inches of asphalt concrete over approximately 4 to 6 inches of aggregate base (AC/AB) fill, followed by top soil, silty sand with gravel and gravel with silt, sand and cobbles which was loose to medium dense.

Decomposed Rock

Below the fill and topsoil decomposed rock was encountered to the total depth explored. The decomposed rock consisted of thoroughly weathered rock that behaved like soil. This soil consisted of clay with sand, silty sand, silt with sand and gravel and is dense to very dense.

Groundwater

Groundwater was observed at three of the boring locations:

- A-18-001 – 10 feet,
- A-18-002 – 15 feet, and
- A-18-004 - 20 feet.

Groundwater typically follows the elevation of water in adjacent channels and accumulates on top-of-rock surfaces. Groundwater levels will vary with precipitation, irrigation, and the water level in the adjacent channels.

4.4 Scour

The proposed improvements do not intrude into an active channel and will not change the current hydraulics. Only one of the proposed walls is located adjacent to an active channel and will be supported by piles. The decomposed rock encountered at the site is considered somewhat scour resistant, but concentrated flow would be expected to cause scour. For these reasons the potential for scour is considered low. However, in areas that may experience concentrated flow along the base of the retaining walls, rock slope protection (RSP) or a concrete lining should be utilized to protect the base of wall.

5 CORROSION EVALUATION

The Caltrans *Corrosion Guidelines*, version 3.0 dated March 2018, has the following definition of corrosive soils:

"For structural elements, the Department considers a site to be corrosive if one or more of the following conditions exists for the representative soil and/or water samples taken at the site:

- *Chloride concentration is 500 ppm or greater,*
- *Sulfate Concentration is 1500 ppm or greater,*
- *pH is 5.5 or less."*

In addition to the conditions listed above, the California Amendments to Section 10.7.5 of the American Association of State Highway and Transportation Officials (AASHTO) *Load and Resistance Factor Design (LRFD) Bridge Design Specifications (BDS)*, 6th Edition (AASHTO 2012), considers a site corrosive if the additional condition listed below exists for the representative soil and/or water samples taken at the site:

- Minimum resistivity of 1000 ohm-cm or less.

Table 3 below lists the Project site's soil corrosion data.

Table 3. Soil Corrosion Data

Boring ID	Depth (ft)	Minimum Resistivity (ohm-cm)	Soil pH	Chloride Content (ppm)	Sulfate Content (ppm)
A-18-001	5	7240	6.23	2.7	43.6

Based on the corrosive potential testing results, the soil at the site is considered non-corrosive to buried metal and concrete as defined by Caltrans *Corrosion Guidelines* and AASHTO *LRFD Bridge Design Specifications*.

6 SEISMIC RECOMMENDATIONS

6.1 Potential Seismic Hazards

Seismic hazards at the site are limited to moderate seismic shaking (ground motion), and seismically induced settlement.

6.2 Ground Surface Rupture

The Project site does not lie within or adjacent to an Alquist-Priolo Earthquake Fault Zone. Active or potentially active faults have not been mapped as crossing through or adjacent to the Project site. The nearest mapped active fault is located more than 20 miles from the site. Therefore, surface rupture is not expected to occur barring the rupture of a previously undiscovered fault.

6.3 Ground Motion

A seismic study was performed for the site to develop seismic design parameters for the proposed bridge structure. Following the Caltrans 2013 *Seismic Design Criteria (SDC)* Version 1.7, Caltrans *Memos* to Designer (MTD) Section 20, and design tools outlined in the Caltrans *Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations* (2012), a seismic analysis was performed for this structure in order to develop seismic design parameters and identify potential seismic hazards such as liquefaction or lateral spreading.

The shear wave velocity of the upper 100 feet of Project soils (V_{S30}) was correlated from the results of data obtained from the borings completed at the site. The results indicated 355.3 meters per second (m/s). This V_{S30} of 355 m/s was selected for the Project site. This is a conservative yet reasonable value considering the majority of the Project site is interpreted to be underlain by bedrock.

Both the deterministic and probabilistic (5% probability of exceedance in 50 years [975-year average return period]) methodologies were evaluated for use in developing the site seismic design parameters. The site is not located in a deep sedimentary basin and no near-fault amplification is necessary.

WRECO compared the deterministic response spectrum for the controlling seismic sources identified above to the Caltrans minimum deterministic response spectrum that assumes a maximum moment magnitude of 7. We then compared the deterministic results with the probabilistic response spectrum based on data from the 2008 United States Geological Survey (USGS) *National Seismic Hazard Map* for a 5%-in-50-year probability of exceedance (975-year return period).

The peak ground acceleration (PGA) for the site is estimated at 0.23g (“g” is the acceleration due to gravity) and the controlling spectrum is the Caltrans minimum deterministic response spectrum and USGS 5%-in-50-years hazard (2008).

The seismic analysis is included in Appendix IV.1.

Table 4. Seismic Analysis Site Data

Site Location:	Latitude: 38.733788
	Longitude: -120.775009
Controlling Fault	Foothills Fault System- North central reach section (DeWitt Fault). Fault ID: 77
Style of Fault	Normal
Approximate Distance from Fault to Site	40 miles
Maximum Credible Earthquake Magnitude	7.0
Estimated Site Shear Wave Velocity (V_{S30})	355 meters/second
Peak Ground Acceleration (PGA)	0.23g
Horizontal Seismic Coefficient	PGA/3 = 0.08g

6.4 Other Seismic Hazards

The site has no known history of subsidence, rock falls/landslides, or embankment failures due to seismic activity, and no features consistent with these types of failures were observed during our limited field observations and review of available published seismic hazards for the Project area. Based on the above, the likelihood of seismically induced subsidence, rock falls/landslides, or embankment failures is considered low.

6.5 Liquefaction Evaluation

Liquefaction is the process in which the seismic shear waves cause an increase in the pore water pressure in a cohesionless (sand and some non-cohesive silts) soil strata. This increase in pore water pressure reduces the effective stress that confines the soil. The reduction in effective stress causes a reduction in the shear modulus of the soil, which in turn, results in increased soil deformation.

Also associated with liquefaction is a loss in bearing strength. In the case of full liquefaction, when the increase in pore water pressure reduces the confining stress to zero, the soil experiences a full loss of strength and undergoes large viscous deformations. Lateral spreading (large lateral deformations) is possible when liquefaction occurs in ground having even minimal slope. Primary factors that can trigger liquefaction are moderate to strong ground shaking, relative clean and loose granular soils, and saturated soil conditions. Liquefaction is generally limited to the upper saturated 50 feet of ground surface due to the increasing overburden pressure with depth.

The new retaining walls and headwall will bear in / on decomposed bedrock and the site PGA is relatively low. For these reasons, the potential of liquefaction is considered negligible.

7 AS-BUILT FOUNDATION DATA

No As-built foundation data was made available for review at the time this report was prepared.

8 FOUNDATION RECOMMENDATIONS

The decomposed rock identified in the boring performed at the site is capable of developing the required bearing and lateral load resistance to support the proposed retaining walls and headwalls. To develop the required bearing resistance, the retaining walls and headwalls will need a minimum of 2 feet embedment into intact decomposed rock. The wall designer should evaluate internal and external stability of each wall.

Soil Nail Wall – Retaining Wall 1

It is recommended to design the proposed soil nail wall at Retaining Wall 1 using the soil profile provided in Table 5.

Table 5. Soil Parameters

Retaining Wall Location	Boring	Elevation of Top of Boring	Top of Layer Depth (ft)	Bottom of Layer Depth (ft)	Layer Thickness (ft)	Soil Type	γ (pcf)	φ (°)	c (psf)
RW-1	A-18-001	1993.2	0	8	8	Sand	125	32	0
			8	10	2	Sand	135	38	0
			10	50	40	Sand	73*	38	0
Notes: * indicates assumed buoyant unit weight value									

The soil nails should be provided a minimum unbonded length of 6.5 feet (horizontal) behind the back of wall based on the planned wall with two 6.75 ft high wall stages. Ground anchors should be inclined a minimum of 10 degrees below horizontal. Using this soil profile and minimum unbonded length a nominal bond strength of 15 psi can be used for design. Use of staged pressure grouting would be expected to allow up to 25 psi or greater nominal bond strength. The design bond strength must be verified by testing by the contractor prior to production nail installation using the contractors means and methods.

Soldier Pile Wall – Retaining Wall 3

WRECO provided preliminary input parameters regarding pile lateral capacity analysis using Ensoft's computer program LPILE for design of the proposed soldier pile wall.

Table 6 below shows the soil borings and LPILE input parameters by elevation for each retaining wall location.

Table 6. LPILE Input Parameters

Retaining Wall Location	Top of Layer Depth (ft)	Bottom of Layer Depth (ft)	Layer Thickness (ft)	Soil Type	γ (pcf)	φ (°)	c (psf)	k (pci)	ε_{50}
RW-3	0	15	15	Sand (Reese)	135	38	0	90	N/A
Elev. 2022± – elev. 2031±	15	50	35	Sand (Reese)	73*	38	0	60	N/A
Notes: * indicates assumed buoyant unit weight value									

Headwall – Retaining Wall 2

Retaining wall RW-2 is a box culvert extension and Type D headwall meeting the requirements of plan No.'s D80 and D85 of the 2018 Caltrans *Standard Plans*. The box culvert consists of a 4 ft by 4 ft square box culvert with a Type D wingwall acting as a cutoff wall with less than 10 feet of cover. Plan D80 indicates a design soil pressure of 2.5 ksf. For design, an allowable bearing pressure of 4 ksf can be used assuming a minimum of 2 ft embedment into intact decomposed rock.

Type 5 Retaining Walls – Retaining Walls 4, 5, and 6

Caltrans Type 5 (Case 1) retaining walls range in design height from 6 to 8 feet. As the soil conditions at each wall location are expected to be uniform along the wall footings, separate calculations for each segment were not performed and only a single check for each applicable design height was performed.

The Type 5 (Case 1) retaining walls are to be supported by shallow spread footings on native decomposed rock at all locations. The specified footing dimensions and minimum embedment depths were obtained from the 2018 Caltrans Standard Type 5 (Case 1) sheet B3-4A. These sheets were utilized to determine the Factored Gross Nominal Bearing Resistance and Net Permissible Contact Stress for each of the design heights shown on the 100% Project plans prepared by WRECO.

Retaining wall footings should be supported on similar materials for each wall segment. Retaining wall footing segments should not be partially supported in decomposed rock and partially in soil; in this situation the areas supported by rock are recommended to be overexcavated a minimum of 1 ft and replaced with either structure backfill, or aggregate base moisture conditioned and compacted to at least 95 percent relative compaction (ASTM D1557 or CTM 216.)

Terzaghi's Ultimate Bearing Capacity formula was utilized to determine gross nominal bearing capacity and was reduced for the appropriate LRFD strength reduction factors, ϕ_b, per the 2012 AASHTO BDS "Strength and Extreme Limit States" presented in Table 7 through Table 10.

Table 7. Extreme Limit State Foundation for Type 5 (Case 1)

ERS Stationing (RW LOL)	Design Height(ft)	Bottom of Footing Elevation(ft)	Footing Width (ft)	Minimum Footing Embedment Depth	Effective Footing Width for Extreme Limit State (ft)	Extreme I Limit State Gross Uniform Bearing Stress (psf)	Extreme I Limit State Factored Bearing Resistance (psf) φ_b=1.00	Effective Footing Width for Extreme II Limit State (ft)	Extreme II Limit State Gross Uniform Bearing Stress (psf)	Extreme II Limit State Factored Bearing Resistance (psf) φ_b= 1.0
RW-4 1+00 to 3+22.5	6	2050.0 to 2062.0	7.75	0.5	4.1	2.2	9.8	3.1	3.0	6.2
RW-5 1+00 to 1+48	6	2178.0 to 2179.0	7.75	0.5	4.1	2.2	12.9	3.1	3.0	12.9
RW-6 1+00 to 1+80.11	8	2185.0, 2083.0, and 2187.0	8.5	0.5	4.0	3.1	12.9	3.8	3.2	12.9

Notes:
(1) Recommendations are based on the foundation geometry provided by County received via email.
(2) Minimum footing cover as required by the Caltrans Bridge Standard Detailed Sheets.

Table 8. Strength Limit State Foundation Data for Type 5 (Case 1)

ERS Stationing (RW LOL)	Design Height(ft)	Bottom of Footing Elevation (ft)	Footing Width (ft)	Minimum Footing Embedment Depth (ft)	Effective Footing Width Strength Limit State (ft)	Strength Limit State Gross Uniform Bearing Stress (ksf	Strength Limit State Factored Bearing Resistance (ksf) φ_b= 0.45
RW-4 1+00 to 3+22.5	6	2050.0 to 2062.0	7.75	0.5	6.1	2.9	5.8
RW-5 1+00 to 1+48	6	2178.0 to 2179.0	7.75	0.5	6.1	2.9	5.8
RW-6 1+00 to 1+80.11	8	2185.0, 2183.0, and 2187.0	8.5	0.5	5.3	3.0	5.8

Table 9. Service Limit State Foundation Data for Type 5 Case 1

ERS Stationing (RW LOL)	Design Height (ft)	Bottom of Footing Elevation (ft)	Footing Width (ft)	Minimum Footing Embedment Depth (ft)	Effective Footing Width for Service Limit State (ft)	Service Limit State Net Bearing Stress (psf)	Calculated Settlement at Net Bearing Pressure (Inches)	Total Permissible Settlement (Inches)
RW-4 1+00 to 3+22.5	6	2050.0 to 2062.0	7.75	0.5	6.1	1.8	0.3	2
RW-5 1+00 to 1+48	6	2178.0 to 2179.0	7.75	0.5	6.1	1.8	0.4	2
RW-6 1+00 to 1+80.11	8	2185.0, 2183.0, and 2187.0	8.5	0.5	6.4	2.1	0.5	2

Notes:
(1) Recommendations are based on the foundation geometry provided by County received via email.
(2) Minimum footing cover as required by the Caltrans Bridge Standard Detailed Sheets.

The follow table (Table 10) is for inclusion on the *Foundation Plans* and provides the allowable bearing capacity for retaining walls RW-4, RW-5, and RW-6, which are all Caltrans Type 5 (Case 1) retaining walls. Copies of the retaining wall bearing capacity and settlement analyses are included in Appendix V.2.

Table 10. Spread Footing Data Table for RW-4 to RW-6

ERS Stationing (RW LOL)	Design Height (ft)	Service Limit State Permissible Net Contact Stress (Settlement) (ksf)	Strength/Construction Factored Gross Nominal Bearing Resistance φ= 0.45 (ksf)	Extreme Event Factored Gross Nominal Bearing Resistance φ = 1.0 (ksf)
RW-4 1+00 to 3+22.5	6	4.9	5.8	6.2
RW-5 1+00 to 1+48	6	4.0	5.8	12.9
RW-6 1+00 to 1+80.11	8	4.0	5.8	12.9

Notes:
1. Controlling load combinations is the one resulting in the highest ratio of $q_{g,u}/q_R$.
2. Controlling load combination for Service Limit State is the one resulting in the highest ratio of $q_{n,u}/q_{pn}$.
3. Controlling load combinations for Strength, Construction, and Extreme Event is the one resulting in the highest ratio of $q_{g,u}/q_R$.

Copies of the bearing capacity and settlement analyses are located in Appendix IV.2.

Block Wall – Retaining Walls 7

The proposed block wall at RW-7 should be designed based on the requirements of the block manufacturer. For design, an allowable bearing pressure of 4 ksf can be used assuming a minimum of 2 ft embedment into intact decomposed rock. The designer should evaluate for the need for soil reinforcement.

For block wall backfill meeting the requirements of Caltrans, the following material properties can be used for design:

- Unit Weight (γ) = 120 pounds per cubic foot (pcf)
- Internal Angle of Friction (φ) = 34°

Sliding Resistance

Sliding resistance of the footings should be calculated according to Section 10.6.3.4 of the AASHTO *LRFD BDS*. This method accounts for sliding resistance as a combination of shear resistance between the soil and foundation, as well as passive resistance of backfill behind the footing. To account for each of these resistances, the following engineering parameters may be used when checking the sliding resistance of the footing, which assumes that the cobbles and boulders within 2 ft (vertical and horizontal) of the proposed footings have been grouted:

Decomposed Rock

- Unit Weight (γ) = 135 pounds per cubic foot (pcf)
- Internal Angle of Friction (φ) = 38°
- Coefficient of Shear Resistance (φ_τ) = 0.8
- Coefficient of Passive Resistance (φ_{ep}) = 0.5

The φ_τ factor is based on Table 1, "Ultimate Friction Factors and Adhesion for Dissimilar Materials" from NAVFAC DM-7.2 (1986), as the AASHTO *LRFD BDS* does not provide a

resistance factor for concrete on rock. The φ_{ep} factor is taken from Table 10.5.5.2.2-1 of the AASHTO *LRFD BDS*.

To mobilize the shear resistance between the soil and foundation, the footing concrete must be cast against the cobbles and boulders in a clean excavation. To account for likely disturbance(s) during construction, the upper 1 foot of embedment has been ignored.

8.1 Lateral Earth Pressures

The retaining walls retaining new fill should be backfilled according to the construction techniques described in Section 19-3.03E, "Structural Backfill" of the Caltrans 2018 *Standard Specifications*. Backfill should be compacted to a minimum of 95 percent of the maximum wet density as determined by ASTM D1557.

As long as the retaining walls are backfilled using material which conforms to the above requirements, the following soil properties and equivalent fluid pressures may be used to determine the soil loading on the abutments and retaining walls:

- Total Unit Weight of Soil (γ_{tot}) = 120 pounds per cubic foot (pcf)
- Internal Angle of Friction (ϕ) = 34°
- Undrained Shear Strength (c) = 0 pounds per square foot (psf)
- Active Equivalent Fluid Pressure = 34 pcf
- At-rest Equivalent Fluid Pressure = 53 pcf
- Passive Equivalent Fluid Pressure = 350 pcf

The headwall is considered a yielding structure and will allow the development of active earth pressures and should be designed using active equivalent fluid pressures to determine the lateral soil loading.

8.2 Wall Drainage

Drainage behind all the walls is essential for the stability of the structures. Many retaining structure failures are due to a buildup of hydrostatic water pressure behind the wall for which the structure was not designed to accept this loading. As a rule of thumb, 1 foot of water is equivalent to 2 feet of soil loading, so if only two-thirds of the height of the wall is subjected to hydrostatic pressure, the structure is subjected to an equivalent soil loading of 1.33 times the design height. Every retaining wall should have a drainage system similar to the one on the Caltrans 2018 *Standard Plan B0-3, Bridge Detail 3-1,* or an approved geocomposite chimney-type drain material. This drain should provide positive drainage to daylight and be maintained to ensure it does not clog with debris and prevent a buildup of hydrostatic pressure.

8.3 Pavement Recommendations

8.3.1 Subgrade Values

The R-value testing results show the native subgrade soils are competent with an R-value of 48. However, fill soils were observed along the outboard road edge that likely are not locally derived and may possess a lower R-value. As such, a conservative R-value of 30 was used to help determine the recommended new structural pavement sections.

8.3.2 Recommended New Structural Pavement Sections

New structural pavement sections are anticipated to be constructed. The following table, Table 11, provides the design Traffic Indices' (TI) provided by the County, the design R-value, and the structural pavement Hot Mix Asphalt (HMA) and Class 2 Aggregate Base (AB) thicknesses.

Table 11. New HMA-AB Flexible Structural Pavement Sections

Design TI	Design R-value	HMA Thickness (ft)	Class 2 AB Thickness (ft)
6.0	30	0.25	0.70
6.5	30	0.30	0.70
7.0	30	0.35	0.75
7.5	30	0.35	0.85
8.0	30	0.40	0.90
Notes: TI=Traffic Index; HMA=Hot Mix Asphalt; AB=Aggregate Base			

Pavement design and construction should conform to the requirements of the Caltrans Standard Specifications, 2018 edition. All native material or import fill used below the new pavement sections should possess an R-value equivalent to or greater than the design R-value (30). All trench backfill for utilities and pipes underlying paved areas should be properly placed and compacted to at least 95 percent compaction (CTM 216 or ASTM D1557) to provide a stable pavement subgrade. The upper 30 inches of all pavement subgrades should be moisture conditioned and compacted to at least 95 percent relative compaction (CTM 216 or ASTM D1557), per Caltrans Standard Specifications (2018).

Copies of the structural pavement calculations are included in Appendix IV. 3

8.4 Bus Pad Recommendations

For the proposed bus pad located between approximate Station 13+31 to 13+93, a jointed-plane concrete pavement (JPCP) section meeting the requirements of Section 626.4 of the 2018 Caltrans *Highway Design Manual* is proposed. The bus pad is recommended to consist of 0.85-foot-thick JPCP with dowel bars at transverse joints on top of 0.5-foot-thick Lean Concrete Base.

Additional length of rigid pavement should be considered for approaches and departures from the bus pad as these areas may be subjected to the same stresses from busses as the pad. Typically, the rigid pavement is extended approximately 250 percent of the length of the typical bus used on the roadway.

8.5 Driveway Recommendations

Driveway entrances are recommended to be designed per the requirements of sheet A87A of the 2018 Caltrans *Standard Plans*. Sidewalk and ramp concrete thickness at the driveways should be a minimum of 6 inches to account for commercial use.

9 ADDITIONAL CONSIDERATIONS

9.1 Existing Structures

Several existing pipe culverts and utilities are known to cross the Project alignment. This includes a power line along the eastbound shoulder and buried utilities below the roadway. These utilities will need to be protected, moved, or de-energized during construction. The Contractor shall identify the location of these utilities prior to start of construction.

Several pipe culverts also cross under the road and outlet on the south side of the roadway. These culverts are to be incorporated into the planned walls and need to be protected during construction.

Multiple buildings are located along the Project alignment. A house is located approximately 45 feet north of RW-1 and has a driveway that connects to Upper Broadway. The driveway and house will require protection during construction and the driveway is understood to remain open during construction. Multiple businesses with driveways and parking lots are located along the eastbound side of the road. These businesses are understood to remain open during construction and will require protection during construction.

9.2 Excavation and Shoring

All excavation and backfill work shall be performed in accordance with Section 19, "Earthwork," of the Caltrans *Standard Specifications* (2018 or latest edition). Based on site review, field exploration, and testing, encountered fill and soil materials are considered generally rippable by typical heavy excavation equipment, such as a Caterpillar D8 with a single-shank ripping bar. However, some cobbles were observed at the site and were encountered in the borings and likely will be encountered in excavations. In addition, while not encountered in the borings, areas of harder, less-weathered rock may be encountered along the alignment which may require the use of air-tools, hydraulic breakers, or other means to allow excavation.

Soil type per Cal/OSHA guidelines range from Type B soils for the undisturbed native soils to Type C within the fill placed along the outboard of the roadway. All soils below groundwater would be considered Type C at this site. The Contractor is responsible for design and construction of excavation sloping / shoring in accordance with Cal/OSHA requirements.

Temporary erosion control measures, such as a flash coating, may be required for excavations open for extended periods. It is also the Contractor's responsibility to assess the actual conditions in the field at the time of construction and to his/her own interpretation of the Cal/OSHA soil/rock type for design of the excavation and trench slopes or the need for excavation shoring.

9.3 Footing Construction

Footing concrete should be placed at the limits and strengths shown on the contract plans, in the contract documents, and in accordance with the Caltrans 2018 *Standard Specifications*. Concrete shall also be cast neat against undisturbed materials. Footing concrete should only be placed in a dry excavation on undisturbed native materials free from loose and otherwise disturbed materials.

The excavation for the footings may require slight overexcavation to remove either a localized area of soft/unsuitable material or to remove a small piece of intact, hard, fresh, and unweathered metamorphic rock. Upon complete removal of loose material or debris which may have entered the void, the void can be filled with footing concrete during the footing concrete pour. Footing concrete should also be poured monolithically without cold-plane joints in one pour. The use of plain concrete to fill voids up to a maximum depth of 4 feet below the planned footing elevation can be used without consultation with WRECO.

9.4 Dewatering

The footing-bottom for the planned headwall (RW-2) would likely be below groundwater level when water is present within the channel. Pile excavations for the planned soldier pile excavations (RW3) will likely encounter groundwater, say, elev. 2016 or above. Granular soils, cobbles, and boulders below groundwater level can be expected to transmit significant seepage. Based on the above, groundwater seepage is expected to be heavy for any excavation below groundwater levels.

For footing excavations below channel water elevation, a minimum of diversion of the channel water and sump pumping will be required. Additional dewatering effort may be required. For soldier pile excavations, the use of slurry drilling methods or temporary casing may be required. The Contractor should evaluate the depth-to-groundwater prior to the beginning of the footing and soldier pile excavations to determine the required dewatering measures needed.

9.5 Culvert Trench Backfill

It is understood that the existing culvert will be left in place and that any backfill around the pipe will be limited. These recommendations are provided if minimal culvert trench backfill is needed for the proposed culvert extension for interface with the new headwall. If more extensive culvert trench backfill is required, additional recommendations may be required and WRECO shall be provided the opportunity to review the proposed trench backfill plan prior to fill placement.

Culvert trench backfill may consist of reprocessed granular native soils or imported non-expansive materials conforming to Section 19-3.02F of the Caltrans 2018 *Standard Specifications*. Trench backfill must be free-draining granular material with a minimum Sand Equivalent (CTM 217) of at least 25. A slurry cement backfill conforming to Section 19-3.02F(3), “Slurry Cement Backfill,” of the Caltrans *Standard Specifications* should be used in the pipe zone where a pipe manufacturer’s specification is not provided. The pipe zone material (all material in the trench above the pipe) should be compacted to a minimum of 95 percent relative compaction per ASTM D1557. Due to difficulty in placing and compacting fill around

the existing pipe sides and bottom, the use of a slurry cement backfill is recommended in these areas.

Where there will be less than 2 feet of cover over the pipe (culvert inlet and outlet), the pipe shall be continually supported on a reinforced headwall. The annulus of the trench shall be backfilled with slurry cement backfill in accordance with Section 19-3.062 of the 2018 Caltrans *Standard Specifications.* Excavation, backfill, and shaped bedding should conform to the requirements in Section 19-3, "Structure Excavation and Backfill." Trenches should be backfilled with fill placed in lifts of approximately 8 inches in non-compacted thickness. However, thicker lifts can be used provided the method of compaction is field-verified and approved by the Geotechnical Engineer of Record, and the required minimum degree of compaction is achieved.

Backfill should be placed by mechanical means only. Imported sand trench backfill should be compacted to at least 95 percent relative compaction, and sufficient water is added during backfilling operations to prevent the soil from "bulking" during compaction. Jetting and ponding are not permitted as acceptable methods of compaction.

Prior to any placement of trench backfill or pipe bedding, the bottom of the trench excavation must be prepared to receive the pipe bedding materials. The bottom of the trench excavations should be graded, moisture conditioned, and compacted to 95 percent relative compaction. In areas where lean clay soils are encountered, achieving the required relative compaction will be difficult. These soils have a tendency to pump and bulk when worked during the compaction process. In lieu of compacting these soils, the bottom of the trench excavations may be overexcavated to the top of weathered rock and replaced with Class 2 AB compacted to 95 percent relative compaction. The pipe bedding material may be placed directly upon this Class 2 AB material.

10 LIMITATIONS

This Geotechnical Report was performed in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, expressed or implied, is made as to the conclusions and professional recommendations made in this report.

This Geotechnical Report is intended for use with the Upper Broadway Bike Path Project located in the City of Placerville, California, and any changes in the design or location of the proposed new improvements, however slight, shall be brought to our attention so that we may determine how they may affect our conclusions and recommendations. The conclusions and recommendations contained in this report are based upon the data relating only to this specific Project and locations discussed herein.

11 REPORT COPY LIST

This Geotechnical Report was prepared for R.E.Y. Engineering and the City of Placerville Public Works Department for use in planning and design of the proposed Upper Broadway Bike Lanes Project.

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12 REFERENCES

AASHTO, 2012. *AASHTO LRFD Bridge Design Specifications*, Customary U.S. Units, American Association of State Highway and Transportation Officials, Washington, D.C, Sixth Edition with Caltrans Amendments, dated 2014.

Cal/OSHA, 2007. State of California Department of Industrial Relations, California Division of Occupational Safety and Health, 2007, *California Code of Regulations, Title 8*, Article 6, Sections 1540-1541.1, Excavations.

California Department of Transportation, 2010. *Soil and Rock Logging, Classification, and Presentation Manual*, 2010 Edition. Caltrans Division of Engineering Services, Geotechnical Services, 2010.

California Department of Transportation, 2010. *Memos to Designer*, Section 20: Seismic Design Methodology, July 2010.

California Department of Transportation, 2012. California Amendments to AASHTO LRFD Bridge Design Specifications – Sixth Edition, California Department of Transportation, Sacramento, CA.

California Department of Transportation, 2012. *Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations*, Caltrans Division of Engineering Services, Geotechnical Services, November 2012.

California Department of Transportation, 2018. California Department of Transportation, Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch, *Corrosion Guidelines*, Version 3.0, March 2018.

California Department of Transportation, 2013. Caltrans *Seismic Design Criteria*, Version 1.7, April 2013.

California Department of Transportation, 2013. Caltrans ARS Online Version 2.3.09, Division of Research and Innovation, Caltrans GeoResearch Group, http://dap3.dot.ca.gov/ARS_Online/index.php, accessed 10/30/2017.

California Department of Transportation, 2018. *Standard Specifications*, 2018.

California Department of Transportation, 2018. *Standard Plans*, 2018.

California Geological Survey, 1981, *Geologic Map of the Sacramento Quadrangle*, Regional Geologic Map No. 1A, 1981

Clark, W.B. and Carlson, D.W., 1956, *Mines and mineral resources of El Dorado County*: California Division of Mines, California Journal of Mines and Geology, v. 52, p. 422-434

Earhart, R.L., 1988, *Geologic setting of gold occurrences in the Big Canyon area, El Dorado County, California*: U.S. Geological Survey professional Paper 1576, 13 p

Naval Facilities Engineering Command, 1986. *Soil Mechanics Design Manual* 7.1 (NAVFAC DM-7.1), September 1986.

Naval Facilities Engineering Command, 1986. *Foundations and Earth Structures Design Manual 7.2* (NAVFAC DM-7.2), September 1986.

Petersen, M., 2008. Documentation for the 2008 update of the national seismic hazard maps, USGS OFR 08–1128.

USGS, 2013. *EHP Quaternary Faults,* Fault Maps – Interactive, USGS Geologic Hazards Science Center, http://geohazards.usgs.gov/qfaults/map.php.

USDA, 2018, Web Soil Survey, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed July 25, 2018

Appendix I. Site Maps

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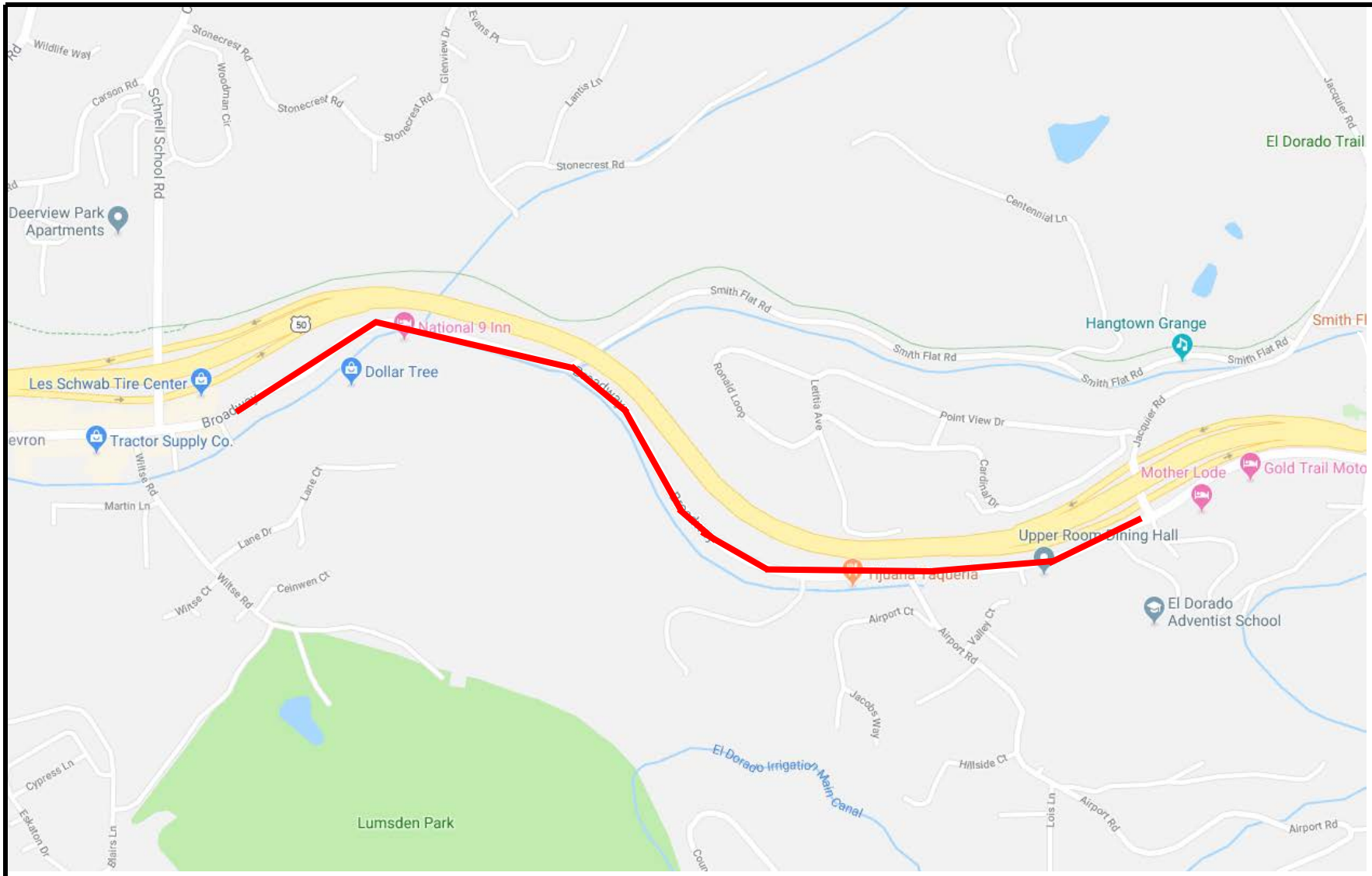
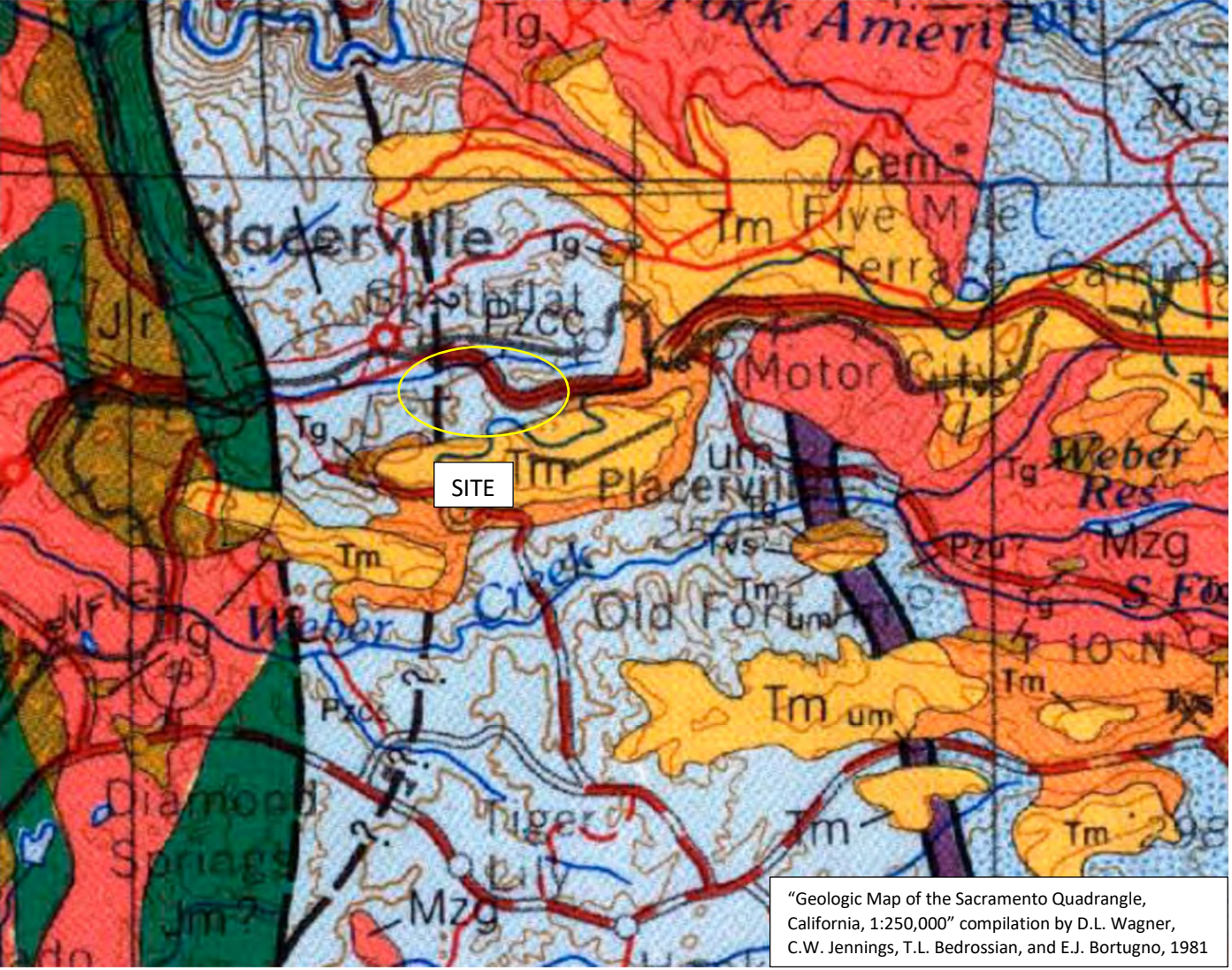


Project Vicinity

Figure 1

Vicinity Map

Upper Broadway Bike Lanes
Placerville
El Dorado County
WRECO Project No. P15055



"Geologic Map of the Sacramento Quadrangle, California, 1:250,000" compilation by D.L. Wagner, C.W. Jennings, T.L. Bedrossian, and E.J. Bortugno, 1981

LEGEND

PLUTONIC ROCKS

MESOZOIC

- Mzg — Mesozoic granitic rocks
- Mzd — Mesozoic dioritic rocks
- gb — Gabbroic rocks*
- Ultramafic rocks*

- Metasedimentary rocks*
- Crystalline limestone and dolomite*
- Pzcc — Calaveras Complex *(Metasedimentary rocks)*

- Paleozoic-Mesozoic metamorphic rocks
- Augen gneiss of uncertain age
- Pzu? — Undifferentiated Paleozoic(?) rocks
- Tm — Mehrten Formation *(Andesitic conglomerate, sandstone, and breccia)*
- Tvs — Valley Springs Formation *(Rhyolitic tuff and sedimentary rocks)*
- Mariposa Formation *(Slate, graywacke, and conglomerate)*

Map Symbols

Strike and dip of sedimentary rocks:

18 inclined — 80 overturned — 75 inclined

Direction of landslide movement

N W E S

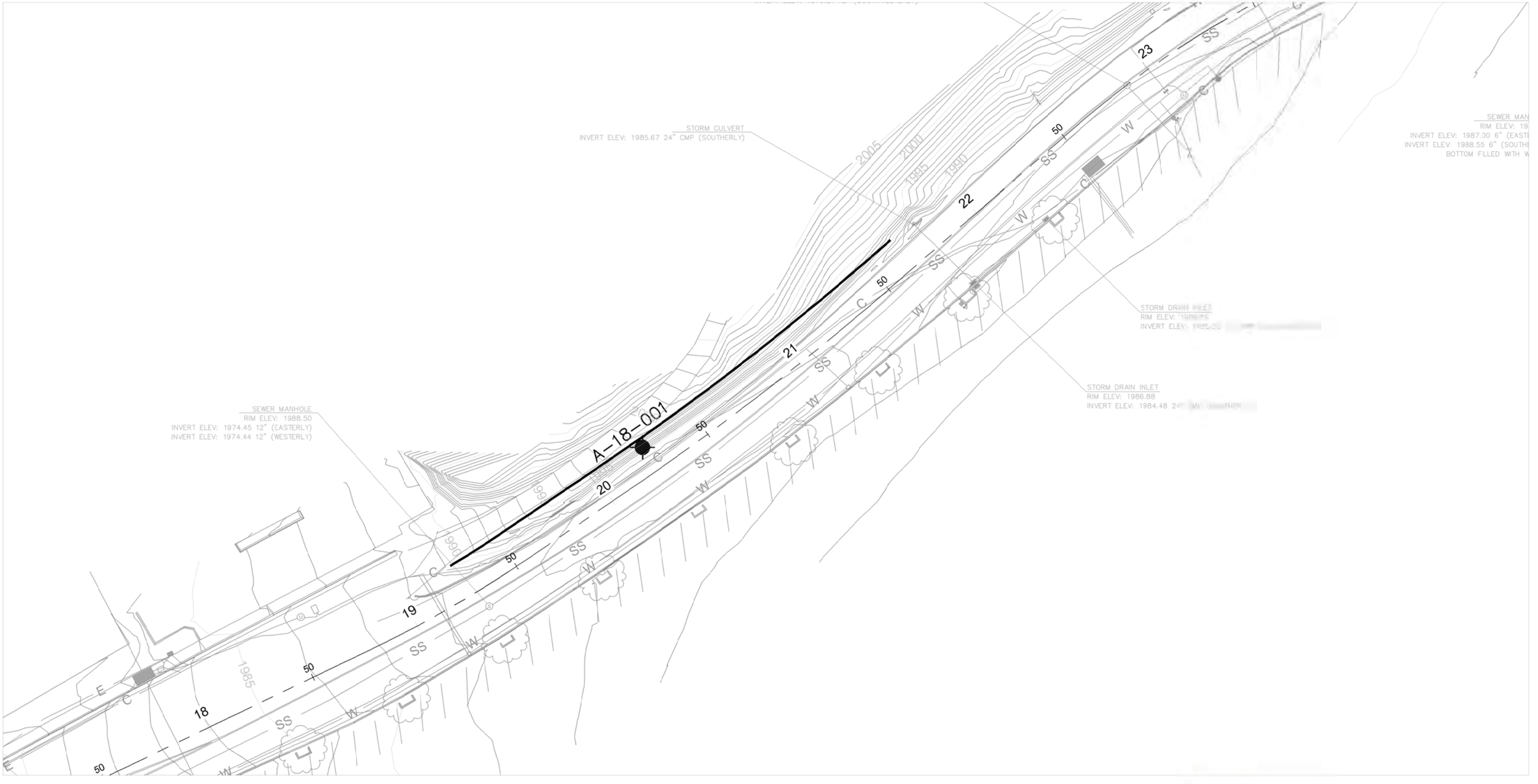
Formation contact, dashed where Inferred or indefinite, dotted where concealed

Fault contact, dashed where inferred or Indefinite, dotted where concealed

WRECO

Figure 2
Geologic Map

Upper Broadway
Upper Broadway Bike Lanes Project
Pacerville, California WRECO
Project No. P15055



LEGEND:

A–17–003 APPROXIMATE BORING LOCATION

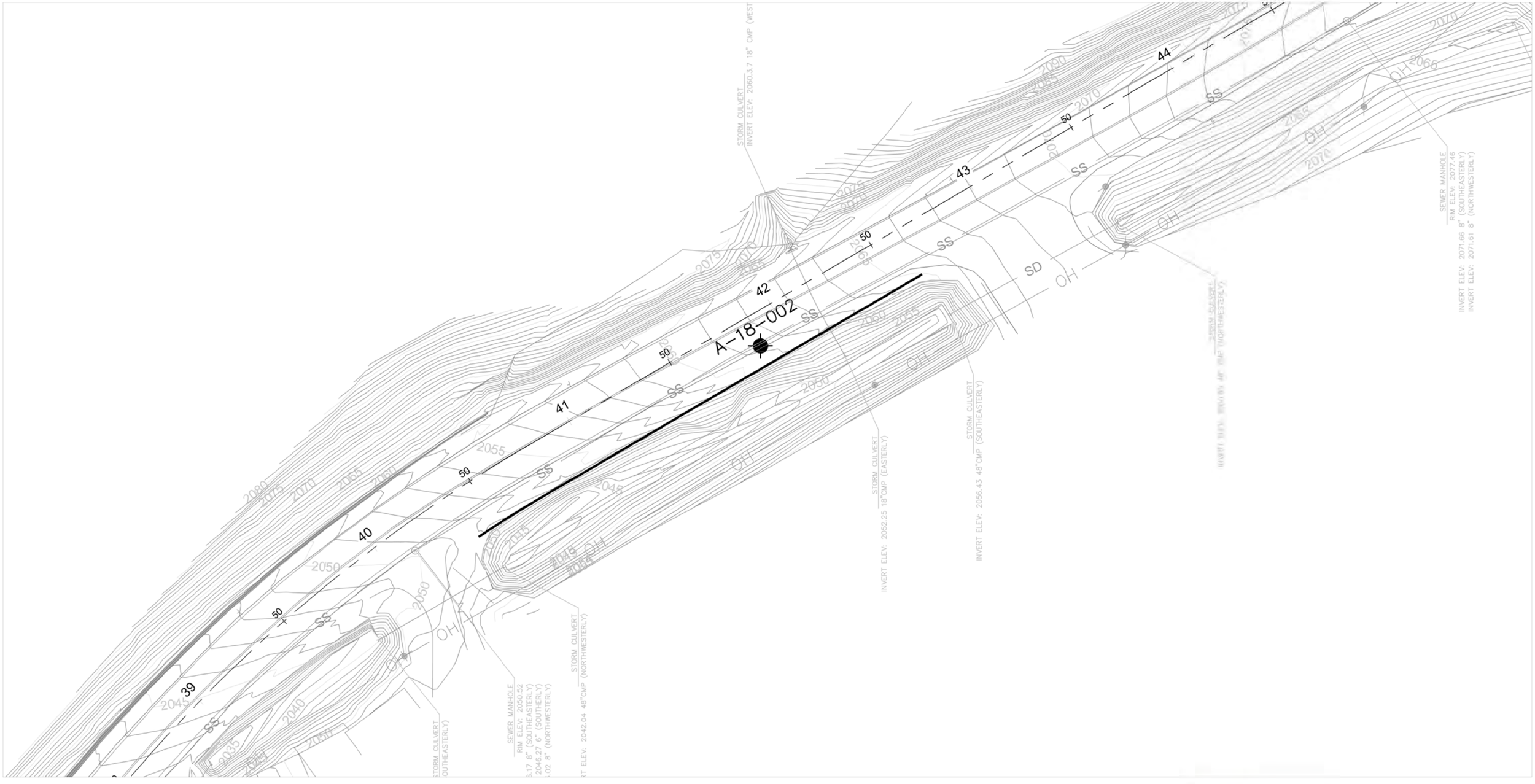
NOTE: All locations are approximate and are referenced from existing site features.

PLAN
1"=40'

0 40 ft 80 ft
SCALE

N

WRECO	7807 LAGUNA BLVD SUITE 400 ELK GROVE, CA 95758
CITY OF PLACERVILLE	
Upper Broadway Bike Lanes Upper Broadway	
Location of Field Tests	
P15055	Figure - 3A



LEGEND:

A–17–003 APPROXIMATE BORING LOCATION

NOTE: All locations are approximate and are referenced from existing site features.

PLAN
1"=40'

0 40 ft 80 ft
SCALE

N

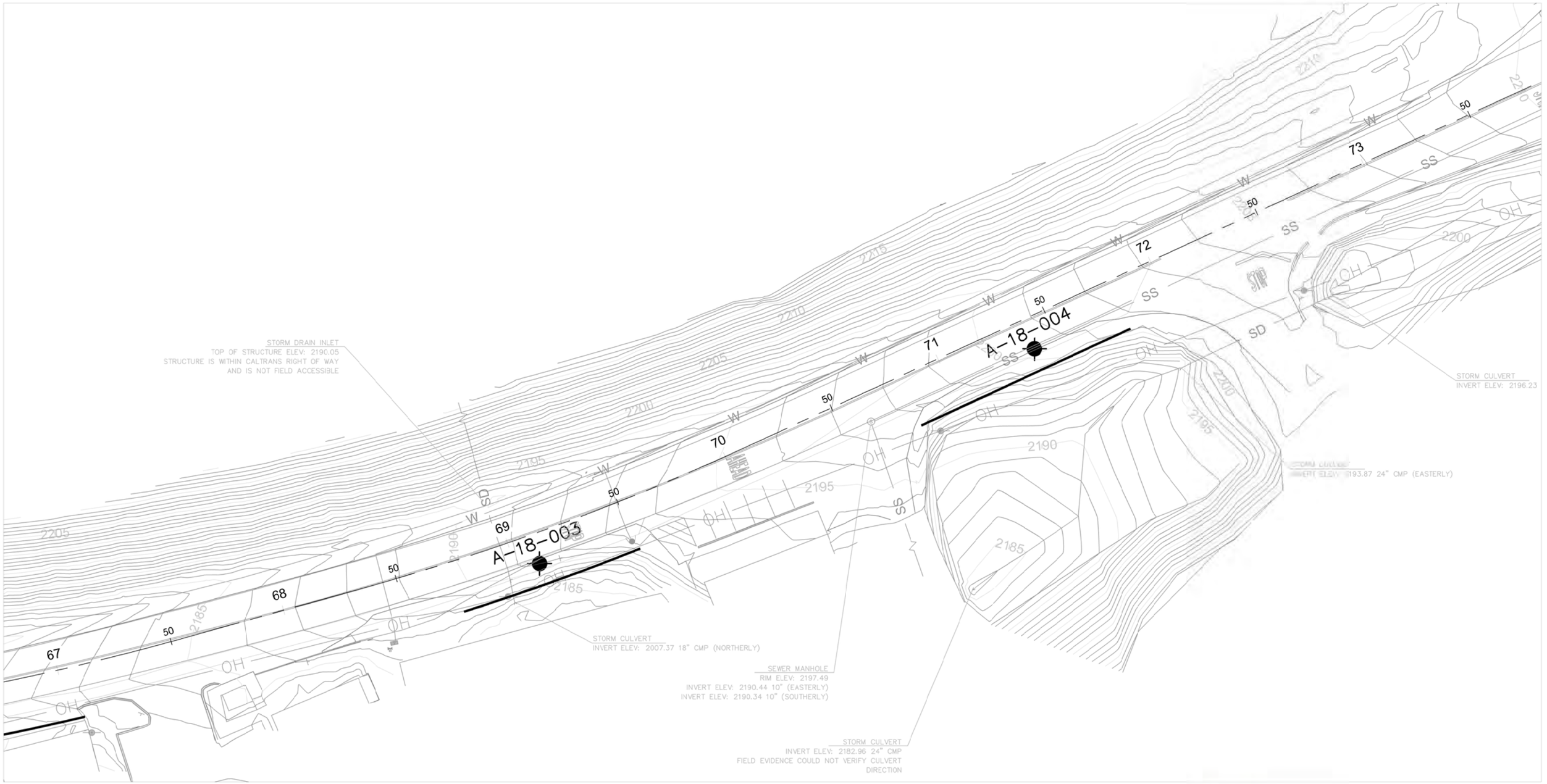
WRECO
7807 LAGUNA BLVD
SUITE 400
ELK GROVE, CA 95758

CITY OF PLACERVILLE

Upper Broadway Bike Lanes
Upper Broadway

Location of Field Tests

P15055 | Figure - 3B



LEGEND:

A–17–003 APPROXIMATE BORING LOCATION

NOTE: All locations are approximate and are referenced from existing site features.

PLAN
1"=40'

0 40 ft 80 ft
SCALE

N

WRECO	7807 LAGUNA BLVD SUITE 400 ELK GROVE, CA 95758
CITY OF PLACERVILLE	
Upper Broadway Bike Lanes Upper Broadway	
Location of Field Tests	
P15055	Figure - 3C

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Appendix II. Boring Records

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LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
OA	**7-23-18**	**7-23-18**		**A-18-001**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
V&W				
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 55**	**6 in**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
NEAT GROUT AND CEMENT			**10.0 ft**		**31.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM); medium dense; brown; moist; nonplastic fines.		S1									
	5		SILTY SAND with GRAVEL (SM); very dense; dark grayish brown; dry; nonplastic fines ; (decomposed bedrock).		S2	50/2			22	55	23			PA
	10				S3	50/3								
	15		Very dense; dark grayish brown; wet; nonplastic fines.		S4	28 50								
	20				S5	50/3								
	25													

(continued)

WRECO
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Granite Bay, CA 95661
(916) 757-6150

REPORT TITLE				HOLE ID
BORING RECORD				**A-18-001**
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT NO.
03	**El Dorado**			**15055**
PROJECT OR BRIDGE NAME				
Upper Broadway				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	OA		**7-30-18**	**1 of 2**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	25		SILTY SAND with GRAVEL (SM) *(continued)*.		S6	50/3								
	26													
	27													
	28													
	29													
	30				S7	50/1								
	31													
	32		Bottom of borehole at 31.5 ft bgs Borehole terminated at planned depth This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
	33													
	34													
	35													
	36													
	37													
	38													
	39													
	40													
	41													
	42													
	43													
	44													
	45													
	46													
	47													
	48													
	49													
	50													
	51													
	52													
	53													
	54													
	55													

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REPORT TITLE				HOLE ID
BORING RECORD				**A-18-001**
DIST. **03**	COUNTY **El Dorado**	ROUTE	POSTMILE	PROJECT NO. **15055**
PROJECT OR BRIDGE NAME **Upper Broadway**				
BRIDGE NUMBER	PREPARED BY **OA**		DATE **7-30-18**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
OA	7-23-18	7-23-18		A-18-002
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
V&W				
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	6 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
NEAT GROUT AND CEMENT			15.0 ft		31.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM); medium dense; dark brown; dry; few GRAVEL ; nonplastic fines.		S1									
	5		Medium dense; dark grayish brown; few GRAVEL ; nonplastic fines.		S2	2 7 10	17		27	29	44			PA, PI
	10		SILTY SAND with GRAVEL (SM); grayish brown; few GRAVEL ; nonplastic fines ; decomposed bedrock.		S3	50/5								
	15		Dark yellowish brown; wet; few GRAVEL ; nonplastic fines.		S4	50/4								
	20		Grayish brown; wet; few GRAVEL ; nonplastic fines.		S5	50/3								
	25													

(continued)

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REPORT TITLE				HOLE ID
BORING RECORD				A-18-002
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT NO.
03	El Dorado			15055
PROJECT OR BRIDGE NAME				
Upper Broadway				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	OA		7-30-18	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	25		SILTY SAND with GRAVEL (SM) *(continued)*.		S6	31 50								
	26													
	27													
	28													
	29													
	30				S7	31 50/2								
	31													
	32		Bottom of borehole at 31.5 ft bgs Borehole terminated at planned depth This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
	33													
	34													
	35													
	36													
	37													
	38													
	39													
	40													
	41													
	42													
	43													
	44													
	45													
	46													
	47													
	48													
	49													
	50													
	51													
	52													
	53													
	54													
	55													

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REPORT TITLE				HOLE ID
BORING RECORD				**A-18-002**
DIST. **03**	COUNTY **El Dorado**	ROUTE	POSTMILE	PROJECT NO. **15055**
PROJECT OR BRIDGE NAME **Upper Broadway**				
BRIDGE NUMBER	PREPARED BY **OA**		DATE **7-30-18**	SHEET **2 of 2**

7 BR - CUSTOM COLUMNS UPPER BROADWAY LOGS.GPJ WRECO - NONCALTRANS.GLB 9/4/18

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
OA	7-23-18	7-23-18		A-18-003
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
V&W				
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	6 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
NEAT GROUT AND CEMENT			Not Encountered	26.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); grayish brown; dry; few GRAVEL ; nonplastic fines.		S1									
	5		Lean CLAY with SAND (CL); medium stiff, grayish brown, dry; few Gravel; low plasticity fines,(decomposed bedrock).		S2	13 19 17	36		3	24	73			PA, PI
	10		Stiff, grayish brown, moist; few Gravel; low plasticity fines,(decomposed bedrock).		S3	6 13 13	26							
	15		SILTY SAND (SM); very dense; light gray; moist; few GRAVEL ; nonplastic fines.		S4	33 50/5								
	20				S5	32 50/3								
	25													

(continued)

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REPORT TITLE				HOLE ID
BORING RECORD				A-18-003
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT NO.
03	El Dorado			15055
PROJECT OR BRIDGE NAME				
Upper Broadway				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	OA		7-30-18	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	25		SILTY SAND (SM) *(continued)*.		S6	30 50/5								
	26													
	27		Bottom of borehole at 26.5 ft bgs Borehole terminated at planned depth This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
	28													
	29													
	30													
	31													
	32													
	33													
	34													
	35													
	36													
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	52													
	53													
	54													
	55													

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REPORT TITLE				HOLE ID
BORING RECORD				**A-18-003**
DIST. **03**	COUNTY **El Dorado**	ROUTE	POSTMILE	PROJECT NO. **15055**
PROJECT OR BRIDGE NAME **Upper Broadway**				
BRIDGE NUMBER	PREPARED BY **OA**		DATE **7-30-18**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
OA	7-24-18	7-24-18		A-18-004
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
V&W				
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			CME 55	6 in
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
NEAT GROUT AND CEMENT			20.0 ft		26.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); loose; brown; dry; few GRAVEL ; nonplastic fines ; moderate cementation.		S1									
	5		Medium dense; grayish brown; dry; few GRAVEL ; nonplastic fines.		S2	3 3 7	10		32	39	29			PA, PI
	10		SILTY SAND with GRAVEL (SM); very dense; gray; moist; few GRAVEL ; nonplastic fines ; (decomposed bedrock).		S3	50/3								
	15		Very dense; gray; moist; few GRAVEL ; nonplastic fines.		S4	50								
	20				S5	50/3								
	25													

(continued)

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REPORT TITLE				HOLE ID
BORING RECORD				A-18-004
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT NO.
03	El Dorado			15055
PROJECT OR BRIDGE NAME				
Upper Broadway				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	OA		7-30-18	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per ft	Recovery (%)	Gravel (%)	Sand (%)	Fines (%)	Drilling Method	Casing Depth	Remarks
	25		SILTY SAND with GRAVEL (SM) *(continued)*.		S6	50/1								
	26													
	27		Bottom of borehole at 26.5 ft bgs Borehole terminated at planned depth											
	28		This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.											
	29													
	30													
	31													
	32													
	33													
	34													
	35													
	36													
	37													
	38													
	39													
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	51													
	52													
	53													
	54													
	55													

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REPORT TITLE				HOLE ID
BORING RECORD				**A-18-004**
DIST. **03**	COUNTY **El Dorado**	ROUTE	POSTMILE	PROJECT NO. **15055**
PROJECT OR BRIDGE NAME **Upper Broadway**				
BRIDGE NUMBER	PREPARED BY **OA**		DATE **7-30-18**	SHEET **2 of 2**

7 BR - CUSTOM COLUMNS UPPER BROADWAY LOGS.GPJ WRECO - NONCALTRANS.GLB 9/4/18

Appendix III. Laboratory Testing

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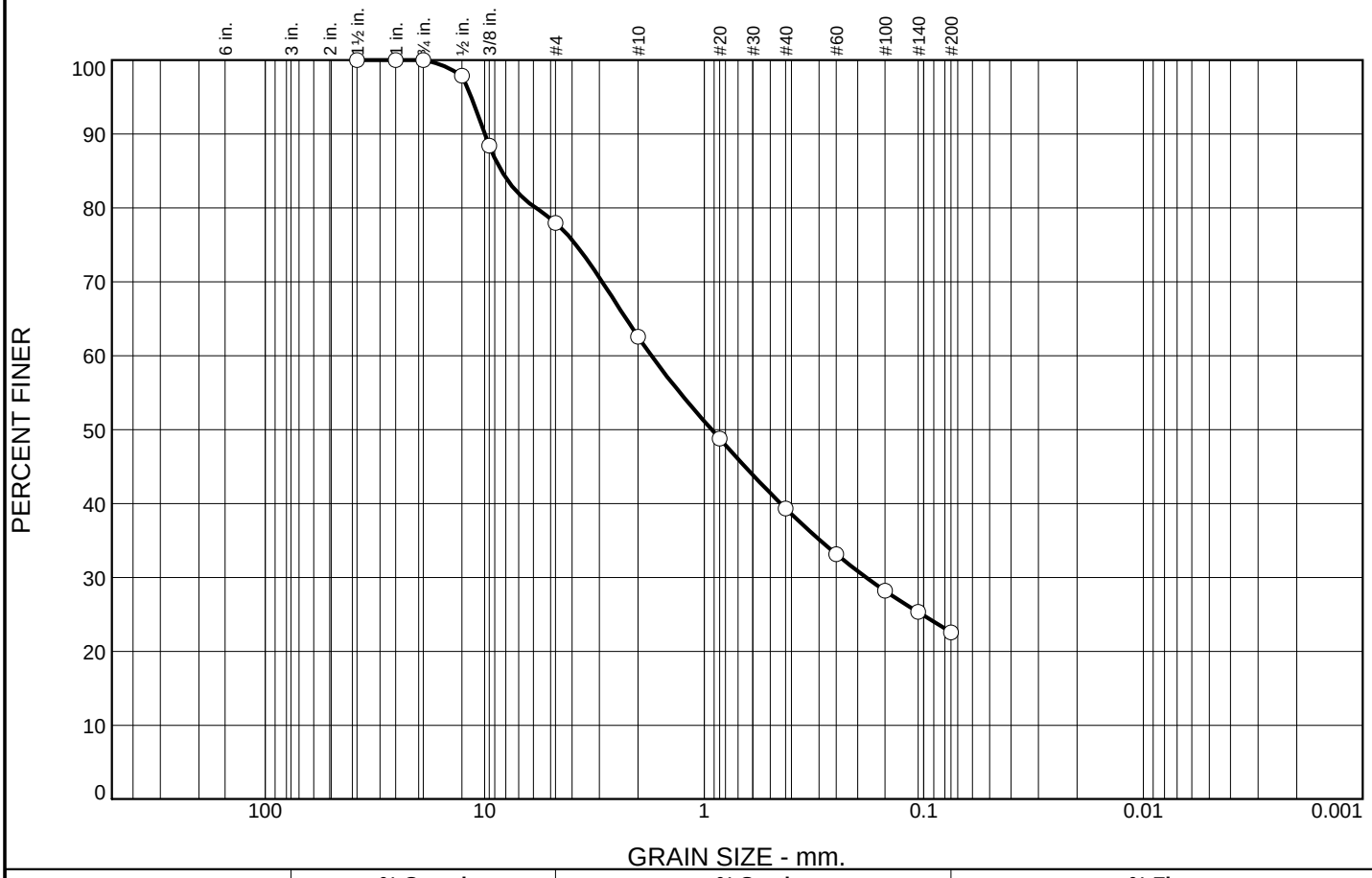
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	22.0	15.4	23.3	16.7	22.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	97.9		
3/8"	88.4		
#4	78.0		
#10	62.6		
#20	48.8		
#40	39.3		
#60	33.2		
#100	28.2		
#140	25.3		
#200	22.6		

* (no specification provided)

Material Description

SILTY SAND with GRAVEL, gray

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 9.9923 D_{85}= 8.3839 D_{60}= 1.7401
D_{50}= 0.9246 D_{30}= 0.1830 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

ASTM D6913 minimum mass requirement not met
Insufficient material for Atterberg Limit testing

Source of Sample: P15055.000 E. Upper Broadway **Depth:** 5.0'
Sample Number: A-18-001, S-2 **Date:** 7/26/18

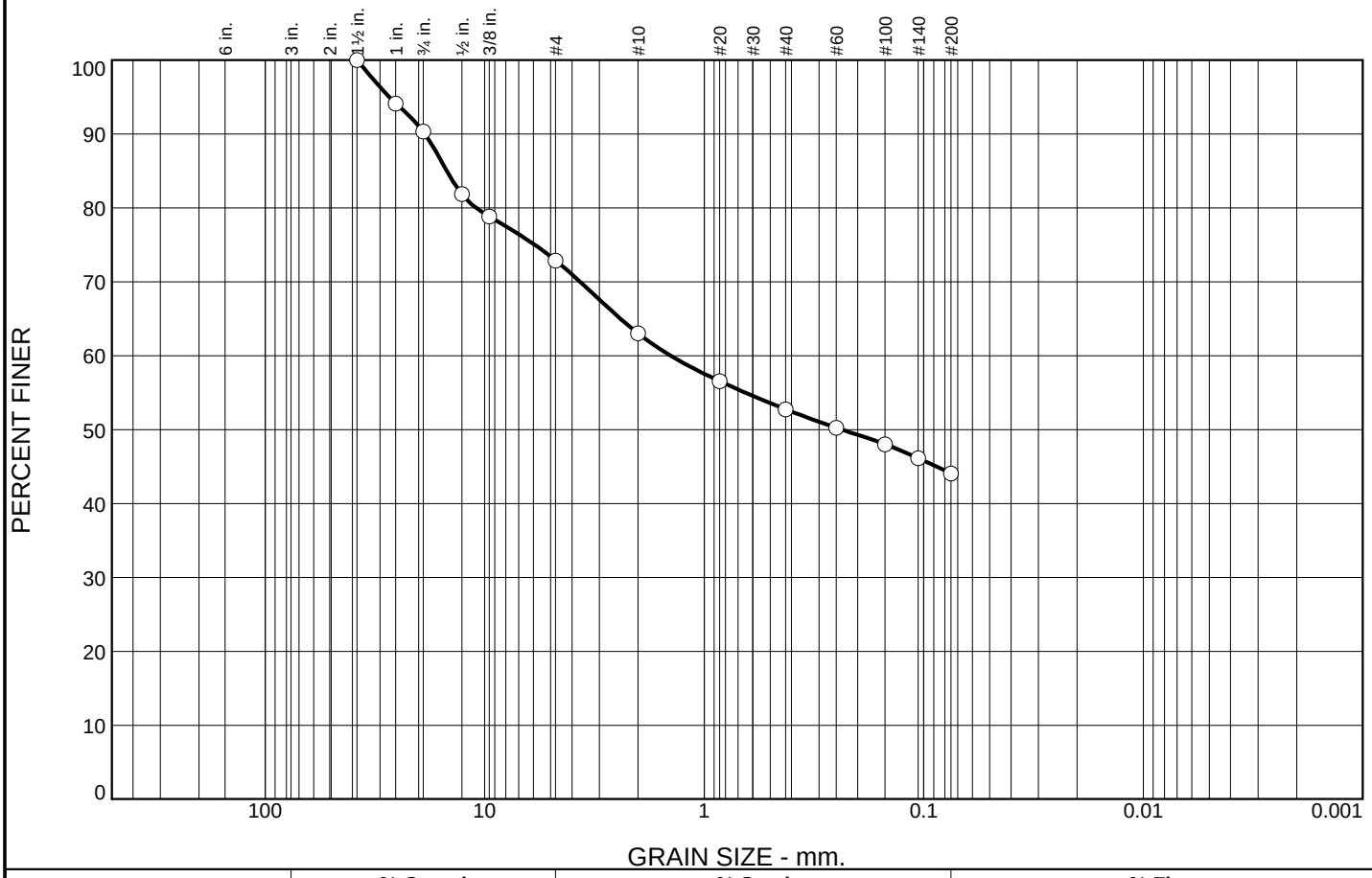
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No: 3390.X **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.7	17.4	9.9	10.3	8.6	44.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	94.1		
3/4"	90.3		
1/2"	81.8		
3/8"	78.8		
#4	72.9		
#10	63.0		
#20	56.6		
#40	52.7		
#60	50.2		
#100	48.0		
#140	46.1		
#200	44.1		

* (no specification provided)

Material Description

SILTY SAND with GRAVEL, redish brown

Atterberg Limits

PL= 25 LL= 30 PI= 5

Coefficients

D_{90}= 18.7159 D_{85}= 14.8787 D_{60}= 1.4234
D_{50}= 0.2366 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

ASTM D6913 minimum mass requirement not met

Source of Sample: P15055.000 E. Upper Broadway **Depth:** 5.0'
Sample Number: A-18-002, S-2 **Date:** 7/26/18

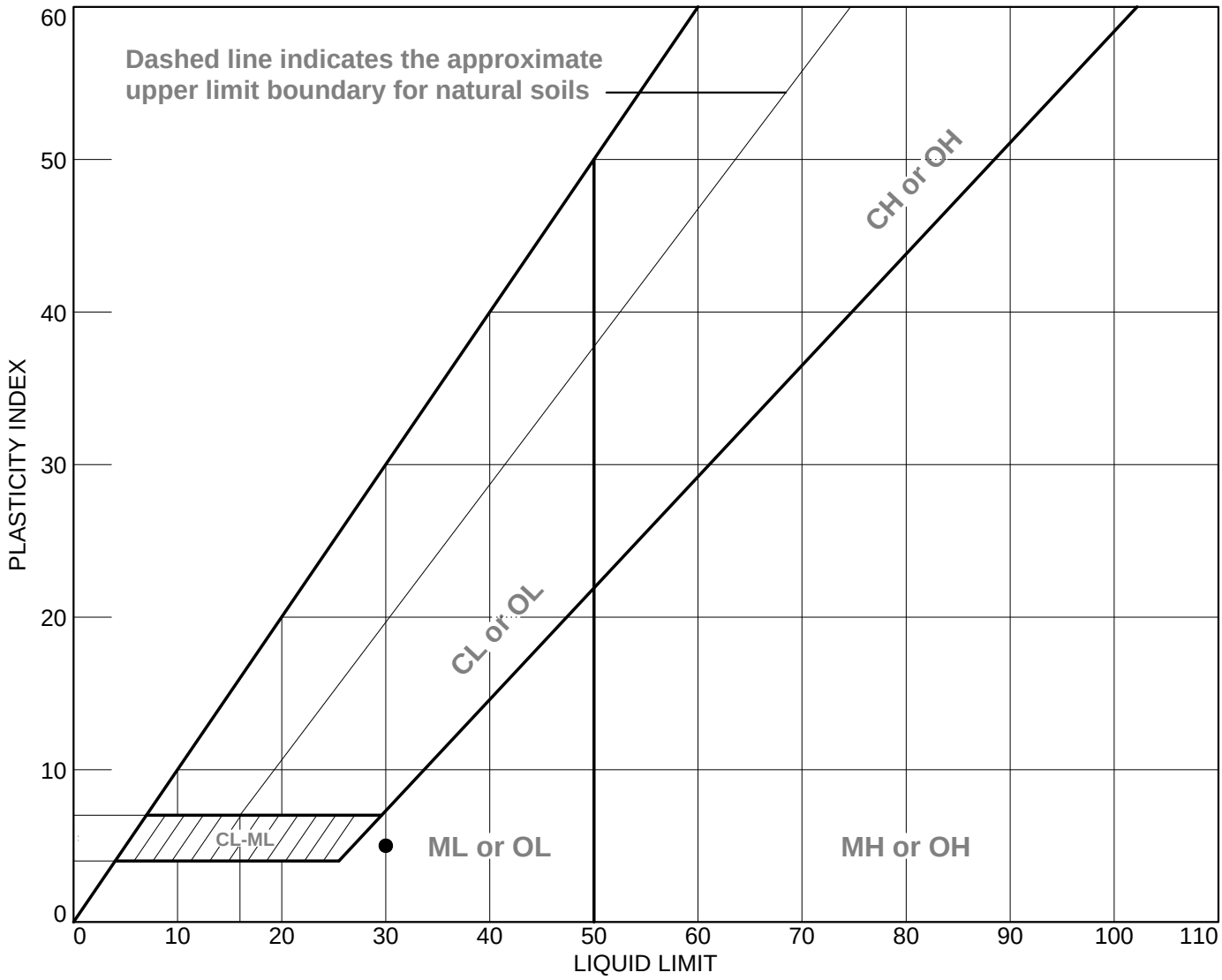
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No: 3390.X **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	P15055.000 E. Upper Broadway	A-18-002, S-2	5.0'	---	25	30	5	SM

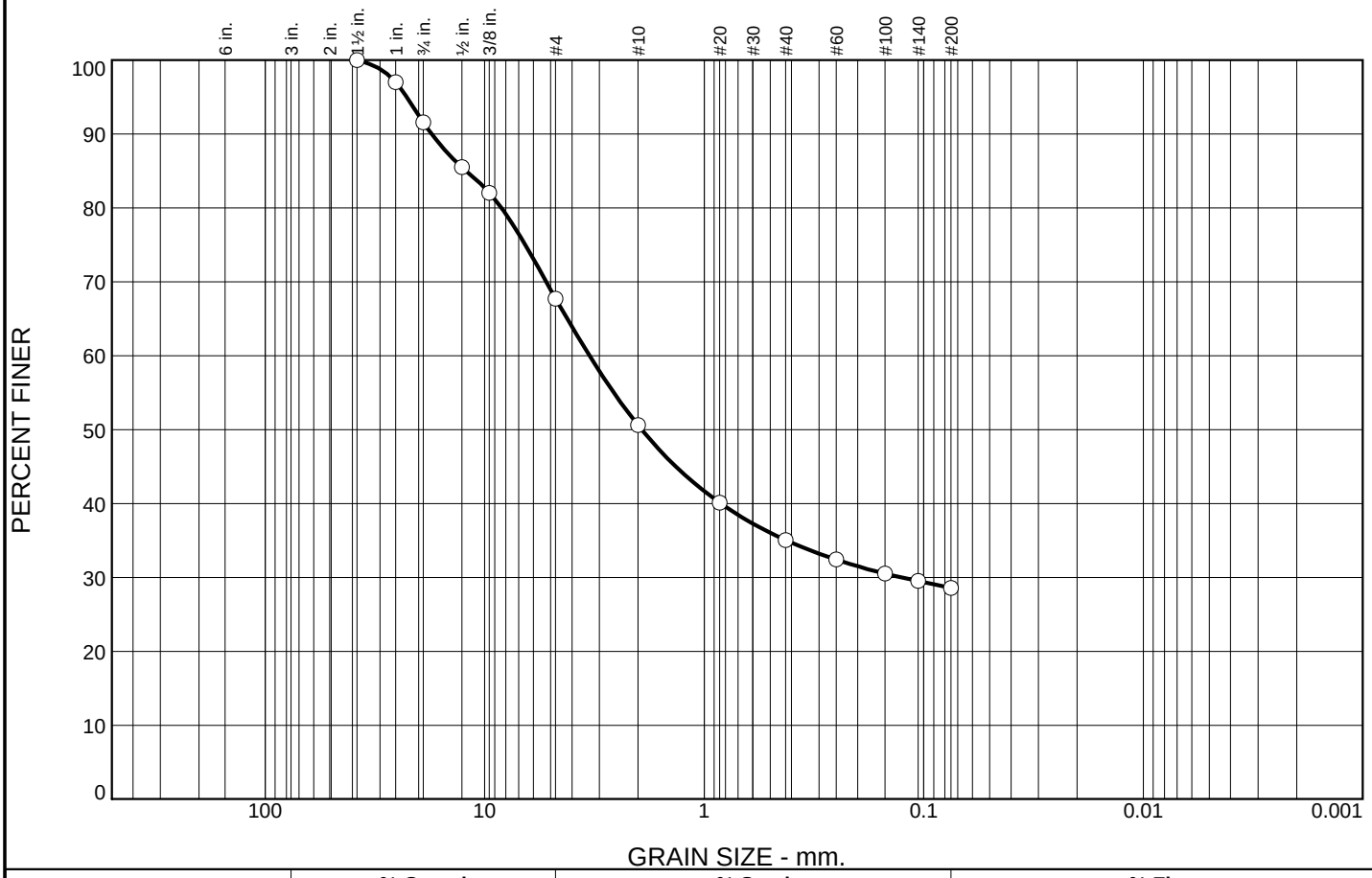
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No.: 3390.X **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.4	23.9	17.1	15.6	6.4	28.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	97.0		
3/4"	91.6		
1/2"	85.5		
3/8"	82.0		
#4	67.7		
#10	50.6		
#20	40.1		
#40	35.0		
#60	32.4		
#100	30.5		
#140	29.5		
#200	28.6		

* (no specification provided)

Material Description

SILTY SAND with GRAVEL, brown

Atterberg Limits

PL= 26 LL= 28 PI= 2

Coefficients

D_{90}= 17.4662 D_{85}= 12.1503 D_{60}= 3.3304
D_{50}= 1.9271 D_{30}= 0.1260 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

ASTM D6913 minimum mass requirement not met

Source of Sample: P15055.000 E. Upper Broadway **Depth:** 5.0'
Sample Number: A-18-003, S-2 **Date:** 7/26/18

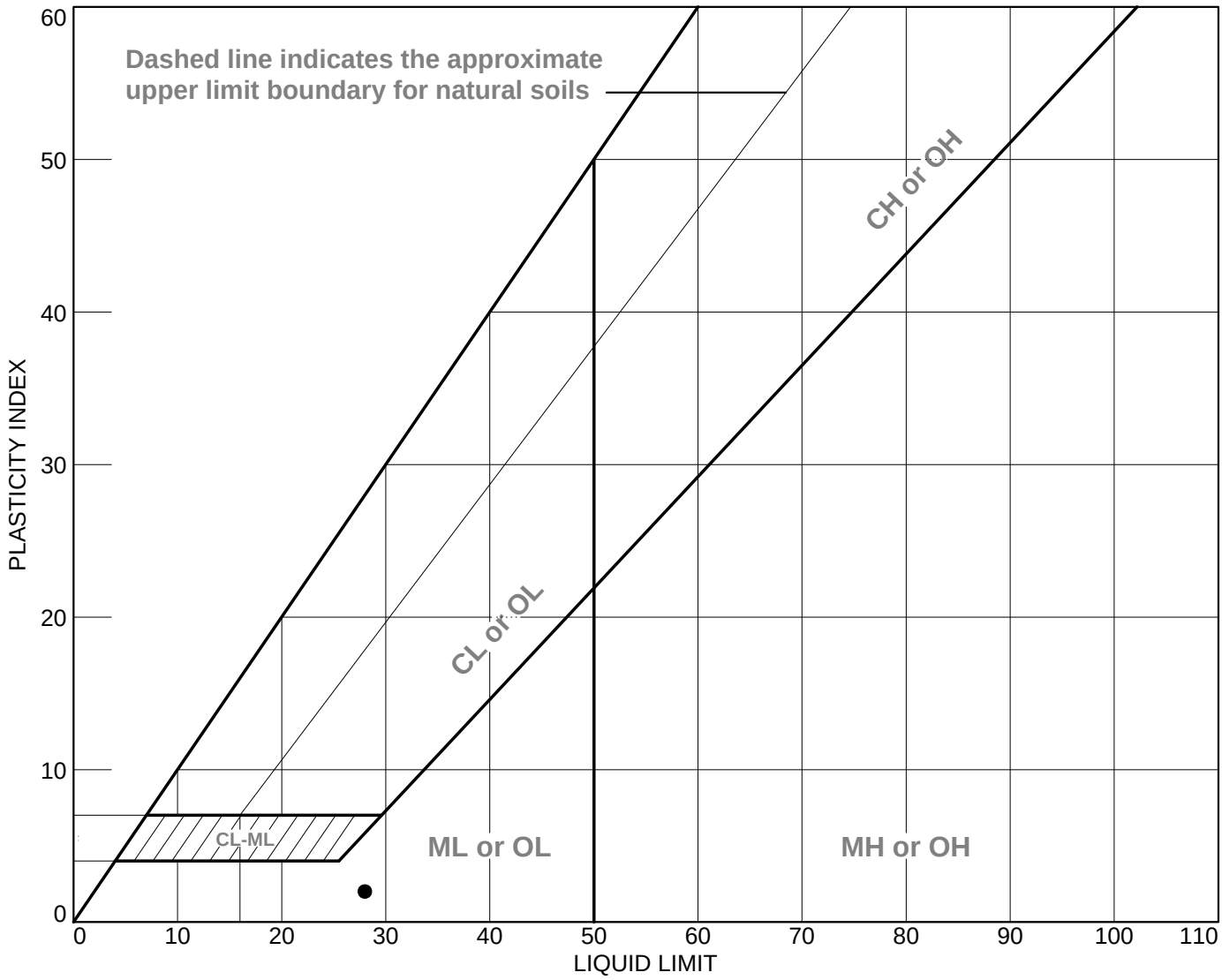
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No: 3390.X **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	P15055.000 E. Upper Broadway	A-18-003, S-2	5.0'	---	26	28	2	SM

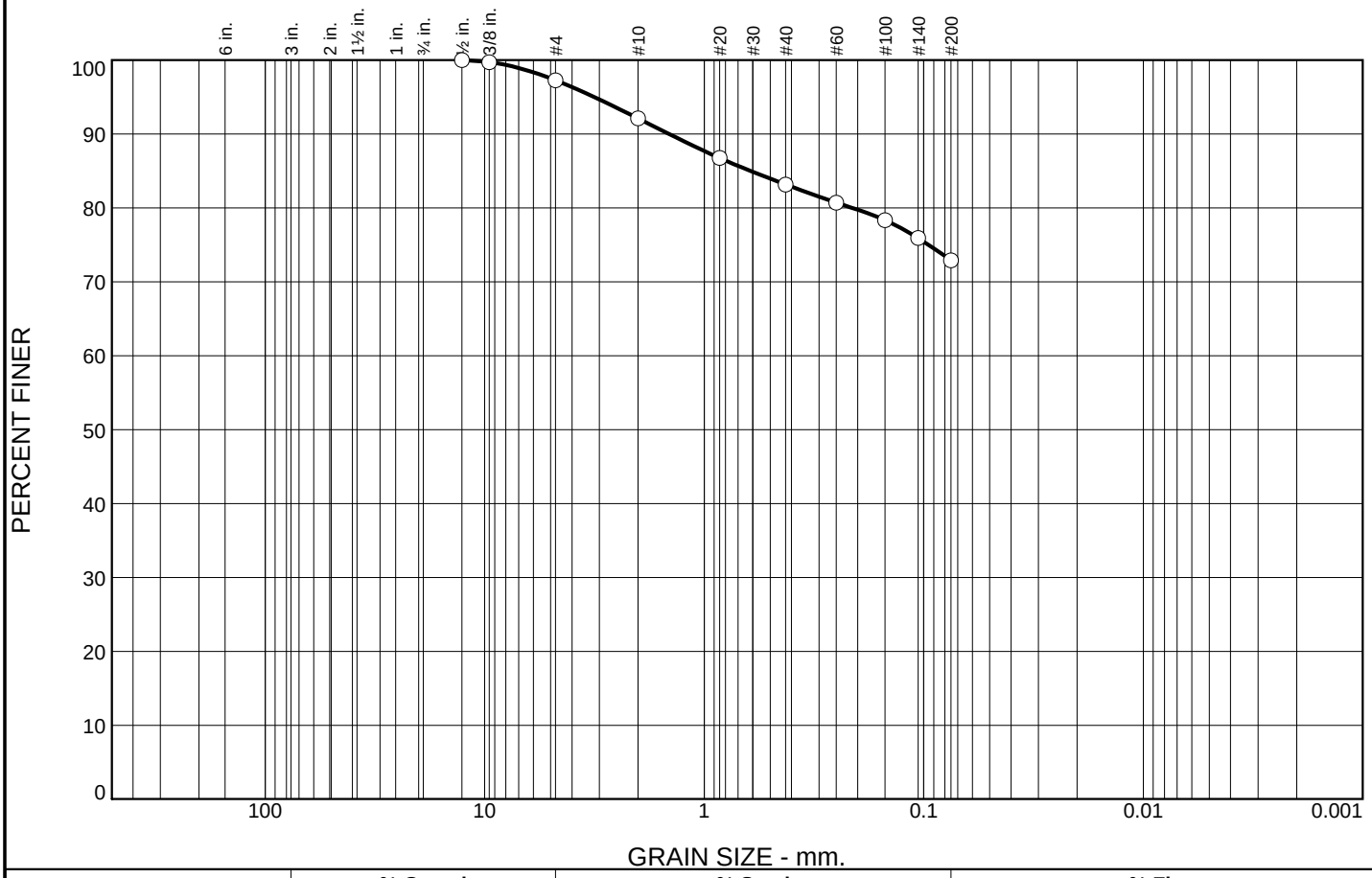
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No.: 3390.X **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	5.2	8.9	10.3	72.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	99.7		
#4	97.3		
#10	92.1		
#20	86.7		
#40	83.2		
#60	80.7		
#100	78.3		
#140	75.9		
#200	72.9		

* (no specification provided)

Material Description

Lean CLAY with SAND, dark yellowish brown

Atterberg Limits

PL= 20 LL= 43 PI= 23

Coefficients

D_{90}= 1.4484 D_{85}= 0.6156 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(16)

Remarks

Source of Sample: P15055.000 E. Upper Broadway **Depth:** 5.0'
Sample Number: A-18-004, S-2 **Date:** 7/26/18

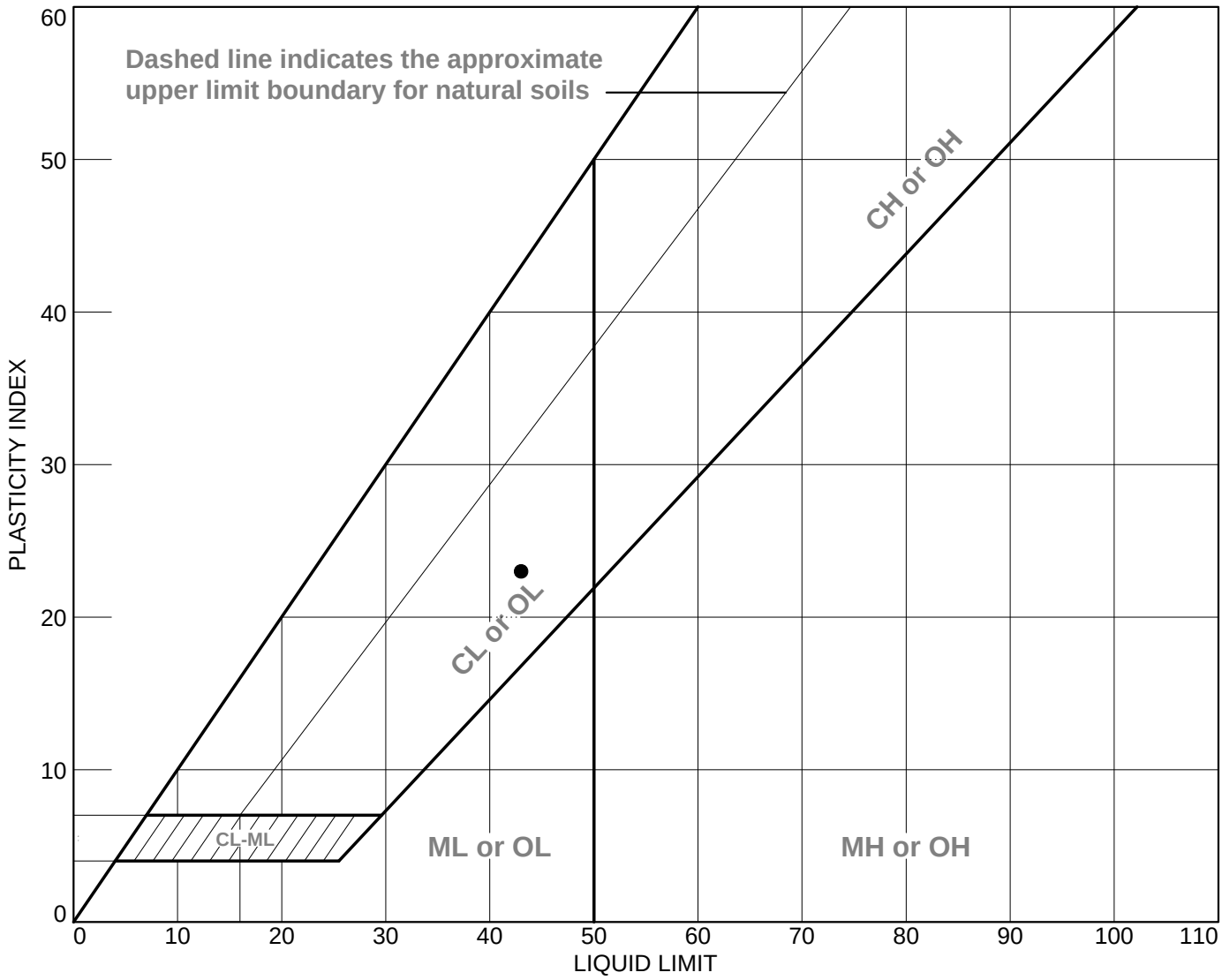
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No: 3390.X **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	P15055.000 E. Upper Broadway	A-18-004, S-2	5.0'	---	20	43	23	CL

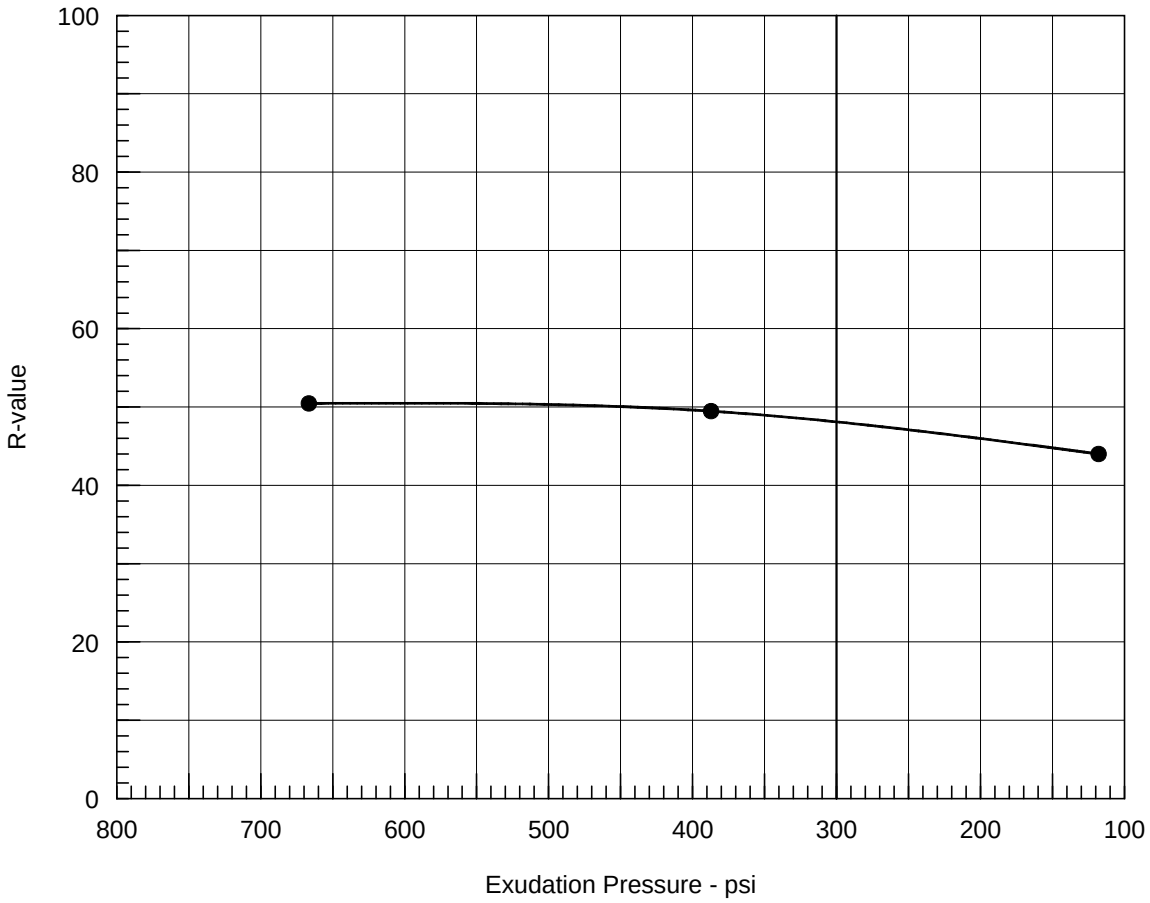
Blackburn Consulting

W. Sacramento, CA

Client: WRECO
Project: WRECO Lab Testing

Project No.: 3390.X **Figure**

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	317	102.6	15.5	611	50	2.45	667	50	50
2	306	102.8	16.1	310	49	2.41	387	52	49
3	167	96.1	20.1	210	52	2.44	118	46	44

Test Results	Material Description
R-value at 300 psi exudation pressure = 48	SANDY SILT, dark yellowish brown

Project No.: 3390.X

Project: WRECO Lab Testing

Source of Sample: P15055.000 E. Upper Broadway

Sample Number: HA-18-005, S-1

Date: 9/4/2018

Tested by: BRL

Checked by: RBL

Remarks:

11.4% retained on the #4 sieve, sample batched

Significant amount of organic material present in sample

R-VALUE TEST REPORT

Blackburn Consulting

Figure _____

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/01/2018
Date Submitted 07/27/2018

To: Orion Adah
WRECO
8331 Sierra College Blvd. 208
Roseville, CA 95661

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : P15055.000 Site ID : A18-001 S-1@0-5.
Thank you for your business.

* For future reference to this analysis please use SUN # 77675-162340.

EVALUATION FOR SOIL CORROSION

Soil pH	6.29		
Minimum Resistivity	7.24 ohm-cm (x1000)		
Chloride	2.7 ppm	00.00027	%
Sulfate	43.6 ppm	00.00436	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/01/2018
Date Submitted 07/27/2018

To: Orion Adah
WRECO
8331 Sierra College Blvd. 208
Roseville, CA 95661

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : P15055.000 Site ID : A18-002 S-1@0-5.
Thank you for your business.

* For future reference to this analysis please use SUN # 77675-162341.

EVALUATION FOR SOIL CORROSION

Soil pH	7.24		
Minimum Resistivity	2.95 ohm-cm (x1000)		
Chloride	6.6 ppm	00.00066	%
Sulfate	51.6 ppm	00.00516	%

METHODS

pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/01/2018
Date Submitted 07/27/2018

To: Orion Adah
WRECO
8331 Sierra College Blvd. 208
Roseville, CA 95661

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : P15055.000 Site ID : A18-003 S-1@0-5.
Thank you for your business.

* For future reference to this analysis please use SUN # 77675-162342.

EVALUATION FOR SOIL CORROSION

Soil pH	7.03		
Minimum Resistivity	8.31 ohm-cm (x1000)		
Chloride	1.4 ppm	00.00014	%
Sulfate	13.8 ppm	00.00138	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/01/2018
Date Submitted 07/27/2018

To: Orion Adah
WRECO
8331 Sierra College Blvd. 208
Roseville, CA 95661

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : P15055.000 Site ID : A18-004 S-1@0-5.
Thank you for your business.

* For future reference to this analysis please use SUN # 77675-162343.

EVALUATION FOR SOIL CORROSION

Soil pH	6.79	
Minimum Resistivity	8.31 ohm-cm (x1000)	
Chloride	1.9 ppm	00.00019 %
Sulfate	17.1 ppm	00.00171 %

METHODS

pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Appendix IV. Analyses and Calculations

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Appendix IV.1 Seismic Analysis

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Project Name: Upper Broadway **Completed By:** OA **on** 8/2/2018
Project Number: P15055 **Checked By:** DB **on** 8/27/2018

Estimating Average Small Strain Shear Wave Velocity (VS30) for Top 100FT

Ref: Caltrans Geotechnical Services Design Manual Version 1.0 (Aug 2009)

Boring Number: A-18-04

1 m = 3.28084 ft

				COHESIONLESS								COHESIVE										YOUNG SEDIMENTARY ROCK			
				Using SPT (1) Sykora (1987)				Using CPT (2) Mayne (2007)				Using SPT (3) Ohta and Goto (1978)				Using S_u (4) Dickenson (1994)			Using CPT (5) Mayne and Rix (1995)			Using SPT (6) Imai & Tonouchi (1982)			
				ER = 63.9								ER = 63.9										ER = 63.9			
Layer	Method Used	Depth to Top (FT)	Depth To Bottom (FT)	N_{ave}	N_{60}	V_S (m/s)	V_S (m/s) Confined	$q_{t,ave}$ (MPa)	Effective Overburden	V_S (m/s)	V_S (m/s) Confined	N_{ave}	N_{60}	V_S (m/s)	V_S (m/s) Confined	S_u (psf)	V_S (m/s)	V_S (m/s) Confined	$q_{t,ave}$ (kPa)	V_S (m/s)	V_S (m/s) Confined	N_{ave}	N_{60}	V_S (m/s)	V_S (m/s) Confined
1	1	0	5	5	5.325	163.229537	163.22954	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
2	1	5	10	10	10.65	199.571007	199.57101	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
3	1	10	15	100	106.5	389.13245	380	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
4	1	15	20	100	106.5	389.13245	380	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
5	1	20	26.5	100	106.5	389.13245	380	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
6	1	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
7	1	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
8	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
9	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
10	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
11	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
12	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
13	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
14	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
15	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
16	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
17	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
18	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
19	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
20	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1
		Enter Total Depth =	26.5																						

Method Numbering Key

- 0 = Layer Not Used
- 1 = Cohesionless Using SPT
- 2 = Cohesionless Using CPT
- 3 = Cohesive Using SPT
- 4 = Cohesive Using S_u
- 5 = Cohesive Using CPT
- 6 = Sedimentary Rock Using SPT

Layer	Depth to Top (FT)	Depth To Bottom (FT)	V_S (m/s)	V_S (ft/s)	D/V_S (sec)
1	0	5	163.22954	535.53	0.009336545
2	5	10	199.57101	654.7605	0.00763638
3	10	15	380	1246.719	0.004010526
4	15	20	380	1246.719	0.004010526
5	20	26.5	380	1246.719	0.005213684
6	0	0	1	3.28084	0
7	0	0	1	3.28084	0
8	0	0	1	3.28084	0
9	0	0	1	3.28084	0
10	0	0	1	3.28084	0
11	0	0	1	3.28084	0
12	0	0	1	3.28084	0
13	0	0	1	3.28084	0
14	0	0	1	3.28084	0
15	0	0	1	3.28084	0
16	0	0	1	3.28084	0
17	0	0	1	3.28084	0
18	0	0	1	3.28084	0
19	0	0	1	3.28084	0
20	0	0	1	3.28084	0

Feet to meters conversion:	
1-foot = 0.3048 meters	

RESULTS Vs(d)

V_{Sd} = 877.2609 ft/sec

V_{Sd} = 267.39 m/sec

OR

***ESTIMATING VS30 FOR SITES WITH SUBSURFACE INFO <100 ft (30 m)**

$V_{S30} = [1.45 - (0.015 * d)] * V_{S(d)}$

d = depth in *"meters"* to bottom of known soil column

$V_{S(d)}$ = Time averaged velocity (m/sec) for known soil column

Vs30 = 355.3179 m/sec

Other Rocks

Review Studies by:

1 Fumal (1978) - Correlated shear wave velociy to weathering, hardness, fracture spacing, and lithology based on data from 27 sites in San Francisco, CA.

2 Fumal and Tinsley (1985) - extended the 1978 study to include 84 sites in Los Angelas, CA

Note: In the absense of in-situ measurements of V_S, the V_{S30} for competent rocks in California should be limited to 760 m/sec

WRECO

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SITE DATA (ARS Online Version 2.3.09)

Shear Wave Velocity, $Vs30$:	355.3 m/s
Latitude:	38.730785
Longitude:	-120.768450
Depth to Vs = 1.0 km/s:	N/A
Depth to Vs = 2.5 km/s:	N/A

DETERMINISTIC

West Tahoe

Fault ID:	77
Maximum Magnitude (MMax):	7
Fault Type:	N
Fault Dip:	50 Deg
Dip Direction:	E
Bottom of Rupture Plane:	13.00 km
Top of Rupture Plane(Ztor):	0.00 km
Rrup	63.79 km
Rjb:	63.79 km
Rx:	63.33 km
Fnorm:	1
Frev:	0

Period	SA(Base Spectrum)	Basin Factor	Near Fault Factor(Applied)	SA(Final Spectrum)
0.01	0.052	1.000	1.000	0.052
0.05	0.062	1.000	1.000	0.062
0.1	0.090	1.000	1.000	0.090
0.15	0.114	1.000	1.000	0.114
0.2	0.127	1.000	1.000	0.127
0.25	0.128	1.000	1.000	0.128
0.3	0.126	1.000	1.000	0.126
0.4	0.113	1.000	1.000	0.113
0.5	0.103	1.000	1.000	0.103
0.6	0.091	1.000	1.000	0.091
0.7	0.082	1.000	1.000	0.082
0.85	0.071	1.000	1.000	0.071
1	0.062	1.000	1.000	0.062
1.2	0.052	1.000	1.000	0.052
1.5	0.042	1.000	1.000	0.042
2	0.030	1.000	1.000	0.030
3	0.018	1.000	1.000	0.018
4	0.013	1.000	1.000	0.013
5	0.010	1.000	1.000	0.010

Carson Range (Genoa)

Fault ID:	83

Maximum Magnitude (MMax):	7.2
Fault Type:	N
Fault Dip:	50 Deg
Dip Direction:	E
Bottom of Rupture Plane:	15.00 km
Top of Rupture Plane(Ztor):	0.00 km
Rrup	82.21 km
Rjb:	82.21 km
Rx:	80.69 km
Fnorm:	1
Frev:	0

Period	SA(Base Spectrum)	Basin Factor	Near Fault Factor(Applied)	SA(Final Spectrum)
0.01	0.045	1.000	1.000	0.045
0.05	0.054	1.000	1.000	0.054
0.1	0.076	1.000	1.000	0.076
0.15	0.097	1.000	1.000	0.097
0.2	0.110	1.000	1.000	0.110
0.25	0.113	1.000	1.000	0.113
0.3	0.112	1.000	1.000	0.112
0.4	0.103	1.000	1.000	0.103
0.5	0.095	1.000	1.000	0.095
0.6	0.085	1.000	1.000	0.085
0.7	0.078	1.000	1.000	0.078
0.85	0.068	1.000	1.000	0.068
1	0.060	1.000	1.000	0.060
1.2	0.052	1.000	1.000	0.052
1.5	0.042	1.000	1.000	0.042
2	0.031	1.000	1.000	0.031
3	0.019	1.000	1.000	0.019
4	0.014	1.000	1.000	0.014
5	0.011	1.000	1.000	0.011

Foothills Fault System - north central reach section (DeWitt Fault)

Fault ID:	423
Maximum Magnitude (MMax):	6.3
Fault Type:	N
Fault Dip:	50 Deg
Dip Direction:	W
Bottom of Rupture Plane:	10.00 km
Top of Rupture Plane(Ztor):	0.00 km
Rrup	34.30 km
Rjb:	34.30 km
Rx:	11.65 km
Fnorm:	1
Frev:	0

Period	SA(Base	Basin	Near Fault	SA(Final

	Spectrum)	Factor	Factor(Applied)	Spectrum)
0.01	0.064	1.000	1.000	0.064
0.05	0.080	1.000	1.000	0.080
0.1	0.124	1.000	1.000	0.124
0.15	0.155	1.000	1.000	0.155
0.2	0.164	1.000	1.000	0.164
0.25	0.158	1.000	1.000	0.158
0.3	0.150	1.000	1.000	0.150
0.4	0.129	1.000	1.000	0.129
0.5	0.111	1.000	1.000	0.111
0.6	0.095	1.000	1.000	0.095
0.7	0.082	1.000	1.000	0.082
0.85	0.068	1.000	1.000	0.068
1	0.058	1.000	1.000	0.058
1.2	0.047	1.000	1.000	0.047
1.5	0.036	1.000	1.000	0.036
2	0.024	1.000	1.000	0.024
3	0.013	1.000	1.000	0.013
4	0.009	1.000	1.000	0.009
5	0.006	1.000	1.000	0.006

PROBABILISTIC

Probabilistic Model
USGS Seismic Hazard Map(2008) 975 Year Return Period

Period	SA(Base Spectrum)	Basin Factor	Near Fault Factor(Applied)	SA(Final Spectrum)
0.01	0.162	1.000	1.000	0.162
0.05	0.247	1.000	1.000	0.247
0.1	0.296	1.000	1.000	0.296
0.15	0.348	1.000	1.000	0.348
0.2	0.390	1.000	1.000	0.390
0.25	0.384	1.000	1.000	0.384
0.3	0.380	1.000	1.000	0.380
0.4	0.342	1.000	1.000	0.342
0.5	0.316	1.000	1.000	0.316
0.6	0.287	1.000	1.000	0.287
0.7	0.265	1.000	1.000	0.265
0.85	0.235	1.000	1.000	0.235
1	0.211	1.000	1.000	0.211
1.2	0.181	1.000	1.000	0.181
1.5	0.151	1.000	1.000	0.151
2	0.119	1.000	1.000	0.119
3	0.074	1.000	1.000	0.074
4	0.051	1.000	1.000	0.051
5	0.042	1.000	1.000	0.042

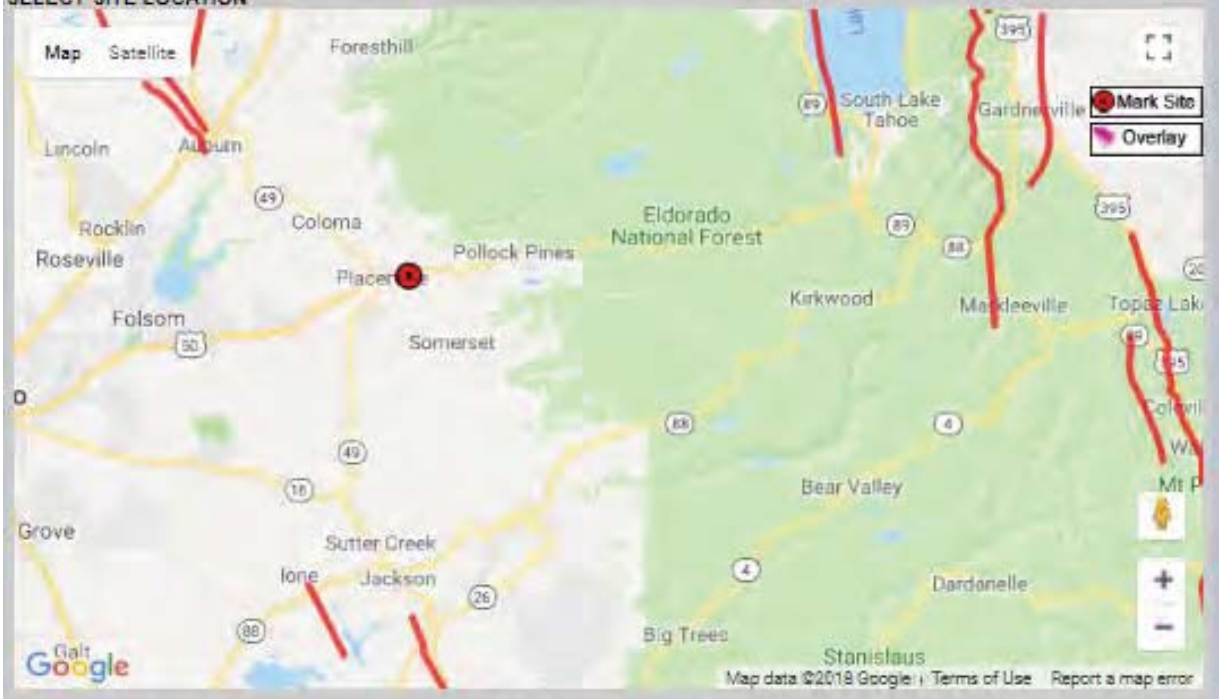
MINIMUM DETERMINISTIC SPECTRUM

Period	SA
0.01	0.225
0.05	0.283
0.1	0.421
0.15	0.503
0.2	0.522
0.25	0.505
0.3	0.483
0.4	0.431
0.5	0.376
0.6	0.322
0.7	0.281
0.85	0.235
1	0.200
1.2	0.164
1.5	0.126
2	0.086
3	0.050
4	0.034
5	0.025

Envelope Data

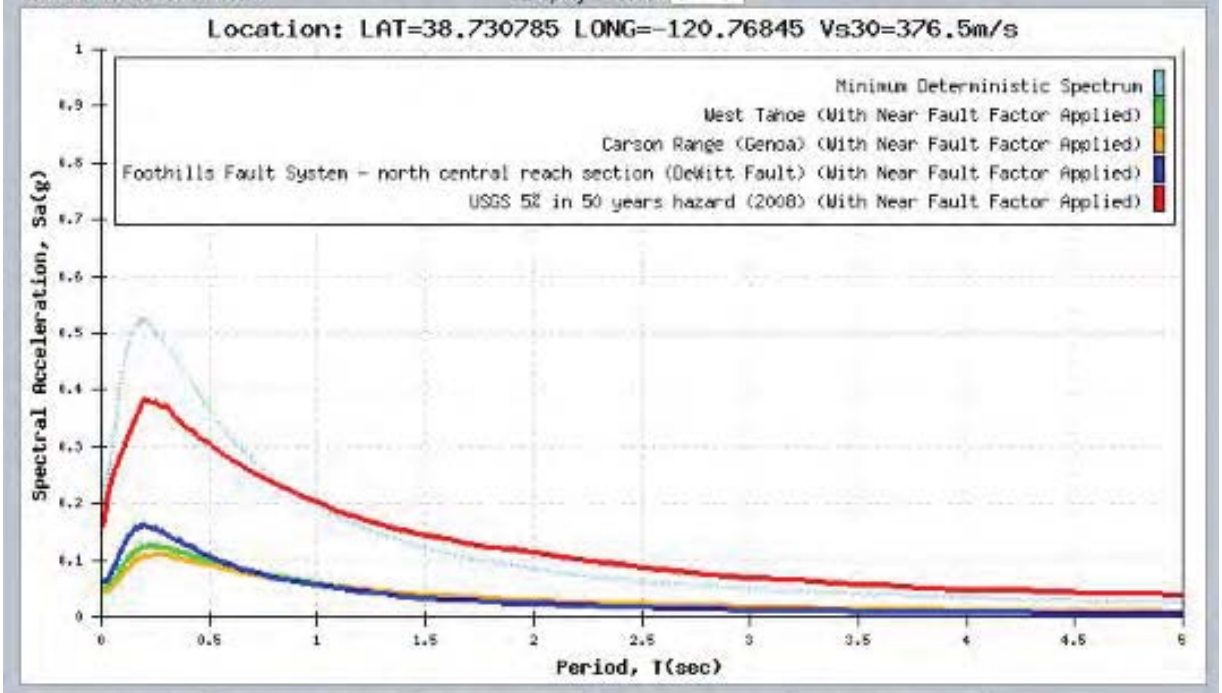
Period	SA
0.01	0.225
0.05	0.283
0.1	0.421
0.15	0.503
0.2	0.522
0.25	0.505
0.3	0.483
0.4	0.431
0.5	0.376
0.6	0.322
0.7	0.281
0.85	0.235
1	0.211
1.2	0.181
1.5	0.151
2	0.119
3	0.074
4	0.051
5	0.042

SELECT SITE LOCATION



Latitude: 38.730785 **Longitude:** -120.76845 **V_{S30}:** 376.5 m/s Calculate

CALCULATED SPECTRA Display Curves: 3



Tabular Data | Envelope Only | Hide Near Fault | Axis Scale | Show Basin

Apply Near Fault Adjustment To:

NOTE: Caltrans SDC requires application of a Near Fault Adjustment factor for sites less than 25 km (Rrup) from the causative fault.

- [x] Deterministic Spectrum Using
  - 63.79 Km West Tahoe
  - 82.21 Km Carson Range (Genoa)
  - 34.30 Km Foothills Fault System - north central reach section (DeWitt Fault)
- [x] Probabilistic Spectrum Using
  - 34.30 Km (Recommend Performing Deaggregation To Verify)

(•) Show Spectrum with Adjustment Only
( ) Show Spectrum with and without near fault Adjustment

OK

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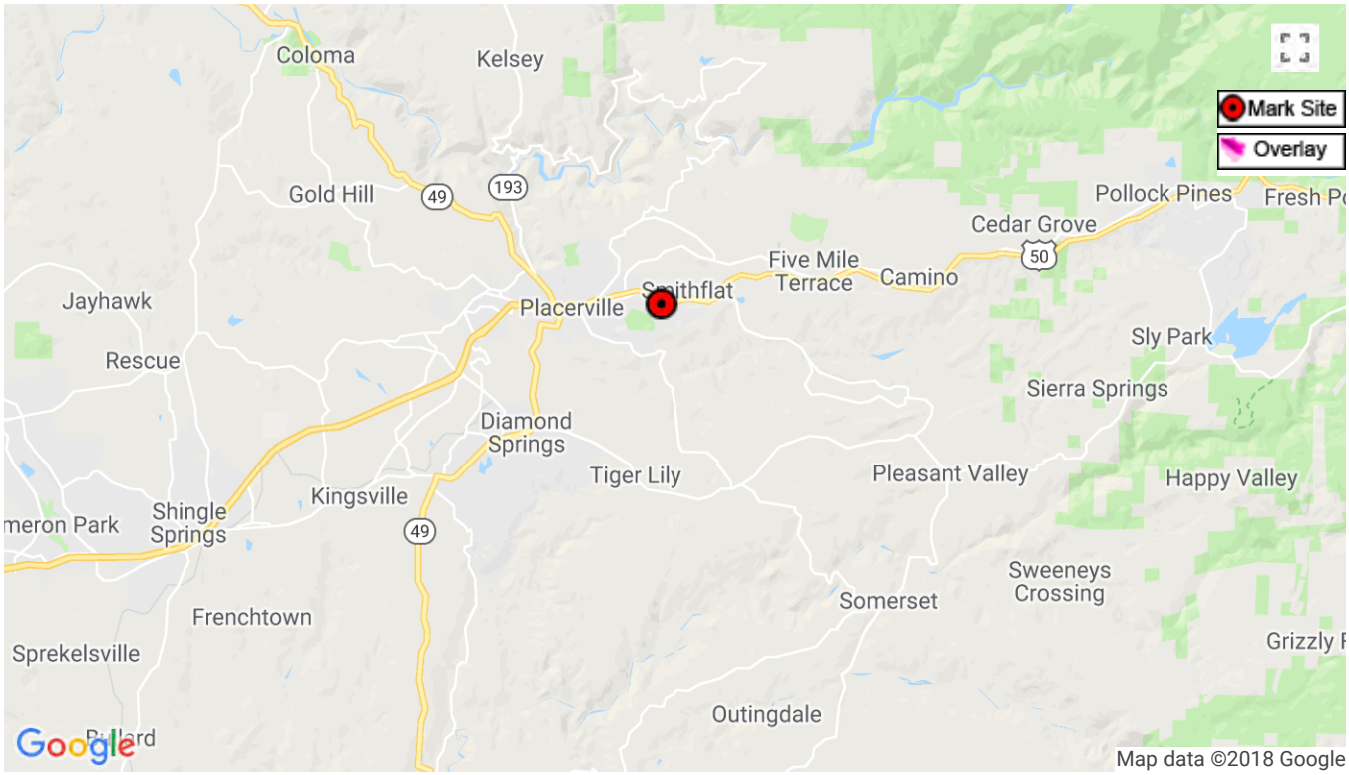
CALIFORNIA DEPARTMENT OF
TRANSPORTATION

Caltrans ARS Online (v2.3.09)

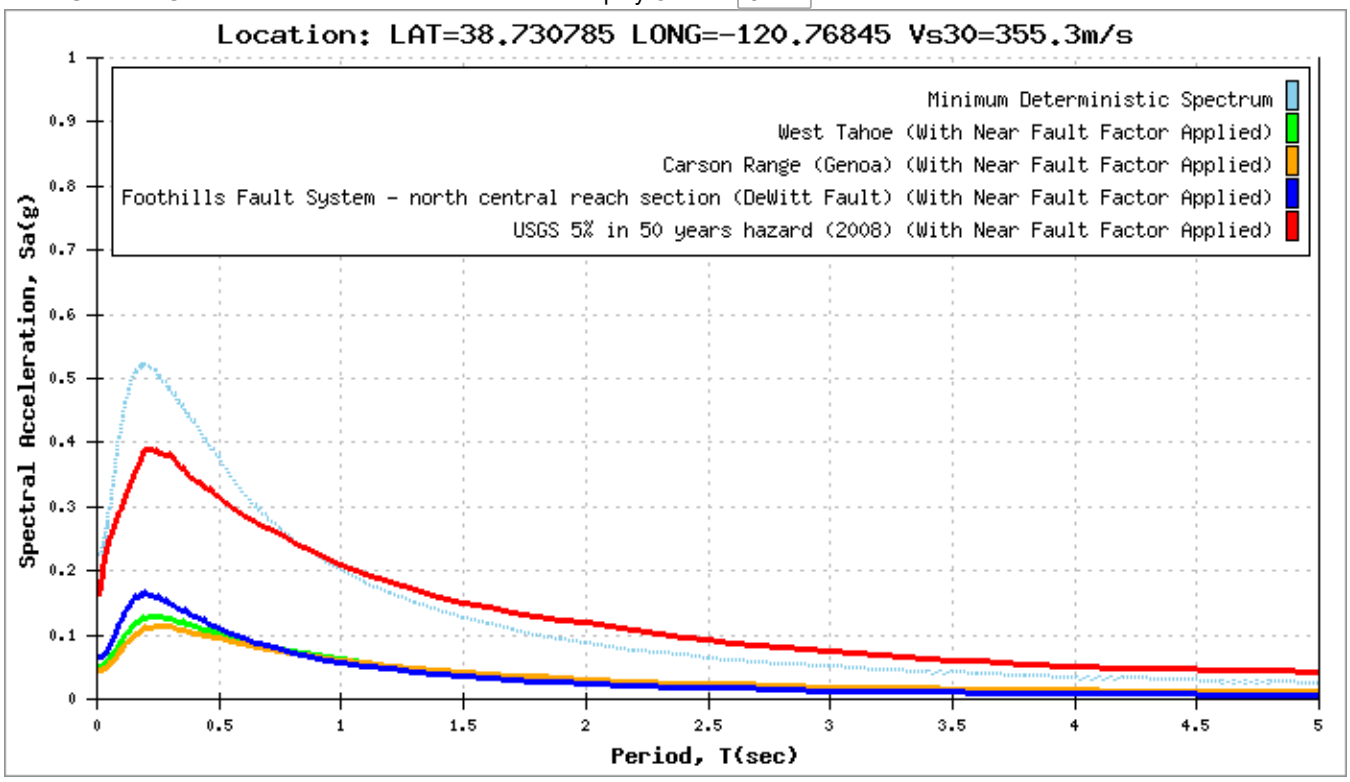
This web-based tool calculates both deterministic and probabilistic acceleration response spectra for any location in California based on criteria provided in *Appendix B of Caltrans Seismic Design Criteria*. More...

SELECT SITE LOCATION



Latitude: 38.730785 **Longitude:** -120.76845 ***V*S30:** 355.3 m/s Calculate

CALCULATED SPECTRA Display Curves: 3



Tabular Data | Envelope Only | Hide Near Fault | Axis Scale | Show Basin

Apply Near Fault Adjustment To:
NOTE: Caltrans SDC requires application of a Near Fault Adjustment factor for sites less than 25 km (Rrup) from the causative fault.

☑ Deterministic Spectrum Using

63.79 Km West Tahoe
82.21 Km Carson Range (Genoa)
34.30 Km Foothills Fault System - north central reach section (DeWitt Fault)

☑ Probabilistic Spectrum Using

34.30 Km (Recommend Performing Deaggregation To Verify)

◉ Show Spectrum with Adjustment Only
○ Show Spectrum with and without near fault Adjustment

OK

Appendix IV.2 Shallow Foundation Analysis

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wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2050 to 2064 feet

STRUCTURE NO.: RW 4

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____
PAGE:1 of 4

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.1	1.8	2.0	0.25	1.55	6.1	1.013	0.624

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE DEPTH (FT.)	STRATA DEPTH FROM (FT.)	STRATA DEPTH TO (FT.)	UNIT WEIGHT (KCF)	P ZERO DEPTH (FT.)	P ZERO (KSF)	Izp DEPTH (FT.)	SIGMA V (KSF)
100	0	8	0.125	2	0.250	8.1	1.000
100	8	32	0.125		0.000		0.013

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.1 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
26.4 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH FROM (FT.)	LAYER DEPTH TO (FT.)	LAYER THICKNESS (FT.)	LAYER MID-THICK DEPTH, FT	E (KSF)	Iz	Iz*D/Es
-	-	-	-	-	-	-
2	10	8	6	175	0.478	0.02184
10	20	10	15	1000	0.389	0.00389
20	44	24	32	1000	-0.191	-0.00458
44						
SUMMATION, Iz*D/Es =						0.02115

SETTLEMENT COMPUTATION: EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es	SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
1.55	0.92	50	1.54	0.0211	0.0464	**0.56**	**0.28**

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2178 to 2179 feet

STRUCTURE NO.: RW 5

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.1	1.8	2.0	0.25	1.55	6.1	1.013	0.624

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE	STRATA DEPTH		UNIT	P ZERO	P ZERO	Izp	SIGMA V
DEPTH	FROM	TO	WEIGHT	DEPTH		DEPTH	
(FT.)	(FT.)	(FT.)	(KCF)	(FT.)	(KSF)	(FT.)	(KSF)
100	0	8	0.125	2	0.250	8.1	1.000
100	8	32	0.125		0.000		0.013

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.1 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
26.4 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH		LAYER	LAYER	E	Iz	Iz*D/Es
FROM	TO	THICKNESS	MID-THICK			
(FT.)	(FT.)	(FT.)	DEPTH, FT	(KSF)		
-	-	-	-	-	-	-
2	10	8	6	137	0.478	0.02790
10	20	10	15	1000	0.389	0.00389
20	44	24	32	1000	-0.191	-0.00458
44						
SUMMATION, Iz*D/Es =						0.02721

SETTLEMENT COMPUTATION:

EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es		SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
1.55	0.92	50	1.54	0.0272		0.0597	**0.72**	**0.36**

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2183.0 to 2187.0 feet

STRUCTURE NO.: RW 6

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____
PAGE:3 of 4

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.4	2.1	2.0	0.25	1.85	6.4	1.050	0.633

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE DEPTH (FT.)	STRATA DEPTH FROM (FT.)	STRATA DEPTH TO (FT.)	UNIT WEIGHT (KCF)	P ZERO DEPTH (FT.)	P ZERO (KSF)	Izp DEPTH (FT.)	SIGMA V (KSF)
100	0	8	0.125	2	0.250	8.4	1.000
100	8	32	0.125		0.000		0.050

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.4 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
27.6 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH FROM (FT.)	LAYER DEPTH TO (FT.)	LAYER THICKNESS (FT.)	LAYER MID-THICK DEPTH, FT	E (KSF)	Iz	Iz*D/Es
-	-	-	-	-	-	-
2	10	8	6	137	0.470	0.02747
10	20	10	15	1000	0.415	0.00415
20	44	24	32	1000	-0.145	-0.00348
44						
SUMMATION, Iz*D/Es =						0.02814

SETTLEMENT COMPUTATION:

EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es	SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
1.85	0.93	50	1.54	0.0281	0.0748	**0.90**	**0.45**

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2183.0 to 2187.0 feet

STRUCTURE NO.: RW 6

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____
PAGE:3 of 4

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
7	2.5	2.0	0.25	2.25	7	1.125	0.641

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE	STRATA DEPTH		UNIT	P ZERO	P ZERO	Izp	SIGMA V
DEPTH	FROM	TO	WEIGHT	DEPTH		DEPTH	
(FT.)	(FT.)	(FT.)	(KCF)	(FT.)	(KSF)	(FT.)	(KSF)
100	0	8	0.125	2	0.250	9	1.000
100	8	32	0.125		0.000		0.125

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
9 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
30 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH		LAYER	LAYER	E	Iz	Iz*D/Es
FROM	TO	THICKNESS	MID-THICK			
(FT.)	(FT.)	(FT.)	DEPTH, FT	(KSF)		
-	-	-	-	-	-	-
2	10	8	6	137	0.452	0.02641
10	20	10	15	1000	0.458	0.00458
20	44	24	32	1000	-0.061	-0.00147
44						
SUMMATION, Iz*D/Es =						0.02952

SETTLEMENT COMPUTATION:

EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es		SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
2.25	0.94	50	1.54	0.0295		0.0966	1.16	0.58

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

Upper Broadway

RW 4 **Sta. 40+25 to 42+50**

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-002 **Retaining Wall Height = 6'**

Sta. 41+75±; el. 2062±

Foundation Soil Properties: **B.O.F. Elevation = 2050.00 to 2064.00'**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	32	degrees
Cohesion	0	pounds per square foot
Nc	35.5	
Nq	23.2	
Nγ	30.2	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Service Bearing Capacity Check

Gross Bearing Pressure (from Designer)	1.4	kips per square foot
Effective Footing width, B' (from Designer)	6.2	feet
Service Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.92	kips per square foot

IF 5.92 > 1.40 SAY OK

Strength Bearing Capacity Check

Gross Bearing Pressure (from Designer)	2.4	kips per square foot
Effective Footing width, B' (from Designer)	6.2	feet
Strength Event Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.92	kips per square foot

IF 5.92 > 2.40 SAY OK

$$\text{Bearing Capacity Eqtn} = \phi\,(cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway

RW 4 **Sta. 40+25 to 42+50**

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-002 **Retaining Wall Height = 6'**

Sta. 41+75±; el. 2062±

Foundation Soil Properties: **B.O.F. Elevation = 2050.00 to 2064.00'**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	32	degrees
Cohesion	0	pounds per square foot
Nc	35.5	
Nq	23.2	
Nγ	30.2	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Extreme 1 Bearing Capacity Check

Gross Bearing Pressure (from Designer)	1.5	kips per square foot
Effective Footing width, B' (from Designer)	4.4	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	9.76	kips per square foot

IF 9.76 > 1.50 SAY OK

Extreme II Bearing Capacity Check

Gross Bearing Pressure (from Designer)	2.7	kips per square foot
Effective Footing width, B' (from Designer)	2.5	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	6.17	kips per square foot

IF 6.17 > 2.70 SAY OK

$$\text{Bearing Capacity Eqtn} = \phi\,(cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway

RW 5 **Sta. 66+65 to 67+10**

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 6'**

Sta. 69+10±; elev. 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2178.00 to 2179.00**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Service Bearing Capacity Check

Gross Bearing Pressure (from Designer)	4.1	kips per square foot
Effective Footing width, B' (from Designer)	6.2	feet
Service Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 4.10 SAY OK

Strength Bearing Capacity Check

Gross Bearing Pressure (from Designer)	2.4	kips per square foot
Effective Footing width, B' (from Designer)	6.2	feet
Strength Event Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 1.08 SAY OK

Bearing Capacity Eqtn = ϕ ($cN_c+\gamma$ D Nq+1/2 γ B' Nγ)

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway

RW 5 **Sta. 66+65 to 67+10**

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 6'**

Sta. 69+10±; elev. 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2178.00 to 2179.00**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Extreme 1 Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.9	kips per square foot
Effective Footing width, B' (from Designer)	4.1	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.90 SAY OK

Extreme II Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.3	kips per square foot
Effective Footing width, B' (from Designer)	4.9	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.30 SAY OK

$$\text{Bearing Capacity Eqtn} = \phi\,(cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway
RW 6 Sta. 68+80 to 69+60

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 8 ft**

Sta. 69+15±; elev 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2185.0 to 2870.00**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Service Bearing Capacity Check

Gross Bearing Pressure (from Designer)	1.8	kips per square foot
Effective Footing width, B' (from Designer)	6.1	feet
Service Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 1.80 SAY OK

Strength Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.0	kips per square foot
Effective Footing width, B' (from Designer)	5.3	feet
Strength Event Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 1.35 SAY OK

Bearing Capacity Eqtn = $\phi\ (cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway
RW 6 Sta. 68+80 to 69+60

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 8 ft**

Sta. 69+15±; elev 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2185.0 to 2870.00**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Extreme 1 Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.1	kips per square foot
Effective Footing width, B' (from Designer)	4.0	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.10 SAY OK

Extreme II Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.2	kips per square foot
Effective Footing width, B' (from Designer)	3.8	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.20 SAY OK

Bearing Capacity Eqtn = ϕ ($cN_c+\gamma$ D Nq+1/2 γ B' Nγ)

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway
RW 6 Sta. 68+80 to 69+60

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 10 ft**

Sta. 69+15±; elev 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2183.0**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Service Bearing Capacity Check

Gross Bearing Pressure (from Designer)	2.5	kips per square foot
Effective Footing width, B' (from Designer)	7.0	feet
Service Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 2.50 SAY OK

Strength Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.5	kips per square foot
Effective Footing width, B' (from Designer)	6.0	feet
Strength Event Phi Factor for Bearing Capacity	0.45	
Bearing Capacity =	5.81	kips per square foot

IF 5.81 > 1.58 SAY OK

Bearing Capacity Eqtn = $\phi\ (cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

Upper Broadway
RW 6 Sta. 68+80 to 69+60

DESIGNED BY: FPT
DATE: 9/25/2018
CHECKED BY:
DATE:

BEARING CAPACITY ANALYSIS

SOIL BORING : A-18-003 **Retaining Wall Height = 10 ft**

Sta. 69+15±; elev 2192±

Foundation Soil Properties: **B.O.F. Elevation = 2183.0**

Unit Weight of Soil	125	pounds per cubic foot
Internal Angle of Friction	0	degrees
Cohesion	2500	pounds per square foot
Nc	5.14	
Nq	1	
Nγ	0	
Depth of Embedment (D)	0.5	foot

Note: Bearing capacity factors from AASHTO, 2012, LRFD Table 10.6.3.1.2a-1

Extreme 1 Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.9	kips per square foot
Effective Footing width, B' (from Designer)	4.1	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.90 SAY OK

Extreme II Bearing Capacity Check

Gross Bearing Pressure (from Designer)	3.3	kips per square foot
Effective Footing width, B' (from Designer)	4.9	feet
Extreme Event Phi Factor for Bearing Capacity	1.00	
Bearing Capacity =	12.91	kips per square foot

IF 12.91 > 3.30 SAY OK

$$\text{Bearing Capacity Eqtn} = \phi\,(cN_c+\gamma\ D\ Nq+1/2\ \gamma\ B'\ N\gamma)$$

References:

(a) NAVFAC, 1986. Ultimate Bearing Capacity of Shallow Foortings with Concentric Loads, 7.2-131. Naval Facilites Engineering Command, Foundations & Earth Structures, Design Manual 7.02, September 1986.

(b) AASHTO, 2012. AASHTO LRFD Bridge Design Specifications, with Caltrans Amendments, 6th Edition, 2012)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2050 to 2064 feet

STRUCTURE NO.: RW 4

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____
PAGE:1 of 4

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.1	4.9	2.0	0.25	4.65	6.1	1.013	0.714

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE	STRATA DEPTH		UNIT	P ZERO	P ZERO	Izp	SIGMA V
DEPTH	FROM	TO	WEIGHT	DEPTH		DEPTH	
(FT.)	(FT.)	(FT.)	(KCF)	(FT.)	(KSF)	(FT.)	(KSF)
100	0	8	0.125	2	0.250	8.1	1.000
100	8	32	0.125		0.000		0.013

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.1 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
26.4 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH		LAYER	LAYER	E	Iz	Iz*D/Es
FROM	TO	THICKNESS	MID-THICK			
(FT.)	(FT.)	(FT.)	DEPTH, FT	(KSF)		
-	-	-	-	-	-	-
2	10	8	6	175	0.537	0.02456
10	20	10	15	1000	0.445	0.00445
20	44	24	32	1000	-0.219	-0.00525
44						
SUMMATION, Iz*D/Es =						0.02376

SETTLEMENT COMPUTATION:

EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es		SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
4.65	0.97	50	1.54	0.0238		0.1656	1.99	0.99

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2178 to 2179 feet

STRUCTURE NO.: RW 5

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.1	4.0	2.0	0.25	3.75	6.1	1.013	0.692

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE DEPTH (FT.)	STRATA DEPTH FROM (FT.)	STRATA DEPTH TO (FT.)	UNIT WEIGHT (KCF)	P ZERO DEPTH (FT.)	P ZERO (KSF)	Izp DEPTH (FT.)	SIGMA V (KSF)
100	0	8	0.125	2	0.250	8.1	1.000
100	8	32	0.125		0.000		0.013

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.1 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
26.4 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH FROM (FT.)	LAYER DEPTH TO (FT.)	LAYER THICKNESS (FT.)	LAYER MID-THICK DEPTH, FT	E (KSF)	Iz	Iz*D/Es
-	-	-	-	-	-	-
2	10	8	6	137	0.523	0.03054
10	20	10	15	1000	0.431	0.00431
20	44	24	32	1000	-0.212	-0.00509
44						
SUMMATION, Iz*D/Es =						0.02976

SETTLEMENT COMPUTATION: EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es	SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
3.75	0.97	50	1.54	0.0298	0.1661	1.99	1.00

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2183.0 to 2187.0 feet

STRUCTURE NO.: RW 6

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
6.4	4.0	2.0	0.25	3.7	6.4	1.050	0.688

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE DEPTH (FT.)	STRATA DEPTH FROM (FT.)	STRATA DEPTH TO (FT.)	UNIT WEIGHT (KCF)	P ZERO DEPTH (FT.)	P ZERO (KSF)	Izp DEPTH (FT.)	SIGMA V (KSF)
100	0	8	0.125	2	0.250	8.4	1.000
100	8	32	0.125		0.000		0.050

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
8.4 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
27.6 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH FROM (FT.)	LAYER DEPTH TO (FT.)	LAYER THICKNESS (FT.)	LAYER MID-THICK DEPTH, FT	E (KSF)	Iz	Iz*D/Es
-	-	-	-	-	-	-
2	10	8	6	137	0.505	0.02948
10	20	10	15	1000	0.451	0.00451
20	44	24	32	1000	-0.158	-0.00378
44						
SUMMATION, Iz*D/Es =						0.03021

SETTLEMENT COMPUTATION: EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es	SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
3.7	0.97	50	1.54	0.0302	0.1663	2.00	1.00

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

wreco

CLIENT:City Placerville
Upper Broadway Biketrail
PROJECT NO.: P15055
TITLE: Settlement at Elevation 2183.0 to 2187.0 feet

STRUCTURE NO.: RW 6

COMPUTED BY: FPT
DATE: 9/21/2018
CHECKED BY: _____
DATE: _____

SETTLEMENT OF STRIP FOOTINGS ON GRANULAR SOILS

(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

EQUATIONS: Izp max = 0.5 + 0.1*(DELTA P / SIGMA V')^0.5 ; DELTA P = P - Po'

B, FOOTING WIDTH (FT.)	P, LOAD (KSF)	DEPTH TO FOOTING BASE (FT.)	Po ' (KSF)	DELTA P (KSF)	B (FT.)	SIGMA V ' (KSF)	Izp (MAX)
			(VALUES FOR Po' AND SIGMA V ' COMPUTED BELOW)				
7	3.9	2.0	0.25	3.6	7	1.125	0.679

NOTE: STRATA DEPTH START AT GROUND SURFACE AND EXTEND TO D + 4B
ONE STRATA BREAK AT WATER TABLE, USE BOUYANT UNIT WEIGHTS BELOW WATER TABLE

WATER TABLE DEPTH (FT.)	STRATA DEPTH FROM (FT.)	STRATA DEPTH TO (FT.)	UNIT WEIGHT (KCF)	P ZERO DEPTH (FT.)	P ZERO (KSF)	Izp DEPTH (FT.)	SIGMA V (KSF)
100	0	8	0.125	2	0.250	9	1.000
100	8	32	0.125		0.000		0.125

INFLUENCE VALUES & BOUNDARY CONDITIONS:
2 FT = D, FIRST LAYER MUST START AT DEPTH D
9 FT = D+B, ONE LAYER BOUNDARY MUST OCCUR AT Izp @ D+B
30 FT = D+4B, BOTTOM OF LAST LAYER MUST END AT D + 4B

LAYER DEPTH FROM (FT.)	LAYER DEPTH TO (FT.)	LAYER THICKNESS (FT.)	LAYER MID-THICK DEPTH, FT	E (KSF)	Iz	Iz*D/Es
-	-	-	-	-	-	-
2	10	8	6	137	0.474	0.02766
10	20	10	15	1000	0.485	0.00485
20	44	24	32	1000	-0.065	-0.00155
44						
SUMMATION, Iz*D/Es =						0.03096

SETTLEMENT COMPUTATION:

EQUATIONS:
C1 = 1.0-0.5*(P zero/DELTA P)
C2 = 1.0+0.2*LOG(TIME,YRS/0.1)
S = DELTA P*C1*C2*(SUM(Iz*D/Es)

DELTA P	C1	TIME (YRS)	C2	Iz*D/Es	SETTLEMENT (FT.)	SETTLEMENT (IN.)	½ SETTLEMENT* (IN.)
3.6	0.97	50	1.54	0.0310	0.1656	1.99	0.99

* If such pre-loading has occurred (i.e. rock), tentatively use ½ the above predicted settlement as probably still conservative.
(SCHMERTMANN, FHWA-TS-78-209, PGS 49-54)

Appendix IV.3 Pavement Calculations

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Upper Broadway Bike Lanes

Performed by D. Kitzmann

September 14, 2018

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 06.0

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.34 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.42 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	02.31	00.23	00.15	02.31	00.35
00.20	02.31	00.46	00.25	02.31	00.58
00.30	02.31	00.69	00.35	02.31	00.81
00.40	02.31	00.92	00.45	02.31	01.04

00.50	02.31	01.16	00.55	02.34	01.29
00.60	02.41	01.45	00.65	02.48	01.61
00.70	02.54	01.78	00.75	02.60	01.95
00.80	02.65	02.12	00.85	02.71	02.30

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0000.80 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF
ft	ft	ft	ft	ft	ft	$/y^2	

00.25	**00.00**	**00.70**	**00.00**	**00.00**	**00.00**	**0000.00**	**02.31**
00.30	00.00	00.60	00.00	00.00	00.01	0000.00	02.31
00.35	00.00	00.50	00.00	00.00	00.01	0000.00	02.31
00.40	00.00	00.40	00.00	00.00	00.02	0000.00	02.31
00.45	00.00	00.35	00.00	00.00	00.08	0000.00	02.31
00.50	00.00	00.35	00.00	00.00	00.20	0000.00	02.31
00.55	00.00	00.35	00.00	00.00	00.33	0000.00	02.34

00.60	00.00	00.35	00.00	00.00	00.49	0000.00	02.41
00.65	00.00	00.35	00.00	00.00	00.65	0000.00	02.48

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 06.5

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.46 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.46 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	02.22	00.22	00.15	02.22	00.33
00.20	02.22	00.44	00.25	02.22	00.56
00.30	02.22	00.67	00.35	02.22	00.78

00.40	02.22	00.89	00.45	02.22	01.00
00.50	02.22	01.11	00.55	02.25	01.24
00.60	02.32	01.39	00.65	02.38	01.55
00.70	02.44	01.71	00.75	02.49	01.87
00.80	02.55	02.04	00.85	02.60	02.21

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0000.85 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF
00.30	00.00	00.70	00.00	00.00	-00.02	0000.00	02.22
00.35	00.00	00.60	00.00	00.00	-00.02	0000.00	02.22
00.40	00.00	00.50	00.00	00.00	-00.02	0000.00	02.22
00.45	00.00	00.40	00.00	00.00	-00.02	0000.00	02.22
00.50	00.00	00.35	00.00	00.00	00.04	0000.00	02.22
00.55	00.00	00.35	00.00	00.00	00.17	0000.00	02.25

00.60	00.00	00.35	00.00	00.00	00.32	0000.00	02.32
00.65	00.00	00.35	00.00	00.00	00.48	0000.00	02.38
00.70	00.00	00.35	00.00	00.00	00.64	0000.00	02.44

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 06.5

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.46 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.46 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	02.22	00.22	00.15	02.22	00.33

00.20	02.22	00.44	00.25	02.22	00.56
00.30	02.22	00.67	00.35	02.22	00.78
00.40	02.22	00.89	00.45	02.22	01.00
00.50	02.22	01.11	00.55	02.25	01.24
00.60	02.32	01.39	00.65	02.38	01.55
00.70	02.44	01.71	00.75	02.49	01.87
00.80	02.55	02.04	00.85	02.60	02.21

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0000.85 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF
ft	ft	ft	ft	ft	ft	$/y^2	
00.30	**00.00**	**00.70**	**00.00**	**00.00**	**-00.02**	**0000.00**	**02.22**
00.35	00.00	00.60	00.00	00.00	-00.02	0000.00	02.22
00.40	00.00	00.50	00.00	00.00	-00.02	0000.00	02.22
00.45	00.00	00.40	00.00	00.00	-00.02	0000.00	02.22

00.50	00.00	00.35	00.00	00.00	00.04	0000.00	02.22
00.55	00.00	00.35	00.00	00.00	00.17	0000.00	02.25
00.60	00.00	00.35	00.00	00.00	00.32	0000.00	02.32
00.65	00.00	00.35	00.00	00.00	00.48	0000.00	02.38
00.70	00.00	00.35	00.00	00.00	00.64	0000.00	02.44

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 07.0

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.57 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.49 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)

00.10	02.14	00.21	00.15	02.14	00.32
00.20	02.14	00.43	00.25	02.14	00.54
00.30	02.14	00.64	00.35	02.14	00.75
00.40	02.14	00.86	00.45	02.14	00.96
00.50	02.14	01.07	00.55	02.17	01.19
00.60	02.23	01.34	00.65	02.29	01.49
00.70	02.35	01.65	00.75	02.40	01.80
00.80	02.46	01.97	00.85	02.51	02.13
00.90	02.55	02.30	00.95	02.60	02.47

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0000.95 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF
ft	ft	ft	ft	ft	ft	$/y^2	
00.35	**00.00**	**00.75**	**00.00**	**00.00**	**00.01**	**0000.00**	**02.14**
00.40	00.00	00.65	00.00	00.00	00.00	0000.00	02.14

00.45	00.00	00.55	00.00	00.00	00.00	0000.00	02.14
00.50	00.00	00.45	00.00	00.00	-00.00	0000.00	02.14
00.55	00.00	00.35	00.00	00.00	00.01	0000.00	02.17
00.60	00.00	00.35	00.00	00.00	00.16	0000.00	02.23
00.65	00.00	00.35	00.00	00.00	00.31	0000.00	02.29
00.70	00.00	00.35	00.00	00.00	00.46	0000.00	02.35
00.75	00.00	00.35	00.00	00.00	00.62	0000.00	02.40

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 07.5

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.68 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.53 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth	GF	GE	Depth	GF	GE

(ft)		(ft)	(ft)		(ft)
00.10	02.07	00.21	00.15	02.07	00.31
00.20	02.07	00.41	00.25	02.07	00.52
00.30	02.07	00.62	00.35	02.07	00.72
00.40	02.07	00.83	00.45	02.07	00.93
00.50	02.07	01.04	00.55	02.09	01.15
00.60	02.16	01.30	00.65	02.21	01.44
00.70	02.27	01.59	00.75	02.32	01.74
00.80	02.37	01.90	00.85	02.42	02.06
00.90	02.47	02.22	00.95	02.51	02.38
01.00	02.56	02.56	01.05	02.60	02.73

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0001.00 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF
ft	ft	ft	ft	ft	ft	$/y^2	

00.35	**00.00**	**00.85**	**00.00**	**00.00**	**-00.02**	**0000.00**	**02.07**
00.40	00.00	00.75	00.00	00.00	-00.03	0000.00	02.07
00.45	00.00	00.70	00.00	00.00	00.02	0000.00	02.07
00.50	00.00	00.60	00.00	00.00	00.01	0000.00	02.07
00.55	00.00	00.50	00.00	00.00	00.02	0000.00	02.09
00.60	00.00	00.35	00.00	00.00	00.00	0000.00	02.16
00.65	00.00	00.35	00.00	00.00	00.14	0000.00	02.21
00.70	00.00	00.35	00.00	00.00	00.29	0000.00	02.27
00.75	00.00	00.35	00.00	00.00	00.45	0000.00	02.32
00.80	00.00	00.35	00.00	00.00	00.60	0000.00	02.37

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 08.0

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.79 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.56 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	02.00	00.20	00.15	02.00	00.30
00.20	02.00	00.40	00.25	02.00	00.50
00.30	02.00	00.60	00.35	02.00	00.70
00.40	02.00	00.80	00.45	02.00	00.90
00.50	02.00	01.00	00.55	02.03	01.12
00.60	02.09	01.25	00.65	02.14	01.39
00.70	02.20	01.54	00.75	02.25	01.69
00.80	02.30	01.84	00.85	02.34	01.99
00.90	02.39	02.15	00.95	02.43	02.31
01.00	02.47	02.47	01.05	02.52	02.65
01.10	02.55	02.81	01.15	02.59	02.98

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0001.10 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF
00.40	**00.00**	**00.90**	**00.00**	**00.00**	**-00.00**	**0000.00**	**02.00**
00.45	00.00	00.80	00.00	00.00	-00.01	0000.00	02.00
00.50	00.00	00.70	00.00	00.00	-00.02	0000.00	02.00
00.55	00.00	00.60	00.00	00.00	-00.02	0000.00	02.03
00.60	00.00	00.50	00.00	00.00	00.01	0000.00	02.09
00.65	00.00	00.35	00.00	00.00	-00.02	0000.00	02.14
00.70	00.00	00.35	00.00	00.00	00.13	0000.00	02.20
00.75	00.00	00.35	00.00	00.00	00.28	0000.00	02.25
00.80	00.00	00.35	00.00	00.00	00.43	0000.00	02.30
00.85	00.00	00.35	00.00	00.00	00.58	0000.00	02.34

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 08.5

R.Value of Subgrade (Native Soil) = 30

Required GE = 0001.90 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.60 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0001.15 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.

Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF
00.40	00.00	01.05	00.00	00.00	00.03	0000.00	01.94
00.45	**00.00**	**00.95**	**00.00**	**00.00**	**00.01**	**0000.00**	**01.94**
00.50	00.00	00.85	00.00	00.00	00.00	0000.00	01.94
00.55	00.00	00.75	00.00	00.00	00.00	0000.00	01.97
00.60	00.00	00.60	00.00	00.00	-00.03	0000.00	02.03
00.65	00.00	00.50	00.00	00.00	-00.00	0000.00	02.08
00.70	00.00	00.40	00.00	00.00	00.03	0000.00	02.13
00.75	00.00	00.35	00.00	00.00	00.12	0000.00	02.18
00.80	00.00	00.35	00.00	00.00	00.27	0000.00	02.23
00.85	00.00	00.35	00.00	00.00	00.41	0000.00	02.27
00.90	00.00	00.35	00.00	00.00	00.57	0000.00	02.32

***** FINISH *****

CALFP Version 1.5

Unit System = E

Title:

Traffic Index (TI) = 09.0

R.Value of Subgrade (Native Soil) = 30

Required GE = 0002.02 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10

Base R.Value = 0078.00

0.0032*TI*(100-R.VALUE) = 0000.63 ft

Base MAX. depth = 0002.00 ft

Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.89	00.19	00.15	01.89	00.28
00.20	01.89	00.38	00.25	01.89	00.47
00.30	01.89	00.57	00.35	01.89	00.66
00.40	01.89	00.76	00.45	01.89	00.85
00.50	01.89	00.95	00.55	01.91	01.05
00.60	01.97	01.18	00.65	02.02	01.31
00.70	02.07	01.45	00.75	02.12	01.59
00.80	02.17	01.74	00.85	02.21	01.88
00.90	02.25	02.03	00.95	02.29	02.18
01.00	02.33	02.33	01.05	02.37	02.49
01.10	02.41	02.65	01.15	02.44	02.81
01.20	02.48	02.98	01.25	02.51	03.14

HMA Safety Factor (GE) = 0000.20 ft

HMA Ultimate Depth = 0001.25 ft

(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

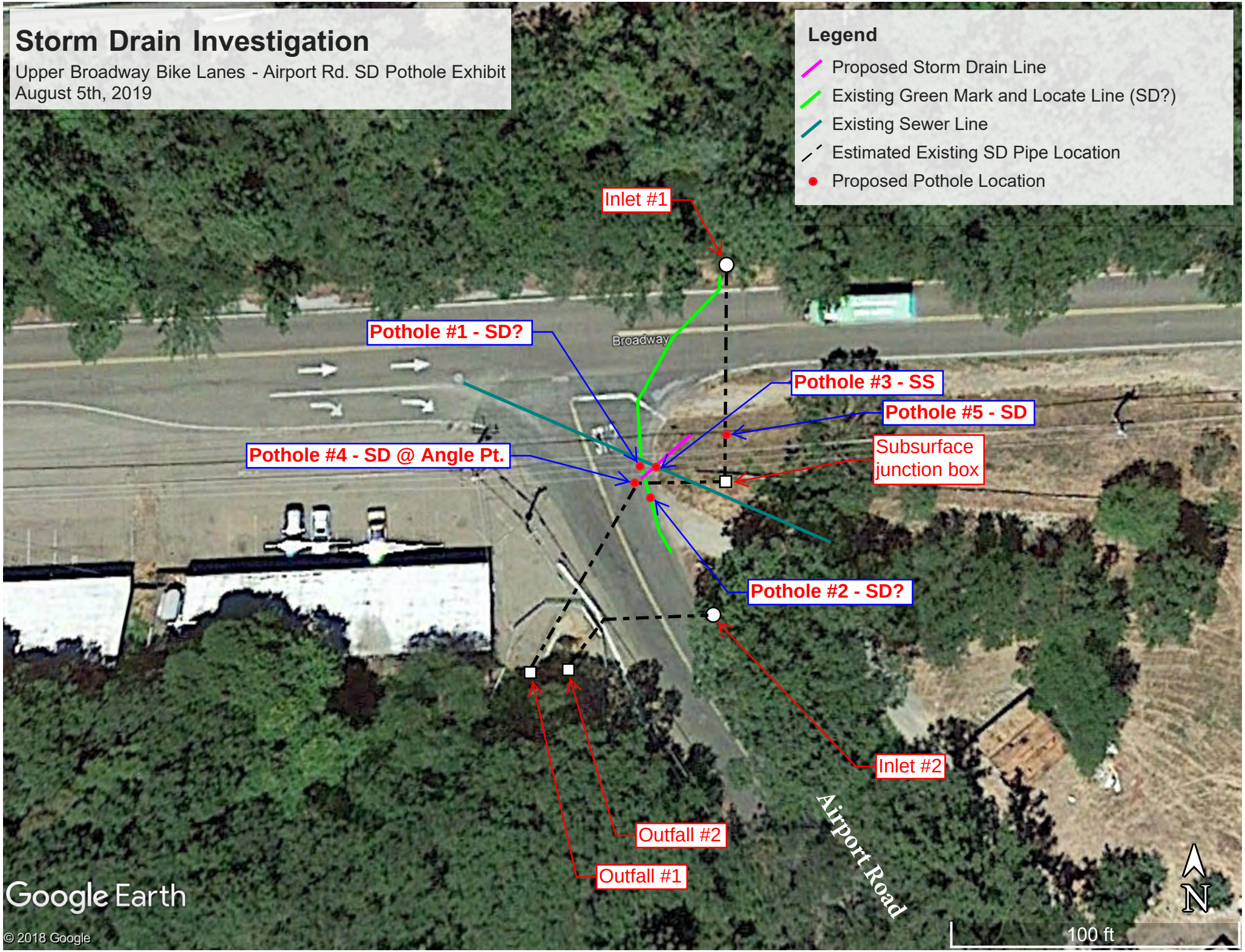
Note: Positive Residual GE indicates over-design.

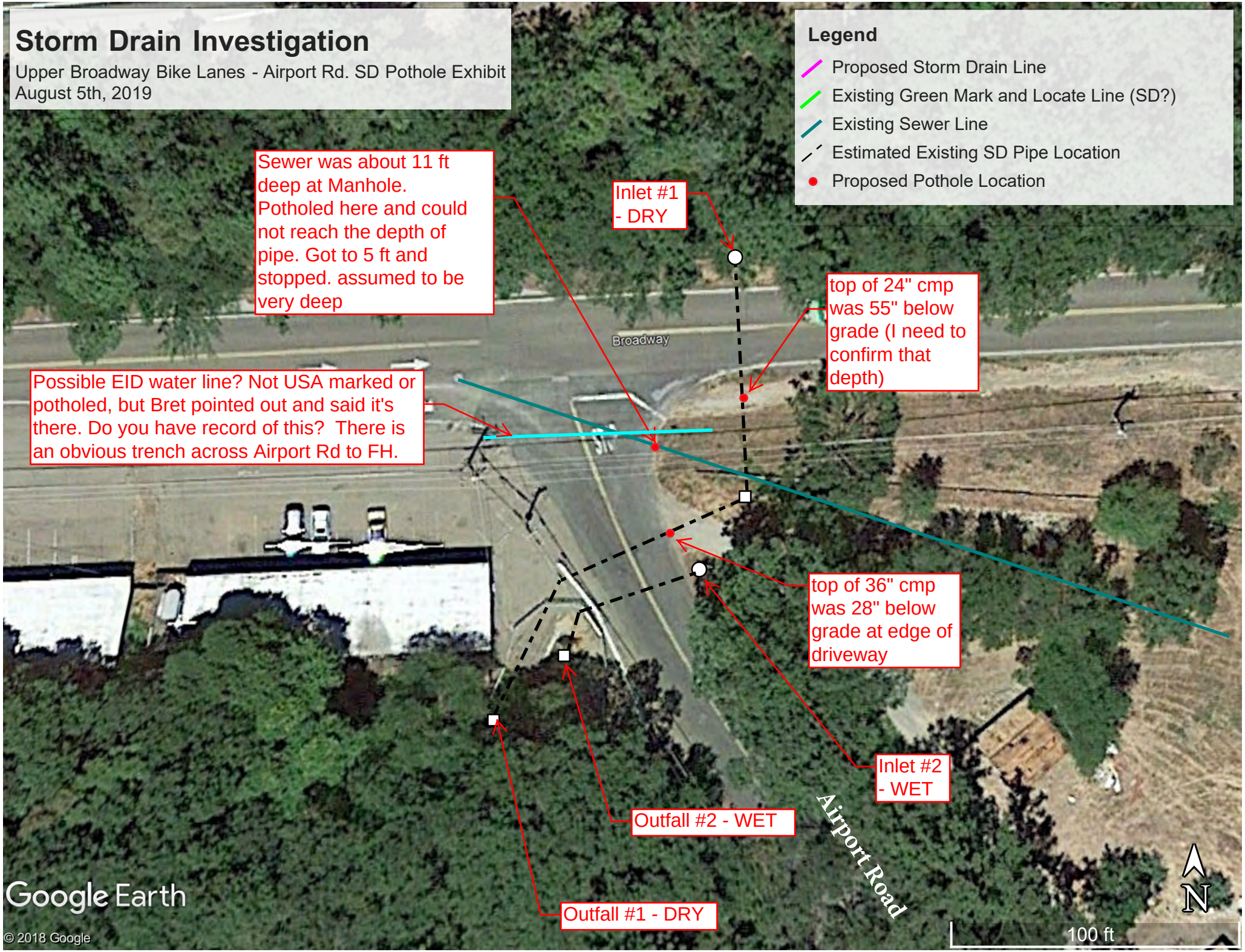
Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF
00.45	**00.00**	**01.05**	**00.00**	**00.00**	**-00.01**	**0000.00**	**01.89**
00.50	00.00	00.95	00.00	00.00	-00.03	0000.00	01.89
00.55	00.00	00.90	00.00	00.00	00.02	0000.00	01.91
00.60	00.00	00.75	00.00	00.00	-00.01	0000.00	01.97
00.65	00.00	00.65	00.00	00.00	00.01	0000.00	02.02
00.70	00.00	00.50	00.00	00.00	-00.02	0000.00	02.07
00.75	00.00	00.40	00.00	00.00	00.01	0000.00	02.12
00.80	00.00	00.35	00.00	00.00	00.11	0000.00	02.17
00.85	00.00	00.35	00.00	00.00	00.25	0000.00	02.21
00.90	00.00	00.35	00.00	00.00	00.39	0000.00	02.25
00.95	00.00	00.35	00.00	00.00	00.54	0000.00	02.29

APPENDIX D

POTHOLE REPORTS

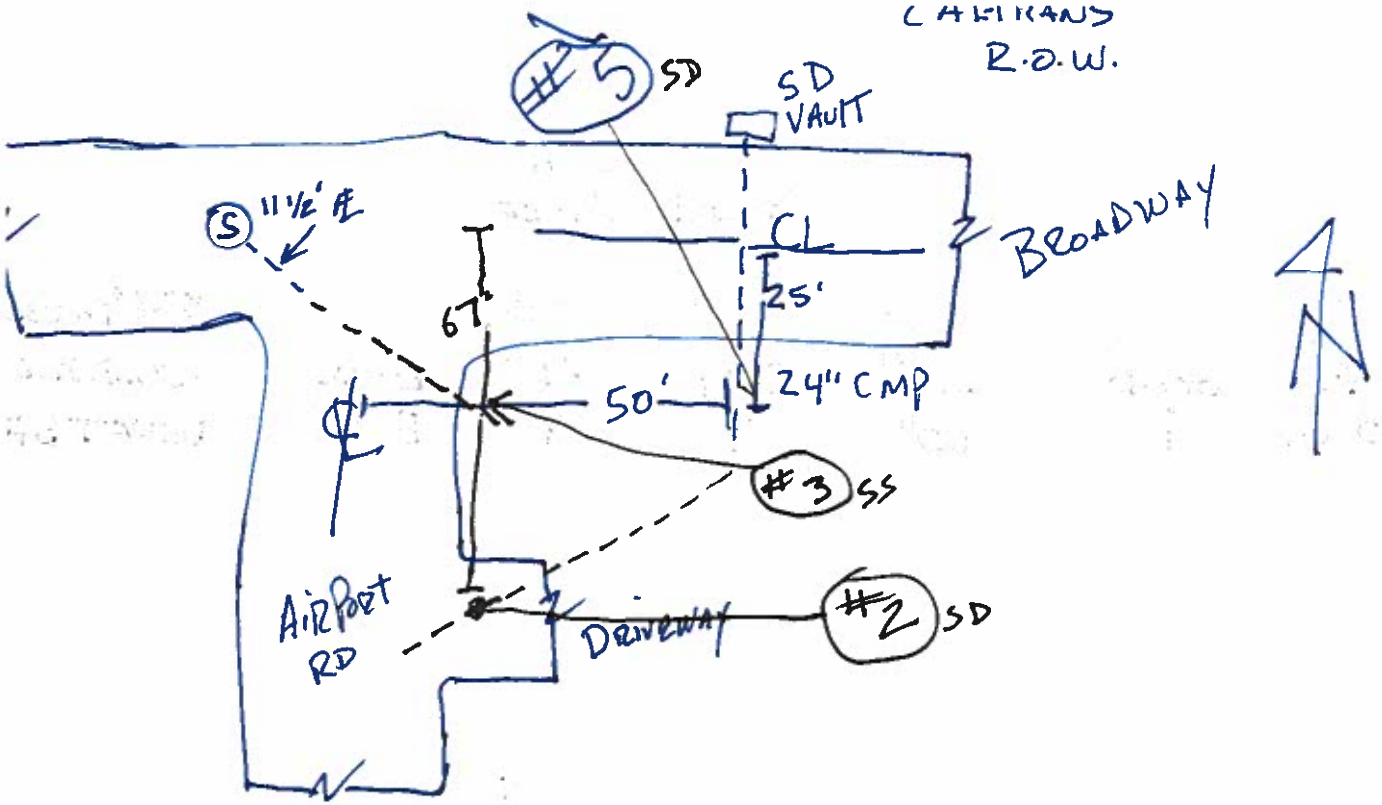

Storm Drain Investigation
Upper Broadway Bike Lanes - Airport Rd. SD Pothole Exhibit
August 5th, 2019
Legend
Proposed Storm Drain Line
Existing Green Mark and Locate Line (SD?)
Existing Sewer Line
Estimated Existing SD Pipe Location
Proposed Pothole Location
Inlet #1
Pothole #1 - SD?
Broadway
Pothole #3 - SS
Pothole #5 - SD
Subsurface junction box
Pothole #4 - SD @ Angle Pt.
Pothole #2 - SD?
Inlet #2
Outfall #2
Outfall #1
Airport Road
Google Earth
© 2018 Google
N
100 ft


Storm Drain Investigation
Upper Broadway Bike Lanes - Airport Rd. SD Pothole Exhibit
August 5th, 2019
Legend
Proposed Storm Drain Line
Existing Green Mark and Locate Line (SD?)
Existing Sewer Line
Estimated Existing SD Pipe Location
Proposed Pothole Location
Sewer was about 11 ft deep at Manhole. Potholed here and could not reach the depth of pipe. Got to 5 ft and stopped. assumed to be very deep
Inlet #1 - DRY
top of 24" cmp was 55" below grade (I need to confirm that depth)
Broadway
Possible EID water line? Not USA marked or potholed, but Bret pointed out and said it's there. Do you have record of this? There is an obvious trench across Airport Rd to FH.
top of 36" cmp was 28" below grade at edge of driveway
Inlet #2 - WET
Outfall #2 - WET
Airport Road
Outfall #1 - DRY
Google Earth
© 2018 Google
N
100 ft

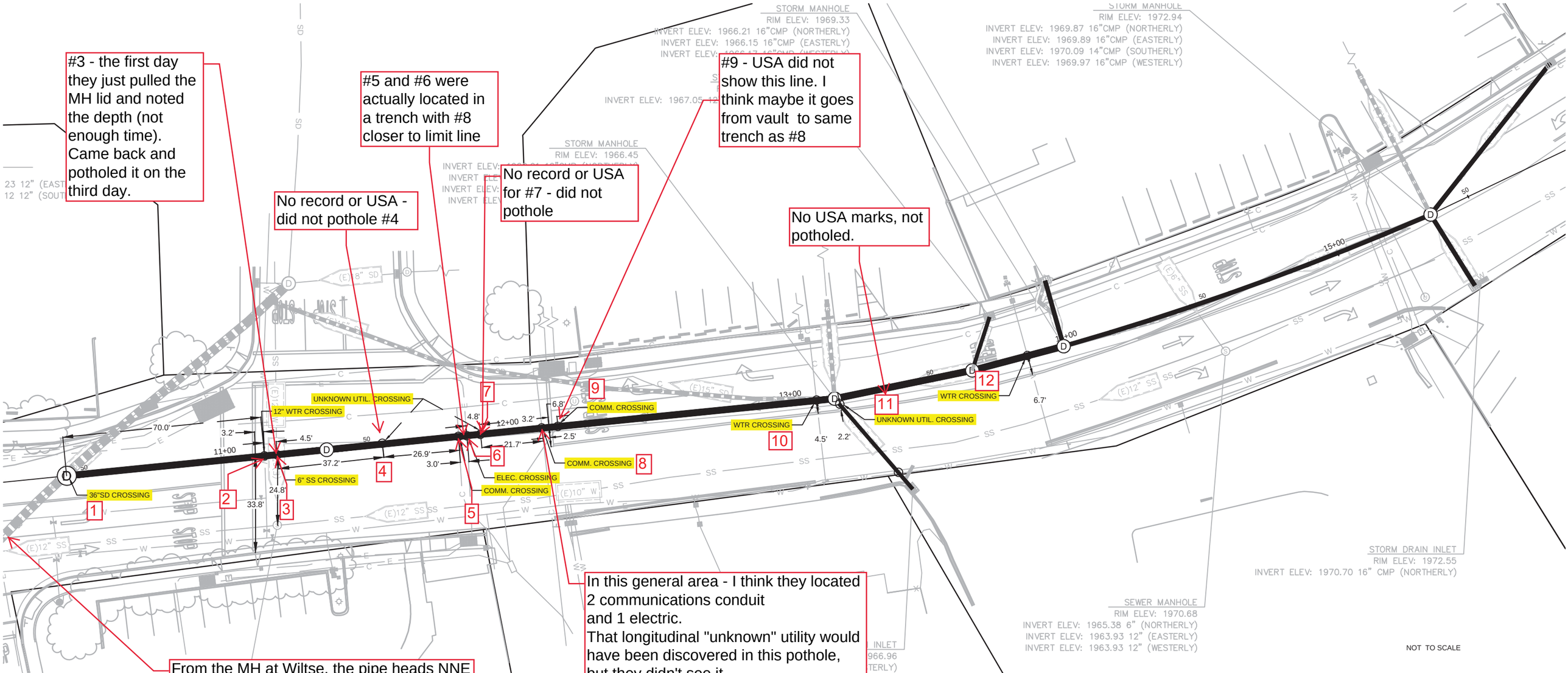
POTHOLE DATA / AIRPORT ROAD

DATE(S): 8/22/2019 INSPECTOR: BRET STONE

	NUMBER	STATION	OFFSET	CONDITION	COVER	MATERIAL	SIZE	DIRECTION	
SD	5	0+	25' ℄	GOOD	55"	CMP	24"	N-S	3"-6" ROCKBED
SD	2		16' ℄	GOOD	28"	CMP	36"	E-W	½" A.B BASE
S.S	3		23' ℄	?	60"	?	?	E-W	NATIVE T BF


#5 SD
SD VAULT
CALTRANS R.O.W.
S 11½' ℄
67'
℄
CL
25'
BROADWAY
50'
24" CMP
#3 SS
AIRPORT RD
DRIVEWAY
#2 SD
N

36' S.S.
℄


#3 - the first day they just pulled the MH lid and noted the depth (not enough time). Came back and potholed it on the third day.
#5 and #6 were actually located in a trench with #8 closer to limit line
#9 - USA did not show this line. I think maybe it goes from vault to same trench as #8
No record or USA - did not pothole #4
No record or USA for #7 - did not pothole
No USA marks, not potholed.
STORM MANHOLE
RIM ELEV: 1969.33
INVERT ELEV: 1966.21 16"CMP (NORTHERLY)
INVERT ELEV: 1966.15 16"CMP (EASTERLY)
STORM MANHOLE
RIM ELEV: 1966.45
STORM MANHOLE
RIM ELEV: 1972.94
INVERT ELEV: 1969.87 16"CMP (NORTHERLY)
INVERT ELEV: 1969.89 16"CMP (EASTERLY)
INVERT ELEV: 1970.09 14"CMP (SOUTHERLY)
INVERT ELEV: 1969.97 16"CMP (WESTERLY)
UNKNOWN UTIL. CROSSING
12" WTR CROSSING
COMM. CROSSING
WTR CROSSING
UNKNOWN UTIL. CROSSING
WTR CROSSING
36"SD CROSSING
6" SS CROSSING
ELEC. CROSSING
COMM. CROSSING
COMM. CROSSING
1
2
3
4
5
6
7
8
9
10
11
12
11+00
12+00
13+00
15+00
70.0'
37.2'
26.9'
21.7'
33.8'
24.8'
STORM DRAIN INLET
RIM ELEV: 1972.55
INVERT ELEV: 1970.70 16" CMP (NORTHERLY)
SEWER MANHOLE
RIM ELEV: 1970.68
INVERT ELEV: 1965.38 6" (NORTHERLY)
INVERT ELEV: 1963.93 12" (EASTERLY)
INVERT ELEV: 1963.93 12" (WESTERLY)
NOT TO SCALE
From the MH at Wiltse, the pipe heads NNE for about 11 ft, then bends to NE.
It was marked incorrectly, so we did Pothole #1 twice.
In this general area - I think they located 2 communications conduit and 1 electric. That longitudinal "unknown" utility would have been discovered in this pothole, but they didn't see it

POTHOLE DATA / BROADWAY

DATE(S): 8/26/19 — INSPECTOR: BRET STONE

	NUMBER	STATION	OFFSET	CONDITION	COVER	MATERIAL	SIZE	DIRECTION
8/26/19	1		2' ℄	GOOD	50"	C.M.P.	36"	N-S
	2		7℄	GOOD	38"	D.I.P.	12"	N-S
	* 3	AT M.H.	1 ℄	GOOD	56"	A.C.	6"	N-S
8/27/19	5		8'6" ℄	GOOD	25" & 33"	PVC	2"-4"	N-S
	6		8'6" ℄	GOOD	43"	PVC	4"	N-S
	10		5'6" ℄	POOR	18"	D.I.P.	4"	N-S
	12		10' ℄	FAIR	37"	STEEL	1"	N-S
8/28/19	* 3		7' ℄	GOOD	47"	A.C.	6"	N-S

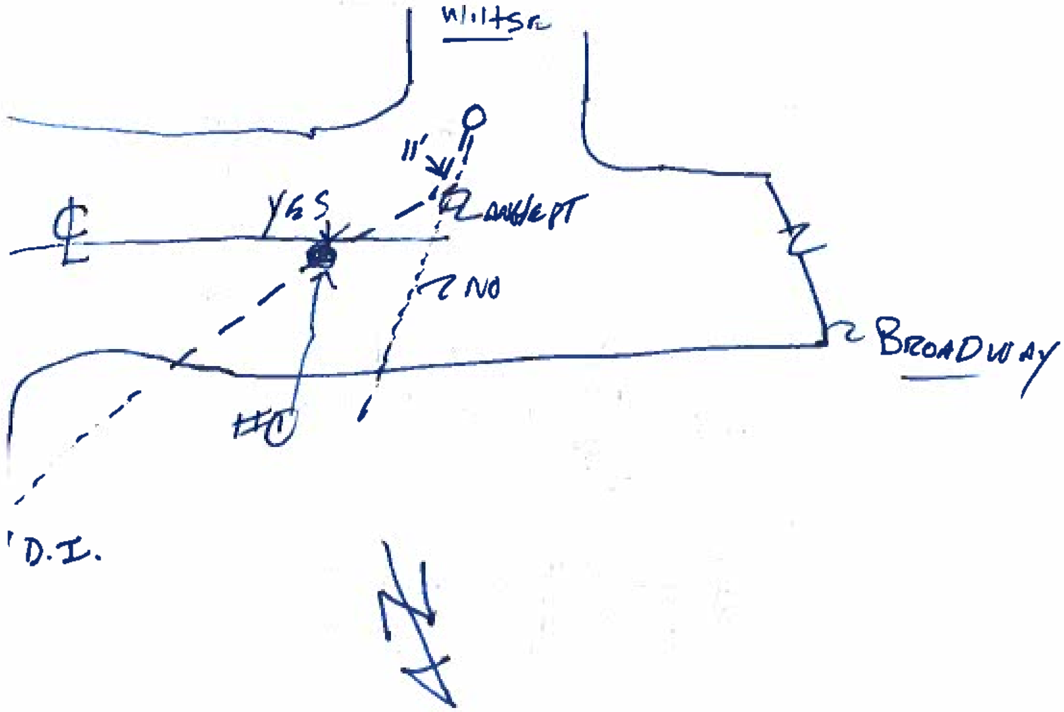
#① = A.C. = 14" Thick - 36" of 1½" A.B. BKFL

#② = A.C. = 9" Thick - 29" of NATIVE BKFL

#③ =

#5/6 = A.C. Thick 25" Top of first pipe, very hard rock = slow digging · 43" DEEPEST Conduit = 4"

#① JACKHAMMERED Through 15" A.C. Than hit concrete = 2hrs until we moved pothole East after cliff went down into S D M.H. and found AN ANGLE PT 11' into 36" CMP MAIN.



APPENDIX E

PERMITS

Caltrans Encroachment Permit

The City is in the process of obtaining a Caltrans Encroachment Permit for the work to be performed within the Caltrans right-of-way at Smith Flat Road and Point View Drive. The permit is anticipated to allow detour signage along Highway 50, staging at Smith Flat Road, and construction of improvements at Smith Flat Road and Point View Drive within Caltrans right-of-way. The Contractor will be responsible for adhering to the conditions of approval of the encroachment permit and applying for, paying the fees for, and obtaining a double permit from Caltrans.

6 June 2019

Rebecca Neves
City of Placerville
3101 Center Street, 3rd floor
Placerville, CA 95667

CERTIFIED MAIL
7015 1520 0002 0442 3916

NOTIFICATION OF A COMPLETE SECTION 401 WATER QUALITY CERTIFICATION APPLICATION; CITY OF PLACERVILLE, UPPER BROADWAY BIKE LANES PROJECT (WDID#5A09CR00201), EL DORADO COUNTY

Thank you for submitting an application for Section 401 Water Quality Certification (Certification) for the Upper Broadway Bike Lanes Project (Project) dated 6 May 2019. Based on review of the above materials submitted, the application appears to be complete. Central Valley Regional Water Quality Control Board staff will be preparing a Certification for the Project.

Pursuant to title 23, section 3856, subdivision (b) of the California Code of Regulations, "[a] full, technically accurate description, including the purpose and final goal, of the entire activity" must be provided before an application will be considered "complete." If there are any changes to the Project, your application may be deemed incomplete, and we may contact you for other information to assist us in preparing the Certification.

When submitting materials related to this application, please reference the Project name and WDID number as shown in the subject line. The materials must be converted to a searchable portable document in PDF format. Please submit the required materials electronically to CentralValleySacramento@waterboards.ca.gov. Documents that are 50 MB or larger should be transferred to a disk and mailed to the address listed below.

Attention: Greg Hendricks
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Please contact me immediately at (916) 464-4709 or at Greg.Hendricks@waterboards.ca.gov if you have any questions or if there are changes to the project description.

Original Signed By:

Greg Hendricks
Environmental Scientist
401 Water Quality Certification Unit

cc: [Via email only]

Sam Ziegler
United States Environmental Protection Agency
Ziegler.Sam@epa.gov

CWA Section 401 WQC Program
State Water Resources Control Board
StateBoard401@waterboards.ca.gov

Leslie Parker
HDR
Leslie.parker@hdrinc.com

cc: Jesse Stovall
United States Army Corps of Engineers
Sacramento District Office
Regulatory Division
1325 J Street, Suite 1350
Sacramento, CA 95814-2922
SPKRegulatoryMailbox@usace.army.mil

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
NORTH CENTRAL REGION
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CA 95670

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2019-0118-R2; VERSION 3
HANGTOWN CREEK

CITY OF PLACERVILLE
UPPER BROADWAY BIKE LANES PROJECT

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and the City of Placerville (Permittee) as represented by Rebecca Neves.

RECITALS

WHEREAS, pursuant to Fish and Game Code section 1602, Permittee notified CDFW on May 22, 2019 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to Fish and Game Code section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in this Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed this Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with this Agreement.

PROJECT LOCATION

The project is located at Hangtown Creek and two of its unnamed tributaries, in the City of Placerville, County of El Dorado, State of California; Latitude 38.435890, Longitude -120.461675; or Sections 8,9, and 10, Township 10N, Range 11E, U.S. Geological Survey (USGS) map ‘Placerville’, Mt. Diablo base and meridian.

Exhibit A shows the project location.

PROJECT DESCRIPTION

The project consists of the construction of bicycle facilities along Broadway between Schnell School Road and Jacuier Road/Point View Drive, with minor signing and striping to connect to the El Dorado Trail at each end, and strategically located sidewalks, additional pedestrian improvements, and select transit facilities. Improvements to Broadway include widening and slight lane shifting for an addition of a

Class II bike lane in the eastbound (uphill) direction, addition of a Class III bike route in the westbound (downhill) direction, and addition of curbs, gutters, and sidewalks on the south side of the roadway in select areas. Stormwater management infrastructure will be included as part of the road widening and will include the installation of two 48-inch corrugated metal pipes for drainage conveyance within a tributary to Hangtown Creek along the south side of Broadway. In addition, a storm water biofiltration swale will be installed south of Broadway and east of Airport Road to offset the increase of impervious pavement. Finally, various sidewalk drains and minor culvert extensions will be installed to account for widening of the road prism. One bus facility (e.g. a bus shelter with a bench and a light) will be installed in the eastbound direction, and an existing bus facility will be replaced with a new facility of equal or greater quality. Up to eight utility poles and five light poles will be relocated or adjusted. Utility relocations and/or adjustments may also include existing utilities, such as street lights, utility boxes, and utility vaults.

The project will include the removal of 23 riparian trees, including eight bigleaf maples (*Acer macrophyllum*), six white alders (*Alnus rhombifolia*), seven valley oaks (*Quercus lobata*), one black oak (*Quercus kelloggii*), and one willow (*Salix* sp.).

Exhibit B shows the project plans.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: fish species, amphibian species including foothill yellow-legged frog (*Rana boylii*), reptiles including western pond turtle (*Actinemys marmorata*), and other aquatic and terrestrial plant and wildlife species.

The adverse effects the project could have on the fish or wildlife resources identified above include:

loss of foraging, nesting, and shelter habitat; disruption to wildlife; disturbance of nesting due to increased human activity, noise, and vibrations; direct take of fish and other aquatic species; direct mortality or injury to individual plants and animals caused by construction activities; impediment to migration of aquatic and terrestrial species during construction; direct loss of resources for aquatic organisms; introduction of sedimentation or other pollutants into the watercourse; short-term release of contaminants (e.g., incidental from construction); loss of natural bed or bank; change in contour of bed, channel or bank; degradation of channel; loss of bank stability during construction; increase of bank erosion during construction; disturbance from project activity; diversion of flow water from, or around, activity site; and dewatering.

The project will cause permanent impacts to 0.06 acre of streambed habitat, 0.29 acre of valley-foothill riparian habitat, and 0.03 acre of blackberry bramble. It will temporarily disturb 0.17 acre of streambed habitat, 0.02 acre of valley-foothill riparian habitat, and 0.01 acre of blackberry bramble.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. Permittee shall make this Agreement, any extensions and amendments to this Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of this Agreement and any extensions and amendments to this Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in this Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall work with the Permittee to resolve any conflict.

1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with this Agreement.

1.5 No Trespass. To the extent that any provisions of this Agreement provide for activities that require the Permittee to traverse another owner's property, such provisions are agreed to with the understanding that the Permittee possesses the legal right to so traverse. In the absence of such right, any such provision is void.

1.6 Notification of Project Modification. The Permittee agrees to notify CDFW of any modifications made to the project plans submitted to CDFW.

1.7 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken.

1.8 Does Not Authorize “Take”. This Agreement does not authorize “take” of any California Endangered Species Act (CESA) listed species. Take is defined in Fish and Game Code section 86, as hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture, or kill. If there is potential for take of any listed species to occur, Permittee shall consult with CDFW and demonstrate compliance with CESA.

1.9 CEQA Compliance. Permittee shall implement and adhere to the mitigation measures in the project’s Mitigated Negative Declaration (MND) (SCH No. 201822049), and all associated documents adopted by the City of Placerville as

lead agency for the project pursuant to the CEQA (Pub. Resources Code, § 21000 et seq.). If the results of focused or pre-commencement surveys indicate that additional impacts may result from project activities that were not analyzed in the CEQA document, then the Permittee should comply with CEQA before the project commences.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

2.1 Work Period. Project activities covered under this Agreement within Hangtown Creek or its associated habitats shall be confined to the period between June 1 – October 31 of the same calendar year during the term of this Agreement. Project activities covered under this Agreement within the tributaries to Hangtown Creek or their associated habitats shall be confined to the period between May 1 – October 31 of the same calendar year during the term of this Agreement. *Revegetation, restoration, erosion control work, and removal of trees and shrubs at the base of the trunk without excavating the roots is not confined to this time period*.

2.2 Work Period Modification. If the Permittee needs more time to complete the project activity, the work may be permitted outside of the work period and extended on a day-to-day basis (or for some other set period of time) by a CDFW representative who reviewed the project, or if unavailable, through contact with the Regional office (see Contact Information). The Permittee shall submit a written request for a work period variance to CDFW. The work period variance request shall: 1) describe the extent of work already completed; 2) detail the activities that remain to be completed; 3) detail the time required to complete each of the remaining activities; and 4) provide photographs of both the current work completed and the proposed site for continued work. Work period variances are issued at the discretion of CDFW. CDFW will review the written request to work outside of the established work period. CDFW will have ten (10) calendar days to review the proposed work period variance. CDFW reserves the right to require additional measures to protect fish and wildlife resources as a condition for granting the variance.

2.3 Work Period in Low Rainfall / Dry Weather Only. The work period within Hangtown Creek shall be restricted to periods of low rainfall (less than ¼-inch per 24 hour period) and periods of dry weather (with less than a 50% chance of rain). Permittee shall monitor the National Weather Service (NWS) 72-hour forecast for the project area. No work shall occur during a dry-out period of 24 hours after the above referenced wet weather. Weather forecasts shall be provided upon request by the CDFW. *All erosion control measures shall be initiated prior to all storm events. This restriction does not apply to revegetation, restoration, erosion control work, and removal of trees and shrubs at the base of the trunk without excavating the roots.*

2.4 Demarcate Work Area to Avoid Vegetation. Prior to project activities, the Permittee shall clearly mark the extent of the work area. Demarcation of the work area shall

consider and avoid vegetation to the greatest extent possible. Vegetation shall not be removed or damaged beyond the work area.

2.5 Vegetation Removal. Disturbance or removal of vegetation shall be kept to the minimum necessary to complete project related activities. Except for tree removal already described in the project description, no native trees with a trunk diameter at breast height (DBH) in excess of four (4) inches shall be removed or damaged without prior consultation and approval of a CDFW representative. Where native trees or woody riparian vegetation split into several trunks close to ground level, the DBH shall be measured for each trunk and calculated as one tree. Vegetation marked for protection may only be trimmed with hand tools to the extent necessary to gain access to the work sites.

Biological Resources

2.6 Leave Wildlife Unharmed. If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

2.7 Designated Biologist(s). At least thirty (30) days before initiating ground- or vegetation-disturbing activities, Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information for a biological monitor(s) (Designated Biologist). Permittee shall obtain CDFW's written approval of the Designated Biologist(s) prior to the commencement of project activities. The Designated Biologist(s) shall be knowledgeable and experienced in the biology and natural history of local fish and wildlife resources present at the project site.

2.8 Designated Biologist Authority. The Designated Biologist(s) shall have authority to immediately stop any activity that is not in compliance with this Agreement, and/or to order any reasonable measure to avoid or minimize impacts to fish and wildlife resources. Neither the Designated Biologist(s) nor CDFW shall be liable for any costs incurred as a result of compliance with this measure. This includes cease-work orders issued by the CDFW.

2.9 On-site Education. Permittee shall conduct an education program for all persons employed or otherwise working on the project site prior to performing any work on-site. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology of the habitats and species identified in this Agreement and present at this site. The Designated Biologist shall also include as part of the education program information about the distribution and habitat needs of any special status species that may be present, legal protections for those species, penalties for violations and project-specific protective measures included in this Agreement. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers prior to their performing work on-site. Permittee shall prepare and distribute cards or a fact sheet that contains this information for workers to carry on-site. Upon completion of the education program, employees shall sign a form stating they attended the

program and understand all protection measures. These forms shall be filed at the worksite offices and submitted as instructed in Contact Information section below. Email notification is preferred.

2.10 Special-Status Species encountered during work. If the Permittee encounters any special-status species during project activities, work shall be suspended, CDFW notified, and conservation measures shall be developed in agreement with CDFW prior to re-initiating the activity. If during project activities, the Permittee encounters any species listed pursuant to the California Endangered Species Act (CESA), work shall be suspended, and CDFW notified. Work may not re-initiate until the Permittee has consulted with CDFW and can demonstrate compliance with CESA.

2.11 Nesting Bird Survey. If project-related activities are scheduled during the nesting season (typically February 1 to August 31), a focused survey for nests shall be conducted by a qualified biologist within three (3) days prior to the beginning of project-related activities. The qualified biologist shall survey the area within 500 foot radius around the project area. The results of the survey shall be made available upon request. If an active nest is found, the Permittee shall consult with CDFW regarding appropriate action to comply with the Fish and Game Code. If a lapse in project-related work of fifteen (15) days or longer occurs, another focused survey, and if nests are found, consultation with CDFW will be required before project work can be reinitiated.

It is the Permittee's responsibility to comply with Fish and Game Code Sections 3503, 3503.5, and 3513, regardless of the time of year. This Agreement does not authorize take of birds, their nests, or their eggs.

2.12 Invasive Species. Permittee shall conduct project activities in a manner that prevents the introduction, transfer, and spread of aquatic, riparian, and terrestrial invasive species from one work site and/or water body to another. Prior to entering the project area, Permittee shall inspect equipment for invasive species and, if any signs of invasive species are found, the equipment shall be cleaned to remove those species. All visible soil/mud, plant materials, and animal remnants on equipment will be removed prior to entering and exiting the work site and/or between each use in different water bodies. Permittee shall notify CDFW immediately if an invasive species not previously known to occur within the work site is discovered during work activities by contacting CDFW's Invasive Species Program by email at Invasives@wildlife.ca.gov.

2.13 Fence and Sign Post Considerations. Permittee shall cap the top opening or fill the three holes on the top (e.g., with a bolt and nut), of any of u-channel posts, signs, or vertical poles installed temporarily or permanently throughout the course of the project to prevent the entrapment of wildlife, especially birds of prey.

2.14 Foothill Yellow-Legged Frog. Prior to starting project activities, Permittee shall submit to CDFW for review and approval their protocol for foothill yellow-legged frog (*Rana boylii*) surveys. After the survey protocol is approved by CDFW and

within 24 hours prior to initiation of construction or ground disturbing activities, the Designated Biologist shall survey the site for foothill yellow-legged frog adults, tadpoles, and egg masses. If foothill yellow-legged frogs, tadpoles, or egg masses are found in the work area, Permittee shall stop work and contact CDFW to determine how to proceed in compliance with CESA.

2.15 Western Pond Turtle. Within 24 hours prior to initiation of construction or ground-disturbing activities, the Designated Biologist shall survey the site for western pond turtles (*Actinemys marmorata*) or their nests. If western pond turtles are found in the work area, work shall not commence until the western pond turtles are no longer present. If a nest is found, Permittee shall contact CDFW to determine appropriate avoidance measures. Turtles may be moved "out of harm's way" by a qualified biologist with the appropriate permit.

2.16 Bats. Prior to work commencing, The Designated Biologist shall survey existing project structures and trees for indications of bat roosting habitat. If roosting sites that are not currently in use but may become occupied before the start of project activities are found, or if bats are found using any trees or structures within the project area, the Designated Biologist shall evaluate the roosting site(s) and number and species of bats present and develop a take-avoidance plan. The plan shall be submitted for CDFW review and approval prior to start of project activities. The plan shall include: 1) a written description and map of the exact location of all roosting sites, 2) a count or estimate of the number of bats present at the time of visit, 3) the bat species present (include how the species was identified), 4) a description of bat sign present (such as guano, discoloration on the walls of structures, etc.), and 5) roost and species-specific measures to minimize disturbance and avoid take. Permittee shall not resume work until CDFW has approved the plan.

Water Diversion

2.17 Diversion Plan. If flowing water is present or reasonably anticipated, Permittee shall submit for approval a detailed water diversion plan to CDFW at least 30 days prior to starting work. Dewatering structures may include the use of sandbags, Port-a-dams, water bladder dams, K-rails or driven sheet metal coffer dams. Permittee may not commence the diversion of water until CDFW approves the water diversion plan in writing.

2.18 Maintain Aquatic Life. When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, Permittee shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937.

2.19 Clean Obstruction Only. Any temporary dam or other artificial obstruction constructed by Permittee shall only be built from non-erodible materials which will cause little or no siltation.

2.20 Maintain Water Quality. Permittee shall divert flow in a manner that prevents turbidity, siltation, or pollution and provides flows to downstream reaches. Flows to downstream reaches shall be provided during all times that the natural flow would have supported aquatic life. Said flows shall be sufficient quality and quantity, and of appropriate temperature to support fish and other aquatic life both above and below the diversion.

2.21 Restore Normal Flows. Permittee shall restore normal flows to the affected stream immediately upon completion of work at that location.

Revegetation and Restoration

2.22 Seeding. Permittee shall restore all exposed/disturbed areas and access points within the project area, by seeding with a locally native grass mix, unless otherwise agreed upon with CDFW. Revegetation shall be completed as soon as possible after construction activities.

2.23 Native Plant Materials. Revegetation shall include only local plant materials native to the project area, unless otherwise approved by CDFW in writing.

2.24 Prohibited Plant Species. Permittee shall not plant, seed or otherwise introduce invasive non-native plant species. Prohibited invasive non-native plant species include those identified in the California Exotic Pest Plant Council's database, which is accessible at: http://www.cal-ipc.org.

Erosion Control/Stabilization

2.25 Erosion Control. Permittee shall actively implement best management practices (BMPs) to minimize turbidity and siltation and prevent erosion and the discharge of sediment where it may pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat during project activities. Precautions shall include, but are not limited to: pre-construction planning to identify site specific turbidity and siltation minimization measures; best management erosion control practices during project activity; and settling, filtering, or otherwise treating silty and turbid water prior to discharge into a stream or storm drain. This may require the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches.

2.25.1 Monitoring. BMPs shall be monitored daily and repaired if necessary to ensure maximum erosion and sediment control.

2.25.2 Materials. All fiber rolls, straw wattles, and/or hay bales utilized within and adjacent to the project site shall be free of non-native plant materials. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute, or coconut (coir) fiber, or other products without welded weaves. Products with plastic monofilament or cross joints in the netting that are bound/stitched (such as

found in straw wattles/fiber rolls and some erosion control blankets), which may cause entrapment of wildlife, shall not be allowed.

2.25.3 Implementation. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. Upon the CDFW's determination that turbidity/siltation levels resulting from project-related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective CDFW-approved control devices are installed or abatement procedures are initiated.

2.26 Prohibition Against Use of Plastic Netting in Erosion Control Measures. Permittee shall not use temporary or permanent erosion control devices containing plastic netting, including photo- or bio-degradable plastic netting. These items are commonly found in straw waddles (fiber rolls) and erosion control blankets.

2.27 Site Restoration. All areas and access points exposed or disturbed during project activities shall be restored using conditions as set forth in the *Revegetation and Restoration* section above. Seeded areas shall be covered with broadcast straw and/or seeded erosion control blankets.

Avoid/Minimize Effects of Equipment

2.28 Heavy Equipment Maintenance. Any equipment or vehicles driven and/or operated shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat. If maintenance or refueling of vehicles or equipment must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses to prevent the runoff of storm water and the runoff of spills. Place drip pans or absorbent materials under vehicles and equipment when not in use. Equipment shall be stored in areas that any possible contamination from the equipment would not pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.29 Minimize Vehicle Parking. Vehicles may enter and exit the work area as necessary for project activities, but may not be parked overnight within ten (10) feet of the drip line of any trees; nor shall vehicles be parked where mechanical fluid leaks may potentially pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.30 Building Material Storage. Project building material and/or construction equipment shall not be placed where materials could pass into waters of the state (Fish & G.

Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat, or where they may cover aquatic or riparian vegetation.

2.31 Decontamination of Project Equipment. Permittee shall decontaminate all tools, waders and boots, and other equipment that will enter the water prior to entering and exiting the project site to avoid the introduction and transfer of organisms. Permittee shall decontaminate project gear and equipment utilizing one of three methods: drying, using a hot water soak, or freezing, as appropriate to the type of gear or equipment. For all methods, Permittee shall begin the decontamination process by thoroughly scrubbing equipment, paying close attention to small crevices such as boot laces, seams, net corners, etc., with a stiff-bristled brush to remove all organisms. To decontaminate by drying, Permittee shall allow equipment to dry thoroughly (i.e., until there is a complete absence of water), preferably in the sun, for a minimum of 48 hours. To decontaminate using a hot water soak, Permittee shall immerse equipment in 140 degrees Fahrenheit or hotter water and soak for a minimum of 5 minutes. To decontaminate by freezing, Permittee shall place equipment in a freezer 32 degrees Fahrenheit or colder for a minimum of eight (8) hours. Repeat decontamination is required only if the equipment/clothing is removed from the site, used within a different waterbody, and returned to the project site.

2.32 Decontamination Sites. Permittee shall perform decontamination of vehicles, watercraft, and other project gear and equipment in a designated location where runoff can be contained and not allowed to pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.33 Stationary Equipment Leaks. Stationary equipment such as motors, pumps, generators, and welders shall be positioned over drip pans and secondary containment, as necessary. Stationary equipment shall have suitable containment to handle any spill/leak. Equipment shall be stored in areas that any possible contamination from the equipment would not pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.34 Equipment Maintenance and Fueling. No equipment maintenance or fueling shall be done where petroleum products or other pollutants from the equipment may pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.35 Staging and Storage Areas. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than one hundred (100) feet from waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat, unless otherwise approved by CDFW in writing. All

equipment and fuel stored on site shall be properly contained and protected from rain.

Debris Materials and Waste

2.36 Remove Structures. Project-related structures and associated materials not designed to withstand high water flows or placed in seasonally dry portions of a stream or lake that could be washed downstream or could be deleterious to aquatic life, wildlife, or riparian habitat shall be moved to areas above high water before such flows occur.

2.37 No Dumping. Permittee and all contractors, subcontractors, and employees shall not dump any litter or construction debris on the project site.

2.38 Remove Temporary Flagging, Fencing, and Barriers. Permittee shall remove all temporary flagging, fencing, and/or barriers from the project area and vicinity immediately upon completion of project activities.

2.39 Wash Water. Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter sensitive areas, or placed in locations where it may pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat.

2.40 Hazardous Materials. Debris, soil, silt, sand, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products or any other substances which could be hazardous to aquatic life, or other organic or earthen material from project activities shall not be stored where it may pass into waters of the state (Fish & G. Code 89.1), the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat. Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located more than one hundred (100) feet from the waters of the state, the stream bed, bank, or channel (including but not limited to dry, ponded, flowing, or wetland areas), drainages, lakes, other sensitive habitat, unless otherwise approved by CDFW in writing. Ensure that all construction areas have proper spill clean-up materials (absorbent pads, sealed containers, booms, etc.) to contain the movement of any spilled substances. All debris shall be disposed of properly. BMPs shall be employed to accomplish these requirements. CDFW shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures.

2.41 Isolate Wet Concrete from Stream. If any structure is cast in place, the area poured shall be completely bermed or otherwise isolated to contain all and any wet cement, even if water is not present. The pH of wet cement may be as high as 13, and contaminants leaching from wet cement into the water can present a hazard to aquatic life. The berm may be made of sandbags or dirt, but it shall be lined with plastic to prevent any material from seeping past the berm. Permittee shall

maintain the berm in place until the concrete is fully cured or is otherwise determined to present no danger of leaching high-pH compounds into a watercourse.

2.42 No Pouring in Advance of Rain. No concrete or any cement product may be poured if measurable rain is forecasted within 10 days. If any concrete is poured after October 15, or if measureable rain may fall 11 to 15 days after pouring, a quick cure ingredient shall be added to the concrete mix to ensure a faster set or drying time.

2.43 Removal of Debris, Materials and Rubbish. Permittee shall remove all project generated debris, building materials and rubbish from the project area following completion of project activities.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

3.1 Restoration of all Temporarily Disturbed Areas. Permittee shall revegetate temporarily disturbed areas as soon as possible and within one year following disturbance. All seed, container stock, cuttings, and/or other plant materials used must be locally native and appropriate for use in wetland and wetland-upland transitional areas.

3.2 Compensatory Mitigation for Loss of Habitat. The Permittee shall provide a mitigation plan for CDFW review and written approval. The mitigation options may include one or a combination of the following:

a. Proof of mitigation credit purchase at a CDFW-approved mitigation bank. The Permittee shall mitigate for impacts to 0.38 acre of streambed and riparian habitat by purchasing a minimum of 1.1 credits for the restoration or creation of riparian habitat at the bank. The Permittee shall obtain CDFW approval prior to purchase of bank credits. Permittee may substitute some or all of the credit purchase by restoring an equivalent amount of riparian habitat as described below. The sum of the credits purchased and the area of riparian habitat restored shall equal at least 1.1 acres.

b. Habitat Restoration Plan. If Permittee elects to restore riparian habitat, then Permittee shall submit to CDFW for review and approval a Habitat Restoration Plan. The Mitigation Plan shall outline how Permittee will mitigate for the permanent loss of 0.38 acre of habitat with 1.1 acre of created or restored habitat, or a combination of habitat restoration and credit purchase. Habitat creation or restoration must include the expansion of riparian areas. Habitat enhancement activities may be used instead of restoration/creation at double the value and therefore would be equal to 2.2 acres of habitat. Habitat enhancement may include removal of invasive species and replacement with

native riparian plantings. The mitigation plan shall include habitat creation and/or habitat enhancement activities.

The Habitat Restoration Plan shall include the following information:

c. A description of the existing physical conditions of the proposed creation and/or restoration site, including water resources and habitat types, and a map that identifies the location of the site;

d. Information pertaining to the ownership and current use of the proposed site including any easements or other restrictions;

e. A plan for the preparation of the restoration site, including the removal of nonnative plant species, non-wetland/riparian plant species;

f. A planting plan which includes use of a local California native plant palette and describes monitoring and maintenance measures;

g. A timeline for implementation;

h. A description of how and how long the replanted vegetation will be watered;

i. A monitoring and management plan, that includes procedures to ensure that non-native plants are not introduced or allowed to sustain within the site. Monitoring and management of the restoration site shall be conducted for a minimum of five (5) years, or until CDFW determines the success criteria have been met;

j. A long-term management plan that describes how the site will be maintained in perpetuity;

k. Overall success criteria; and

l. Contingency measures for replanting and plan re-design, in case the success criteria are not met.

The following conditions will apply if Permittee elects to restore riparian habitat:

3.3 Conservation Easement. Prior to starting project activities, permittee shall preserve the restoration area in perpetuity by placing a conservation easement over the restoration site. CDFW shall act as grantee for the conservation easement over the restoration site or shall, in its sole discretion, approve a non-profit entity, public agency, or Native American tribe to act as grantee for the conservation easement over the restoration site provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW does not hold the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The Permittee shall obtain CDFW written approval of any conservation easement before its execution or recordation. No conservation

easement shall be approved by CDFW unless it complies with Government Code sections 65965-65968, as amended and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e).

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

4.1 Notification of Project Initiation. The Permittee shall notify the CDFW two (2) working days prior to beginning work for each construction season. Notification shall be submitted as instructed in Contact Information section below. Email submittal is preferred.

4.2 Notification of Project Completion. Upon completion of the project activities described in this Agreement, the project activities shall be digitally photographed. Photographs shall be submitted to CDFW within fifteen (15) days of project completion. Photographs and project completion notification shall be submitted as instructed in Contact Information section below. Email submittal is preferred.

4.3 Notification to the California Natural Diversity Database. If any special-status species are observed during project implementation, the Permittee shall submit the California Natural Diversity Data Base (CNDDB) Online Field Survey Form electronically at https://www.wildlife.ca.gov/data/CNDDB/submitting-data within five (5) working days of the sightings, and provide a copy of the form, survey map and/or report to the CDFW's Regional office as instructed in Contact Information section below.

4.4 Restoration Monitoring Reports. *This condition only applies if Permittee elects to restore riparian habitat.* After completion of the restoration activities, the area of restoration shall be monitored for a minimum of five (5) years or until CDFW determines the success criteria have been met. Each year for five years after restoration, a monitoring report shall be submitted to CDFW for review and approval. The report shall discuss the mitigation performance as it relates to the success criteria. The report shall include the success of natural revegetation establishment, survival, percent cover, and height of both tree and shrub species. The number by species of plants replaced, an overview of the revegetation effort, and the method used to assess these parameters shall also be included. The report shall include photos from designated photo stations and other relevant information such as: a summary of invasive species control, methods used to remove non-native plants, and a list of wildlife observed on site.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:

Rebecca Neves
City of Placerville
3101 Center Street, 3rd Floor
Placerville, CA 95667
Phone: (530) 642-5250
Email: rneves@cityofplacerville.org

Contact:

Leslie Parker
HDR, Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
Phone: (916) 679-8745
Email: leslie.parker@hdrinc.com

To CDFW:

Department of Fish and Wildlife
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
Attn: Lake and Streambed Alteration Program
Notification #1600-2019-0118-R2
Phone: (916) 358-2885
Email: R2LSA@wildlife.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of this Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that this Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with this Agreement.

Before CDFW suspends or revokes this Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee

an opportunity to correct any deficiency before CDFW suspends or revokes this Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in this Agreement precludes CDFW from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking this Agreement.

Nothing in this Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with, from obtaining any other permits or authorizations that might be required under, other federal, state, or local laws or regulations before beginning the project or an activity related to it. For example, if the project causes take of a species listed as threatened or endangered under the Endangered Species Act (ESA), such take will be unlawful under the ESA absent a permit or other form of authorization from the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the Fish and Game Code including, but not limited to, Fish and Game Code sections 2050 *et seq*. (threatened and endangered species), section 3503 (bird nests and eggs), section 3503.5 (birds of prey), section 5650 (water pollution), section 5652 (refuse disposal into water), section 5901 (fish passage), section 5937 (sufficient water for fish), and section 5948 (obstruction of stream).

Nothing in this Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend this Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend this Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and Permittee. To request an amendment, Permittee shall submit to CDFW a completed CDFW “Request to Amend Lake or Streambed Alteration” form and include with the completed form payment of the

corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of this Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of this Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with Fish and Game Code section 1605, subdivision (b), Permittee may request one extension of this Agreement, provided the request is made prior to the expiration of this Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with Fish and Game Code section 1605, subdivisions (b) through (e).

If Permittee fails to submit a request to extend this Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project this Agreement covers (Fish & G. Code § 1605, subd. (f)).

EFFECTIVE DATE

This Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after Permittee's signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable Fish and Game Code section 711.4 filing fee listed at https://www.wildlife.ca.gov/Conservation/CEQA/Fees.

TERM

This Agreement shall **expire five (5) years** from the date signed by CDFW. All provisions in this Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after this Agreement expires or is terminated, as Fish and Game Code section 1605, subdivision (a)(2) requires.

EXHIBITS

The documents listed below are included as exhibits to this Agreement and incorporated herein by reference.

A. Exhibit A. Project Location
B. Exhibit B. Project Plans

AUTHORITY

If the person signing this Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project this Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with Fish and Game Code section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR CITY OF PLACERVILLE

Rebecca Neves — Date

FOR DEPARTMENT OF FISH AND WILDLIFE

Jeff Drongesen — Date
Environmental Program Manager

Prepared by: Gabriele Quillman
Environmental Scientist

Exhibit A: Project Location

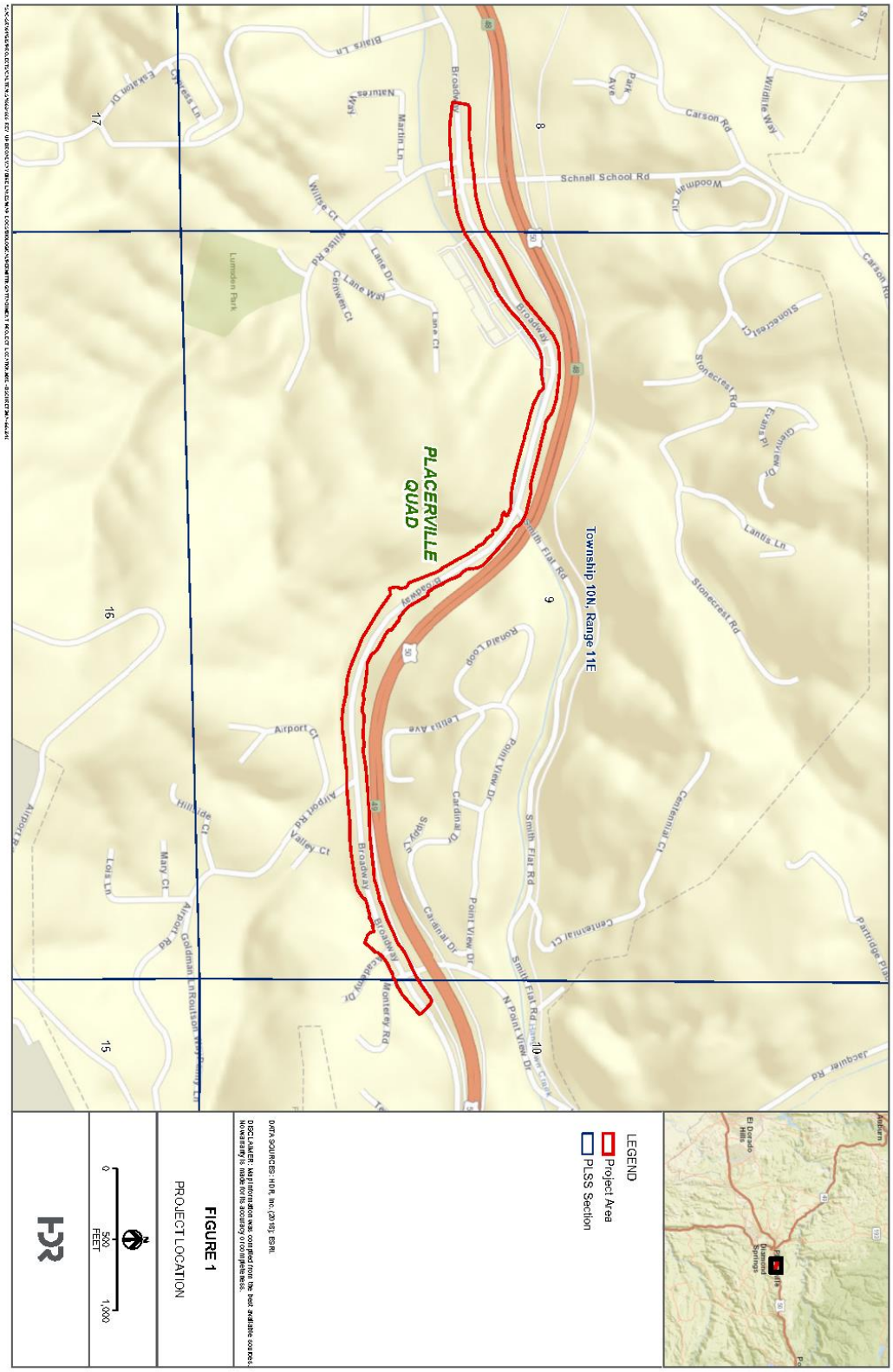


Exhibit B: Project Plans


US HWY 50
US HWY 50
SCHNELL SCHOOL RD
BROADWAY
WILSE RD
ORCHARD LN
Stonecrest Rd
Smith Flat Rd
Airport Rd
Placerville Airport
LEGEND
Project Area
Permanent Impact
Vegetation Type
Developed
NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).
DISCLAIMER: Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.
APPENDIX B
PROJECT IMPACT
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FEET
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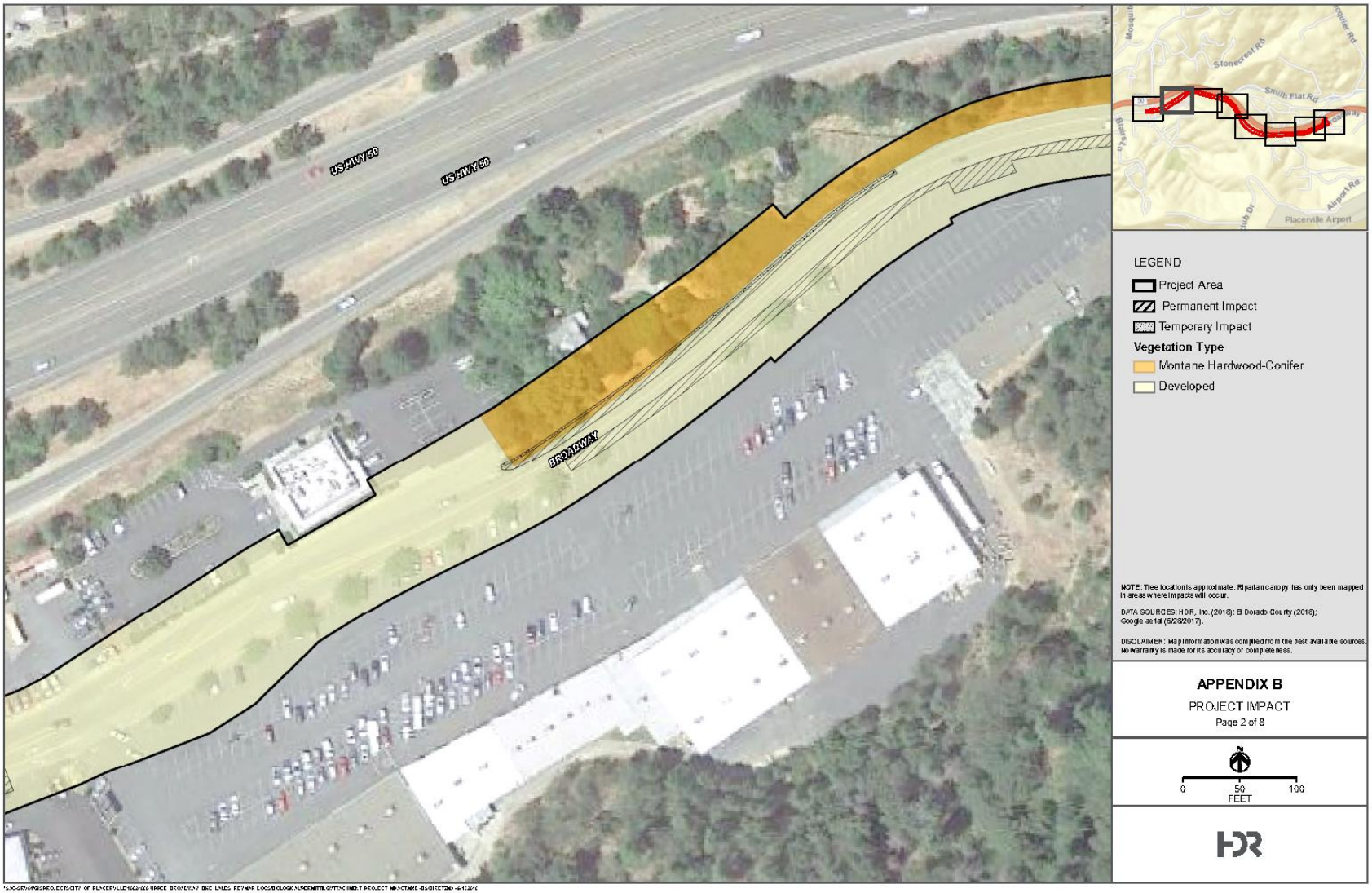
US HWY 50
US HWY 50
BROADWAY
Stonecrest Rd
Smith Flat Rd
Airport Rd
Placerville Airport
LEGEND
Project Area
Permanent Impact
Temporary Impact
Vegetation Type
Montane Hardwood-Conifer
Developed
NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).
DISCLAIMER: Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.
APPENDIX B
PROJECT IMPACT
Page 2 of 8
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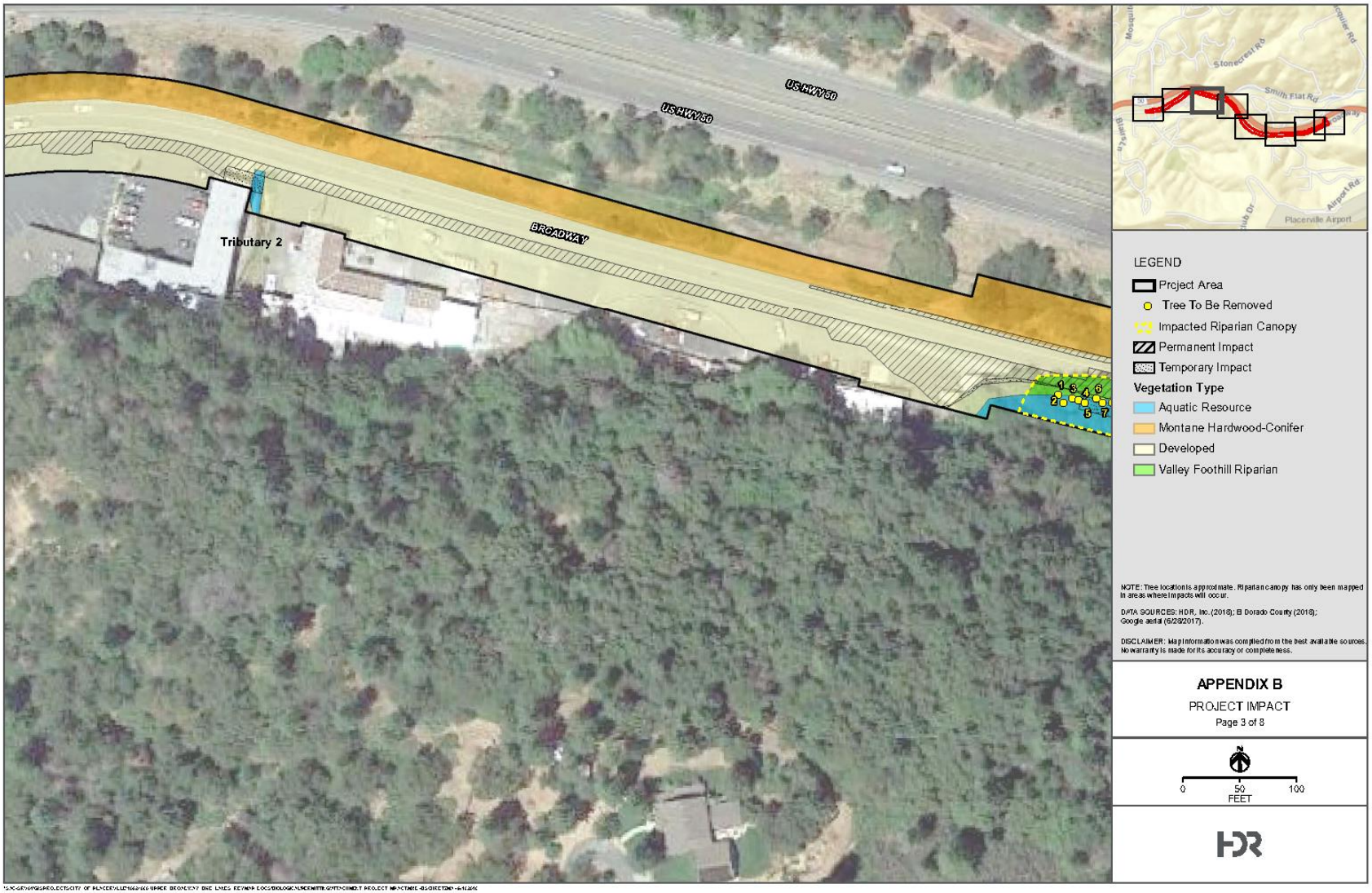
US HWY 50
US HWY 50
BROADWAY
Tributary 2
1
2
3
4
5
6
7
Stonecrest Rd
Smith Flat Rd
Airport Rd
Placerville Airport
LEGEND
Project Area
Tree To Be Removed
Impacted Riparian Canopy
Permanent Impact
Temporary Impact
Vegetation Type
Aquatic Resource
Montane Hardwood-Conifer
Developed
Valley Foothill Riparian
NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).
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APPENDIX B
PROJECT IMPACT
Page 3 of 8
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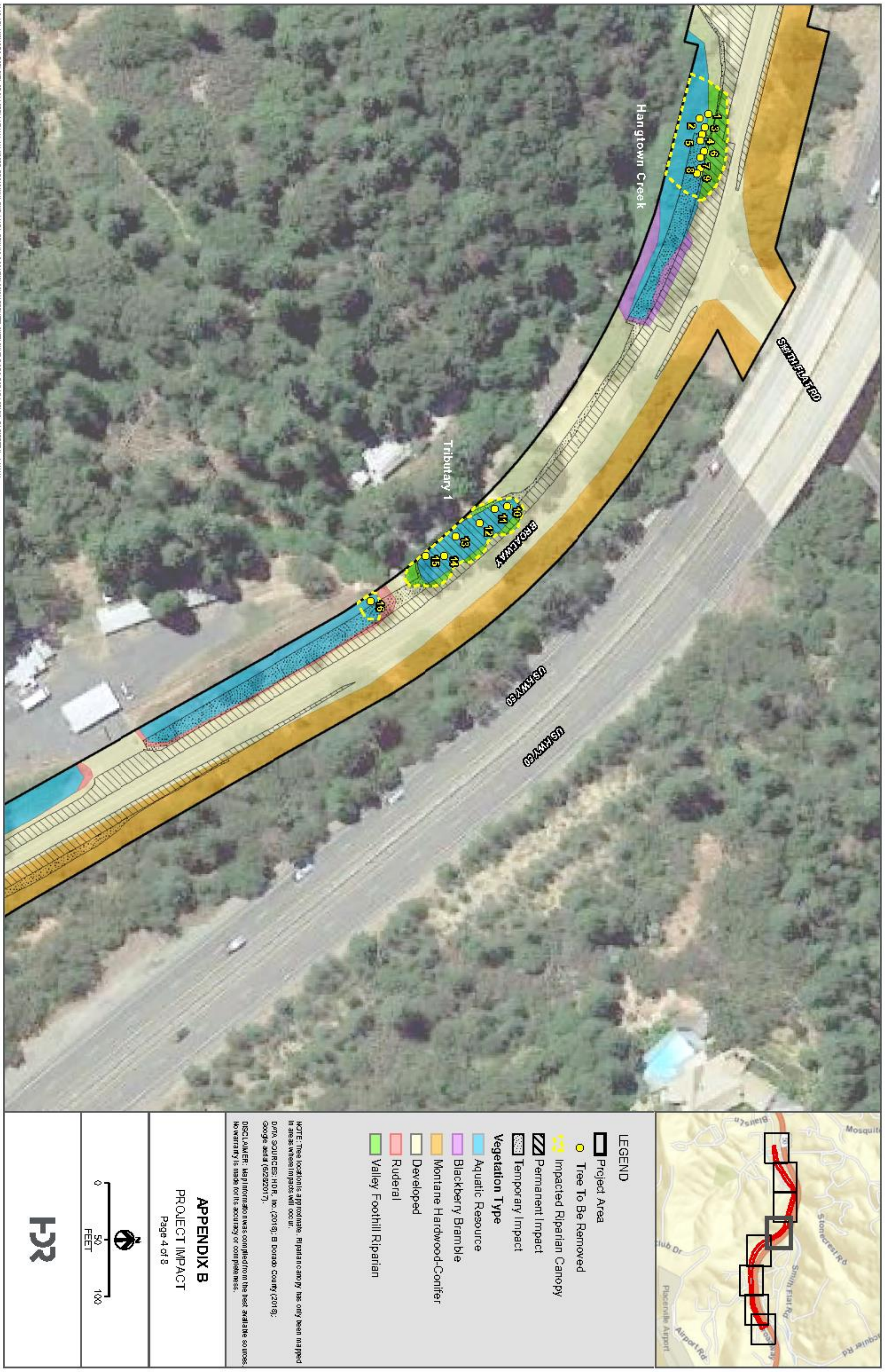
Hangtown Creek
Tributary 1
BROADWAY
SMITH FLAT RD
US HWY 50
US HWY 50
LEGEND
Project Area
Tree To Be Removed
Impacted Riparian Canopy
Permanent Impact
Temporary Impact
Vegetation Type
Aquatic Resource
Blackberry Bramble
Montane Hardwood-Conifer
Developed
Ruderal
Valley Foothill Riparian
NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/29/2017).
DISCLAIMER: Map information was compiled from the best available sources. No warranty is made for its accuracy or completeness.
APPENDIX B
PROJECT IMPACT
Page 4 of 8
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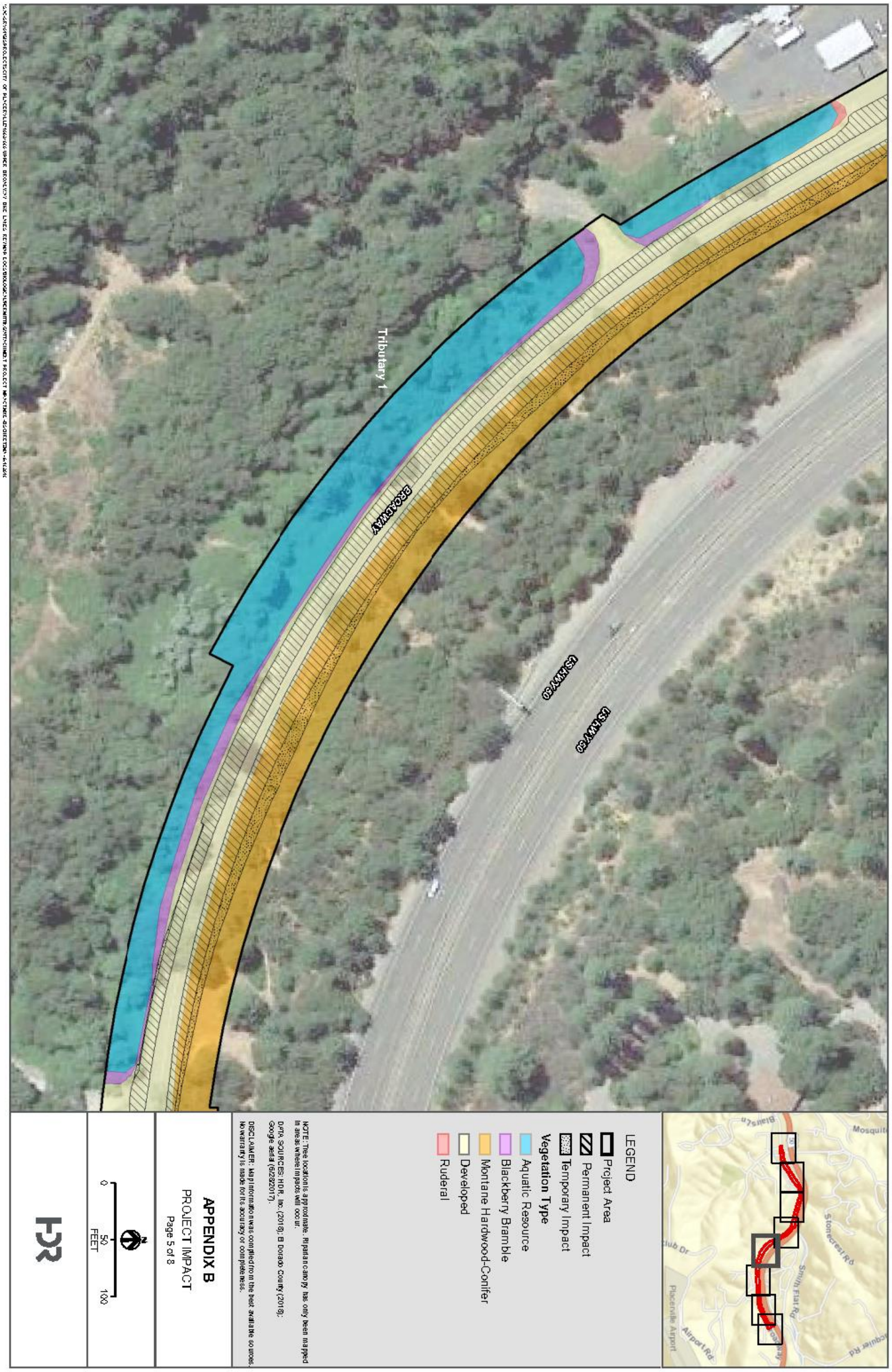
Tributary 1
BROADWAY
US HWY 50
US HWY 50
LEGEND
Project Area
Permanent Impact
Temporary Impact
Vegetation Type
Aquatic Resource
Blackberry Bramble
Montane Hardwood-Conifer
Developed
Ruderal
APPENDIX B
PROJECT IMPACT
Page 5 of 8
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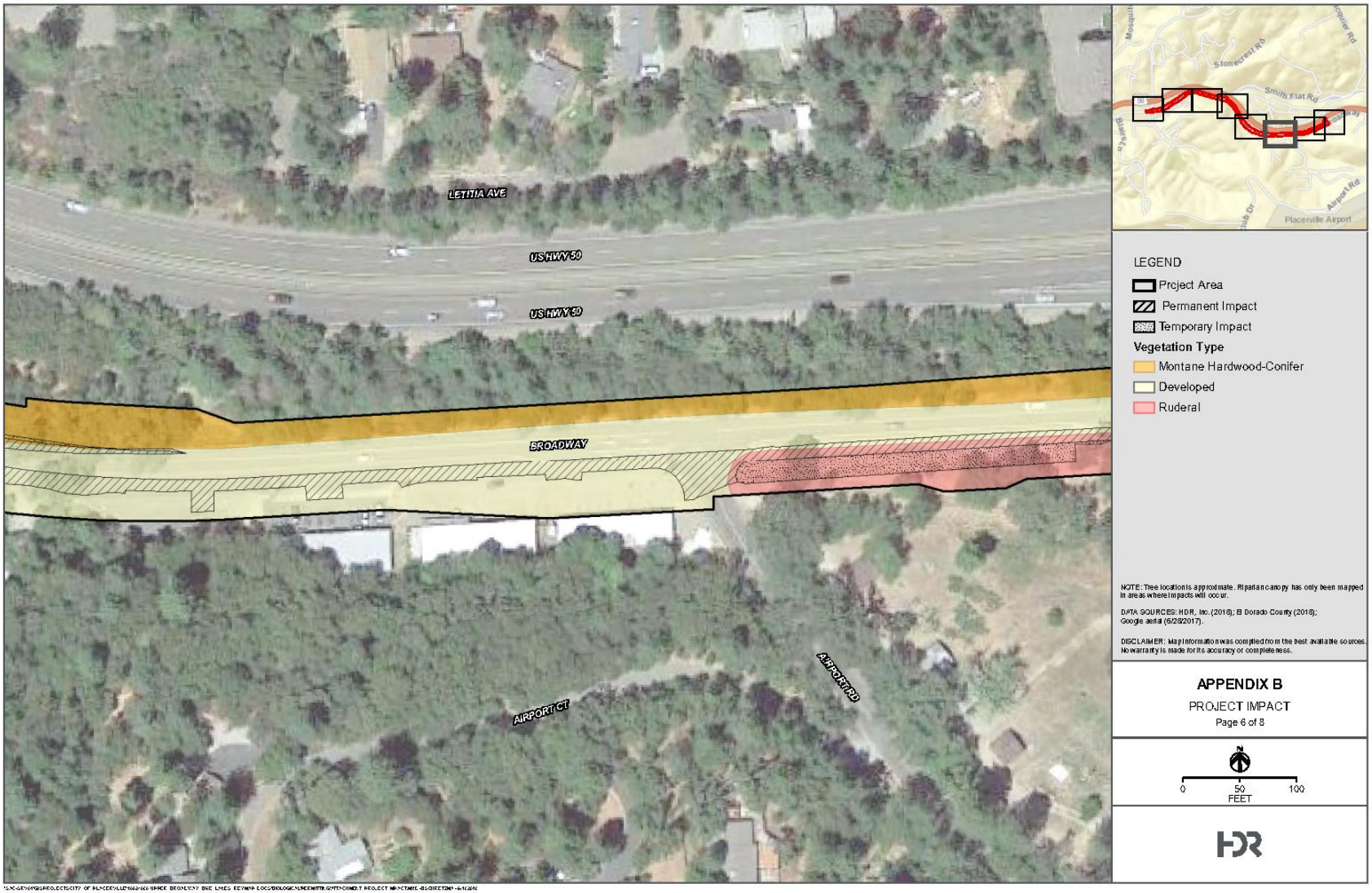
LETITIA AVE
US HWY 50
US HWY 50
BROADWAY
AIRPORT CT
AIRPORT RD
Stonecrest Rd
Smith Flat Rd
Airport Rd
Placerville Airport
LEGEND
Project Area
Permanent Impact
Temporary Impact
Vegetation Type
Montane Hardwood-Conifer
Developed
Ruderal
NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).
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APPENDIX B
PROJECT IMPACT
Page 6 of 8
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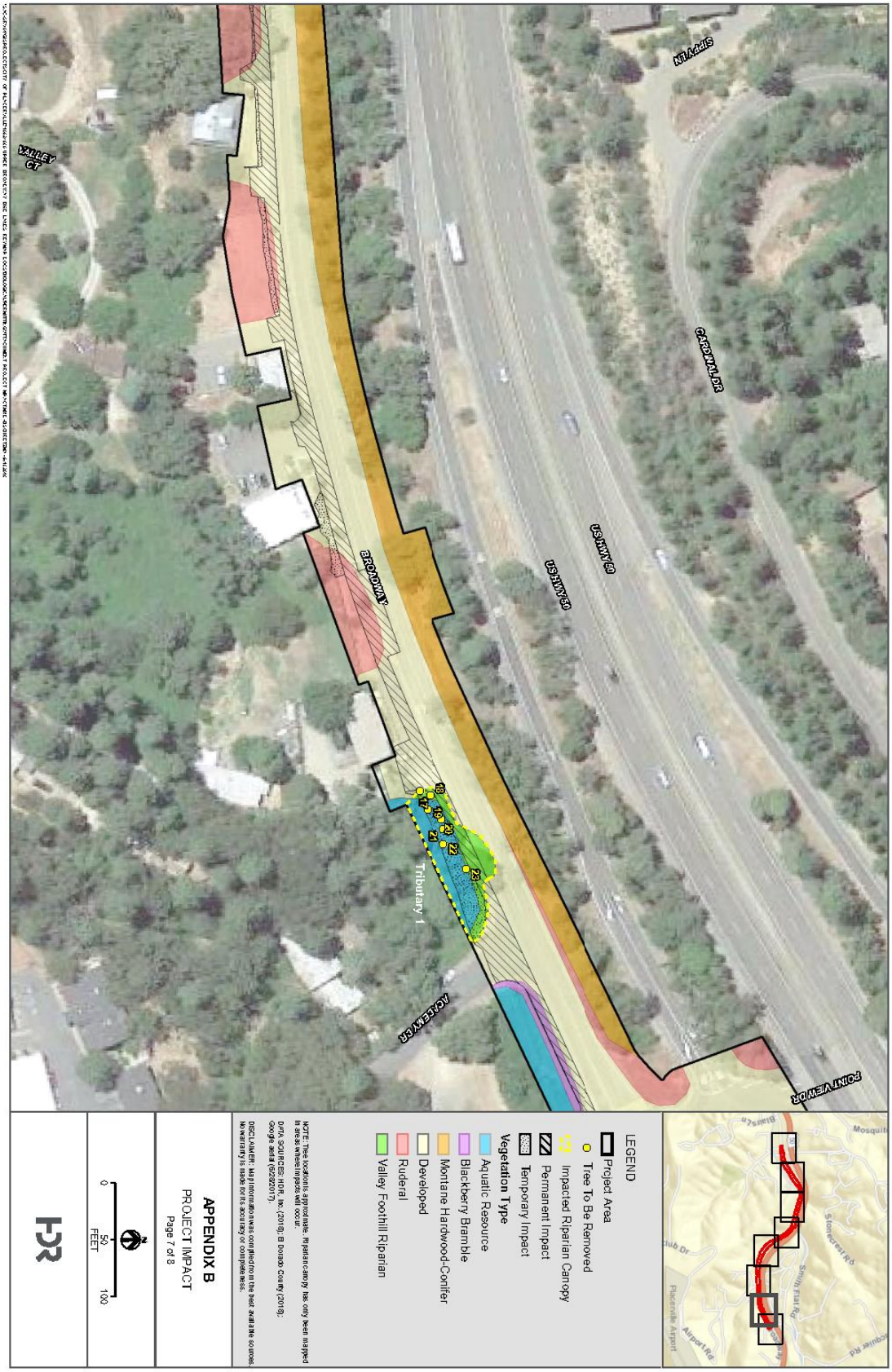
SPRY LN
CARDINAL DR
US HWY 50
US HWY 50
BROADWAY
VALLEY CT
POINT VIEW DR
ACKLEY DR
Tributary 1
18
19
20
21
22
23
LEGEND
Project Area
Tree To Be Removed
Impacted Riparian Canopy
Permanent Impact
Temporary Impact
Vegetation Type
Aquatic Resource
Blackberry Bramble
Montane Hardwood-Conifer
Developed
Ruderal
Valley Foothill Riparian
NOTE: Tree locations approximate. Riparian canopy has only been mapped in areas where impacts will occur.
DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/29/2017).
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APPENDIX B
PROJECT IMPACT
Page 7 of 8
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FEET
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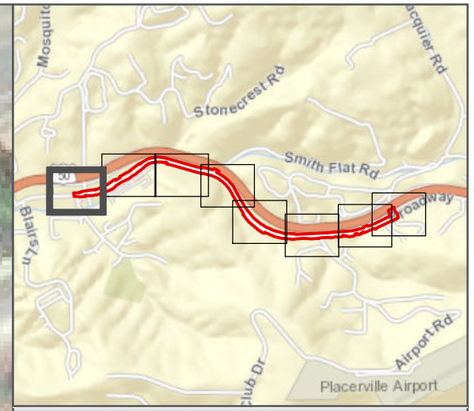

LEGEND

Project Area

Permanent Impact

Vegetation Type

Developed

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).

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APPENDIX B

PROJECT IMPACT

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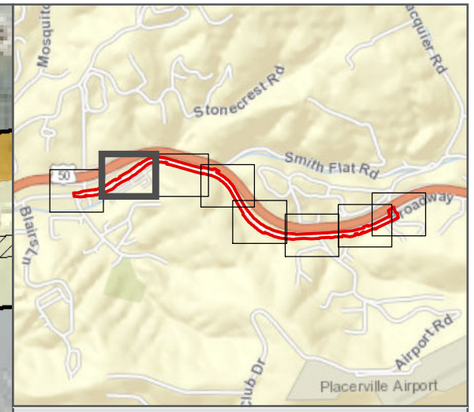

LEGEND

- Project Area
- Permanent Impact
- Temporary Impact

Vegetation Type

- Montane Hardwood-Conifer
- Developed

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).

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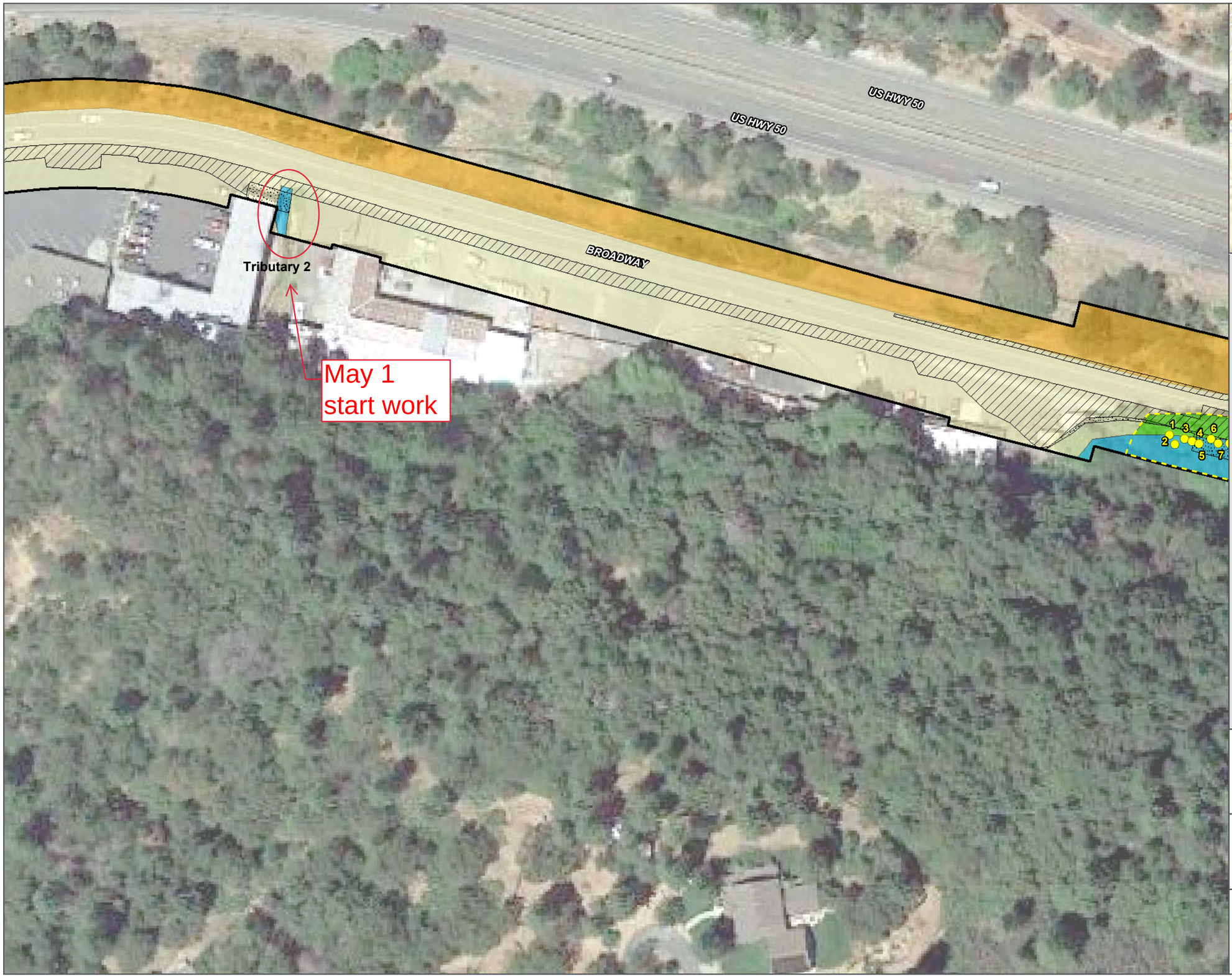

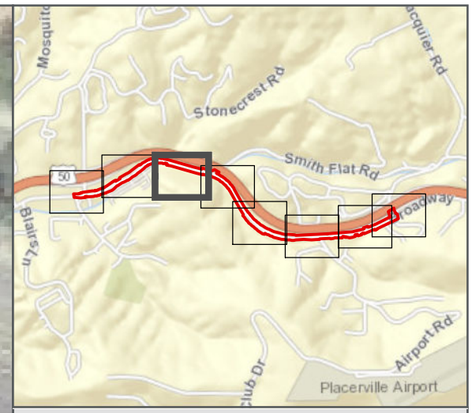

LEGEND

- Project Area
- Tree To Be Removed
- Impacted Riparian Canopy
- Permanent Impact
- Temporary Impact

Vegetation Type

- Aquatic Resource
- Montane Hardwood-Conifer
- Developed
- Valley Foothill Riparian

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).

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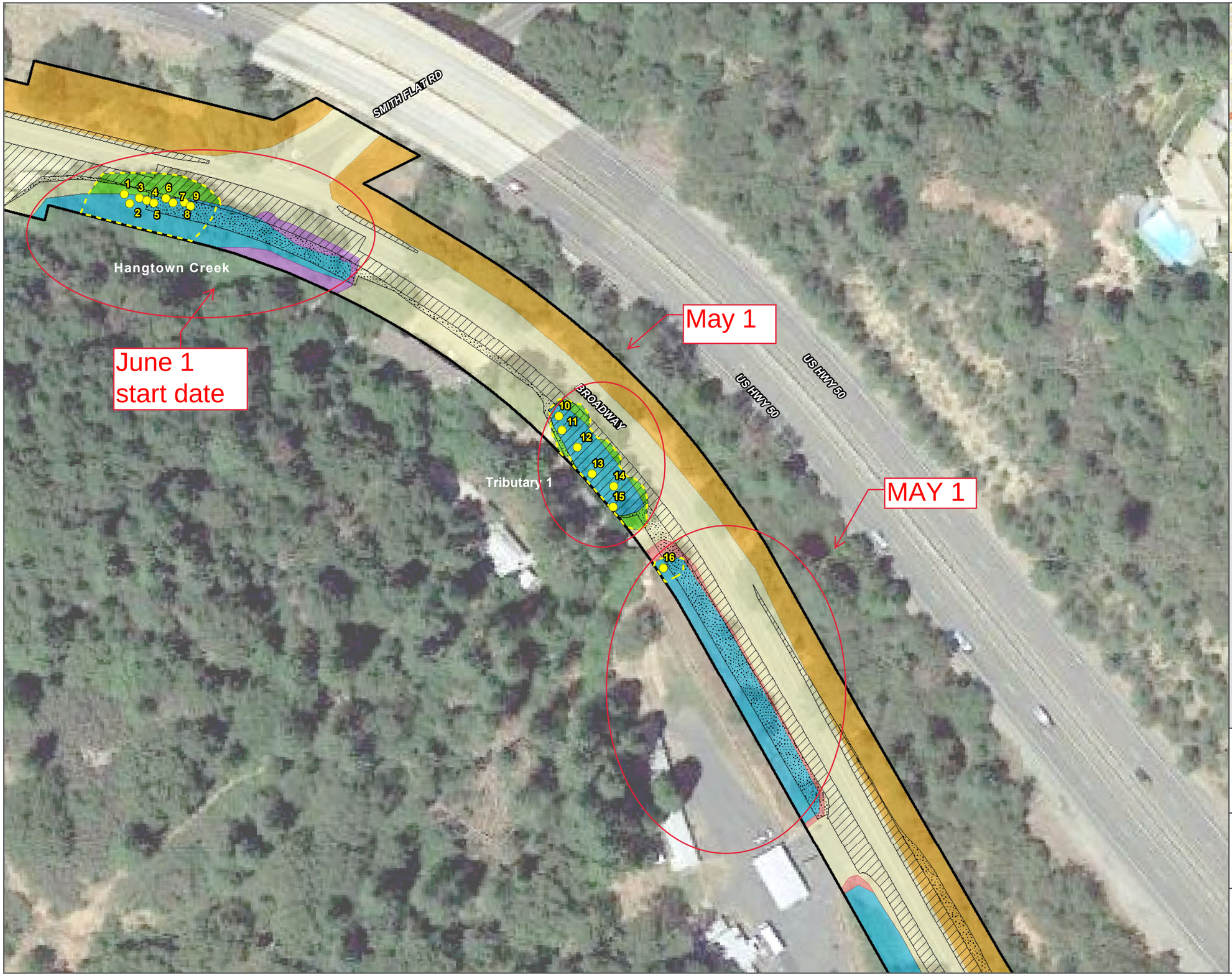

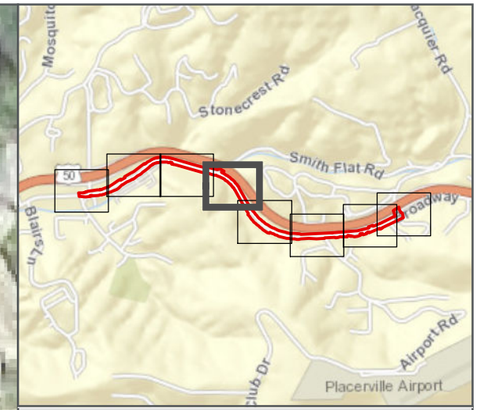

LEGEND

- Project Area
- Tree To Be Removed
- Impacted Riparian Canopy
- Permanent Impact
- Temporary Impact

Vegetation Type

- Aquatic Resource
- Blackberry Bramble
- Montane Hardwood-Conifer
- Developed
- Ruderal
- Valley Foothill Riparian

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).

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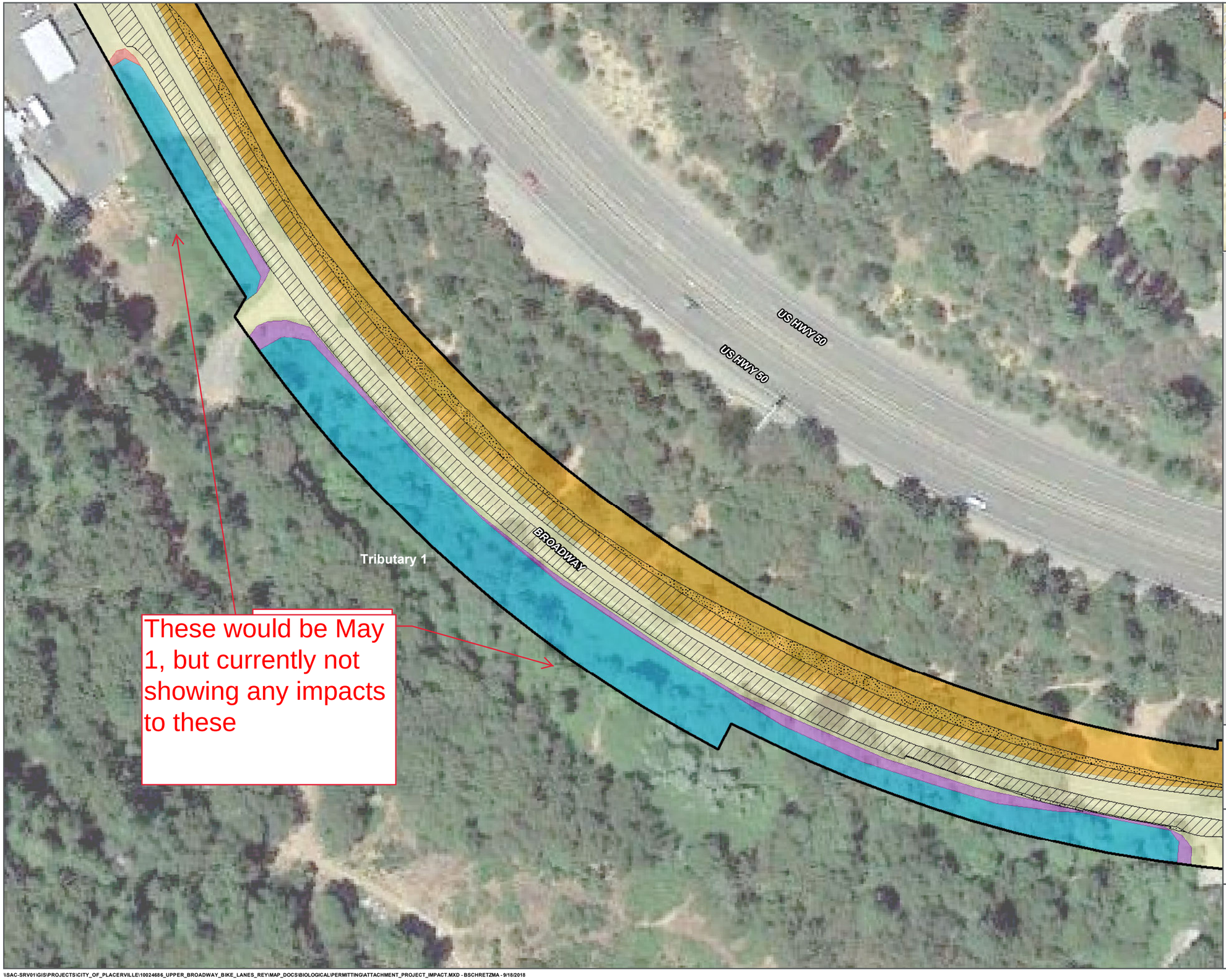

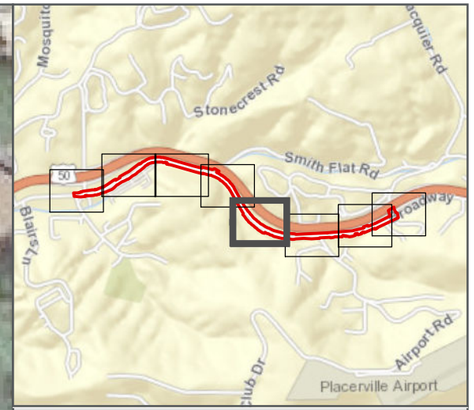

LEGEND

- Project Area
- Permanent Impact
- Temporary Impact

Vegetation Type

- Aquatic Resource
- Blackberry Bramble
- Montane Hardwood-Conifer
- Developed
- Ruderal

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

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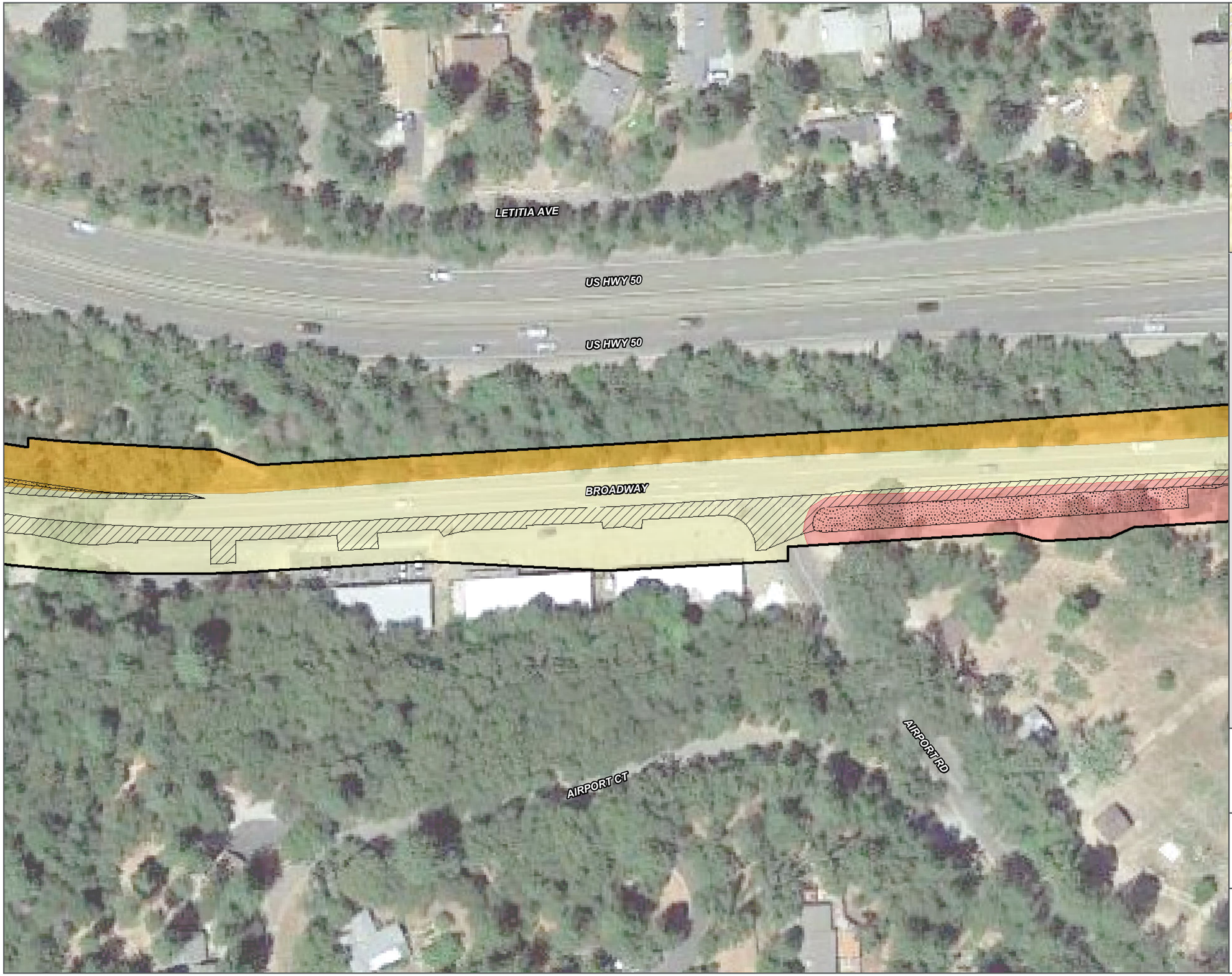

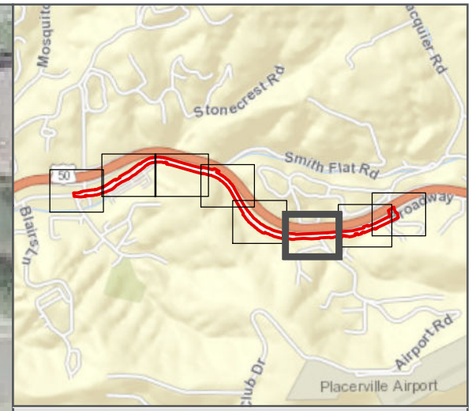

LEGEND

- Project Area
- Permanent Impact
- Temporary Impact

Vegetation Type

- Montane Hardwood-Conifer
- Developed
- Ruderal

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

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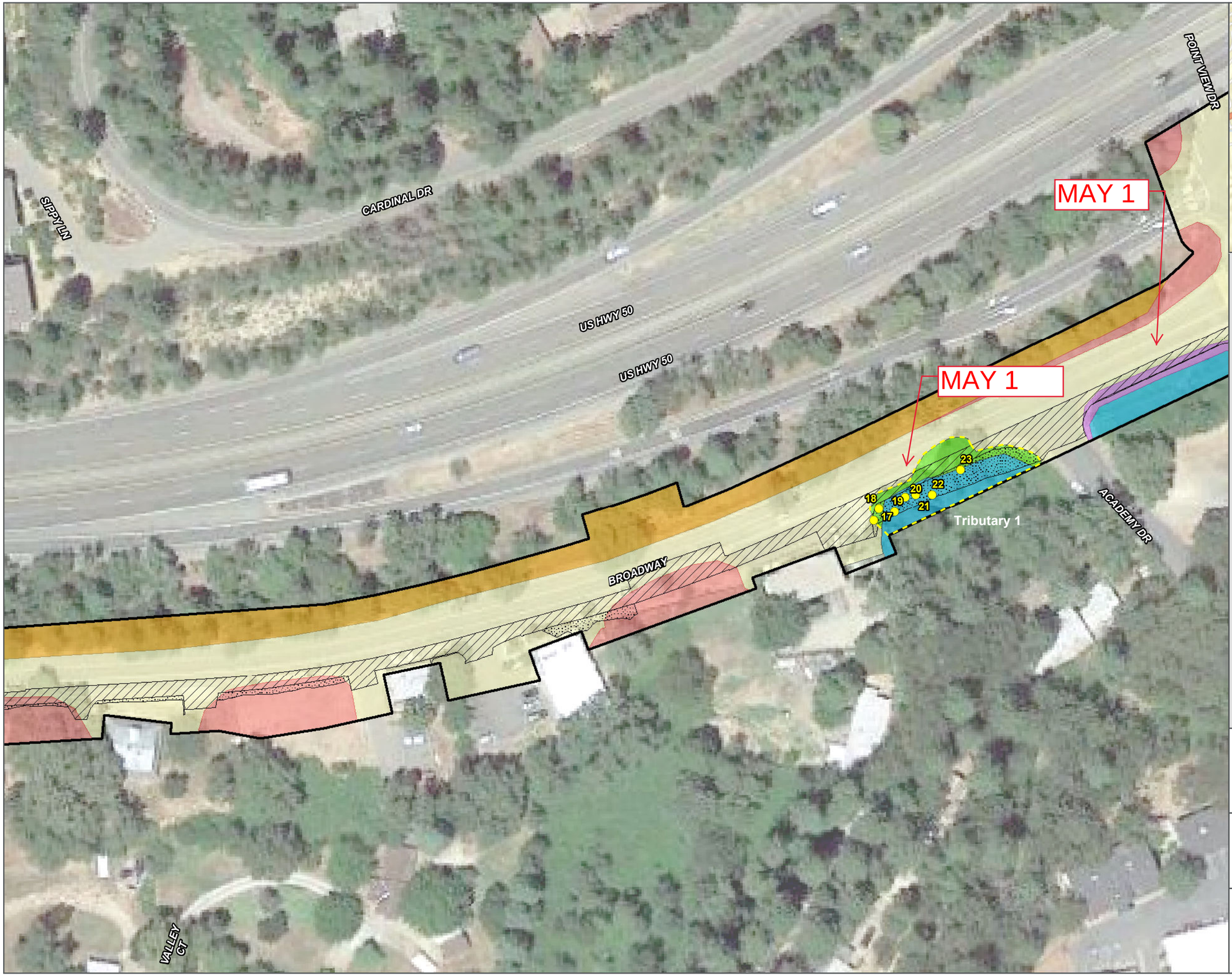

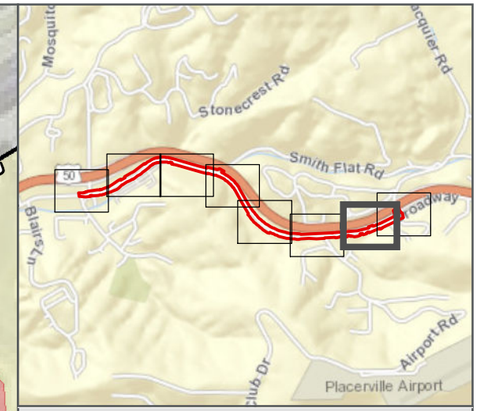

LEGEND

- Project Area
- Tree To Be Removed
- Impacted Riparian Canopy
- Permanent Impact
- Temporary Impact

Vegetation Type

- Aquatic Resource
- Blackberry Bramble
- Montane Hardwood-Conifer
- Developed
- Ruderal
- Valley Foothill Riparian

NOTE: Tree location is approximate. Riparian canopy has only been mapped in areas where impacts will occur.

DATA SOURCES: HDR, Inc. (2018); El Dorado County (2018); Google aerial (6/28/2017).

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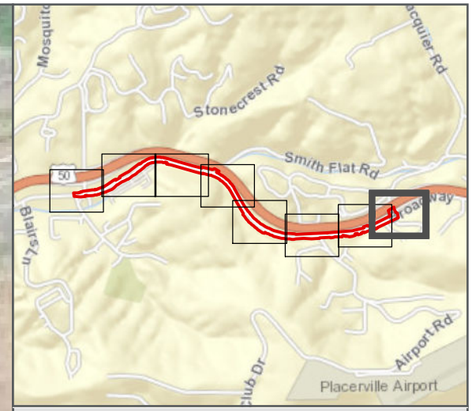

LEGEND

- Project Area
- Tree To Be Removed
- Impacted Riparian Canopy
- Permanent Impact
- Temporary Impact

Vegetation Type

- Aquatic Resource
- Blackberry Bramble
- Montane Hardwood-Conifer
- Developed
- Ruderal
- Valley Foothill Riparian

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APPENDIX B

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APPENDIX F

STAINED AND CARVED SHOTCRETE FACING PHOTO

Stained and Carved Shotcrete Facing
(Picture taken along Highway 12, between I-80 and Hwy 29)

APPENDIX G

R/W ACQUISITIONS, TEMPORARY CONSTRUCTION EASEMENTS, AND PERMITS TO ENTER AND CONSTRUCT

City of Placerville
PURCHASE AND SALE AGREEMENT

PROJECT: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
APN: 049-350-21-100
ADDRESS: 1886 Broadway, Placerville, CA
SELLER: Aureliano and Lorena Ceja

CITY OF PLACERVILLE CITY CLERK
3101 CENTER STREET
PLACERVILLE, CA 95667

This Agreement is made between the CITY OF PLACERVILLE, a municipal corporation in the State of California, its assigns or agents, hereinafter collectively referred to as "CITY", and **Aureliano Ceja and Lorena Ceja, husband and wife**, hereinafter referred to as "SELLER".

The property subject to this agreement is described in the attached deed for a *Temporary Construction Easement* over a portion of Assessor's Parcel Number 049-350-21-100 with the legal description and exhibit plat map. Which deed is attached as Exhibit "A".

In consideration of which, and the other considerations hereinafter set forth, it is mutually agreed as follows:

1. (A) The parties have herein set forth the whole of their agreement. The performance of this agreement constitutes the entire consideration for said document and shall relieve the CITY of all further obligation or claims on this account, or on account of the location, grade or construction of the proposed public improvement

2. THE CITY SHALL:

   (A) Purchase the property for the sum of One Thousand Dollars ($1,000.00) ("PURCHASE PRICE"), which the parties agree includes compensation for any and all improvements located within the property and any severance damages, loss of goodwill damages, relocation assistance payments, costs, or attorney fees, except as provided herein.

   (B) Accept delivery of property or interest conveyed by above document and record same when title can be vested in the CITY free and clear of all liens, encumbrances, assessments, easements and leases (recorded and/or unrecorded), and taxes, except:

      i. Taxes for the tax year in which this escrow closes shall be cleared and paid in the manner required by Section 5086 of the Revenue and Taxation Code, if unpaid at the close of escrow.

      ii. Covenants, conditions, restrictions and reservations of record, or contained in the above- referenced document.

      iii. Easements or rights of way over said land for public or quasi-public utility or public street purposes, if any.

   (C) Pay all escrow and recording fees incurred in this transaction and, if title insurance is desired by the CITY, the premium charged therefor. This transaction will be handled through Fidelity National Title Company.

3. HAZARDOUS WASTE:

   The acquisition price of the property being acquired in this transaction reflects the fair market value of the property without the presence of contamination. If the property being acquired is found to be contaminated by the presence of hazardous waste, which required

mitigation under Federal or State law, the CITY may elect to recover its cleanup costs from those who caused or contributed to the contamination.

The SELLER hereby represents and warrants that during the period of SELLER's ownership of the property, there have been no disposals, releases or threatened releases of hazardous substances or hazardous wastes on, from, or under the property. SELLER further represents and warrants that SELLER has no knowledge of any disposal, release, or threatened release of hazardous substances or hazardous wastes on, from, or under the property, which may have occurred prior to SELLER taking title to the property.

4. TEMPORARY CONSTRUCTION EASEMENT:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this Agreement, the right of possession and use of the Easement Area by the CITY, including the right to remove and dispose of improvements, shall commence on 3|12|2019 or the close of escrow controlling this transaction, whichever occurs first, and the amount shown in Section 2 herein includes, but is not limited to, full payment for such possession and use, including damages, if any, from said date. Temporary Construction Easement will expire on 9|12|2020. Upon the CITY's recordation of a Notice of Completion for the Project with the El Dorado County Recorder's Office, the Temporary Construction Easement granted herein shall be automatically surrendered by CITY, and CITY's interests thereto shall be automatically reverted to SELLER as if quitclaimed by CITY, and shall no longer represent any title interest of or to SELLER's Property. Nevertheless, if requested by SELLER following such termination, CITY will execute a quitclaim deed confirming such termination.

5. TEMPORARY CONSTRUCTION EASEMENT TERM:

The Temporary Construction Easement shall remain in effect for an 18-month period, or until a Notice of Completion of the Project has been filed by the CITY, whichever occurs first, and shall expire no later than 9|12|2020

6. OPTION TO EXTEND TEMPORARY CONSTRUCTION EASEMENT:

SELLER agrees that upon the expiration of the Temporary Construction Easement, CITY has the option to extend the term of the Temporary Construction Easement on a month to month basis. The rate for the extended use of the TCE shall be $ 56 per month. It is further agreed and understood that CITY shall provide SELLER with the written notice of its intent to extend the term of the Temporary Construction Easement at least thirty (30) days prior to the expiration of the Temporary Construction Easement.

7. PERMISSION TO ENTER SUBJECT PROPERTY

Permission is hereby granted to CITY and its authorized agents to enter on SELLER's property, where necessary, for access to construct wall within CITY's right-of-way and to grade and conform slope located at the western end of the SELLER's property to the new road section and pedestrian improvements, on the south side of Broadway.

SELLER understands and agrees that after completion of the work said facilities will be considered as SELLER's sole property and SELLER will be responsible for its maintenance and repair.

8. INDEMNIFICATION:

CITY agrees to indemnify and hold harmless the SELLER from any liability arising out of CITY's operations under this agreement. CITY further agrees to assume responsibility for any damages proximately caused by reason of CITY's operation under this agreement and CITY will, at its option, either repair or pay for such damage.

9. DAMAGES:

An analysis was completed by a licensed appraiser for damages which may accrue to the SELLER's remaining property by reason of its severance from the property conveyed herein and the construction of the proposed project, including, but not limited to, any expense which may be entailed by the SELLER in restoring the utility of their remaining property. No payment of damages was the conclusion arrived upon by the appraiser.

10. DATE OF POSSESSION:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this contract, the right of possession and use of the subject property by the CITY, including the right to remove and dispose of improvements, shall commence on 3/12/2019 or at the close of the escrow controlling this transaction, whichever occurs first.

11. ESCROW:

The deed to be held pursuant to this agreement represents property acquisitions required for the CITY to construct the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)." Should the CITY cancel or terminate the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)" before close of escrow, the deed will be returned to SELLER and CITY respectively and this Agreement will be terminated.

12. TERMINATION:

The CITY reserves the right to terminate this Agreement at any time.

In Witness Whereof, the Parties have executed this agreement the day and year first above written.

SELLER
Aureliano Ceja and Lorena Ceja, husband and wife

Date: 11-28-18

By: Aureliano Ceja
Aureliano Ceja

Date: 11-28-18

By: Lorena Ceja
Lorena Ceja

CITY OF PLACERVILLE

Date: 3/12/2019

M. Cleve Morris, City Manager

No Obligations Other Than Those Set Forth Herein Will Be Recognized

Exhibit "A"
GRANT OF TEMPORARY CONSTRUCTION EASEMENT

NO FEE DOCUMENT
Government Code §6103 & §27383

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:

City Clerk
City of Placerville
3101 Center Street
Placerville, CA 95667

Project Name: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Address: 1886 Broadway, Placerville, CA
APN: 049-350-021

GRANT OF TEMPORARY CONSTRUCTION EASEMENT

FOR VALUABLE CONSIDERATION, receipt and sufficiency of which is hereby acknowledged, **AURELIANO CEJA AND LORENA CEJA, husband and wife** ("GRANTORS"), hereby grant to the **CITY OF PLACERVILLE, a municipal corporation in the State of California** ("GRANTEE"), a Temporary Construction Easement ("TCE") for the purposes of access and construction located in the City of Placerville, State of California, described as follows:

See Exhibit A, legal description, and Exhibit B, plat to accompany legal description, attached hereto and made a part hereof.

Executed this ___ day of _____, 20 __

GRANTEE's right to use this TCE shall commence upon its execution and shall remain in effect for an 18-month period, or until a Notice of Completion of the project known as the Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project) has been filed by the City of Placerville, whichever occurs first, and shall expire no later than _____, unless otherwise extended by GRANTEE.

It is understood that in the event the GRANTORS plan to sell, lease or rent the GRANTORS' property prior to the final expiration date of this TCE, the GRANTORS shall inform, in writing, any and all parties involved in the sale, lease, or rental of this TCE and associated construction projects.

GRANTORS: **AURELIANO CEJA AND LORENA CEJA, husband and wife**

BY:_____ BY:_____

PRINT NAME: Aureliano Ceja PRINT NAME: Lorena Ceja

TITLE: _____ TITLE: _____

Exhibit "A"
Legal Description

A.P.N. (2018)
049-350-21

Temporary Construction Easement

All that portion of the parcel of land described in the Grant Deed recorded as Document No. 2006-53693, in the Office of the El Dorado County, described as follows:

BEGINNING at a point on the west line of said Grant Deed, said point also being on south line of the parcel of land described in the Grant Deed to the State of California, recorded as Book 584, Page 198, Official Records of said County;

thence, along said south line the following two (2) courses:

1. N 77°43'24" E, 64.82 feet
2. N 68°46'22" E, 74.01 feet to the west line of the parcel described in the Grant Deed recorded as Document No. 2012-50115, official records of said County

thence, along said west line, S 20°54'58" E, 13.10 feet;

thence, leaving said line, S 75°10'59" W, 127.38 feet; thence S 69°41'51" W, 10.99 feet to said west line the Grant Deed recorded as Document No. 2006-53693;

thence, along said line, N 23°50'36" W, 8.80 feet to the POINT OF BEGINNING.

Containing an area of 1,066 square feet, more or less.

The bearings and distances used in the above description are based on the California Coordinate System of 1983, Zone 2. Distances are U.S. Survey Foot grid distances. Multiply distances by 1.00014365 to obtain ground level distances.

This real property description has been prepared by me in conformance with the Professional Land Surveyors Act on October 2, 2018.

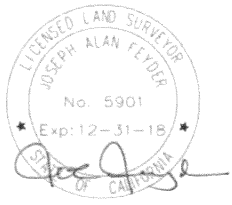
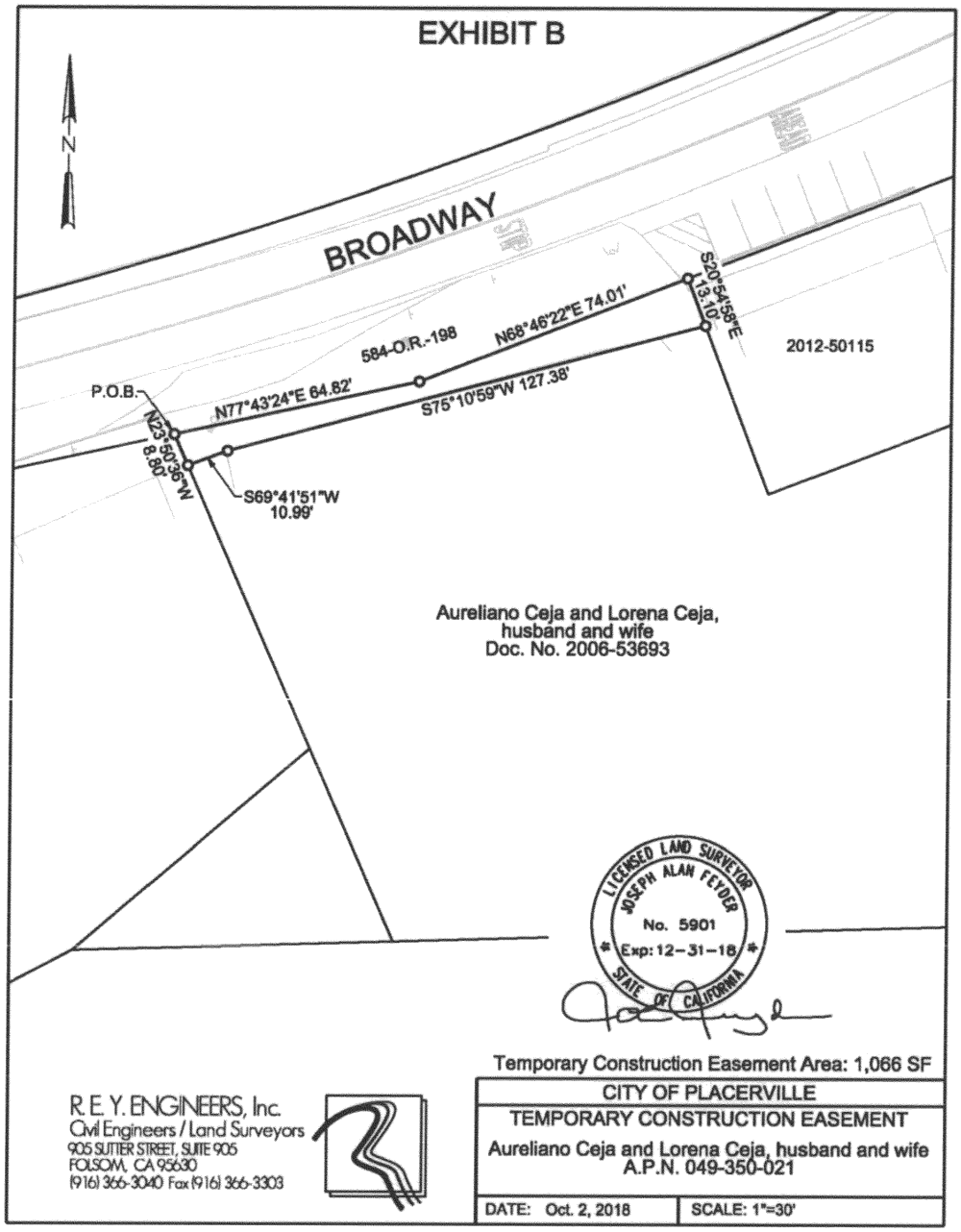


Exhibit "A"
Page 3 of 3



City of Placerville

PURCHASE AND SALE AGREEMENT

PROJECT: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
APN: 004-201-022-100, 004-201-14-100
ADDRESS: 1426 / 1486 Broadway, Placerville, CA
SELLER: Kapre Properties Inc.

CITY OF PLACERVILLE CITY CLERK
3101 CENTER STREET
PLACERVILLE, CA 95667

This Agreement is made between the CITY OF PLACERVILLE, a municipal corporation in the State of California, its assigns or agents, hereinafter collectively referred to as "CITY", and KAPRE PROPERTIES, Inc., a California Corporation, hereinafter referred to as "SELLER".

The property subject to this agreement is described in the attached deed for *Partial Fee Acquisition* over a portion of Assessor's Parcel Numbers 004-201-022-100 and 004-201-14-100 together with legal description and exhibit plat map. Which deed is attached as Exhibit "A".

In consideration of which, and the other considerations hereinafter set forth, it is mutually agreed as follows:

1. (A) The parties have herein set forth the whole of their agreement. The performance of this agreement constitutes the entire consideration for said document and shall relieve the CITY of all further obligation or claims on this account, or on account of the location, grade or construction of the proposed public improvement

2. THE CITY SHALL:

   (A) Purchase the property for the sum of Seventeen Thousand Seven Hundred Ninety Three Dollars ($17,793.00) ("PURCHASE PRICE"), which the parties agree includes compensation for any and all improvements located within the property and any severance damages, loss of goodwill damages, relocation assistance payments, costs, or attorney fees, except as provided herein.

   (B) Accept delivery of property or interest conveyed by above document and record same when title can be vested in the CITY free and clear of all liens, encumbrances, assessments, easements and leases (recorded and/or unrecorded), and taxes, except:

      i. Taxes for the tax year in which this escrow closes shall be cleared and paid in the manner required by Section 5086 of the Revenue and Taxation Code, if unpaid at the close of escrow.

      ii. Covenants, conditions, restrictions and reservations of record, or contained in the above- referenced document.

      iii. Easements or rights of way over said land for public or quasi-public utility or public street purposes, if any.

   (C) Pay all escrow and recording fees incurred in this transaction and, if title insurance is desired by the CITY, the premium charged therefor. This transaction will be handled through Fidelity National Title Company.

3. HAZARDOUS WASTE:

The acquisition price of the property being acquired in this transaction reflects the fair market value of the property without the presence of contamination. If the property being acquired is found to be contaminated by the presence of hazardous waste, which required mitigation under Federal or State law, the CITY may elect to recover its cleanup costs from those who caused or contributed to the contamination.

The SELLER hereby represents and warrants that during the period of SELLER's ownership of the property, there have been no disposals, releases or threatened releases of hazardous substances or hazardous wastes on, from, or under the property. SELLER further represents and warrants that SELLER has no knowledge of any disposal, release, or threatened release of hazardous substances or hazardous wastes on, from, or under the property, which may have occurred prior to SELLER taking title to the property.

4. PERMISSION TO ENTER SUBJECT PROPERTY

Permission is hereby granted to CITY and its authorized agents to enter on SELLER's property, where necessary, to grade and conform driveways located along the eastern and western ends of SELLER's property, to the new road section along the south side of Broadway.

SELLER understands and agrees that after completion of the work said facilities will be considered as SELLER's sole property and SELLER will be responsible for its maintenance and repair.

5. INDEMNIFICATION:

CITY agrees to indemnify and hold harmless the SELLER from any liability arising out of CITY's operations under this agreement. CITY further agrees to assume responsibility for any damages proximately caused by reason of CITY's operation under this agreement and CITY will, at its option, either repair or pay for such damage.

6. DAMAGES:

An analysis was completed by a licensed appraiser for damages which may accrue to the SELLER's remaining property by reason of its severance from the property conveyed herein and the construction of the proposed project, including, but not limited to, any expense which may be entailed by the SELLER in restoring the utility of their remaining property. No payment of damages was the conclusion arrived upon by the appraiser.

7. DATE OF POSSESSION:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this contract, the right of possession and use of the subject property by the CITY, including the right to remove and dispose of improvements, shall commence on 3/12/2019 or at the close of the escrow controlling this transaction, whichever occurs first.

8. ESCROW:

The deed to be held pursuant to this agreement represents property acquisitions required for the CITY to construct the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)." Should the CITY cancel or terminate the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)" before close of escrow, the deed will be returned to SELLER and CITY respectively and this Agreement will be terminated.

9. TERMINATION:

The CITY reserves the right to terminate this Agreement at any time.

10. SPECIAL PROVISIONS:

The Special Provisions attached hereto as Exhibit "B" are hereby incorporated, and made a part of this Agreement by this reference. In the event of any conflict or inconsistency between the Agreement and the Special Provisions, the terms of the Special Provisions shall prevail.

In Witness Whereof, the Parties have executed this agreement the day and year first above written.

SELLER
Kapre Properties Inc., a California Corporation

Date: 1/29/2019

By: _____
Shashank Kapre, President

Date: 1/29/2019

By: Sheila Kapre

Name: SHEELA KAPRE

Title: VICE PRESIDENT

CITY OF PLACERVILLE

Date: 3/12/19

_____
M. Cleve Morris, City Manager

No Obligations Other Than Those Set Forth Herein Will Be Recognized

Exhibit "A"
Partial Fee Acquisition

No Fee Document – Per Government Code §6103 & §27383
No Documentary Transfer Tax – Per R&T Code §11922

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:

City Clerk
City of Placerville
3101 Center Street
Placerville, CA 95667

Project Name: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection)
Address: 1426 / 1486 Broadway, Placerville, CA
APNs: 004-201-022-100, 004-201-14-100
Escrow Number: 01002345-010-PA-CDT

The Above Space For Recorder's Use Only

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **KAPRE PROPERTIES, INC., a California Corporation ("GRANTOR")**, hereby grants to the **CITY OF PLACERVILLE, a municipal corporation in the State of California ("GRANTEE")**, all that real property situated in the City of Placerville, County of El Dorado, State of California, described in Exhibit "A" and depicted in Exhibit "B", attached hereto and made a part hereof.

Dated this _____ day of _____, 20___.

GRANTOR: **KAPRE PROPERTIES, INC., a California Corporation**

BY:_____ BY:_____

PRINT NAME: Shashank Kapre_____ PRINT NAME:_____

TITLE: President_____ TITLE: _____

A.P.N. (2018)
004-201-14 & 22

Right of Way

All those portions of Lot 1, Block 1 of the City of Placerville, as the same are marked, designated and numbered on the Official Map and in the field notes of the Official Survey of said City of Placerville, on file and of record in the Office of the County Recorder of said County of El Dorado, State of California, described as follows:

Right of Way Parcel 1:

Commencing at the northwesterly corner of PARCEL NO. 2, as described in the Grant Deed recorded as Document No. 1998-57738, in the office of said Recorder, said corner being on the southerly line of Broadway;

thence, along said southerly line the following two courses, N 57°26'56" E, 275.10 feet; N 62°19'46" E, 100.49 feet to the POINT OF BEGINNING;

thence, continuing along said southerly line, N 62°19'46" E, 93.98 feet;

thence, leaving said line, S 58°46'27" W, 6.49 feet; thence S 58°54'45" W, 25.44 feet;

thence S 61°52'25" W, 24.97 feet; thence S 65°24'56" W, 25.24 feet;

thence S 65°58'10" W, 11.95 feet to the POINT OF BEGINNING.

Containing an area of 122 square feet, more or less.

Right of Way Parcel 2:

BEGINNING at a point on the northerly line of said PARCEL NO. 2, said point also being on the southerly line of Broadway, said point being the southerly terminus of the course described as, *"S 25°10'00" E, 4.02 feet"*, in said Grant Deed;

thence, northerly and southwesterly along said line the following two (2) courses:

1. N 26°01'31" W, 4.02 feet
2. S 44°37'01" W, 36.55 feet

thence, leaving said line, N 50°45'44" E, 35.42 feet to the POINT OF BEGINNING.

Containing an area of 69 square feet, more or less.

Right of Way Parcel 3:

Commencing at a point on the northerly line of said PARCEL NO. 2, said point also being on the southerly line of Broadway, said point being the southerly terminus of the course described as, *"S 25°10'00" E, 4.02 feet"*, in said Grant Deed;

thence, along said line, N 50°19'21" E, 153.87 feet to the POINT OF BEGINNING;

thence, continuing along said line, the following four (4) courses:

1. N 50°19'21" E, 48.99 feet
2. N 71°34'20" E, 72.06 feet
3. N 84°44'19" E, 171.52 feet
4. S 89°47'41" E, 6.11 feet to the northeast corner of said PARCEL NO. 2

thence, along the easterly line of the PARCEL, S 15°59'59" W, 10.53 feet;

thence , leaving said line, along a curve to the left, having a radius of 468.00 feet, a central angle of 14°09'00", and an arc distance of 115.58 feet;
said curve being subtended by a chord of S 88°42'54" W, a distance of 115.29 feet;

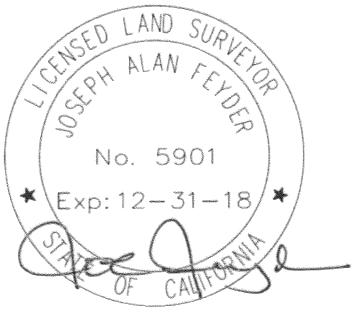
thence S 81°38'24" W, 15.93 feet;

thence along a curve to the left, having a radius of 388.00 feet, a central angle of 23°36'55", and an arc distance of 159.92 feet;
said curve being subtended by a chord of S 69°49'57" W, a distance of 158.79 feet to the POINT OF BEGINNING.

Containing an area of 1,490 square feet, more or less.

The bearings and distances used in the above description are based on the California Coordinate System of 1983, Zone 2. Distances are U.S. Survey Foot grid distances. Multiply distances by 1.00014365 to obtain ground level distances.

This real property description has been prepared by me in conformance with the Professional Land Surveyors Act on October 2, 2018.



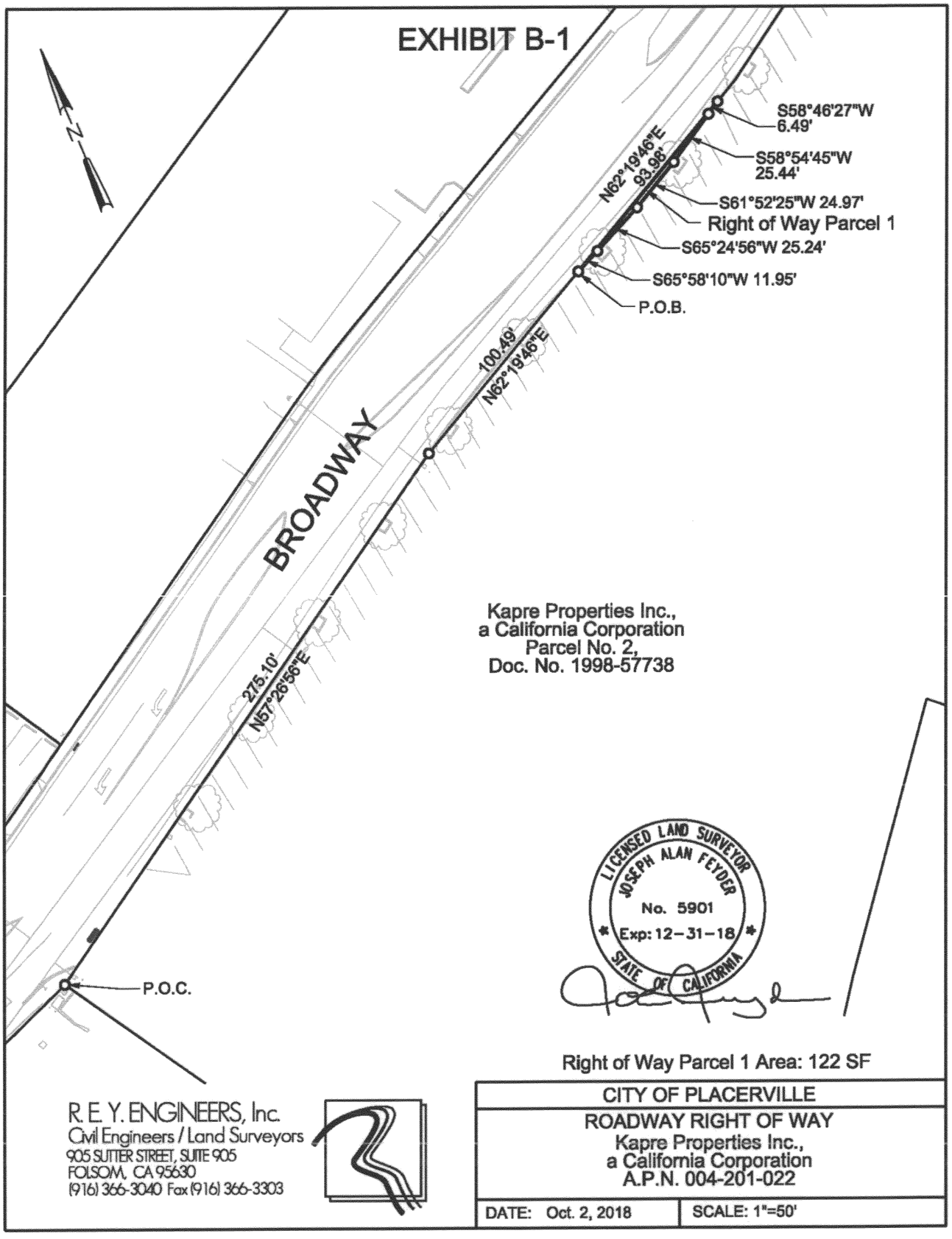
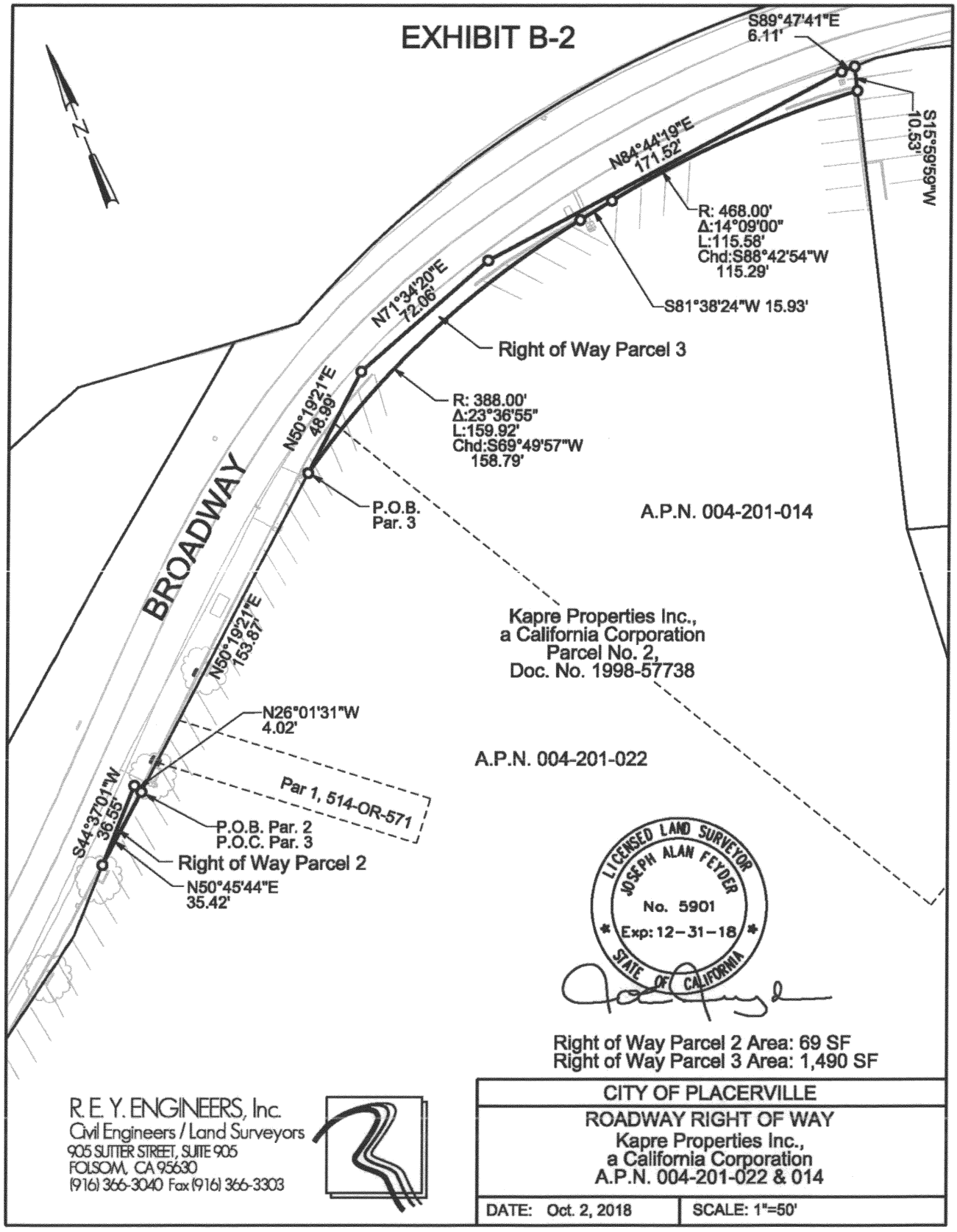


EXHIBIT B-1
N
S58°46'27"W
6.49'
S58°54'45"W
25.44'
S61°52'25"W 24.97'
Right of Way Parcel 1
S65°24'56"W 25.24'
S65°58'10"W 11.95'
P.O.B.
N62°19'46"E
93.98'
100.49'
N62°19'46"E
BROADWAY
275.10'
N57°26'56"E
P.O.C.
Kapre Properties Inc.,
a California Corporation
Parcel No. 2,
Doc. No. 1998-57738
LICENSED LAND SURVEYOR
JOSEPH ALAN FEYDER
No. 5901
Exp: 12-31-18
STATE OF CALIFORNIA
Right of Way Parcel 1 Area: 122 SF
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors
905 SUTTER STREET, SUITE 905
FOLSOM, CA 95630
(916) 366-3040 Fax (916) 366-3303
CITY OF PLACERVILLE
ROADWAY RIGHT OF WAY
Kapre Properties Inc.,
a California Corporation
A.P.N. 004-201-022
DATE: Oct. 2, 2018
SCALE: 1"=50'



R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors
905 SUTTER STREET, SUITE 905
FOLSOM, CA 95630
(916) 366-3040 Fax (916) 366-3303

CITY OF PLACERVILLE	
ROADWAY RIGHT OF WAY Kapre Properties Inc., a California Corporation A.P.N. 004-201-022 & 014	
DATE: Oct. 2, 2018	SCALE: 1"=50'

Exhibit "B"
Special Provisions

SELLER Construction Work

It is mutually agreed and understood the PURCHASE PRICE recited in Section 2(A) of this Agreement includes $5,000.00 in compensation to SELLER for relocation of parking stalls. Any construction work including grading, paving, and striping of the new parking stalls and restriping of existing parking stalls shall be the responsibility of the SELLER.

City of Placerville
PURCHASE AND SALE AGREEMENT

PROJECT: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
APN: 049-350-30-100
ADDRESS: 1864 Broadway, Placerville, CA
SELLER: Northern California Conference of Seventh Day Adventists

CITY OF PLACERVILLE CITY CLERK
3101 CENTER STREET
PLACERVILLE, CA 95667

This Agreement is made between the CITY OF PLACERVILLE, a municipal corporation in the State of California, its assigns or agents, hereinafter collectively referred to as "CITY", and NORTHERN CALIFORNIA CONFERENCE OF SEVENTH DAY ADVENTISTS, hereinafter referred to as "SELLER".

The property subject to this agreement is described in the attached deed for a *Temporary Construction Easement* over a portion of Assessor's Parcel Number 049-350-30-100 with the legal description and exhibit plat map. Which deed is attached as Exhibit "A".

In consideration of which, and the other considerations hereinafter set forth, it is mutually agreed as follows:

1. (A) The parties have herein set forth the whole of their agreement. The performance of this agreement constitutes the entire consideration for said document and shall relieve the CITY of all further obligation or claims on this account, or on account of the location, grade or construction of the proposed public improvement

2. THE CITY SHALL:

   (A) Purchase the property for the sum of Five Hundred Dollars ($500.00) ("PURCHASE PRICE"), which the parties agree includes compensation for any and all improvements located within the property and any severance damages, loss of goodwill damages, relocation assistance payments, costs, or attorney fees, except as provided herein.

   (B) Accept delivery of property or interest conveyed by above document and record same when title can be vested in the CITY free and clear of all liens, encumbrances, assessments, easements and leases (recorded and/or unrecorded), and taxes, except:

      i. Taxes for the tax year in which this escrow closes shall be cleared and paid in the manner required by Section 5086 of the Revenue and Taxation Code, if unpaid at the close of escrow.

      ii. Covenants, conditions, restrictions and reservations of record, or contained in the above- referenced document.

      iii. Easements or rights of way over said land for public or quasi-public utility or public street purposes, if any.

   (C) Pay all escrow and recording fees incurred in this transaction and, if title insurance is desired by the CITY, the premium charged therefor. This transaction will be handled through Fidelity National Title Company.

3. HAZARDOUS WASTE:

   The acquisition price of the property being acquired in this transaction reflects the fair market value of the property without the presence of contamination. If the property being

acquired is found to be contaminated by the presence of hazardous waste, which required mitigation under Federal or State law, the CITY may elect to recover its cleanup costs from those who caused or contributed to the contamination.

The SELLER hereby represents and warrants that during the period of SELLER's ownership of the property, there have been no disposals, releases or threatened releases of hazardous substances or hazardous wastes on, from, or under the property. SELLER further represents and warrants that SELLER has no knowledge of any disposal, release, or threatened release of hazardous substances or hazardous wastes on, from, or under the property, which may have occurred prior to SELLER taking title to the property.

4. TEMPORARY CONSTRUCTION EASEMENT:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this Agreement, the right of possession and use of the Easement Area by the CITY, including the right to remove and dispose of improvements, shall commence on 3/12/2019 or the close of escrow controlling this transaction, whichever occurs first, and the amount shown in Section 2 herein includes, but is not limited to, full payment for such possession and use, including damages, if any, from said date. Temporary Construction Easement will expire on 9/12/2020. Upon the CITY's recordation of a Notice of Completion for the Project with the El Dorado County Recorder's Office, the Temporary Construction Easement granted herein shall be automatically surrendered by CITY, and CITY's interests thereto shall be automatically reverted to SELLER as if quitclaimed by CITY, and shall no longer represent any title interest of or to SELLER's Property. Nevertheless, if requested by SELLER following such termination, CITY will execute a quitclaim deed confirming such termination.

5. TEMPORARY CONSTRUCTION EASEMENT TERM:

The Temporary Construction Easement shall remain in effect for an 18-month period, or until a Notice of Completion of the Project has been filed by the CITY, whichever occurs first, and shall expire no later than 9/12/2020.

6. OPTION TO EXTEND TEMPORARY CONSTRUCTION EASEMENT:

SELLER agrees that upon the expiration of the Temporary Construction Easement, CITY has the option to extend the term of the Temporary Construction Easement on a month to month basis. The rate for the extended use of the TCE shall be $28 per month. It is further agreed and understood that CITY shall provide SELLER with the written notice of its intent to extend the term of the Temporary Construction Easement at least thirty (30) days prior to the expiration of the Temporary Construction Easement.

7. PERMISSION TO ENTER SUBJECT PROPERTY

Permission is hereby granted to CITY and its authorized agents to enter on SELLER's property, where necessary, for access to grade and conform driveway and slope to the new road section and pedestrian improvements on the south side of Broadway.

SELLER understands and agrees that after completion of the work said facilities will be considered as SELLER's sole property and SELLER will be responsible for its maintenance and repair.

8. INDEMNIFICATION:

CITY agrees to indemnify and hold harmless the SELLER from any liability arising out of CITY's operations under this agreement. CITY further agrees to assume responsibility for any damages proximately caused by reason of CITY's operation under this agreement and CITY will, at its option, either repair or pay for such damage.

9. DAMAGES:

An analysis was completed by a licensed appraiser for damages which may accrue to the SELLER's remaining property by reason of its severance from the property conveyed herein and the construction of the proposed project, including, but not limited to, any expense which may be entailed by the SELLER in restoring the utility of their remaining property. No payment of damages was the conclusion arrived upon by the appraiser.

10. DATE OF POSSESSION:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this contract, the right of possession and use of the subject property by the CITY, including the right to remove and dispose of improvements, shall commence on 3/12/2019 or at the close of the escrow controlling this transaction, whichever occurs first.

11. ESCROW:

The deed to be held pursuant to this agreement represents property acquisitions required for the CITY to construct the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)." Should the CITY cancel or terminate the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)" before close of escrow, the deed will be returned to SELLER and CITY respectively and this Agreement will be terminated.

12. TERMINATION:

The CITY reserves the right to terminate this Agreement at any time.

In Witness Whereof, the Parties have executed this agreement the day and year first above written.

SELLER
Northern California Conference of Seventh Day Adventists

Date: 2-21-19

By: Richard Magnuson Jr.

Title: Director, Property Management

Date: 2-26-19

By:

Title: ~~CFO~~ Associate TREASURER

CITY OF PLACERVILLE

Date: 3/12/19

By: M. Cleve Morris
M. Cleve Morris, City Manager

No Obligations Other Than Those Set Forth Herein Will Be Recognized

Exhibit "A"
Temporary Construction Easement

NO FEE DOCUMENT
Government Code §6103 & §27383

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:

City Clerk
City of Placerville
3101 Center Street
Placerville, CA 95667

Project Name: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Address: 1864 Broadway, Placerville, CA
APN: 049-350-030-100

GRANT OF TEMPORARY CONSTRUCTION EASEMENT

FOR VALUABLE CONSIDERATION, receipt and sufficiency of which is hereby acknowledged, **NORTHERN CALIFORNIA CONFERENCE OF SEVENTH DAY ADVENTISTS** ("GRANTOR"), hereby grants to the **CITY OF PLACERVILLE, a municipal corporation in the State of California** ("GRANTEE"), a Temporary Construction Easement ("TCE") for the purposes of access and construction located in the City of Placerville, State of California, described as follows:

See Exhibit A, legal description, and Exhibit B, plat to accompany legal description, attached hereto and made a part hereof.

Executed this ___ day of _____, 20 __

GRANTEE's right to use this TCE shall commence upon its execution and shall remain in effect for an 18-month period, or until a Notice of Completion of the project known as the Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project) has been filed by the City of Placerville, whichever occurs first, and shall expire no later than _____, unless otherwise extended by GRANTEE.

It is understood that in the event the GRANTOR plans to sell, lease or rent the GRANTOR's property prior to the final expiration date of this TCE, the GRANTOR shall inform, in writing, any and all parties involved in the sale, lease, or rental of this TCE and associated construction projects.

GRANTOR: **NORTHERN CALIFORNIA CONFERENCE OF SEVENTH DAY ADVENTISTS**

BY:_____ BY:_____

PRINT NAME:_____ PRINT NAME:_____

TITLE: _____ TITLE: _____

Exhibit "A"
Page 2 of 3

A.P.N. (2018)
049-350-30

Temporary Construction Easement

All that portion of Parcel 2, as said parcel is shown on that certain Parcel Map filed in the Office of the El Dorado County Recorder on October 6, 2005 in Book 49 of Parcel Maps, Page 26, described as follows:

BEGINNING at the northeast corner of said Parcel;

thence, along the east line of said Parcel, S 17°11'33" E, 3.40 feet;

thence, leaving said line, S 75°54'57" W, 42.83 feet;

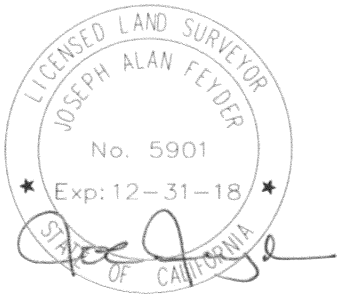
thence N 15°00'08" W, 3.10 feet to the north line of said Parcel;

thence along said line, along a curve to the left, having a radius of 1540.00 feet, a central angle of 1°35'19", and an arc distance of 42.70 feet;
said curve being subtended by a chord of N 75°31'02" E, a distance of 42.70 feet to the POINT OF BEGINNING.

Containing an area of 135 square feet, more or less.

The bearings used in the above description are based on the California Coordinate System of 1983, Zone 2.

This real property description has been prepared by me in conformance with the Professional Land Surveyors Act on October 2, 2018.



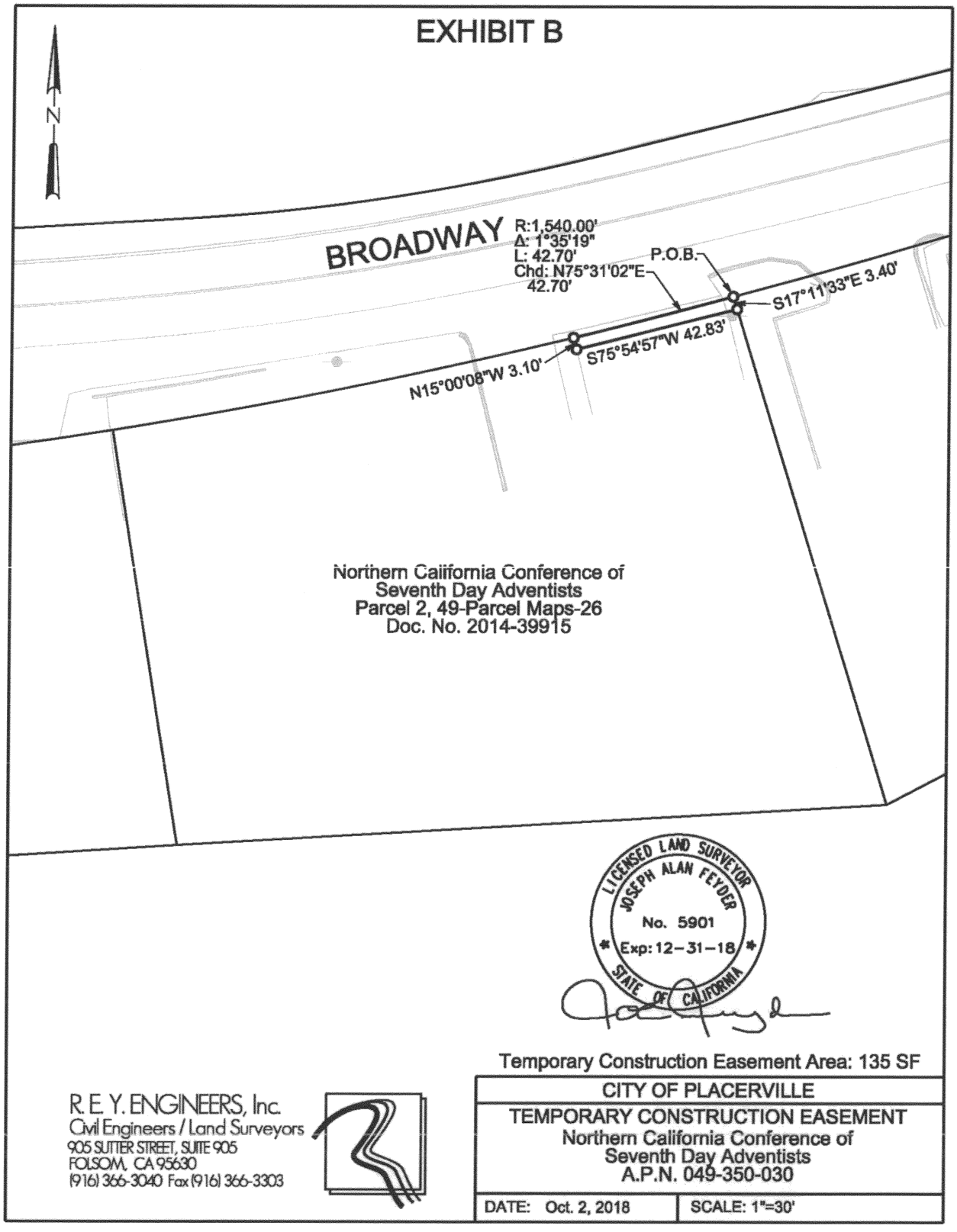


EXHIBIT B
N
BROADWAY
R:1,540.00'
Δ: 1°35'19"
L: 42.70'
Chd: N75°31'02"E
42.70'
P.O.B.
S17°11'33"E 3.40'
S75°54'57"W 42.83'
N15°00'08"W 3.10'
Northern California Conference of
Seventh Day Adventists
Parcel 2, 49-Parcel Maps-26
Doc. No. 2014-39915
LICENSED LAND SURVEYOR
JOSEPH ALAN FEYDER
No. 5901
Exp: 12-31-18
STATE OF CALIFORNIA
Temporary Construction Easement Area: 135 SF
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors
905 SUTTER STREET, SUITE 905
FOLSOM, CA 95630
(916) 366-3040 Fax (916) 366-3303
CITY OF PLACERVILLE
TEMPORARY CONSTRUCTION EASEMENT
Northern California Conference of
Seventh Day Adventists
A.P.N. 049-350-030
DATE: Oct. 2, 2018
SCALE: 1"=30'

City of Placerville
PURCHASE AND SALE AGREEMENT

PROJECT: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
APN: 004-201-12-100
ADDRESS: 1500 Broadway, Placerville, CA
SELLERS: Vinod K. Patel and Kusumben Patel / Minesh B. Patel and Kavita K. Patel

CITY OF PLACERVILLE CITY CLERK
3101 CENTER STREET
PLACERVILLE, CA 95667

This Agreement is made between the CITY OF PLACERVILLE, a municipal corporation in the State of California, its assigns or agents, hereinafter collectively referred to as "CITY", and VINOD K. PATEL, KUSUMBEN PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest, and MINESH B. PATEL and KAVITA K. PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest, hereinafter referred to as "SELLERS".

The property subject to this agreement is described in the attached deed for *Partial Fee Acquisition* over a portion of Assessor's Parcel Number 004-201-12-100 together with legal description and exhibit plat map. Which deed is attached as Exhibit "A".

In consideration of which, and the other considerations hereinafter set forth, it is mutually agreed as follows:

1. (A) The parties have herein set forth the whole of their agreement. The performance of this agreement constitutes the entire consideration for said document and shall relieve the CITY of all further obligation or claims on this account, or on account of the location, grade or construction of the proposed public improvement

2. THE CITY SHALL:

   (A) Purchase the property for the sum of Thirteen Thousand Three Hundred Seventy Five Dollars ($13,375.00) ("PURCHASE PRICE"), which the parties agree includes compensation for any and all improvements located within the property and any severance damages, loss of goodwill damages, relocation assistance payments, costs, or attorney fees, except as provided herein.

   (B) Accept delivery of property or interest conveyed by above document and record same when title can be vested in the CITY free and clear of all liens, encumbrances, assessments, easements and leases (recorded and/or unrecorded), and taxes, except:

      i. Taxes for the tax year in which this escrow closes shall be cleared and paid in the manner required by Section 5086 of the Revenue and Taxation Code, if unpaid at the close of escrow.

      ii. Covenants, conditions, restrictions and reservations of record, or contained in the above- referenced document.

      iii. Easements or rights of way over said land for public or quasi-public utility or public street purposes, if any.

   (C) Pay all escrow and recording fees incurred in this transaction and, if title insurance is desired by the CITY, the premium charged therefor. This transaction will be handled through Fidelity National Title Company.

3. HAZARDOUS WASTE:

The acquisition price of the property being acquired in this transaction reflects the fair market value of the property without the presence of contamination. If the property being acquired is found to be contaminated by the presence of hazardous waste, which required mitigation under Federal or State law, the CITY may elect to recover its cleanup costs from those who caused or contributed to the contamination.

The SELLERS hereby represent and warrant that during the period of SELLERS' ownership of the property, there have been no disposals, releases or threatened releases of hazardous substances or hazardous wastes on, from, or under the property. SELLERS further represent and warrant that SELLERS have no knowledge of any disposal, release, or threatened release of hazardous substances or hazardous wastes on, from, or under the property, which may have occurred prior to SELLERS taking title to the property.

4. PERMISSION TO ENTER SUBJECT PROPERTY

Permission is hereby granted to CITY and its authorized agents to enter on SELLERS' property, where necessary, to grade and conform driveway of SELLERS' property, to the new road section along the south side of Broadway.

SELLERS understand and agree that after completion of the work said facilities will be considered as SELLERS' sole property and SELLERS will be responsible for its maintenance and repair.

5. INDEMNIFICATION:

CITY agrees to indemnify and hold harmless the SELLERS from any liability arising out of CITY's operations under this agreement. CITY further agrees to assume responsibility for any damages proximately caused by reason of CITY's operation under this agreement and CITY will, at its option, either repair or pay for such damage.

6. DAMAGES:

An analysis was completed by a licensed appraiser for damages which may accrue to the SELLERS' remaining property by reason of its severance from the property conveyed herein and the construction of the proposed project, including, but not limited to, any expense which may be entailed by the SELLERS in restoring the utility of their remaining property. No payment of damages was the conclusion arrived upon by the appraiser.

7. DATE OF POSSESSION:

It is agreed and confirmed by the parties hereto that notwithstanding other provisions in this contract, the right of possession and use of the subject property by the CITY, including the right to remove and dispose of improvements, shall commence on 3/12/2019 or at

the close of the escrow controlling this transaction, whichever occurs first.

8. ESCROW:

The deed to be held pursuant to this agreement represents property acquisitions required for the CITY to construct the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)." Should the CITY cancel or terminate the "Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)" before close of escrow, the deed will be returned to SELLERS and CITY respectively and this Agreement will be terminated.

9. TERMINATION:

The CITY reserves the right to terminate this Agreement at any time.

In Witness Whereof, the Parties have executed this agreement the day and year first above written.

SELLERS
VINOD K. PATEL, KUSUMBEN PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest, and MINESH B. PATEL and KAVITA K. PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest

Date: 12/19/2018

By: Patel
Vinod K. Patel

Date: 12/19/2018

By: Kpatel
Kusumben Patel

Date: 12/19/2018

By: MPatel
Minesh B. Patel

Date: 12/19/2018

By: MPatel
Kavita K. Patel

CITY OF PLACERVILLE

Date: 2/22/19

By: M. Cleve Morris
M. Cleve Morris, City Manager

No Obligations Other Than Those Set Forth Herein Will Be Recognized

Exhibit "A"
Partial Fee Acquisition

No Fee Document – Per Government Code §6103 & §27383
No Documentary Transfer Tax – Per R&T Code §11922

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:

City Clerk
City of Placerville
3101 Center Street
Placerville, CA 95667

Project Name: Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection)
Address: 1500 Broadway, Placerville, CA
APN: 004-201-12-100

The Above Space For Recorder's Use Only

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **VINOD K. PATEL, KUSUMBEN PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest, and MINESH B. PATEL and KAVITA K. PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest ("GRANTORS")**, hereby grants to the **CITY OF PLACERVILLE, a municipal corporation in the State of California ("GRANTEE")**, all that real property situated in the City of Placerville, County of El Dorado, State of California, described in Exhibit "A" and depicted in Exhibit "B", attached hereto and made a part hereof.

Dated this _____ day of _____, 20___.

GRANTORS: **VINOD K. PATEL, KUSUMBEN PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest, and MINESH B. PATEL and KAVITA K. PATEL, husband and wife, as Community Property with right of Survivorship as to a 50 % interest**

BY:_____ BY:_____

PRINT NAME: Vinod K. Patel PRINT NAME: Kusumben Patel

BY:_____ BY:_____

PRINT NAME: Minesh B. Patel PRINT NAME: Kavita K. Patel

A.P.N. (2018)
004-201-12

Right of Way:

All that portion of Lot 1, Block 1 of the City of Placerville, as the same are marked, designated and numbered on the Official Map and in the field notes of the Official Survey of said City of Placerville, on file and of record in the Office of the County Recorder of said County of El Dorado, State of California, more particularly described as follows:

BEGINNING at the northwesterly corner of the parcel of land described in the Grant Deed recorded as Document No. 2011-36695, in the office of said Recorder, said corner being on the southerly line of Broadway;

thence, along said line the following four (4) courses:

1. S 89°03'03" E, 9.95 feet
2. S 79°20'03" E, 15.80 feet
3. S 73°07'03" E, 15.50 feet
4. S 65°38'04" E, 47.83 feet

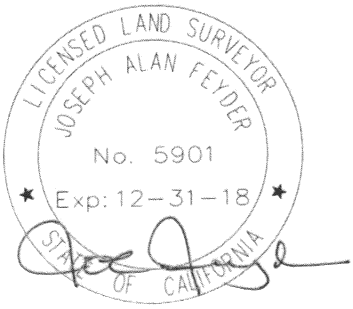
thence, leaving said line, along a curve to the left, having a radius of 468.00 feet, a central angle of 10°50'50", and an arc distance of 88.60 feet;
said curve being subtended by a chord of N 78°47'11" W, a distance of 88.47 feet to the west line of said Grand Deed;

thence, along said line, N 15°59'59" E, 10.53 feet to the POINT OF BEGINNING.

Containing an area of 620 square feet, more or less.

The bearings and distances used in the above description are based on the California Coordinate System of 1983, Zone 2. Distances are U.S. Survey Foot grid distances. Multiply distances by 1.00014365 to obtain ground level distances.

This real property description has been prepared by me in conformance with the Professional Land Surveyors Act on October 2, 2018.



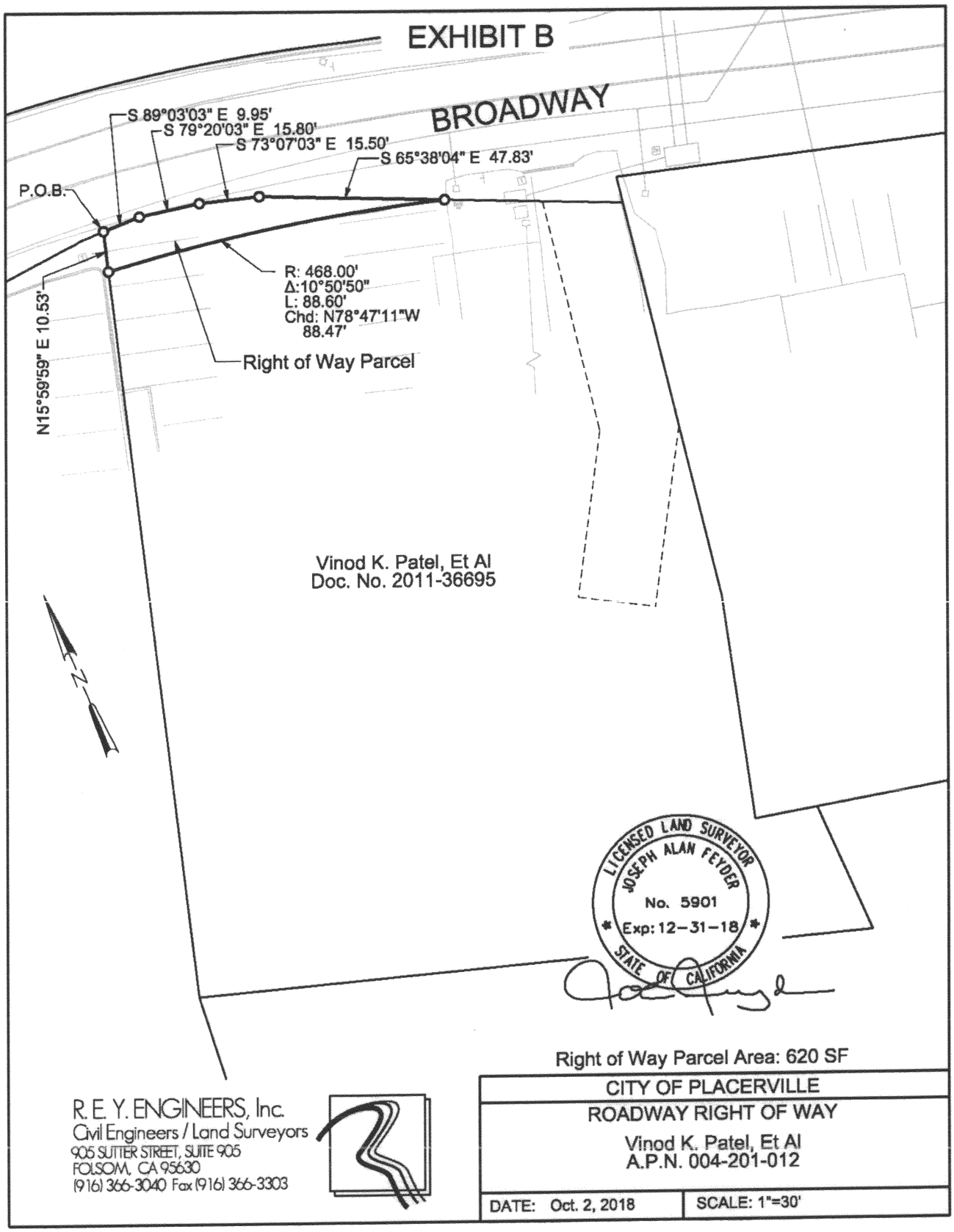


EXHIBIT B
BROADWAY
S 89°03'03" E 9.95'
S 79°20'03" E 15.80'
S 73°07'03" E 15.50'
S 65°38'04" E 47.83'
P.O.B.
N15°59'59" E 10.53'
R: 468.00'
Δ:10°50'50"
L: 88.60'
Chd: N78°47'11"W
88.47'
Right of Way Parcel
Vinod K. Patel, Et Al
Doc. No. 2011-36695
N
LICENSED LAND SURVEYOR
JOSEPH ALAN FEYDER
No. 5901
Exp: 12-31-18
STATE OF CALIFORNIA
Right of Way Parcel Area: 620 SF
R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors
905 SUTTER STREET, SUITE 905
FOLSOM, CA 95630
(916) 366-3040 Fax (916) 366-3303
CITY OF PLACERVILLE
ROADWAY RIGHT OF WAY
Vinod K. Patel, Et Al
A.P.N. 004-201-012
DATE: Oct. 2, 2018
SCALE: 1"=30'

IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	049-350-19-100
Property Address:	1868 Broadway, Placerville, CA 95667
Grantor:	Roman Catholic Bishop of Sacramento
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	February 1, 2019

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1868 Broadway, Placerville, CA**, also identified as El Dorado County **Assessor Parcel Number 049-350-19-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construct is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the accessed area, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or loss of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

_____ Please call each time *before* entering my property. My phone number is: _____

_____ You may enter my property as needed during the prescribed times of: _____

_____ There are specific conditions on my property that inhibit public access, which are described below:

1. _____
2. _____
3. _____

GRANTOR: ROMAN CATHOLIC BISHOP OF SACRAMENTO, a Corporation Sole

Date: 3-11-19

By: _____
Rev. Michael Vaughan, Vicar General

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 4/8/19

By: _____
M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

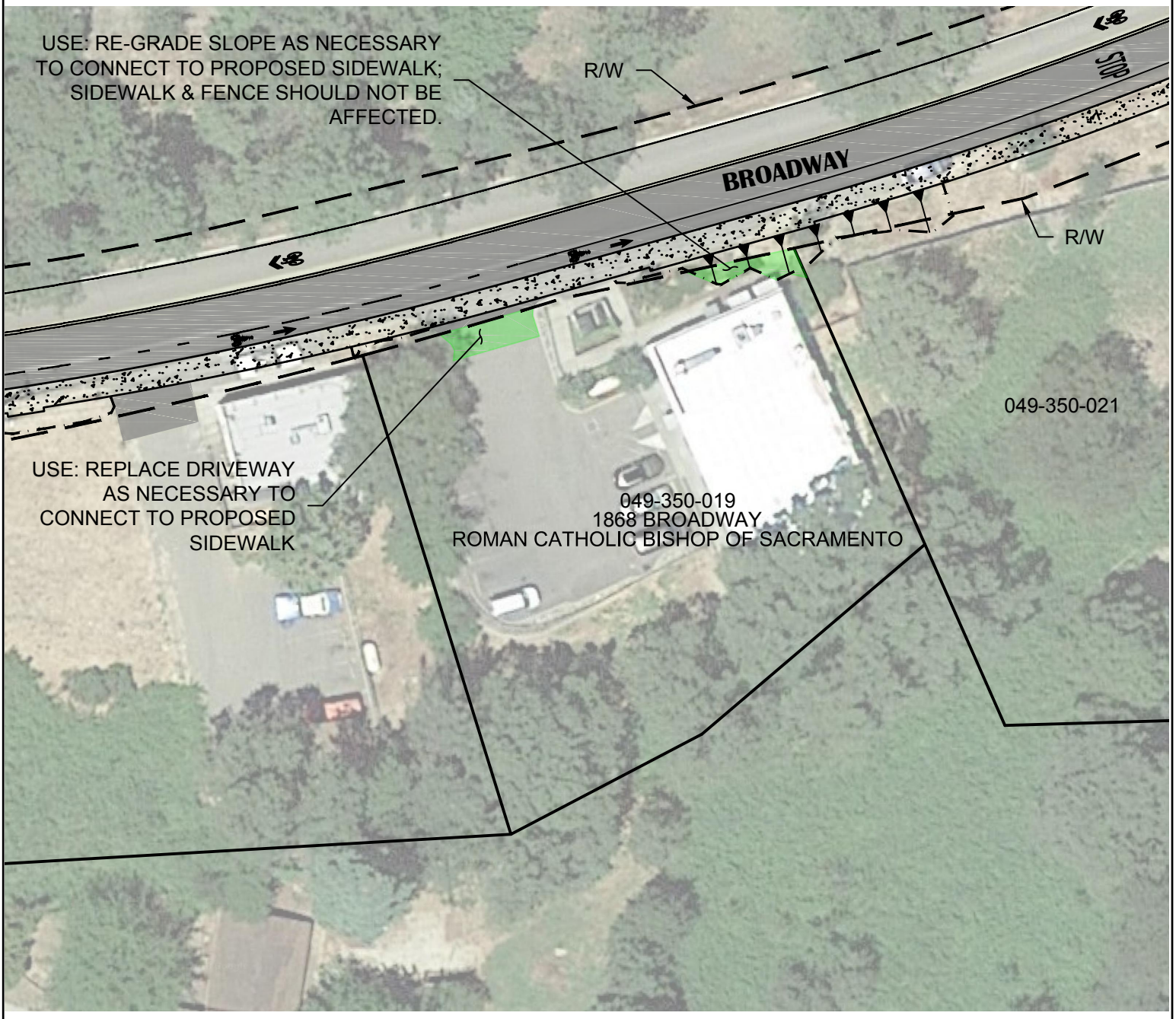
049-350-019

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 20' 40' 80'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREAS
- PROPOSED PAVEMENT AREA
- PROPOSED SLOPE
- PARCEL LINES
- PROPOSED CONCRETE CURB, GUTTER, AND SIDEWALK
- GRADING DAYLIGHT LINE

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	049-350-29-100
Property Address:	1850 Broadway, Placerville, CA 95667
Grantor:	Benjamin Rentfrow
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	February 1, 2019

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1850 Broadway, Placerville, CA**, also identified as El Dorado County **Assessor Parcel Number 049-350-29-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construct is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the Project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the Project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the accessed area, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

X Please call each time ***before*** entering my property. My phone number is: 916 813 0930

_____ You may enter my property as needed during the prescribed times of: _____

_____ There are specific conditions on my property that inhibit public access, which are described below:

1. _____
2. _____
3. _____

GRANTOR: BENJAMIN RENTFROW

Date: _____

By: _____

Name: Benjamin Rentfrow

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 4/8/19

By: _____

M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

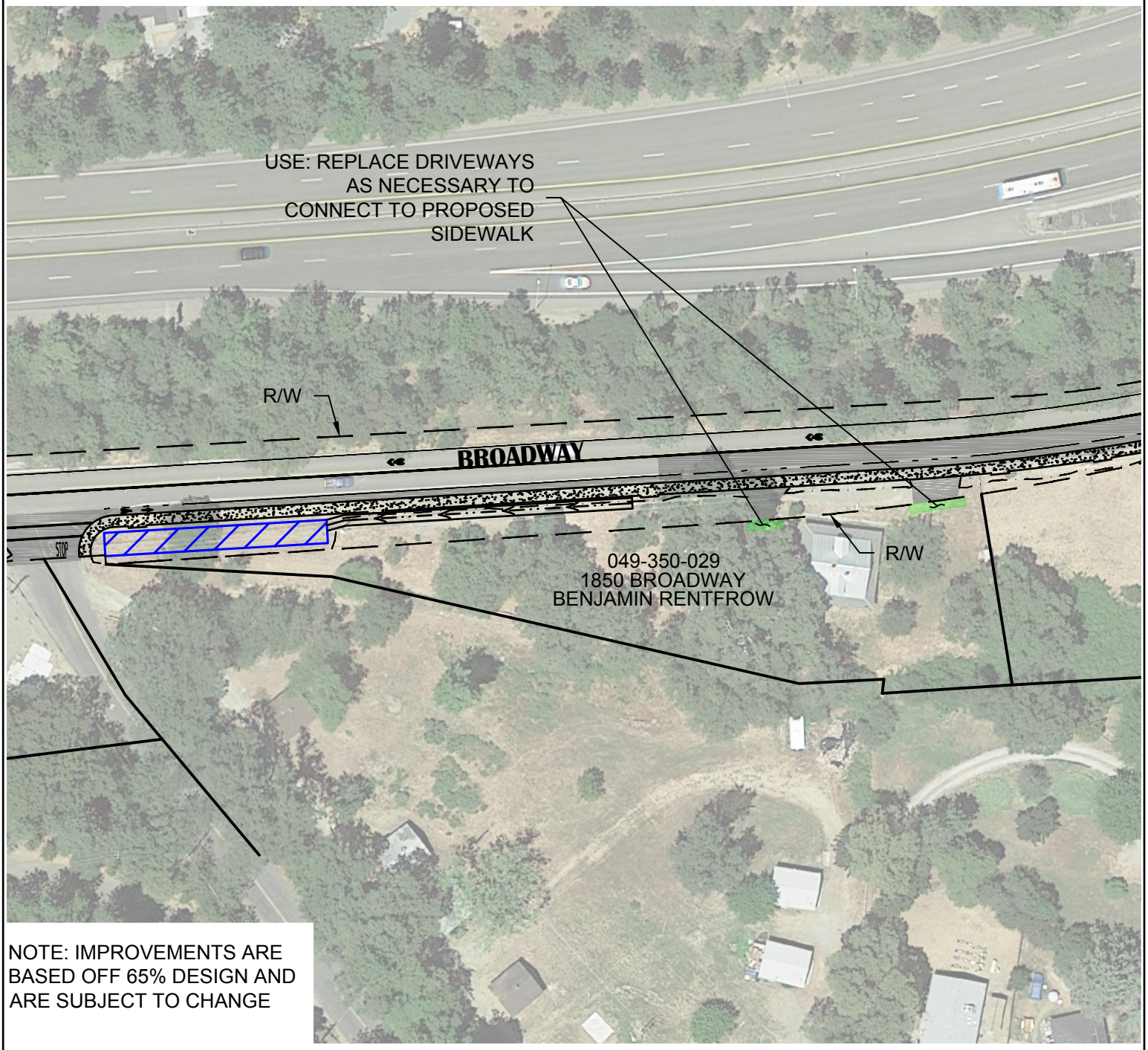
049-350-029

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 40' 80' 160'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREAS
- PROPOSED PAVEMENT AREA
- GRADING DAYLIGHT LINE
- PARCEL LINES
- PROPOSED CONCRETE CURB, GUTTER, AND SIDEWALK
- PROPOSED BIOSWALE

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	004-191-49-100
Property Address:	1400 Broadway, Placerville, CA 95667
Grantor:	Vonda Accettura, Trustee of the Joseph Accettura and Vonda Accettura 2005 Revocable Trust Revocable Trust
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	February 1, 2019

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1400 Broadway, Placerville, CA, also identified as El Dorado County Assessor Parcel Number 004-191-49-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construction is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the accessed area, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

_____ **Please call each time *before* entering my property. My phone number is:** _____

_____ **You may enter my property as needed during the prescribed times of:** _____

_____ **There are specific conditions on my property that inhibit public access, which are described below:**

1. _____
2. _____
3. _____

GRANTOR: VONDA ACCETTURA

Date: 3/20/19

By: _____

Name: Vonda Accettura

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 4/8/19

By: _____

M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

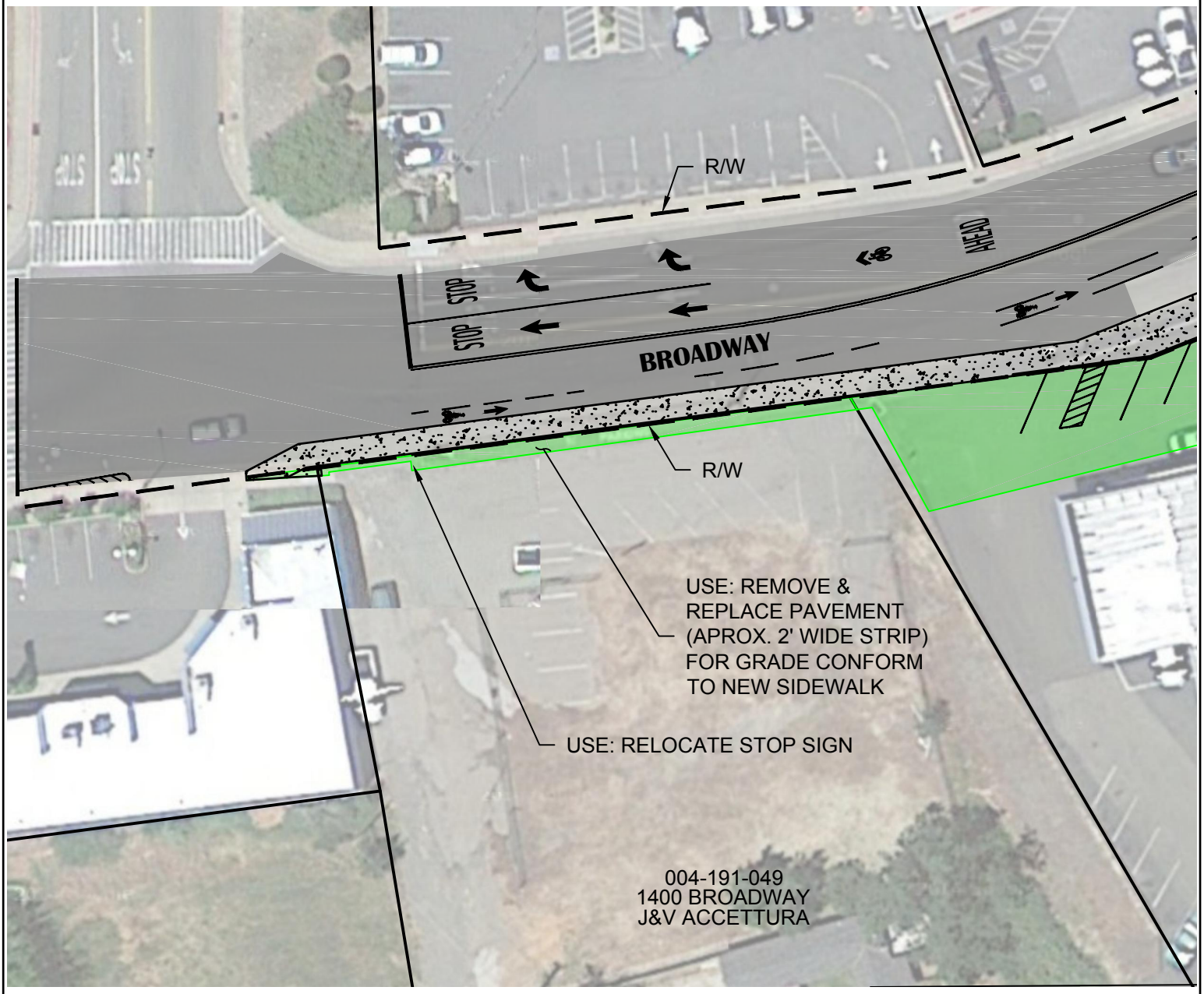
004-191-049

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 20' 40' 80'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREA
- PROPOSED PAVEMENT AREA
- PARCEL LINES
- PROPOSED CONCRETE CURB, GUTTER, & SIDEWALK

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	049-100-15-100
Property Address:	1600 Broadway, Placerville, CA 95667
Grantor:	Kuldip Singh
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	February 1, 2019

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1600 Broadway, Placerville, CA**, also identified as El Dorado County **Assessor Parcel Number 049-100-15-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construction is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the accessed area, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

✓ **Please call each time *before* entering my property. My phone number is: 916 847 8365**

_____ **You may enter my property as needed during the prescribed times of:** _____

_____ **There are specific conditions on my property that inhibit public access, which are described below:**

1. _____
2. _____
3. _____

GRANTOR: KULDIP SINGH

Date: 3/11/19

By: _____

Name: Kuldip Singh

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 4/8/19

By: _____
M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

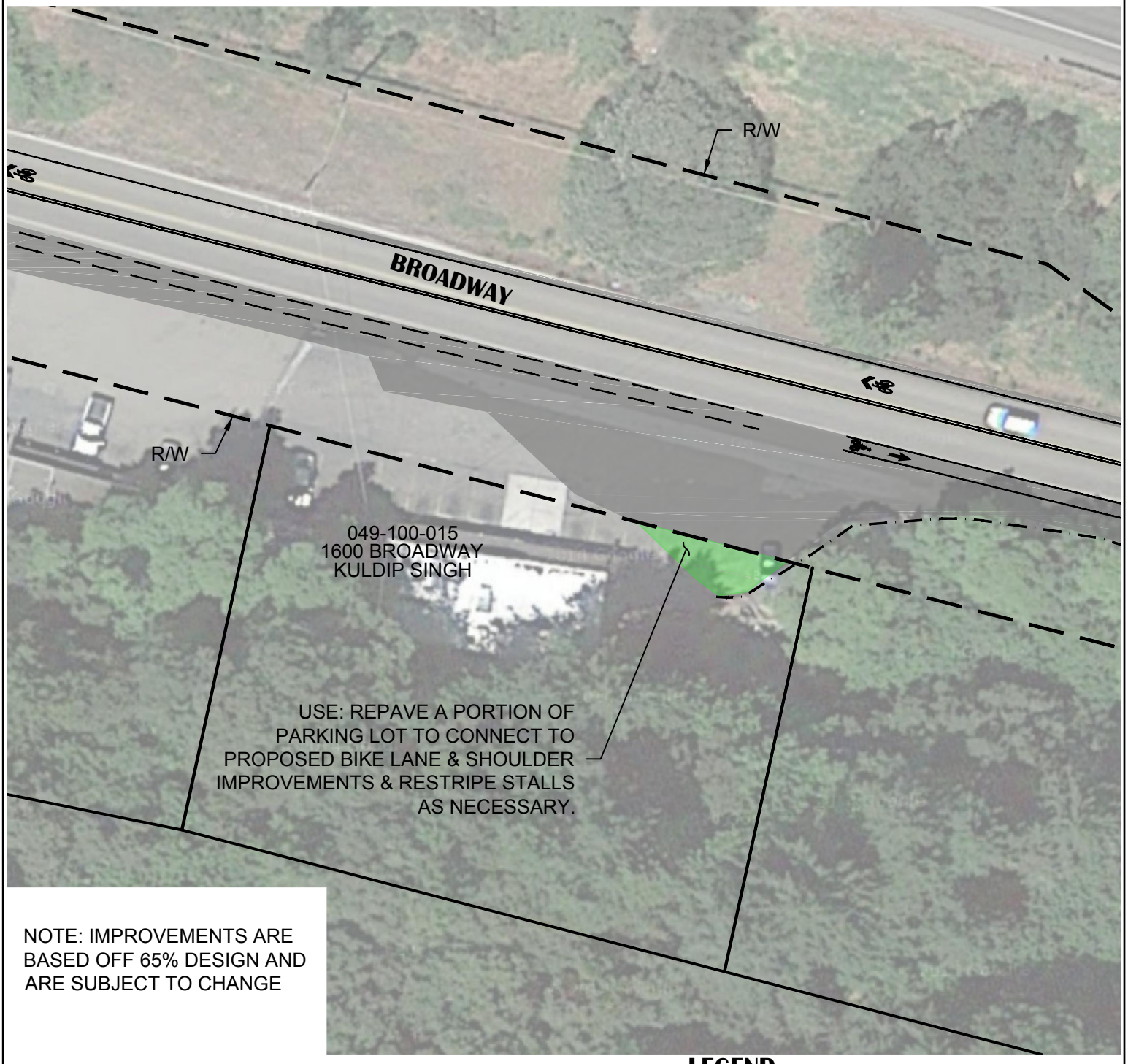
049-100-015

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 20' 40' 80'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREA
- PROPOSED PAVEMENT AREA
- PARCEL LINES
- GRADING DAYLIGHT LINE

R.E.Y. ENGINEERS, INC.
Civil Engineers | Land Surveyors | LiDAR
905 Sutter Street, Suite 200 Folsom, CA 95630
Phone: (916) 366-3040 Fax: (916) 366-3303

IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	004-191-48-100
Property Address:	1390 Broadway, Placerville, CA 95667
Grantor:	Espinoza Properties II LLC
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	February 1, 2019

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1400 Broadway, Placerville, CA, also identified as El Dorado County Assessor Parcel Number 004-191-48-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construction is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the accessed area, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

_____ Please call each time *before* entering my property. My phone number is: _____

✓ You may enter my property as needed during the prescribed times of: _____

_____ There are specific conditions on my property that inhibit public access, which are described below:

1. _____
2. _____
3. _____

GRANTOR: ESPINOZA PROPERTIES II LLC

Date: 3-22-2019

By: ESPINOZA Properties II LLC

Name: SUSANA ESPINOZA

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 9/3/19

By: _____

M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

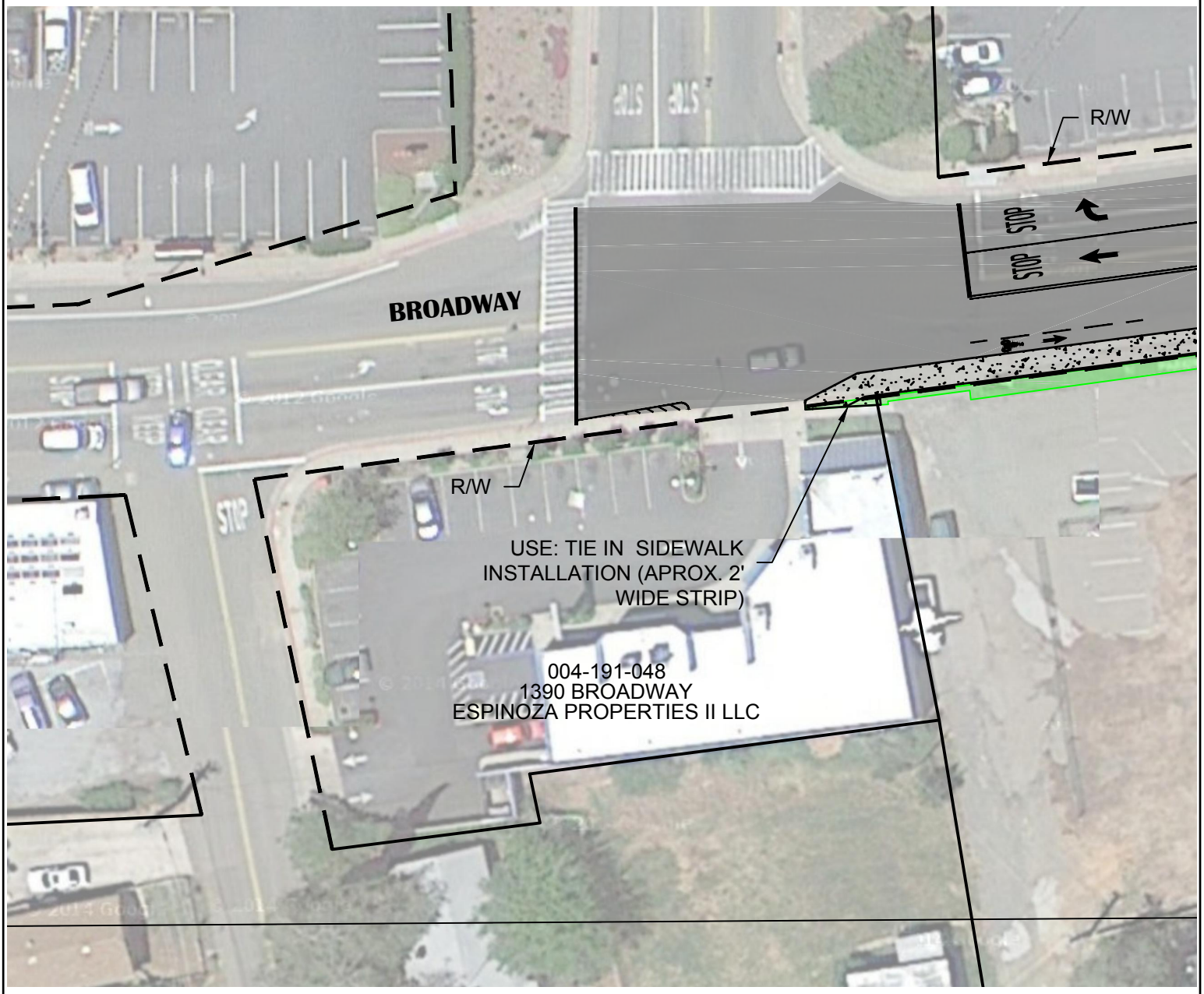
004-191-048

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 20' 40' 80'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREA
- PROPOSED PAVEMENT AREA
- PARCEL LINES
- PROPOSED CONCRETE CURB, GUTTER, & SIDEWALK

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IRREVOCABLE PERMIT TO ENTER AND CONSTRUCT

City of Placerville
Rebecca Neves, P.E., City Engineer
3101 Center Street
Placerville, CA 95667

Project Name:	Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)
Property APN:	004-191-050-100
Property Address:	1412 Broadway, Placerville, CA 95667
Grantor:	James A. O'Brien Trustee, of the James A. O'Brien Trust
Time Period:	December 2019 – One Year After Completion of Project and Execution of Notice of Completion
Date:	November 26, 2018

The undersigned(s), herein collectively called "Grantor," hereby permits the City of Placerville, its agents, employees, contractors, and invitees, hereinafter called "Grantee", to enter and construct on certain property located at **1412 Broadway, Placerville, CA**, also identified as El Dorado County **Assessor Parcel Number 004-191-050-100** ("Property") for the following purpose(s):

The purpose of this Permit to Enter and Construction is for access and construction activities related to the **Upper Broadway Bike Lanes Project (including Upper Broadway Pedestrian Connection Project)** ("Project"). The City is proposing to widen, and restripe Broadway to provide uniform lanes in the eastbound and westbound directions. In the westbound/downhill direction, the project will provide an 11-foot travel lane and a Class III bike route with "sharrow" pavement markings and a paved shoulder that varies in width. In the eastbound/uphill direction, the project will provide an 11-foot travel lane, a minimum 4-foot Class II bike lane, and curb, gutter and sidewalk. In areas not selected to receive sidewalk improvements as a part of this project, a widened shoulder would be installed. These project improvements may require grading and modification to existing driveways, as well as accomplishing all necessary activities incidental and related thereto, as depicted in **Exhibit "A"**. The undersigned is aware of the location and nature of the Project.

If existing improvements will be disturbed within the area used, Grantee shall leave the construction area in good condition and shall employ all reasonable efforts to restore the construction area to its existing condition, excepting driveway and parking reconfiguration, immediately prior to such entry by the Grantee and remove all equipment or materials used in said construction. Grantee shall keep the Property free from liens relating to or arising out of any work conducted by its employees, agents, or contractors.

This permit is granted in consideration of the benefits which may accrue to Grantor's property and is accepted on behalf of the Grantor's heirs, executors, administrators, successors, and assigns and hereby expressly and unconditionally waives any claim for compensation for injury to the property, claims for inverse condemnation, loss of goodwill, and/or of benefits.

Grantee agrees to hold harmless and indemnify Grantor against claims arising from the exercise of the rights granted under this Permit to Enter and Construct excepting those claims arising from Grantor's negligent acts.

This permit shall terminate one year after completion of the Project and execution of the Notice of Completion.

The undersigned represent(s) and warrant(s) that they are the owner(s) of said Property and that they have the right to grant this permit.

Please indicate your preferences and property conditions by initialing the appropriate consent below:

_____ Please call each time ***before*** entering my property. My phone number is: _____

_____ You may enter my property as needed during the prescribed times of: _____

_____ There are specific conditions on my property that inhibit public access, which are described below:

1. _____
2. _____
3. _____

GRANTOR: JAMES A. O'BRIEN

Date: 9/10/19

By: James A O'Brien

Name: James A. O'Brien

GRANTEE: CITY OF PLACERVILLE, a municipal corporation in the State of California

Date: 9/10/19

By: M. Cleve Morris

M. Cleve Morris, City Manager

UPPER BROADWAY BIKE LANES PROJECT

PERMIT TO ENTER AND CONSTRUCT EXHIBIT

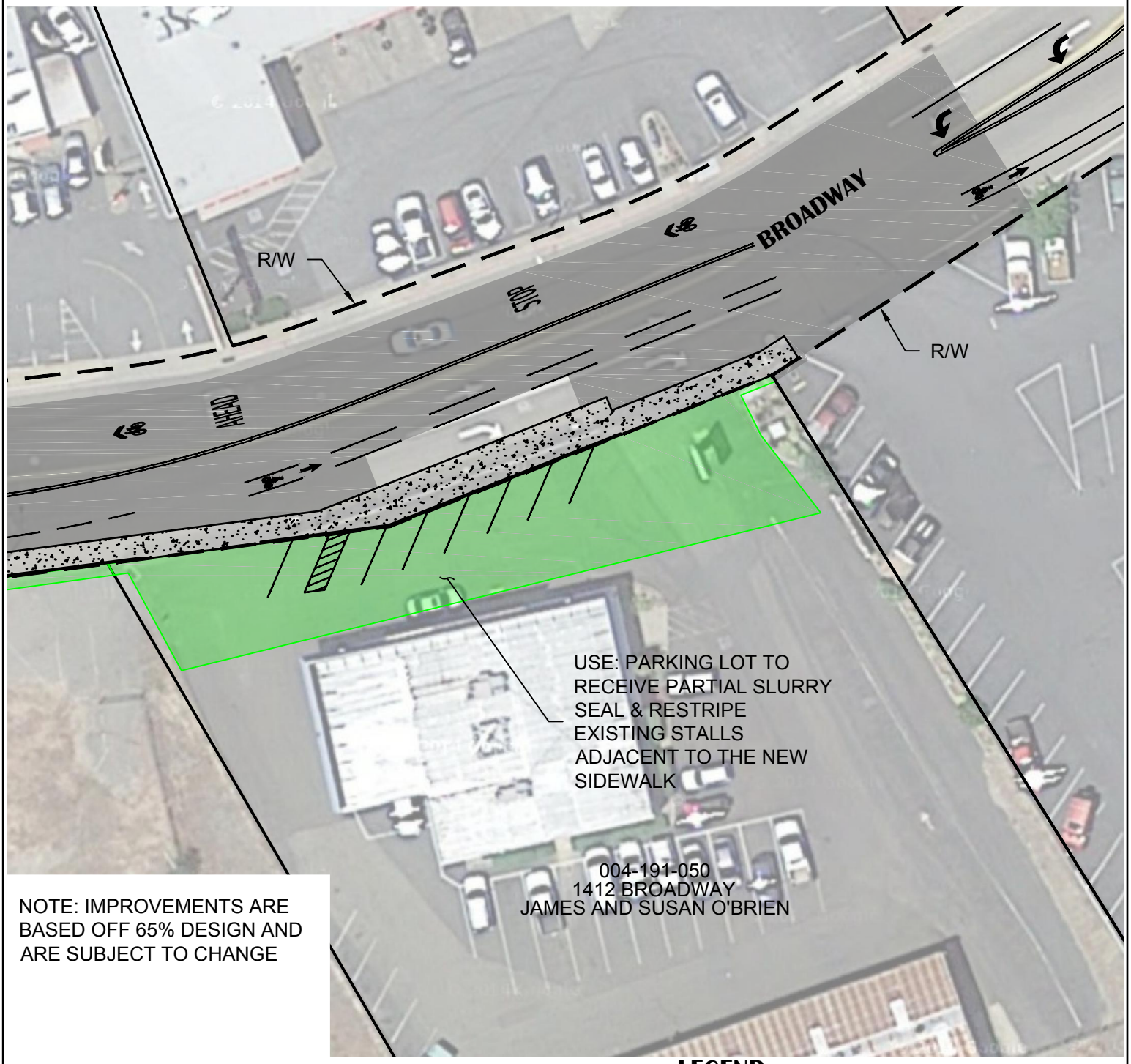
004-191-050

JANUARY 24, 2019

PROJECT NO.
CIP# 41508

0 20' 40' 80'

PLAN VIEW SCALE IN FEET



NOTE: IMPROVEMENTS ARE BASED OFF 65% DESIGN AND ARE SUBJECT TO CHANGE

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED AFFECTED AREA
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