RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1

BID FILE NUMBER: 12700455

OCTOBER, 2026
PROJECT ID #: 209900322
FUND/ORG:22225/189901
P.W. FILE NO.: 13245
PROJECT MANAGER:YUE LEHMAN
PROCUREMENT SPECIALIST: VERONICA BRANDON
PHONE (559) 621-1131 or 621-1332
EMAIL: PURCHASING@FRESNO.GOV

SCHEDULED BID OPENING: Friday, November 20, 2026

TABLE OF CONTENTS

PAGE

INTRODUCTION

Notice Inviting Bids i
Instructions to Bidders iv

DIVISION I BIDDING AND CONTRACT DOCUMENTS 1.0

Bidder's Checklist 1.1
Bid Proposal Form 1.2
Time of Completion and Liquidated Damages 1.5
Time Period to Award Bid 1.5
List of Subcontractors 1.9
Certification from Comptroller 1.10
Noncollusion Declaration 1.11
Certification for Local Preference 1.12
Update of Statement of Qualifications 1.13
PLA Addendum A – Agreement to be Bound 1.14
Signature Page for Bid Proposal 1.15
Sample Certification 1.17
Attachments (to be filed within 1 working day after Bid Opening)
Subcontractor Information – Detail 1.18
Attachments (to be Filed after Award) 1.20
Sample Contract
Fair Employment Practices Compliance Report
Payment Bond
Performance Bond
PLA Pre-Apprentice/Apprentice Compliance 1.31
PLA Journey Level Compliance 1.32

DIVISION II GENERAL CONDITIONS 2.0

Definitions (Nonfederal) 2.1
City of Fresno Community Workforce Agreement 2.2
Resolution No. 2021-242 ..... 2.3
Community Workforce Agreement 09/29/21 ..... 2.6
Insurance Requirements 2.32
Bonds 2.35
General Guaranty 2.36
Precedence of Contract Documents 2.36
Nonfederal Labor Standards Provisions 2.39

TABLE OF CONTENTS
(Continued)

		PAGE
	Payrolls and Basic Records	2.42
	Fair Employment Practices and Nondiscrimination	2.44
	Claims for Additional Time	2.48
	Claims and Disputes	2.48
DIVISION III	FEDERAL REQUIREMENTS (Not required for this project.)	3.0
DIVISION IV	SPECIAL CONDITIONS	4.0
DIVISION V	STANDARD SPECIFICATIONS	5.0
DIVISION VI	TECHNICAL SPECIFICATIONS	6.0
DIVISION VII	ENGINEER'S TECHNICAL SPECIFICATIONS	7.0
DIVISION VIII	CONTRACTOR COMMUNICATION REQUIREMENTS	8.0
DIVISION IX	MMRP COMPLIANCE	9.0
DIVISION X	PG&E RULE 16	10.0
DIVISION XI	GEOTECHNICAL REPORT	11.0
DIVISION XII	CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT	12.0
DIVISION XIII	CALTRANS ENCROACHMENT PERMIT	13.0
DIVISION XIV	FUNDING SIGNAGE	14.0
DIVISION XV	FMFCD CONDITIONAL LICENSE	15.0

NOTICE INVITING BIDS

Electronic bids will be received at the office of the Purchasing Manager of the City of Fresno for the following:

RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1

BID FILE NUMBER: 12700455

The scope of work includes but is not limited to: construct 2.4 miles of multipurpose trail from the existing Lewis S. Eaton Trail from near Perrin Avenue and State Route 41, construct a new vehicular access point at the east entrance, a stairway and a pedestrian ramp for pedestrian/bicycle access from the City's Spano Park at the northern terminus of Palm Avenue to the Fresno River West area, new fire hydrants, one two-vault restroom at the Woodward West access, and other amenities such as lighting, landscape and irrigation, equestrian amenities, picnic areas, gates, and signage.

The Construction Allocation for this project is $10,108,591

Bids will be taken on complete work, in accordance with Plans and Specifications on file in the office of the Purchasing Manager, via Planet Bids, phone number (559) 621-1332.

Specifications and bid proposal forms for these items can be downloaded at the City's online website at: http://www.fresno.gov. "Business" (at the top of the screen), under the Doing Business header, click "Bid Opportunities."

Bids will be submitted electronically via Planet Bids.

Bid Proposals must be filed electronically prior to the bid opening at 3:00 PM on Friday, November 20, 2026 when the bids will be publicly opened and recorded. Electronically filed is defined as by means of electronic equipment or devices. Join the bid opening meeting at https://fresno.zoomgov.com/j/1619517892 or call 1 (669) 254-5252, meeting ID 161 951 7892.

The work hereunder constitutes a "public work" as defined in Chapter 1, Part 7, Division 2 of the California Labor Code, and Contractor shall cause the work to be performed as a "public work" in accordance with such Chapter of the California Labor Code. The Council of the City of Fresno has adopted Resolution No. 82-297 ascertaining the general prevailing rate of per diem wages and per diem wages for holidays and overtime in the Fresno area for each craft, classification, or type of worker needed in the execution of contracts for the City. A copy of the resolution is on file at the Office of the City Clerk. Actual wage schedules are available at Construction Management Office, 747 R Street, 2nd Floor, Fresno, California 93721, (559) 621-8880.

Contractors and Subcontractors must meet any and all requirements of Labor Code sections 1771.1 and 1771.5 prior to submitting bids.

All proposals must be made on the Bid Proposal Form provided by the Purchasing Manager. A Bid Deposit, which can be provided separately, in the amount of **TEN PERCENT (10%) of the Total Net Bid Amount** (or, in bids with Add Alternates, the highest possible combination of the Base Bid plus Add Alternates) in the form of a certified or cashier's check, an irrevocable letter of credit, or a certificate of deposit or a bidder's bond executed by a corporate surety, admitted by the California Insurance Commissioner to do business in California, payable and acceptable to the City of Fresno; or the Bidder shall have registered with the Purchasing Manager of the City an

annual bid bond sufficient to provide coverage in such amount. All Bid Deposits will be held until a Contract has been executed with the successful Bidder or all bids have been rejected. Copies of Bid Deposits may be submitted electronically, with the exception of a certified or cashier's check, which must be brought to the Purchasing Manager's office and labeled accordingly with bid number prior to the bid opening.

The City of Fresno hereby notifies all Bidders that no person shall be excluded from participation in, denied any benefits of, or otherwise discriminated against in connection with the award and performance of any contract on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, ethnicity, status as a disabled veteran or veteran of the Vietnam era or on any other basis prohibited by law.

A pre-bid conference will be held at 10:00 AM, on November 4, 2026. Join the meeting by going to https://fresno.zoomgov.com/j/1609588136 or call 1 (669) 254-5252, meeting ID 160 958 8136. Prospective Bidders are encouraged to attend since City Staff will be present to answer any questions regarding the Specifications, and there may be an inspection tour of the job site(s).

Services of an interpreter and additional accommodations can be made available. Requests for accommodations should be made at least five working days but no later than 48 hours prior to the scheduled meeting/event. Please contact the Procurement Specialist on the cover at 559-621-1332 or through the Questions and Answers field on Planet Bids.

In accordance with provisions of section 22300 of the California Public Contract Code, Contractor may substitute securities for any monies withheld by City to ensure performance under the Contract.

A 100 percent Payment Bond and 100 percent Performance Bond for all public works contracts must be filed with the Contract Documents and approved by the City before the Contractor enters upon performance of the Work.

No bid will be considered for award unless the Bidder at the time of bid opening, is licensed with a valid Class "A" Contractor's License issued by the State of California.

The Contractor shall utilize the City's Construction Management Information System (CMIS) for the submission, management, and review of all project-related data and documents throughout the duration of the Contract. CMIS is a web-based electronic project management system provided by the City at no cost to the Contractor. It is intended to facilitate the electronic exchange of information, automate key construction management processes, provide electronic notifications of project activities, and serve as the primary platform for the submission and oversight of contract documentation.

All construction management documentation, including but not limited to daily inspection reports, submittals, Requests for Information (RFIs), pay estimates and change orders, shall be submitted and reviewed through CMIS. The use of CMIS by both the City and the Contractor is mandatory and shall serve as the official record of project communications and documentation unless otherwise authorized in writing by the City.

The City reserves the right to reject any and all bids.

Bidders are advised that this contract is subject to the City's Community Workforce Agreement, a project labor agreement executed by the City and the Fresno, Madera, Tulare, Kings Building Trades Council. Which includes a local hiring program, wherein the contractor must use best faith efforts to meet the hiring percentage requirements for Journey-level and apprentice level project work hours. A copy of the Community Workforce Agreement is attached to the bid solicitation.

INSTRUCTIONS TO BIDDERS
RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1
BID FILE NO.: 12700455

BID PROPOSALS WILL BE CONSIDERED FOR AWARD ONLY IF THE BIDDER HAS COMPLIED WITH THE FOLLOWING:

1. Bid Proposals shall be submitted on the forms furnished by the Purchasing Manager via Planet Bids, with all documents listed on the Bidder's Checklist, completely filled out, properly signed by the Bidder and electronically filed utilizing Planet Bids prior to the date and time specified in the Notice Inviting Bids, when all bids will be publicly opened and recorded. Bids received at 3:00 p.m. or after will **not** be accepted. The time stamp in the Purchasing Division will be the official clock for documenting the time of filing. Electronically filed is defined as by means of electronic equipment or devices. Failure to submit all forms required herein may deem the bidder non-responsive at City's sole discretion.

2. A Bid Deposit has been made in accordance with either paragraph (a) or paragraph (b), below. **A bid without a proper Bid Deposit will be automatically rejected.**

   (a) **BID DEPOSIT**. Bidders must submit a Bid Deposit, which may be provided separately, in the amount of **TEN PERCENT (10%) of the Total Net Bid Amount (or, in bids with Add Alternates, the highest possible combination of the Base Bid plus Add Alternates) with their Bid Proposal.** Such Bid Deposit shall be in the form of a certified or cashier's check, an irrevocable letter of credit or a certificate of deposit payable to the City of Fresno, or a bidder's bond executed by a corporate surety, admitted by the California Insurance Commissioner to do business in California, payable and acceptable to the City of Fresno. Such Deposit shall be retained by the City of Fresno as a guarantee that the Bidder, if awarded all or part of the Contract, will within 15 calendar days from the date the Notice of Award is mailed to the Bidder, execute, and return a Contract furnished by the City. No Bid Deposits will be returned to Bidders until either a Contract has been executed for all items awarded, or all bids have been rejected. Bid bonds will not be returned, except upon bidder's written request. Copies of Bid Deposits may be submitted electronically, with the exception of a certified or cashier's check, which must be brought to the Purchasing Manager's office and labeled accordingly with bid number prior to the bid opening.

   (b) **ANNUAL BIDDERS BOND**. If the Bidder contemplates submitting bids from time to time during a period of one (1) year for the furnishing of certain materials, supplies or services to the City of Fresno, the Bidder may cover all such bids by a single Annual Bidder's Bond instead of a separate bond for each bid. If such an Annual Bidder's Bond is registered with the Purchasing Manager of the City of Fresno, and is currently valid, it shall be deemed to accompany each and every bid submitted, provided such bond is in a sufficient amount to provide the required Deposit for all of the Bidder's proposals then outstanding. It shall be stated upon the Bid Proposal that such an Annual Bidder's bond is registered with the Purchasing Manager of the City of Fresno.

NOTARIAL ACKNOWLEDGEMENT

Each Bid Bond must be executed by a surety authorized to do business in the State of California. The bond must be originally signed by both the Principal and the Surety. Notary acknowledgements for both the Principal and the Surety must be attached if corporate seal is not visible on the bid bond. If signed by an Attorney-in-Fact, a certified and effectively dated Power of Attorney must be included with the bond. Failure to provide properly notarized signatures or visible corporate seal will render the bid non-responsive.

CONTRACT DEFINITIONS

Attention of Bidders is especially directed to all provisions of the Contract Documents, as defined in the GENERAL CONDITIONS.

PREVAILING WAGE

The work hereunder constitutes a “public work” as defined in Chapter 1, Part 7, Division 2 of the California Labor Code, and Contractor shall cause the work to be performed as a “public work” in accordance with such Chapter of the California Labor Code. The Council of the City of Fresno has adopted Resolution No. 82-297 ascertaining the general prevailing rate of per diem wages and per diem wages for holidays and overtime in the Fresno area for each craft, classification, or type of worker needed in the execution of Contracts for the City. Information specific to the Work to be done under this Contract can be obtained by contacting the Contract Compliance Officer at the City of Fresno office of Construction Management, (559) 621-8880.

FEDERAL IMMIGRATION REFORM AND CONTROL ACT

As a material part of any Contract for a City of Fresno project, every Contractor who has employees who will work on a City of Fresno project, is required to comply with all of the provisions of the Federal Immigration Reform and Control Act of 1986 (P.L. 99-603, 100 Stat. 3359). This requirement includes compliance with all of the employee documentation provisions. Furthermore, the Contractor will make any employee documentation required to comply with the Act immediately available to the City upon its request for each individual employee working on a City of Fresno project.

VERIFICATION OF WORK

All dimensions and quantities noted on the Plans, exhibits, etc., are approximate. Before submitting a Bid Proposal, Bidders should inspect the Work site to verify the Work and the conditions under which the Work will be performed. The submittal of a Bid Proposal shall be considered prima facie evidence that the Bidder has reviewed the Specifications, job site and conditions; is fully aware of the required Work and Work conditions and has included within the Bid Proposal the appropriate amounts covering the cost of execution of the Work in accordance with such Specifications, job site and conditions.

SUBCONTRACTORS

The Prime Contractor shall include with the Bid Proposal the name, location and license number of the place of business of each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the Work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor’s total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor’s total bid or ten thousand dollars ($10,000), whichever is greater.

Subcontractor Information – Detail concerning any subcontractor who the prime contractor is required to list under this subdivision, other than the subcontractor's name and location of business, shall be submitted by the prime contractor within 1 working day after the time of bid opening.

The Prime Contractor shall list only one subcontractor for each portion of work as is defined by the prime contractor in its bid.

PRE-BID CONFERENCE

A pre-bid conference may be held at the time and place listed in the Notice Inviting Bids. Prospective Bidders are encouraged to attend. City Staff will be present to answer any questions regarding the Specifications, and there may be an inspection tour of the job site(s).

QUESTIONS, CLARIFICATIONS AND CONCERNS

The Specifications describing this project have been carefully prepared. **Any questions or concerns relating to these Specifications shall be directed in writing to the designated Procurement Specialist of the Purchasing Division (see cover page) and shall be sent by email to Purchasing@fresno.gov** A Bid Question form for this purpose has been included in these specifications.

Questions will be accepted only up to 5 working days prior to the bid opening date to allow the City, if necessary, to issue an addendum to all bidders stating revisions, deletions, or additions to be made to the Specifications as a result of any questions**.** If questions arise after the deadline, please contact the designated Procurement Specialist of the Purchasing Division, but the City will not guarantee a response.

The City will not be responsible for verbal responses made by parties other than the Purchasing Manager or its designee.

CONTACTS WITH CITY STAFF

Before an award is made, any contact with City staff, other than the Purchasing Manager or designee(s), without prior written authorization is strictly prohibited and may render the Bidder non-responsible.

CONSTRUCTION ALLOCATION

The Construction Allocation listed in the Notice Inviting Bids is given for informational purposes only. This amount does not include other Project costs such as design, inspection, contingency and Contract compliance and is not warranted to represent the City's estimated cost of construction for this Project.

LOCAL PREFERENCE

Fresno Municipal Code Section 4-108 LOCAL PREFERENCE IN CONTRACTS REQUIRING COMPETITIVE BIDDING provides for a local preference. That applicable to public work of improvement contracts are paraphrased as follows:

> Except for those contracts funded by the federal or state government when such funding would be jeopardized because of this preference, the Council authorizes the Purchasing Manager to extend a preference to a local business as expressly set forth herein. For purposes of this section, "local business" shall mean a business with a fixed primary or branch office either (i) within a twenty-five-mile radius of Fresno City Hall, located at 2600 Fresno Street in the City of Fresno, or (ii) within the County of Fresno; and which fixed

primary, or branch office was established prior to the City inviting bids for the respective purchase.

The Purchasing Manager, in the evaluation of any and all sealed bids for any public works construction pursuant to this section, shall extend **a five percent (5%) preference to a local business in award of the Contract whenever the amount of the preference, as determined in subdivision (i) below, is less than or equal to seventy-five thousand dollars ($75,000).**

The preference shall be extended consistent with each of the following:

(i) The amount of the preference shall be equal to the amount of the percentage applied to the lowest responsive and responsible bid.

(ii) If the Bidder submitting the lowest responsive and responsible bid is not a local business, and if a local business has also submitted a responsive and responsible bid, and, with the benefit of the preference, the local business' bid is equal to or less than the original lowest responsive and responsible bid, the City shall award the Contract to the local business at its submitted bid price.

(iii) The Bidder shall certify, under penalty of perjury, that the Bidder qualifies as a local business. The preference is waived if the certification does not appear on the bid.

(iv) Bidder shall certify, under penalty of perjury, that it will self-perform at least 30% of the contract amount with individuals who reside in Fresno County.

(v) The Bidder shall certify, under penalty of perjury, that at least 50% of the contract value would be performed by either the bidder or subcontractor meeting the local preference criteria.

For (iv) and (v), in determining compliance with the minimum percentages, work performed by residents of states other than California will be excluded from the calculation. Bidders shall submit the CERTIFICATION FOR LOCAL PREFERENCE form with their bid if they seek the benefit of local preference.

SUBSTITUTION OF MATERIALS

Where specific names are used in conjunction with materials, they are mentioned as standards, but this implies no right upon the part of the Contractor to substitute other materials or methods without permission of the Engineer.

If manufacturers or brands are used or listed in conjunction with products, equipment or materials in these Specifications without the words "or equal," equals are allowed. Except in those instances where the product is designated as "No Substitution Allowed," the Specifications will list at least two brands or trade names of comparable quality or utility followed by the words "or equal." Where "or equal(s)" are allowed for any product, equipment, or materials, they must meet all the requirements of the Specifications to the satisfaction of the City and must be in current production.

For all "or equal(s)," Contractor shall make submittals after Notice to Proceed for evaluation. If approval as an equal is denied by the City, Contractor shall provide one of the manufacturers/brands listed in the Specifications without change in the Contract Price.

STATEMENT OF QUALIFICATIONS

Bidders who desire to participate in the formal bidding process of the City of Fresno for public works projects must, (a) have on file with the Office of the Purchasing Manager of the City of Fresno; or (b) must submit with the Bid Proposal, a "Statement of Qualifications," including

Schedules “A-1” and “A-2.” The Statement must be filed annually. Statements that are older than one year are no longer valid which may render a bid nonresponsive.

EXCEPTIONS

Any exceptions taken at the time of or after bid submittal, may render the bid nonresponsive. Attachments by Bidders which include legal terms and conditions that conflict with the GENERAL CONDITIONS may be considered an exception, and Bidder may, therefore, be considered nonresponsive.

ERRORS AND OMISSIONS

Errors and omissions by the Bidder will be dealt with in accordance with the California Public Contract Code including, but not limited to sections 4107.5 and 5103.

BID APPEAL PROCEDURE

The City has an appeal procedure in place as adopted by the City Council on May 7, 2026, in Resolution No. 2026-88. Any Bidder wishing to file an appeal should refer to that Resolution. A copy of the Resolution may be obtained from the City Clerk’s Office, 2600 Fresno Street, Fresno, California 93721.

Once City staff has reviewed and evaluated the bid proposals received and has determined the lowest responsive and responsible Bidder for award, that determination will be posted on a public bulletin board outside the Purchasing Division Office and the City’s website www.fresno.gov, Departments, General Services, Purchasing Division, a minimum of 5 working days prior to council action to award a Contract for the project/purchase. It is the sole responsibility of interested bidders to seek this information from either of these sources.

Should bidders be found non-responsible and wish to appeal the staff determination on the grounds of non-responsibility, appeals must be received in writing and conform to the requirements under Resolution No. 2026-88 within three working days from the time the determination is posted. “Working day” means a City of Fresno regular business day. Appeals must be submitted to the following:

City of Fresno Purchasing Division

2101 G Street, Bldg. A

Fresno California, 93706-1620

FAX Number (559) 457-1564

Letters of appeal must clearly follow the rules and procedures laid out in Resolution No. 2026-88. Only a bidder determined by the City to be non-responsible may file an appeal under the Resolution. Formal appeals are not permitted for bids deemed non-responsive; such determinations are subject only to internal administrative review. No appeals by non-bidders shall be accepted.

Appeals not submitted within the stated three working day timeframe will not be honored and the City will proceed to award the Contract.

REGULATED COMMUNICATIONS IN CITY PROCUREMENT PROCESS ORDINANCE

The Regulated Communications in City Procurement Process Ordinance (Article 6, Chapter 4 of the Fresno Municipal Code) became effective May 7, 2004. With certain specified exceptions, the Ordinance provides that no Respondent, Bidder, Proposer (as the case may be) shall initiate, engage in, or continue any communication to or with any City elected official concerning or touching upon any matter which is the subject of this competitive procurement process.

Any Respondent, Bidder, Proposer, or elected official (as the case may be) who initiates, engages in, continues in, or receives any regulated communication shall file the written disclosure required by the Regulated Communications in City Procurement Process Ordinance.

Any Respondent, Bidder, or Proposer violating the Regulated Communications in City Procurement Process Ordinance may be disqualified from participating in this procurement process and/or determined to be non-responsible. Additionally, the City may set aside the award of a contract, prior to its execution, to a party found to have violated the Ordinance.

Note: The full text of Fresno Municipal Code, Chapter 4, Article 6 may be viewed on the City's website at, http://www.fresno.gov. under "Departments" on the top right portion of the home page click on "City Clerk", then click on "Fresno Municipal Code" located in the middle of the page. Or view the Fresno Municipal Code directly at:
https://library.municode.com/ca/fresno/codes/code_of_ordinances?nodeId=MUCOFR_CH4CIPUCOSA_ART6RECOELOFPRPR.

DEBARMENT

A Bidder may be debarred from bidding or proposing upon or being awarded any contract with the City, or from being a subcontractor or supplier at any tier upon such contract, in accordance with the procedures in Fresno Municipal Code Section 4-104 adopted by Council on May 17, 2018. The initial period of any such debarment shall not be less than one year and may be permanent depending on the violation. A Bidder may request a hearing, in accordance with Fresno Municipal Code Section 4-104, upon receipt of a notice of proposed debarment from the City Manager or designee. A copy of the Resolution may be obtained from the City Clerk's Office, 2600 Fresno Street, Fresno, California 93721.

OUTREACH TO SMALL BUSINESS ENTERPRISES IN SUBCONTRACTING

The City of Fresno hereby notifies all Bidders that it is the City's policy to provide all small business enterprises, including minority, women, and disabled veteran business enterprises, equal access, and opportunity for participation in the performance of all construction contracts, professional service contracts, and procurement of supplies, equipment, and other services. Therefore, the City requests that a Bidder who intends to subcontract a portion of the work seek out small business enterprises that are potential subcontractors, suppliers, or consultants, and actively solicit their interest, capability, and prices.

ACH PAYMENT INITIATIVE-ELECTRONIC PAYMENT

Contractor shall provide complete and accurate billing invoices in order to receive payment. Billing invoices submitted must contain all information and supporting documentation required by the contract. Payment for invoices submitted by the contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the Controller, in the Controller's sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary City procedures and practices. The contractor shall comply with the Controller's procedures to authorize electronic payments. Contractor acknowledges that it will not receive payment on any invoices submitted under this Contract if it does not comply with the Controller's electronic payment procedures, except where the Controller has expressly authorized payment by paper check as set forth above.

HOT WORK SAFETY REQUIREMENTS

A. Applicability
This section applies whenever Contractor's work under this Contract involves or may involve "hot work," defined as soldering, welding, pipe-cutting, heat-treating, grinding,

thawing pipes, hot riveting, torch-applied roofing, or any other activity involving open flame, heat, or the production of sparks. If Contractor's work does not involve hot work, this section does not apply.

B. Compliance with City Program
Where applicable, Contractor shall comply with the City of Fresno Hot Work Safety Program (Program), as may be amended, a copy of which is available upon request from the City's Personnel Services Department, Risk Management Division, or from the City's project representative. In the event of any conflict between this section and the Program, the more stringent requirement shall control.

C. Designated Roles
Prior to performing any hot work, Contractor shall designate, from among its own personnel, a Supervisor, a Fire Watch, and, when City personnel are not present at the work location, a Hot Work Approver, each trained consistent with the Program's requirements for that role.

D. Permits
Where hot work is to be performed at a location where City employees are present, Contractor shall obtain a hot work permit from the City's designated Hot Work Approver prior to beginning work.

Where hot work is to be performed at a location where City employees are not present, Contractor is responsible for issuing its own permit consistent with the Program.

Contractor may use its own hot work permit form in lieu of the City's, provided it contains, at minimum, the information required by the Program's standard permit and has been approved in advance by the City.

Contractor shall provide the City's project representative with copies of all revoked/closed hot work permits by the end of each business day, or within such other reasonable time as may be mutually agreed.

E. Precautions
Contractor shall, at a minimum: remove or protect combustible materials within 35 feet of the hot work; confirm any applicable fire suppression system is operational; ensure a fire watch is maintained during hot work and for not less than 60 minutes after work concludes; and ensure personnel performing or exposed to hot work use PPE appropriate to the hazard.

F. Notification
Contractor shall notify the City's project representative before hot work begins so the City can coordinate access, evacuate affected areas if necessary, and confirm no conflicting activity is scheduled in the vicinity.

G. No Relief from Other Requirements
Nothing in this section relieves Contractor of its independent obligation to comply with all applicable fire codes, Cal/OSHA requirements, NFPA standards, and manufacturer requirements for equipment used in hot work operations.

City of FRESNO

PURCHASING DIVISION
TELEPHONE # (559) 621-1332

BID QUESTIONS FOR:RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1 BID FILE NUMBER: 12700455 ATTENTION:VERONICA BRANDON, PROCUREMENT SPECIALIST E-MAIL: Purchasing@Fresno.gov	(FOR CITY OF FRESNO USE ONLY) QUESTION NO: _____ DATE: _____ REVIEWED BY: _____ RESPONSIBLE FOR RESPONSE: [__] CITY STAFF [__] CONSULTANT
FROM: _____ COMPANY: _____ CONTACT PERSON: _____	DATE: _____ PHONE No: _____ FAX No: _____

QUESTION (One question per sheet.) _____

_____

_____

_____

_____

_____

_____

_____

ANSWER: _____

_____

_____

_____

_____

_____

RESPONSE BY: _____ DATE: _____

INCLUDED IN ADDENDUM NO._____ DATE: _____

One question per page - Duplicate this form as necessary.

DIVISION I
BIDDING AND CONTRACT DOCUMENTS

BIDDER'S NAME: _____
(Submit with Bid Proposal)

BIDDER'S CHECKLIST
RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1
Bid File No. 12700455

SUBMIT THIS BIDDER'S CHECKLIST WITH YOUR BID DOCUMENTS. Bidders shall complete and submit all documents marked with an "X" in the "REQUIRED" column. Documents required on the checklist but not included may render your bid nonresponsive and ineligible for award. Bids received by the City by the scheduled bid opening time will be opened and publicly read but are subject to verification that all the required documents have been submitted. Copies of bid Deposits may be submitted electronically and separate, with the exception of a certified or cashier's check, which must be brought to the Purchasing Manager's office and labeled accordingly with bid number prior to bid opening.

REQUIRED

[X] 1. A valid **STATEMENT OF QUALIFICATIONS** including Schedules "A-1 and "A-2" must be on file with the Office of the Purchasing Manager of the City of Fresno at the time of the bid opening.
[X] 2. **BID PROPOSAL** pages 1.2 through 1.4.
[X] 3. **CONTRACTOR'S LICENSE** information, page 1.8.
[X] 4. **BID DEPOSIT** attached to front of Proposal or submitted electronically in the form of:
[ ] Certified Check [ ] Bidder's Bond
[ ] Cashier's Check [ ] Irrevocable Ltr of Credit
[ ] Certificate of Deposit [ ] Annual Bidder's Bond
[X] 5. **LIST OF SUBCONTRACTORS**, page 1.9.
[X] 6. **CERTIFICATION**, (Comptroller General's List), page 1.10.
[X] 7. **NONCOLLUSION DECLARATION**, page 1.11.
[X] 8. **CERTIFICATION FOR LOCAL PREFERENCE**, if applicable, page 1.12.
[X] 9. **UPDATE OF STATEMENT OF QUALIFICATIONS,** page 1.13.
[X] 10. **PLA ADDENDUM A – AGREEMENT TO BE BOUND,** page 1.14
[X] 11. **SIGNATURE PAGE** 1.15.
[X] 12. **ADDENDA** - Signature page of all Addenda issued, Addenda No. ____ to ___.
(Enter numbers)
[_] 13. **PRE-BID CONFERENCE** - A company representative attended the pre-bid conference held on November 4, 2026 at 10:00 AM.

If one (1) of the three (3) lowest bidders, submit after bid opening:

[X] 14. **SUBCONTRACTOR INFORMATION - DETAIL**, page 1.18. If bidder lists subcontractors on page 1.9, this form is to be submitted to the Purchasing Division within one working day from the date of the bid opening.

SUBMITTED BY:
Name of Company _____ Contact Name _____

Address _____ City _____ State _____ Zip_____

Phone No. _____ Fax No. _____

E-Mail Address: _____

BIDDER'S NAME: _____
(Submit with Bid Proposal)

BID PROPOSAL
RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1
BID FILE NO. 12700455

TO: THE PURCHASING MANAGER OF THE CITY OF FRESNO:

The undersigned Bidder, having carefully examined the location of the hereinafter described work, plans and/or specifications therefor, hereby proposes to furnish, all, in strict accordance with said plans and/or specifications, the materials, labor, and equipment necessary to complete the project for the prices set forth in the following bid items:

ITEM	QUANTITY	DESCRIPTION OF WORK	UNIT PRICE	TOTAL
1.	Lump Sum	Mobilization	Lump Sum	$*438,080
2.	Lump Sum	Mediator (Owner's 50% share, see page 2.52 of General Conditions)	Lump Sum	$**10,000
3.	Lump Sum	Traffic Control	Lump Sum	$
4.	Lump Sum	Storm Water Pollution Prevention Plan (SWPPP) and Fugitive Dust Control Plan (FDCP) Preparation, Implementation & Maintenance	Lump Sum	$
5.	Lump Sum	Clearing and Grubbing	Lump Sum	$
6.	40,840 C.Y.	Earthwork (F)	$	$
7.	3,535 Tons	Hot Mix Asphalt, Type A	$	$
8.	5,119 Tons	Aggregate Base (Class II)	$	$
9.	12,536 S.F.	Decomposed Granite	$	$
10.	15,686 S.F.	Pedestrian Concrete	$	$
11.	540 S.F.	Vehicular Concrete	$	$
12.	29,125 L.F.	Concrete Curb	$	$
13.	Lump Sum	Palm Avenue Concrete Ramps with Handrails, Guardrails, and Retaining Walls	Lump Sum	$
14.	Lump Sum	Palm Avenue Concrete Stairs with Handrails, Guardrails, and Retaining Walls	Lump Sum	$
15.	69 L.F.	Fencing (Chainlink)	$	$
16.	2 EA	Manual Access Gate	$	$

(Continued)

17.	25 EA	Bollard (Fixed)	$ _____	$ _____
18.	1 EA	Bollard (Removable)	$ _____	$ _____
19.	50 EA	Wheelstop	$ _____	$ _____
20.	5 EA	Site Lighting	$ _____	$ _____
21.	Lump Sum	Signing & Striping (Thermoplastic)	Lump Sum	$ _____
22.	1 EA	Two-vault Restroom	$ _____	$ _____
23.	4 EA	Fire Hydrant	$ _____	$ _____
24.	5,478 L.F.	10-inch C900 Water Main	$ _____	$ _____
25.	742 L.F.	8-inch C900 Water Main	$ _____	$ _____
26.	2 EA	Backflow Assembly	$ _____	$ _____
27.	Lump Sum	Water Main Wet Tie by Water Division	Lump Sum	$***56,300
28.	1 EA	Drinking Fountain with Drywell	$ _____	$ _____
29.	Lump Sum	Site Furnishings	Lump Sum	$ _____
30.	Lump Sum	Planting	Lump Sum	$ _____
31.	Lump Sum	Irrigation	Lump Sum	$ _____
32.	Lump Sum	Miscellaneous Facilities & Operations	Lump Sum	$ _____
33.	Lump Sum	Contractor Communication Requirements	Lump Sum	$ _____
34.	Lump Sum	MMRP Compliance	Lump Sum	$ _____
35.	Lump Sum	Miscellaneous Electrical	Lump Sum	$ _____
36.	Lump Sum	CVFPB Encroachment Permit	Lump Sum	$ _____
37.	Lump Sum	Caltrans Encroachment Permit	Lump Sum	$****2,000
38.	3 EA	Funding Signage	$ _____	$ _____

(Continued)

BIDDER'S NAME: _____
(Submit with Bid Proposal)

TOTAL NET BID AMOUNT $_____

The Total Net Bid Amount is _____

_____ Dollars and _____ Cents.

Completion of Bid Proposal Form to be Eligible for Award. Bidders must bid all bid items (including any Alternates). The Bidder is non-responsive and ineligible for award in the event Bidder fails to initial this paragraph on the line provided and completely fill in this Bid Proposal Form including, without limitation, all dollar amounts, and information called for on this Bid Proposal Form. By its initials to the right hereof, Bidder represents he or she has read and understands the consequences of not completely filling in this Bid Proposal Form. _____ **Initial**

*This item has been determined to be $438,080 as noted in the "Explanation of Bid Items," page 6.1.

**This item has been determined to be $10,000 as noted in the "Explanation of Bid Items", page 6.1 and in the General Conditions, page 2.55.

***This item has been determined to be $56,300 as noted in the "Explanation of Bid Items", page 6.11.

****This item has been determined to be $2,000 as noted in the "Explanation of Bid Items", page 6.16.

The Bid Prices set forth herein shall include any and all applicable taxes.

(F) Final pay quantity as defined by Section 9 of the State Standard Specifications.

TIME OF COMPLETION/LIQUIDATED DAMAGES

The Contractor shall diligently prosecute the work to completion for all bid items before the expiration of **ONE HUNDRED EIGHTY (180) working days** from the date of the Notice to Proceed.

It is agreed that the Contractor shall be liable for and shall pay to the City, as fixed, and agreed, liquidated damages, and not as a penalty, the sum of **TWO THOUSAND FIVE HUNDRED DOLLARS ($2,500)** per day for each calendar day of delay in completion of the work from the date for completion as specified herein or in any written extension of time granted by the City.

NOTE: The following shall apply to all bid items:

TIME OF COMPLETION AS SPECIFIED WILL BE ENFORCED.
LIQUIDATED DAMAGES WILL BE DEDUCTED FROM PAYMENTS.

CONTRACT QUANTITIES

The City reserves the right to increase or decrease Contract quantities in accordance with available funds. If the City Council has not appropriated funds, or if sufficient funds are not available to complete the purchase, the City reserves the right to decrease quantities to stay within the budget limitations.

ADDENDA

The City makes a concentrated effort to ensure any addenda issued relating to these Specifications are distributed to all interested parties. It shall be the Bidder's responsibility to inquire as to whether any addenda to the Specifications have been issued. Upon issuance by the City, all Addenda are part of the Bid Proposal. Signing the Bid Proposal on the signature page thereof shall also constitute signature on all Addenda.

PRECEDENCE OF BID PRICES

In the event of discrepancies between the bid total, summaries of totals and unit price extensions, the unit price correctly extended will control over the summaries of totals, and the summaries of totals correctly added will control over the total, whether the summaries of totals are extended unit prices or lump sums.

RIGHT TO REJECT ANY AND ALL BIDS

The City reserves the right to reject any and all bids.

TIME PERIOD TO AWARD/REJECT BIDS

The undersigned Bidder agrees that the City may have **SIXTY-FOUR (64) DAYS** from the date bids are opened to accept or reject this Bid Proposal. It is further understood that if the Bidder to whom any award is made fails to enter into a Contract as provided in the Specifications, award may be made to the next lowest responsive and responsible Bidder, who shall be bound to perform as if he/she had received the award in the first instance. No Bid Proposal may be withdrawn prior to award within that time.

AWARD OF CONTRACT

When bids are submitted to the Council, the award will be made to the lowest responsive and responsible Bidder, subject to the right to reject any and all bids.

MINOR IRREGULARITIES

The City reserves the right to waive any informality or minor irregularity that does not have a monetary consideration when it is in the best interest of the public and of the City to do so. A discrepancy that offers a Bidder an unfair advantage will cause the bid to be nonresponsive.

CITY ENGINEER'S QUANTITY ESTIMATE

All bids will be compared with the City Engineer's Estimate of the quantities of work to be done.

TIEBREAKER

In the event a tiebreaker is needed to establish the lowest responsive and responsible Bidder, the City shall, unless otherwise agreed upon by all participating parties, utilize a coin toss as a tiebreaker to be administered by a third party chosen by mutual consent of the participants. Such coin toss shall take place within 7 working days from the date of bid opening. If the City determines that a tiebreaker is necessary, each applicable Bidder agrees to participate or to indemnify the City in any litigation resulting from the utilization of the tiebreaker. If a Bidder refuses to timely participate, the City shall conduct the coin toss in a manner determined by the City to be fair to all and the results of such coin toss shall be final.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

BID DEPOSIT

Accompanying this bid proposal, if paper copy, is a Bid Deposit in the amount of **TEN PERCENT (10%) OF THE TOTAL NET BID AMOUNT** (or, in bids with Add Alternates, the highest possible combination of the Base Bid plus Add Alternates) in the following form:

[__]	Certified Check	[__]	Bidder's Bond
[__]	Cashier's Check	[__]	Irrevocable Letter of Credit
[__]	Certificate of Deposit	[__]	Annual Bidder's Bond

Copies of Bid Deposits may be submitted electronically, with the exception of a certified or cashier's check, which must be brought to the Purchasing Manager's office and labeled accordingly with bid number prior to the bid opening.

Bid Deposit is deposited by the undersigned Bidder with the City of Fresno as a guarantee that the Bidder, if awarded all or part of the Contract, will, within 15 calendar days from the date the Notice of Award is mailed to the Bidder, execute, and return a Contract furnished by the City. If the Deposit is in the form of an Annual Bidder's Bond, the bond must be heretofore registered with the Purchasing Manager and **must be in the amount of not less than the greater of TEN PERCENT (10%) of the Total Net Bid Amount or TEN PERCENT (10%) of the highest possible combination of the Base Bid plus Add Alternates.**

Such Deposit is made with the understanding that failure to execute such Contract will result in damage to the City, that the amount of such damage would be difficult to determine and that in the event of such default said Deposit shall become the property of the City; or, if a Bidder's Bond is deposited, the amount of the obligation thereof, but not more than the above stated amount, shall thereupon be due and payable to the City of Fresno as liquidated damages for such default, payment of said amount to be the joint and several obligation of the Bidder and the corporate surety.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

CONTRACTOR'S LICENSE

The undersigned Bidder holds a valid Class _____ State of California Contractor's License.

The License Number is _____ and was issued on _____.

Expiration date: _____.

BUSINESS LICENSE

( ) The undersigned bidder has a current City of Fresno Business License.

License Number: _____.

If the successful bidder does not have a City of Fresno Business license, he/she shall obtain such a license prior to the issuance of a Notice to Proceed for the Work and maintain in effect throughout the term of this Contract.

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR)

Registration Number: _____ and Expiration Date: _____

CALIFORNIA LABOR CODE SECTION 1777.5

PLEASE ANSWER YES OR NO: Was the undersigned Bidder in the last six months determined to have willfully failed to comply with the provisions of California Labor Code Section 1777.5 relating to apprentices on Public Works?

YES_____ NO_____

BIDDER'S NAME: _____
(Submit with Bid Proposal)

LIST OF SUBCONTRACTORS

Pursuant to the provisions of California Public Contract Code **sections 4100 to 4113 inclusive**, the undersigned hereby designates below, for the Project, opposite various portions of work, the names, locations and license number of the places of business of each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the Work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater. **All work not listed below shall be performed by the undersigned Bidder**. It is understood that the Bidder, if awarded the Contract, shall not substitute any Subcontractor in place of the Subcontractors herein designated, or sublet or subcontract any of the work as to which a Subcontractor is not herein designated, without the written consent of the City. The subletting or subcontracting of any work for which there was no Subcontractor designated in the original bid may be permitted only in case of public emergency or necessity, and only after the City Council makes findings in a Resolution setting forth facts constituting the emergency or necessity.

List one firm only for each portion of work.

NAME AND LICENSE NUMBER	LOCATION	WORK TO BE SUBLET	DIR REGISTRATION #

BIDDER'S NAME: _____
(Submit with Bid Proposal)

CERTIFICATION

The Bidder certifies under penalty of perjury under the laws of the State of California that its business or the corporation is not listed on the Comptroller General's list of ineligible bidders/contractors.

The above Certification is part of the Bid Proposal. Signing this Bid Proposal on the signature page thereof shall also constitute signature of this Certification.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

NONCOLLUSION DECLARATION
(23 U.S.C. 112; California Public Contract Code § 7106)

The Bidder declares under penalty of perjury under the laws of the State of California all of the following paragraph is true and correct:

> The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any other Bidder or anyone else to put in a sham bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other Bidder. All statements contained in the Bid Proposal are true. The Bidder has not, directly or indirectly, submitted its bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose. Any person executing this declaration on behalf of the Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he/she has full power to execute, and does execute, this declaration on behalf of the Bidder.

The above Noncollusion Affidavit is part of the Bid Proposal. Signing this Bid Proposal on the signature page thereof shall also constitute signature of this Noncollusion Affidavit.

Bidders are cautioned that making a false declaration may subject the certifier to criminal prosecution.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

CERTIFICATION FOR LOCAL PREFERENCE
FOR: RIVER WEST FRESNO EATON TRAIL EXTENSION, PHASE 1
BID FILE NO. 12700455

We certify that we qualify as a local business pursuant to Fresno Municipal Code Section 4-108(d), as revised.

Location of Business:
Please provide street address
(No PO Box)

Primary Office [ ]
Branch Office [ ]
(Please mark as applicable)

Address: _____

_____

Phone: _____

And:

The undersigned Bidder hereby declares under penalty of perjury under the laws of the State of California that the information contained on this CERTIFICATION FOR LOCAL PREFERENCE is correct and complete.

The above Certification is part of the Bid Proposal. Signing this Bid Proposal on the signature page thereof shall also constitute signature of this Certification.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

☐ Bidder will self-perform at least 30% of the contract amount with residents of Fresno County

☐ Not applicable.

And:

☐ Bidder affirms at least 50% of the total value of the contract will be performed by either the Bidder or subcontractors meeting the local preference criteria.

☐ Not applicable.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

UPDATE OF STATEMENT OF QUALIFICATIONS

TO: Purchasing Manager, City of Fresno

The undersigned Bidder filed with the Purchasing Manager of the City of Fresno a STATEMENT OF QUALIFICATIONS on _____, 20___, The Statement is valid for one year and must be refiled after that time.

In connection with the submission of a bid for this project, it is desired to advise the City regarding any changes in the information contained in the STATEMENT and its schedules or attachments.

The Contractor hereby declares under penalty of perjury under the laws of the State of California that the information contained in the STATEMENT OF QUALIFICATIONS (and its schedules and attachments) currently on file with the City of Fresno is correct and complete, except as stated below:

(If the information is all correct and complete, state "No Change." Otherwise, indicate the portion of the STATEMENT involved and the nature of the change or correction. Attach additional sheets if necessary.)

_____

_____

_____

_____

The required "Subcontractor Information - Detail" sheet will be filed with the Purchasing Manager within one working day following the opening of bids, provided the undersigned Contractor is the apparent low, second low, or third low Bidder.

The above Statement is part of the Bid Proposal. Signing this Bid Proposal on the signature page thereof shall also constitute signature of this Statement.

Bidders are cautioned that making a false declaration may subject the certifier to criminal prosecution.

BIDDER'S NAME: _____
(Submit with Bid Proposal)

Addendum A
AGREEMENT TO BE BOUND

[Date]
[Addressee]
[Address]

Re: City of Fresno Community Workforce Agreement

Agreement to be Bound

Dear _____:

The undersigned confirms that it agrees to be a party to and bound by the City of Fresno Community Workforce Agreement ("Agreement") as such Agreement may, from time to time, be amended by the parties or interpreted pursuant to its terms.

By executing this Agreement to be Bound, the undersigned subscribes to, adopts and agrees to be bound by the written terms of the legally established trust fund documents as set forth in Section 10.1 of the Agreement, as they may from time to time be amended, specifying the detailed basis upon which contributions are to be made into, and benefits made out of, such trust funds, and ratifies and accepts the trustees appointed by the parties to such trust funds. The undersigned agrees to execute a separate subscription agreement(s) for such trust funds when such trust fund(s) require(s) such document(s).

The obligation to be a party to and bound by the Agreement shall extend to all work covered by the Agreement undertaken by the undersigned. The undersigned shall require all of its subcontractors, of whatever tier, to become similarly bound for all their work within the scope of the Agreement by signing an identical Agreement to be Bound.

This letter shall constitute a subscription agreement, to the extent of the terms of the letter.

CONTRACTOR/SUBCONTRACTOR: _____

California Contractor State License No. or Motor carrier (CA) Permit No.: _____

Name of Authorized Person (print):

_____

Signature of Authorized Person:

_____

Title of Authorized Person:

_____

Telephone Number of Authorized Person:

_____

Address of Authorized Person:

_____

State Public Works Registration Number:

_____

BIDDER'S NAME: _____
(Submit with Bid Proposal)

SIGNATURE PAGE

By my signature on this Bid Proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing statements, pages 1.1 through 1.15, and those contained herein are true and correct.

BID SUBMITTED BY:
(Please follow the instructions for each line, as explained below.)

(1) _____ (___) _____ (___) _____
Bidding Firm Phone Fax

(2) [__] Corp: State of Incorporation: _____

[__] Individual

[__] Partner

[__] Other:

(3) _____
Business Address

_____
City State Zip Code

(4) By: _____
Signature of Authorized Person

_____
Type or Print Name of Authorized Person and Title

Federal Tax I.D. No.: _____ Date: _____

BIDDER'S NAME: _____

INSTRUCTIONS FOR SIGNATURE PAGE

LINE 1: The name of the Bidder must be the same as that under which a license is issued, if a license is required. If the Bidder is a corporation, enter the exact name of the corporation under which it is incorporated; if Bidder is an individual, enter name; if Bidder is an individual operating under a trade name, enter name and dba (trade name in full); if a partnership, enter the correct trade style of the partnership; if a joint venture, enter exact names of entities joining in the venture.

LINE 2: Identify here the character of the name shown under (1), i.e., corporation (including state of incorporation), individual, partnership, or joint venture.

LINE 3: Enter the address to which all communications and notices regarding the Bid Proposal and any Contract awarded thereunder are to be addressed.

LINE 4: (a) If the Bidder is a corporation, the Bid Proposal must be signed by an officer or employee authorized to sign Contracts on behalf of the corporation evidenced by inclusion of one of the following certified by the secretary of the corporation, authorizing the officer or employee to sign contracts (sample certification attached): a copy of the Articles of Incorporation, a copy of the Bylaws, a copy of the Board Resolution or Minutes.

(b)If Bidder is an individual, he/she must sign the Bid Proposal, or if the Bid Proposal is signed by an employee or agent on behalf of the Bidder, a copy of a power of attorney must be on file with the City of Fresno prior to the time set for the opening of the bids or must be submitted with the Bid Proposal.

(c) If the Bidder is a partnership, the Bid Proposal must be signed by all general partners; or by a general partner(s) authorized to sign Contracts on behalf of the partnership evidenced by inclusion of either a copy of the Partnership Agreement or a recorded Statement of Partnership.

(d) If the Bidder is a joint venture, the Bid Proposal must be signed by all joint venturers; or by a joint venture(s) authorized to sign Contracts on behalf of the joint venture evidenced by inclusion of either a copy of the Joint Venture Agreement or a recorded Statement of Joint Venture; and if the joint venture(s) is a corporation or a partnership signing on behalf of the Joint Venture, then Paragraphs (a) and (c) above apply respectively.

Where Bidder is a partnership or a corporation, the names of all other general partners, or the names of the president and secretary of the corporation, and their business addresses must be typewritten below:

NAME	ADDRESS

NOTE: All addresses must be complete with street number, City, State and Zip Code.

BIDDER'S NAME: _____

SAMPLE CERTIFICATION

I, _____, certify that I am the secretary
Name

of the corporation named herein; that _____ who signed this
Name

Bid Proposal on behalf of the corporation, was then _____ of
Title

said corporation; that said Bid Proposal is within the scope of its corporate powers and was duly signed for and on behalf of said corporation by authority of its governing body, as evidenced by the attached true and correct copy of the _____
Name of Corporate Document

By: _____

Name: _____
Title: Secretary

Date: _____

BIDDER'S NAME: _____

SUBCONTRACTOR INFORMATION - DETAIL
(To be submitted by the three lowest Bidders within one working day from the date of the bid opening.)

Complete and attach as many sheets as necessary.

Name of Project: _____

Date bids were submitted: _____

Subcontractor's Name: _____ City _____
Work to be performed on Project: _____
California State License No: _____ Class: _____
Expiration Date: _____
Name of License Bonding Company: _____
Bond Number: _____

Subcontractor's Name: _____ City _____
Work to be performed on Project: _____
California State License No: _____ Class: _____
Expiration Date: _____
Name of License Bonding Company: _____
Bond Number: _____

Subcontractor's Name: _____ City _____
Work to be performed on Project: _____
California State License No: _____ Class: _____
Expiration Date: _____
Name of License Bonding Company: _____
Bond Number: _____

Subcontractor's Name: _____ City _____
Work to be performed on Project: _____
California State License No: _____ Class: _____
Expiration Date: _____
Name of License Bonding Company: _____
Bond Number: _____

Signed: _____, 20___

Name of Bidder: _____

Contractor's License Number: _____

SIGNED UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA BY:

Name of Authorized Official: _____

Signature: _____

Date: _____

ATTACHMENTS

(To be filed after award by successful bidder)

SAMPLE CONTRACT
CITY OF FRESNO, CALIFORNIA
PUBLIC WORK OF IMPROVEMENT

THIS CONTRACT is made and entered into by and between CITY OF FRESNO, a California municipal corporation (City), and [Contractor Name], [Legal Identity] (Contractor) as follows:

1. Contract Documents. The "Notice Inviting Bids," "Instructions to Bidders," "Bid Proposal," and the "Specifications" including "General Conditions," "Special Conditions," and "Technical Specifications" for the following: [Title] (Bid File No. [Bid File No.]) [Alternates (if any)] copies of which are annexed hereto, together with all the drawings, plans, and documents specifically referred to in said annexed documents, including Performance and Payment Bonds, if required, and are hereby incorporated into and made a part of this Contract, and shall be known as the Contract Documents.

2. Price and Work. For the monetary consideration of [Written Dollar Amount] dollars and [Written Cents Amount] cents ($[Amount]), as set forth in the Bid Proposal, Contractor promises and agrees to perform or cause to be performed, in a good and workmanlike manner, under the direction and to the satisfaction of the City's "Engineer," and in strict accordance with the Specifications, all of the work as set forth in the Contract Documents.

3. Payment. City accepts Contractor's Bid Proposal as stated and agrees to pay the consideration stated, at the times, in the amounts, and under the conditions specified in the Contract Documents.

4. Indemnification. To the furthest extent allowed by law, including California Civil Code section 2782, CONTRACTOR shall indemnify, defend and hold harmless CITY and each of its officers, officials, employees, agents, and volunteers from any and all claims, demands, actions in law or equity, loss, liability, fines, penalties, forfeitures, interest, costs including legal fees, and damages (whether in contract, tort, or strict liability, including but not limited to personal injury, death at any time, property damage, or loss of any type) arising or alleged to have arisen directly or indirectly out of (1) any voluntary or involuntary act or omission, (2) error, omission or negligence, or (3) the performance or non-performance of this Contract . CONTRACTOR'S obligations as set forth in this section shall apply regardless of whether CITY or any of its officers, officials, employees, agents, or volunteers are passively negligent, but shall not apply to any loss, liability, fines, penalties, forfeitures, costs or damages caused by the active or sole negligence, or the willful misconduct, of CITY or any of its officers, officials, employees, agents or volunteers.

To the fullest extent allowed by law, and in addition to the express duty to indemnify, CONTRACTOR, whenever there is any causal connection between the CONTRACTOR's performance or non-performance of the work or services required under this Contract and any claim or loss, injury or damage of any type, CONTRACTOR expressly agrees to undertake a duty to defend CITY and any of its officers, officials, employees, agents, or volunteers, as a separate duty, independent of and broader that the duty to indemnify. The duty to defend as herein agreed to by CONTRACTOR expressly includes all costs of litigation, attorneys fees, settlement costs and expenses in connection with claims or litigation, whether or not the claims are valid, false or groundless, as long as the claims could be in any manner be causally connected to CONTRACTOR as reasonably determined by CITY.

Upon the tender by CITY to CONTRACTOR, CONTRACTOR shall be bound and obligated to assume the defense of CITY and any of its officers, officials, employees, agents, or volunteers, including the a duty to settle and otherwise pursue settlement negotiations, and shall pay, liquidate, discharge and satisfy any and all settlements, judgments, awards, or expenses resulting

from or arising out of the claims without reimbursement from CITY or any of its officers, officials, employees, agents, or volunteers.

It is further understood and agreed by CONTRACTOR that if CITY tenders a defense of a claim on behalf of CITY or any of its officers, officials, employees, agents, or volunteers and CONTRACTOR fails, refuses or neglects to assume the defense thereof, CITY and its officers, officials, employees, agents, or volunteers may agree to compromise and settle or defend any such claim or action and CONTRACTOR shall be bound and obligated to reimburse CITY and its officers, officials, employees, agents, or volunteers for the amounts expended by each in defending or settling such claim, or in the amount required to pay any judgment rendered therein.

The defense and indemnity obligations set forth above shall be direct obligations and shall be separate from and shall not be limited in any manner by any insurance procured in accordance with the insurance requirements set forth in this Contract. In addition, such obligations remain in force regardless of whether CITY provided approval for, or did not review or object to, any insurance CONTRACTOR may have procured in a accordance with the insurance requirements set forth in this Contract. The defense and indemnity obligations shall arise at such time that any claim is made, or loss, injury or damage of any type has been incurred by CITY, and the entry of judgment, arbitration, or litigation of any claim shall not be a condition precedent to these obligations.

The defense and indemnity obligations set forth in this section shall survive termination or expiration of this Contract.

5. Trench Shoring Detailed Plan. Contractor acknowledges the provisions of Section 6705 of the California Labor Code and, if said provisions are applicable to this Contract, agrees to comply therewith.

6. Worker's Compensation Certification. In compliance with the provisions of Section 1861 of the California Labor Code, Contractor hereby certifies as follows:

I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of work of this Contract and will make my subcontractors aware of this provision.

IN WITNESS WHEREOF, the parties have executed this Contract on the day and year here below written, of which the date of execution by City shall be subsequent to that of Contractor's, and this Contract shall be binding and effective upon execution by both parties.

[Contractor Name],
[Legal Identity]

By: _____

Name: _____
(Type or print written signature.)

Title: _____
(If corporation or LLC, Board Chair, Pres. or Vice Pres.)

Dated: _____

By: _____

Name: _____
(Type or print written signature.)

Title: _____
(If corporation or LLC, CFO, Treasurer, Secretary or Assistant Secretary)

Dated: _____

CITY OF FRESNO,
a California municipal corporation

By: _____
[Name], [Title]
Department of Public Works

Dated: _____

ATTEST:
AMY K. ALLER,
City Clerk

By: _____
Deputy

No signature of City Attorney required. Standard Document # 2022-11 DPW-SFormalBidContract-PublicWorkofImprovement has been used without modification as certified by the undersigned.

By: _____
[City Certifier Name]
[City Certifier Title]
Department of Public Works

City address:

City of Fresno
Attention: [Name], [Title]
[Street Address]
Fresno, CA [Zip]

Job of File No._____
Name or Title of Job._____
Department No._____

City of FRESNO

FAIR EMPLOYMENT PRACTICES COMPLIANCE REPORT

		Yes	No
1.	Name and Address of Contractor PRIME [ ] SUB [ ]		
2.	Have you established a company-wide employment policy to assure that equal employment opportunity is given to all persons without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation or on any other basis prohibited by law?		
3.	Have you notified all supervisors, foreman and other personnel officers in writing of the contents of the anti-discrimination clause and their responsibilities under it?		
4.	Have notices setting forth the provisions of the Fair Employment Practice Section used in City of Fresno Contracts been posted in conspicuous places available to employees and applicants for employment on this Project?		
5.	Have each of the Company's employee referrals including unions, employment agencies, advertisements, Department of Employment, etc., been notified of the contents of the anti-discrimination clause?		
5a.	Has this been done in writing?		
6.	Has each employee referral advised the Company that it will refer all qualified applicants for employment to the Company without regard to race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation or on any other basis prohibited by law?		
7.	Has a collective bargaining agreement or other contract or understanding been made with a labor union (or unions) which covers the performance of any work or supplying of any materials under this Contract?		
7a.	Do you operate under an Association Master Labor Agreement? If your answer is "yes", state the name of the Association. Are copies of those agreements on file with the City? [ ] Yes [ ] No With whom? _____		
7b.	If you do not operate under an Association Master Labor Agreement then indicate what steps you have taken to attempt to develop an agreement which will: (1) Spell out responsibilities for nondiscrimination in hiring, referral, upgrading and training. (2) Otherwise implement an affirmative anti-discrimination program in terms of the unions' specific area of skill and geography, to the end that qualified minority workers will be available and given an equal opportunity for employment. In addition, if you have reached such an agreement, attach a copy of the provisions thereof which bear on (1) and (2) above.		
8.	Have you encountered any opposition to the anti-discrimination clause by individuals, firms or organizations?		
	If your answer to No. 8 is "Yes", identify the individual, firm or organization and briefly describe the nature of the opposition.		
9.	Check principal sources for employee referrals. DEPT OF EMP. EMP. AGENCIES DIRECT HIRING UNION OTHER 15. Const. Workers_____ b. Other Workers_____		
10.	The following person or persons are responsible for determining whom to hire or whether or not to hire workers on this particular Project:		
QUESTIONS 11 THROUGH 13 TO BE FILLED OUT BY PRIME CONTRACTOR ONLY:			
11.	Have you awarded any subcontracts for work covered by your Contract?		
12.	Have the anti-discrimination provisions been included in each of said subcontracts?		
13.	Have all such Subcontractors been instructed to file compliance reports and have they been furnished with report forms?		
14.	Dated this _____ day of _____, 20__, at_____ (City and State)		
15.	I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct._____ (Contractor)		

FAIR EMPLOYMENT PRACTICES COMPLIANCE REPORT (continued)

INSTRUCTIONS TO CONTRACTORS

This Compliance Report is required by the Fair Employment Practices provisions of City of Fresno Contracts for the supplying of work, materials, or both.

This report is to be completed in its entirety for each prime Contract and all first-tier subcontracts. The reports shall be submitted to the City after award of the Contract and prior to Notice to Proceed.

Additional sheets of paper may be attached if necessary to submit explanations or further information.

If the answers to any of the questions indicate non-compliance with the anti-discrimination provision of the Contract, a brief explanation of such answer must accompany the report.

It shall be the further responsibility of the Contractor to keep the information contained in the compliance report current and should there be changes in the Contractor's agreements with employee referrals, including unions or in the individuals responsible for hiring, etc., which would change the answers submitted by the Contractor in its original questionnaire, the Contractor should file a supplementary report containing revised answers to the applicable questions. Such changes from the original report are to be submitted in duplicate.

Upon completion of the Contract the Contractor must submit a final statement of compliance including statements that the original compliance report was submitted, that any changes in the original report were reported, and that the requirements of the Fair Employment Practices section were complied with during the Contract. If such a statement cannot be submitted in its entirety, a statement along the same lines with the exceptions noted must be submitted.

The City may require submission of additional information or reports on compliance at any time.

FINAL STATEMENT OF FAIR EMPLOYMENT PRACTICES COMPLIANCE

Name of Job or Contract

The undersigned is responsible to see that the Contractor has complied with the Fair Employment Practices section of the City of Fresno Contract indicated above. The original compliance report was submitted and no changes or additions to the original report became known to the Contractor or the undersigned except as noted below. The Contractor, in performance of the Contract, to the best of my knowledge, complied with said section of the Contract, except as noted below.

Dated this _____ day of _____, 20____ , at _____
City and State

Changes or additions to the original compliance report _____
City

_____ By_____

Title _____

Deviations from compliance_____

_____
Contractor

_____ By_____

_____ Title_____

City of FRESNO

PAYMENT BOND - PUBLIC WORK

KNOW ALL MEN BY THESE PRESENTS: That [NAME OF CONTRACTOR] as Principal (the Principal) and [NAME] as Surety (the Surety) are held and firmly bound onto the City of Fresno (the Obligee) in the just and full sum of [WRITTEN $ AMOUNT] DOLLARS AND [WRITTEN CENTS AMOUNT] CENTS ($[DOLLAR AMOUNT]) lawful money of the United States of America (said sum being equal to 100 percent of the estimated amount payable by the terms of the hereinafter described contract), for the payment of which, well and truly to be made, we hereby bind ourselves and ours, and each of our, heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That

WHEREAS, the Principal has been awarded a contract for the following described work of improvement and is required by the Obligee to give this bond in connection with the execution of the written contract therefor *(insert brief description of work of improvement)*:

[TITLE AND WORK]

(Bid File No. [BID FILE NO.]) [ALTERNATES (if any)]

NOW, THEREFORE, if the Principal or subcontractors of the Principal shall fail to pay all contractors, subcontractors, laborers, materialmen and other persons employed in the performance of the aforesaid contract and/or named in the Section 9100 of the Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or prevailing wages due and penalties incurred pursuant to Sections 1774, 1775, 1813, or 1815 of the Labor Code, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to the work and labor, the Surety will pay for the same, in an amount not exceeding the sum specified above, and also, in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the Obligee in successfully enforcing this obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered. It is expressly agreed that any attorney's fees incurred in any suit or other proceeding brought upon this Bond by the Obligee shall be in addition to the penal sum of the Bond. The benefit of this bond shall inure to any of the persons named in Section 9100 of the Civil Code so as to give the right of action to those persons or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

No extension of time granted to the Principal and no change, alteration or addition in any of the terms of the contract or any of the contract documents or the work to be performed thereunder, whether made after notice or not, shall release or otherwise affect the obligations of the Surety hereunder, and the Surety waives notice of any such extension, change, alteration or addition. The Surety, by the execution of this bond, represents and warrants that this bond has also been duly executed by the Principal and proper authority, and the Surety hereby waives any defense which it might have by reason of any failure of the Principal to execute or properly execute this bond.

[Signatures follow on the next page.]

In witness whereof, this instrument has been duly executed by the Principal and the Surety above names, on the ___ day of _____, 20____.

[NAME OF CONTRACTOR]_____ [NAME]_____

_____ _____

PRINCIPAL SURETY

No Signature of City Attorney required. Standard Document #CPD-S Payment Bond (10-2025) has been used without modification, as certified by the undersigned.

By _____
[Name]

Title:_____
[Department]

Approved:
City Manager, or designee

By: _____
[Name]

Title:_____

Date:_____

City of FRESNO

PERFORMANCE BOND - PUBLIC WORK

KNOW ALL MEN BY THESE PRESENTS: That [NAME OF CONTRACTOR]

as Principal (the Principal) and [NAME] as Surety (the Surety) are held and firmly bound onto the City of Fresno (the Obligee) in the just and full sum of [WRITTEN $ AMOUNT] DOLLARS AND [WRITTEN CENTS AMOUNT] CENTS ($[DOLLAR AMOUNT]) lawful money of the United States of America (said sum being equal to 100 percent of the estimated amount payable by the terms of the hereinafter described contract), for the payment of which, well and truly to be made, we hereby bind ourselves and ours, and each of our, heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that

WHEREAS, the Principal has been awarded a contract for the following described work of improvement and is required by the Obligee to give this bond in connection with the execution of the written contract therefor *(insert brief description of work of improvement)*:

[TITLE AND WORK]

(Bid File No [BID FILE NO.].) [ALTERNATES (if any)]

NOW, THEREFORE, if the Principal shall well and truly do and perform each and all of the covenants, conditions, and agreements of said contract on the Principal's part to be done and performed, and any and all alterations thereof made as therein provided, at the time and in the manner therein specified, and shall indemnify and save harmless the Obligee, its officers, officials, agents, employees and volunteers, as therein stipulated, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

In the event of the Principal's default or Obligee' s termination of the Subcontract due to the Principal's breach or default of the Subcontract; within (20) days after written notice from the Obligee to the Surety of the Principal's breach or default of the Subcontract or Obligee' s termination of the Subcontract, the Surety shall notify Obligee in writing of Surety s assumption of obligations hereunder by its election to either remedy the default or breach of the Principal or to take charge of the Work of the Subcontract and complete the Work at its own expense ("Notice of Election"); provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the Obligee, which approval shall not be unreasonably withheld. The insolvency of the Principal or the Principal's mere denial of a failure of performance or default under the Subcontract shall not by itself, without the Surety's prompt, diligent inquiry and investigation of such denial, be justification for Surety's failure to give the Notice of Election or for its failure to promptly remedy the failure of performance or default of the Principal or to complete the Work.

In the event the Surety shall fail to issue its Notice of Election to Obligee within the time provided for herein above, the Obligee may thereafter cause the cure or remedy of the Principal's failure of performance or default or to complete the Work. The Principal and the Surety shall each be jointly and severally liable to the Obligee for all damages and costs sustained by the Obligee as a result of the Principal's failure of performance under the Subcontract or default in its performance of obligations thereunder, including without limitation the costs of cure or completion exceeding the then remaining balance of the Subcontract price. The Surety's liability hereunder for the costs of performance, damages and other costs sustained by the Obligee upon the Principal's failure of performance under or default under the Subcontract shall be limited to the penal sum hereof, which penal sum shall be deemed to have increased by an amount equal to the costs or value of any changes of any work which increases the Subcontract price.

In the event that suit or other proceeding is brought upon this Bond by the Obligee, the Surety shall pay to the Obligee all costs, expenses and fees incurred by the Obligee, including any expert fees, in connection therewith, including without limitation, attorney's fees. It is expressly agreed that any attorney's fees incurred in any suit or other proceeding brought upon this Bond by the Obligee shall be in addition to the penal sum of the Bond.

No extension of time granted to the Principal and no change, alteration or addition in any of the terms of the contract or any of the contract documents or the work to be performed thereunder, whether made after notice or not, shall release or otherwise affect the obligations of the Surety hereunder, and the Surety waives notice of any such extension, change, alteration or addition. The Surety, by the execution of this bond, represents and warrants that this bond has also been duly executed by the Principal and proper authority, and the Surety hereby waives any defense which it might have by reason of any failure of the Principal to execute or properly execute this bond. Surety hereby waives the provisions of California Civil Code Sections 2845 and 2849. The City is the principal beneficiary of this Bond and has all rights of a party hereto.

[Signatures follow on the next page.]

In witness whereof, this instrument has been duly executed by the Principal and the Surety above named, on the ____ day of _____, 20____.

[NAME OF CONTRACTOR]_____ [NAME]_____

_____ _____

PRINCIPAL SURETY

No Signature of City Attorney required. Standard Document #CPD-S Performance Bond (10-2025) has been used without modification, as certified by the undersigned.

By _____
[Name]

Title:_____
[Department]

Approved:
City Manager, or designee

By: _____
[Name]

Title:_____

Date:_____

CITY OF FRESNO
COMMUNITY WORKFORCE AGREEMENT
PRE-APPRENTICE/APPRENTICE COMPLIANCE
This form is to be completed monthly and
submitted (electronically/hard copy) to:
City of Fresno
Attn: Contract Compliance Officer
Capital Administration Division
747 R Street, 2nd Floor
Fresno, CA 93721

Project Title: _____
Project ID: _____
Bid File Number: _____

Contractor Name: _____
Contractor Address: _____

Pre-Apprentice	Apprentice	Employee Name	Employee Address	Employee City, State, Zip

Prepared by: _____ Date: _____

Approved by _____ Date: _____

CITY OF FRESNO
COMMUNITY WORKFORCE AGREEMENT
JOURNEY LEVEL COMPLIANCE
Submitted (electronically/hard copy) to:
City of Fresno
Attn: Contract Compliance Officer
Capital Administration Division
747 R Street, 2nd Floor
Fresno, CA 93721

Project Title: _____
Project ID: _____
Bid File Number: _____

Contractor Name: _____
Contractor Address: _____

Employee Name	Employee Address	Employee City, State, Zip

Prepared by: _____ Date: _____
Approved by: _____ Date: _____

DIVISION II

GENERAL/PLA CONDITIONS

DIVISION II

GENERAL/PLA CONDITIONS

DEFINITIONS (NONFEDERAL)

Wherever used in the Specifications, including the Instructions to Bidders and the Bid Proposal, or any of the Contract documents, the following words shall have the meaning herein given, unless the context requires a different meaning.

1. "Bidder" shall mean and refer to each person or other entity submitting a bid proposal, whether or not such person or entity shall become a Seller by virtue of award of a Contract by the Buyer.
2. California Building Code (CBC), Latest Edition; California Plumbing Code (CPC), Latest Edition; California Mechanical Code (CMC), Latest Edition; National Electrical Code (NEC), Latest Edition; California Fire Code (CFC), Latest Edition; California Health and Safety Code (as applicable). For purposes of this definition, “Latest Edition” shall mean the edition, and to the extent, adopted by the City through the City of Fresno Municipal Code.
3. “City,” "Buyer," "Owner," "Vendee," "City of Fresno" shall each mean and refer to the City of Fresno, California.
4. "City Standard Specifications" - City of Fresno, Standard Specifications, Department of Public Works, dated September, 2010 and as amended from time-to-time.
5. "Construction Manager" shall mean and refer to the Owner’s authorized representative at the Job Site, in responsible charge of administering the Contract. The Construction Manager shall be the single point of contact for all correspondence, submittals, progress payment requests, and contacts to and from the Contractor.
6. "Contract," "Contract Documents" shall mean and refer to these Specifications, including the Instructions to Bidders, the Bid Proposal, and any addenda thereto, the Agreement and all other standard Specifications, Buyer's Specifications and other papers and documents incorporated by reference into or otherwise referred to in any of the foregoing documents, whether or not attached thereto.
7. “Contractor,” "Seller," "Vendor," "Supplier" shall each mean and refer to each person or other entity awarded a Contract hereunder and named or to be named in the Agreement with the Buyer to furnish the goods or services, or both, to be furnished under the Contract.
8. "Council," "City Council" shall each mean and refer to the Council of the Buyer.
9. "Engineer," "City Engineer," shall mean and refer to the City Engineer and any duly authorized representative.
10. "Goods," "Merchandise" shall each mean and refer to the equipment, material, article, supply, or thing to be furnished by the Seller under the Contract.
11. "Purchasing Manager" shall mean and refer to the Purchasing Manager of the Buyer.
12. "Specifications" shall mean and refer to all of the Contract Documents.
13. "State Standard Specifications" - State of California, Department of Transportation, Standard Specifications, Latest Edition.
14. “Working day” shall mean and refer to City regular business day.

CITY OF FRESNO COMMUNITY WORKFORCE AGREEMENT

This section refers to the City of Fresno's Community Workforce Agreement, dated September 29, 2021.

DEFINITIONS:

1.12 "Project" means a City awarded public works project as defined in California Labor Code Section 1720, where the engineer's estimate of the total cost of the project exceeds one million dollars ($1,000,000). All Construction Contracts required to complete an integrated Project shall be considered in determining whether this threshold is met. For the purpose of application of this threshold to Job Order Contracts, the threshold shall be applied to each job order, rather than to the job order contract aggregate maximum; any individual job order above the threshold shall require application of this Agreement to such individual job order. The City and the Trades Council may mutually agree in writing to add additional projects or components to be covered by this Agreement.

ARTICLE V, PRE-JOB CONFERENCES:

5.1 Timing: The Project Manager shall; convene and conduct, at a location and time mutually agreeable to the Trades Council, a pre-job conference with the Unions and the representatives of all involved Contractors/Employers, who shall be prepared to announce craft assignments and discuss in detail the scope of work and the other issues set forth below, at least fourteen (14) calendar days prior to:

(a) The commencement of any Project work, and

(b) The commencement of Project work on any subsequently awarded Construction Contract.

ARTICLE VII, UNION SECURITY:

7.2 The Contractors/Employers shall make and transmit all deductions for Union dues, fees, and assessments that have been authorized by employees in writing in accordance with the applicable Master Agreement. This Agreement does not require any employee of a non-Union Contractor/Employer to join a Union or to pay dues or fees to a Union as a condition of working on a Project; however, nothing in this Article is intended to supersede the independent requirements of the applicable Master Agreements as to Contractors/Employers signatory to such Master Agreements and as to employees of those Contractors/Employers who are performing Covered Work.

ARTICLE IX, LOCAL HIRING PROGRAM:

9.4 Percentage Requirements: For each Project, each Contractor shall make best faith efforts to satisfy the following percentage requirements (the "Percentage Requirements"):

9.4.1 at least 50 percent of all journey-level Project work hours performed by City Residents;

9.4.2 at least 55 percent of all apprentice-level Project work hours performed by City Residents;

9.4.3 at least 30 percent of all apprentice-level Project work hours performed by New Local Apprentices.

RESOLUTION NO. 2021-242

A RESOLUTION OF THE COUNCIL OF THE CITY OF FRESNO, CALIFORNIA, APPROVING A PROJECT LABOR AGREEMENT FOR CITYWIDE PUBLIC WORK OF IMPROVEMENT PROJECTS (THE "RANDY L. GHAN ACT")

WHEREAS, the City of Fresno is experiencing poor economic conditions created by the COVID-19 pandemic and faces significant infrastructure needs; and

WHEREAS, the Project Labor Agreement (Agreement) provides uniform wages, benefits, overtime pay, hours, working conditions, and work rules for work on major construction projects, as well as providing reliable and uninterrupted qualified workers at predictable costs; and

WHEREAS, an Agreement will help to develop qualified workers in the construction trades and include people who are historically underrepresented in the trades; and

WHEREAS, the Agreement for citywide public work of improvement projects, requires employment of local, economically disadvantaged, apprentices, as well as veterans, women and minorities, to the extent permitted by legal and funding restrictions

WHEREAS, City staff, the Building Trades Council and the ad hoc City Council committee negotiated the Project Labor Agreement as presented to the City Council

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno as follows:

1. Approves the Agreement in substantially the form attached hereto as

Date Adopted: 09/16/2021
Date Approved:09/16/2021
Effective Date: 09/16/2021 Resolution No. 2021-242

Exhibit A.

2. Authorizes the City Manager, or designee, to execute the Agreement.

3. Directs administrative staff to implement and carry out the provisions of the Agreement

4. This resolution shall be effective upon final approval.

* * * * * * * * * * * * * * *

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.
CITY OF FRESNO)

I, BRIANNA PARRA, Interim City Clerk of the City of Fresno, Certify that the foregoing resolution was adopted by the Council of the City of Fresno, at a regular meeting held on the 2nd day of September, 2021.

AYES : Arias, Esparza, Karbassi, Maxwell, Soria, Chavez
NOES : Bredefeld
ABSENT : None
ABSTAIN : None

Mayor Approval: N/A, 2021
Mayor Approval/No Return: N/A, 2021
Mayor Veto: September 13th, 2021
Mayor Approval: September 16th, 2021

BRIANA PARRA, CMC
Interim City Clerk

By: [Signature on File] 9/27/2021
Deputy Date

APPROVED AS TO FORM:
DOUGLAS T. SLOAN
City Attorney

By: [Signature on File] 9/27/2021
Brandon M. Collet Date
Senior Deputy City Attorney

Attachment: Exhibit A – Community Workforce Agreement

COMMUNITY WORKFORCE AGREEMENT
FOR THE CITY OF FRESNO

INTRODUCTION/FINDINGS

This Community Workforce Agreement is entered into this 29th day of September 2021, by and between the City of Fresno (hereinafter the "City"), and the Fresno, Madera, Kings and Tulare Counties Building and Construction Trades Council (hereinafter the "Trades Council") and its affiliated Unions that have executed this Agreement (referred to collectively herein as the "Union(s)"). Contractors and subcontractors of all tiers who work on City construction projects covered by this Agreement (hereinafter the "Contractor(s)/ Employer(s)"), shall become signatory to this Agreement by signing the "**Agreement to be Bound**" attached hereto as **Addendum A**.

A central purpose of this Agreement is to provide employment and training opportunities that build pathways into high-quality, sustainable construction careers for local workers, to create a pool of skilled construction labor for future City construction projects, to develop the regional workforce and economy, and to combat unemployment and underemployment in the region. Equally important, this Agreement is designed to promote the efficiency of construction operations through the use of skilled labor resulting in quality construction outcomes, and to provide for the peaceful settlement of labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring the timely and economical completion of City Projects covered by this Agreement.

WHEREAS, this Agreement encourages construction employment and training opportunities in ways calculated to mitigate the harms caused by geographically concentrated poverty, unemployment and underemployment in economically disadvantaged areas and among City residents; and

WHEREAS, this Agreement reflects a commitment by all parties to diversity, workforce equity, and open opportunity in employment and training on City-funded projects; and

WHEREAS, the City places high priority upon the development of comprehensive programs for the recruitment, training and employment of local area residents and military veterans, and recognizes the ability of local pre-apprenticeship and apprenticeship programs to provide meaningful and sustainable career pathways in the construction industry; and

WHEREAS, the timely and successful completion of City Projects is an important fiduciary responsibility of the City of Fresno; and

WHEREAS, large numbers of workers of various skills will be required in the performance of construction work on City Projects and the timely and successful completion of City Projects is of the utmost importance to meet the needs of the City and avoid increased costs from delays in construction; and

WHEREAS, the use of skilled labor on construction work increases the safety of construction projects as well as the quality of completed work; and

WHEREAS, it is recognized that on City Projects with multiple contractors and bargaining units on the job site at the same time over an extended period of time, the potential for work disruption may be substantial without an overriding commitment to maintain continuity of work; and

WHEREAS, the interests of the general public, the City, the Unions, and the Contractors/Employers are best served when construction work proceeds in an orderly manner without disruption because of strikes, sympathy strikes, work stoppages, picketing, lockouts, slowdowns or other interferences with work; and

WHEREAS, the Contractors/Employers and the Unions desire to mutually establish and stabilize wages, hours and working conditions for the workers employed on City Projects and to encourage close cooperation among the Contractors/Employers and the Unions so that a satisfactory, continuous and harmonious relationship will exist; and

WHEREAS, the parties seek to avoid the tensions that would arise on City Projects if Union and non-union workers of different employers were to work side by side on City Projects, potentially leading to labor disputes that could delay completion of City Projects; and

WHEREAS, this Agreement is not intended to replace, interfere with, abrogate, diminish or modify existing local or national collective bargaining agreements in effect during the duration of City Projects, insofar as a legally binding agreement exists between the Contractors/Employers and the Unions, except to the extent that the provisions of this Agreement are inconsistent with said collective bargaining agreements, in which event the provisions of this Agreement shall prevail; and

WHEREAS, the contract(s) for construction work on City Projects will be awarded in accordance with the applicable provisions of all state, local and federal laws; and

WHEREAS, the parties to this Agreement pledge their full good faith and trust to work toward the mutually satisfactory completion of the City Projects;

NOW, THEREFORE, IT IS AGREED BETWEEN AND AMONG THE PARTIES HERETO, AS FOLLOWS:

ARTICLE I
DEFINITIONS

1.1 "Agreement" means this Community Workforce Agreement.

1.2 "Agreement to be Bound" means the agreement (attached hereto as Addendum A) that shall be executed by each and every Contractor/Employer as a condition of working on a Project.

1.3 "City" means the City of Fresno, California and its governing board, officers, agents and employees, including managerial personnel.

1.4 "City Resident" means an individual domiciled in the City. "Domiciled" has the meaning set forth in section 349(b) of the California Election Code, which cannot be a post office box.

1.5 "Completion" means that point at which there is Final Acceptance by the City of a Construction Contract and the City has filed a Notice of Completion. For purposes of this definition, "Final Acceptance" means that point in time at which the City has determined upon final inspection that the work has been completed in all respects and all required contract documents, contract drawings, warranties, certificates, manuals and data have been submitted and training completed in accordance with the contract documents and the City has executed a written acceptance of the work.

1.6 "Construction Contract" means the public works or improvement contract(s) (including design-bid, design-build, lease-leaseback or other contracts under which construction of City Projects is done) awarded by the City that are necessary to complete City Projects.

1.7 "Contractor(s)/Employer(s)" or "Contractor(s)" or "Employer(s)" means any individual, firm, partnership or corporation (including the prime contractor, general contractor, construction manager, project manager, design-build entity, lease-leaseback entity or equivalent entity), or combination thereof, including joint ventures, and their successors and assigns, that is an independent business enterprise and enters into a contract with the City with respect to the construction of any part of City Projects, and all contractors and subcontractors of any tier.

1.8 "Covered Work" means work on a Project that is described in Section 2.3, and not excluded pursuant to Section 2.4.

1.9 "Master Agreement" or "Schedule A" means the Master Collective Bargaining Agreement of each craft Union signatory hereto.

1.10 "New Local Apprentice" means a City Resident who both (i) is enrolled (or can be immediately enrolled) in a state-approved joint labor-management apprenticeship program and has progressed less than halfway toward the work hours needed to graduate from such program; and (ii) is a graduate of a Trades Council-recognized pre- apprenticeship program.

1.11 "Party" means the City, the Trades Council, and the Unions.

1.12 "Project" means a City awarded public works project as defined in California Labor Code Section 1720, where the engineer's estimate of the total cost of the project exceeds one million dollars ($1,000,000). All Construction Contracts required to complete an integrated Project shall be considered in determining whether this threshold is met. For the purpose of application of this threshold to Job Order Contracts, the threshold shall be applied to each job order, rather than to the job order contract aggregate maximum;

any individual job order above the threshold shall require application of this Agreement to such individual job order. The City and the Trades Council may mutually agree in writing to add additional projects or components to be covered by this Agreement.

1.13 "Project Manager" means the person(s) or entity(ies) designated by the City to oversee all phases of construction on a Project and the implementation of this Agreement.

1.14 "Trades Council" means the Fresno, Madera, Kings and Tulare Counties Building and Construction Trades Council.

1.15 "Transitional Housing" means housing the purpose of which is to facilitate the movement of homeless individuals and families into permanent housing within 24 months.

1.16 "Union" or "Unions" means the Trades Council and its affiliated local unions signatory to this Agreement, acting on their own behalf and on behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed this Agreement.

ARTICLE II

SCOPE OF AGREEMENT

2.1 Parties: This Agreement applies to and is limited to all Contractors/Employers performing work under a Construction Contract on a Project (including subcontractors at any tier), and their successors and assigns, the City, the Trades Council, and its affiliated Unions signatory to this Agreement.

2.2 Applicability: This Agreement governs all Construction Contracts awarded on City Projects. For purposes of this Agreement, Construction Contracts shall be considered Completed as set forth in Section 1.5, except when the City directs a Contractor to engage in repairs, warranty work, modifications, or punch list work under a Construction Contract or when a Contractor performs work under a change order for a Construction Contract.

2.2.1 The terms of this Agreement will cover, and will fully apply to, any Contractor performing Project work, without regard to whether that Contractor performs work at other sites on either a union or non-union basis. This Agreement shall not apply to any work of any Contractor other than the Project work specifically covered by this Agreement. No Contractor shall be required to become signatory to a Union Schedule A Agreement as a result of performing Project work.

2.3 Covered Work: This Agreement covers, without limitation, all site preparation, surveying, construction, alteration, demolition, installation, improvement, remediation, retrofit, painting or repair of buildings, structures and other works, and related activities for a Project that is within the craft jurisdiction of one of the Unions and that is directly or indirectly part of a Project, including, without limitation to the following examples, landscaping and temporary fencing, temporary HVAC, geotechnical and

exploratory drilling, soils and materials testing and inspection, pipelines (including those in linear corridors built to serve a Project), pumps, pump stations, start-up, modular furniture installation, and final clean-up. This Agreement covers work done for a Project in temporary yards, dedicated sites, or areas adjacent to a Project, and at any on-site or off-site batch plant constructed to supply materials to a Project.

2.3.1 This Agreement applies to any start-up, calibration, commissioning, performance testing, repair, maintenance, and operational revisions to systems and/or subsystems for a Project performed after Completion, unless performed by City employees.

2.3.2 This Agreement covers all on-site fabrication work over which the City, Contractor(s)/Employer(s) or subcontractor(s) possess the right of control (including work done for a Project in any temporary yard or area established for a Project). This Agreement also covers any off-site work, including fabrication, that is traditionally performed by the Unions and is directly or indirectly part of a Project, provided such work is covered by a current Master Agreement or current local addenda to a national agreement of the applicable Union(s).

2.3.3 Except for the delivery of supplies, equipment or materials that are stockpiled for later use, this Agreement covers all construction trucking work, including the hauling and delivery of ready-mix, asphalt, aggregate, sand, soil or other fill or similar material that is directly incorporated into the construction process as well as the off- hauling of soil, sand, gravel, rocks, concrete, asphalt, excavation materials, construction debris and excess fill, material and/or mud. Contractor(s)/Employer(s), including brokers, of persons providing construction trucking work shall provide certified payroll records to the City within ten (10) days of written request or as required by the bid specifications.

2.3.4 Work covered by this Agreement within the following craft jurisdictions shall be performed under the terms of their National Agreements as follows: the National Transient Lodge (NTL) Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of Elevator Constructors, and any instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, with the exception that Articles IV, XIV and XV of this Agreement shall apply to such work.

2.4 Exclusions: The following shall be excluded from the scope of this Agreement.

2.4.1 This Agreement shall not apply to work performed by the City's own employees as permitted by the Public Contract Code.

2.4.2 This Agreement shall not apply to a Contractor/Employer's non-construction craft employees, managerial employees, administrative personnel, and supervisors above the level of general foreman, unless covered by a Master Agreement.

2.4.3 This Agreement shall not apply to a contract entered into with a professional service provider for a Project, as defined in Section 1.12, unless the professional service provider performs or subcontracts Covered Work, in which event the entity self-performing the Covered Work shall execute an Agreement to be Bound. Where applicable, the City shall include this requirement in the professional services contract.

2.4.4 This Agreement shall not apply to any non-Project work performed on or near or leading to the site of work covered by this Agreement that is undertaken by state, county, city, or other governmental bodies or their contractors. Work performed by public or private utilities including all electrical utility, voice-data-video, and security installation work ahead of and up to the electrical service entry connection or the main point of entry into the building shall be excluded. All electrical utility, voice-data-video, and security installation work performed after the electrical utility service entrance or the main point of entry shall be Covered Work. Additionally, all contracted work performed ahead of the service entrance connection and main point of entry that is inside the property line and provides for access to the building via a conduit or series of conduits shall be Covered Work.

2.4.5 This Agreement shall not apply to the off-site maintenance of leased equipment and on-site supervision of such work.

2.4.6 This Agreement does not apply to work by employees of, or contractors retained by, a manufacturer or vendor necessary to maintain such manufacturer's or vendor's warranty or guaranty, provided the manufacturer or vendor provides documentation showing that the warranty or guarantee specifically requires such employees or contractors to perform the work in order to preserve the warranty or guarantee, or provided the manufacturer or vendor demonstrates by an enumeration of specific tasks that the work cannot be performed by craft workers covered by this Agreement.

2.4.7 In circumstances requiring special knowledge, work may be performed by persons not covered by this Agreement provided that the Contractor/Employer or manufacturer responsible for such work demonstrates by an enumeration of specific tasks that the work cannot be performed by craft workers covered by this Agreement. A Contractor/Employer invoking this provision shall give notice to the Trades Council and the relevant Union(s), and such work shall be identified and discussed by the Contractor/Employer at its Pre-Job Conference, or, if not known at the time of the Pre-Job Conference, shall be identified and discussed with the Trades Council and the relevant Union(s) once the work becomes known, including by holding a Pre-Job Conference if requested by the Trades Council or the relevant Union(s).

2.4.8 This Agreement shall not apply to work substantially funded by any federal, state, other local or public agency that prohibits the use of project labor agreements on projects receiving its funding, or the funding of projects on which such agreements are used. With respect to such work, the City agrees that it will make a reasonable effort to defend the application of this Agreement, including by making a written request to the funding source. Notwithstanding the foregoing, however, should

only a specific provision of the Agreement be prohibited by the funding source, the parties shall modify the requirements of this Agreement accordingly, to advance the purposes of this Agreement to the maximum extent feasible without the loss of funding.

2.4.9 This Agreement shall not apply to work that is jointly performed with another public agency, unless the work is awarded by the City, or unless otherwise agreed to by the Parties on a case by case basis. With respect to such work jointly performed with another public agency, the City will make a request to the other public agency to apply the terms of this Agreement, or in the alternative, request that the other public agency communicate with City representatives and the Trades Council to discuss application of this Agreement.

2.4.10 This Agreement shall not apply to renovation of Transitional housing buildings or units, given the time sensitivity of such work. For the avoidance of doubt, this exclusion does not apply to new construction, nor to a total remodel where residents are not occupying the building or units.

2.5 Award of Contracts: It is understood and agreed that the City has the right to select any qualified bidder for the award of a Construction Contract under this Agreement. The bidder need only be willing, ready and able to execute and comply with this Agreement. It is further agreed that this Agreement shall be included in all invitations to bid or solicitations for proposals from contractors or subcontractors for work on a Project. The City shall provide a copy of all such invitations to bid to the Trades Council at the time of issuance.

ARTICLE III
EFFECT OF AGREEMENT

3.1 By executing this Agreement, the Trades Council, the Unions and the City agree to be bound by each and all of the provisions of the Agreement.

3.2 By accepting the award of work under a Construction Contract for a Project, whether as a Contractor or subcontractor thereunder, all Contractors/Employers agree to be bound by each and every provision of this Agreement and agree to evidence their acceptance prior to the commencement of work by executing the Agreement to be Bound in the form attached hereto as **Addendum A**.

3.3 At the time that any Contractor/Employer enters into a subcontract with any subcontractor providing for the performance of work under a Construction Contract, the Contractor/Employer shall provide a copy of this Agreement to said subcontractor and shall require the subcontractor, as a condition of accepting the award of a construction subcontract, to agree in writing, by executing the Agreement to be Bound, to be bound by each and every provision of this Agreement prior to the commencement of work. The obligations of a Contractor may not be evaded by subcontracting. If the subcontractor refuses to execute the Agreement to be Bound, then such subcontractor shall not be awarded a Construction Contract on a Project.

3.4 This Agreement shall only be binding on the signatory parties hereto, and their successors and assigns, and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any such party. Each Contractor shall alone be liable and responsible for its own individual acts and conduct and for any breach or alleged breach of this Agreement, except as otherwise provided by law or the applicable Master Agreement. Any dispute between the Union(s) and the Contractor(s) with respect to compliance with this Agreement shall not affect the rights, liabilities, obligations and duties between the Union(s) and other Contractor(s) party to this Agreement.

3.5 It is mutually agreed by the parties that any liability by a Union signatory to this Agreement shall be several and not joint. Any alleged breach of this Agreement by a Union shall not affect the rights, liabilities, obligations and duties between the Contractor(s) and the other Union(s) party to this Agreement.

3.6 The provisions of this Agreement, including the Schedule As incorporated herein by reference, shall apply to the work covered by this Agreement, notwithstanding the provisions of any other local, area and/or national agreements which may conflict with or differ from the terms of this Agreement. To the extent a provision of this Agreement conflicts with a Schedule A, the provision of this Agreement shall prevail. Where a provision of a Schedule A does not conflict with this Agreement, the provision of the Schedule A shall apply.

ARTICLE IV
WORK STOPPAGES, STRIKES. SYMPATHY STRIKES AND LOCKOUTS

4.1. The Unions, the City, and the Contractor(s)/Employer(s) covered by this Agreement agree that for the duration of a Project:

4.1.1 There shall be no strikes, sympathy strikes, work stoppages, picketing, handbilling or otherwise advising the public that a labor dispute exists, or slowdowns of any kind, for any reason, by the Unions or employees employed on a Project, at the job site of a Project or any other City facility because of a dispute on a Project. Disputes arising between the Unions and Contractor(s)/ Employer(s) on other City projects are not governed by the terms of the Agreement or this Article.

4.1.2 There shall be no lockout of any kind by a Contractor/Employer of workers employed on a Project.

4.1.3 If a Master Agreement expires before the Contractor/Employer completes the performance of work under a Construction Contract and the Union or Contractor/Employer gives notice of a demand for a new or modified Master Agreement, the Union agrees that it will not strike on work covered by this Agreement and the Union and the Contractor/Employer agree that the expired Master Agreement will continue in full force and effect for work covered under this Agreement until a new or modified Master Agreement is reached. If the new or modified Master Agreement provides that any terms of the Master Agreement shall be retroactive, the Contractor/ Employer agrees to comply with any retroactive terms of the new or modified Master Agreement that are applicable

to any employee(s) on a Project during the interim, with retroactive payment due within seven (7) calendar days of the effective date of the new or modified Master Agreement.

4.1.4 In the case of nonpayment of wages or trust fund contributions on a Project, the Union shall give the City and the Contractor/Employer three (3) business days' notice when nonpayment of trust fund contributions has occurred, and one (1) business days' notice when nonpayment of wages has occurred or when paychecks being tendered to a financial institution normally recognized to honor such paychecks will not honor such paycheck, of the intent to withhold labor from the Contractor/Employers' or their subcontractor's workforce, during which time the Contractor/Employer may correct the default. In this instance, a Union's withholding of labor (but not picketing) from a Contractor/Employer who has failed to pay its fringe benefit contributions or failed to meet its weekly payroll shall not be considered a violation of this Article.

4.1.5 Notification: If the City or any Contractor contends that any Union has violated this Article, it will so notify in writing the Senior Executive of the Trades Council and the Senior Executive of the Union, setting forth the facts alleged to violate the Article, prior to instituting the expedited arbitration procedure set forth below. The Trades Council will immediately use its best efforts to cause the cessation of any violation of this Article. The leadership of the Union will immediately inform the workers of their obligations under this Article. A Union complying with this obligation shall not be held responsible for the unauthorized acts of employees it represents.

4.2 Expedited Arbitration: Any party to this Agreement shall institute the following procedure, prior to initiating any other action at law or equity, when a breach of this Article is alleged to have occurred.

4.2.1 A party invoking this procedure shall notify Robert Hirsch, as the permanent arbitrator, or Barry Winograd, as the alternate arbitrator, under this procedure. In the event the permanent arbitrator is unavailable at any time, the alternate will be contacted. If neither is available, the parties shall select the arbitrator from the list in Section 14.4. Notice to the arbitrator shall be by the most expeditious means available, with notice by email and telephone to the City, the involved Contractor, and the party alleged to be in violation, and to the Trades Council and involved local Union if a Union is alleged to be in violation.

4.2.2 Upon receipt of said notice, the City will contact the permanent arbitrator named above, or the alternate if the permanent arbitrator is not available, who will attempt to convene a hearing within twenty-four (24) hours if it is contended that the violation still exists.

4.2.3 The arbitrator shall notify the parties by email and telephone of the place and time for the hearing. Said hearing shall be completed in one session, which, with appropriate recesses at the arbitrator's discretion, shall not exceed twenty-four (24) hours unless otherwise agreed upon by all parties. A failure of any party to attend said hearings shall not delay the hearing of evidence or the issuance of an award by the arbitrator.

4.2.4 The sole issue at the hearing shall be whether or not a violation of Section 4.1 of the Agreement has occurred. The arbitrator shall have no authority to consider any matter of justification, explanation or mitigation of such violation or to award damages, which issue is reserved for court proceedings, if any. The award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) calendar days, but the parties shall not delay compliance with or enforcement of the award due to the issuance of a written opinion. The arbitrator may order cessation of the violation of this Article, and the arbitrator's award shall be served on all parties by hand or registered mail upon issuance. Should a party found in violation of this Article fail to comply with the arbitrator's award ordering the party to cease the violation, the party in violation shall pay to the affected party as liquidated damages the sum of ten thousand dollars ($10,000.00) per shift for which it failed to comply, or portion thereof, until such violation is ceased. The arbitrator shall retain jurisdiction to resolve any disputes regarding the liquidated damages claimed under this section.

4.2.5 The arbitrator's award may be enforced by any court of competent jurisdiction upon the filing of this Agreement and all other relevant documents referred to above in the following manner. The party filing such enforcement proceedings shall give written notice to the other party. In a proceeding to obtain a temporary order enforcing the arbitrator's award as issued under this Article, all parties waive the right to a hearing and agree that such proceeding may be ex parte. However, such agreement does not waive any party's right to seek or participate in a hearing for a final order of enforcement. Any court order enforcing the arbitrator's award shall be served on all parties by hand or delivered by certified mail.

4.2.6 Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure, or which interfere with compliance with the above procedure, are waived by the parties.

4.2.7 The fees and expenses of the arbitrator shall be divided equally between the party instituting the arbitration proceedings provided in this Article and the party alleged to be in breach of its obligation under this Article.

4.2.8 Should either the permanent or the alternate arbitrator identified above no longer work as a labor arbitrator, the City and the Trades Council shall mutually agree to a replacement.

ARTICLE V
PRE-JOB CONFERENCES

5.1 Timing: The Project Manager shall convene and conduct, at a location and time mutually agreeable to the Trades Council, a pre-job conference with the Unions and the representatives of all involved Contractors/Employers, who shall be prepared to announce craft assignments and discuss in detail the scope of work and the other issues set forth below, at least fourteen (14) calendar days prior to:

(a) The commencement of any Project work, and

(b) The commencement of Project work on any subsequently awarded Construction Contract.

5.2 The pre-job conference shall be attended by a representative of each participating Contractor and each affected Union, and the Trades Council and City may attend at their discretion.

5.3 The pre-job conference shall include but not be limited to the following subjects:

(a) A listing of each Contractor and subcontractor and their scope of work;

(b) The craft assignments;

(c) The estimated number of craft workers required to perform the work;

(d) Transportation arrangements;

(e) The estimated start and completion dates of the work; and

(f) Discussion of pre-fabricated materials.

5.4 Joint Administrative Committee: This Agreement is intended to provide close cooperation between management and labor. To that end, the City shall designate two representatives and the Trades Council shall designate two representatives to serve on a Joint Administrative Committee ("JAC"), each of whom may designate an alternate. JAC members may invite participation by a Contractor or Union as needed. The JAC shall meet quarterly and at the request of any member, to review progress of Projects and to discuss matters of general concern, such as safety and security. The JAC shall serve as a forum to foster communication between management and labor, and to assist the Unions and the Contactors to complete Projects in an economically efficient manner without interruption, delays or work stoppages.

5.4.1 The JAC shall participate in the drafting of reports to City Council regarding the status of targeted objectives under this Agreement, including the local hiring and apprenticeship provisions herein.

5.4.2 The JAC shall have no authority to review grievances or disputes involving this Agreement, which are subject to the applicable grievance procedure.

ARTICLE VI

NO DISCRIMINATION

6.1 The Contractors/Employers and the Unions agree to comply with all anti-discrimination provisions of federal, state, and local law, to protect employees and applicants for employment, on a Project.

ARTICLE VII
UNION SECURITY

7.1 The Contractors/Employers recognize the Unions as the sole bargaining representative of all craft employees working within the scope of this Agreement, and all such employees must be represented by a Union for the duration of their employment on a Project.

7.2 The Contractors/Employers shall make and transmit all deductions for Union dues, fees, and assessments that have been authorized by employees in writing in accordance with the applicable Master Agreement. This Agreement does not require any employee of a non-Union Contractor/Employer to join a Union or to pay dues or fees to a Union as a condition of working on a Project; however, nothing in this Article is intended to supersede the independent requirements of the applicable Master Agreements as to Contractors/Employers signatory to such Master Agreements and as to employees of those Contractors/Employers who are performing Covered Work.

7.3 Authorized representatives of the Unions shall have access to a Project whenever work covered by this Agreement is being, has been, or will be performed on a Project.

ARTICLE VIII
REFERRAL

8.1 Contractor(s)/Employer(s) performing construction work on a Project shall, in filling craft job requirements, utilize and be bound by the registration facilities and referral systems established or authorized by the Unions signatory hereto. The Contractor(s)/Employer(s) shall have the right to reject any applicant referred by the Union(s), in accordance with the applicable Master Agreement.

8.2 Contractor(s)/Employer(s) shall have the unqualified right to select and hire directly all supervisors above the level of general foreman it considers necessary and desirable, without such persons being referred by the Union(s), unless such craft construction employee is covered by a Master Agreement.

8.3 Core Workers: Contractor(s)/Employer(s) that are not signatory to a Master Agreement may request by name, and the Union will honor, referral of Core Workers as journeypersons for Project work who have been on the Contractor/Employer's active payroll for at least sixty (60) out of the one hundred (100) working days prior to the request, and who possess all licenses and certifications required to perform the work ("Core Workers").

8.3.1 The Union will refer to the Contractor one journeyperson employee from the hiring hall then one Core Worker for the affected trade or craft. This process shall be repeated, one and one, until the Contractor's workforce has a maximum of five(5) Core Workers. Thereafter, all of the Contractor's additional employees performing Covered Work shall be hired from the Union's hiring hall out-of-work list(s).

8.3.2 When the Contractor's workforce is reduced, employees shall be reduced so as to maintain the same ratio of Core Workers to hiring hall referrals as was applied in the initial hiring.

8.3.3 The Contractor shall provide the appropriate Union with the name and all necessary information for each Core Worker, and each Core Worker shall register with the Union's hiring hall and comply with Article VII before commencing work on a Project. If there is any question regarding an employee's eligibility as a Core Worker under this section, the Contractor shall provide the Union with written records demonstrating eligibility.

8.4 In the event that referral facilities maintained by the Union(s) are unable to fill the requisition of a Contractor/Employer for employees within a forty-eight (48) hour period (Saturdays, Sundays and Holidays excluded) after such requisition is made by the Contractor/Employer, the Contractor/Employer shall be free to obtain the worker(s) from any source. A Contractor/Employer who hires a worker(s) to perform Covered Work on a Project pursuant to this section shall immediately provide the appropriate Union with the name and address of such worker(s) and shall immediately refer such worker(s) to the appropriate Union to satisfy the requirements of this Agreement.

ARTICLE IX
LOCAL HIRING PROGRAM

9.1 It is in the interest of the parties to this Agreement to facilitate employment of City Residents to construct City Projects. To that end, the Unions agree to exert their utmost efforts to recruit a sufficient number of craft persons to fulfill the referral requests of Contractors/Employers for City Projects, consistent with this Article.

9.2 To the maximum extent allowed by law and consistent with the Unions' hiring hall referral provisions set forth in Master Agreements, City residents shall be requested by the Contractor(s)/Employer(s) and dispatched by the applicable Union(s).

9.3 Each Contractor shall either demonstrate satisfaction of the Percentage Requirements in Section 9.4 below, or demonstrate satisfaction of the good faith efforts set forth in Section 9.5 below.

9.4 Percentage Requirements: For each Project, each Contractor shall make best faith efforts to satisfy the following percentage requirements (the "Percentage Requirements"):

9.4.1 at least 50 percent of all journey-level Project work hours performed by City Residents;

9.4.2 at least 55 percent of all apprentice-level Project work hours performed by City Residents;

9.4.3 at least 30 percent of all apprentice-level Project work hours performed by New Local Apprentices.

9.5 Each Contractor must take the following steps in an attempt to utilize City Residents to satisfy the Percentage Requirements:

9.5.1 City Residents/Journey level Hours. Contractor may assign current crew members who are City Residents to a Project. If staffing with Contractor's current crew members does not enable satisfaction of the Percentage Requirement of Section 9.4.1, the Contractor shall request referral of needed City Residents from the appropriate Union hiring hall, using "name call," "rehire," or other available procedures to satisfy the Percentage Requirement of Section 9.4.1. All requests for referrals under this subsection shall be in writing.

9.5.2 City Residents/Apprentice Hours. Contractor may assign current crew members who are City Residents and apprentices registered in a joint labor- management apprenticeship program to a Project. If staffing with Contractor's current crew members does not enable satisfaction of the Percentage Requirement of Section 9.4.2, the Contractor shall request referral of needed City Resident apprentices from the appropriate Union hiring hall or joint labor-management apprenticeship program, using "name call," "rehire," or other available procedures to satisfy the Percentage Requirement of Section 9.4.2. All requests for referrals under this subsection shall be in writing.

9.5.3 New Local Apprentices. Contractor may assign current crew members who are New Local Apprentices to a Project. If staffing with Contractor's current crew members does not enable satisfaction of the Percentage Requirement of Section 9.4.3, the Contractor shall request referral of New Local Apprentices from the appropriate Union hiring hall or joint labor-management apprenticeship program, using "name call," "rehire," or other available procedures to satisfy the Percentage Requirement of Section

9.4.3. All requests for referrals under this subsection shall be in writing.

9.6 Union hiring halls and, where applicable, joint apprenticeship programs, will refer apprentices to non-signatory Contractors/Employers upon request provided the Contractors/Employers submit the forms required by the Department of Industrial Relations.

9.7 Oversight and Enforcement. Contractor requirements of the Local Hiring Program shall be terms of the prime contracts awarded by the City and subcontracts awarded by Contractors. Enforcement actions shall be pursuant to contract compliance procedures set forth in such contracts. Hours worked by workers who reside in states other than California shall not be considered in compliance determinations regarding the Local Hiring Program. Upon request by the City, Contractors shall submit copies of all information necessary to determine Contractor compliance with the Local Hiring Program, including dispatch requests and responses, records regarding hiring decisions of City Residents and New Local Apprentices who were referred but not hired, and any other relevant information requested by the City.

9.8 Federally-Funded Projects: The requirements of this Article IX shall not apply to Projects for which a federal funding source prohibits such application. However,

if a federal funding source requires alternative hiring goals or requirements (such as in federal Executive Order 11246), then such requirements shall apply, and all requirements and procedures set forth in this Article shall be utilized to implement the alternative hiring goals or requirements imposed by the federal funding source. The City shall notify the Trades Council in the event that federal hiring goals supplant this Article.

ARTICLE X
WAGES AND BENEFITS

10.1 The Contractors/Employers agree to pay contributions to the vacation, pension and/or other deferred compensation plan, apprenticeship, worker protection and assistance, and health benefit funds established by the applicable Master Agreement(s) for each hour worked on a Project, in the amounts designated in the applicable Master Agreement(s).

10.2 By signing this Agreement, the Contractors/Employers adopt and agree to be bound by the written terms of the legally established Trust Agreements described in Section 10.1, which may from time to time be amended, specifying the detailed basis upon which payments are to be made into, and benefits paid out of, such Trust Funds. The Contractors/Employers authorize the parties to such local Trust Agreements to appoint trustees and successor trustees to administer the Trust Funds and hereby ratify and accept the trustees so appointed as if they were appointed by the Contractors/Employers. The Contractors/Employers agree to execute a separate subscription agreement(s) when such Trust Fund(s) requires such document(s).

10.3 Wages, Hours, Terms and Conditions of Employment: The wages, hours and other terms and conditions of employment on City Projects shall be governed by the Master Agreement of the respective craft, to the extent such Master Agreement is not inconsistent with this Agreement. Where a subject is covered by the Master Agreement and not covered by this Agreement, the Master Agreement will prevail. When a subject is covered by both the Master Agreement and this Agreement, to the extent there is any inconsistency, this Agreement will prevail.

10.4 Holidays: Holidays shall be as set forth in the applicable Master Agreement.

ARTICLE XI
APPRENTICES

11.1 Recognizing the need to develop adequate numbers of competent workers in the construction industry, including on public works projects, the Contractors/Employers shall employ apprentices from a California state-approved Joint Apprenticeship Training Program in their respective crafts, to perform such work as is within their capabilities and that is customarily performed by the craft in which they are indentured.

11.2 Apprentice ratios will be in compliance with the provisions of the California Labor Code and the applicable state prevailing wage determination.

11.3 Consistent with the Master Agreements, there shall be no restriction on the utilization of apprentices in performing the work of their craft provided they are properly indentured and supervised.

ARTICLE XII
HELMETS TO HARDHATS

12.1 The Contractors/Employers and Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Contractors/Employers and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

12.2 The Unions and Contractors/Employers agree to coordinate with the Center to participate in an integrated database of veterans interested in working on Projects and of apprenticeship and employment opportunities for Projects. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE XIII
COMPLIANCE

13.1 It shall be the responsibility of the Contractors/Employers and Unions to investigate and monitor compliance with the provisions of Article IX of this Agreement. Nothing in this Agreement shall be construed to interfere with or supersede the usual and customary legal remedies available to the Unions and/or employee benefit Trust Funds to collect delinquent wages or Trust Fund contributions from Contractors/Employers on the Projects. Because the Projects are public works subject to the California Labor Code, the City shall monitor and enforce the Contractors/Employers' compliance with state prevailing wage requirements as well as this Agreement.

ARTICLE XIV
GRIEVANCE ARBITRATION PROCEDURE

14.1 Project Labor Disputes: All disputes involving the application or interpretation of a Master Agreement to which a Contractor/Employer and a Union are parties shall be resolved pursuant to the resolution procedures of the Master Agreement. All disputes relating to the interpretation or application of this Agreement, other than disputes under Article IV and Article XV, shall be subject to resolution by the grievance arbitration procedures set forth in this Article.

14.2 Employee Discipline: All disputes involving the discipline and/or discharge of an employee working on a Project shall be resolved through the grievance and arbitration provisions contained in the Master Agreement for the craft of the affected

employee. No employee working on a Project shall be disciplined or discharged without just cause.

14.3 No grievance shall be recognized unless the grieving party (Union or District Council on its own behalf, or on behalf of an employee whom it represents, or a Contractor/Employer on its own behalf) provides notice in writing to the party with whom it has a dispute within five (5) business days after becoming aware of the dispute but in no event more than thirty (30) business days after it reasonably should have become aware of the event giving rise to the dispute. Time limits may be extended by mutual agreement of the parties.

14.4 Grievances shall be settled according to the following procedures:

Step 1: Within five (5) business days after the receipt of the written notice of the grievance, the representative of the involved Union or District Council, or his/her designee, and the representative of the involved Contractor/Employer, shall confer and attempt to resolve the grievance.

Step 2: If the grievance is not resolved at Step 1, within five (5) business days of the Step 1 meeting or the conclusion of efforts to resolve the grievance at Step 1, the alleged grievance may be referred in writing by either involved party to the Business Manager(s) of the affected Union(s) involved and the Labor Relations Manager of the Contractor/Employer, or the Contractor/Employer's designated representative, for discussion and resolution. This time limit may be extended by mutual consent of both parties. Regardless of which party has initiated the grievance, the Union shall notify its International Union representative prior to the Step 2 meeting, and the International Union representative shall advise if it intends to participate in the Step 2 meeting. The Project Manager and the Trades Council shall have the right to participate in any efforts to resolve the dispute at Step 2.

Step 3: If the grievance is not resolved at Step 2, either party may request the dispute be submitted to arbitration within five (5) business days of the Step 2 meeting or the conclusion of efforts to resolve the grievance at Step 2. This time limit may be extended by mutual consent of both parties. Within five (5) business days after referral of a dispute to arbitration, the representatives shall notify the permanent arbitrator designated in Article IV, or if not available, the alternate arbitrator designated in Article IV, for final and binding arbitration. If the permanent arbitrator or the alternate is not available, an arbitrator shall be selected by the alternate striking method from the list of three (3) below. The order of striking names from the list of arbitrators shall be determined by a coin toss, the winner of which shall decide whether they wish to strike first or second.

1. Carol Vendrillo
2. David Weinberg
3. Mark Keppler

14.5 The decision of the arbitrator shall be final and binding on all parties. The arbitrator shall have no authority to change, amend, add to or detract from any of the provisions of the Agreement. The expense of the arbitrator shall be borne equally by both parties. The arbitrator shall arrange for a hearing on the earliest available date from the date of his/her selection. A decision shall be given to the parties within five (5) calendar days after completion of the hearing unless such time is extended by mutual agreement. A written opinion may be requested by a party from the presiding arbitrator.

14.6 The time limits specified at any step of the grievance procedure may be extended by mutual agreement of the parties. However, failure to process a grievance, or failure to respond in writing within the time limits provided above, without an agreed upon extension of time, shall be deemed a waiver of such grievance without prejudice, or without precedent to the processing and/or resolution of like or similar grievances or disputes.

14.7 In order to encourage the resolution of disputes and grievances at Steps 1 and 2 of this grievance procedure, the parties agree that such settlements shall not be precedent setting.

14.8 Should any of the arbitrators listed in this Article or Article IV no longer work as a labor arbitrator, the City and the Trades Council shall mutually agree to a replacement.

ARTICLE XV

WORK ASSIGNMENTS AND JURISDICTIONAL DISPUTES

15.1 The assignment of Covered Work will be solely the responsibility of the Employer performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of the Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

15.2 All jurisdictional disputes on this Project between or among the building and construction trades Unions and the Employers parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Employers and Unions parties to this Agreement.

15.3 If a dispute arising under this Article involves the Northern California Carpenters Regional Council or any of its subordinate bodies, an arbitrator shall be chosen by the procedures specified in Article V, Section 5 of the Plan from a list composed of John Kagel, Thomas Angelo, Robert Hirsch and Thomas Pagan, and the arbitrator's hearing on the dispute shall be held at the offices of the California State Building and Construction Trades Council in Sacramento, California within fourteen (14) calendar days of the selection of the arbitrator. All other procedures shall be as specified in the Plan.

15.4 All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Employer's assignment shall

be adhered to until the dispute is resolved. Individual employees violating this section shall be subject to immediate discharge.

15.5 Each Employer will conduct a pre-job conference with the Trades Council prior to commencing work. The City and the Project Manager will be advised in advance of all such conferences and may participate if they wish. Pre-job conferences for different Employers may be held together.

ARTICLE XVI
MANAGEMENT RIGHTS

16.1 Consistent with the Schedule A agreements, the Contractor(s)/Employer(s) shall retain full and exclusive authority for the management of their operations, including the right to direct their work force in their sole discretion. No rules, customs or practices shall be permitted or observed which limit or restrict production, or limit or restrict the working efforts of employees, except that all lawful manning provisions in the Master Agreement shall be recognized.

ARTICLE XVII
DRUG AND ALCOHOL TESTING

17.1 The use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms at any time during the work day is prohibited.

17.2 Drug and alcohol testing shall be conducted in accordance with the substance abuse prevention policies set forth in the applicable Schedule A.

ARTICLE XVIII
SAVINGS CLAUSE

18.1 If any article, provision, clause, sentence or word of this Agreement is determined to be illegal or void as being in contravention of any applicable law, by a court of competent jurisdiction, the remainder of the Agreement shall remain in full force and effect. The parties further agree that if any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void, by a court of competent jurisdiction, the parties shall substitute, by mutual agreement, in its place and stead, an article, provision, clause, sentence or word that will meet the objections to its validity and will be in accordance with its original intent. If the parties are unable to agree on substitute language, then the entire Agreement shall be null and void.

18.2 If a court of competent jurisdiction determines that all or part of the Agreement is invalid and/or enjoins the City from complying with all or part of the Agreement's provisions, and the City accordingly determines that compliance with this Agreement will not be required in order to perform work under a Construction Contract, the Unions will no longer be bound by the provisions of Article IV.

ARTICLE XIX
TERM

19.1 This Agreement shall be included in all bid documents, requests for proposals, or other equivalent Project solicitations, which shall indicate that entering into this Agreement is a condition of the award of a Construction Contract(s) for each Project.

19.2 This Agreement shall apply until the Completion of each Project in accordance with Sections 1.5 and 2.2.

19.3 This Agreement shall become effective 120 days after it is executed by the City and the Trades Council and shall remain in effect until the five (5) year anniversary of the effective date. During this term, the City administration shall prepare annual reports to the City Council on Agreement implementation and results of the Local Hiring Program, which reports shall be provided to the JAC for review and comment prior to submission to the City Council. The Unions, Trades Council, and Contractors shall provide to the administration requested information relevant to such reports, including information regarding referrals from hiring halls for Covered Work on Projects. Upon the two-year anniversary of the effective date, if the Percentage Requirements set forth in the Local Hiring Program are not being met on all Projects in aggregate, the City shall provide the Trades Council with written notice. Upon receipt of such notice, the Trades Council and the City shall meet and confer regarding whether to modify the Local Hiring Program in order to improve outcomes and meet the Percentage Requirements, with any such modifications made upon mutual agreement by the Trades Council and the City. A similar process will take place on the third and fourth anniversaries of the effective date.

19.4 Approximately ninety (90) days prior to the five (5) year anniversary of the effective date of this Agreement, at the request of either party, the City and Trades Council shall meet to discuss whether to extend this Agreement, and, if so, the proposed terms of such extension including any proposed changes to the Agreement.

ARTICLE XX
MISCELLANEOUS PROVISIONS

20.1 The section headings contained in this Agreement are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Agreement. All defined terms used in this Agreement shall be deemed to refer to the singular and/or plural, in each instance as the context and/or particular facts may require.

20.2 This Agreement may be executed in counterparts, such that original signatures may appear on separate pages and when bound together all necessary signatures shall constitute an original. Faxed or emailed signature pages transmitted to other parties to this Agreement shall be deemed the equivalent of original signatures.

20.3 Each of the persons signing this Agreement represents and warrants that such person has been duly authorized to sign this Agreement on behalf of the party

indicated, and each of the parties signing this Agreement warrants and represents that such party is legally authorized and entitled to enter into this Agreement.

20.4 The parties acknowledge that this is a negotiated agreement, that they have had the opportunity to have this Agreement reviewed by their respective legal counsel, and that the terms and conditions of this Agreement are not to be construed against any party on the basis of such party's draftsmanship thereof.

20.5 All defined terms used in this Agreement shall be deemed to refer to the singular and/or plural, in each instance as the context and/or particular facts may require.

[SIGNATURES TO FOLLOW]

CITY OF FRESNO

By: [Signature on File] Date: 9/21

Name: Thomas Esqueda

Title: City Manager

FRESNO, MADERA, KINGS AND TULARE COUNTIES BUILDING AND CONSTRUCTION TRADES COUNCIL

By: [Signature on File] Date: 9/29/2021

Name/Title: Chuck Riojas

APPROVED AS TO FORM

CITY ATTORNEY'S OFFICE

By: [Signature on File]

City Attorney

Sr. Dep, Brandon Collet

ATTEST

BRIANA PARRA, CMC

INTERIM CITY CLERK

By: [Signature on File]

Deputy

Bernard Canez

[Signature on File]
Insulators & Allied Workers Local 16

[Signature on File]
Boilermakers Local 549

[Signature on File]
Bricklayers, Tile Setters & Allied Crafts 3

[Signature on File]
Northern CA Carpenters Regional Council

Drywall/Lathers Local 9083

District Council 16 Local Union 294

[Signature on File]
Electricians Local 100

[Signature on File]
Elevator Constructors Local 8

[Signature on File]
Iron Workers Local 155

[Signature on File]
Laborers Local 294

[Signature on File]
IUPAT/DC 16

[Signature on File]
Plasterers & Cement Masons Local 300

[Signature on File]
Plumbers & Pipefitters Local 246

[Signature on File]
Road Sprinkler Fitters Local 669

[Signature on File]
Roofers and Waterproofers Local 27

[Signature on File]
SMART International Association 104

[Signature on File]
Teamsters Local 431

[Signature on File]
Underground Utility/Landscape 355

[Signature on File]
Operating Engineers Local 3

Addendum A
AGREEMENT TO BE BOUND

[Date]
[Addressee]

[Address]

Re: City of Fresno Community Workforce Agreement
Agreement to be Bound

Dear:_____:

The undersigned confirms that it agrees to be a party to and bound by the City of Fresno Community Workforce Agreement ("Agreement") as such Agreement may, from time to time, be amended by the parties or interpreted pursuant to its terms.

By executing this Agreement to be Bound, the undersigned subscribes to, adopts and agrees to be bound by the written terms of the legally established trust fund documents as set forth in Section 10.1 of the Agreement, as they may from time to time be amended, specifying the detailed basis upon which contributions are to be made into, and benefits made out of, such trust funds, and ratifies and accepts the trustees appointed by the parties to such trust funds. The undersigned agrees to execute a separate subscription agreement(s) for such trust funds when such trust fund(s) require(s) such document(s).

The obligation to be a party to and bound by the Agreement shall extend to all work covered by the Agreement undertaken by the undersigned. The undersigned shall require all of its subcontractors, of whatever tier, to become similarly bound for all their work within the scope of the Agreement by signing an identical Agreement to be Bound.

This letter shall constitute a subscription agreement, to the extent of the terms of the letter.
CONTRACTOR/SUBCONTRACTOR:

_____

California Contractor State License No. or Motor Carrier (CA) Permit No.:

_____

Name of Authorized Person (Print):

_____

Signature of Authorized Person:

_____

Title of Authorized Person:

_____

Telephone Number of Authorized Person:

(Continued)

Address of Authorized Person

State Public Works Registration Number

Addendum B
SIDE LETTER

The parties recognize that the capacity to perform slurry seal maintenance work may not exist locally. Their mutual intent is to facilitate the creation of such capacity locally over time, Accordingly, the parties agree that with respect to slurry seal maintenance work that may otherwise be covered by this agreement, in the event the City receives no responsive bids, the parties agree to meet and confer. The parties may mutually agree to exclude such projects from coverage under this Agreement, or agree to modify the terms of this Agreement for the purpose of such projects. If the parties cannot agree, the City Manager may recommend to the City Council the exclusion of such projects from PLA coverage.

The parties further recognize that significant, new federal resources may become available after the effective date of this Agreement, and that such resources may require changes to this Agreement in order to ensure that the City can take full advantage of such resources. The parties' mutual goal is to ensure that nothing in this Agreement will impair the City's ability to apply for and receive such new funding, and that they will endeavor to agree on any necessary changes to ensure compliance with any new federal regulations governing such funding.

INSURANCE REQUIREMENTS

(a) Throughout the life of this Agreement, CONTRACTOR shall pay for and maintain in full force and effect all insurance as required herein with an insurance company(ies) either (i) admitted by the California Insurance Commissioner to do business in the State of California and rated no less than "A-VII" in the Best's Insurance Rating Guide, or (ii) as may be authorized in writing by CITY'S Risk Manager or their designee at any time and in their sole discretion. The required policies of insurance as stated herein shall maintain limits of liability of not less than those amounts stated therein. However, the insurance limits available to CITY, its officers, officials, employees, agents and volunteers as additional insureds, shall be the greater of the minimum limits specified therein or the full limit of any insurance proceeds to the named insured.

(b) If at any time during the life of the Agreement or any extension, CONTRACTOR or any of its subcontractors fail to maintain any required insurance in full force and effect, all services and work under this Agreement shall be discontinued immediately, and all payments due or that become due to CONTRACTOR shall be withheld until notice is received by CITY that the required insurance has been restored to full force and effect and that the premiums therefore have been paid for a period satisfactory to CITY. Any failure to maintain the required insurance shall be sufficient cause for CITY to terminate this Agreement. No action taken by CITY pursuant to this section shall in any way relieve CONTRACTOR of its responsibilities under this Agreement. The phrase "fail to maintain any required insurance" shall include, without limitation, notification received by CITY that an insurer has commenced proceedings, or has had proceedings commenced against it, indicating that the insurer is insolvent.

(c) The fact that insurance is obtained by CONTRACTOR shall not be deemed to release or diminish the liability of CONTRACTOR, including, without limitation, liability under the indemnity provisions of this Agreement. The duty to indemnify CITY shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by CONTRACTOR. Approval or purchase of any insurance contracts or policies shall in no way relieve liability nor limit the liability of CONTRACTOR, vendors, suppliers, invitees, contractors, sub-contractors, subcontractors, or anyone employed directly or indirectly by any of them.

Coverage shall be at least as broad as:

1. The most current version of Insurance Services Office (ISO) Commercial General Liability Coverage Form CG 00 01, providing liability coverage arising out of your business operations. The Commercial General Liability policy shall be written on an occurrence form and shall provide coverage for "bodily injury," "property damage" and "personal and advertising injury" with coverage for premises and operations (including the use of owned and non-owned equipment), products and completed operations, and contractual liability (including, without limitation, indemnity obligations under the Agreement) with limits of liability not less than those set forth under "Minimum Limits of Insurance."

2. The most current version of ISO *Commercial Auto Coverage Form CA 00 01, providing liability coverage arising out of the ownership, maintenance or use of automobiles in the course of your business operations. The Automobile Policy shall be written on an occurrence form and shall provide coverage for all owned, hired, and non-owned automobiles or other licensed vehicles (Code 1- Any Auto).

3. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

MINIMUM LIMITS OF INSURANCE

CONTRACTOR shall procure and maintain for the duration of the contract insurance with limits of

liability not less than those set forth below. However, insurance limits available to CITY, its officers, officials, employees, agents and volunteers as additional insureds, shall be the greater of the minimum limits specified herein or the full limit of any insurance proceeds available to the named insured:

1. COMMERCIAL GENERAL LIABILITY

(i) $2,000,000 per occurrence for bodily injury and property damage;
(ii) $2,000,000 per occurrence for personal and advertising injury;
(iii) $4,000,000 aggregate for products and completed operations; and,
(iv) $4,000,000 general aggregate applying separately to the work performed under the Agreement.

2. COMMERCIAL AUTOMOBILE LIABILITY

$1,000,000 per accident for bodily injury and property damage.

3. Workers' Compensation Insurance as required by the State of California with statutory limits and EMPLOYER'S LIABILITY with limits of liability not less than:

(i) $1,000,000 each accident for bodily injury;
(ii) $1,000,000 disease each employee; and,
(iii) $1,000,000 disease policy limit.

4. BUILDERS RISK (Course of Construction) insurance in an amount equal to the completed value of the project with no coinsurance penalty provisions. (Only required if the project includes new construction of a building, or renovation of, or addition to, an existing building.)

5. CONTRACTORS' POLLUTION LEGAL LIABILITY with coverage for bodily injury, property damage or pollution clean-up costs that could result from pollution conditions, both sudden and gradual, including a discharge of pollutants brought to the work site, a release of pre-existing pollutants at the site, or other pollution conditions with limits of liability of not less than the following:

(i) $1,000,000 per occurrence; and,
(ii) $2,000,000 general aggregate per annual policy period.

(a) In the event this Agreement involves the transportation of hazardous material, either the Commercial Automobile policy or other appropriate insurance policy shall be endorsed to include Transportation Pollution Liability insurance covering materials to be transported by CONTRACTOR pursuant to the Agreement.

UMBRELLA OR EXCESS INSURANCE

In the event CONTRACTOR purchases an Umbrella or Excess insurance policy(ies) to meet the "Minimum Limits of Insurance," this insurance policy(ies) shall "follow form" and afford no less coverage than the primary insurance policy(ies). In addition, such Umbrella or Excess insurance policy(ies) shall also apply on a primary and non-contributory basis for the benefit of the CITY, its officers, officials, employees, agents and volunteers.

DEDUCTIBLES AND SELF-INSURED RETENTIONS

CONTRACTOR shall be responsible for payment of any deductibles contained in any insurance policy(ies) required herein and CONTRACTOR shall also be responsible for payment of any self-insured retentions.

OTHER INSURANCE PROVISIONS/ENDORSEMENTS

(i) All policies of insurance required herein shall be endorsed to provide that the coverage shall not be cancelled, non-renewed, reduced in coverage or in limits except after thirty (30) calendar days written notice has been given to CITY, except ten (10) days for nonpayment of premium. CONTRACTOR is also responsible for providing written notice to the CITY under the same terms and conditions. Upon issuance by the insurer, broker, or agent of a notice of cancellation, non-renewal, or reduction in coverage or in limits, CONTRACTOR shall furnish CITY with a new certificate and applicable endorsements for such policy(ies). In the event any policy is due to expire during the work to be performed for CITY, CONTRACTOR shall provide a new certificate, and applicable endorsements, evidencing renewal of such policy not less than seven (7) calendar days following to the expiration date of the expiring policy.
(ii) The Commercial General, Pollution and Automobile Liability insurance policies shall be written on an occurrence form.
(iii) The Commercial General, Pollution and Automobile Liability insurance policies shall be endorsed to name City, its officers, officials, agents, employees and volunteers as an additional insured for all ongoing and completed operations. The Commercial General endorsements must be as broad as that contained in ISO Forms: CG 20 10 11 85 or both CG 20 10 & CG 20 37.
(iv) The Commercial General, Pollution and Automobile Liability insurance shall contain, or be endorsed to contain, that the CONTRACTORS' insurance shall be primary to and require no contribution from the City. Coverage under the General Liability policy shall be as broad as that contained in ISO Form CG 20 01 04 13. These coverages shall contain no special limitations on the scope of protection afforded to City, its officers, officials, employees, agents and volunteers.
(v) If CONTRACTOR maintains higher limits of liability than the minimums shown above, City requires and shall be entitled to coverage for the higher limits of liability maintained by CONTRACTOR.
(vi) Should any of these policies provide that the defense costs are paid within the Limits of Liability, thereby reducing the available limits by defense costs, then the requirement for the Limits of Liability of these polices will be twice the above stated limits.
(vii) The General Liability, Auto Liability and Pollution policies shall contain, or be endorsed to contain, a waiver of subrogation as to CITY, its officers, officials, agents, employees and volunteers.
(viii) The Builder's Risk Insurance shall have the policy endorsed to provide the City of Fresno to be named as a Loss Payee.

PROVIDING OF DOCUMENTS

CONTRACTOR shall furnish CITY with all certificate(s) and applicable endorsements effecting coverage required herein All certificates and applicable endorsements are to be received and approved by the CITY'S Risk Manager or his/her designee prior to CITY'S execution of the Agreement and before work commences. All non-ISO endorsements amending policy coverage shall be executed by a licensed and authorized agent or broker. Upon request of CITY, CONTRACTOR shall immediately furnish CITY with a complete copy of any insurance policy required under this Agreement, including all endorsements, with said copy certified by the underwriter to be a true and correct copy of the original policy. This requirement shall survive expiration or termination of this Agreement. All subcontractors working under the direction of CONTRACTOR shall also be required to provide all documents noted herein.

SUBCONTRACTORS

If CONTRACTOR subcontracts any or all of the services to be performed under this Agreement, CONTRACTOR shall require, at the discretion of the CITY Risk Manager or designee, subcontractor(s) to enter into a separate Side Agreement with the City to provide required indemnification and insurance protection. Any required Side Agreement(s) and associated insurance documents for the subcontractor must be reviewed and preapproved by CITY Risk Manager or

designee. If no Side Agreement is required, CONTRACTOR will be solely responsible for ensuring that it's subcontractors maintain insurance coverage at levels no less than those required by applicable law and is customary in the relevant industry and include the CITY as an Additional Insured with Primary and Non Contributory coverage and a Waiver of Subrogation consistent with the requirements herein.

PERFORMANCE AND PAYMENT BONDS

The Contractor shall provide two good and sufficient surety bonds from a corporate surety admitted by the California Insurance Commissioner to do business in the State of California, on forms as those provided by the City in these Specifications and approved by the City.

(a) The "Payment Bond" shall be for not less than 100% under $10M; 110% $10M and over of the Contract price, to satisfy claims of material suppliers and of mechanics and laborers employed by Contractor on the work. The bond shall be maintained by the Contractor in full force and effect until the work is completed and accepted by the City, and until all claims for materials and labor are paid, and shall otherwise comply with Chapter 5, Title 3, Part 6, Division 4 of the California Civil Code.

(b) The "Faithful Performance Bond" shall be for 100% under $10M; 110% $10M and over of the Contract price to guarantee faithful performance of all work, within the time prescribed, in a manner satisfactory to the City, and that all materials and workmanship will be free from original or developed defects.

INDEMNIFICATION

To the furthest extent allowed by law including California Civil Code section 2782, CONTRACTOR shall indemnify, defend and hold harmless CITY and each of its officers, officials, employees, agents and volunteers from any and all claims, demands, actions in law or equity, loss, liability, fines, penalties, forfeitures, interest, costs including legal fees, and damages (whether in contract, tort, or strict liability, including, but not limited to personal injury, death at any time, property damage, or loss of any type) arising or alleged to have arisen directly or indirectly out of (1) any voluntary or involuntary act or omission, (2) error, omission or negligence, or (3) the performance or non-performance of this Contract. CONTRACTOR'S obligations as set forth in this section shall apply regardless of whether CITY or any of its officers, officials, employees, agents or volunteers are passively negligent, but shall not apply to any loss, liability, fines, penalties, forfeitures, costs or damages caused by the active or sole negligence, or the willful misconduct, of CITY or any of its officers, officials, employees agents or volunteers.

To the fullest extent allowed by law, and in addition to the express duty to indemnify, CONTRACTOR, whenever there is any causal connection between the CONTRACTOR'S performance or non-performance of the work or services required under this Contract and any claim or loss, injury or damage of any type, CONTRACTOR expressly agrees to undertake a duty to defend CITY and any of its officers, officials, employees, agents, or volunteers, as a separate duty, independent of and broader that the duty to indemnify. The duty to defend as herein agreed to by CONTRACTOR expressly includes all costs of litigation, attorneys fees, settlement costs and expenses in connection with claims or litigation, whether or not the claims are valid, false or groundless, as long as the claims could be in any manner be causally connected to CONTRACTOR as reasonably determined by CITY.

Upon the tender by CITY to CONTRACTOR, CONTRACTOR shall be bound and obligated to assume the defense of CITY and any of its officers, officials, employees, agents, or volunteers, including the a duty to settle and otherwise pursue settlement negotiations, and shall pay, liquidate, discharge and satisfy any and all settlements, judgments, awards, or expenses resulting from or arising out of the claims without reimbursement from CITY or any of its officers,

officials, employees, agents, or volunteers.

It is further understood and agreed by CONTRACTOR that if CITY tenders a defense of a claim on behalf of CITY or any of its officers, officials, employees, agents, or volunteers and CONTRACTOR fails, refuses or neglects to assume the defense thereof, CITY and its officers, officials, employees, agents, or volunteers may agree to compromise and settle or defend any such claim or action and CONTRACTOR shall be bound and obligated to reimburse CITY and its officers, officials, employees, agents, or volunteers for the amounts expended by each in defending or settling such claim, or in the amount required to pay any judgment rendered therein.

The defense and indemnity obligations set forth above shall be direct obligations and shall be separate from and shall not be limited in any manner by any insurance procured in accordance with the insurance requirements set forth in this Contract. In addition, such obligations remain in force regardless of whether CITY provided approval for, or did not review or object to, any insurance CONTRACTOR may have procured in accordance with the insurance requirements set forth in this Contract. The defense and indemnity obligations shall arise at such time that any claim is made, or loss, injury or damage of any type has been incurred by CITY, and the entry of judgment, arbitration, or litigation of any claim shall not be a condition precedent to these obligations.

The defense and indemnity obligations set forth in this section shall survive termination or expiration of this Contract.

If CONTRACTOR should subcontract all or any portion of the work to be performed under this Contract, CONTRACTOR shall require each subcontractor to Indemnify, hold harmless and defend CITY and each of its officers, officials, employees, agents and volunteers in accordance with the terms as set forth above.

GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the City shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of 1 year from the date of final acceptance of work unless a longer period is specified. The Engineer will give notice of observed defects with reasonable promptness.

PRECEDENCE OF CONTRACT DOCUMENTS

The order of precedence of documents shall be: (1) Rules and Regulations of Federal Agencies relating to the source of funds for this project; (2) Permits from other agencies as may be required by law;(3) Supplemental Agreements, Change Orders, or Contract the one dated later having precedence over another dated earlier; (4) Special Conditions; (5) General Conditions; (6) Technical Specifications; (7) Plans;(8) Standard Specifications; (9) Standard Plans.

Detailed Plans shall have precedence over general Plans.

Whenever any conflict appears in any portion of the Contract, it shall be resolved by application of the order of precedence.

CONTRACT DOCUMENTS

The Contractor shall submit the required contract documents in a form acceptable to the Capital Projects Department (Capital Projects Administration Division, 747 R Street, 2nd Floor, Fresno, California 93721)

within 15 calendar days (except in the event federal funding is applicable to this Contract, then 10 working days) from the Notice of Award of Bids. Failure to provide said documents within the designated period shall be sufficient cause to forfeit the Contractor's Bid Deposit and initiate a departmental recommendation to the Council to award project to the next lowest responsive and responsible Bidder.

NOTE: Contract Documents consist of the following: Contract, Labor and Materials and Faithful Performance Bonds, Insurance Certificates, Workers' Compensation Insurance Certificate, Fair Employment Form, and any other information which may be required by these Specifications.

The Contractor shall utilize the City's Construction Management Information System (CMIS) for the submission, management, and review of all project-related data and documents throughout the duration of the Contract. CMIS is a web-based electronic project management system provided by the City at no cost to the Contractor. It is intended to facilitate the electronic exchange of information, automate key construction management processes, provide electronic notifications of project activities, and serve as the primary platform for the submission and oversight of contract documentation.

All construction management documentation, including but not limited to daily inspection reports, submittals, Requests for Information (RFIs), pay estimates and change orders, shall be submitted and reviewed through CMIS. The use of CMIS by both the City and the Contractor is mandatory and shall serve as the official record of project communications and documentation unless otherwise authorized in writing by the City.

PRE-CONSTRUCTION MEETING AND SCHEDULE OF WORK

Prior to the start of construction, the Construction Management Division will call a meeting with all affected City Departments, governmental agencies, or utility companies to coordinate the construction with the Contractor so that no delays will be encountered due to conflicts of operations.

The Contractor will be called upon to indicate, at this meeting, the proposed operations to accomplish the work. The Contractor's attention is called to Section 6-1, City Standard Specifications, and the following requirements:

- The Contractor shall submit a written tentative schedule of work to the Engineer at the pre-construction meeting.
- The final schedule of work shall be submitted no later than 5 working days after the pre-construction meeting.
- If the Project does not require a Stormwater Pollution Prevention Plan (SWPPP), pre the specification outlined in Division IV, the awarded Contractor shall begin job site activities 15 calendar days after receiving notice that the contract has been executed by the City.
- If the Project requires a Stormwater Pollution Prevention Plan (SWPPP), per the specification outlined in Division IV, the awarded Contractor shall begin job site activities within 55 calendar days after receiving notice that the contract has been executed by the City
- Modifications to the start of job site activities shall be approved in writing by the Engineer

If the Contractor delays the submittal of the final work schedule, the City may deduct the number of calendar days beyond the 5 working days allowed for submittal from the number of working days allowed for completion of the project.

Contractor's proposed schedule shall be in the form of a tabulation, chart, or graph and shall be in sufficient detail to show the chronological relationship of all activities of the project including, but not limited to, estimated starting and completion dates of various activities, procurement of materials, and scheduling of equipment. The construction schedule shall reflect completion of all work under the Contract within the specified time and in accordance with these Specifications. Once submitted to the

Engineer for review and approval, the Engineer shall either approve or reject said Project Schedule. If rejected, it shall be revised to incorporate the necessary changes, deletions or additions and resubmitted to the Engineer. If the Project Schedule is approved by the Engineer, the Project Schedule shall become the baseline schedule for the Project. The Project Schedule is subject to change during construction and will be continually updated and adjusted throughout the Project by Contractor on at least a monthly basis.

The City will use the Project Schedule for planning, executing and monitoring Project progress.

The Contractor will prepare a monthly schedule update. The Contractor, at each weekly Project meeting shall provide City with two week look-ahead schedules identifying its planned prosecution of the Work.

Contractor will exchange scheduling information with subcontractors and suppliers. Contractor will order work, equipment, and materials with sufficient lead-time to avoid interruption of the Work.

The City may issue a Notice to Proceed and start contract time upon the required start of job site activities, as specified herein, unless otherwise approved in writing by the Engineer. It is the Contractors responsibility to ensure that all necessary pre-construction coordination is completed, submittals are approved, and permits issued in order for the work to commence.

OVERTIME INSPECTION FEES

The Contractor shall promptly pay the City for all overtime inspections in accordance with existing resolutions or fee schedule of the City unless the charges for such inspection have been specifically waived elsewhere within this Contract. Overtime inspection charges will be made for all inspections on Saturdays, Sundays, and City Holidays, and hours worked by the inspector other than those of the normal City working days. If charges are not paid within 15 days of invoice, City may elect in its sole discretion to withhold unpaid charges from any progress payments.

SUBSTITUTION OF MATERIALS

(After Award)

See City of Fresno Standard Specifications, Section 4-1.5 entitled "Trade Names or Equals," which shall prevail.

Where the Contractor has good and sufficient reason to suggest a substitution after bidding, it will within 14 days after the signing of the Contract, submit his or her request for substitution in writing and shall indicate all information required thereof including reasons for substitution, difference in price or cost, difference in size, difference in color, etc., and it will be approved or disallowed within 30 days.

No consideration shall be given to request for substitution not in accordance with the above conditions. The Engineer will be the sole judge in matters concerning equality of proposed substitutions and the decision shall be final. The burden of proof as to the quality of any proposed substitutions shall be upon the Contractor.

Supplier must submit a letter to guarantee the replacement of any material that appears defective on the job for a period of 1 year after acceptance of the project.

ASSIGNMENT OF PAYMENT

Contractor hereby agrees it will not assign the payment of any monies due it from the City under the terms of this Contract to any other individual(s), corporation(s), or entity(s). The City retains the right to pay any and all monies due Contractor directly to Contractor.

PATENTS

For the purchase of equipment and material, the Vendor shall hold the City of Fresno, its officers and employees, harmless from any and all liability for damages arising out of the use of any patented material, equipment, device or process incorporated into or made a part of or required by the manufacturer's Specifications to be used on or in connection with the material, equipment or supplies purchased by the Buyer pursuant to these Specifications, and Vendor agrees, by submission of a proposal hereunder, to defend the Buyer, at Vendor's sole expense, in any action or suit for damages or injunctive relief on account of any allegedly unauthorized use of or infringement of patent rights on any patented material, equipment, device or process, if the Buyer is named as a defendant in any such action or suit.

CODES AND ORDINANCES

Nothing in these Specifications is to be construed to permit work not conforming to applicable codes.

MAINTENANCE OF RECORDS

Contractor and its subcontractors are required to maintain books, records, and other documents pertinent to the work of this Contract in accordance with Generally Accepted Accounting Principles. All such books, records, and other documents pertaining to the Contract shall be available to City or its authorized representatives upon request during regular business hours throughout the life of the Contract and for a period of 5 years after final payment or, if longer, for any period required by law or any State or Federal funding agreement applicable to this Contract. In addition, all books, documents, papers and records of Contractor and its subcontractors pertaining to the Contract shall be available for the purpose of making audits, examinations, excerpts, and transcriptions for the same period of time by City or its authorized representatives, (and, in the event State or Federal funding is applicable to this Contract, then the respective State of California, State of California Department of Transportation (Caltrans), the State of California State Auditor, the United States, the Federal Highway Administration (FHWA), or any authorized representatives of the aforementioned), and shall allow interviews during normal business hours of any employees who might reasonably have information related to such records. If any litigation, claim, negotiations, audit, or other action is commenced before the expiration of said time period, all records must be retained until such action is resolved, or until the end of said time period whichever shall later occur. Failure or refusal by Contractor or its subcontractors to comply with this provision shall be considered a substantial failure to comply with this Contract, and City may declare Contractor in default as set forth in these Specifications, withhold payment to Contractor, or take any other action it deems necessary to protect its interests. This provision shall survive expiration or termination of this Contract.

Contractor and its subcontractors shall establish and maintain an accounting system and records that properly accumulate and segregate incurred Project costs by line item for the Project. The accounting system shall enable the determination of incurred costs at interim points of completion and provide support for reimbursement payment vouchers or invoices sent to or paid by the City.

Contractor and its subcontractors shall make the Contract and any State or Federal funding agreement materials applicable to this Contract available at their respective offices at all reasonable times during the entire Project period and 5 years from the date of final payment to Contractor. This provision shall survive expiration or termination of this Contract.

NONFEDERAL LABOR STANDARD PROVISIONS

GENERAL PROVISIONS: The following Nonfederal Labor Standards Provisions, including the following provisions concerning: maximum hours of work, minimum rates of pay, and overtime compensation, with respect to the categories and classifications of employees hereinafter mentioned are included in the Contract pursuant to the requirements of applicable State or local laws, but the inclusion of such provisions shall not be construed to relieve the Contractor or any subcontractor from the pertinent requirements of any corresponding Federal Labor-Standard Provisions of this Contract. In cases the

minimum rates of pay set forth below shall be higher than the minimum rates of pay required by or set forth in the Federal Labor-Standards Provisions of this Contract for corresponding classifications, the minimum rates of pay set forth below shall be deemed, for the purpose of this Contract, to be the applicable minimum rates of pay for such classifications. The limitations, if any, in these Nonfederal Labor Standards Provisions upon the hours per day, per week or month which employees engaged on the work covered by this Contract may be required or permitted to work thereon shall not be exceeded.

SCHEDULE OF WAGES AND SALARIES: In accordance with the provisions of sections 1770 to 1781, inclusive of the Labor Code of the State of California and/or section (1)(b) of the United States Labor Code, the Director of Industrial Relations and/or the United States Secretary of Labor shall ascertain the general prevailing rate of wages applicable to the work to be done under this Contract to be included in these Specifications by reference. (For any questions regarding wage rates or specific wage rate determinations, contact the Contract Compliance Officer at City of Fresno Capital Projects Department, Capital Projects Administration Division, 747 R Street, 2nd Floor, Fresno, California 93721, (559) 621-8880.)

LABOR CODE SECTION 1775: PENALTIES FOR UNDER-PAYMENT OF WAGES: The Contractor and each subcontractor shall comply with California Labor Code section 1775 and pay not less than the wages established by the Director of the Department of Industrial Relations and/or the Federal government. In accordance with such section 1775, Contractor or such subcontractor shall, as a penalty to the City, forfeit up to $200.00, as determined by the Labor Commissioner, for each calendar day or portion thereof for each worker under this Contract paid less than the established wage rates. These penalties shall be withheld from progress payments then due. The Contractor shall contain in each subcontract the requirements hereunder.

PENALTIES FOR VIOLATION OF EIGHT HOUR DAY: Eight hours labor constitutes a regular day's work under this Contract. Contractor or any subcontractor under him/her shall forfeit as a penalty to the City $25.00 for each worker employed in the execution of this Contract by contractor or such subcontractor for each calendar day during which any such worker is required or permitted to labor more than eight hours in any one calendar day and 40 hours in any one calendar week in violation of sections 1810 to 1815, inclusive, of the California Labor Code. Notwithstanding the provisions of Sections 1810 to 1814, inclusive, of the California Labor Code, and notwithstanding the foregoing, work performed by employees of contractors and subcontractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours in excess of 8 hours per day at not less than one and one-half (1.5) times the basic rate of pay.

LABOR CODE SECTION 1777.5; EMPLOYMENT OF APPRENTICES: If this Contract involves

$30,000 or more, the Contractor and each subcontractor shall comply with California Labor Code section 1777.5, as it may be amended from time to time, the entire provisions of which are incorporated by this reference as if fully set forth herein, and Article 10, Subchapter 1, Chapter 2, Title 8 of the California Code of Regulations for all apprenticeable occupations applicable to the work as defined in such laws and regulations. Contractor shall be responsible for the compliance with such Labor Code section for all apprenticeable occupations and shall contain in each subcontract the requirements hereunder. In accordance with section 1777.5 of the California Labor Code and the rules and regulations of the California Apprenticeship Council, properly indentured apprentices shall be employed in the execution of this Contract in at least the ratio of not less than 1 hour of apprentice work for every 5 hours of journeyman work (unless the respective contractor or subcontractor has been exempted from such ratio) and paid the prevailing rate of per diem wages for apprentices in the trade to which it is registered. The employment and training of each apprentice shall be in accordance with either the apprenticeship standards and apprentice agreements under which it is training, or the rules and regulations of the California Apprenticeship Council. Prior to commencing work on the Contract, Contractor and each subcontractor shall submit contract award information to the City, if requested, and to an applicable apprenticeship

program that can supply apprentices to the job site. The information shall include an estimate of journeyman hours to be performed under the Contract, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. Within 60 days after concluding work on the Contract, the Contractor and each subcontractor shall submit to the City, if requested, and to the apprenticeship program a verified statement of the journeyman and apprentice hours performed on the Contract. Contractor shall employ apprentices for the number of hours computed before the end of the Contract or, in the case of the subcontractor, before the end of the subcontract and endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the job site.

FRESNO MUNICIPAL CODE SECTION 4-113; LABOR CODE SECTION 1777.5; EMPLOYMENT OF APPRENTICES: If this Contract involves $500,000 or more, the Contractor shall contain in each subcontract the requirements hereunder and be responsible for providing all documentation required hereunder from subcontractor to the City. The Contractor and each subcontractor shall provide documentation to City demonstrating compliance with the requirements of California Labor Code section 1777.5 and Article 10, Subchapter 1, Chapter 2, Title 8 of the California Code of Regulations by providing City copies of each of the following:

(i) All contract award information (e.g., completed form DAS 140) sent by Contractor and by subcontractors to the State Division of Apprenticeship Standards and each applicable apprenticeship program in accordance with California Labor Code section 1777.5, as may be amended from time to time, including identification of addressee.

(ii) All requests by Contractor and by subcontractors for approval, and all responses and certificates from any applicable apprenticeship program disapproving or approving Contractor or subcontractor(s), to train apprentices; if any.

(iii) All requests by Contractor and by subcontractors for dispatch of apprentices from any applicable apprenticeship program (e.g., completed form DAS 142); and all responses thereto, if any.

(iv) All certifications, if any, of Contractor and of subcontractor(s) as an individual employer apprenticeship program by the State Division of Apprenticeship Standards or the California Apprenticeship Council.

(v) All apprenticeship agreements of apprentices employed by Contractor and by subcontractor(s) and performing work under the Contract.

(vi) A verified statement by the Contractor and by the subcontractor within 60 days after concluding the work of the respective journeyperson and apprentice hours performed on the Contract or subcontract.

(vii) All certificates of any exemption by the State Division of Apprenticeship Standards, California Apprenticeship Council or any apprenticeship program of Contractor or subcontractor from any requirements of California Labor Code section 1777.5, as may be amended from time to time.

(viii) Other documentation as may be requested by City.

LABOR CODE SECTION 6705: If this Contract involves an estimated expenditure in excess of

$25,000.00 and excavation of any trench or trenches five feet or more in depth, then your attention is directed to California Labor Code section 6705 relating to a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches, the entire provisions of which are incorporated by this reference as if fully set forth hereinafter.

Before execution of the Contract by the City, the Contractor shall submit to the City and the Engineer

shall accept, if satisfactory to him/her, said detailed plan.

If, in the Engineer's opinion, there is any noncompliance with said detailed plan, then the Contractor shall stop forthwith all trench work until, either in the Engineer's or the State Division of Industrial Safety's opinion, there is compliance. The City shall not be liable for costs incurred by the Contractor due to the work stoppage and the Contractor will not be given nor is entitled to an extension of time to complete the work within the time set forth in this Contract due to the work stoppage.

WAGE AND PRICE CONTROL: Notwithstanding any provisions of the Contract to the contrary, the Contractor shall be bound by the orders issued and rules and regulations adopted pursuant to the Economic Stabilization Act of 1970 (Public Law 91-379, 84 Statutes 799), as amended, or any subsequent Act of Congress.

COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970: This Contract is

subject to all terms and conditions of the OCCUPATIONAL SAFETY AND HEALTH ACT of 1970, the California Occupational Safety and Health Act and their present and future amendments.

Contractor expressly assumes responsibility for compliance therewith and warrants that all materials, supplies, and equipment provided or installed pursuant to this Contract, whether provided by the Contractor, subcontractor, or a supplier, fully satisfy the requirements of said Acts. Contractor shall, upon insertion in each Contract with a subcontractor or supplier of a clause by which the subcontractor or supplier warrants such compliance, be relieved of responsibility by the subcontractor or supplier.

LABOR CODE SECTION 1776; PAYROLLS AND BASIC RECORDS: The Contractor and

each subcontractor shall comply with California Labor Code section 1776, the entire provisions of which are incorporated by this reference as if fully set forth herein, and Contractor shall contain in each subcontract the requirements hereunder.

(a) Accurate payroll records and basic records relating thereto shall be maintained by the Contractor and each subcontractor during the course of the work and preserved for a period as required by law for all journeymen, apprentices, workers, and other employees employed in connection with the work. Such records shall contain information as on the payroll record forms provided by the Division of Labor Standards of the Department of Industrial Relations, the name, address, social security number, work classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents), daily and weekly number of hours worked, deductions made and actual per diem wages paid. The Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to all employees affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b) (1) The Contractor shall submit weekly (7 days after each week ending pay period) for each week in which any Contract work is performed a certified copy of all payrolls to the Engineer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. The Contractor is responsible for the submission of certified copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify under penalty of perjury under the laws of the State of California each of the following:

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause entitled "LABOR CODE SECTION 1776; PAYROLLS AND BASIC" and that such information is true, correct and complete;

(ii) That each employee employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions;

(iii) That each employee has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract;

(iv) Contractor has complied with the requirements of California Labor Code sections 1771, 1811, and 1815 for any work performed hereunder by his or her employees.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (b) (2) of this clause.

(4) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution.

(c) The Contractor or subcontractor shall make certified copies of all the records required under paragraph (a) of this clause available for inspection at all reasonable hours at the principal office of the Contractor by, and furnished upon request to, the Engineer, the Division of Labor Standards Enforcement of the Department of Industrial Relations, the Division of Apprenticeship Standards of the Department of Industrial Relations, and each of their authorized representatives. A certified copy of the employee's record shall likewise be made available for inspection or furnished upon request by the employee or his or her authorized representative. The Contractor shall provide hereunder the street address, city, and county of the location of the payroll records maintained by Contractor and shall provide a notice of any change of location and address within 5 working days of such change. The Contractor and subcontractors shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records within 10 days after each week ending pay period, or to furnish or make them available for inspection within 10 days of request, (Contractor has 10 days to comply) after written notice, the Contractor shall forfeit $100.00 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated, pursuant to California Labor Code section 1776. These penalties shall be withheld from progress payments then due.

LABOR CODE SECTION 1771.1: CONSTRUCTION REGISTRATION WITH CALIFORNIA

DEPARTMENT OF INDUSTRIAL RELATIONS: A Contractor or Subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered Contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the Contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The prime Contractor is required to post job site notices prescribed by California Code of Regulations. All Contractors and Subcontractors must furnish electronic certified payroll records directly to the Division of Labor Standards Enforcement.

FAIR EMPLOYMENT PRACTICES AND NONDISCRIMINATION

In connection with the performance of work under this Contract, the Contractor agrees as follows:

1. The Contractor shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), marital status, political affiliation, sex, age (over 40), sexual orientation, and denial of family care leave or on any other basis prohibited by law. The Contractor shall ensure that the treatment of employees and evaluation of applicants for employment are free of such discrimination and harassment. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment, or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State of California setting forth the provisions of this Fair Employment Practices section.

2. Contractor and all subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full.

3. Contractor assures City that it shall comply with the requirements of the Americans with Disabilities Act (ADA) of 1990, (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA; the Civil Rights Act of 1964, as amended, 42 U.S.C. 2000d (1988) et seq.; Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. 794 (1989) and the Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102 (1994); together with all applicable regulations and guidelines adopted to implement same. Said group of laws and requirements are collectively referred to in this Contract as the “anti-discrimination laws”.

4. The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a written notice advising the said labor union or workers' representative of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. The Contractor will permit access to his or her records of employment, employment advertisements, application forms, and other pertinent data and records by the City, State of California, the State Fair Employment and Housing Commission, or any other appropriate agency designated by the City or the State of California, for the purposes of investigation to ascertain compliance with the Fair Employment Practices and Nondiscrimination section of this Contract.

6. Contractor agrees to collect and maintain information to show compliance with the “anti-discrimination laws” including a list of discrimination complaints, reports of any compliance reviews conducted by other agencies descriptions of any pending discrimination-based lawsuits and data on the racial, ethnic, national origin, sex, and handicap characteristics of the population it serves.

7. Contractor agrees to cooperate with City, and any other appropriate agency designated by the City, in all manner necessary to permit City and any such agency to adequately report to the United States Environmental Protection Agency on Contractor’s compliance with the “anti- discrimination laws”.

8. A finding of willful violation of the Fair Employment Practices section of this Contract or of the California Fair Employment and Housing Act shall be regarded by the City as a basis for determining the Contractor to be not a *responsible bidder* as to future contracts for which such Contractor may submit

9. bids, for revoking the Contractor's prequalification rating, if any, and for refusing to establish, reestablish, or renew a prequalification rating for the Contractor.

The City will deem a finding of willful violation of the California Fair Employment and Housing Act to have occurred upon receipt of written notice from the Fair Employment and Housing Commission that it has investigated and determined that the Contractor has violated the California Fair Employment and Housing Act and has issued an order under California Government Code section 12973, section 12970, or obtained an injunction under California Government Code section 12973.

Upon receipt of such written notice from the Fair Employment and Housing Commission, the City shall notify the Contractor that unless it demonstrated to the satisfaction of the City within a stated period that the violation has been corrected, that it will be reported to the City Council as not a *responsible bidder* on any future Contract.

10. The Contractor agrees, that should the City determine that the Contractor has not complied with the Fair Employment Practices section of this Contract, then pursuant to Labor Code sections 1735 and 1775, the Contractor shall forfeit, as a penalty to the City, for each calendar day, or portion thereof, for each person who was denied employment as a result of such noncompliance, the penalties provided in the Labor Code for violation of prevailing wage rates. Such monies may be recovered from the Contractor. The City may deduct any such damages from any monies due the Contractor from the City. Furthermore, Contractor agrees that the City shall have the right to terminate this Contract either in whole or in part, and any loss or damage sustained by City in securing the goods or services thereunder shall be borne and paid for by Contractor and by the surety under the performance bond, if any, and City may deduct from any moneys due or thereafter may become due to Contractor, the difference between the price named in the Contract and the actual cost thereof to City to cure Contractor’s breach of the Contract.

11. Nothing contained in this Fair Employment Practices section shall be construed in any manner or fashion so as to prevent the City from pursuing any other remedies that may be available at law.

12. After award of the Contract, the Contractor shall certify to the City that it has or will meet the following standards for affirmative compliance, which shall be evaluated in each case by the City:

(a) The Contractor shall provide evidence, as required by the City, that it has notified all supervisors, foremen, and other personnel officers in writing of the content of the antidiscrimination clause and their responsibilities under it.

(b) The Contractor shall provide evidence, as required by the City, that it has notified all sources of employee referrals (including unions, employment agencies, advertisement, Department of Employment) of the content of the antidiscrimination clause.

(c) The Contractor shall file a Fair Employment Practices compliance report, as required by the City. Willfully false statements made in such reports shall be punishable as provided by law. The compliance report shall also spell out the sources of the work force and who has the responsibility for determining whom to hire, or whether or not to hire. The compliance report shall be kept current throughout the Contract in that the Contractor shall report any changes in or additions to the answers therein, including changes in agreements with others. After the work or supplying materials is complete, and before final payment, the Contractor shall submit a final statement of compliance.

(d) Personally, or through his or her representatives, the Contractor shall, through negotiations with the unions with whom it has agreements, attempt to develop an agreement which will:

(1) Spell out responsibilities for nondiscrimination in hiring, referral, upgrading and training.

(2) Otherwise implement an affirmative antidiscrimination program in terms of the unions;

(3) specific areas of skill and geography, to the end that qualified disadvantaged workers will be available and given an equal opportunity for employment.

13. Contractor's signature on this Contract shall constitute a certification under the penalty of perjury under the laws of the State of California that Contractor has, unless exempted, complied with the nondiscrimination program requirements of Government Code, Section 12990, and Title 2, California Code of Regulations, Section 8103.

14. The Contractor will include the provisions of the foregoing paragraphs 1 through 12 in every first-tier subcontract so that such provisions will be binding upon each such subcontractor.

GENERAL MISCELLANEOUS

Independent Contractor. In the furnishing of the work provided for herein, the Contractor is acting as an independent contractor. Neither the Contractor, nor any of its officers, associates, agents, or employees shall be deemed an employee, joint venturer, partner, or agent of the City for any purpose. However, the City shall retain the right to verify that the Contractor is performing its respective obligations in accordance with the terms of the Contract.

Because of its status as an independent contractor, Contractor and its officers, agents and employees shall have absolutely no right to employment rights and benefits available to City employees. Contractor shall be solely liable and responsible for all payroll and tax withholding and for providing to, or on behalf of, its employees all employee benefits including, without limitation, health, welfare, and retirement benefits. In addition, together with its other obligations under this Contract, Contractor shall be solely responsible**,** indemnify, defend and save City harmless from all matters relating to employment and tax withholding for and payment of Contractor's employees, including, without limitation, (i) compliance with Social Security and unemployment insurance withholding, payment of workers compensation benefits, and all other laws and regulations governing matters of employee withholding, taxes and payment; and (ii) any claim of right or interest in City employment benefits, entitlements, programs and/or funds offered employees of City whether arising by reason of any common law, de facto, leased, or co- employee rights or other theory**.** It is acknowledged that during the term of this Contract, Contractor may be providing services to others unrelated to City or to this Contract.

Notices. Any notice required or intended to be given to either party under the terms of this Contract shall be in writing and shall be deemed to be duly given if delivered personally or sent by United States registered or certified mail, with postage prepaid, return receipt requested, addressed to the party to which notice is to be given at the party's address set forth on the signature page of the Bid Proposal in the case of the Contractor and at the address set forth on the signature page of the Contract in the case of the City, or at such other address as the parties may from time to time designate by written notice. Notices served by United States mail in the manner above described shall be deemed sufficiently served or given at the time of the mailing thereof.

Binding. Subject to the following section, once this Contract is signed by all parties, it shall be binding upon, and shall inure to the benefit of, all parties, and each parties' respective heirs, successors, assigns, transferees, agents, servants, employees, and representatives.

Assignment. The Contract is personal to the Contractor and there shall be no assignment, transfer, sale, or subcontracting by the Contractor of its rights or obligations under the Contract without the prior written approval of the City. Any attempted assignment, transfer, sale or subcontracting by the Contractor, its successors, or assigns, shall be null and void unless approved in writing by the City.

Compliance with Law. In providing the services required under this Contract, Contractor and its subcontractors shall at all times comply with all applicable laws of the United States, the State of California and City, and with all applicable regulations promulgated by federal, state, regional, or local administrative and regulatory agencies, now in force and as they may be enacted, issued, or amended during the term of this Contract.

Waiver. The waiver by either party of a breach by the other of any provision of this Contract shall not constitute a continuing waiver or a waiver of any subsequent breach of either the same or a different provision of this Contract. No provisions of this Contract may be waived unless in writing and signed by all parties to this Contract. Waiver of any one provision herein shall not be deemed to be a waiver of any other provision herein.

Headings. The section headings in this Contract are for convenience and reference only and shall not be construed or held in any way to explain, modify, or add to the interpretation or meaning of the provisions of this Contract.

Severability. The provisions of this Contract are severable. The invalidity, or unenforceability of any one provision in this Contract shall not affect the other provisions.

Interpretation. The parties acknowledge that this Contract in its final form is the result of the combined efforts of the parties and that, should any provision of this Contract be found to be ambiguous in any way, such ambiguity shall not be resolved by construing this Contract in favor of or against either party, but rather by construing the terms in accordance with their generally accepted meaning.

Exhibits. Each exhibit and attachment referenced in this Contract is, by the reference, incorporated into and made a part of this Contract.

Cumulative Remedies. No remedy or election hereunder shall be deemed exclusive but shall, wherever possible, be cumulative with all other remedies at law or in equity.

No Third-Party Beneficiaries. The rights, interests, duties, and obligations defined within this Contract are intended for the specific parties hereto as identified in the preamble of this Contract. Notwithstanding anything stated to the contrary in this Contract, it is not intended that any rights or interests in this Contract benefit or flow to the interest of any third parties other than expressly identified within this section. The parties do intend that in the event that the State of California is funding the Project being constructed hereunder, that the State of California be a third-party beneficiary under this Contract and all rights, interest and benefits of this Contract accrue to the State.

Termination for Convenience: The City reserves the right to terminate this Contract upon 60 calendar days prior written notice to the Contractor. In the event of such termination, the Contractor shall be paid for satisfactory service performed to the date of termination.

Termination for Non-Performance: If Contractor shall (i) materially breach any of its obligations under this Contract (including, without limitation, the failure to meet quality standards or to complete delivery, within the time specified herein, of all or any part of the materials, equipment, supplies or services to be provided under the Contract), and (iii) fail to commence and diligently pursue reasonable efforts to cure such breach within 5 calendar days after written notice by the City specifically describing the breach; the City Manager or his/her designee, acting for and on behalf of the City, may at any time after the expiration of the time for delivery, terminate the Contract as to the whole thereof, or in the event partial delivery has been made and accepted, as to such items or service to be furnished which have not been delivered or accepted prior to such termination. Such termination shall be effective upon receipt by Contractor of written notice of termination from said City Manager or his/her designee, which notice shall be deemed to have been received by Contractor, if mailed, within forty-eight hours to Contractor's address as contained in the Contractor's Bid Proposal or, if personally delivered, upon the delivery thereof to Contractor, the authorized representative of Contractor, or to the Contractor's said address.

Funding. This Contract is contingent on the appropriation of funds by City. Should funds not be appropriated, this Contract may be terminated by City upon prior written notice to Contractor.

Governing Law and Venue. This Contract shall be governed by, and construed and enforced in

accordance with, the laws of the State of California, excluding, however, any conflict of laws rule which would apply the law of another jurisdiction. Venue for purposes of the filing of any action regarding the enforcement or interpretation of this Contract and any rights and duties hereunder shall be Fresno County, California.

Extent of Agreement. Each party acknowledges that they have read and fully understand the contents of this Contract. This Contract represents the entire and integrated agreement between the parties with respect to the subject matter hereof and supersedes all prior negotiations, representations, or agreements, either written or oral. This Contract may be modified only by written instrument duly authorized and executed by both City and Contractor in accordance with City's current contract change order resolution for public works of improvement as may be revised.

CLAIMS FOR ADDITIONAL TIME

Extension of time, when granted, will be based upon the effect of delays to the project as a whole and will not be granted for noncontrolling delays to minor included portions of the Work unless it can be shown that such delays did, in fact, delay the progress of the project as a whole. The Contractor shall not be entitled to damages or additional payment due to these delays except to the extent the delay exceeds the original Contract duration for Substantial Completion, and any extension hereunder other than any extension granted due to Owner caused delay, when Owner is responsible for the delay, the delay is unreasonable under the circumstances involved, not within the contemplation of the parties, and such delay causes actual damage to the Contractor. The Owner shall not be entitled to liquidated damages for Contractor delays unless the delay by Contractor exceeds the original Contract duration for Substantial Completion and any extension of time to which the Contractor is entitled to under the Specifications.

If delays are caused by unforeseen events beyond the control of the Contractor, such delays will entitle the Contractor to an extension of time as provided herein. War, governmental regulations, priorities, labor disputes, strikes, fires, floods, adverse weather necessitating cessation of Work, other similar action of the elements, inability to obtain materials, equipment or labor because of Federal Government restrictions arising out of the National Defense or War Program, required *Extra Work,* action or inaction by the Owner, or other specific reasons as may be further described in the Specifications may constitute such a delay.

If the Contractor is delayed by the failure of the Owner to furnish necessary rights of way or materials agreed to be furnished by it, or by failure to supply necessary plans or instructions concerning the Work, after written request therefore, the Contractor shall be entitled to an extension of time as provided herein.

CLAIMS AND DISPUTES

(a) General

The Contractor and Owner shall make good faith efforts to resolve any and all Claims and disputes in a timely manner that may from time to time arise during Contractor's performance of the Work. Claims, including those alleging an error or omission shall be directed to the Owner's Construction Manager for action as provided in the "Resolution of Claims and Disputes," below.

It shall be a condition precedent to Claims review by the Public Works Director or his or her designated representative and to mediation or litigation between the Contractor and Owner as to all such matters arising prior to the date final payment is due, that a formal decision on all Contractor Claims be made by the Construction Manager. It shall be a condition precedent that the Contractor appeal any disputed Claim to the Public Works Director prior to initiating mediation or litigation. It shall be a condition precedent that the Contractor mediate any disputed Claim through non-binding mediation as provided herein, prior to initiating litigation. Unless mutually waived in writing by both parties, these provisions apply regardless of 1) whether such matters relate to execution and progress of the Work, or 2) the extent to which the Work has been completed.

Notice of Intent to Claim by Contractor must be made within 72 hours after occurrence of the event giving

rise to such Claim, or within 72 hours after the claimant first discovers or should have reasonably discovered the condition giving rise to the Claim, whichever is later. Notice of Intent to Claim and Claims must be made by written notice.

At all times during the course of the dispute resolution process pursuant to the "Resolution of Claims and Disputes," the Contractor shall continue with the Work as directed, in a diligent manner and without delay, or shall conform to the Owner's decision or order, and shall be governed by all applicable provisions of the Contract. Records of the Work shall be kept in sufficient detail to enable payment in accordance with applicable provisions in the Contract if this should become necessary.

The making of final payment shall not constitute a waiver of Claims by the Owner including, but not limited to, the following:

(i) liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;

(ii) failure of the Work to comply with the requirements of the Contract Documents; or

(iii) terms of special warranties required by the Contract Documents.

Contractor shall promptly provide an unconditional waiver and release upon final payment in accordance with California Civil Code section 3262 and these Contract Documents. Except to the extent of any Claim arising from City's sole or active negligence, and except to the extent Contractor expressly describes any other disputed Claims for which prior written notice has been given the City and lists the respective dollar amounts in an unconditional waiver and release, the making of final payment shall constitute a waiver of Claims by the Contractor pertaining to any and all costs, expenses, changes or other Claims related to Contract Price or Contract Time, including any synergistic effects attributed to multiple Change Orders. In the event of any disputed Claims between the City and Contractor, the City may withhold from the final payment an amount not to exceed 150% of the disputed amount.

(b) Resolution of Claims and Disputes

(1) Decision of Construction Manager:

a. If the Contractor believes any Work or demand to be outside the requirements of the Contract or believes that omissions, conflicts, errors, or discrepancies will cause or have caused the Contractor additional costs or delays in the performance of the Work, it shall file a written Notice of Intent to Claim with the Construction Manager within 72 hours after occurrence of the event giving rise to the Claim, or within 72 hours after the Contractor or its subcontractor first discovers or should have reasonably discovered the condition giving rise to the Claim, whichever is later. If a written Notice of Intent to Claim is not submitted within this time period, the Contractor shall waive his or her right to further Claims on the issue and any synergistic effects related to such Claim.

1. Within 10 working days following the Notice of Intent to Claim, the Contractor shall provide a Notice of Claim with complete supporting data for the Claim of the cost and delay related to such omissions, conflicts, errors, discrepancies, or Work alleged to be outside the requirements of the Contract. Notwithstanding the foregoing, if all supporting data cannot reasonably be made available within said 10 working days, then Contractor shall provide all then available supporting data along with a request for additional time, stating a time certain, to obtain the remainder of supporting data along with both an explanation of the nature of such supporting data and the reason why additional time is necessary to provide same to the Construction Manager.

2. If a written Notice of Claim, along with complete supporting data or all then available supporting data and reasonable request for additional time with explanation as required above, is not submitted within 10 working days following the Notice of Intent to Claim, the Contractor shall waive his or her

right to make further Claims on the issue and any synergistic effects related to such Claim.

3. The Contractor's request for additional time to provide the remainder of its supporting data shall be deemed acceptable to Owner unless the Construction Manager rejects in writing Contractor's request within 5 working days from receipt of Contractor's request. If the Construction Manager rejects Contractor's request for additional time, then Contractor shall either provide complete supporting data immediately upon receipt of such rejection or within any time acceptable to the Construction Manager as stated in his or her written rejection, whichever is later (unless otherwise mutually agreed upon in writing by Contractor and Construction Manager).

b. The Construction Manager will review any and all Claims and take one or more of the following preliminary actions in writing within 10 working days of receipt of written Notice of Claim and complete supporting data: 1) request additional supporting data from the Contractor; 2) reject the Claim in whole, or in part, stating reasons for rejection; or, 3) recommend approval of the Claim. In the event the Construction Manager has not taken any preliminary action within 10 working days, then the Claim is deemed rejected unless the Contractor and the Construction Manager mutually agree in writing to extend the time period for taking preliminary action. The Construction Manager will make his or her decision on the basis of the pertinent Contract provisions, together with the facts and circumstances involved in the dispute. The Construction Manager may also, but is not obligated to, notify the surety on Contractor's performance bond of the nature and amount of the Claim.

c. If the Construction Manager requests additional supporting data from the Contractor, the Contractor shall supply the additional information to the Construction Manager within 10 working days unless the Contractor and the Construction Manager mutually agree in writing to extend the time period for supplying such information. The Construction Manager will have 10 working days from the receipt of additional supporting data to provide a written decision unless the Contractor and the Construction Manager mutually agree in writing to extend the time period for providing such decision. In the event the Construction Manager has not provided a written decision within 10 working days, or any extended time period agreed to in writing by Construction Manager and Contractor, then the Claim is deemed rejected and this shall constitute Contractor's automatic request for an appeal meeting with the Public Works Director unless the Contractor submits a written withdrawal of its Claim.

d. If the Claim is rejected in whole or in part by a written decision of the Construction Manager, the Contractor shall notify the Construction Manager in writing within 10 working days after receiving the written decision that either: 1) the decision is accepted, and the Claim is amended accordingly; or 2) the Contractor requests an appeal meeting with the Public Works Director. Failure to timely request an appeal meeting with the Public Works Director following receipt of the written decision constitutes acceptance by the Contractor of the Construction Manager's decision. If the Owner and Contractor are able to resolve their dispute, the Owner will promptly process any required Contract changes.

(2) Decision of Public Works Director

a. The Public Works Director, or his or her designee, shall meet with the Contractor and the Construction Manager within 15 working days (unless necessary to accommodate the Public Works Director's schedule, or that of his or her designee, but in no event longer than 20 working days; or unless otherwise mutually agreed

b. upon in writing by Contractor and Construction Manager) from the Contractor's timely submittal of his or her request, or any automatic request hereunder, for a meeting. The Contractor may make a presentation in support of his or her Claim. No attorney may take part in the presentation or defense of the Claim in the meeting with the Public Works Director, or his or her designee. Nothing herein shall prevent an attorney from providing advice to a party either before or after the meeting. In the event the meeting with the Public Works Director, or his or her designee, has not been conducted within the time provided herein or as agreed upon in writing by Contractor and Construction Manager, then the Claim is deemed rejected and, unless the Contractor submits a written withdrawal of its Claim, the parties shall proceed to mediation as provided herein.

c. Within 10 working days (unless otherwise mutually agreed upon in writing by Contractor and Construction Manager) from the meeting with the Contractor and the Construction Manager, the Public Works Director, or his or her designee, shall render a written decision and a copy thereof shall be personally delivered, or mailed return receipt requested, to the Contractor. In the event the Public Works Director, or his or her designee, has not provided a written decision within 10 working days, or any extended time period agreed to in writing by Construction Manager and Contractor, then the Claim is deemed rejected and, unless the Contractor submits a written withdrawal of its Claim, the parties shall proceed to mediation as provided herein.

d. If the Claim is rejected in whole or in part by a written decision of the Public Works Director, or his or her designee, the Contractor shall notify the Construction Manager in writing within 10 working days after receiving the written decision that either: 1) the decision is accepted and the Claim is amended accordingly; or 2) the Contractor rejects the decision of the Public Works Director, or his or her designee. Failure to timely notify the Construction Manager of either following receipt of the Public Works Director's written decision, or that of his or her designee, shall constitute acceptance by the Contractor of the Public Works Director's decision, or that of his or her designee. If the Owner and Contractor are able to resolve their dispute, the Owner will promptly process any required Contract changes. If the Contractor rejects the written decision of the Public Works Director or his or her designee, the parties shall proceed to mediation as provided herein.

(3) Mediation

a. In the event that the Claim is not resolved after exhausting all aforementioned administrative measures, then the Contractor must participate in non-binding mediation with City before the Contractor may initiate litigation.

b. The parties shall mutually select, in writing, a mediator with at least 5 years' experience in the construction industry. In the event that the parties are unable to agree on a mediator within 15 working days of Contractor's rejection of the decision of the Public Works Director or his or her designee, the City may select the mediator. Mediation, including at least one session requiring physical attendance by all parties, shall begin within 15 working days of selection of the mediator, unless necessary to accommodate the mediator's schedule. The parties shall share the mediator's fees and any administrative costs of mediation equally. The mediation shall be held in Fresno, California, unless another location is mutually agreed upon by the parties in writing. In the event the parties are unable to reach a mutually acceptable resolution of the Claim within 20 working days of the start of mediation, unless extended or otherwise terminated by written mutual agreement of the parties, mediation shall terminate.

c. If the Owner and Contractor are able to resolve their dispute the Owner will promptly process any required Contract changes. Any settlement reached in principal must be in writing and is subject to approval by the City Manager or City

d. Council consistent with City laws and policies. Should the dispute remain unresolved, the parties may resort to other dispute resolution procedures.

e. All statements made during the mediation shall be confidential and subject to sections 703.5, 1119 and 1152 of the California Evidence Code.

(4) Government Claims Act. Nothing herein is intended by the parties to waive any requirements of the Contractor to comply with the Government Claims Act including, without limitation, California Government Code section 905; and Contractor agrees that it shall remain responsible for complying with said section regarding any Claim. The parties agree, however, that the timeline for the Contractor to file a claim under the Government Claims Act is tolled until exhaustion of the Contractor of its administrative remedies hereunder (i.e., either upon termination of mediation, or upon written mutual waiver of mediation by the parties, whichever first occurs).

(5) Litigation

a. If the Contractor continues to dispute the Work demanded of him/her after exhausting all aforementioned administrative measures, the Contractor may institute legal proceedings, but only after final acceptance of the project by the Owner.

Unless specifically waived by the Owner, in writing, the submission of a dispute for mediation in accordance with the above provisions shall be a condition precedent to the Contractor's right to initiate a suit, action or other proceeding against the Owner for damages.

b. In the event Owner initiates suit, action, or other proceeding against the Contractor for damages, the prevailing party in such suit or action shall be entitled to recover reasonable attorney's fees and costs of suit.

c. In the event Contractor initiates suit, action, or other proceeding against the Owner, the Owner shall be entitled to recover reasonable attorneys' fees and engineering defense costs if the Contractor is not awarded, by the arbitrator or court, a dollar amount greater than 50 percent of the Contractor's original Claim for damages.

d. The Contractor shall include, or cause to be included, a requirement in all subcontracts of all tiers of Subcontractors for this project that whenever the Subcontractor disputes the Work demanded of him/her, it shall cooperate and comply with the Claims and Dispute procedures contained herein including, without limitation, exhausting all administrative measures prior to instituting legal proceedings, and instituting legal proceedings only after final acceptance of the project by the Owner.

MEDIATOR

The bid proposal includes a bid item “Mediator” which is provided to account for compensation by Owner for Owner’s share of costs of the Mediator as provided in these Specifications. The dollar amount listed in the bid item is an estimate only and will be included in each Bidder’s Proposal. Invoices of the Mediator shall be paid by Contractor only upon direct written authorization from the Owner.

Final payment to Contractor will be based on fifty percent (50%) of the total amount of Owner approved invoices of the Mediator actually billed to Owner by Contractor. The Contractor shall include the specified lump sum bid item on the Bid Proposal for payment of Owner’s share of costs for the Mediator. Payment will be made under this bid item by issuance of a Change Order approved by the Owner and charged against this lump sum allocation.

This bid item may be increased, decreased, or deleted in its entirety and is not to be construed as additional money owed the Contractor. If no Change Order is issued against this bid item, the Contract

Price shall be reduced by the full amount of the bid item included in the Bid Proposal for the Mediator.

The Contractor shall have no claim for anticipated overhead or profit should the Owner fail to issue any Change Orders against this bid item.

PROGRESS PAYMENTS AND RETENTION

The Construction Manager will, after award of a Contract, establish a monthly payment date. This date will be the date during the life of the Contract, which will terminate each working month. Each month, the Construction Manager will make an approximate measurement of the Work performed to that date and estimate its value based on the Contract Unit Prices. When the Work has been satisfactorily completed, the Construction Manager will determine the quantity of Work performed and prepare the final estimate of its value.

Unless a greater percentage of retention is otherwise specified in the Contract Documents to be withheld from progress payments, 5% will be deducted from each progress estimate and retained by the City; and the remainder, less the amount of any previous payment for the Work performed, will be paid to the Contractor subject to other provisions of this section. The City retains the option, at its discretion, to reduce any retained amount by payment to the Contractor upon conditions or otherwise.

Under no circumstance shall any provision of this section be construed to limit the ability of the City to withhold 150 percent of the value of any disputed amount of Work from the final payment. In the event of a good faith dispute, nothing in this section shall be construed to require the City pay for Work that is not approved or accepted in accordance with the Plans and Specifications.

The payment of progress payments by the City shall not be construed as an absolute acceptance of the Work done up to the time of such payments.

If within the time fixed by law, a properly executed stop notice is filed with the City due to Contractor's failure to pay for labor or materials used in the work, all money due for such labor or materials will be withheld from payment to the Contractor in accordance with applicable laws.

Notwithstanding any other provision of the Contract, the City reserves the right to off-set any payment due the Contractor against any debt due from the Contractor to the City, pursuant to this Contract.

COMPLETION

When Contractor considers the Work ready for its intended use, the Contractor shall notify the City in writing that the Work is substantially complete. The Contractor shall attach to this request a list of all work items that remain to be completed and a request that the City prepare a Certificate of Substantial Completion. Within a reasonable time thereafter, the City and Contractor shall inspect the Work to determine the status of completion and to the extent that City agrees the Project is substantially complete. If the City does not consider the Work substantially complete, the City will notify Contractor in writing of the reasons therefore and Contractor shall promptly correct all items identified by the City. The City and Contractor shall repeat the above-referenced procedure until all items are completed to the City’s satisfaction, whereupon City shall issue a Certificate of Substantial Completion.

On the date that the City issues the Certificate of Substantial Completion, the City shall provide Contractor with the final punch list identifying the remaining minor corrective items to be completed for final completion of the Project.

When the Contractor considers the final punch list work to be complete, it shall request City to perform a final walk through of the Project to determine if said punch list work is complete and whether Contractor has otherwise completed all of its obligations under the Contract Documents.

The City shall record the Notice of Completion when the entire Work including, but not limited to Contractor's closeout document obligations are fully satisfied, Contractor's punch list(s) and work shall have been completed to the satisfaction of the City.

However, the City, at its sole option, may accept completion of the Contract and have the Notice of Completion recorded when the entire Work including individual portions of the Work shall have been completed to the satisfaction of the City, except for minor corrective items, as distinguished from incomplete items.

Regardless of the cause therefore, the Contractor may not maintain any claim or cause of action against the City for damages incurred as a result of its failure or inability to complete its Work on the Project in a shorter period than established in the Contract Documents, the parties stipulating that the period set forth in the Contract Documents is a reasonable time within which to perform the work on the Project.

EXTENSION OF TIME - LIQUIDATED DAMAGES

The Contractor and City hereby agree that the exact amount of damages for failure to complete the work within the time specified is extremely difficult or impossible to determine. Contractor shall be assessed the sum as set forth in the Contract, as liquidated damages for each and every day the work required under the Contract Documents remains unfinished past the time for completion, as set forth in the Contract Documents, and any extensions of time granted by the City to the Contractor under the terms of the Contract Documents. The Contractor will pay to the City or City may retain from amounts otherwise payable to the Contractor, said amount for each day after failure to meet the requirements of the contract completion as scheduled in the Contract. For purposes of this Item, section Work shall be considered *complete* in accordance with the provisions of the foregoing section entitled "COMPLETION" and issuance of a Certificate of Substantial Completion.

Contractor shall not be charged for liquidated damages, as set forth above, because of any delays in completion of Work which are not the fault or negligence of Contractor, or its subcontractors, or persons or entities for which it is responsible, including, but not restricted to acts of God, as set forth herein.

FINAL APPLICATION FOR PAYMENT AND FINAL PAYMENT

After Contractor has completed all of the remaining Work items, and delivered all maintenance and operating instructions, schedules guarantees, bonds, certificates of inspection, and As-Built drawings, marked up Record documents, and any other close out documents required by the Contract Documents, and after the City has indicated that Contractor has achieved Final Completion (including, without limitation, all final punch list work), Contractor may make application for final payment following the City's procedure for progress payments. The final application for payment shall be accompanied by all documentation called for in the Contract Documents for making of progress payments together with complete and legally effective releases and waivers of all encumbrances arising out of or related to the Work.

After Contractor has satisfied all of the conditions of the preceding paragraph, Contractor shall submit its application for final payment and release of retention. Said application shall set forth the following information, at a minimum:

(1) Cost of the Work in permanent place as of the end of the immediately preceding month as shown on the updated Project Schedule and Schedule of Values submitted with the Contractor's application;

(2) Less amounts previously paid and previously withheld as retention;

(3) The amount currently due; and

(4) An itemized list of disputed amounts, if any.

Contractor's application for final payment shall also be accompanied by Conditional Waivers and Releases Upon Final Payment executed by Contractor and by all subcontractors for whom payment is requested.

If the Contractor fails to complete the punch list work or corrective items prior to the expiration of 35 calendar days immediately following issuance of a Certificate of Substantial Completion, the City shall withhold from the final payment an amount equal to 150% of the estimated cost, as determined by the City, of each item until such time as the item is completed. Alternatively, at the end of such 35-day period, if there are items remaining to be corrected, the City may elect to proceed to withhold a sufficient amount, which in City's judgment may be necessary to cover the cost of incomplete and defective work. In the event of a dispute between the City and Contractor over the amount due, the City may withhold from the final payment an amount not to exceed 150% of the disputed amount.

Subject to the provisions of the Contract Documents, City shall make final payment of undisputed amounts to Contractor no later than 45 calendar days after City's receipt of Contractor's properly submitted application for final payment.

PAYMENTS WITHHELD

In addition to any amount which City may retain under the Contract Documents, City may withhold a sufficient amount of the Contract price otherwise due to Contractor, which in City's judgment may be necessary to cover:

(1) Payments which may be past due and payable for just claims against Contractor or any subcontractors, or against and about the performance of work on the Project.

(2) The cost of defective work, which Contractor has not remedied.

(3) Liquidated damages assessed against Contractor.

(4) Penalties for violation of any labor laws or deficient certified payroll.

(5) The cost of materials or equipment ordered by the City as it may deem advisable (this right is reserved by City in the event of any neglect by Contractor in furnishing materials in ample quantities and at such times as to ensure uninterrupted progress of the Work) in order that the Work may be completed by the date specified in the Contract documents.

(6) The cost of completion of this Contract if there exists a reasonable doubt that this Contract can be completed for the balance then unpaid to Contractor.

(7) Damage caused by Contractor or its subcontractors and the parties for whom they are responsible.

(8) Site clean-up including, but not limited to, removal from site and disposal of debris if Contractor fails to provide such final cleaning after construction has been completed.

(9) Payments to indemnify, defend, or hold harmless the City.

(10) Any payments due to the City including but not limited to payments for failed tests, utilities or imperfections.

(11) Extra services for the Construction Manager or any City agents, including but not limited to, services rendered in the evaluation of Contractor substitution requests, Requests for Information (RFI's), Change Order Requests and Claims.

(12) Extra services for any inspector including, but not limited to, re-inspection required due

(13) to Contractor's failed tests or installation of unapproved or defective materials and Contractor's requests for inspection and Contractor's failure to attend the inspection.

(14) Costs to complete or submit to City Project Record Documents and other closeout documents required under the Contract Documents.

(15) Submission of daily reports and completeness thereof.

(16) Breach of any provision of the Contract Documents.

If the above grounds are in the opinion of the City removed by or at the expense of Contractor, payment shall be made for amounts withheld because of them.

City may apply, but is not obligated to apply, such withheld amount or amounts to payment of such claims or obligations at its sole discretion. In so doing, City shall make such payments on behalf of Contractor. If any payment is so made by City, then such amount shall be considered as a payment made under contract by City to Contractor and City shall not be liable to Contractor for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. City will render Contractor an accounting of such funds disbursed on behalf of Contractor.

As an alternative to payment of such claims or obligations, City, in its sole discretion, may reduce the total Contract price or set-off the amount against payments due.

WAIVER AND RELEASE FORMS

Consistent with the provisions of California Civil Code Chapter 3 – Waiver and Release [8120 – 8138], the Contractor and its subcontractors shall promptly furnish the City with a release of all claims against the City arising by virtue of the Contract Documents related to amounts to be paid or which have been paid. This section shall survive expiration or termination of the Contract. Contractor shall include these requirements in all subcontracts for this project. The Contractor and subcontractors from the operation of the release may specifically exclude disputed contract claims in stated amounts.

Neither the City nor the Contractor by any term of this Contract, or otherwise, shall waive, affect, or impair the claims and liens of other persons whether with or without notice except by their written consent, and any term of the Contract to that effect shall be null and void. Any written consent given by any claimant pursuant to this section shall be null, void, and unenforceable unless and until the claimant executes and delivers a waiver and release. Such a waiver and release shall be binding and effective to release the City, construction lender, and surety on a payment bond from claims and liens only if the waiver and release follows substantially one of the forms set forth in California Civil Code Chapter 3 – Waiver and Release [8120 – 8138] and this section and is signed by the claimant or his or her authorized agent, and, in the case of a conditional release, there is evidence of payment to the claimant. Evidence of payment may be by the claimant's endorsement on a single or joint payee check that has been paid by the bank upon which it was drawn or by written acknowledgment of payment given by the claimant.

No oral or written statement purporting to waive, release, impair or otherwise adversely affect a claim is enforceable or creates any estoppel or impairment of a claim unless:

(1) It is pursuant to a waiver and release prescribed herein, or
(2) The claimant had actually received payment in full for the claim.

This section does not affect the enforceability of either an accord and satisfaction regarding a bona fide dispute or any agreement made in settlement of an action pending in any court provided the accord and satisfaction or agreement and settlement make specific reference to the stop notice or bond claims.

The waiver and release given by any claimant hereunder shall be null, void, and unenforceable unless it follows substantially the following forms in the following circumstances. Each waiver in this provision shall contain the following language, in at least as large a type as the largest type otherwise on the document:

(Example 1.)

Where the claimant is required to execute a waiver and release in exchange for, or in order to induce the payment of, a progress payment and the claimant is not, in fact, paid in exchange for the waiver and release or a single payee check or joint payee check is given in exchange for the waiver and release, the waiver and release shall follow substantially the following form:

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived, and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: $ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): $_____

(4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

Exclusions: Listing of Claims, of which prior written Notice has been given to the City of Fresno:

1. Claim for: _____ In the amount of: $_____
2. Claim for: _____ In the amount of: $_____
3. Claim for: _____ In the amount of: $_____

(Example 2.)

Where the claimant is required to execute a waiver and release in exchange for, or in order to induce payment of, a progress payment and the claimant asserts in the waiver it has, in fact, been paid the progress payment, the waiver and release shall follow substantially the following form with the text of the "Notice to Claimant" in at least as large a type as the largest type otherwise in the form:

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived, and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: $____.

Exceptions

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the

payment.

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

Exclusions: Listing of Claims, of which prior written Notice has been given to the City of Fresno:

1. Claim for: _____ In the amount of: $_____
2. Claim for: _____ In the amount of: $_____
3. Claim for: _____ In the amount of: $_____

(Example 3.)

Where the claimant is required to execute a waiver and release in exchange for, or in order to induce the payment of, a final payment and the claimant is not, in fact, paid in exchange for the waiver and release or a single payee check or joint payee check is given in exchange for the waiver and release, the waiver and release shall follow substantially the following form:

CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived, and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: $ _____

Check Payable to: _____

*Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of: $ _____

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

*Listing of Claims, of which prior written Notice has been given to the City of Fresno:

1. Claim for: _____ In the amount of: $_____
2. Claim for: _____ In the amount of: $_____
3. Claim for: _____ In the amount of: $_____

(Example 4.)

Where the claimant is required to execute a waiver and release in exchange for, or in order to induce payment of, a final payment and the claimant asserts in the waiver it has, in fact, been paid the final payment, the waiver and release shall follow substantially the following form with the text of the "Notice to Claimant" in at least as large a type as the largest type otherwise in the form:

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived, and released by this document, unless listed as an Exception below. The claimant has been paid in full.

*Exceptions

This document does not affect the following:

Disputed claims for extras in the amount of: $ _____

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

*Listing of Claims, of which prior written Notice has been given to the City of Fresno:

1. Claim for: _____ In the amount of: $_____
2. Claim for: _____ In the amount of: $_____
3. Claim for: _____ In the amount of: $_____

SECURITIES IN LIEU OF RETENTION PERMITTED AND ESCROW AGREEMENT (PUBLIC CONTRACT CODE SECTION 22300)

Pursuant to provisions of section 22300 of the California Public Contract Code, Contractor may substitute securities for any monies withheld by Owner. Procedures shall be as provided in section 22300 of the California Public Contract Code.

(a) Provisions shall be included in any invitation for bid and in any contract documents to permit the substitution of securities for any moneys withheld by a public agency to ensure performance under a contract, provided that substitution of securities provisions shall not be required in contracts in which there will be financing provided by the Farmers Home Administration of the United States Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 U.S.C. Sec. 1921 et seq.), and where federal regulations or policies, or both, do not allow the substitution of securities. At the request and expense of the contractor, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank in this state as the escrow agent, who shall then pay those moneys to the contractor. Upon satisfactory completion of the contract, the securities shall be returned to the contractor.

(b) Alternatively, the contractor may request, and the owner shall make payment of retentions earned directly to the escrow agent at the expense of the contractor. At the expense of the contractor, the contractor may direct the investment of the payments into securities and the contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the contractor. Upon satisfactory completion of the contract, the contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the owner, pursuant to the terms of this section.

(c) Securities eligible for investment under this section shall include those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the contractor and the public agency. The contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon. Failure to include these provisions in bid and contract documents shall void any provisions for performance retentions in a public agency contract. For purposes of this section, the term “public agency” shall include, but shall not be limited to, chartered cities.

(d) (1) Any contractor who elects to receive interest on moneys withheld in retention by a public agency shall, at the request of any subcontractor, make that option available to the subcontractor regarding any moneys withheld in retention by the contractor from the subcontractor. If the contractor elects to receive interest on any moneys withheld in retention by a public agency, then the subcontractor shall receive the identical rate of interest received by the contractor on any retention moneys withheld from the subcontractor by the contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the contractor elects to substitute securities in lieu of retention, then, by mutual consent of the contractor and subcontractor, the subcontractor may substitute securities in exchange for the release of moneys held in retention by the contractor. (2) This subdivision shall apply only to those subcontractors performing more than five percent of the contractor’s total bid. (3) No contractor shall require any subcontractor to waive any provision of this section.

(e) The Legislature hereby declares that the provisions of this section are of statewide concern and are necessary to encourage full participation by contractors and subcontractors in public contract procedures.

(f) The escrow agreement used hereunder shall be null, void, and unenforceable unless it is substantially similar to the following form:

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between _____

whose address is _____ hereinafter called "Owner," _____

_____ whose address is _____ hereinafter called

"Contractor" and _____ whose address is _____

_____ hereinafter called "Escrow Agent." For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for _____ in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of _____and shall designate the Contractor as the beneficial owner.

(2) The Owner shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

(5) The interest earned on the securities, or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

(8) Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:	On behalf of Contractor:	On behalf of Escrow Agent:
Title	Title	Title
Name	Name	Name
Signature	Signature	Signature
Address	Address	Address

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

Owner	Contractor
Title	Title
Name	Name
Signature	Signature

DIVISION III

FEDERAL REQUIREMENTS

(This is not a federally funded project and, as such, those provisions that would otherwise apply to a federally funded project are not applicable to this project.)

DIVISION IV

SPECIAL CONDITIONS

DIVISION IV

SPECIAL CONDITIONS TO SPECIFICATIONS

1. PLANS, SPECIFICATIONS AND CONTRACT ADMINISTRATION

The location of the work, together with profiles and special construction details are illustrated on the accompanying Plans consisting of sheet(s) numbered as follows:

Sheet	Title	Drawing No.
1	Cover Sheet	15-E-14582
2	Sheet Index	15-E-14583
3	Overall Site Plan	15-E-14584
4	Existing Conditions Key Map	15-E-14585
5	Existing Site Conditions 1	15-E-14586
6	Existing Site Conditions 2	15-E-14587
7	Existing Site Conditions 3	15-E-14588
8	Existing Site Conditions 4	15-E-14589
9	Existing Site Conditions 5	15-E-14590
10	Existing Site Conditions 6	15-E-14591
11	Palm Ave Demolition Plan	15-E-14592
12	Riverview Drive Demolition Plan	15-E-14593
13	Woodward West Demolition Plan	15-E-14594
14	Access Point Keymap	15-E-14595
15	Palm Avenue Site Plan 1	15-E-14596
16	Palm Avenue Site Plan 2	15-E-14597
17	Palm Avenue Stair and Ramp Notes	15-E-14598
18	Palm Avenue Stair Plan and Profile	15-E-14599
19	Palm Avenue Ramp Leg 1	15-E-14600
20	Palm Avenue Ramp Leg 2	15-E-14601
21	Palm Avenue Ramp Leg 3	15-E-14602
22	Palm Avenue Ramp Leg 4	15-E-14603
23	Palm Avenue Ramp Leg 5	15-E-14604
24	Palm Avenue Ramp Leg 6	15-E-14605
25	Palm Avenue Ramp Leg 7	15-E-14606

26	Palm Avenue Ramp Leg 8	15-E-14607
27	Woodward West Site Plan 1	15-E-14608
28	Woodward West Site Plan 2	15-E-14609
29	Woodward West Overall Grading Plan	15-E-14610
30	Woodward Enlarged Grading Plan	15-E-14611
31	Trail Improvements Trail Keymap	15-E-14612
32	Trail Improvements Trail Horizontal Control Tables	15-E-14613
33	Trail Improvements Trail Cross Section Details	15-E-14614
34	Trail Improvements Trail Cross Section Details	15-E-14615
35	Trail Improvements Primary Trail Sta 10+00 - 17+00	15-E-14616
36	Trail Improvements Primary Trail Sta 17+00 - 27+00	15-E-14617
37	Trail Improvements Primary Trail Sta 27+00 - 34+00	15-E-14618
38	Trail Improvements Primary Trail Sta 34+00 - 43+00	15-E-14619
39	Trail Improvements Primary Trail Sta 43+00 - 48+00	15-E-14620
40	Trail Improvements Primary Trail Sta 48+00 - 54+00	15-E-14621
41	Trail Improvements Primary Trail Sta 54+00 - 61+00	15-E-14622
42	Trail Improvements Primary Trail Sta 61+00 - 70+00	15-E-14623
43	Trail Improvements Primary Trail Sta 70+00 - 79+00	15-E-14624
44	Trail Improvements Primary Trail Sta 79+00 - 88+00	15-E-14625
45	Trail Improvements Primary Trail Sta 88+00 - 97+00	15-E-14626
46	Trail Improvements Primary Trail Sta 97+00 - 106+00	15-E-14627
47	Trail Improvements Primary Trail Sta 106+00 - 113+00	15-E-14628
48	Trail Improvements Primary Trail Sta 113+00 - 122+00	15-E-14629
49	Trail Improvements Primary Trail Sta 122+00 - 129+00	15-E-14630
50	Trail Improvements Primary Trail Sta 129+00 - 136+50	15-E-14631
51	Trail Improvements Grading Oak Waypoint	15-E-14632
52	Trail Improvements Grading Underpass Waypoint	15-E-14633
53	Trail Improvements Equestrian Trail	15-E-14634
54	Trail Improvements Riverview Spur Sta 230+00 - 239+00	15-E-14635
55	Trail Improvements Riverview Spur Sta 239+00 - 247+03	15-E-14636
56	Utility Plans Riverview Utility Keymap	15-E-14642
57	Utility Plans Riverview Sta 10+00-15+50	15-E-14643
58	Utility Plans Riverview Sta 15+50-21+00	15-E-14644

59	Utility Plans Riverview Sta 21+00-26+30	15-E-14645
60	Utility Plans Riverview Sta 26+30-31+50	15-E-14646
61	Utility Plans Riverview Sta 31+50-37+50	15-E-14647
62	Utility Plans Riverview Sta 37+50-42+50	15-E-14648
63	Utility Plans Riverview Sta 42+50-46+50	15-E-14649
64	Utility Plans Riverview Sta 46+50-50+86.88	15-E-14650
65	Utility Plans Riverview Sta 50+86.88-55+50	15-E-14651
66	Utility Plans Riverview Sta 55+50-58+90.22	15-E-14652
67	Utility Plans Riverview Sta 58+90.22-65+07	15-E-14653
68	Utility Plans Spano Park Sta 10+00-14+00	15-E-14654
69	Utility Plans Spano Park Sta 14+00-17+47	15-E-14655
70	Civil Details	15-E-14637
71	Civil Details	15-E-14638
72	Civil Details	15-E-14639
73	Vault Restroom Civil Details	15-E-14640
74	Ramp Details	15-E-14641
75	Landscape Plans Key Plan	15-E-14656
76	Landscape Plans Material Plan - Spano Stairs	15-E-14657
77	Landscape Plans Material Plan - Spano Parking	15-E-14658
78	Landscape Plans Material Plan - Bus Drop Off	15-E-14659
79	Landscape Plans Material Plan – Restoration Waypoint	15-E-14660
80	Landscape Plans Material Plan - History Waypoint	15-E-14661
81	Landscape Plans Material Plan - Habitat Waypoint	15-E-14662
82	Landscape Plans Material Plan - View Deck Waypoint	15-E-14663
83	Landscape Plans Material Plan - Oak Waypoint	15-E-14664
84	Landscape Plans Material Plan – Underpass	15-E-14665
85	Landscape Plans Material Plan – Woodward West	15-E-14666
86	Landscape Plans Site Planting Plan	15-E-14667
87	Landscape Plans Planting Plan Spano Stairs	15-E-14668
88	Landscape Plans Planting Plan Spano Parking	15-E-14669
89	Landscape Plans Planting Plan Bus Drop Off	15-E-14670
90	Landscape Plans Planting Plan Restoration Waypoint	15-E-14671
91	Landscape Plans Planting Plan History Waypoint	15-E-14672

92	Landscape Plans Planting Plan Habitat Waypoint	15-E-14673
93	Landscape Plans Planting Plan View Deck Waypoint	15-E-14674
94	Landscape Plans Planting Plan Oak Waypoint	15-E-14675
95	Landscape Plans Planting Plan Underpass Waypoint	15-E-14676
96	Landscape Plans Planting Plan Woodward West	15-E-14677
97	Landscape Plans Signage Plan	15-E-14678
98	Landscape Plans Details - Custom Elements	15-E-14679
99	Landscape Plans Details – Furnishing	15-E-14680
100	Landscape Plans Details - Customized Benches	15-E-14681
101	Landscape Plans Details - Shade Structure	15-E-14682
102	Landscape Plans Details - Wayfinding Signage Family	15-E-14683
103	Landscape Plans Details -Interpretive Signage Family	15-E-14684
104	Landscape Plans Details - Interpretive And Regulatory Signage Family	15-E-14685
105	Landscape Plans Details - Tree Protection	15-E-14686
106	Landscape Plans Details – Planting	15-E-14687
107	Irrigation Plans Irrigation Legend	15-E-14688
108	Irrigation Plans Irrigation Plan – Plam Ave POC	15-E-14689
109	Irrigation Plans Irrigation Plan – Plam Ave POC	15-E-14690
110	Irrigation Plans Irrigation Plan – Plam Ave POC	15-E-14691
111	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14692
112	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14693
113	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14694
114	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14695
115	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14696
116	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14697
117	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14698
118	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14699
119	Irrigation Plans Irrigation Plan – Riverview POC	15-E-14700
120	Irrigation Plans Irrigation Plan – Habitat Waypoint POC	15-E-14701
121	Irrigation Plans Irrigation Plan – Habitat Waypoint POC	15-E-14702
122	Irrigation Plans Irrigation Plan – Habitat Waypoint POC	15-E-14703
123	Irrigation Plans Irrigation Plan – View Deck Waypoint POC	15-E-14704

124	Irrigation Plans Irrigation Plan – Oak Waypoint POC	15-E-14705
125	Irrigation Plans Irrigation Plan – Underpass Waypoint POC	15-E-14706
126	Irrigation Plans Irrigation Plan – Underpass Waypoint POC	15-E-14707
127	Irrigation Plans Irrigation Plan – Woodward POC	15-E-14708
128	Irrigation Plans Irrigation Plan – Woodward POC	15-E-14709
129	Irrigation Plans Irrigation Details	15-E-14710
130	Irrigation Plans Irrigation Details	15-E-14711
131	Irrigation Plans Irrigation Notes	15-E-14712
132	Irrigation Plans City of Fresno Irrigation Notes	15-E-14713
133	Irrigation Plans MWELO Documents	15-E-14714

The work embraced herein shall be done in accordance with applicable provisions of the Standard Specifications of the City of Fresno, Department of Public Works and with the special conditions contained herein.

Inspection and other construction review shall be provided by the City of Fresno, except where specified otherwise in Specifications or required permits.

2. PERMITS AND FEES

The Contractor shall secure all permits required to complete the items of this Contract. No fees will be charged for any City permits, other than for a water meter, if required. Water meter permit and fee shall be obtained and paid for at the Fresno City Water Division Office at 1910 East University Avenue. Caltrans encroachment permits are required for work at or near Caltrans right-of-way.

3. NOTIFICATION OF PROPERTY OWNERS

The Contractor shall notify all property owners in writing along the public right-of-way 96 hours (7 days notification prior to any street closure) in advance of construction as to when, how, and how long they will be affected. The Letter of Notification shall also give the name of the person representing the Contractor and his or her telephone number. The letter shall be prepared and delivered by the Contractor.

4. CONTRACTOR'S RESPONSIBILITIES

The contractor agrees, from the date of commencement of construction (NTP) until the formal final acceptance (NOC) of the completed work by the city. That he or she shall assume sole and complete responsibility for the job site conditions, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours. Contractor shall bear all risks of injury or damage to or the destruction of, the work or any part or parts thereof, or any materials or equipment delivered to the site thereof, by fire, earthquake, windstorm or other actions of the elements, vandalism, or from any other cause, including loss by theft. Contractors shall rebuild, replace, restore, and make good all injuries or damage to any portion of the work either temporary (Fencing, electrical, safety, lighting) or permanent fixtures incorporated into the project, and shall bear the entire expense thereof.

The Contractor shall be responsible at his/her own expense for the prevention and removal of vandalism within the Project Site. The Contractor is responsible for the protection and restoration of existing improvements per Section 7-9 herein and shall be responsible for and apply the same protections to the contract improvements. When vandalism, including graffiti, stickers, and/or other public nuisances (City of Fresno Municipal Code, Sec 10-605) appear within the project site, the Contractor shall remove, repair, or restore the improvements within 48 hours of discovery of such occurrence. The Contractor shall be responsible for all costs, labor, materials, tools, and incidentals necessary to keep the Project Site free of vandalism.

The Contractor shall at his/her own expense furnish, install, maintain, replace, and remove all temporary fence including poles, piping, fabric, foundations, stands, signage, chains, locks, and other equipment, necessary for the Work and in order to keep the Project Site secure. The Contractor shall use temporary fence any time a permanent fence is removed or displaced during the course of construction and as needed to protect the traveling public, private property, and the project site.

When Underground Service Alert markings are applied, the Contractor shall at his/her own expense remove those markings. Only markings applied in response to the awarded Contract shall be removed.

Long lead items including custom fabrication items, specialty equipment, or items incorporated into the projects critical path timeline shall provide written verification, purchase orders or subcontract agreements showing approval and release for construction critical items no later than two weeks after submittal approval. All long lead items shall be shown on the pre-construction schedule. Submittals shall be submitted for review as soon as possible after the contract has been awarded, weekly submittal progress status will be required.

5. TEMPORARY SUSPENSION OF WORK

The Engineer shall have the authority to suspend the work wholly or in part, for such period as deemed necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the work, or for such time as he or she may deem necessary due to the failure on the part of the Contractor to carry out orders given, or to perform any provision of the Contract.

If the Engineer orders a suspension of all of the work or a portion of the work which is the current controlling operation or operations, due to unsuitable weather or to such other conditions as are considered unfavorable to the suitable prosecution of the work, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion, State Standard Specifications." If a portion of the work at the time of such suspension is not a current controlling operation or operations, the determination of working days will be made on the basis of the then current controlling operation or operations.

If a suspension of work is ordered by the Engineer, due to the failure on the part of the Contractor to carry out orders given or to perform any provision of the Contract, the days on which the suspension order is in effect shall be considered working days if such days are working days within the meaning of the definition set forth in Section 8-1.06, " Time of Completion, State Standard Specifications."

6. TESTING

All first compaction tests shall be performed at no expense to the Contractor. The cost of each subsequent retest shall be paid for by the Contractor if the first tests fail to meet the required relative compaction.

7. DISPOSAL OF CONCRETE AND A.C. SURFACING

All concrete, A.C. and pavement removed from the project site shall be disposed of at a site obtained by the Contractor and approved by the Engineer. **No recyclable material shall be disposed of at any landfill. All disposable recyclable materials shall be disposed in a manner that facilitates recycling.** Payment for disposal, including all costs of hauling, shall be as specified in the Technical Specifications or Explanation of Bid Items. The Contractor shall report quantities of disposed material in a manner that enables the City to utilize diverted quantities as diversion credits pursuant to California Integrated Waste Management Act of 1989 (Public Resources Code Sections 40000 et seq.)

8. DISPOSAL OF OIL CAKE, VEGETATION, WOOD DEBRIS, STRUCTURE DEMOLITION AND OTHER DEBRIS

All oil cake, wood debris, structure demolition, vegetation and any other debris removed from the project site shall be legally disposed of at a site(s) obtained by the Contractor ("Disposal Site(s)") with prior written permission of the Engineer. Contractor shall identify the proposed Disposal Site(s) at the pre-construction conference. Such Disposal Site(s) shall be a properly licensed and permitted facility pursuant to state and local regulations for purposes of accepting delivery of the respective materials. No recyclable material shall be disposed of at any landfill. All disposable recyclable materials shall be disposed in a manner that facilitates recycling. In addition to the following, a certificate of compliance stating disposal location and manner of disposal of recyclable materials shall be submitted to the Engineer.

Contractor shall make arrangements for disposing of the materials at the Disposal Site(s) and pay all costs involved. Arrangements shall include, but not be limited to, obtaining written authorization from the property owner of the Disposal Site(s) and before disposing of any material off the project site, Contractor shall furnish to the Engineer the authorization or a certified copy thereof together with a written release from the property owner absolving the City of Fresno from any and all responsibility in connection with the disposal of material on the property of the Disposal Site(s). Before any material is disposed of on the Disposal Site(s), the Contractor shall obtain written permission from the Engineer to dispose of the material at the location designated in the authorization.

It is expressly understood and agreed that the City of Fresno assumes no responsibility to the Contractor whatsoever by the granting of such permission and Contractor shall assume all risks in connection with the use of the Disposal Site(s). The Contractor is cautioned to make such independent investigation and examination as the Contractor deems necessary to be satisfied as to the quantity and types of materials which may be disposed of on the Disposal Site(s) and the status of any permits or licenses in connection therewith.

Within 24 hours of removing the respective material from the project site for disposal, Contractor shall provide Engineer with a certified copy of the weight slip from the Disposal Site obtained by Contractor upon delivery of such debris, and a certified statement from Contractor identifying the material constituting the debris and that it was disposed of at the Disposal Site (identifying the facility and name of the owner) in accordance with all laws and applicable regulations promulgated by Federal, State, regional, or local administrative and regulatory agencies.

Payment for disposal, including all costs of hauling, shall be as specified in the Technical Specifications or Explanation of Bid Items. The Contractor shall report quantities of disposed material in a manner that enables the City to utilize diverted quantities as diversion credits pursuant to the California Integrated Waste Management Act of 1989 (Public Resources Code Sections 40000 et seq.)

9. PARKING PERMITS

All Contractors using vehicles, necessary for the performance of work for the City of Fresno, that require parking off the job site in an area subject to a parking violation shall obtain special meter provisions issued by the City Parking Division. Meter reservations may be made on the City website by going to *Departments, Planning & Development, Parking,* and clicking *Construction and Event Support* at the bottom of the page, *To Apply for Meter Reservation Online.* Contractors not coordinating such provisions shall be required to

otherwise comply with the parking requirements of Chapter 14 of the Fresno Municipal Code and will be subject to fines for violation of the Code.

10. TRAFFIC CONTROL

Any additional project specific requirements are outlined in Div. VI Technical Specifications.

Access to all local streets, businesses and residences shall be maintained at all times, except as noted. Turn lanes are not to be considered as travel lanes. A minimum of one 12-foot travel lane in each direction must be provided at all times.

Intersections:

Intersections may not be closed. A detour and barricading plan must be submitted to the City of Fresno Traffic Engineering Division at least 5 working days in advance of any work being done. Written approval shall be obtained from the Traffic Engineering Division prior to the beginning of work.

Construction of sidewalks and curb ramps must be prosecuted in a manner that allows for the continued use of ADA-compliant routes by pedestrians at the intersection being worked on.

Public Notification:

The Contractor will ensure the public is given at least 7 days notification prior to street closure, and 96 hours notification prior to trail and lane closure. Method of notification must be approved in writing by the Engineer.

Any deviation from these requirements must have prior written approval of the Engineer and the Traffic Engineering Division.

Traffic Control Systems:

The *California Manual on Uniform Traffic Control Devices* (MUTCD) is hereby referred to and incorporated herein as though set forth in full. Special attention is directed to Section 7-10 of the City Standard Specifications.

The Contractor shall be responsible for removal of any traffic markings and/or signing that may conflict with detour channelization and the placement and removal of any temporary traffic markings and/or signing as may be required by the City Traffic Engineer or his or her designee, or desired by the Contractor. Any removal of traffic markings shall be accomplished by burning off or sandblasting of the existing markings.

It is the responsibility of the Contractor to prepare a traffic control, traffic detour and temporary lane delineation plan for use during construction.

It is also the responsibility of the Contractor to obtain the City Traffic Engineering Division's written approval of the Traffic Control plan prior to the beginning of any work.

Approval of the Traffic Control Plan may be rescinded at any time if all necessary signing and barricading is not placed and maintained as required.

Should it become necessary to rescind approval of the Traffic Control Plan, the City shall place and maintain all necessary signing and barricading. Payment for this work shall be deducted from the Contractor's *final payment*. Furthermore, non-compliance with any of the stated conditions in this section by Contractor will result in public inconvenience and/or exposure of the public to a dangerous condition, and such inconvenience and exposure is difficult to determine. Therefore, the Contractor agrees that liquidated damages of

$1,000.00 per calendar day for each and every calendar day not in compliance with the stated conditions in this section shall be applied during the period whereby approval for the plan has been rescinded. Such liquidated damages shall be in addition to any other liquidated damages withheld from payments under these Specifications due to any delay by Contractor. In the event that the total liquidated damages exceeds the final payment due the Contractor, the excess amount shall be due and payable immediately by the Contractor to City.

Construction Management Division with the assistance of the Traffic Engineering Division will be observing and directing the Contractor on proper traffic signing and barricading through the construction zone. The Contractor shall provide safe access for the City inspection staff to make their observation.

The Contractor shall strictly comply with, and will be solely responsible for, all required traffic control and devices as per City approved plan and any revisions thereof. The Contractor shall inspect the traffic control setup at two hour intervals at the least and correct all problems immediately.

The Contractor shall be responsible for providing all necessary flagging and maintaining traffic control facilities, 24 hours per day, 7 days per week for the entire duration of the project.

11. REMOVAL OF TRAFFIC CONTROL PAVEMENT MARKERS

Existing pavement markers, when no longer required for traffic lane delineation, shall be removed, and disposed of as directed by the Engineer.

Full compensation for removing and disposing of pavement markers shall be included in the various bid items and no separate payment will be made.

12. SURVEY MONUMENTS AND CONSTRUCTION STAKING

The Engineer shall provide horizontal and vertical controls which consist of control stakes at 50-foot intervals, angle points, and beginning and ending of curves only for proposed concrete improvements, edge of pavement, proposed underground facilities to be constructed under this Contract, and areas as required by Engineer.

All requests for staking shall be in writing and signed by the Contractor. All requests for staking shall be submitted to the Engineer at least two working days prior to the need for such staking. The Project Inspector or Chief Surveyor will accept verbal requests for staking provided the Contractor signs a written request prior to commencement of the staking. Any stakes disturbed or removed prior to completion and inspection of the work controlled by said stakes shall be replaced by the Engineer at the expense of the Contractor. The cost of restaking or replacement of stakes so disturbed shall be charged to the Contractor at the rate as shown in the Master Fee Schedule in effect at the time the Contract is awarded. Said cost will be deducted from monies owed the Contractor under progress payments or fixed payment. Execution of the request for staking shall be prima facie evidence that the Contractor is responsible for all stakes set pursuant to the request.

The Contractor shall pay overtime rates when staking is required and performed at other than normal working hours. The hourly overtime rate for staking, as shown in the Master Fee Schedule in effect at the time the Contract is awarded, shall be paid when such overtime services are required on City observed holidays, Saturdays, Sundays, or before or after the normal 8 hours of a normal working day.

13. LOCATION OF THE WORK FOR INSTALLATIONS

The exact location for installation purposes will be indicated by the Engineer with location stakes and the Contractor will not commence any work hereunder without such stakes in place.

Full compensation for all costs involved in the above shall be included in the amount bid for the various items of work and no separate payment shall be made, therefore.

14. PROJECT SITE MAINTENANCE

Reference is made to Section 7.8 of the City Standard Specifications, which is referred to in full and contained herein as part of these Specifications together with the following addition:

The Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day to keep paved areas acceptably clean as directed by the Engineer.

Full compensation for clean up during construction and for final clean up shall be included in the prices bid for the various items of work, and no separate payment will be made.

15. UTILITIES

Reference is made to Section 5 of the City Standard Specifications contained herein as part of these Specifications with the following additions:

As directed by the Engineer, and as set forth in these Specifications, the Contractor shall expose, prior to construction staking, all existing utilities which may control proposed facility grades, so that the Engineer may verify the grades prior to staking. Two working days' notice shall be given the Engineer.

The Contractor is responsible for protection of all utility services and facilities within the limits of work. Responsible diligence has been exercised in locating all lines, but the Contractor is responsible for checking in the field the locations as shown and is further responsible for any and all utilities whose presence or location is unknown.

All existing utility mains and service lines shall be kept in constant service during the construction of this project. Hand excavating shall be employed where necessary to safely expose existing utilities.

All utility services and facilities damaged or broken by the Contractor shall be repaired or replaced in accordance with the requirements of the owner of said utility. The Contractor will be permitted to sever a sanitary sewer house branch, provided an approved temporary conduit for the missing portion is installed immediately.

The cost of verifying the locations of said utility facilities indicated on the Plans, including exposing them prior to construction, and the full cost of protection, repair, or replacement of utilities shall be included in the various bid items of work with no separate payment thereof.

The Contractor should be aware that, because of the depth of certain facilities and their close proximity to existing utilities, it may be necessary for the Contractor to protect and support adjacent or crossing utilities and improvements. If utility poles require bracing

during storm drain construction, the Contractor shall contact the effected utility companies and have their forces brace the pole. The Contractor shall reimburse the utility company for all costs associated with bracing utility poles. The Engineer has made a diligent attempt to show on the Construction Drawings all pertinent intersecting utilities which may affect the work. Utilities shown in profile view are shown at their most probable location, based upon available as-built drawings and known construction custom. The Contractor shall exercise extreme caution in excavating for this project and shall protect existing utilities from damage, inasmuch as their exact location is unknown until exposed by the excavation.

16. HAZARDOUS MATERIAL AND UNFORESEEN CONDITIONS

In the event any Work hereunder involves digging trenches or other excavations that extend deeper than four feet below the surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the Engineer, in writing, of any: (i) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the site differing from those indicated; and (iii) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in these Specifications. The Buyer will promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, it will issue a change order under the procedures described in these Specifications. In the event that a dispute arises between the Buyer and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all Work to be performed under the Contract. The Buyer and Contractor shall retain any rights provided by Contract or law which pertain to the resolution of disputes and protests between the parties.

Full compensation for all costs involved in locating, verifying, protecting, exposing, bracing, and otherwise providing for utilities, and compliance with preceding paragraph shall be included in the amounts bid for Miscellaneous Facilities and Operations or the various items of work, and no separate payment shall be made therefor.

17. ACCESS TO PROPERTY

Pedestrian and vehicular access to properties shall be provided and maintained at all times, unless arrangements are made with the property owners, their tenants, renters, or lease holders along the streets and alleys, to deviate from this requirement. Exceptions include during the actual placing of concrete or for very short periods during paving operations. Access shall be safe and reasonable for pedestrians and motor vehicles used by the property owners and emergency vehicles (fire, police, and ambulance). The Engineer will make the sole determination of what is safe and reasonable.

The Contractor's failure to provide safe and reasonable pedestrian and vehicular access shall provide just reason to issue a stop work order to the Contractor with no additional working days added to the Contract.

18. AMERICANS WITH DISABILITIES ACT ACCESSABILITY

If the previous pedestrian facility was accessible to pedestrians with disabilities, the path provided during construction and/or temporary traffic control shall also be accessible.

This will consist of a continuous, unobstructed 48” wide pedestrian path of travel adjacent to the work site, preferably parallel to the same sidewalk that has been obstructed. There shall not be any abrupt changes in grade or terrain that could cause a tripping hazard or could be a barrier to wheelchair use. The Contractor shall install and maintain temporary concrete, asphalt, or wood ramps to provide a safe path of travel for mobility-impaired pedestrians at locations where ramps have been temporarily removed or are needed to route pedestrians. Barriers and channelizing devices shall be detectable to pedestrians who have visual disabilities. These considerations include, but are not limited to, the following:

- The path of travel shall not have abrupt changes in grade, elevation, or terrain. The path of travel shall have a cross slope of 2% or less; running slope may be equal to that of the topography of the adjacent street.

- Any changes in level in a path of travel that is over ¼” – ½” height shall be beveled at a 45-degree angle to provide a smooth transition.

- Temporary ramps shall be a minimum of 48” wide, with a running slope ratio not to exceed 1:12 (one foot run for every inch of the curb). Sides of a ramp shall be protected where there is a drop off. For all ramps not meeting the definition of a *curb ramp*, handrails will be provided in conformance with Title 24 and the Americans with Disabilities Act Design Standards.

- For walkways in the pedestrian path that have less than 5’ of clear width, there shall be provided passing spaces 5’ wide every 200 ft. to provide adequate space for two pedestrians in wheelchairs to pass each other.

- Signposts, scaffolding and fencing and other supports shall be placed to provide an unobstructed path of travel that is 48” wide and 80” high.

- Closed trenches, temporary paving surfaces, walking surfaces, steel plates, etc. shall have a smoothly finished, firm walking surface made even with surrounding walkways. If plywood is used as a temporary walking surface, it will be a minimum of ¾” in thickness and it will be anchored using either a mechanical fastener, cold mix, or asphalt so that it is stable and level with surrounding surfaces.

- When a sidewalk is closed and pedestrian traffic detoured, sidewalk signs indicating that the sidewalk, curb ramp, or both the sidewalk and curb ramp are closed are required. These signs shall be placed so as to provide ample warning of the detour to people with mobility impairments and minimize backtracking. Signs shall be placed so that they are visible from the sidewalk before the detour begins.

- When a sidewalk is completely closed, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.

- During detours, access shall be provided by directing all pedestrian traffic to the unaltered side of the street where marked crossings and usable curb ramps exist; if such elements do not exist, temporary marked crosswalks and temporary ramps shall be provided. Any plan proposing temporary marked crosswalks and ramps shall be approved in writing by the City Traffic Engineer or his or her designee.

- To protect pedestrians with visual disabilities using a mobility cane and to serve as a wheelchair stop, barriers shall have brightly contrasting colors marking each end and a ground rail running the length of each side of the barrier that is attached to the base.

- A-frames and other devices used for defining path of travel shall be connected and maintained to provide a stable guide to help a pedestrian with a visual disability negotiate a safe path while using a cane. These devices shall provide a continuous detectable edge at least 6" above the surface of the sidewalk or pathway, with the bottom of the edge a maximum of 2" above the ground or walkway surface. This edge should be firmly attached to the ground or to other devices.

- The bottom 3" of fencing material (e.g., chain link, plastic, etc.) shall be solid to provide a guide for pedestrians with visual disabilities and limit the likelihood that a long cane will be caught in the fence. This may be achieved by attaching a solid material to the bottom portion of the fence.

- During working hours, open excavations will not be allowed to adjoin or interrupt the pedestrian path. No open excavations will be permitted in pedestrian access areas overnight.

- Caution tape or its equivalent shall NOT be used by itself to delineate the path of travel or create a barricade.

- The Contractor shall provide notice to Fresno Area Express (FAX) at (559) 621-1424 forty-eight hours before engaging in work that will impede access to a FAX bus stop to allow the relocation of the bus stop to a temporary, accessible location.

Each project is unique, and the Contractor is responsible for and will conduct a thorough review to ensure complete, safe, usable, and accessible paths of travel.

Full compensation for all costs involved shall be included in the bid amount for the various items of work and no separate payment will be made.

19. COORDINATION BETWEEN CONTRACTORS

The Contractor shall coordinate his or her work at the site with work which may be done concurrently by other Contractors as required by Section 5-1.20 of the State Standard Specifications.

Full compensation for all costs involved shall be included in the bid amount for the various items of work and no separate payment will be made.

20. ADJUSTMENT OF EXISTING UTILITY FACILITIES

The following are for estimating purposes only, and the Contractor should field verify the exact number of facilities to be adjusted to finish pavement elevation.

The following facilities shall be adjusted to grade by the Contractor unless otherwise directed by the Engineer:

(a) Sanitary Sewer Manhole
(b) Storm Drain Manhole
(c) Water Valve Casings and Lids

All other utilities shown on the Plans which may need adjustment to grade shall be done by their respective owners. All adjustments will be done after the paving operations. Contractor

shall be responsible to identify the location with a physical marker and notifying the respective utility companies concerned; for PG&E, contact Mr. Chris Woods at (559) 263-5215, for AT&T, contact Ms. Dawn Sibley at (559) 454-3367, and for FMFCD, contact Ms. Debbie Campbell at debbieci@fresnofloodcontrol.org

21. HANDLING OF WATER MAIN

For projects that include installation of a water main, all pipe, fittings, valves, and accessories shall be loaded and unloaded with hoists or skidding in order to avoid shock or damage. Under no circumstances shall such material be dropped. Pipe handled on skidways shall not be rolled or skidding against pipe on the ground.

Gaskets for push on joints to be stored shall be placed in a cool location out of direct sunlight.

22. UNDERGROUND UTILITY SEQUENCING

If included in the project, the first order of work shall be the installation of the water main. Contractor shall trench through existing pavement and no additional pavement areas beyond the normal trench width shall be removed. The contractor may commence remaining work after obtaining satisfactory results for the pressure test(s) on the water main.

23. CONSTRUCTION SCHEDULE CONSTRAINTS

The Contractor shall submit a Tentative Construction Schedule and Final Construction Schedule in accordance with Division II – Pre-Construction Meeting and Schedule of Work. The contractor shall identify any schedule constraints that they foresee regarding material procurement, community impacts, utility work or adjacent construction projects.

At a minimum, the schedule shall consider/reflect the following Schedule Constraints:

- Deferred submittals to be submitted within 30 days of construction contract award.
- Refer to Division VIII, Environmental Commitment Report and Mitigations, 3.5 Biological Resources, of these Specifications which include but not limited to - night work not allowed.
- Adjacent construction projects include but not limited to – City’s Audubon/Lexington Intersection Improvements and City’s Pave More Now Package B2.

24. ASPHALT CONCRETE MIX DESIGN APPROVAL

The Contractor shall submit to the Engineer a proposed mix design for each asphalt concrete mixture to be used at least two weeks prior to production of that asphalt concrete mixture. The proposed mix designs shall conform to the asphalt concrete mixture quality requirements specified in Section 39-2 of the State Standard Specifications.

The Contractor shall furnish test data in support of each proposed mix design including asphalt concrete quality requirements for California Test 305, Swell; California Test 307, Moisture Vapor Susceptibility; and, California Test 366, Stabilometer Value. The test data furnished shall be for an asphalt concrete mixture that conforms to the proposed target values for the asphalt binder content. The Contractor shall submit the following for each asphalt concrete mixture proposed for use under the contract:

A. Aggregate and mineral filler:

1. Target values for percent passing each sieve size for the aggregate blend. The proposed target values, for the specified type and aggregate size, shall conform to the aggregate gradation limits specified in Section 39-2.02, *Aggregate*, of the State Standard Specifications.
2. Results of tests for aggregate quality requirements specified in Section 39-2.02, *Aggregate*, of the State Standard Specifications.
3. Source of each aggregate to be used.
4. Percentage of each aggregate stockpile or hot bin to be used.
5. Gradation of each aggregate stockpile or hot bin to be used.

B. Asphalt binder:

1. Target value for asphalt binder content for each proposed asphalt concrete mixture.
2. Results of the asphalt binder quality tests as specified in Section 92, *Asphalts*, of the State Standard Specifications.

Asphalt concrete production for this project shall not begin until the Contractor has received written notification that the proposed mix design has been accepted by the Engineer.

Adjustments from one mix design to another shall not be made during the progress of the work, unless permitted in writing by the Engineer. The Contractor shall submit to the Engineer a proposed mix design for each new asphalt concrete mixture to be used at least two weeks prior to production of that mixture. Changes in stockpile or hot bin proportions to conform to aggregate grading requirements will not be considered changes in the approved mix design.

25. PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS

Section 9-1.07 applies to asphalt contained in materials for pavement structures and pavement surface treatments such as HMA, tack coat, asphaltic emulsions, bituminous seals, asphalt binders, and modified asphalt binders placed in the work.

The Engineer adjusts payment whenever the California statewide crude oil price index for the month the material is placed is more than 5 percent higher or lower than the price index at the time of bid.

The Department determines the California statewide crude oil price index each month on or about the 1st business day of the month. This is determined by averaging the daily Brent crude oil posted prices from the previous month, as reported by Business Insider. The daily closing price of oil will be used for the corresponding date. If Brent crude oil data is not posted on a given day, the last posted closing price will be used instead.

The Brent monthly average is converted to a California statewide crude oil price index using the following formula:

$Yc = 0.9975 \times Xb - 2.2565$

Where:

Yc = California statewide crude oil price index for each month

Xb = the monthly average closing price of Brent crude oil calculated from daily Brent crude oil prices posted by Business Insider

If Business Insider discontinues posting daily Brent crude oil prices, the Department utilizes the Brent crude oil price from another source.

For the California statewide crude oil price index, go to the Department's Division of Construction website.

If the adjustment is a decrease in payment, the Department deducts the amount from the monthly progress payment.

SECTION 9 PAYMENT

The Department makes payment adjustments due to price index fluctuations for changed quantities under section 9-1.06.

If the Contractor does not complete the work within the Contract time, payment adjustments during the overrun period are determined using the California statewide crude oil price index in effect for the month in which the overrun period began.

If the price index at the time of placement increases:

1. 50 percent or more over the price index at bid opening, notify the Engineer.

2. 100 percent or more over the price index at bid opening, do not furnish material containing asphalt until the Engineer authorizes you to proceed with that work. The Department may decrease bid item quantities, eliminate bid items, or terminate the Contract.

Before placing material containing asphalt, submit the current sales and use tax rate in effect in the tax jurisdiction where the material is to be placed.

Submit a public weighmaster certificate for HMA, tack coat, asphaltic emulsions, and modified asphalt binders, including those materials not paid for by weight. For slurry seals, submit a separate public weighmaster certificate for the asphaltic emulsion.

26. ARCHEOLOGICAL AND HISTORICAL FINDINGS

Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during his or her operations, any building, part of a building, structure, or object which is incongruous with its surroundings, he or she shall immediately cease operations in that location and notify the Construction Manager. The Construction Manager will immediately investigate the Contractor's finding and will direct the Contractor to either resume his or her operations or to suspend operations as directed.

Should the Construction Manager order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract modification (change order or supplemental agreement) as provided in the General Conditions.

27. PERFORMANCE AND ASSURANCES

Contractor agrees to faithfully and expeditiously perform or cause to be performed all work as described in the plans and specifications, or as later amended and approved by City under this Contract, and to perform in accordance with applicable provisions of the law.

28. CHANGE ORDERS

Approval of any change order by the City is subject to Resolution No. 2017-158 as adopted by the City Council.

29. DUST CONTROL AND STORM WATER POLLUTION PREVENTION

It shall be the responsibility of the Contractor to prepare, obtain approval and implement all of the requirements of the latest Fugitive Dust Control Plan (FDCP) in accordance with the San Joaquin Valley Air Pollution Control District (District) Regulation VIII. Also, it shall be the responsibility of the Contractor to prepare, obtain approval and implement all of the requirements of the latest State National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009- DWQ and industry standards according to the State Water Quality Control Board (SWQCB).

Dust Control

The FDCP and maps must be prepared utilizing the latest requirements of the District. Once the FDCP and maps have been prepared, it shall be the responsibility of the Contractor to submit and obtain written approval by the District. Until a written approval has been obtained by the District, no construction activity shall commence on the project site. Once a written approval has been obtained, the Contractor shall submit to Construction Management Division a copy of the approved FDCP with all maps. The Contractor shall keep the FDCP current as required by the District. The Contractor shall keep a copy of the approved FDCP, and amendments thereto, at the job site and in the general business office

of the Contractor.

In addition, the Contractor shall make available to Construction Management Division copies of all amendments to the FDCP as prepared by the Contractor. The FDCP shall be made available upon request of a representative of the District or U.S. Environmental Protection Agency. Requests by the public shall be directed to the Engineer.

Contractor must provide written notification to the District at least 48 hours in advance of any earthmoving activity. Record keeping is required by the District and must be kept for each day any dust control measure is used. Copies of record keeping forms and the Construction Notification form are available on the District's website at www.valleyair.org under Compliance Assistance/Dust Control. The Contractor shall be familiar with and shall have a copy of the District's *Regulation VIII – Fugitive Dust Control at Construction Sites.* Copies of the regulation may be obtained online at the above-mentioned web site.

The Contractor shall be responsible throughout the duration of the project for street sweeping, soil stabilization, watering operations, establishing a water source and associated costs, carryout and track out prevention, notification, installing, inspecting, maintaining, required record keeping and removing control measures to reduce Visible Dust Emissions (VDE) and eliminate nuisances from or within the construction site.

Dust control shall conform to Section 7-8 of the Standard Specifications and the cost of labor and equipment required for the work shall be included in the various bid items and no separate payment will be allowed. The cost of water will be paid by the Contractor.

Reference to and incorporation of the provisions of Sections 23113, 23114, 23115 and 40,000.16 of the California Vehicle Code regarding containment and transportation of any aggregate material upon public roadways is made to these Specifications.

Storm Water

It shall be the responsibility of the Contractor to comply with all of the requirements of the latest NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ according to SWQCB and standard industry practice. This includes, but is not limited to, preparing plans and application, maps as well as all necessary reporting on the SWQCB's Storm Water Multiple Application and Report Tracking System (SMARTS System). The Contractor, working with their certified Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD), will determine what would be the best course of action to comply with the latest State NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009- DWQ. If the Contractor's QSD determines a SWPPP is the best course of action, it shall be the responsibility of the Contractor and their QSD to submit to Construction Management Division a completed SWPPP for review. Upon acceptance of the SWPPP document by Construction Management Division, the QSD shall prepare a Notice of Intention (NOI) application in the SWQCB's SMARTS System and upload all necessary documents and maps to be approved by the Legally Responsible Person (LRP). Until a written approval of the SWPPP has been obtained from the SWQCB, no construction activity shall commence on the project site. Upon obtaining written approval of the SWPPP, it shall be the responsibility of the Contractor to implement the SWPPP. Throughout the course of the project, the Contractor's

certified Quality SWPPP Practitioner (QSP) shall conduct periodic inspections, testing, any reporting on the SMARTS System as well as coordinate with the QSD to update the SWPPP as necessary. At the conclusion of construction, it shall be the responsibility of the Contractor and his or her QSD/QSP to ensure the annual report has been updated on the SMARTS System as well as prepare the Notice of Termination (NOT) for City's approval. The Contractor shall keep a copy of the approved SWPPP, and amendments thereto, at the job site and in the general business office of the Contractor. In addition, the Contractor shall make available to Construction Management Division copies of all amendments to the SWPPP as prepared by the Contractor. The SWPPP shall be made available upon request of a representative of the Fresno Metropolitan Flood Control District, Regional Water Quality Control Board, State Water Resources Control Board or U. S. Environmental Protection Agency. Requests by the public shall be directed to the Engineer.

SWPPP preparation will also include any preparation of Storm Water Annual Reports or Rain Event Action Plan (REAP). If specified for the risk level, REAP preparation includes preparing and submitting REAP forms and monitoring weather forecasts. Storm Water Annual Report preparation includes certifications, training, monitoring and inspection results, and obtaining Storm Water Annual Report acceptance.

If the Contractor and/or his/her QSD determines that a SWPPP is not necessary, then it shall be the responsibility of the Contractor to provide a list of Best Management Practices (BMP) that are to be implemented during the Work to Construction Management Division. The Contractor shall implement the BMP in a timely manner and maintain throughout the duration of the project. The Contractor shall keep a copy of the BMP list and any modification to the list at the job site and in the general business office of the Contractor. In addition, the Contractor shall make available to the City copies of all modifications to the BMP list. The BMP list shall be made available upon request of a representative of the Fresno Metropolitan Flood Control District, Regional Water Quality Control Board, State Water Resources Control Board or U. S. Environmental Protection Agency. Requests by the public shall be directed to Construction Management Division.

The Contractor shall be responsible throughout the duration of the project for installing, inspecting and maintaining the control measures (Best Management Practices – BMP's) and for properly removing and disposing of temporary control measures. The contactor shall be responsible for all permit fees and other fees associated with the SWPPP including any renewal fees. The Contractor will also be responsible for producing annual reports, as necessary. The Contractor shall also be responsible for other items associated with SWPPP implementation including Job Site Management, Storm Water Sampling and Analysis, and Street Sweeping.

Notice of violation and/or fines for any non-compliance will be the responsibility of the Contractor.

30. SALVAGED ITEMS

See Plans for locations of specific items to be salvaged. All salvaged material shall be delivered by the Contractor to the City Corporation Yard, located at 2101 "G" Street or to a location directed by the Engineer.

Full compensation for all costs involved in salvage shall be included in the amount bid for the various items of work and no separate payment will be made therefore.

<u>This item does not apply to Federally funded projects.</u>

DIVISION V
STANDARD SPECIFICATIONS

STANDARD SPECIFICATIONS

The City of Fresno Standard Specifications and Drawings, Department of Public Works, dated March 4, 1970 and as amended from time-to-time, are hereby referred to and incorporated herein as though set forth in full. It is recommended that bidders review and obtain all published addenda to these Specifications and Drawings. References made to these Specifications and Drawings from Division VI shall be the most current version, unless otherwise stated by the Engineer in the Plans.

The Standard Specifications and Drawings, as well as addenda are available on the City of Fresno's website (www.fresno.gov) by clicking on "Departments", "Public Works: Streets, Lights, Landscape and Construction", "Developer Doorway", "Technical Library", or clicking the link below:

https://www.fresno.gov/publicworks/developer-doorway/#tab-8.

If you do not have access to the Internet, copies of the Standard Specifications with Standard Drawings may be obtained for $40 at City Hall, Public Works Counter, Room 4064N, 2600 Fresno Street, Fresno CA 93721- 3623, Telephone (559) 621-8800. (If mailed, a mailing charge of $6.00 per book will be required.)

DIVISION VI
TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

EXPLANATION OF BID ITEMS

Explanation of Bid Items

The unit price bid per unit measure of work shall include all costs of labor, equipment, and materials necessary for the furnishing and constructing complete in place and operating in accordance with the Plans and Specifications for the City of Fresno for all work listed in the bid items.

Bid Item 1 – Mobilization

This item shall be bid lump sum and shall conform to the provisions of Section 9-1.16D of the City adopted Edition of the Caltrans Standard Specifications and these Specifications.

This item shall consist of covering the Contractor's cost for contract documents and for the moving of personnel, equipment, supplies and incidentals to the project site.

The lump sum price for this item has been determined to be $438,080 and shall not exceed that amount. No additional payment will be made for this item.

Bid Item 2 – Mediator (Owner's 50% share, see page 2.52 of General Conditions)

This item shall be bid lump sum for Mediator. Reference is made to "Mediator" on page 2.52 of the General Conditions.

This work shall consist of paying the City's share of the costs of the Mediator, in conformance with the provisions in the Specifications, and as directed by the Engineer.

The dollar amount listed on the Bid Proposal form is an estimate only and will be included in each bidder's Bid Proposal.

The bid item may be increased, decreased, or deleted in its entirety and is not to be construed as additional money owed to the Contractor. If no change order is issued against this bid item, the contract price shall be reduced by the full amount of the bid item included in the Bid Proposal for the Mediator

All costs associated with this bid item shall be included in the lump sum price and based on actual costs incurred.

Bid Item 3 – Traffic Control

This item shall be bid lump sum and shall conform to the provisions of the latest adopted edition(s) of:

- Caltrans Standard Specifications: Section 12 (Temporary Traffic Control) and Section 82 (Signs and Markers)
- Caltrans Standard Plans: RS1 (Roadside Signs Typical Installation Details No. 1) and RS2 (Roadside Signs Wood Post Typical Installation Details No. 2)
- Caltrans Traffic Manual: Chapter 5 (Traffic Controls for Construction and Maintenance Work Zones)
- California Manual on Uniform Traffic Control Devices (CA-MUTCD)
- City of Fresno Standard Specifications: Section 7-10 (Public Convenience and Safety)
- Fresno Department of Public Works Policies: 210.01 (Traffic Control Policies and Procedures) and 210.10 (Conditions for Roadway Closures and Lane Closures)

These Specifications, and as directed by the Engineer.

This item shall consist of the Contractor's responsibility to provide safety and convenience to the public in connection with the Contractor's operations. The Contractor shall be responsible for providing a Traffic Control Plan approved by the Department of Public Works prior to starting work and for furnishing, placing, maintaining, repairing, replacing and removing barricades, detours, traffic handling equipment and devices, signs, lights, flares, temporary railing, and other affected facilities. All Traffic Control Plan production shall be prepared by a C-31 licensed contractor or qualified Professional Engineer licensed in the State of California; all field set up and traffic control maintenance shall be performed by a C-31 licensed contractor. Access for emergency vehicles shall be available along all streets within the construction area at all times. Per CA-MUTCD, the contractor shall install advance construction warning signage prior to beginning of any construction activities. Placement of the advance warning signs shall be per Chapter 6B (Temporary Traffic Control Elements) of the 2026 CA-MUTCD. Advance warning sign shall be mounted on wooden posts per Section 82-3.02C (Wood Post) and Section 82-3.02E (Sign Panel Fastening and Mounting Hardware) of the 2025 Caltrans Standard Specifications. Wood post installation shall comply with Caltrans Standard Plan RS2 and Section 82-3 (Roadside Signs).

The following special minimum traffic control requirements shall apply to the project:

Street Name	Days/Hours	Minimum Requirements
Riverview Drive Bluff Avenue Palm Avenue	At all times	Maintain two directions of travel.
Riverview Drive and Bluff Avenue Intersection	At all times	Maintain two directions of travel. May be closed for utility work at the intersection with Riverview Drive.
Perrin Avenue	At all times	May be closed between Cobb Ranch Boulevard and western terminus of Lewis S. Eaton Trail.

Construction of sidewalks and curb ramps must be prosecuted to allow continuous and unimpeded ADA-compliant accessibility by pedestrians at intersections under construction.

Full compensation for furnishing all labor (including flagging), materials, tools, equipment and incidentals, and for doing all work involved for the sole convenience, direction and safety of public traffic and pedestrians shall be included in the lump sum price for this bid item and no additional payment will be made. Payments shall be prorated over the term of the contract.

Bid Item 4 – Storm Water Pollution Prevention Plan (SWPPP) and Fugitive Dust Control Plan (FDCP) Preparation, Implementation & Maintenance

This item shall be bid lump sum and shall conform to the provisions of Item 29, DUST CONTROL AND STORM WATER POLLUTION PREVENTION, of Division IV Special Conditions for plan preparation, implementation, and maintenance, if required for Storm Water Pollution Prevention Plan (SWPPP) and Fugitive Dust Control Plan (FDCP). This bid item shall also include Best Management Practices (BMP) as described in Division IV.

Full compensation for all costs involved in preparing, obtaining approval, maintenance of, revising, and amending the SWPPP, FDCP, and BMP shall be included in the lump sum bid amount for this bid item, and no additional payment will be made.

Bid Item 5 – Clearing & Grubbing

This item shall be bid lump sum and shall be in accordance with the provisions of Division VII Section 01 56 39, Section 10 of the City of Fresno Standard Specifications, be in accordance with the provisions of Section 17 of the State Standard Specifications, the applicable provisions of Division IV of these Specifications, as shown on the Plans, and as directed by the Engineer.

This work shall include but is not limited to the removal and disposal of the concrete curb, gutter, sidewalk, curb ramp, asphalt pavement, median island curb, concrete ramp, sawcutting, decommissioning of existing roads and trails, landscaping and irrigation, or other existing facilities as needed for reconstruction of new improvements as shown on the Plans and Section 10 of the City of Fresno Specifications.

The following is a list of approximate quantities of various items to be removed, excluding the clearing and grubbing required for the Palm Avenue concrete stairs, ramps, and retaining walls, and the costs for their removal shall be all included in this bid item:

Clearing & Grubbing	728,448	S.F.
Pavement Sawcutting	386	L.F.
Concrete Curb & Gutter	43	L.F.
Concrete Ramp/Sidewalk	542	S.F.
Asphalt Pavement	1,524	S.F.
Fencing	240	L.F.
Standpipe Abandonment	1	L.S.

This work shall also include the maintenance and/or modification of existing landscape irrigation systems affected by the scope of work as shown in the plans and as required in the project specifications. At locations where no relocation of existing sprinkler systems are contemplated on the plans and the Contractor must disturb said systems in order to complete the work under this and other items of work, such as while removing concrete work and forming new concrete work, the Contractor shall temporarily cap said line and then return them to service within 48 hours. If the Contractor cannot restore service in 48 hours, then Contractor shall make provision for temporary irrigation of affected landscape every 48 hours until permanent irrigation service is restored. The method of temporary irrigation service will be approved by the Engineer. No separate payment will be made for such operations and full compensation shall be included in the amount bid for clearing and grubbing.

Items to be removed from City's Spano Park shall be salvaged and coordinated with the Engineer.

Safe root pruning distances based upon the tree diameter and one (1) foot above ground level are as follows:

Tree Diameter (in.)	Distance from Tree Trunk (ft.)
4	1¼
5	1½
6	1¾
7	2
8	2¼
9	2¼
10	2½
11	2¾
12	3
13	3¼
14	3½

15	3¾
16	4
17	4¼
18	4½
19	4¾
20	5

Note: When it is absolutely necessary to cut closer than the safe distance from a tree trunk, only cut one side the smallest amount possible. All tree root pruning which is necessary but closer than the safe distance shall be approved by the Engineer. Roots of diameter 6" or larger shall not be damaged per plans & specifications.

Work on this bid item shall not commence until the City Chief Surveyor has been notified 48 hours before at 621-8681. Any proposed street tree removal shall obtain a tree removal permit in accordance with Article 3 of Chapter 13 of the Fresno Municipal Code (FMC), which details City standards for all street tree removals.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in clearing and grubbing, complete in place, including subgrade preparation of secondary trails, as shown on the Plans, and as directed by the Engineer shall be included in the lump sum price of this bid item.

All costs associated with this bid item shall be included in the lump sum price and no additional payment will be made.

Bid Item 6 – Earthwork (F)

This is a final pay quantity as defined by Section 9 of the State Standard Specifications. This bid item shall be bid per cubic yard and shall conform to the provisions of Section 11 (Excavation and Grading) of the City of Fresno Standard Specifications, these Specifications, and as shown on the plans.

This item shall consist of excavating, sloping, rounding tops and ends of excavations, construction of dirt swales, loading, hauling, depositing, spreading and compacting the material complete in place, and preparing subgrade at the grading plane. Excess or unsuitable material becomes the property of the contractor, which, upon completion of the project, must be removed and disposed of in accordance with Section 19 (Earthwork) of the Caltrans Standard Specifications.

Measurement will be per cubic yard and shall include the removal and disposal of the unsuitable and excess material.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in performing excavation, grading, backfilling, exporting, importing and subgrade preparation as shown on the Plans, and as directed by the Engineer shall be included in the unit bid price of this bid item.

The final payment will be made on quantity estimated and no additional payment will be made. This bid item is designated as a final pay item as defined by provisions of the latest edition of Section 9-1.02C (Final Pay Item Quantities) of the Caltrans Standard Specifications.

Bid Item 7 – Hot Mix Asphalt, Type A

This item shall be bid per ton and shall be in accordance with Section 13 of the City Standard Specifications. The bid price for this item shall include the cost for the application of paint binder

in accordance with Section 13-4 of the City of Fresno Standard Specifications.

Paving shall be placed to the thickness shown on the plans. The top/final lift of asphalt concrete surfacing of all new street and driveway pavement sections shall not be placed until all underground work has been completed.

Asphalt concrete shall be spread and compacted in layers per Section 39-2.02 of the State Standard Specifications, latest edition. Asphalt paving shall be laid with paving machine. Miscellaneous paving may be hand placed. All asphalt concrete paving shall be done with a machine which utilizes an electronic screed.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

This bid item shall include the following: furnishing all labor, materials, tools, equipment, incidentals, placing asphalt-concrete, applying liquid asphalt (prime coat) and asphaltic emulsion (paint binder), Hot Mix Asphalt, Type A complete in place, including subgrade preparation, placing or replacing, working in and around, water meter boxes, electrical pull boxes, sewer vent caps, utility vaults, street lighting facilities, and/or incorporating into curb return, and/or adjacent driveways, as well as any other work required in paving with hot mix asphalt type A that is not identified on this list.

The final pay quantity will be the actual authorized tonnage installed based upon certified weight receipts.

Bid Item 8 – Aggregate Base (Class II)

This item shall be bid per ton and shall conform with the provisions of Section 12 of the City of Fresno Standard Specifications, these Specifications, and as shown on the Plans.

This item shall consist of mineral aggregate, spread, and compacted on a prepared subgrade or subbase in conformance with the lines, grades and dimensions shown on the Plans, standard details and as specified herein.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in the spreading and compaction of Class II Aggregate base, complete in place, including subgrade preparation, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of this bid item.

The final pay quantity will be the actual authorized tonnage installed based upon certified weight receipts.

Bid Item 9 – Decomposed Granite

This item shall be bid per square foot and shall conform to the provisions of Section 20-5.03D (2) and 20-5.03D (3) of the State Standard Specifications, latest adopted edition and these Specifications and as shown on the Plans. Utilization of 20-5.03D(2)(b) Solidifying Emulsion shall not be required.

This work shall consist of furnishing and placing Decomposed Granite at the locations and grades as shown on the Plans and in accordance with the details as directed by the Engineer.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

This bid item shall include the following: furnishing all labor, materials, tools, equipment, incidentals, Decomposed Granite complete in place, including subgrade preparation, adjustment of pull boxes and other appurtenances to grade, placing or replacing, working in and around, water meter boxes, electrical pull boxes, sewer vent caps, utility vaults, street lighting facilities, and/or adjacent driveways, as well as any other work required in placing Decomposed Granite that is not identified on this list.

The final pay quantity shall be based upon the actual quantity installed as determined by the Engineer.

Bid Item 10 – Pedestrian Concrete

This item shall be bid per square foot and shall conform to the provisions of Section 14 of the City of Fresno Standard Specifications, City of Fresno Standard Drawings P-5, P-9, and P-13 these Specifications and as shown on the Plans.

This item shall consist of furnishing and constructing concrete pavement in pedestrian areas at the locations and grades shown on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment, incidentals and for completing all the work involved in constructing concrete pavement, complete in place, including subgrade preparation, furnishing and installing reinforcing bars, utility facilities that shall be adjusted by owner, placing or replacing, working in and around, and/or incorporating into curb return, and/or adjacent driveways, as well as any other work required in placing Concrete Pavement in pedestrian areas that is not identified on this list.

The final pay quantity will be based upon the actual quantity installed, as determined by the Engineer.

Bid Item 11 – Vehicular Concrete

This item shall be bid per square foot and shall conform to the provisions of Section 14 of the City of Fresno Standard Specifications, City of Fresno Standard Drawings P-5, P-9, and P-13 these Specifications and as shown on the Plans.

This item shall consist of furnishing and constructing concrete pavement in vehicular areas at the locations and grades shown on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment, incidentals and for completing all the work involved in constructing vehicular concrete pavement, complete in place, including subgrade preparation, furnishing and installing reinforcing bars, utility facilities that shall be adjusted by owner, placing or replacing, working in and around, and/or incorporating into curb return, and/or adjacent driveways, as well as any other work required in placing Concrete Pavement in vehicular areas that is not identified on this list.

The final pay quantity will be based upon the actual quantity installed, as determined by the Engineer.

Bid Item 12 – Concrete Curb

This item shall be bid per linear foot and shall conform to the provisions of Section 14 of the City of Fresno Standard Specifications, City of Fresno Standard Drawing P-9, these Specifications and as shown on the Plans.

This item shall consist of constructing Concrete Curb at the locations and the grades shown on

the Plans.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

This item shall include the following: furnishing all labor, materials, tools, equipment, incidentals, concrete curb complete in place, including subgrade preparation, placing, or replacing, working in and around, and/or incorporating into curb return, and/or adjacent driveways, as well as any other work required in constructing concrete curb that is not identified on this list. Depressed curb shall be paid for as regular curb.

The final pay quantity will be based upon the actual quantity installed, as determined by the Engineer.

Bid Item 13 – Palm Avenue Concrete Ramps with Handrails, Guardrails, and Retaining Walls

This item shall bid lump sum and shall conform to the provisions of Division VII Sections 03 11 00, 03 15 00, 03 20 00, 03 30 00, 03 33 15, 03 39 00 and the Design-Ramp and Stairs at Palm Avenue – River West Eaton Trail Extension Technical Design Memo in Division VII, dated August 7, 2026, as shown on the Plans and as directed by the Engineer.

The work shall consist of pavement sawcutting, concrete pavement removal, fencing removal, clearing and grubbing, temporary excavation, sub-grade preparation, finish grading, form work, reinforcement, construction and finish of the concrete ramps, cast in place concrete cut and fill walls, handrails, guardrails, new barrier fencing, and pedestrian concrete of the concrete ramps in the location indicated on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the cast-in-place concrete ramps, handrails, guardrails, and retaining walls, shall be included in the lump sum price of this bid item.

All costs associated with this bid item shall be included in the lump sum price and no additional payment will be made.

Bid Item 14 – Palm Avenue Concrete Stairs with Hand Rails, Guardrails, and Retaining Walls

This item shall bid lump sum and shall conform to the provisions of Division VII Sections 03 11 00, 03 15 00, 03 20 00, 03 30 00, 03 33 15, 03 39 00 of these specifications, and the Design-Ramp and Stairs and Palm Avenue – River West Eaton Trail Extension Technical Design Memo in Division VII, dated August 7, 2026, as shown on the Plans and as directed by the Engineer.

The work shall consist of clearing and grubbing, temporary excavation, sub-grade preparation, finish grading, form work, reinforcement, construction and finish of the concrete stairs, cast in place concrete cut and fill walls, handrails, guardrails, and pedestrian concrete of the concrete stairs in the location indicated on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the cast-in-place concrete stairs with handrails, guardrails, and retaining walls, shall be included in the lump sum price of this bid item.

All costs associated with this bid item shall be included in the lump sum price and no additional payment will be made.

Bid Item 15 – Fencing (Chainlink)

This bid item shall be bid per linear foot and shall conform to the applicable provisions of City Standard Plans and Specifications, City of Fresno Standard Drawing P-98, these Specifications and as shown on the Plans.

Improvements damaged by the Contractor's operation shall be repaired to the satisfaction of the engineer.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

Items shall include the following: furnishing all labor, materials, tools, equipment, incidentals, chain link fencing complete in place, including subgrade preparation, placing, or replacing, working in and around, street lighting facilities, and other appurtenances to grade, and/or adjacent driveways, as well as any other work required in constructing chain link fencing that is not identified on this list.

The final pay quantity will be based upon the actual quantity installed, as determined by the Engineer.

Bid Item 16 – Manual Access Gate

This item shall bid per each and shall conform to the provisions of the City of Fresno Standard Specifications, City of Fresno Standard Drawing P-99, these Specifications and as shown on the Plans.

The work shall consist of furnishing, assembling, installing and anchoring the Manual Access Gate and an approved Fire/Police padlock in place. The work shall also include installation of an approved Fire/Police padlock. It shall be used solely for emergency vehicle access. Fire/Police padlocks may be used in conjunction with other approved locking devices. Padlocks shall be an approved City of Fresno bypass lock. ("Best" padlock model 21B700 series or electric cylinder switch model 1W7B2) on drive access gate(s). Fire/Police padlocks may be purchased only through Sierra Lock & Glass, 1560 N. Palm Avenue, Fresno, CA 93728. (FFD Development Policy 403.004).

The contract price paid per each manual access gate shall include full compensation for furnishing all labor, tools, equipment and incidentals, and for doing all the work involved in installing the manual access gate as shown on the Plans and as directed by the Engineer complete and in place.

Bid Item 17 – Bollard (Fixed)

This item shall be bid per each and shall conform to City of Fresno Standard Drawing P-61, these Specifications and as shown on the Plans.

This item shall consist of full construction and placement of the steel pipe at the locations shown on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in constructing the bollard(s), complete in place, including subgrade preparation, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of this bid item.

The final pay quantity shall be the actual quantity installed as determined by the Engineer.

Bid Item 18 – Bollard (Removable)

This item shall be bid per each and shall conform to City of Fresno Standard Drawing P-61, these Specifications and as shown on the Plans.

This item shall consist of full construction and placement of the steel pipe at the locations shown on the Plans.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in constructing the bollard(s), complete in place, including subgrade preparation, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of this bid item.

The final pay quantity shall be the actual quantity installed as determined by the Engineer.

Bid Item 19 – Wheelstop

This item shall bid per each and shall conform to these specifications, and as shown on the Plans.

This item shall consist of furnishing, assembling, installing and anchoring the Wheelstops in place.

The contract price paid per each Wheelstop shall include full compensation for furnishing all labor, tools, equipment and incidentals, and for doing all the work involved in installing the Wheelstop as shown on the Plans and as directed by the Engineer complete and in place.

The final pay quantity shall be the actual quantity installed as determined by the Engineer.

Bid Item 20 – Site Lighting

This item shall bid per each and shall conform to, the City of Fresno Standard Specifications, these Specifications, and as shown on the Plans.

The work shall consist of furnishing, assembling, installing and anchoring the Site Lighting in place, including the reinforced concrete foundation of the light.

The contract price paid per each Site Light shall include full compensation for furnishing all labor, tools, equipment and incidentals, and for doing all the work involved in installing the Site Lighting as shown on the Plans and as directed by the Engineer complete and in place.

The final pay quantity shall be the actual quantity installed as determined by the Engineer.

Bid Item 21 – Signing & Striping (Thermoplastic)

This bid item shall be bid lump sum and consists of furnishing, relocation, and installation of traffic signs as shown on the Construction Plans and the placement of traffic stripes, pavement arrows and legend as shown on the Construction Plans. These items do not apply to striping of detours or any other temporary striping.

Striping shall conform to Section 28 "Traffic Stripes and Pavement Markings" of the City of Fresno Technical Specifications. Signing and Striping shall conform to the latest edition of State Standard Plans and Specifications, Sign Specifications Sheets, the latest edition California Manual On Uniform Traffic Control Devices (California MUTCD), the latest edition of the City of Fresno Standard Specifications and Drawings, and the special provisions.

Installation of all affected Fire Hydrant marker per City of Fresno Standard Drawing W-5 and painting and/or re-painting yellow (2 coats) of affected median island nose shall be included on this bid item.

Installation of all parking lot signs shall conform to the latest edition of the City of Fresno Standard Specifications and Drawings, and these specifications. The parking lot signs shall be picked up from City of Fresno, Planning and Development Office.

All costs associated with this item shall be included in the lump sum price and no additional payment will be made.

Bid Item 22 – Two-vault Restroom

This item shall bid per each and shall conform to the City of Fresno Standard Specifications, these Specifications and as shown on the Plans.

The work shall consist of sub-grade preparation, finish grading of pad, excavation of vault pits, installation of two-vault restroom and post-installation site improvements in the location shown on the construction Plans

The contract price paid per each Two-vault Restroom shall include full compensation for furnishing all labor, tools, equipment and incidentals, and for doing all the work involved in constructing the restroom as shown on the Plans and as directed by the Engineer complete and in place.

The final pay quantity shall be based upon the actual quantity installed, as determined by the Engineer.

Bid Item 23 – Fire hydrant

This item shall be bid per each and shall conform to the provisions of Sections 21 and 22 of the City of Fresno Standard Specifications, City of Fresno Standard Drawings W-3, W-5, W-23 and W-37, these Specifications, as shown on the Plans and as directed by the Engineer.

This item shall consist of furnishing and installing all pipes, valves, bends, fittings, thrust restraints, bollards, and fire hydrants, complete with bury appurtenances.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

Items shall include the following: furnishing all labor, materials, tools, equipment, incidentals, Fire Hydrant(s) complete in place, including subgrade preparation, placing, or replacing, working in and around, water meter boxes, and/or incorporating into curb return, and/or adjacent driveways, chlorination, flushing, pressure testing, trenching, blocking, backfilling, and compactions shall also be included in the unit price of this item. as well as any other work required in installing Fire Hydrant(s) that is not identified on this list.

If a sidewalk does not exist, the Contractor shall pour a 36” square concrete pad as called out in the plans and Standard Drawing W-3.

The final pay quantity will be based upon actual quantity installed, as determined by the Engineer.

Bid Item 24 – 10-inch C900 Water Main

The item shall be bid per linear foot and shall conform to the provisions of Sections 21 and 22 of

the City of Fresno Standard Specifications, these Specifications, and as shown on the Plans and as directed by the Engineer.

Payment under this item shall apply where 10" C900 PVC is called for on the Plans.

This item shall consist of furnishing and installing all pipes, fittings, valves and appurtenances to the lines and grades shown, and per City of Fresno Standard Drawings W-31, W-32, W-33. Chlorination, flushing, pressure testing, trenching, blocking, backfilling and compactions shall also be included in the unit price of this item.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all work involved in installing the 10-inch C900 Water Main, complete in place, shall be included in this Bid Item.

The final pay quantity will be based upon actual quantity installed, as determined by the Engineer.

Bid Item 25 – 8-inch C900 Water Main

The item shall be bid per linear foot and shall conform to the provisions of Sections 21 and 22 of the City of Fresno Standard Specifications, these Specifications, and as shown on the Plans and as directed by the Engineer.

Payment under this item shall apply where 8" C900 PVC is called for on the Plans.

This item shall consist of furnishing and installing all pipes, fittings, valves and appurtenances to the lines and grades shown, and per City of Fresno Standard Drawings W-31, W-32, W-33. Chlorination, flushing, pressure testing, trenching, blocking, backfilling and compactions shall also be included in the unit price of this item.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all work involved in installing the 8-inch C900 Water Main, complete in place, shall be included in this Bid Item.

The final pay quantity will be based upon actual quantity installed, as determined by the Engineer.

Bid Item 26 – Backflow Assembly

This item shall be bid per each and shall conform to the provisions of Sections 21 and 22 of the City of Fresno Standard Specifications, City of Fresno Standard Drawings, these Specifications, and as shown on the Plans.

This item shall consist of furnishing and installing the backflow assembly complete and in place at the locations determined by the City of Fresno, Water Division. The Contractor shall furnish all labor, materials, tools and equipment necessary to install, complete and ready for operation per City of Fresno Standard Drawing Revised W-11 including a low-flow bypass meter.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all work involved in installing the backflow preventer, complete in place, shall be included in this bid item.

The final pay quantity will be based upon actual quantity installed, as determined by the Engineer.

Bid Item 27 – Water Main Wet Tie by Water Division

This item shall be bid lump sum for City of Fresno, Water Division Permit Work. This item is

provided to account for Water Division to perform water main wet-ties as shown on plans. The Contractor shall coordinate with the City of Fresno, Water Division for this work. Contact the Water System Supervisor, Chad Colby at (559) 621-5393 to schedule the water main wet-ties. The Water Division will then furnish and install the required equipment per this bid item. The dollar amount listed on the Bid Proposal form is an allowance set aside by the City and will be included in each Bidder's Bid Proposal for City of Fresno, Water Division Work. The contractor will be reimbursed the amount paid to the City Water Division for the work. The amount for this bid item has been determined to be $56,300.

Bid Item 28 – Drinking fountain with Drywell

This item shall be bid per each and shall conform to the provisions of Sections 21 and 22 of the City of Fresno Standard Specifications, these Specifications, as shown on the Plans and as directed by the Engineer.

This item shall consist of furnishing and installing all supply pipes, valves, bends, fittings, thrust restraints, drinking fountain, drain pipes and drywell, complete with bury appurtenances.

Full compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer shall be included in the unit price of the item.

Items shall include the following: furnishing all labor, materials, tools, equipment, incidentals, drinking fountain(s) complete in place. Chlorination, flushing, pressure testing, trenching, blocking, backfilling, and compactions shall also be included in the unit price of this item. As well as any other work required in installing drinking fountain(s) that is not identified on this list.

The final pay quantity will be based upon actual quantity installed, as determined by the Engineer.

Bid Item 29 – Site Furnishings

This item shall bid as a lump sum and shall conform to Division VII Sections 06 10 60, 10 14 00, 32 30 00, and 32 40 00 of these specifications, and as shown on the Plans and as directed by the Engineer.

The work shall consist of furnishing, assembling, installing and anchoring the site furnishings. The following is a complete list of site furnishings for this bid item.

- Trash Receptacle – 6 EA
- Bench (Metal) – 47 EA
- Bench (Concrete) – 3 EA
- Picnic Table – 10 EA
- Shade Structure – 6 EA
- Gateway Signage – 1 EA
- Boulders (Large) – 2,662 EA
- Boulders (Small) – 1,441 EA
- Stepping Stone – 7 EA
- Timber Blocks – 77 EA
- Edge Marker – 256 EA
- Horse Hitching Post – 2 EA
- Salvaged Log – 7 EA
- Gateway Monument – 2 EA
- Destination/Interpretive Marker – 6 EA
- Totem – 38 EA
- Entrance Sign – 2 EA

- Trailhead Sign – 3 EA
- Regulatory Sign – 2 EA

The Contractor shall furnish the Engineer a Schedule of Values (cost break-down) for this contract lump sum item. Reference Section 9-1.16B Full compensation for furnishing all labor, materials including tools, equipment and incidentals for doing all the work involved in the installation of Site Furnishings, complete, shall be included in this bid item.

All costs associated with this item shall be included in the lump sum price and no additional payment will be made.

Bid Item 30 – Planting

This item shall bid as a lump sum and shall conform to Division VII Sections 32 91 13, 32 93 00, and 32 93 20 of these Specifications, the Plans, the provisions of Section 26 of the City of Fresno Standard Specifications, and as directed by the Engineer.

This item shall consist of, but is not limited to, all weed control, soil amendments and fertilizers providing and planting of all trees, shrubs and ground cover, staking root barriers and topdressing as shown on the Plans and as specified.

The following is a complete list of planting materials for this bid item.

- Planting Soil Import – 168 CY
- Soil Amendments – 116,925 SF
- Trees – Irrigated – 120 EA
- Shrubs – Irrigated – 1,784 EA
- Wood Mulch – 92,318 SF
- Hydroseeding – 405,273 SF

The Contractor shall furnish the Engineer a Schedule of Values (cost break-down) for this contract lump sum item. Reference Section 9-1.16B Schedule of Values of the State Standard Specifications, latest edition. Schedule of Values table shall be submitted to the Engineer for approval prior to start of work.

Full Compensation for furnishing all items listed below, as shown on the Plans, and as directed by the Engineer, shall be included in the unit price of this item.

This bid item shall include the following: furnishing all labor, materials, tools, equipment, incidentals, soil testing, soil amendment, subgrade preparation, installing root barrier, placement of fertilizer, soil, and wood mulch, working around irrigation facilities, street lighting facilities, 90-day maintenance period and for doing all work involved in Planting that is not identified herein. The contractor shall submit 90 days of billing to the City to finalize the 90-day inspection.

The sum of the amounts for the line items of work listed in the Schedule of Values table for this bid item shall be equal to the contract lump sum bid price. No adjustments in compensation will be made in the contract lump sum price due to differences between the quantities shown in the Schedule of Values furnished by the Contractor and the quantities required to complete the work as shown on the plans and as specified in these specifications.

At the Engineer's discretion, the approved Schedule of Values may be used to determine partial payments during the progress of the work. No additional payment will be made.

Bid Item 31 – Irrigation

This item shall be bid lump sum and shall conform to the provisions of Section 25 of the City of Fresno Standard Specifications, and the Plans. The Contractor shall furnish the Engineer a

Schedule of Values (cost break-down) for this contract lump sum item. Reference Section 9-1.16B. Schedule of Values of the State Standard Specifications, latest edition. Schedule of Values table shall be submitted to the Engineer for approval prior to start of work.

This item shall include, but is not limited to, furnishing all necessary irrigation and materials and products, 90-day maintenance period, and performing all trenching and installation of all irrigation components and backfilling of all trenches as shown on the Plans and as specified. Any damage to adjacent facilities caused during the trenching process will be replaced per City of Fresno standards and the cost thereof will be borne by the Contractor. The contractor shall submit 90 days of billing to the City to finalize the 90-day inspection.

The sum of the amounts for the line items of work listed in the Schedule of Values table for this bid item shall be equal to the contract lump sum bid price. No adjustments in compensation will be made in the contract lump sum price due to differences between the quantities shown in the Schedule of Values furnished by the Contractor and the quantities required to complete the work as shown on the plans and as specified in these specifications.

Full compensation for all costs involved in installing the irrigation system, including furnishing all labor, materials, tools, equipment and incidentals for doing all work shown on the Plans, as set forth in the Standard Specifications, and directed by the Engineer shall be included in this lump sum bid item. All costs associated with this item shall be included in the lump sum price, and no additional payment will be made.

The approved Schedule of Values may be used to determine partial payments during the progress of the work at the Engineer's discretion.

Bid Item 32 – Miscellaneous Facilities & Operations

This item is a lump sum bid for Miscellaneous Facilities & Operations, which includes all miscellaneous work shown as specified on the Plans. The contractor shall reference Standard Plans and Specifications or these Special Conditions to identify items not specifically included in any other bid item.

This bid item shall include items as costs incurred in moving labor, equipment, and material to the site to complete any work required by the final inspection, attending the pre-construction meeting, potholing existing utilities, temporary and permanent relocation of fencing, drainage facility adjustment, removal of Underground Service Alert Markings, temporary fence, vandalism prevention and/or correction, and/or all other facilities and operations set forth and required but not specifically included in another bid item, all in conformance with existing codes and as directed by the Engineer. Any abandoned facility encountered in excavation for this project shall be plugged as directed by the Engineer and included in this bid item. The Contractor shall be responsible for potholing all existing facilities and utilities prior to the start of site construction.

Full compensation for all costs involved in carrying out and providing all Miscellaneous Facilities & Operations as specified herein and as directed by the Engineer shall be included in the lump sum bid for Miscellaneous Facilities & Operations and no additional payment will be made.

Bid Item 33 – Contractor Communication Requirements

This item shall be bid as lump sum and shall conform with the Division VIII – Contractor Communication Requirements as specified on the Plans and herein.

This Bid Item requires the Contractor to support the City of Fresno Capital Projects and Public Works Departments by delivering clear, consistent, and branded public outreach throughout construction to affected residences, businesses, and institutions within the geographic

boundary/boundaries as determined by the City and included in Division VIII of the project Specifications. All communication and outreach materials, including door hangers, signage, or other physical materials, as well as the methods or conveyance of these materials to the public shall conform to, and comply with, Division VIII of the project specifications.

The contract lump sum bid price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for carrying out the Contractor Communication Requirements in accordance with Division VIII – Contractor Communication Requirements herein and as directed by the Engineer, and no additional payment shall be made.

Bid Item 34 – MMRP Compliance

This item shall be bid as lump sum and shall conform with the CEQA Mitigation Monitoring and Reporting Program (MMRP) in Division IX, and as specified on the Plans and herein. The MMRP containing in these specifications is a combination of the three MMRPs adopted by the SJRC on December 13, 2017 by Resolution 17-02(Alt. 5B)

This Bid Item requires that the Contractor shall comply with all Mitigation Measures that list "Contractor's Responsibility" under the column headed "Action". Measures that have been incorporated into the project Plans and/or Specifications are also the responsibility of the contractor; however, they are included in the prices paid under other bid items. The Engineer will review the Contractor's daily reports and perform routine observations to confirm the Contractor is satisfactorily achieving the desired extent and effectiveness of the MMRP. This bid item shall also include coordination with the Engineer for scheduling of surveys should the Contractor's schedule of work trigger any of the various surveys listed under Biological Resources and the Cultural Resources investigation and monitoring, as necessary.

This bid item does not include preparation nor implementation of a SWPPP or DCP, paid for under separate bid items.

The contract lump sum bid price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for carrying out the MMRP requirements in accordance with Division IX – MMRP Compliance herein and as directed by the Engineer, and no additional payment shall be made.

Bid Item 35 – Miscellaneous Electrical

This item shall be bid lump sum and shall conform to the City of Fresno Standard Specifications, these Specifications and as shown on the Plans.

This item shall consist of performing all work involved in furnishing and installing new PG&E Rule 16 infrastructure and miscellaneous electrical facilities complete and in place to provide the necessary power from the existing electrical facilities at Woodward West and Palm Avenue/Spano Park to the new meter panels and irrigation controllers at these locations, including grounding facilities, feeder and branch circuit conduit and conductors, cables, pull boxes, panelboards, interconnection with existing equipment and new point of service, grounding, bonding, trenching and backfill for installation of conduits underground and above ground and all other electrical facilities that are not included in other bid item descriptions.

This bid item also includes costs associated with coordination with the City for their PG&E service application for the new meters at these locations. The City will pay for the application fee and PG&E Contract fee, once issued by PG&E. The PG&E issued construction drawings (CON DWG) are included in Division X.

The Contractor shall furnish the Engineer a Schedule of Values (cost break-down) for this contract lump sum item. Reference Section 9-1.16B Schedule of Values of the State Standard Specifications, latest edition. Schedule of Values table shall be submitted to the Engineer for approval prior to start of work.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals to furnish and install all miscellaneous electrical facilities, as shown on the Plans and as directed by the Engineer, shall be included in the lump sum price for this Bid Item.

Bid Item 36 – CVFPB Encroachment Permit

This item shall be bid as lump sum and shall include necessary coordination with the Engineer and the Central Valley Flood Protection Board (CVFPB) in accordance with Conditions Twenty-Two through Twenty-Six, Thirty through Thirty-Eight of the encroachment permit included in Division XII, and as specified herein.

This bid item shall include scheduling inspections with the CVFPB per Condition Twenty-Two. This bid item shall not include inspection fee payments described in Condition Twenty-Four.

Conditions Thirty-Two through Thirty-Six are incorporated into the Plans and Specifications and are the responsibility of the contractor.

The contract lump sum bid price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for carrying out the coordination and scheduling in accordance with Division XII – CVFPB Encroachment Permit herein and as directed by the Engineer, and no additional payment shall be made.

Bid Item 37 – Caltrans Encroachment Permit

This item shall be bid as a lump sum, used to reimburse the Contractor for permit(s) paid by the Contractor to the State for the Caltrans Encroachment Permit. The parent permit is provided in Division XIII for reference.

The contractor shall be responsible for obtaining and maintaining the permit(s) as directed by the City's Construction Management Division, as well as fulfilling all requirements as set forth in said permit(s). The lump sum listed on the Bid Proposal form is an estimate only and shall be included in each Bidder's proposal.

The bid item may be increased, decreased, or deleted in its entirety and is not to be construed as additional money owed to the Contractor. If no change order is issued against this bid item, the contract price shall be reduced by the full amount of the bid item included in the Bid Proposal for the Caltrans Encroachment Permit

The Contractor will be paid only for the actual amount of fees paid to the State for the Caltrans Encroachment Permit, which is authorized in writing by the Engineer. The Contractor shall have no claim for anticipated overhead or profit should the fees required by the State be less than the estimate provided on the Bid Proposal.

All costs associated with this bid item shall be included in the allowance cost and based on actual costs incurred.

Bid Item 38 – Funding Signage

This item shall be bid per each and shall include fabrication and installation of funding signs at each access point as specified on the Plans and Division XIV herein and Caltrans Standards.

Full compensation for all labor, material, tools, equipment, and incidentals for installing the funding signs shall be included in the unit price for this bid item. The signs shall follow the format shown in Division XIV of these Specifications and as directed by the City Engineer.

The unit price bid per unit measure of work shall include all costs of labor, equipment, and materials necessary for the furnishing and constructing complete in place and operating in accordance with the Plans and Specifications for the City of Fresno.

END SECTION

DIVISION VII

ENGINEER'S TECHNICAL SPECIFICATIONS

SECTION 01 56 39
TREE PROTECTION

PART 1 GENERAL

1.1 WORK INCLUDED

A. This Section includes all services, labor, materials, transportation, and equipment necessary to perform the Work indicated on the Contract Drawings and specified herein this Section, as required to properly complete the Work and the following:

1. Protecting and maintaining existing trees and native vegetation not specifically designated for removal.

2. Protection shall be extended to trees and/or vegetation located within or adjacent to the Project Site, whether or not the tree trunk and/or vegetation is located within the designated Limits of Work.

1.2 DEFINITIONS

A. "Tree" shall mean a woody perennial plant which usually has (but not limited to) a single dominant trunk and has a mature height of fifteen feet (15') or more and has a trunk diameter (caliper) of three (3") inches or more when measured at 24" above the finished grade.

B. "Dripline" shall be generally defined as the outermost extent of the tree's foliaged canopy, which encompasses the tree leaves or fronds, trunk, branches, roots, and soil. In no case shall a dripline encompass an area under a tree canopy, which is less than ten feet (10'), in diameter. Since each tree is unique in size, scale, and form, the delineated dripline of each tree shall be refined at the discretion of the Owner's Authorized Representative.

C. "Injury" shall be defined, without limitation, as any bruising, scarring, tearing, gouging, or breaking of roots, branches, or trunk(s), soil compaction around the dripline, or contamination around the dripline which results in the decline to the health of the tree.

1.3 REFERENCE STANDARDS

A. Standards for Tree Care Operations (Z133.1), American National Standards Institute, Latest Edition.

B. Safety Standards for Tree Care Operations (Z133), American National Standards Institute, Latest Edition.

C. Tree Pruning Guidelines, International Society of Arboriculture, 1995 Edition.

D. Pruning Standards for Shade Trees, National Arborists Association. Latest Edition

1.4 SUBMITTALS

A. Contractor shall provide site photographs, sufficiently detailed and described, of existing conditions of trees and vegetation, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing, tree pruning, or tree protection. Submit photographs to the Owner's Authorized Representative prior to commencement of Work.

B. Product Data: Submit complete and legible materials list of items to be provided for Work described in this Section.

C. Submit complete detailed schedule and description of Work to be done within dripline, if any, including list of equipment to be used.

D. Submit schedule and description of proposed pruning and/or other remedial work to existing plant materials. Submit qualifications describing years of experience and list of similar projects completed for the following:

a. Tree Pruning Company, and List of Certified Tree Workers, who will perform Work relating to requirements in this Section. Tree Pruning Company shall have a minimum of five (5) years experience specializing in performing the work of this Section for projects of comparable size with trees of similar size and nature.

1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project Site.

1.6 PROJECT SITE CONDITIONS

A. Contractor shall become acquainted with existing site conditions, verifying quantities and locations of all protected trees and vegetation, and other information as may be necessary. Notify the Owner's Authorized Representative of unsatisfactory conditions, in writing, prior to commencement of Work.

B. Tree Flagging: Prior to commencement of Work, Contractor shall flag all existing trees and vegetation to remain and be protected throughout the duration of Work. Adequately flag tree trunks with bright-colored tape. Verify flagged trees and vegetation with the Owner's Authorized Representative.

C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during tree-pruning or tree-protection operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the City and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

D. Protect existing Work and Work of other trades: Damage to existing construction caused by Work of this Section shall be promptly repaired and/or replaced at the expense of the Contractor.

1. Environmental Requirements:

a. Perform actual pruning operations (if needed) during those seasons suitable for the specific tree type, in accordance with locally acceptable horticultural practices.

2. Pre-Tree Pruning/Tree Protection Conference:

a. The Contractor shall be responsible for notifying all parties, in writing, at least seven (7) days in advance to schedule the Conference.

b. The Contractor shall provide to all parties in attendance within seven (7) days a written legible inventory of Work to be accomplished, including species (botanical and common name), location, size, specific pruning needs or tree protection needs as identified during the Conference, recommended pruning or tree protection methods to meet the identified needs, and any additional conditions noted.

1.7 SCHEDULE

A. Install tree protection barricades before commencement of Work.

B. Work shall be done according to approved schedule.

1.8 GUARANTEE

A. Contractor shall guarantee that all plants covered by the Provisions of this Section shall be healthy and in a flourishing condition of active growth for one (1) year from the date of Substantial Completion.

B. Requirements of the guarantee shall apply if failure of the Contractor to take specified precautions and Work within restrictions of this Section contributes to the destruction, decline, or injury to a tree to remain, in the judgment of the Project Arborist.

C. If a tree to remain is destroyed or injured so that in the judgment of the Project Arborist it should be replaced, it shall be removed at the expense of the Contractor. Contractor shall

pay compensation to the Owner of the property where the tree was located at the rate as specified herein this Section (see Compensation).

1.9 COMPENSATION

A. Contractor shall replace any existing tree that died or sustained injury from the result of the Contractor's negligence to provide adequate required tree protection, pruning, or maintenance during the course of construction operations. Compensation shall be awarded to the Owner as follows:

1. Contractor shall thoroughly remove damaged tree, including trunk, branches, and roots, at no cost to the Owner, and at the direction of the Owner's Authorized Representative.

2. Contractor shall furnish and install per requirements in Section 02900 "Landscape Planting", with a minimum six-inch (6") caliper tree allowing Owner's Authorized Representative to determine requirements of replacement trees. Compensation shall include the actual cost of the item boxed out of the ground; transportation or delivery of boxed item to the site; unloading, planting and staking; maintenance, including watering, fertilizing, pruning, pest control, and other care to bring replacement to same general condition of the original item.

PART 2 PRODUCTS

2.1 TREE PROTECTION MATERIALS

A. Tree Protection Type 1, Tree Protection Fence:

1. Application:

a. Install Tree Protection Fence to the driplines of existing trees to remain wherever possible.

b. Tree protection fencing shall be installed around groups of trees wherever possible.

c. Tree Protection Fence shall be installed at the driplines of all existing trees to remain until work needs to be performed within the driplines, at which time the fencing shall be repositioned or, where necessary, removed and replaced with Tree Protection Type 2.

d. Tree protection fencing shall be re-installed at the driplines of trees after demolition of existing pavement under the tree canopies has been completed.

B. Fabric: Utility (snow) type fencing, minimum four feet (4'-0") high, consisting of a vinyl meshed fabric in a bright orange color. Fabric shall be approved by the Owner's Authorized Representative.

C. Posts: Metal or wood, sufficient in gauge (as appropriate) and size to support the fabric material in a taut and plumb condition. Posts shall be subject to approval by the Owner's Authorized Representative.

1. Signs: Posted plastic laminated signs, attached to fabric fencing, with words "WARNING-KEEP OUT-TREE PROTECTION ZONE".

D. Tree Protection Type 2, Trunk Protection

1. Where Tree Protection Fencing cannot be installed because new pavement or surfacing is indicated to be installed (and not at the discretion of the Contractor), protect tree trunks to a height of 8 feet from mechanical damage. Acceptable alternatives are:

   a. Cover the entire trunk with 2x4 lumber. Place 2x4's vertically, side by side, around the diameter of the tree trunk and hold securely in place with strapping.

   b. Wrap the entire trunk with 8-inch diameter erosion-control sock filled with organic material (wood chips, straw, mulch, etc.), spiraling the sock up the trunk from the base and securely tying in place.

2. Prior to construction, pull and tie back limbs that may impede the construction zone. Minimize pruning or removing limbs; even large limbs over 3" in diameter may have the flexibility to be effectively pulled and tied away from the work area.

3. Properly prune branches or roots that are broken and/or damaged during construction. Any limbs or roots that are damaged during the work should be removed with a clean saw cut at an adjoining limb or branch using good pruning techniques.

E. Mulch: If available, Contractor shall stockpile and reuse shredded wood chips produced from on-site tree removals and remedial work, if chips are disease free and acceptable to the Owner's Authorized Representative. Where on-site chips are not available, Contractor shall provide mulch as specified in Section 02930 "Landscape Planting".

PART 3 EXECUTION

3.1 PREPARATION

A. Provide erosion-control measures as needed to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

3.2 *TREE AND VEGETATION PROTECTION*

A. Protect existing trees and other vegetation indicated to remain in place against the following:

1. Storage or parking of automobiles or other vehicles.

2. Stockpiling of building materials, refuse, or excavated materials.

3. Use of trees as support posts, power posts, or sign posts, anchorage for ropes, guy wires, or power lines, or other similar functions.

4. Dumping of poisonous materials on or around plant roots, trunks, branches, or foliage. Such materials include, but are not limited to, paint, pertroleum products, dirty water, or other deleterious materials.

5. Cutting or breaking of roots caused by utility trenching, foundation digging, placement of curbs and trenches, and other miscellaneous excavation without prior written approval by the Owner's Authorized Representative.

6. Damage by skinning or bruising of bark on trunks or branches, caused by maneuvering vehicles or stacking material or equipment too close to the plant.

7. Compaction of the soil within the dripline of the plants due to movement of trucks or grading machines, pedestrian or vehicular traffic, storage of equipment or materials.

8. Excessive water or heat from equipment, utility line construction, or burning of trash under or near vegetation to remain.

9. Damage to root system from flooding, erosion, and excessive wetting and drying resulting from watering and other operations.

B. Prior to commencement of construction activities, the Contractor shall erect and maintain a temporary fenced barricade around the dripline of individual trees, around perimeter dripline of groups of trees, or around other vegetation to remain.

1. Prevent damage to roots during installation of barricade posts. Space posts approximately 4'-0" on center and securely attach fabric.

2. Barricades shall be installed plumb, taut, and sturdy to prevent unauthorized access around dripline of trees and protected vegetation. Repair sagging or damaged barricades immediately.

3. Immediately after barricade fencing is installed, cover entire soil area inside of the fence area with a four-inch (4") layer of mulch. Keep mulch 18" away from root crown. Irrigate protected trees and vegetation to a moist soil depth of 18" deep.

4. During the course of construction, relocation of the barricade may be required to facilitate construction. Contractor shall relocate barricade as directed by the Owner's Authorized Representative at no additional expense to the Owner.

5. Remove barricade when construction operations are complete or when directed by the Owner's Authorized Representative.

C. Do not excavate within drip line of trees, unless approved, in writing, by the Owner's Authorized Representative

D. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Cover exposed roots with burlap and water regularly.

2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3. Where roots must be cut, cut roots cleanly with pruning tools appropriate for root sizes.

4. Coat cut faces of roots more than 1-1/2 inches in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.

5. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.

E. Protect root systems of existing trees and vegetation from damage due to chemically injurious materials in solution caused by run-off or spillage during mixing or placement of construction materials, and drainage of stored materials.

F. Protect root systems from flooding, erosion, excessive wetting or drying resulting from de-watering or other operations.

G. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by the Owner's Authorized Representative.

1. Employ a qualified arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.

2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the qualified Arborist.

H. PRUNING AND REMEDIAL WORK

1. Pruning and remedial work shall be done under continuous supervision of the approved Arborist, according to approved submittals, and per ANSI A-300 Pruning Standards.

2. Provide pruning, cabling and bracing, irrigation, pest and disease control and other remedial treatments as recommended by the approved Arborist, required to assure the long-term health of the trees and existing vegetation, and the safety of persons and property.

3.2 MAINTENANCE

A. Keep areas within tree protection barricades free from weeds, trash, and debris. Do not use herbicides.

B. Maintain mulch layer and protective devices throughout entire period of construction.

END OF SECTION 01 56 39

SECTION 03 11 00

CONCRETE FORMWORK

PART 1 GENERAL

1.1 WORK INCLUDED

A. Work required under this section consists of furnishing all materials, supplies, equipment, tools, transportation, and facilities, and performing all labor and services incidental to furnishing and installing concrete formwork as described in this section of the Specifications, shown on the accompanying Plans, or reasonably implied therefrom. The work shall include, but is not necessarily limited to:

B. Scope:

1. Design of formwork, shoring and reshoring.

2. Furnishing, erection, and removal of forms.

3. Shoring, bracing, and anchorage of formwork.

4. Openings for other work.

1.2 RELATED SECTIONS

A. Section 03 15 00 – Concrete Accessories

B. Section 03 20 00 – Concrete Reinforcing

C. Section 03 30 00 – Cast-In-Place Concrete

D. Section 03 39 00 – Concrete Curing

1.3 REFERENCES

A. Industry Codes and Standards

1. American Concrete Institute (ACI) Manual of Concrete Practice

ACI 117	Standard Tolerances for Concrete Construction and Materials and Commentary
ACI 301	Specifications for Structural Concrete for Buildings
ACI 318	Building Code Requirements for Structural Concrete
ACI 347	Guide to Formwork for Concrete

2. Voluntary Product Standard

a. PS-1 – Construction and Industrial Plywood

B. Western Wood Products Association (WWPA)

C. American Plywood Association Design and Construction Guide

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-afe3-776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

D. Government Regulations

1. U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) Regulations

a. OSHA 29 CFR Part 1926.701 Safety and Health Regulations for Construction

2. Cal/OSHA Standards, Division of Industrial Safety, Construction Safety Orders, Article 29 Erection and Construction

a. Section 1717 Falsework and Vertical Shoring

E. Air Quality Management District – Local AQMD

F. Where reference is made to one of the above, the revision in effect at the time of bid opening shall apply.

1.4 SUBMITTALS

A. Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

B. Provide concrete construction joints and expansion joints of the types and locations indicated. Submit for approval shop drawings showing proposed location and type of required construction for any joints not shown on the Drawings, and sequence of forming and concrete placing operations.

C. Provide formwork, shoring and reshoring calculations for information only.

1.5 DESIGN REQUIREMENTS

A. Design, engineer and construct formwork, shoring and bracing to conform to ACI 318 Section 26.11. Resultant concrete to conform to required shape, line and dimension. Design of formwork is Contractor's responsibility.

B. The formwork shall be designed for the loads and lateral pressures outlined in Chapter 2 of ACI 347R, and lateral forces as specified by the CBC.

C. Above grade forms for elevated slabs and for walls exceeding 4 ft. in height shall be designed by a professional Civil or Structural engineer registered in the State of California.

D. Foundation concrete may be placed directly into neat excavations, provided foundation trench walls are sufficiently stable. Otherwise, minimum formwork is mandatory to ensure clean excavations and properly formed surfaces immediately prior to and during placing of concrete.

1.6 COORDINATION

A. Coordinate this Section with other Sections of work that require attachment of components to formwork.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-a9e1-776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

B. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, Contractor shall adjust reinforcement positioning to accomplish required cover or otherwise request instructions from Engineer before proceeding.

1.7 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies. The requirements of California Division of Occupational Safety and Health, Construction Safety Orders Section 1717 and OSHA Part 1926, Section 1926.701 apply to the Work of this Section, and the Contractor shall prepare and maintain at least one (1) copy of the required drawings at the site. Design of the structures shown on the Drawings does not include any allowance or consideration for imposed construction loads. Provide forms, shoring and falsework adequate for imposed live and dead loads, including equipment, height of concrete drop, concrete and foundation pressures, stresses, lateral stability, and other safety factors during construction.

B. Standards and Tolerances. Employ formwork complying with ACI 347 Guide to Formwork for Concrete, except as exceeded by the requirements of regulatory agencies or as otherwise indicated or specified. Design and construct formwork to produce finished concrete conforming to tolerances given in ACI 117

1. Form offset shall meet the requirements of Class C.

PART 2 PRODUCTS

2.1 FORM COATING

A. Form coating compounds shall be biodegradable with a VOC level less than 50 grams/liter. Non-grain raising and non-staining resin or polymer type that will not leave residual matter on surface of concrete or adversely affect bonding to concrete of paint, plaster, mortar, protective coatings, waterproofing or other applied materials. Coatings containing mineral oils, paraffin, waxes, or other non-drying ingredients are not permitted. For concrete surfaces contacting potable stored water, use only coatings and form-release agents that are completely non-toxic.

2.2 LUMBER

A. WWPA Structural Light Framing No. 1 or Structural Joists and Planks No. 1, or equal. Board forms, if used, shall be No. 2 Common or better, T&G or shiplap, S1S2E, or better.

B. Plywood. APA - MDO (Medium Density Overlay) Plyform, Group 1, Exterior, PS-1, for exposed surfaces. APA - BB (No-overlay) Plyform, Class 1, Exterior, PS-1 for unexposed surfaces.

2.3 METAL FORM TIES

A. Provide commercially manufactured, prefabricated rod, snap-off, or threaded internal disconnecting type of tensile strength to resist all imposed loads. Use only ties that leave no metal within 1½-inch of concrete surfaces after removal. Employ

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-a9e1-776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

snap-off type ties having integral washer spreaders of diameter to fully close tie holes in forms.

PART 3 EXECUTIONS

3.1 FORM TYPES

A. Smooth Surface Concrete. Use specified plywood or metal forms, as approved, for interior and exterior exposed above-grade concrete and all formed concrete in contact with liquids, waterproofing and protective coatings.

B. General Concrete. Use either plywood or board forms for concealed surfaces, or form as specified for smooth surface concrete.

3.2 SHORING AND FALSE WORK

A. Distribute loads properly over base area on which shoring is erected, either concrete slabs or ground; if on ground, protect against undermining or settlement, particularly against wetting of soils.

B. Alignment. Construct forms to produce in finished structure all lines, grades, and camber, as required.

3.3 FORM CONSTRUCTION

A. Erect formwork, shoring and bracing to achieve design requirements in accordance with requirements of ACI 318 Section 26.11.

B. Build forms to exact shapes, sizes, lines, and dimensions as required to obtain accurate alignment, location and grades, and level and plumb work in finished structures. Provide for openings, offsets, keyways, recesses, moldings, chamfers, blocking, joint screeds, bulkheads, anchorages, and other required features. Make forms easily removable without hammering or prying against concrete. Use approved metal spreaders to provide accurate spreading of forms. Construct forms so that no sagging, leakage, or displacement occurs during and after pouring of concrete.

C. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

D. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shoring. Conform to Title 8, Subchapter 4, Construction Safety Orders, CCR.

E. Align joints and make watertight. Keep form joints to a minimum.

F. Obtain approval before framing openings in structural members that are not indicated on Drawings.

G. Form Joints and Tie Holes. Seal joints between form panels with specified calking compound. Unless form tie spreaders fully seal tie holes in forms, seal around ties with specified materials and prevent leakage of concrete mortar.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-a9e1-776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

H. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

I. Reuse. Clean and recondition form material before each reuse. Fill all holes, cracks and defects. Unsatisfactory material (in the opinion of the Construction Manager) shall be rejected and removed from the site.

J. Provide ¾" inch chamfers at all exposed outside corners in the maximum lengths possible. Use mill run chamfer strips surfaced all sides. Provide rounded top edges of sidewalks, walkways, and where directed.

3.4 ALLOWABLE VARIATIONS FOR FORMED SURFACES

A. Tolerances: Per ACI 117 requirements.

B. Surface irregularities, ACI 347R Class A, gradual or abrupt irregularities of 1/8 inch for exposed to view concrete. Class B, 1/4 inch for plaster cement finish.

3.5 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices and embedded items.

C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.6 EMBEDDED PARTS, OPENINGS AND HARDWARE

A. Provide formed openings where required for items to be embedded in or passing through concrete work. No openings or embedded items permitted in structural slabs within 18 inches of columns. Conform to ACI 318 Section 26.11.

B. Locate and set in place items that will be cast directly into concrete.

C. Coordinate work of other Sections in forming and placing openings, slots, reglets, recesses, chases, sleeves, bolts, anchors and other inserts, whether indicated on the structural drawings or not.

D. Install accessories in accordance with manufacturer's instructions, straight, level and plumb. Ensure items are not disturbed during concrete placement.

E. Install electrical conduits per the direction of the electrical contractor as not to reduce the strength of the construction. Support embedded pipes and conduits independently from reinforcing steel in a manner to prevent metallic contact and thereby prevent electrolytic deterioration. Place embedded pipes and conduits as nearly as possible to the centerline of the concrete section. Submit all conduit, piping and other wall penetrations, reinforcements and anchor bolt sizing and locations to Owner's review and approval.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-a7ee-1776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

G. Close temporary openings with tight fitting panels, flush with inside face of forms and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.7 FIELD QUALITY

A. Inspection of Forms: Check forms prior to placement of any concrete for grade and alignment.

B. Control during Concrete Placement: Check forms during concrete placement and to promptly seal all mortar leaks and to correct all form movement or misalignment.

3.8 REMOVAL OF FORMS AND SHORING

A. Do not remove forms or shoring until concrete has attained sufficient strength to support its own weight and all imposed construction and permanent loads.

B. Form Removal. Minimum times for removal after concrete placement are as follows:

Slab forms and wall forms	2 days

C. Shoring and Falsework Removal. Do not remove shoring and falsework until 21 days after concrete placement, or until concrete has attained at least 90 percent of the 28 day design compressive strength as demonstrated by control test cylinders, but in no event, not sooner than 14 days.

D. All form materials, during stripping of forms below finish grade, shall be removed and deposed of unless otherwise approved by the Engineer.

E. Restriction. Do not impose construction, equipment, or permanent loads on columns, supported slabs, or supported beams until concrete has attained the 28-day design compressive strength.

F. Concrete Curing During Removals. Refer to Section 03 39 00 of these Specifications.

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/b5ba12d7-6320-48ac-afee-776c43ee23e4/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 11 00 Concrete Formwork.docx

SECTION 03 15 00

CONCRETE ACCESSORIES

PART 1 GENERAL

1.1 WORK INCLUDED

A. Furnish all materials, supplies, and performing all labor to furnish and install concrete accessories as described in this section of the Specifications, shown on the Plans. The work shall include, but is not necessarily limited to

1. Preformed synthetic sponge rubber expansion joint material.

2. Preformed bituminous fiber expansion joint material.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. D412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

2. D570 - Standard Test Method for Water Absorption of Plastics

3. D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

4. D638 - Standard Test Method for Tensile Properties of Plastics

5. D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

6. D747 - Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam

7. D792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

8. D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)

9. D2240 - Standard Test Method for Rubber Property—Durometer Hardness

RELATED WORK

B. Section 03 30 00 – Cast in Place Concrete

C. Section 07 92 00 – Caulking and Sealants

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9e60ec7-008a-4c15-97e1-ed40b20dcba1/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 15 00 Concrete Accesories.docx

1.3 SUBMITTALS

A. Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

B. Product Data:

1. Preformed Expansion Joint Material: Sufficient information on each type of material for review to determine conformance of material to requirements specified.

C. Provide material certificates, shop fabrication and placement drawings, and schedule.

D. Samples: Provide samples of each product to be supplied under this section.

E. Manufacturer's Installation Instructions: For all materials specified under this section

F. Quality Control Submittals:

1. Certificates of Compliance:
   a. Written certificate that Preformed Expansion Joint Material supplied meet or exceed physical property requirements of this section.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

A. Preformed Expansion Joint Materials:

1. Preformed Synthetic Sponge Rubber Expansion Joint Material:

   a. Manufacturers: One of the following or Engineer approved equivalent:

      1) JD Russell Co, Reflex

      2) W.R. Meadows, Sponge Rubber Expansion Joint

2. Preformed Bituminous Fiber Expansion Joint Material:

   a. Conform to ASTM D994, preformed bituminous type, 1/2-inch thick

   b. Manufacturers: One of the following or Engineer approved equivalent:

      1) JD Russell Co., Fiberflex

      2) W.R. Meadows, Fiber Expansion Joint

2.2 ACCESSORIES

A. Adhesives and sealants:

1. Provide as recommended by product supplier.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9e60ec7-008a-4c15-97e-ed40b20dcba1/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 15 00 Concrete Accesories.docx

PART 3 EXECUTION

3.1 INSTALLATION

A. Preformed Expansion Joint Material:

1. Fasten expansion joint strips to concrete, masonry, or forms with adhesive. No nailing will be permitted, nor shall expansion joint strips be placed without fastening.

2. Install expansion joint filler in accordance with manufacturer's instructions.

3. Install joint filler ½ inch (13 mm) below the concrete surface.

4. Prior to sealing, slide expansion joint cap over the expansion joint.

5. Place concrete and screed to finish grade, allow adequate during time before removing top of expansion joint cap. Pull cap free and discard.

6. Seal with joint sealant.

B. Joints:

1. Install construction and expansion joints as indicated on the Plans.

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9e60ec7-008a-4c15-978e-ed40b20dcba1/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 15 00 Concrete Accesories.docx

This Page is Intentionally Left Blank

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9e60ec7-008a-4c15-978e-ed40b20dcba1/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 15 00 Concrete Accesories.docx

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Work required under this section consists of furnishing all materials, supplies, equipment, tools, transportation, and facilities, and performing all labor and services incidental to furnishing and installing concrete reinforcing work as described in this section of the Specifications, shown on the accompanying Plans, or reasonably implied therefrom, except as hereinafter specifically excluded. The work shall include, but is not necessarily limited to:

1. Provide reinforcing work, complete as indicated, specified and required.

2. Furnishing and placing bar and wire reinforcement for cast-in-place concrete.

1.2 RELATED WORK

A. Section 03 11 00 – Concrete Formwork

B. Section 03 30 00 – Cast-In-Place Concrete

C. Section 03 33 15 – Concrete Sidewalk, Curb, & Gutter

1.3 REFERENCES

A. Industry Codes and Standards

1. American Society for Testing and Materials (ASTM)

a. A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete

b. A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

c. ASTM A706 - Specification for Deformed and Plain Low-Alloy Steel Deformed Bars for Concrete Reinforcement.

2. California Building Code (CBC)

3. Concrete Reinforcing Steel Institute (CRSI)

a. Manual of Standard Practice (CRSI Manual)

4. American Concrete Institute (ACI)

a. ACI 301 Specification for Structural Concrete

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a7461-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

b. ACI 315 - Details and Detailing of Concrete Reinforcing.

c. ACI 318 - Building Code Requirements for Structural Concrete and Commentary.

1.4 SUBMITTALS

A. Submittals shall be in accordance with the Standard General Conditions and the Supplementary conditions.

B. Provide material certificates, shop fabrication and placement drawings, and schedule for all reinforcing steel, imbedded items, form release and curing compounds.

1. Shop Drawings. Submit shop drawings for reinforcing steel prepared in accordance with ACI Details and Detailing Reinforcing. Show layouts, bending diagrams, assembly diagrams, dimensioned types and locations of all bar laps and splices, and shapes, dimensions, and details of bar reinforcing and accessories. Include layout plans for bar supports and chairs, with typical details. Dimensions and quantities shown on the shop drawings are the responsibility of the Contractor and Owner's approval of shop drawings shall not constitute approval of dimensions and quantities thereon.

1.5 MATERIALS

A. All materials in contact with potable water shall be certified to ANSI/NSF Standard 61.

1.6 QUALITY ASSURANCE

A. Code Requirements: Unless otherwise specified all work specified herein and as shown on the drawings shall conform to the applicable requirements of the California Building Code (CBC), and the State Standard Specifications.

B. Standard**:** Reinforcing steel installations shall conform to the current specification requirements of the Concrete Reinforcing Steel Institute "Manual of Standard Practice" (herein referred to as the CRSI Manual) except as otherwise indicated or specified.

C. Shop Quality Control:

1. Provide Testing Laboratory with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection.

D. Field Quality Control: All continuous inspections shall be performed by "Special Inspectors" qualified and approved by Governing Building Code Authority or inspector as otherwise qualified and approved by the Owner. Reports as required by Code shall be prepared and submitted to Owner, Building Department, Design Professional in Responsible Charge and Contractor.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a746-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

1. Inspection of Reinforcing. Provide 48-hour advance notice to permit inspection of in-place reinforcement prior to closing forms, and refer to applicable requirements of Section 03 30 00 of these Specifications.

2. Concreting Operations. During concrete placing, assign construction personnel to inspect reinforcement and maintain bars in correct positions at each pour location.

E. COORDINATION

1. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.1 REINFORCING

A. Deformed bars conforming to ASTM A615, Type “S”, in the grades as follows, and conforming to ACI 318 Chapter 20 and Section 26.6.

1. For No.4 and larger bars, use 60 ksi yield grade.

2. For ties and stirrups, and No. 3 and smaller bars, use 40 or 60 ksi yield grade.

2.2 WELDED WIRE REINFORCEMENT

A. Conform to ASTM A1064 in flat sheets, uncoated finish. 6 x 6 - W4.0 x W4.0 unless otherwise noted on drawings.

2.3 TIE WIRE

A. Annealed steel, 16-gage minimum.

2.4 REINFORCING SUPPORT

A. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.

B. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic coated steel type; size and shape as required.

C. Concrete Blocks: Approximately 3 inches dimension each side.

2.5 COUPLER SPLICE DEVICES

A. Reinforcing bar coupler/splice devices which bear current ICC Evaluation Report Number, and which develop at least 125 percent of bar yield strength in tension may be used with Owner’s approval in lieu of lapped bar-type splices. Submit for Owner’s approval in each instance.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a7e6-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

2.6 DOWELS

A. Where and as designated on Drawings, provide reinforcing bar dowels in new work and for anchorage to existing concrete. For anchorage where shown or required to existing construction, use non-shrink epoxy type grout or deferred bolting devices as approved in each instance and conforming to “Product” Article requirements of this Specification.

2.7 FABRICATION AND DELIVERY

A. Conform to CRSI Manual Chapters 6 and 7 except as otherwise indicated or specified and ACI 315 and 318. Bundle reinforcement and tag with suitable identification to facilitate sorting and placing, and transport and store at site so as not to damage material. Keep a sufficient supply of tested, approved, and proper reinforcement at site to avoid delays.

B. Bending and Forming. Fabricate bars of indicated size and accurately form to shapes and lengths indicated and required by methods not injurious to materials. Do not heat reinforcement for bending. Bars with kinks or bends not scheduled will be rejected. Rebending of bars in prohibited.

PART 3 EXECUTION

3.1 PLACING

A. General: Comply with CBC and CRSI's "Manual of Standard Practice" for placing reinforcement, except no reduction of concrete cover is allowable for bars at concrete surfaces exposed in liquid or water-containing structures.

B. Cleaning. Before placing reinforcing, and again before concrete is placed, clean reinforcement of loose mill scale, oil, or other coating that might destroy or reduce bond. Do not allow form coatings, release agents, bond breaker, or curing compound to contact reinforcement.

C. Concrete coverage over reinforcing bars shall be in accordance with ACI 318 Section 20.5.1.3 unless otherwise shown on the Drawings. Measure the coverage to the outer edge of ties, stirrups, bar spacers, hangers, and like items, and detail and fabricate the reinforcing accordingly.

1. Where fire protective cover is specified exceeding the ACI and structural drawing specification, the fire protective cover shall apply.

D. Do not displace or damage vapor barrier where vapor barrier is specified or indicated on drawings. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

E. Accommodate placement of formed openings.

F. Securing in Place. Accurately place reinforcement and securely wire tie in precise position at all points where bars cross. Tie stirrups to bars at both top and bottom. Bend ends of binding wires inward, allowing no encroachment on the concrete cover; exercise special care at surfaces to remain exposed and unpainted. Support

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a746-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

bars in accordance with CRSI Manual Chapter 3, Specifications for Placing Bar Supports, using approved chairs and supports.

G. Splices. Provide wired contact lap splices unless otherwise indicated or approved. Provide lap lengths as indicated on the Drawings.

1. Tie reinforcement splices and intersections per CBC and CRSI, Chapter 10-General Principles for Placing, Splicing and Tying Reinforcing Bars, unless otherwise shown on the Drawings.

H. Welding. Welding of reinforcing bars may be permitted on case-by-case basis. All welding of reinforcing bars will be approved by the Engineers.

I. Additional Reinforcing. Provide additional reinforcing bars at sleeves and openings as indicated on the Drawings.

J. Welded Wire Reinforcement. Install necessary supports and chairs to hold in place during concrete pours. Straighten reinforcement to lay in flat plane and bend reinforcement as shown or required to fit work. Provide laps of no less than one complete mesh unless otherwise detailed. Tie every other wire at laps. Welded wire reinforcement rolls are not acceptable.

K. During placing of structural concrete slabs, provide a full-time reinforcing steel placer to repair and replace reinforcing to its proper location. Provide additional chairs of the proper size available to place under bars displaced during the concrete pouring operation.

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a7e6-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

This Page is Intentionally Left Blank

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/fa6126c8-592b-4cb6-a746-676e1b1c9c8a/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 20 00 Concrete Reinforcing.docx

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 WORK INCLUDED

A. Work required under this section consists of furnishing all materials, supplies, equipment, tools, transportation, and facilities, and performing all labor and services incidental to furnishing and installing concrete work as described in this section of the Specifications, shown on the accompanying Plans, or reasonably implied therefrom, except as hereinafter specifically excluded. The work shall include, but is not necessarily limited to:

1. All concrete placement and finishing.

2. Installation of all reglets, bolts, anchors, sleeves, etc., whether furnished under this section or by others.

3. The furnishing of all items required to be or shown on the Plans as embedded in concrete, which are not specifically required under other sections.

4. Setting headers and screeds for finishing and protecting concrete.

B. Where prior inspection and test of materials are required, documentary evidence, in the form of test reports, shall be furnished prior to the time the material is incorporated into the work. All rejected material shall be promptly removed from the premises.

1.2 RELATED WORK

A. Section 03 11 00 – Concrete Formwork

B. Section 03 15 00 – Concrete Accessories

C. Section 03 15 20 – Anchor Bolts and Post-Installed Anchors

D. Section 03 20 00 – Concrete Reinforcing

E. Section 03 39 00 – Concrete Curing

1.3 REFERENCES

A. American Concrete Institute (ACI)

B. American Society for Testing and Materials (ASTM)

C. State Standard Specifications

D. California Building Code (CBC)

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

1.4 DEFECTIVE WORK

A. Work considered to be defective may be ordered, by the Engineer, to be replaced in which case the Contractor shall remove and replace the defective work at his expense. Work considered to be defective shall include, but not be limited to, the following:

1. Concrete incorrectly formed, or not conforming to details and dimensions on the Plans or with the intent of these documents or concrete the surfaces of which are out of plumb or level.

2. Concrete in which defective or inadequate reinforcing steel has been placed.

3. Concrete containing wood, cloth, or other foreign matter, rock pockets, voids, honeycombs, cracks or cold joints not scheduled or indicated on the Plans.

4. Concrete below specified strength.

1.5 SUBMITTALS

A. Submittals shall be in accordance with the Standard General Conditions and the Supplementary conditions.

B. Provide material certificates, mix designs including laboratory tests, shop fabrication and placement drawings, and schedule for all reinforcing steel, embedded items, form release and curing compounds.

C. The Contractor shall provide a proposed concrete placement plan (to minimize the effects of cracking and differential settlement) to the Engineer, and gain approval of said plan, prior to ordering of reinforcing steel. As a minimum this plan shall contain the layout of horizontal and vertical construction joints, spaced no greater than 30 feet apart (unless specifically approved otherwise by the Engineer), and a pour schedule for the individual slab and wall pours.

PART 2 PRODUCTS

2.1 CONCRETE

A. Concrete shall conform to Section 90 of the State Standard Specifications. Portland cement shall be Type II, Type II Modified, or Type V. Unless otherwise shown on the concrete note sheet or specified in other sections, all concrete shall conform to the following table:

Location	Mix Requirements
Paving, Exterior Slabs, and Sidewalks Exposed to Freezing	3,500 PSI, F1, S0, W1, C1 (W/C Max 0.55)
Paving, Exterior Slabs, and Sidewalks	2,500 PSI, F0, S0, W1, C1

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

Structural Footings and Interior Slabs	3,000 PSI, F0, S0, W1, C1
All Other Structural Concrete	4,000 PSI, F0, S0, W0, C0

1. Water/cement ratio shall not exceed 0.45 (by weight).

2. Slump at placement shall be 4 inches +/- 1 inch.

B. Slurry cement backfill used in lieu of compacted soil shall contain not less than 188-pounds of Type II Portland Cement per cubic yard of concrete (2 sack) and shall comply with Section 19-3.02E of the State Standard Specifications.

C. Slurry cement backfill used in lieu of compacted soil shall contain not less than 188-pounds of Type II Portland Cement per cubic yard of concrete (2 sack) and shall comply with Section 19 of the State Standard Specifications.

D. Concrete mixtures shall conform to the minimum requirements of the following exposure classes in accordance with ACI 318-19 section 19.3:

1. Sidewalk and pavement – F1, S0, W1, C1

2. Thrust blocks, foundations and other concrete exposed to soil – F0, S1, W1, C1

2.2 AGGREGATE

A. Aggregate for normal weight concrete shall conform to Section 90-1.02C, “Aggregates” of the State Standard Specifications. Aggregates shall be free of dirt, clay balls, roots, bark and other deleterious substances and shall be thoroughly washed before use.

B. The combined aggregates for concrete shall conform to the grading limits for the one-inch, maximum size specified in Section 90-1.02C(4)(d), “Aggregate Gradation” of the State Standard Specifications, Combined Aggregate Gradings.

2.3 WATER

A. Water shall be clean and free from injurious amounts of acids, alkalis, salts, oils, organic materials or other deleterious substances.

2.4 FLYASH

A. Fly Ash: ASTM C618, Class F

1. Type of fly ash shall be compatible with the type of cement and the intended use of the concrete.

B. The weight of fly ash conforming to ASTM C618 shall not exceed 25 percent of the total cementitious material.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

2.5 ADMIXTURES

A. Admixtures shall comply with Section 90-1.02E, “Chemical Admixtures”, of the State Standard Specifications

B. Air Entraining: ASTM C260

C. Water Reducing: ASTM C494, Type A, D or F

D. Accelerating: ASTM C494, Type C or E

1. No admixture containing any chloride ions is acceptable.

E. Retarding: ASTM C494, Type B, D or G

2.6 INTEGRAL COLOR

A. Concrete retaining walls at stairs and ramp: Color additives/pigments: Insoluble materials, light fast, at least 95 percent passing #325 sieve complying with ASTM C979; David Colors, Los Angeles, CA (800) 356-4848, or equal, as shown on plans and as follows:

1. Davis color #5447 Mesa Buff at 2 lbs. per sack of cement

B. Concrete flatwork, stairs and ramps and all buried concrete shall be standard gray concrete (no color added.)

2.7 JOINT SEALANT

A. Joint sealant shall be clear or matching the color of the adjacent concrete.

2.8 REINFORCING STEEL

A. Reinforcing shall comply with Section 03 20 00 – Concrete Reinforcement.

2.9 FORMS

A. Formwork shall conform with Section 03 11 00 – Concrete Formwork.

PART 3 EXECUTION

3.1 PLACING

A. All concrete shall be placed before it has taken its initial set and shall be placed in horizontal layers and in such a manner as to avoid segregation. The concrete adjacent to the forms and joints shall be thoroughly consolidated per ACI 309.

1. Pumping equipment shall be of suitable type, without Y-sections, and with adequate pumping capacity.

2. Loss of slump in pumping shall not exceed $1^1/_2$ ".

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

3. Concrete shall not be placed through reinforcing that may cause separation of aggregates.

B. The concrete shall be deposited as nearly as possible in its final position. Drop chutes and elephant trunks shall be used on drops greater than 5 feet. Concrete shall be placed at such a rate that all concrete in the same lift will be deposited on plastic concrete. The concrete comprising each unit of work shall be placed in a continuous lift.

C. The Contractor shall notify the Engineer 24 hours (1 working day) prior to concrete placement.

1. The form work and reinforcing steel placement shall be approved by the Engineer prior to ordering concrete.

D. Form Removal. Minimum times for removal after concrete placement shall conform to 03 11 00 Concrete Formwork.

E. Construction Joints

1. Overlap the hardened concrete of the first pour with forms for the second pour. Brace the ends of the forms against the hardened concrete to prevent joint offsets and mortar leakage. Align any exterior features required on the finished surface.

3.2 CONCRETE JOINTS

A. General

1. Provide joints:

a. As shown on the Drawings and as noted below in these Specifications.

b. As required for constructability

c. After favorable review of layout, sequence and concrete placement program.

2. Provide minimum curing times before the second placement:

a. 2 days after the first concrete placement at the joint.

b. 10 days after each adjacent concrete placement, for infill pours or checkerboard placement pattern.

B. Control Joints:

1. Space typical control joints in slabs on grade and elevated slabs not exceeding 10 feet, or as shown on the Drawings. Control joints shall not be provided in water containment structures.

2. If cast-in with the concrete, positively locate the preformed joint filler and hold rigidly in place during concreting.

3. If saw-cut, use a wheeled power saw as soon as the concrete surface is firm enough. Saw-cut control joints must be constructed within 8-hours after concrete placement. Fill the groove with sealant over a backer rod.

C. Construction Joints:

1. Space typical slab joints not exceeding 30 feet in the direction of the transverse or secondary reinforcing, typically the smaller reinforcing nearer to the center of the slab thickness. Space typical vertical wall joints no more than 30 feet apart.

2. Continue all reinforcing through the joint unless otherwise noted.

3. After the first concrete placement at the joint, do not walk on or disturb any reinforcing extending into the second placement area for at least 48 hours.

4. Before depositing new concrete on or against concrete that has hardened, clean and roughen the entire surface of the joint exposing clean coarse aggregate solidly embedded in mortar matrix. Provide typically 1/4-inch roughness or amplitude of the concrete surface measured from the top of the exposed aggregate to the bottom of pockets between stones.

5. Drench the prepared joint with clean water and remove prior to the concrete pour.

6. Use special care in vibrating adjacent to construction joints to ensure thorough consolidation of the concrete against the hardened portion of the joint. Additional hand tamping may be required.

7. For joints that are shown on architectural drawings as having a continuous reveal or recess, leave the wood form or pour strip used to create the reveal or recess in place or re-insert before roughening. Prevent the next concrete placement from filling the reveal or recess.

D. Expansion Joints

1. Stop all steel reinforcing clear of the joint at each side.

2. Prepare a smooth first concrete surface with all voids filled.

3. Provide preformed joint filler, securely fastened to the existing concrete as directed by the Manufacturer.

4. Install bond breaker and sealant after curing is completed and when directed.

E. Bonding to Pre-existing Concrete: Mechanically roughen the old surface to a 1/4-inch amplitude, as defined in construction joint paragraph above. Apply epoxy bonding material prior to concreting, as recommended by the manufacturer.

3.3 CONCRETE CURING

A. Curing shall comply with Section 03 39 00 – Concrete Curing.

3.4 FINISHING

A. Defective and honeycombed surfaces shall be chipped back to such a depth to expose solid concrete. The surface shall be dampened and coated with a bonding agent and packed with mortar.

B. Concrete Finishes for Vertical Wall Surfaces:

1. Form facing material shall produce a smooth, hard, uniform texture.

    a. Use forms specified for surfaces exposed to view in accordance with the Plans and other Specification Sections.

2. At a minimum, repair the following surface defects:

    a. Tie holes

    b. Honeycombs deeper than ¼”

    c. Air pockets deeper than ¼”

    d. Rock holes deeper than ¼”

    e. Scabbing

3. Chip or rub off fins exceeding 1/8” in height.

4. Provide SF/ESF-3.0 finish and a smooth-rubbed finish for:

    a. Walls being waterproofed, painted, coated with some other material.

    b. Use at all exposed surfaces not specified to receive another finish.

C. Related Uniform Surfaces (Except Slabs):

1. Strike smooth tops of walls or buttresses, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces after concrete is placed.

2. Float surface to a texture consistent with that of formed surfaces.

3. Continue treatment uniformly across unformed surfaces.

D. Concrete Finishes for Horizontal Slab Surfaces:

1. General: Tamp concrete to force coarse aggregate down from surface. Screed with straightedge, eliminate high and low places, bring surface to

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

required finish elevations; slope uniformly to drains. Dusting of surface with dry cement or sand during finishing processes not permitted.

2. Slab Finish shall be as follows:

   a. Surfaces intended to receive damp proofing or water proofing membranes: Float finish.

   b. Floors intended to receive floor coverings and interior rooms: Trowel finish.

   c. Sidewalks, garage floors, drive-throughs and ramps: Broom finish.

   d. Exterior slabs, platforms, steps and landings, exterior and interior pedestrian ramps and interior stairs and all process equipment areas, not covered by other finish materials: Broom finish.

3. Tolerance for finished surface shall not exceed SO F_F=35, SO F_L = 25.

4. No tolerance will be allowed that will result in the maximum running, or cross, slope exceeding the requirements of the Americans with Disabilities Act.

3.5 TESTING

A. Testing of concrete shall be as required by the Engineer and in accordance with ACI 301, Chapter 1.7.

   1. All costs of initial testing will be paid by the Owner unless otherwise noted.

   2. All costs involved, including those required by the Engineer, in retesting of concrete required because of a failure to meet these Specifications shall be at the expense of the Contractor.

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/60fc6d7f-588d-4408-aa7d-e7a8cb01de3b/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_87.ppeng.egnyte.com/03 30 00 Cast-In-Place Concrete.docx

SECTION 03 33 15

CONCRETE WALKS, CURBS, GUTTERS AND DRIVEWAYS

PART 1 GENERAL

1.1 WORK INCLUDED

A. The work of this section consists of constructing on-site concrete flatwork., walks, drive approaches, curbs, and gutters.

1.2 RELATED WORK

A. Section 03 11 00 – Concrete Formwork

B. Section 03 20 00 – Concrete Reinforcing

C. Section 03 30 00 - Cast-in-Place Concrete

D. Section 31 05 00 – Common Work Results for Earthwork

E. Section 32 11 23 – Aggregate Base

1.3 REFERENCES

A. Section 40 – Concrete Pavement, State Standard Specifications

B. Section 90 –Concrete, State Standard Specifications

C. ASTM C172 – Sampling Fresh Concrete

D. California Test 540 – Method for Making, Handling and Storage of Concrete

1.4 SUBMITTALS

A. As specified in Section 01 33 00 – Submittal Procedures.

B. Submit supplier's material certificates, mix designs including field strength test record in accordance with ACI 318. .

1.5 QUALITY ASSURANCE

A. Concrete testing will be the responsibility of the Owner. All costs of initial testing will be paid by the Owner unless otherwise noted. All costs involved in retesting of concrete required because of a failure to meet these Specifications shall be at the expense of the Contractor, including those required by the Engineer.

B. The Contractor shall cooperate by rerouting equipment or by temporarily closing the work area being tested.

C. Contractor is responsible to schedule concrete tests to be conducted by the Owner's contracted independent testing laboratory. Laboratory shall take, prepare,

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9da5d38-3369-4420-a783-58930def6108/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 33 15 Concrete Walk Curb Gutter Driveway.docx

and cure samples, and do all field and laboratory testing. Promptly submit five copies of test reports to the Engineer. Testing shall comply with Section 90-1.01D Quality Assurance of the State Standard Specifications.

1. Strength Tests: Strength tests shall be made from each 100 cubic yards of concrete or fraction thereof each day. For each test, four cylinders shall be molded, one to be used for a 7-day test, two for 28-day test and one for a hold.

2. Air Content and Slump Tests: At the time samples are taken for strength tests, the laboratory shall make slump and air content tests.

1.6 PROJECT CONDITIONS:

A. Place concrete only when temperatures are above 35 degrees F, unless it is protected from freezing and approved in advance by the Engineer.

PART 2 PRODUCTS

2.1 CONCRETE

A. Materials: Materials, including cement, aggregates, water, and admixtures, shall meet the requirements of Section 90 of the State Standard Specifications.

1. Cement: Type II.

2. Coarse Aggregate: Maximum size, 1-inch for hand methods, 3/4-inch for slip-form construction, and 1/2-inch for extruded curbs. For machine placed concrete, Contractor may, with Owner's approval, modify the aggregate grading specified to meet the recommendations of the manufacturer of the machine.

B. Slump:

1. Concrete Walks: Maximum 4 inches.

2. Curbs and Gutter:

a. Hand Vibrated: Maximum 3 inches.

b. Slip-Formed: Maximum 2 inches.

C. Strength: 4,000 psi for concrete pavements and drive approaches and valley gutters and 3,000 psi for site flatwork, sidewalks, curbs and gutters at 28 days.

D. Manufacture and Delivery: Measurement of materials, batching, mixing, transporting, and delivery shall be as specified in ASTM C94. Discharge concrete into forms within 1-1/2 hours after introduction of water to cement. When temperature of concrete is 85 degrees F or above, the time between introduction of water to cement and complete discharge of concrete into forms shall not exceed 45 minutes.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9da5d38-3369-4420-a783-58930def6108/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 33 15 Concrete Walk Curb Gutter Driveway.docx

E. Air Entraining Admixture: ASTM C260.

F. Other admixtures complying with ASTM C494 or ASTM C618 may be used with approval of Engineer. No chlorides will be permitted.

2.2 EXPANSION JOINT FILLERS

A. ASTM D994, preformed bituminous type, 1/2-inch thick.

2.3 SURFACE RETARDANT

A. Rugasol S, manufactured by Sika Chemical Corporation, Lyndhurst, New Jersey, Top Stop by WR Meadows, or approved equal.

2.4 CURING COMPOUND

A. In accordance with Section 90 of the State Standard Specifications.

2.5 CURING MATERIAL

A. Waterproof paper, polyethylene sheet, clean burlap, cotton mats, or other approved material that will not cause stain or discoloration.

B. Using curing compound or curing materials, thoroughly cure and protect concrete keeping the surface moist for 7 days. Cure slabs with integral color in accordance with instructions of the pigment manufacturer. On exposed aggregate slabs or slabs with integral color, do not use polyethylene or paper sheeting.

PART 3 EXECUTION

3.1 PREPARATION OF SUBGRADE

A. Excavate to required depth. Remove soft, yielding material and replace with select fill. Scarify and compact subgrade soils to a density of not less than 95 percent of the maximum dry density.

3.2 MAINTENANCE OF SUBGRADE

A. Maintain subgrade in a compacted condition until concrete is placed.

3.3 FORMS

A. Metal or uniform warp-free lumber, coated with form release agent. Grade forms to give slabs positive drainage and stake securely. Obtain approval of alignment and grade before placing concrete.

3.4 PLACING

A. Concrete slabs for walks shall be formed, placed, vibrated, and finished by hand using conventional methods. Concrete curbs or curbs and gutters may be constructed in the same manner, but Contractor has the option of machine placing

curbs using the extrusion method or machine placing curb and gutter using the slip-form method.

B. Place concrete on moistened subgrade monolithically between construction joints. Deposit to full depth in one operation. Consolidate immediately. After depositing concrete, screed and darby or bullfloat.

3.5 FORM REMOVAL

A. Remove forms within 24 hours after concrete placement. Repair minor defects with mortar. Plastering will not be permitted on exposed faces.

3.6 SLAB FINISHING

A. After darbying or bullfloating, stop finishing until bleeding has ceased and until concrete can support foot pressure with only about 1/4-inch indentation. Edge and joint, then float the slab. Use steel trowel to densify surface, then broom slab perpendicular to line of traffic.

3.7 EXPOSED AGGREGATE FINISHING

A. Clean and thoroughly wet surface aggregate before use and drain to prevent free water from entering the concrete.

B. Evenly distribute aggregate by hand, covering surface with a single layer.

C. Embed the surface aggregate by patting with the flat side of a strike-off board or another tool.

D. When surface is firm, lightly hand float with a float or darby.

E. Spray retardant on the surface according to manufacturer's recommendations.

F. When the concrete has set up sufficiently, expose aggregate by simultaneously brushing and flushing with water without overexposing or dislodging the aggregate. Expose aggregate to a depth of 1/8 to 1/4 inch.

3.8 JOINTS

A. Construct joints true to line with faces perpendicular to surface.

1. Isolation Joints: Separate walks from walls, stairways, and other structures, using expansion joint fillers.

2. Contraction (Control) Joints: Space joints at intervals about equal to width of walk to a depth of one-fourth the slab thickness. Space curb and gutter joints not over 12 feet 6 inches on center and align them with sidewalk joints. Contraction joints may be either sawn or tooled.

a. Sawn: Cut with a power saw fitted with an abrasive or diamond blade within 4 to 12 hours after walk has been placed and finished. Use sawn joints on exposed aggregate.

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9da5d38-3369-4420-a783-58930def6108/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 33 15 Concrete Walk Curb Gutter Driveway.docx

b. Tooled: Form plane of weakness by inserting and later removing a metal divider, finish with an edger or a groover, or by saw cutting a previously tooled joint.

3.9 SIDEWALK RESTORATION

A. Where sections of miscellaneous sidewalk work require removal and restoration the following shall apply:

1. The surface of the sidewalk shall match the existing weakened plane joints, score joints and construction joint patterns with the adjoining sidewalks or City or County standards.

2. Where short sections of sidewalk have been removed for replacement, a minimum distance of three (3) feet section of sidewalk shall be removed or as directed by the Engineer.

3. If curbs and gutters cannot be cut off square and neat, the entire curb and gutter shall be removed to the nearest weakened plane or expansion joint. No patching at joints will be permitted.

3.10 FIELD QUALITY CONTROL

A. Surfaces shall not vary more than 5/16 inch when tested with a 10-foot straightedge, nor curb gutters and valley gutters shall not vary more than .03 feet from design grade.

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9da5d38-3369-4420-a788-58930def6108/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 33 15 Concrete Walk Curb Gutter Driveway.docx

This Page is Intentionally Left Blank

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/d9da5d38-3369-4420-a783-58930def6108/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 33 15 Concrete Walk Curb Gutter Driveway.docx

SECTION 03 39 00

CONCRETE CURING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Work required under this section consists of furnishing all materials, supplies, equipment, tools, transportation, and facilities, and performing all labor and services incidental to concrete curing.

1.2 RELATED WORK

A. Division 3 – Concrete

1.3 REFERENCES

A. State Standard Specifications, latest edition with amendments.

1.4 SUBMITTALS

A. Submittals shall be in accordance with the Standard General Conditions and the Supplementary Conditions.

PART 2 PRODUCTS

2.1 METHODS OF CURING

A. Newly placed concrete shall be cured by the methods specified in Section 90-1.03B of the State Standard Specifications (SSS).

1. 90-1.03B(2), Water Method
2. 90-1.03B(3), Curing Compound Method
3. 90-1.03B(4), Waterproof Membrane Method
4. 90-1.03B(5), Forms-In-Place Method

PART 3 EXECUTION

3.1 CURING

A. Exposed concrete surfaces shall be protected from premature drying by covering as soon as possible with canvas, plastic sheets with sealed joints, burlap, sand or other satisfactory materials and kept continuously moist; or, if the surfaces are not covered,

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/f558d8b1-1299-4f20-b47d-26e100760eb9/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 39 00 Concrete Curing.docx

they shall be kept continuously moist by flushing or sprinkling. Curing shall continue for a period of not less than 7 days after placing the concrete.

B. If curing compound is used, it must be nontoxic and taste and odor free, and provide a paintable concrete surface. Curing compound shall include a dye and two (2) applications shall be made to insure coverage. Curing materials and methods require approval by the Engineer prior to use.

3.2 CURING PAVEMENT

A. The entire exposed area of the pavement, including edges, shall be cured by the waterproof membrane method, or curing compound method using curing compound (1) or (2) as the Contractor may elect. Should the side forms be removed before the expiration of 72 hours following the start of curing, the exposed pavement edges shall also be cured. If the pavement is cured by means of the curing compound method, the saw-cut and all portions of the curing compound that have been disturbed by sawing operations shall be restored by spraying with additional curing compound.

B. Curing shall commence as soon as the finishing process provided in Section 40-1.H(3), "Final Finishing," has been completed. The method selected shall conform to the provisions in SSS Section 90-1.03B, " Curing Concrete."

C. When the curing compound method is used, the compound shall be applied to the entire pavement surface by mechanical sprayers. Spraying equipment shall be of the fully atomizing type equipped with a tank agitator that provides for continual agitation of the curing compound during the time of application. The spray shall be adequately protected against wind, and the nozzles shall be so oriented or moved mechanically transversely as to result in the minimum specified rate of coverage being applied uniformly on exposed faces. Hand spraying of small and irregular areas, and areas inaccessible to mechanical spraying equipment, in the opinion of the Engineer, will be permitted. When the ambient air temperature is above 60°F (15°C), the Contractor shall fog the surface of the concrete with a fine spray of water as specified in SSS Section 90-1.03B(2), "Water Method." The surface of the pavement shall be kept moist between the hours of 10:00 a.m. and 4:30 p.m. on the day the concrete is placed. However, the fogging done after the curing compound has been applied shall not begin until the compound has set sufficiently to prevent displacement. Fogging shall be discontinued if ordered in writing by the Engineer.

3.3 CURING STRUCTURES

A. Newly placed concrete for cast-in-place structures, other than highway bridge decks, shall be cured by the water method, the forms-in-place method, or, as permitted herein, by the curing compound method, in conformance with the provisions in SSS Section 90-1.03B, "Curing Concrete."

B. The curing compound method using a pigmented curing compound may be used on concrete surfaces of construction joints, surfaces that are to be buried underground, and surfaces where only Ordinary Surface Finish is to be applied and on which a uniform color is not required and that will not be visible from a public traveled way. If the Contractor elects to use the curing compound method on the bottom slab of box

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/f558d8b1-1299-4f20-b4fd-26e100760eb9/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 39 00 Concrete Curing.docx

girder spans, the curing compound shall be curing compound (1), pigmented, Type 2, Class B.

C. The top surface of highway bridge decks shall be cured by both the curing compound method and the water method. The curing compound shall be curing compound (1), pigmented, Type 2, Class B.

D. Concrete surfaces of minor structures, as defined in SSS Section 51-7, "Minor Structures," shall be cured by the water method, the forms-in-place method or the curing compound method.

E. When deemed necessary by the Engineer during periods of hot weather, water shall be applied to concrete surfaces being cured by the curing compound method or by the forms-in-place method, until the Engineer determines that a cooling effect is no longer required. Application of water for this purpose will be paid for as extra work as provided in SSS Section 00 63 44 – Changes to the Work.

3.4 CURING SLOPE PROTECTION

A. Concrete slope protection shall be cured in conformance with any of the methods specified in Section 90-1.03B, " Curing Concrete."

B. Concreted-rock slope protection shall be cured in conformance with any of the methods specified in Section 90-1.03B, " Curing Concrete," or with a blanket of earth kept wet for 72 hours, or by sprinkling with a fine spray of water every 2 hours during the daytime for a period of 3 days.

3.5 CURING MISCELLANEOUS CONCRETE WORK

A. Exposed surfaces of curbs shall be cured by pigmented curing compounds as specified in SSS Section 90-1.03B(3), "Curing Compound Method."

B. Concrete sidewalks, gutter depressions, island paving, curb ramps, driveways, and other miscellaneous concrete areas shall be cured in conformance with any of the methods specified in SSS Section 90-1.03B, "Curing Concrete."

C. Shotcrete shall be cured for at least 72 hours by spraying with water, or by a moist earth blanket, or by any of the methods provided in SSS Section 90-1.03B, "Curing Concrete."

D. Mortar and grout shall be cured by keeping the surface damp for 3 days.

E. After placing, the exposed surfaces of sign structure foundations, including pedestal portions, if constructed, shall be cured for at least 72 hours by spraying with water, or by a moist earth blanket, or by any of the methods provided in SSS Section 90-1.03B, "Curing Concrete."

END SECTION

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/f558d8b1-1299-4f20-b47d-26e100760eb9/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 39 00 Concrete Curing.docx

This Page is Intentionally Left Blank

https://us-partner-integrations.egnyte.com/msoffice/wopi/files/f558d8b1-1299-4f20-b47d-26e100760eb9/WOPIServiceId_TP_EGNYTE_PLUS/WOPIUserId_229.ppeng.egnyte.com/03 39 00 Concrete Curing.docx

SECTION 06 10 60

SALVAGED WOOD ELEMENTS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Salvaged Log – Woodward West Entrance and At Bust Drop Off

B. Timber Wheel Stop – At Woodward West Entrance

C. Eucalyptus Timber – At Bus Drop Off

D. Totem – Vertical Site Markers Throughout Site

E. Edge Marker – Habitat Markers adjacent to Trail Edge

F. Wood Horse Hitching Post

1.2 SUBMITTALS

A. Product Data: For preservative treatment.

B. Photos: Salvaged Sierra Wood Supplier to provide photos showing a range of appropriate dimensions for use per detail. Photos to be labeled with dimensions to clarify the intent for use.

1.3 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct a conference call to coordinate the placement of Totem, Edge Marker, and Eucalyptus Timber

B. Mockup: Build a mockup to verify the selection, quality, finish, and assembly of each of the salvaged wood elements. Mockup may become part of the completed work if approved by authorized Owner's Representatives.

PART 2 PRODUCTS

2.1 WOOD TYPES

A. Salvaged Sierra Wood – Incense Cedar Sourced Locally from the Sierras.

1. For use in the following applications:

a. Timber Wheel Stop

b. Totem

c. Edge Marker

d. Wood Horse Hitching Post

e. Regulatory Sign Post

2. Source:

Welker Custom Cut Lumber
5305 W California Ave, Fresno CA 93706
Chris Welker
559.349.02581

3. Maximum cracks to be ¼" in with and clear of any splinters.

4. Surface of wood to be sanded smooth on all sides exposed to human contact.

5. Moisture Content – max of 19%

6. Face Surface – Saw textured – hand sanded for all splinters/sharp edges

B. Eucalyptus Forms - Locally sourced horticultural salvage blue gum eucalyptus

1. For use in the following applications:

a. Eucalyptus Timber Forms at Bus Drop off Zone and at Oak

b. Salvaged Log – at Woodward West Entrance

2. Size and Shapes for Eucalyptus Timber Forms:

a. Assortment of varied quadrilateral shapes in plan, with sides ranging in length from 2'-0" to 3'-0", with average dimension of 2'-6".

b. Heights: 2'-6" (+/- 4") Heights include below-grade portion.

c. Width: 2' Average (+/- 6")

d. Shape: While plan shows perfect squares, 4 or 5-sided polygons would be acceptable with non-perfectly orthogonal forms

3. Size and shape for Salvaged Log: per plans and details

4. Finishing

e. All edges to have ¼" chamfer.

f. Maximum cracks to be ½" in width and clear of any splinters.

g. Surface of wood to be sanded smooth on all sides including any cracks.

h. Below-grade base of eucalyptus forms to be treated with Copper-Green wood preservative or approved alternative.

5. Source:

Gilbert Estrada

Estrada's Trees Inc.

gestrada83ge@gmail.com

(559)393-3607

-or-

Bay Area Redwood

support@bayarearedwood.com

925.421.0118

2.2 PERMEABLE AGGREGATE BASE

A. Class II ½-inch open-graded, angular aggregate.

PART 3 EXECUTION

3.1 INSTALLATION

A. Contractor to mark locations of trail, edge markers and planting with spray paint and stakes. Contractor to provide cardboard cutouts sized to match timber form dimensions. Landscape architect to layout placement of cardboard in the field and spray paint locations prior to placement by the contractor.

B. Set salvaged wood elements firmly on compacted permeable aggregate base for leveling, shim with larger stones as necessary.

END OF SECTION 06 10 60

SECTION 10 14 00 - EXTERIOR SIGNAGE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. To install and fabricate new signage throughout the project as shown and located on the Construction Documents. This will involve metal fabrication of signs, painting and finishing the metal parts, as well as printing of sign panels to be attached to some of the metal sign bodies, some metal signs require laser cutting detailed symbols and lettering, all require to be engineered to withstand wind load and other forces with adequate foundation and fasteners.

1.2 SUMMARY

A. This section includes:
   1. Gateway Monument
   2. Trailhead Sign
   3. Entrance Sign
   4. Totem – (Stencil & Paint)
   5. Interpretive Marker
   6. Regulatory Sign
   7. Edge Marker – (Paint)

B. Related sections include the following:
   1. Section 06 10 60 “Salvaged Wood Elements” for Totem, Regulatory Sign Post, and Edge Marker

1.3 SUBMITTALS

A. Shop Drawings

   1. Provide electronic copy of shop drawings, engineering calculations and all pertinent information for each sign type in the Design Drawings for review and written approval prior to fabrication. Provide one hard copy set of all items reviewed to Owner.

   2. Shop Drawings definition: Original shop instruction drawing on vendor's title block showing exactly how the sign will be made: exact materials; techniques; processes; dimensions; internal structure; welds; connections; fasteners; mounting details; access panels, trade coordination comments and other construction pertinent information for the manufacture and installation of all signage. Shop drawings showing structure shall be structurally calculated, showing total weight, wind load and overturn moment. All drawings shall be "wet" stamped and signed by a State licensed Structural Engineer.

   3. These drawings will, once accepted, be signed as reviewed and will become the documents from which the signs are fabricated. Note: All rejected shop drawings must be revised and resubmitted within ten (10) working days to the Owner until approval

is obtained.

4. Vendor requests to substitute alternate materials or techniques other than those noted on drawings or in these specifications shall be noted on the shop drawings.

B. Calculations

1. Prior to fabrication, provide engineer stamped calculations for all foundations, lifting eyes and other components that effect the structural design.

C. Braille

1. Provide full-sized prints of braille characters including direct translation of the characters, showing the size and orientation to the corresponding text. Braille shall be compliant with CBC Chapter 11B-703.3

D. Patterns

1. Provide three (3) full size, paper pattern for all signs with painted, curved, stenciled, cutout, fabricated, routed or sandblasted letters, characters, forms or other as noted on drawings for review and approval. Identify each pattern with the sign number to which the pattern applies.
2. Pattern definition: Full size exact outline on white paper of each letter, word, character, or form. Include outline of sign panel. Make outlines dark enough for long distance viewing.

3. These patterns, once accepted, will become the patterns or templates for shop fabrication. Retain all original annotated patterns reviewed during pattern submittal process. Retain final approved/stamped pattern for use and review at installation.

4. First in-place markup for wood totem in locations especially when in combination with Interpretive Markers Type A Interpretive Marker with Viewframe at Habitat Waypoint to ensure the Viewframe, Totem and Habitat align.

5. Digital files will be provided in Adobe illustrator CC 2014 Encapsulated Postscript (.eps) format for sign contractor to use in producing patterns.

E. Colors and Material Samples

1. Submit three (3) for each of the samples for review and approval. Identify each sample with the sign type number to which the sample applies.
   a. Ppaint samples, 6" x 6", on actual specified materials to match color, texture and finish for the Interpretive Markers for each color and black.
   b. ExEposed metal used for major elements of work with respective finish.
   c. Metal of work with Nativa finish for Interpretive Markers, Entrance Signs, Trailhead Post, and Gateway Monument as an alternative to the black color.
   d. Metal Cutout logos, shapes and names samples for Interpretive Markers, Entrance Signs, and part of Gateway Monument.
   e. Wood used for major elements of work with respective finish like the in the Totem.
   f. Adhesive plastic film, including computer-cut designs for the Entrance Signs and Interpretive Markers.

g. Concrete, 3” x 3”, with specified texture and finish used for major elements of work like in the Gateway Monument.
h. River rock samples of different sizes for major elements of work like in the Gateway Monument.
i. Decorative hardware, including bolt heads, nail heads, screw heads, rivets and similar exposed items.
j. All other items as may be required by Owner or as indicated on Drawings.

2. Three (3) copies of Manufacturer's Certificates of Material Standards to meet all applicable Code and Ordinance Requirements.

F. Compile and maintain a listing of all paint colors with the factory batch number and formulation code for all paints and coatings. For custom semi-opaque and/or “wash” type finishes, provide specific mix ”reduced” formulations. Submit the list to the Owner for future maintenance reference.

1. Three (3) copies of Manufacturer's Certificates of Material Standards to meet all Code and Ordinance Requirements.

G. Artwork:

1. Sign Contractor to provide all sign type artwork, including films, typesetting, variations in required project map art with graphic images, all city and state requirements of artwork for fire, safety and occupancy related signage. Contractor artwork to be generated based on samples of template electronic art files provided as guides for actual production art. Signage Consultant to provide map templates only. Sign Contractor to use templates to produce all maps areas, legend icon placements and “You are Here” locations.

1.4 Mock-Ups

A. First-in-place mock-ups: mock-ups shall be prepared by the Contractor as specified by the Owner to test scale, color, appearance, legibility and/or aesthetic aspects of sign elements and are to be made of materials that simulate final construction materials and finishes. Mock-ups are to be placed at designated locations for review by Owner prior to fabrication. If approved they can be used as part of final construction.

1.5 QUALITY ASSURANCE

A. Design Criteria

1. Structural design: Details on drawings indicate a design approach for sign structure but do not necessarily include all fabrication details required for the complete structural integrity of the signs, including consideration for static, dynamic and erection loads during handling, erecting, and service at the installed locations, nor do they necessarily consider the preferred shop practices of the individual sign fabricators. Therefore, it shall be the responsibility of the fabricator to perform the complete structural design of the signs and to incorporate all the safety features necessary to adequately support the sign for its intended use and purpose and to protect the Owner. Designs, which meet or exceed industry and code

standard engineering practices, will be required. The sign fabricator shall submit engineer stamped calculations for foundations, lifting eyes and other sign components that affect the structural design.

a. Include foundations per details and concrete specification section.
b. When required because of size or weight of sign, provide lifting eyes. Lifting eyes shall be removable or visually inconspicuous in the finished work.
c. Include support backing and connection to existing support structure or mounting surface.

2. Interpretation of Plans and Specifications:

a. The Owner will interpret the meaning of any part of the Plans and Specifications about which any misunderstanding may arise and the Owner's decision will be final. Should there appear to be any error or discrepancy in or between the Plans and Specifications, the Contractor shall refer the matter to the Owner for adjustment and incorporation into shop drawings submittal before proceeding with the work. Should the Contractor proceed with the work without so referring the matter, the Contractor does so at its own risk and must bear any additional cost incurred as a result of failure to so refer.

Preparation:

1. Contractor to protect all fabricated, printed, and painted signage on site until project completion.

1.5 MAINTENANCE - MATERIALS AND DOCUMENTATION

A. Upon completion of work, Contractor is to provide written documentation outlining proper care and maintenance for all graphic materials, colors, finishes and hardware. Touch-up paint: Provide Owner with one 1/2 pint can of touch-up paint (including clear coat finish) of each type and color used in Work.

1.6 WARRANTY

A. Warrant all work against failure because of faulty materials, workmanship, and design for a period of one year from date of acceptance by the Owner.

B. Fading, cracking, warping, peeling, delaminating, rusting, corroding and structural failure, including distortion by whatever cause, shall be construed to mean failure because of faulty materials and workmanship.

C. Failures during the warranty period shall be repaired or replaced to the satisfaction of, and without any cost to the Owner.

PART 2 - PRODUCTS

2.1 GENERAL

A. The work as herein identified, requires the manufacture and/or purchase of; and delivery, installation and/or application of: Signage and Environmental Graphics as part of the Contract Documents.

B. Fabricators

The following fabricators have extensive experience providing signs of the type indicated to the Owner on past projects:

a) Metal Fabrication, Painting, Finishing, Coating, Installation:

DALE BRISCO, INC.
2132 S. Temperance
Corner of Temperance & Golden State Fowler, CA 93625
559-834-5926
Contact: Dale Brisco bbrisco@dalebriscoinc.com 559-307-0571

Priority Graphics
Production: 820 Sweeney Ave
Redwood City, CA 94063 US
Office: 1260 Egbert Ave
San Francisco, CA 94124
415.643.1144
Contact Rachel Guevara rachel@prioritygraphics.com 415.914.4131

Arrow Sign Company
1051 46th Avenue, Oakland, CA 94601
510-533-7693
Contact: Neal Duffy nduffy@arrowsigncompany.com 510-277-5311

Martinelli Environmental Graphics
1829 Egreat Avenue, San Francisco, CA 94124
415-468-4000
Contact: Jeff Osicka, jeff@martinelli-graphics.com, 415-468-4000

b) Sign Printing for Trailhead Sign, Entrance Sign, Regulatory Sign:

iZone Imaging
2526 Charter Oak Drive - Suite 100
Temple, TX 76502
888.464.9663 x151
Contact: Micheal Dean michael.dean@izoneimaging.com 254.314.8248

2.2 MATERIALS - METALS

D. Steel for Gateway Monuments, Trailhead Posts, Entrance Signs, Interpretive Markers:

1. Exposed, painted locations and bending/formed uses: Stretcher-leveled, electrolytic zinc-coated, sheet steel, with phosphate or other specialty treatment for maximum paint adherence, ASTM A591, commercial or drawing quality, Coating Class B, and All exterior [signage panels / metal posts / concrete walls] shall receive a clear

graffiti-resistant coating, applied per manufacturer's instructions. Coating shall be UV-resistant, allow for repeated cleaning, and meet ASTM D6578 graffiti-removal performance criteria..

2. Concealed, unpainted locations and flat/unformed uses: Galvanized sheet steel, ASTM A653, commercial quality, with G90 coating.

3. Steel shapes: ASTM A36, A53, A500, A501 hot-rolled or cold rolled shapes, plates and tubes in sizes indicated on Design Drawings. Steel post, unless otherwise specified in the structural drawings, shall be schedule 40 min.

E. Aluminum alternatively for Gateway Monuments, Trailhead Posts, Entrance Signs, Interpretive Markers:

1. Sheet Aluminum ASTM B209: Provide alloy and temper consistent with specific fabrication and finishing processes.

2. Extruded aluminum: Provide alloy and temper consistent with specific fabrication and finishing processes.

3. Bars, rod, wire and shapes: ASTM B221

4. Pipe and tubing: Seamless, minimum Schedule 40 or equivalent wall thickness
   a. Non-structural: ASTM B210 and ASTM B241.

2.3 MATERIALS – SIGN PRINTING (iZoneImaging) to be attached to Trailhead Sign, Entrance Sign, Regulatory Sign

A. Custom High Pressure Laminate (CHPL) - digital print papers in melamine resins over phenolic resin core or similar with protective surface layer for UV and scratch and graffiti resistance.

B. Bonded at >1200 psi and ~300°F (149°C), trimmed or CNC cut.

C. Sizes up to 48" × 144"; oversized up to 60" × 144".

D. 0.5" laminate to 0.75" thick compact panels, self-supporting; can be machined for blind fastening from behind.

E. 10-year warranty

F. Fade, scratch & graffiti resistance

G. Impervious to moisture & thermally stable

Can be odered to be cut i custom forms (figures, ovals, arches, freeform); options for cutouts, shaped edges, 3-D layering.

H. See sign content sample designs in the appendix for Entrance Signs, Regulatory Signs and Trailhead Signs

2.4 MATERIALS - ADHESIVE FILM

A. Vinyl die-cut: Precision-cut, pre-spaced, computer-generated, pressure-sensitive type by 3M or equal for Entrance Signs and Interpretive Markers.

B. Decalcomania (decal): Pressure sensitive adhesive type by 3M, or equal.

C. Sheet reflective materials (White): Pressure-sensitive or heat-activated adhesive backed, reflective plastic sheet.

1. Roadway and retroreflective signs: Provide 3M Scotchlite Diamond Grade Long Distance Performance (LDP) reflective sheeting Series 3970 in accordance with Product Bulletin 3970, dated April 1999. (No known equal)

2.5 MATERIALS - PRIMERS AND PAINTS

A. Provide and use paint by:

1. Matthews Paint Co., Kenosha, WI

2. PPG Paint Co., Pittsburg, PA

3. Or equal.

B. Paint Schedule for the steel parts of the Gateway Monuments, Trailhead Posts, Entrance Signs, Interpretive Markers and for all Interpretive Marker colors:

1. Zinc coated steel sheet and hot-dip galvanized steel black (or alternatively see below Natina), black is the preferred treatment for maintenance and graffiti removal reasons. The same Treatment applies to all Interpretive Marker Colors:
   a. Pretreatment: Etching/wash type as recommended by paint manufacturer.
   b. 1st coat: Exterior alkyd or latex primer.
   c. 2nd and 3rd coats: Exterior alkyd or 100% acrylic latex. Vinyl acrylics and similar acrylic blends are not acceptable.
   d. Final coat: UV resistant with anti-graffiti coating

2. Zinc coated steel sheet and hot-dip galvanized steel with Natina coating (or alternatively black, see above) for all visible and exposed metal parts but the Color Panels of the Interpretive Markers:
   a. Pretreatment: Etching/wash type as recommended by Natina.
   b. 1st coat: Natina patina solution applied to galvanized surface.
   c. 2nd coat: Additional Natina application as needed for uniform tone and finish by natural curing/weathering; no sealer required unless specified.
   d. Final coat: UV resistant with anti-graffiti coating

3. Steel and ferrous metals below grade:
   a. 1st coat: Primer as recommended by paint manufacturer.
   b. 2nd and 3rd coats: Epoxy or urethane mastic protective coating system.

2.6 MATERIALS – MISCELLANEOUS

A. Cement for iZOne Sign Panels as needed: Weld-On Part No. 4 cement by Industrial Polychemical Co., or equal.

B. Adhesives.

1. Silicone: Single-component silicone rubber by:
   a. General Electric
   b. Dow Corning
   c. Or equal

2. Epoxy: Two-part, catalyzed; provide fast-setting, high-strength, flexible, high-viscosity or other specific types as necessary and approved by Owner.

3. Tape: Double-coated, high strength acrylic adhesive foam tape, 3M VHB+ tape or equal.

4. Thread-locking: Anaerobic, single-component adhesive, as manufactured by:
   a. Hernon.
   b. Loctite.
   c. Permabond.
   d. Or equivalent.

5. Other: Exterior grade, waterproof, structural types as necessary and compatible with materials in contact with adhesives.

C. Miscellaneous hardware: Provide hooks and hook-eyes, bolts with acorn nuts, and other non-corrosive, commercial type hardware items including fasteners as necessary, where not specifically indicated on the Design

D. Braille: Braille characters shall be provided on wayfinding and interpretive/educational signage where text is utilized. Braille shall be in conformance with CBC Chapter 11B-703.3.

PART 3 - EXECUTION

3.1 STRUCTURAL:

A. It shall be the responsibility of the Contractor to perform the structural design of the signs and to incorporate all the safety features necessary to adequately support the sign for its intended use and purpose and to protect the Owner. Designs that meet or exceed industry and code standard engineering practices will be required. The sign fabricator shall submit engineer stamped calculations for foundations, lifting eyes and other sign components that affect the structural design.

1. Include foundations when part of the signage and graphics work.

2. When required because of size or weight of sign, provide lifting eyes. Lifting eyes shall be removable or visually inconspicuous in the finished work.

3. Include support backing and connection to existing support structure or mounting surface.

B. Design loads:

1. All forces resulting from dead loads, live loads, rated loads, wind loads, and seismic loads as applicable shall be applied in determining adequacy of all parts of a suspension system and the system as a whole.

a. Wind loads and seismic loads shall be in accord with governing loads.
b. Dead loads consist of the weight of the suspended object(s), and, if a separate system, the load of the suspension system.

C. Allowable stresses:

1. Allowable stresses shall not exceed values which would cause permanent distortion of any structural or machinery component.

2. All components of stress shall have the benefit of engineering calculations and data, and such calculations and data shall be used in the selection of materials.

3. Stresses due to combined loads shall be in accord with governing codes.

D. Connections:

1. All sign brackets, members, connections, welds, bolts, screws, etc. shall conform to 2013 California Building Code, ASCE 7-10 and all appropriate material reference documents.

E. Safety factors:

1. The safety ratio for a specific installation shall, as a minimum, meet a 5:1 safety ratio over the minimum allowable load for the installation condition.

2. The required minimum safety ratio applies to the total system. Individual components of a system may be rated at higher values, depending upon the component. The lowest value shall determine the safety factor of the system. Certified "working load" factors that have the basis of laboratory testing are acceptable. As an example, chain manufacturers traditionally use a safety factor of 4:1 over breaking strength as ultimate working load. Wire rope shall use the 5:1 safety factor.

3.2 FABRICATED LETTERS, NUMBERS AND SHAPES:

A. Provide materials and workmanship that is performed by skilled craftsman under the supervision of trained foremen, experienced in the trade or craft required to accomplish

the Work and produce a product of high quality.

B. For final fabrication, Ai files for all the laser cut letters will be provided for relevant signage types like Gateway Monument and Entrance Signs. Laser cut letter sample for the Gateway Monument is shown below.



3.3 PAINTING AND FINISHING:

A. Definitions:

1. The term "paint" as used herein includes enamels, polyurethanes, paints, primers, sealers, fillers, stains, and coatings systems whether used as prime, intermediate or finish coats.

2. The term "system" implies that each finish is comprised of materials and quantities appropriate for the surface to be finished, and includes preparation priming/sealing, and intermediate and finish coats as applicable.

B. Sample finishes: Refer to Section 1.2 - "SUBMITTALS".

C. Paint color references:

1. History-Yellow: CMYK 0 10 100 0 / Pantone 109 C
2. Nature-Green: CMYK 22 0 100 8 / Pantone 2995 C
3. River-Blue: CMYK 90 11 0 0 / Pantone 2747 C
4. Utilities-Grey: CMYK 11 1 0 64 / Pantone 431 C
5. Trails-Red: CMYK 0 90 86 0 / Pantone 032 C

D. Paint formulation: All paint materials shall be especially formulated to meet all local and state environmental codes and specifications, with anti-mildew agents incorporated into the formulations. This requirement applies to all materials including those for interiors of sign cabinets and cans. In addition, include carefully balanced ultraviolet inhibitors for exterior materials.

E. Application:

1. Properly prepare subsurfaces and apply materials in an environment most favorable for producing best quality work. Where indicated or necessary, etch surfaces prior to applying finish paint materials.
   a. Finish surfaces shall be free of streaks, laps, runs, or pile-up of paints, with all surfaces uniformly covered.
   b. Surfaces with over spray are not acceptable.

2. Unless specified or directed otherwise, provide semi-gloss (specular gloss value of

50 in accord with ASTM D523) finish for all surfaces.

3. Unless specified or directed otherwise, provide "clear coat" finish over all exposed, finish painted surfaces consisting of a two-component catalytic, clear, acrylic polyurethane enamel with ultraviolet inhibitors. Unless otherwise directed by Owner, provide semi-gloss for metal and plastic surfaces and flat/matte gloss for wood surfaces.

4. Seal all edges of plywood and end grain of solid stock wood even though it may be concealed by other work.

3.4 FABRICATION – GENERAL

A. It is intended that the workmanship be of the highest quality obtainable by the respective trades and crafts experienced in the fabrication of signs.

B. Finished work shall be of highest quality to pass eye-level examination and scrutiny. Scratches, paint drips or sags and other visual defects are not acceptable.

C. Copy application: Sign copy shall be crisp, sharp, clean, and free from "ticks," discontinuous curves, line waver, and similar type imperfections.

1. Letterforms shall conform to prescribed proportions.

2. Whenever possible, messages shall be set full-size.

3. Letterforms shall be aligned so as to maintain a baseline parallel to sign format, with margins and layout as indicated on Design Drawings and approved shop drawings.

D. Sign construction:

1. Construct work to eliminate burrs, cutting edges, and sharp corners.

2. Finish welds on exposed surfaces to be imperceptible in the finished work.

3. Except as indicated or directed otherwise, finish surfaces smooth.

4. Surfaces that are intended to be flat shall be without bulges, depressions, oil canning, or other physical deformities; use thicker materials or other means of stiffening or reinforcement to achieve intended results.

5. Surfaces that are intended to be curved shall be smoothly free-flowing to required shapes.

6. Parts indicated to be turned must be accurately machined/worked from solid stock to indicated or on approved shop drawings. Finished surfaces to be polished smooth unless otherwise indicated, free of any visible pits, voids, or similar defects.

7. Fabricate continuous, internal support/mounting systems required to adequately secure/support signs. Where necessary, make provisions to allow for easy, quick removal for maintenance, etc.

8. Except where approved otherwise by Owner, conceal fasteners.

9. Make signs tight fitting, between parts and sections, and with adjacent surfaces. Unless indicated otherwise, non-welded joints between various portions of signs must be weatherproof (for exterior signs) and have tight, hairline-type appearance, without gaps (varying or otherwise). Provide sufficient fastenings to preclude looseness, racking, or similar movement.

10. Exercise care to assure that finished surfaces are unblemished in completed Work.

11. Isolate dissimilar materials. Exercise particular care to isolate non-ferrous metals from ferrous metals, including fasteners.

12. Fabricating copy: Unless specifically indicated on Design Drawings otherwise, fabricate sign copy as follows.
    a. Silk-screened and hand-painted copy: Finish sheen of copy to match sheen of copy panel background (gloss, semi-gloss, or sheens between). Edges of letters shall be straight and corners sharp. Surface of letters shall be uniform in color, finish, and free from pinholes and other imperfections.
    b. Vinyl letters: Vinyl letters and numbers shall be computer cut unless an alternate process is approved by Owner prior to fabrication. Copy shall be pre-spaced with 3-M series 2-application tape, prior to installation on sign. No exceptions.
    c. Letters and logos laser-cut through metal: use minimal vertical only bridges (suggested 3/8 wide bridges) to support the counters in letters and logos.

3.5 INSTALLATION – GENERAL

A. Verify and stake the exact sign locations at on site walk-through with Owner at the job site for all sign locations which are not exactly dimensioned on the drawings. Notify Owner of any conditions that may adversely affect satisfactory installation of graphic elements.

B. Except as indicated otherwise on the drawings, install prefabricated work plumb, level, square and true to line.

C. Securely anchor work in proper location using anchors, anchorages, fasteners, or other methods approved on shop drawings. All anchors and fasteners shall be appropriate to the anchorage condition.

D. Coordinate work and access to site with the Owner.

E. Final adjustment and cleaning:

1. Touch-up all scratched, marred, abraded, or otherwise damaged surfaces to match original surfaces.

2. Clean-up work area after installation has been completed.

3.6 MATERIAL HANDLING

A. Pack, wrap, crate, bundle, box, bag, or otherwise package, handle, transport, and store all fabricated work as necessary to provide protection from damage by every cause.

B. Provide clear and legible identifying information on all product packaging to ensure proper on-site review and installation.

3.7 PROJECT CONDITIONS

A. Protection:

1. Warning signs and other methods of protection must be sufficiently substantial to withstand normal, anticipated construction activities and are subject to approval.

B. Sequencing/Scheduling: Coordinate fabrication, delivery, installation, field finishing and field-application, where applicable, of the work of this section, with progress of construction and schedule.

C. All fabrication shall be done in an approved and registered fabrication shop, per CBC Chapter 17.

D. Maintain all structural integrity of existing structures. Alteration requires a design by California Licensed Civil or Structural Engineer and must be submitted for review and approval prior to installation.

3.8 RESTORATION

A. Damage due to negligence of the Contractor to surfaces or building components, shall be repaired and restored to its original condition by the Contractor at no extra cost to the Owner. Patch and paint around all cuts to match adjacent surfaces.

B. Patch and paint around all cuts to match adjacent surfaces. Replace with ceiling, wall or floor tiles affected by the installation with new tiles.

3.9 INSPECTION

A. Owner reserves the right to inspect work in the fabrication shop in progress and before it is shipped to the job site for installation.

B. Fabricator shall inspect installation locations for conditions that will adversely affect execution, performance and quality of work, and shall not proceed with installation until unsatisfactory conditions have been corrected.

PART 4 - APPENDICES

4.1 GENERAL:

A. The appendices listed below are integral parts of the specifications and contract documents. If either Appendix is missing or incomplete, provide timely and written notification. Do not submit a bid based on incomplete information.

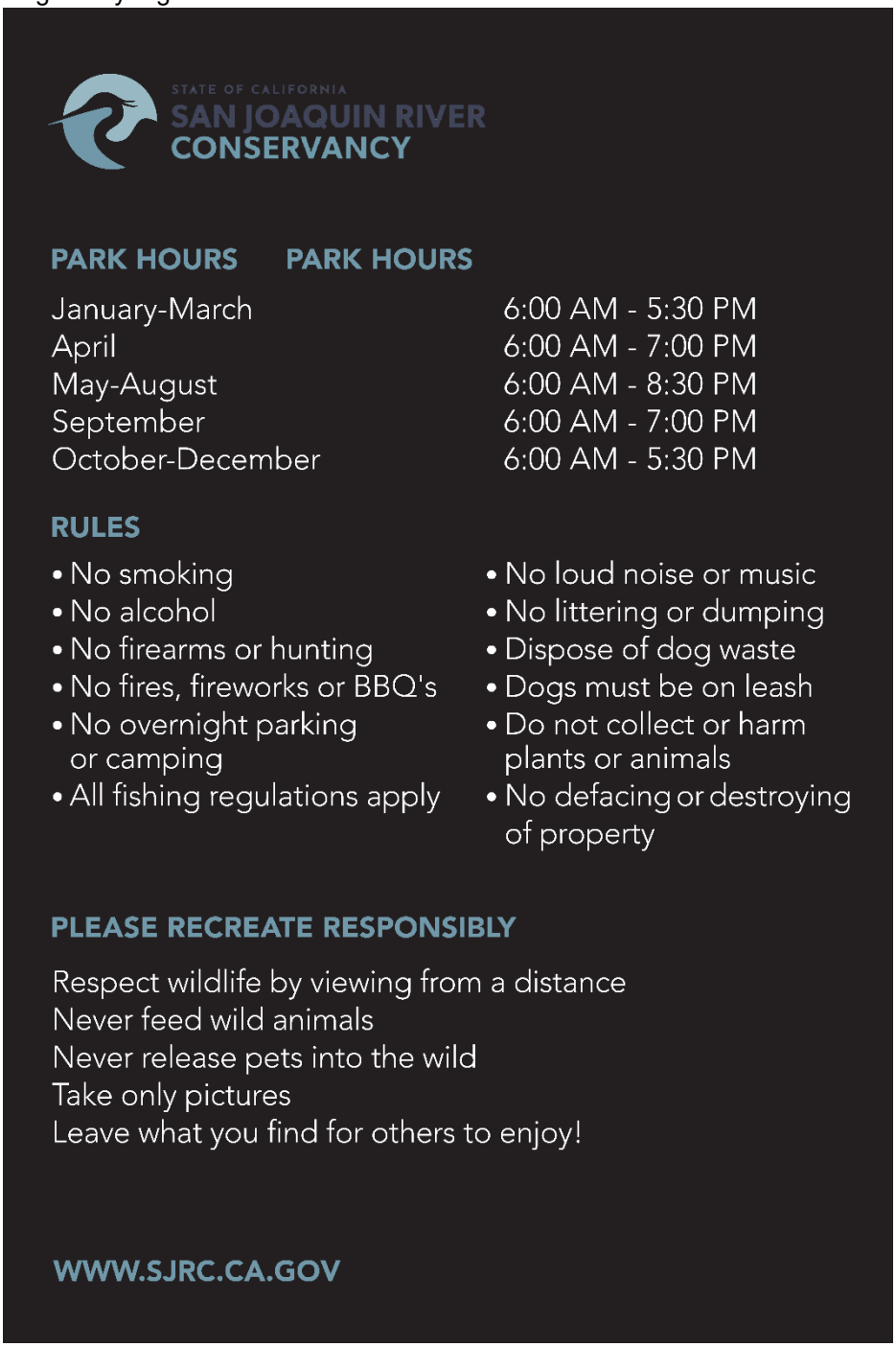
4.2 APPENDIX

A. Sign content sample designs

1. Entrance sign



2. Regulatory Sign



3. Trailhead Sign



B. Sign Color Index Sheet

END OF SECTION 10 14 00

SECTION 32 30 00
LANDSCAPE STONE

PART 1 GENERAL

1.1 WORK INCLUDED

A. Procurement, finishing, shipping, and installation of a variety of stonework as shown on the drawings including:

1. Boulder – Type 1 & Type 2 – For use as edge marker and below signage

2. Stepping Stones – at Underpass Waypoint

3. Gateway Monument – River Stone

1.2 RELATED WORK

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Division 32 Section "Decomposed Granite Paving" for aggregate base and decomposed granite.

1.3 SUBMITTALS

A. Source Information: For each type of stone indicated.

B. Photographs of stones to be used within 25% range of the size as detailed on the plans.

1. Provide a range of colors for selection by Landscape Architect.
2. Landscape Architect may choose to select stones at stone supplier's yard.
3. Landscape Architect may request several samples as outline below.

C. Samples for Verification:

1. For each stone type and finish indicated. Include at least one sample for each type of stone and finish, exhibiting the full range of color and finish expected in completed Work. Size of sample to be a minimum of 4"x4"x4"

PART 2 PRODUCTS

2.1 BOULDER TYPE 1 –

A. Purpose: These stones will be used to line the trail/parking area per the plans to prevent unauthorized vehicular access to the site

B. Locally sourced within 200 miles of project site

1. Rosenbalm Rockery or approved equal

Fresno, CA

1745 N Hughes Ave

Fresno, Ca 93705

559-256-3900

C. Size: 3'x2'x2' ±6" – minimum weight of 300 lbs.

D. Color/Texture – Send Architect Photos of Color/Texture Options

2.2 BOULDER TYPE 2 –

A. Purpose: These stones will be used to line the trail/parking area per the plans to accent the larger type 1 boulders.

B. Locally sourced within 200 miles of the project site

1. Rosenbalm Rockery or approved equal

Fresno, CA

1745 N Hughes Ave

Fresno, Ca 93705

559-256-3900

C. Size: 1.5'x1'x1' ±3"– minimum weight of 150 lbs.

D. Color/Texture – Send Architect Photos of Color/Texture Options

2.3 STEPPING STONES –

A. Purpose: Flagstone Path at Underpass Waypoint

B. Locally sourced within 200 miles of project site

C. Size: 1.5'x3'x2"

D. Source: Clovis Stone Flagstone

E. Color/Texture – Send Architect Photos of Color/Texture Options

2.4 GATEWAY MONUMENT – RIVER STONE

A. Purpose: for use in gateway monument

B. Locally sourced from within San Joaquin River watershed.

C. Size: 4” - 8” DIA. Max

D. Color/Texture – Smooth riverstone with light gray/buff mix

E. Samples – Send architect photos for verification

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces indicated to receive stone, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SETTING OF STONE, GENERAL

A. Mock-up a portion of the trail and each sign/totem type for the Architect to review and approve prior to full installation.

END OF SECTION 32 30 00

32 40 00
SITE FURNISHINGS

PART 1 GENERAL

This Section includes all materials, labor, transportation, services, and equipment necessary for and reasonably incidental to perform the installation of site and street furnishings as shown on the Contract Drawings, and as specified herein this Section.

1.1 WORK INCLUDED

A. Concrete Bench

B. Metal Bench

C. Picnic Tables

D. Waste Bin

1.2 SUBMITTALS

A. Contractor shall submit shop drawings to show component parts, fabrication, installation, and dimensions for all units indicated herein this Section. Show vandal resistant mounting hardware. Submit shop drawings for review by the Engineer.

B. Submit manufacturer's product data for review by the Engineer.

C. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Submit samples for each material and finish. Provide powdercoat sample for each separate manufacturer.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed in the last five (5) years and at least five (5) installations similar in material, design, and extent to that indicated for this Project. Installer will assign mechanics from these earlier applications to this Project, of which one will serve as lead mechanic.

B. Single-Source Responsibility: Obtain each type of unit of furnishings from a single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying the Work.

1.4 COORDINATION

A. The Contractor shall coordinate the installation of all furnishings in this Section with all other related Work of this Contract.

B. The Contractor shall be responsible for verifying the dimensions and required hardware of the furnishings prior to commencing installation Work.

C. Particular attention shall be given to coordinating furnishing footings with utility locations to avoid any conflicts.

1.5 DELIVERY, STORAGE AND HANDLING

A. All new furnishings shall be stored as necessary to prevent damage and shall be in new condition when ready for installation. It shall be the responsibility of the Contractor to install “factory condition” furnishings

PART 2 PRODUCTS

2.1 CONCRETE BENCH:

MFR: Landscape Forms
Contact: 800-521-2546
Model: Trapecio
Include Extra Center Armrest:
Color/Finish: Concrete with acid-etched finish
Note: Install per MFR specs and details

2.2 METAL BENCH

MFR: MMCITE
Contact: 704 995 1942, ext. 105
Model: LV256- VERA
Include Extra Center Armrest: Yes
Color/Finish: Stainless Steel
Note: Install per MFR specs and details

2.3 PICNIC TABLES

MFR: Outdoor Creations
Contact: 530-365-6106
Model: (Concrete)Timber Table 96”, 114-2E, 114
Plans depict locations and the quantity of ADA vs. non-ADA tables
Note: Install per MFR specs and details

2.4 WASTE BIN

MFR: Big Belly
Contact: 888-820-0300
Model: Element

Note: Install per MFR specs and details

PART 3 EXECUTION

Examine the areas and conditions under which site furnishing units are to be installed and remedy any conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the Engineer.

3.1 INSTALLATION

A. Unit(s) shall be furnished and located as shown on the Contract Drawings, and as directed by the Contract Specifications.

B. Use actual Unit(s) to establish all dimensions for installation.

C. Erect and install Unit(s) in accordance with manufacturer's instructions and recommendations. Install unit(s) plumb, accurately, and in the correct orientation and relationship with other site furnishings, elements, and/or paving as shown on the Contract Drawings. Verify prior to installation with the Engineer.

D. Install all footings, anchorage, and mounting hardware, as applicable, in strict accordance with manufacturer's instructions and contract drawings.

E. Use vandal resistant hardware or industry standard epoxy resin application to nut.

3.2 PROTECTION

A. Protect all furnishings against damage throughout the duration of the construction period, complying with manufacturer's directions.

B. Touch-up Painting (if applicable): Immediately after erection, clean field welds, bolted connections, and abraded areas of the work. Paint exposed areas with paint or galvanizing material as supplied by the manufacturer. Apply by brush, to thickness recommended by paint manufacturer.

END OF SECTION 32 40 00

SECTION 32 91 13

PLANTING SOIL PREPARATION

PART 1 GENERAL

1.1 WORK INCLUDED

A. Locate, purchase, deliver, and install soil and soil amendments, as needed.

B. Amend and modify existing soil in place for use as Planting Soils.

C. Install mulch over the soil surface.

D. Fine grade Planting Soils.

E. Clean up and dispose of all excess and surplus material.

1.2 RELATED WORK

A. Section 32 93 00 Planting

B. Section 32 93 20 Hydroseed

1.3 SUBMITTALS

A. As specified in Section 01 33 00 – Submittals.

B. Submittals shall be in accordance with the Standard General Conditions and the Supplementary conditions.

C. Qualification Data: For landscape Installer.

D. Material Test Reports: For existing soils, imported soils, and amended soils.

1.4 DEFINITIONS

A. Amendment: Material, such as mulch or compost, added to soil to produce planting soil

B. Biological Amendment: Additions used to enhance the biological characteristics of the soil, such as mycorrhizae.

C. Compacted soil: Soil where the bulk density is greater than the threshold for root penetration, and as further defined in this specification.

D. Compost: Well-decomposed and stable organic material as defined by the US Composting Council, and as further defined in this specification.

E. Existing soil: *In situ* mineral soil present on site, and as further defined in this specification.

F. Field Capacity: Is the amount of soil moisture or water content held in soil after excess water has drained away and the rate of downward movement has materially decreased.

G. Fine grading: Final grading of the soil to achieve proposed contours, and as further defined in this specification.

H. Finished grade: Surface of elevation of Soils after final grading and 12 months of settlement, and as further defined in this specification.

I. Scarify: Loosening and roughening the surface of subsoil prior to placing additional soil on top, and as further defined in this specification.

J. Subsoil: Subsurface horizon or layer immediately below the topsoil, and as further defined in this specification.

K. Subsoiling: Loosening the subsoil by using a backhoe or by dragging a ripping shank or chisel through the soil to depths of 18-24 inches or as specified, and as further defined in this specification.

L. Tilling: Loosening the topsoil with a rotary tine tilling machine, rototiller, or spade tiller to depths of 6 inches or as specified, and as further defined in this specification.

M. Topsoil: Soil surface horizon or layer, and as further defined in this specification.

N. Undisturbed soil: Areas of soil with topsoil that has not been graded or compacted.

1.5 QUALITY ASSURANCE

A. Soil testing laboratory qualifications include an independent laboratory with experience and capability to conduct testing indicated herein and that specialize in USDA agricultural soil testing.

B. Compost testing laboratory qualifications include an independent, US Composting Council STA Program-certified lab for compost testing. Verifying current participation in the STA program can also be achieved by logging onto the USCC website at https://www.compostingcouncil.org/page/CertifiedLabs.

C. All modified, furnished, and installed Planting Soil products shall conform to the approved submittal's test analysis. Any Planting Soil products that fail to meet the criteria shall be modified or removed from the site and new soil installed if requested by the Landscape Architect.

D. Following the installation of planting mixes and/or modification of existing soil, test soil compaction with a penetrometer. Prior to testing the soil with the penetrometer, check the soil moisture with a moisture meter. Excessively wet or dry soils will indicate significantly lower or higher bulk density than soils at optimum moisture.

1. Penetrometer shall be AgraTronix Soil Compaction Meter distributed by Ben Meadows, www.benmeadows.com, or an approved equivalent.

2. Moisture meter shall be “general digital soil moisture meter” distributed by Ben Meadows, www.benmeadows.com, or an approved equivalent.

3. Report shall recommend “Rescape” organic soil amendments only and shall avoid synthetic fertilizers and amendments if possible.

4. Report shall make soil amendment recommendations specific to plant palette indicated.

E. SOIL COMPACTION

1. The Penetrometer Resistance Method shall be used to address the compaction thresholds. This method uses a penetrometer to measure compaction in PSI (pressure per square inch). Soil moisture shall be measured simultaneously to ensure moisture is within the allowable range for compaction testing. Penetrometer resistance threshold for levels of compaction shall define the threshold point of soil compaction in existing, modified, and installed soil and subsoil.

2. Acceptable Compaction: 75-200 PSI.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Material shall not be handled or hauled, placed, or compacted when it is wet, as after a heavy rainfall, or is frozen. Soil shall be handled only when the moisture content is less than at field capacity. The Landscape Architect shall be consulted to determine if the soil is too wet to handle.

B. Store and handle packaged materials in strict compliance with manufacturer’s instructions and recommendations. Protect all materials from weather, damage, injury, and theft.

C. Prohibit vehicular and pedestrian traffic on or around stockpiled planting soil.

D. If soil is stockpiled longer than two weeks, whether on or off-site, it shall not be placed in mounds greater than ten feet high. If soil stockpiles greater than ten feet tall are present longer than two weeks, then the Contractor shall break down and disperse soil so that mounds do not exceed the ten-foot height restriction for longer than two weeks.

E. Vehicular access to the un-graded areas shall be restricted. Before construction, the Contractor shall submit for approval a plan showing proposed routing for deliveries and site access.

1.7 EXISTING SOIL

A. The soils in the Eaton Trail Site range from slightly acidic to slightly alkaline, with no major chemistry issues noted beyond low

B. Nutrient levels. In terms of texture, most areas other than directly adjacent to bodies of water were either sandy loam or loamy sand. California natives are adapted to these soils and the Planting Soil Mix amendment will provide supplemental nutrients.

The area identified as a landfill has a notably high gravel content, and is not recommended for planting purposes. It should be assumed that new soil should be imported to accommodate planting in this area.

C. Existing Soils to be used in Planting Soil Mix

1. The amendments to existing soil are based on field and laboratory analyses conducted in June 2023.

2. The modifications or additions to create an engineered fill on the building pads to support the foundations of buildings roads and other infrastructure shall be limited to its footprint. With the exception of slopes and other erosion control measures, the soil around the houses, parks, streets, and other areas that will receive vegetation (trees, shrubs, ground covers, or hydroseed) will not be subject to any geotechnical improvements.

3. Demolition and construction will affect the compaction, structure, stability, nutrient content, and pH of soils.

4. After clearing and grubbing, the planting areas shall be cleared of all demolition debris, and erosion control measures shall be implemented.

5. The exposed soil on the open areas will be amended on-site following the specifications for the designated areas.

D. Upon completion of earthwork, the contractor is to test soils to determine the level of amendment required. For the purposes of bidding on the project, the contractor is to assume imported planting soil for locations above the existing landfill (at Spano Parking Area L202), and amended planting soil for other locations to receive plants or hydroseed per the specifications below.

PART 2 PART 2 - PRODUCTS

2.1 PLANTING MIX PRODUCTS

A. Planting Soil Mix shall be mixes of Existing Soil and amendments to make new soil that meets the project goals for the indicated planting area. If Existing Soil does not meet the physical and chemical criteria, furnished soil shall be used.

B. Existing Soil shall be *in situ* mineral soil present on-site free of all rocks 1 inch or larger in any direction, weeds, trash, debris, brush, and other foreign materials. Soils prior to modification shall meet the following physical and chemical criteria:

1. Soil texture: USDA Loamy Sand, Sandy Loam

2. pH value: 6.3-7.4

3. Percent organic matter (OM): 0.4% - 3.1% by dry weight

4. Salinity (ECe): low sodium and boron

5. Sodium absorption ration (SAR): sodium is balanced by soluble calcium and magnesium

2.2 COMPOST: BLENDED AND GROUND LEAF, WOOD, AND MANURE, COMPOSTED FOR A MINIMUM OF 9 MONTHS AT TEMPERATURES SUFFICIENT TO BREAK DOWN ALL WOODY FIBERS, SEEDS AND LEAF STRUCTURES, FREE OF TOXIC MATERIAL AT LEVELS THAT ARE HARMFUL TO PLANTS OR HUMANS.

1. Source material shall be yard waste trimmings blended with other plant material and manure designed to produce compost high in fungal material.

2. Compost containing available nutrients are preferred; the use of unstable or immature compost is not approved.

3. Compost shall be commercially prepared and meet US Compost Council (USCC) Seal of Testing Assurance (STA) including the following parameters:

   a. The compost will possess no objectionable odors and shall not resemble the raw material from which it was derived.

   b. Provide only compost that has not received the addition of liming agents or ash by-products.

   c. The compost shall be weed-free

   d. Compost shall meet the following parameters:

Parameters[1]	**Reports as (units of measure)**	**General Range**
pH	pH units	5.5 - 7.5
Soluble Salt Concentration (electrical conductivity)	dS/m	Less than 3.0
Moisture Content	%, wet weight basis	30-60
Organic Matter Content	%, dry weight basis	30-65[2]
Particle Size	% passing a selected mesh size, dry weight basis	Minimum of 98% pass-through ¾" screen or smaller

Parameters[1]	**Reports as (units of measure)**	**General Range**
Bulk Density	pounds/cubic yard	Unit only needed for estimating application rate of organic amendment.
Chemical Contaminants[3]	Mg/kg (ppm)	Meet or exceed US EPA Class A standard, 40 CFR 503.13, Tables 1 and 3 levels
Biological Contaminants[4] Select Pathogens Fecal Coliforms Bacteria, or Salmonella	MPN per gram per day dry weight; MPN per 4 grams per dry weight	Meet or exceed US EPA Class A standard, 40 CFR 503.32(a) levels
[1]Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council) [2]This is the typical range of organic matter content found in compost. An organic matter content greater than 65% would also be acceptable. [3]US EPA Class A Standard, 40 CFR 503.13, Table 1 and 3 levels = Arsenic 41 ppm, Cadmium 39ppm, Copper 1,5Z0ppm, Lead 300ppm, Mercury 17ppm, Molybdenum 75ppm, Nickel 420ppm, Selenium 100ppm, Zinc 2,800ppm. [4]US EPA Class A standard, 40 CFR 503.32(a) levels = Salmonella <3 MPN/4 grams of total solids or Fecal Coliform <1000 MPN/gram of total solids.		

2.3 ORGANIC MULCH: MULCH SHALL BE SHREDDED WOOD, AND NON-DYED, PREFERABLY REDWOOD CHIPS, AND SHALL MEET THE FOLLOWING PARAMETERS:

1. Mulch shall be commercial “Walk on" grade, weed-free, coarse, ground, from trees and other wood structures.

2. The size range shall be a minimum (less than 25% or less of volume) fine particles 3/8 inch or less in size, and a maximum size of individual pieces (largest 20% or less of volume) shall be approximately 1 to 1-1/2 inch in diameter and maximum length of approximately 4 to 6 inches. It is understood that mulch quality will vary significantly from supplier to supplier and region to region. The above requirements may be modified to conform to the source material from locally reliable suppliers as approved by the Landscape Architect.

2.4 HIGH LIGNIN PINE BARK NUGGETS: UNCOMPOSTED PINE NUGGETS FROM THE SHREDDED BARK OF PINE TREES A MAXIMUM OF 2 INCHES IN PARTICLE SIZE. PINE BARK NUGGETS SHALL CONTAIN A NEGLIGIBLE AMOUNT OF OTHER WOODY MATERIALS AND BE FREE OF TRASH AND INVASIVE SPECIES SEED. PINE BARK NUGGETS MAY BE PRODUCED ON-SITE USING APPROVED AVAILABLE WASTE PINE OR PURCHASED FROM OFF-SITE VENDORS.

2.5 PLANTING SOIL MIX

A. Planting Mix shall be produced on-site in all mulched planting areas. Topsoil shall be mixes of Existing Soil and the following amendments.

a. Compost: Mix 3 cubic yards/1000 sq. ft tilled into the top 6 inches.

b. Sulfur-coated urea (43-0-0): Mix 5 lbs/1000 sq. ft filled into the top 6 inches.

c. Triple Superphosphate (0-45-0): Mix 1 lb/1000 sq. ft filled into the top 6 inches.

d. Potassium Sulfate (0-0-50): Mix 3 lbs/1000 sq. ft filled into the top 6 inches.

B. Planting Mix has a final target soil organic matter of 4.5 – 5%. If organic amendment contains significant amount of phosphorus or potassium, the triple superphosphate or potassium sulfate should be decreased or omitted accordingly.

C. After planting, install 3 inches of Mulch over soil surface, keeping the Mulch 6 inches away from plant crowns.

2.6 PLANTING BACKFILL SOIL MIX

A. The top 12 inches of backfill around the sides of the rootball of trees and shrubs may be prepared as follows-5 parts Site Soil, 1 part Composted Greenwaste Organic Amendment. This mixture will be uniformly blended with:

a. Sulfur-coated urea (43-0-0): ¼ lb per Cubic Yard of Backfill

b. Triple Superphosphate (0-45-0): 1/8 lb per Cubic Yard of Backfill

c. Potassium Sulfate (0-0-50): 1/8 lb per Cubic Yard of Backfill

B. Backfill below 12 inches required for 24 inch box or larger material should not contain the organic amendment or sulfur-coated urea but should still contain the triple superphosphate and potassium sulfate at the recommended rates

2.7 IMPORT SOIL MIX

A. USDA classification of fraction passing 2.0-mm sieve: sandy loam, loamy sand or sand and conforming to the following:

Class	Particle Size Range	Maximum, %	Minimum, %
Coarse sand	.5-2.0 mm	25	0
Silt plus clay	<.05 mm	30	10
Other classes			
Gravel	2-13mm	10	0
Rock	½-1inch	10% by volume with none >1 inch	
Organic		15%	0

1. Chemistry/Suitability Considerations

a. Salinity: Saturation Extract Conductivity (ECe); Less than 3.0 dS/m @ 25°CSodium: Sodium Adsorption Ratio (SAR); Less than 6.0

b. Boron: Saturation Extract Concentration; Less than 1.0 ppm

c. Reaction: pH of Saturated Paste; 5.5 - 7.5 without high lime content

B. Soil to contain sufficient quantities of available nitrogen, phosphorus, potassium, calcium and magnesium to support normal plant growth. In the event of nutrient inadequacies, provisions shall be made to add required materials prior to planting.

PART 3 PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. Complete rough grading prior to ripping and amending.

B. Take soil samples of existing soil around representative areas of the site, test for chemical and physical properties, test compaction, and make appropriate adjustments. Contractor to schedule, pay, and coordinate soil testing by an independent laboratory, recognized by the State Department. Expert listed below or approved alternate.

Lucchesi Plant & Soil Consulting, LLC

Los Gatos, CA 95032-0401

United States

(408) 337-2575

info@lucchesiconsulting.com

C. All soil grading, subsoiling and tilling must be completed at times when soil moisture is below field capacity

D. Deep soil compaction from previous grading filling or compaction forces makes the soil not suitable for planting.

E. Soil Ripping and Amending:

1. Using a tracked dozer or similar large grading equipment, loosen the soil by dragging a ripping shank or chisel through the soil to depths of 18 – 24 inches with ripping shanks spaced 18 inches or less apart in two directions. The number of shanks per pull is dependent on the degree of soil compaction and the size of the dozer.

2. Spread pine bark nugget over the soil surface before using the dozer or similar equipment to loosen the soil as describe above. The bark nuggets shall be mixed through the soil to a depth of 18 inches.

3. Spread the amendments over the ripped area and till into the top inches, as indicated in 2.2.

4. Following soil ripping and fracturing, the average penetration resistance should be 250 PSI or less to the depth of ripping or fracturing.

5. Do not start planting into ripped or fractured soil until the soil has settled and leave grades sufficiently high to anticipate 10-15% of ripped soil depth.

6. Installed Planting Soil Mix shall have a soil density through the required depth of the installed layers of soil, such that the penetrometer reads approximately 75 to 250 psi at soil moisture approximately the mid-point between wilt point and field capacity. This will be approximately between 75 and 82% of maximum dry density standard proctor.

7. Maintain moisture conditions within the Planting Soil during installation or modification to allow for satisfactory compaction. Suspend operations if the Planting Soil becomes wet.

8. Limit paths of construction vehicle traffic to reduce the impact of compacting in Planting Soils.

F. The Landscape Architect shall verify that existing soil in designated planting areas is suitable for the specified modification prior to planting work in that area. The Landscape Architect may require further modification of damaged existing soil up to and including removal and replacement with soil of equal quality to the soil that would have resulted from alteration.

G. The contractor is responsible for providing soil testing after import/amendment from the same expert as listed in 3.1 B to confirm levels are achieved as desired, further amendment to occur if not, and to be signed off by the Landscape Architect for approval.

3.2 FINE GRADING

The Landscape Architect shall approve all rough grading prior to the fine grading, planting, and mulch over the finished grade.

A. Grade the finished surface to meet the finished grades shown on the drawings, allowing the finished grade to remain higher (10-15% of depth of soil modification) than the one indicated on the plan to anticipate settlement over the first year.

B. Utilize hand equipment, small garden tractors with rakes or toothed buckets, or equipment with low ground pressure tires to keep surface rough without further compaction. Do not use equipment that will smooth, compress, and/or compact the finished grade.

C. Provide smooth, rounded transitions between slopes of different gradients and direction unless otherwise shown on drawings or directed by the Landscape Architect.

3.3 CLEANUP

A. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace material to a depth as directed by the Lead Landscape Architect; reshape at optimum moisture content to the required density.

3.4 SUBSTANTIAL COMPLETION ACCEPTANCE

A. The Landscape Architect shall review the Planting Soil work and determine if the work is substantially complete upon written notice from the Contractor.

3.5 FINAL ACCEPTANCE/SOIL SETTLEMENT

A. At the end of the plant warranty and maintenance period, the soil installation work and all provisions of the contract are complete, and work is satisfactory.

B. The Contractor shall restore any soil settlement and/or erosion areas to grades show on the drawings. When restoring grades, remove plants and mulch and add appropriate Planting Soil before restoring the planting and mulch over the finished grade. Do not place additional soil over the plant's root ball, on top of plants, or top of the mulch.

END OF SECTION 32 91 13

SECTION 32 93 00

PLANTING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Trees – Along Parkway Trail, Palm Ave and Woodward West Entrances, Waypoints

B. Shrubs – Palm Ave and Woodward West Entrances, Waypoints

C. Organic mulch – at tree and shrub planting per details.

1.2 RELATED WORK

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Section 32 93 20 Hydroseed

2. Section 32 91 13 Soil Planting Prep

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Photographs of trees to be shipped to site. Include a person or measurement stick in the photographs to show scale. Include close-up of trunk with ruler to show trunk caliper.

C. Samples for Verification: For each of the following:
1. 0.5 lb of organic mulch in labeled plastic bag.

2. 0.5 lb of decomposed granite in labeled plastic bag

D. Product Certificates: For each type of manufactured product, signed by product manufacturer, and complying with the following:

1. Manufacturer's certified analysis for standard products.

2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

E. Qualification Data: For landscape Installer.

F. Planting Schedule: Indicating anticipated planting dates for exterior plants.

1.4 DEFINITIONS

A. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required. Plants to be contract grown- per section – Plant Sourcing and Mycorrhizae.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Topsoil: The top layer of soil from an undisturbed site, described as the A horizon. Topsoil is rich in organic content, is usually dark in color, and has desirable physical properties for plant growth.

D. Surface soil: Soil which may be used to produce acceptable planting soil, but which is not necessarily the A horizon.

E. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments to meet the requirements specified herein and per the soil test report.

F. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

1.5 QUALITY ASSURANCE

Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of exterior plants.

Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when exterior planting is in progress.

A. Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."

B. Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6 inches above ground for trees up to 4-inch caliper size, and 12 inches above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.

C. Observation: Landscape Architect will observe trees at place of growth and shrubs at site before planting for compliance with requirements for genus, species, variety, size, and quality. Landscape Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, insects, injuries, and latent

defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Landscape Architect of sources of planting materials fourteen days in advance of delivery to the site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not prune trees and shrubs before delivery, except as approved by Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.

B. Handle planting stock by root ball.

C. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants trees in shade, protect from weather and mechanical damage, and keep roots moist.

1. Do not remove container-grown stock from containers before time of planting.

2. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

1.7 COORDINATION

A. Planting Restrictions: Plant during the following period. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.In subparagraphs below, add actual dates for spring and fall plantings.
Fall Planting: October 1 – December 31.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 WARRANTY

A. Special Warranty: Warrant the following plants for the warranty period indicated against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, or incidents that are beyond Contractor's control.

1. Warranty periods below are examples only for some categories of exterior plants; revise to suit Project.

2. Warranty Period for Trees and Shrubs: One year from date of Substantial Completion.

3. Warranty Period for Ground Cover and Plants: Six months from date of Substantial Completion.

4. Remove dead plants immediately. Replace immediately unless required to plant in the succeeding planting season.

5. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

6. A limit of one replacement of each exterior plant will be required, except for losses or replacements due to failure to comply with requirements.

1.9 MAINTENANCE

A. Trees and Shrubs: Maintain for the following maintenance period by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening, and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.

1. Maintenance Period: 90 days from date of Substantial Completion.

B. Ground Cover and Plants: Maintain for the following maintenance period by watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings:

1. Maintenance Period: 90 days from date of Substantial Completion.

PART 2 PRODUCTS

2.1 TREE AND SHRUB MATERIAL

A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Grade: Provide trees and shrubs of sizes and grades complying with ANSI Z60.1 for type of trees and shrubs required. Trees and shrubs of a larger size may be used if acceptable to Owner's Authorized Representative, with a proportionate increase in size of roots or balls.

C. Contract grow native tree and shrub species having been propagated and grown to promote beneficial mycorrhizae associations by inoculating the germination medium with native mycorrhizae appropriate for the species.

1. Qualified Nursery: Intermountain Nursery, 30443 Auberry Rd, Prather, CA 93651

D. Label at least one tree and one shrub of each variety and caliper with a securely attached, waterproof tag bearing legible designation of botanical and common name.

E. If formal arrangements or consecutive order of trees or shrubs is shown, select stock for uniform height and spread, and number label to assure symmetry in planting.

2.2 SHADE AND FLOWERING TREES

A. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with ANSI Z60.1 for type of trees required. Leaders shall not have been pruned at the nursery and shall not be pruned by Contractor.

1. Provide container-grown trees.

2.3 PLANTS

A. Perennials: Provide healthy, field-grown plants from a commercial nursery, of species and variety shown or listed.

2.4 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
1. Type: Ground recycled and composted wood and bark chips from yard waste, 1” – 3” particle size range. No dyes, free of disease, and sourced locally to Fresno (within 50 miles).

2. Z-Best Organic Mulch, or approved equal.

2.5 MISCELLANEOUS PRODUCTS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive exterior plants for compliance with requirements and conditions affecting installation and performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and existing exterior plants from damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple exterior plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before planting. Make minor adjustments as required.

D. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
   1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

3.3 PLANTING BED ESTABLISHMENT

A. Excavate and remove unsuitable soil as indicated.

B. Rip and cross rip subgrade to depth per details, loosen all undisturbed or compacted areas.

C. Spread and thoroughly blend amendment materials with the top 6 inches of soil, to finish grade of planting area. Lightly compact. See 2.5 32 84 00 PLANTING SOIL PREP.

D. Do not proceed if planting soil or subsoil is muddy or excessively wet.

E. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

F. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

3.4 TREE AND SHRUB EXCAVATION

A. Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.

B. Obstructions: Notify Owner's Authorized Representative if unexpected rock, pavement, or obstructions detrimental to trees or shrubs are encountered in excavations.

3.5 TREE AND SHRUB PLANTING

A. Set container-grown stock plumb and in center of pit or trench with top of root ball flush with adjacent finish grades per details.
   1. Carefully remove root ball from container without damaging root ball or plant.

   2. The top 12 inches of backfill around the sides of the rootball of trees and shrubs may consist of the Planting Backfill Soil Mix (2.5, 32 84 00 PLANTING SOIL PREP).

   3. Place backfill around root ball in layers, tamping to settle fill and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Place and tamp final layer of planting soil mix and water thoroughly.

3.6 PLANT PLANTING

A. Set out and space plants as indicated.
B. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

C. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

D. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.7 PLANTING BED MULCHING

A. Mulch backfilled surfaces of all planting beds and other areas indicated.

   1. Organic Mulch: Apply organic mulch to thickness indicated, and finish level with adjacent finish grades. Do not place mulch within 6 inches of trunks or stems.

3.8 CLEANUP AND PROTECTION

A. During exterior planting, keep adjacent paving and construction clean and work area in an orderly condition.

B. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged exterior planting.

3.9 DISPOSAL

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 02 93 00

SECTION 32 93 20
HYDROSEEDING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Hydroseeding - The Contractor shall provide work and equipment to hydroseed the areas and all disturbed areas per the limit of grading as shown on the plans, and as directed by the lead Landscape Architect following best practices.

B. The hydroseeding application system selection regarding tank size, mixing system (paddles or agitation jets), pump, and nozzle application size shall follow the applicator and manufacturers's recommendations for this project and seed types.

C. Hydroseeding ingredients should be thoroughly blended before application to achieve uniform coverage of all components and minimizing the risk of seed breakage in the hydraulic seeder tank.

D. The timing of hydroseeding and the irrigation regime for establishment shall occur from September 1 through February 15th, ideally before a 5-10 day period of precipitation.

E. The seed supplier shall give recommendations on the most favorable cleaning requirements for hydroseeding associated with each selected species. Seeds to be used in hydroseeding do not have to be as clean as other methods of seeding. Some species might benefit from being used in the mix conserving seed bracts, palea and lemma in the case of grasses, or other protective structures. Other species might perform better without protective structures and require thorough cleaning.

F. The seed supplier shall give the contractor recommendations on the maximum time that seeds for selected species can spend in the slurry tank without compromising the germination capacity.

G. The seed supplier shall also recommend the seeds' moisture content to reduce breakage and maximize germination rates.

H. The seed supplier shall provide verification of seed uniformity, purity, and germination standards.

1.2 RELATED WORK:

A. Section 32 91 13 – Planting Soil Preparation

B. Section 32 93 00 – Planting

PART 2 PRODUCTS

2.1 SEED MIXES

A. Hydroseed Mix

1. Species:

Species		PLS lbs/acre
Botanical name	Common name	
Eschscholzia californica	California Poppy	3
Lasthenia glabrata	Yellowray Goldfields	1
Festuca idahoensis	Idaho Fescue	4
Festuca rubra 'Molate'	Red Fescue	5
Festuca californica	California Fescue	1.5
Bouteloua gracilis	Blue Grama	4
Elymus glaucus	Blue Wildrye	6
Melica californica	California Melicgrass	5

2. Source:

S&S Seeds

zach@ssseeds.com

805.684.0436

Or Approved Equal

2.2 HYDRAULIC MULCH

A. The Hydraulic Mulch (HM) must be 100% biodegradable and composed of 100% recycled processed wood fibers and cellulose fibers. The HM shall be phytosanitized, free from plastic netting, and should create, upon application, an intimate bond with the soil surface to create a continuous, porous, absorbent, and flexible, resistant blanket that allows for rapid germination and accelerated plant growth.

B. Submit manufacturer product data and installation instructions. Include required substrate preparation, list of materials, and application rate.

C. Submit a letter of certification that the product meets or exceeds all technical and packaging requirements.

D. Deliver materials and products in UV and weather-resistant factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage, weather, excessive temperatures, and construction operations.

E. All components of the HM shall be pre-packaged by the manufacturer to assure both material performance and compliance with the following values: Processed Wood Fibers (min) 70%; Cellulose Fibers (max) – 30%.

F. The HM application rates will be defined based on the manufacturer recommendations and the slope gradient condition. A typical value for slopes below the 4H to 1V ratio is 2,000lbs/ac, for slopes above that ratio, typical value is 2,500 lb.ac.

G. Following the applicator's recommendation, to reduce the damage to the seeds derived from the hydroseeding process, the brand of HM might include a wetting agent or tackifier. This component should be 100% biodegradable, high-viscosity colloidal polysaccharide.

2.3 FERTILIZER

A. Organic Fertilizer 7-2-1 at 1,000 lbs./acre

B. AM-120 Mycorrhizal inoculum at 60 lbs./acre

2.4 HYDROGEL

A. Hydrogel shall be incorporated to promote the retention and availability of water.

B. The hydrogel must be potassium propenoate-propenamide copolymer, and shall be non-toxic (FHSA Std), with 7 – 7.5 pH, and non-phytotoxic.

C. The hydrogel shall be mixed while the tank is filling with water at a rate of 15lbs/ac. For slope applications, use 24lbs/ac.

D. Option to the contractor to use M-Binder @100 ibs. / acre per manufacturers re-cordations

2.5 EROSION CONTROL

A. Slope flat to 4:1:

1. Standard Hydroseeding Slurry as above with or without any 1 of the following:

2. Erosion Control Blanket—Temporary 10-month protection

3. Bonded Fiber Matrix @ 2,500 lbs/acre

B. Slope 3:1 to 2:1:

1. Standard Hydroseeding Slurry as above any 1 of the following:

2. Wood Fiber Mulch @ 1,500 – 2,000 lbs/acre

3. Erosion Control Blanket—Temporary 12-18 -month protection

4. Flexible Growth Medium @ 3,500 lbs/acre

5. Bonded Fiber Matrix @ 3,000-3,500 lbs/acre

PART 3 EXECUTION

3.1 SOIL PREPARATION

A. Prior to application, scarify or roughen the surface by rolling with a crimping or punching type roller. Track walking shall only be used where other methods are impractical. The final face of slopes should not be bladed or scraped to give a smooth, hard finish. Follow the recommendations of the Civil Engineer for the water retention slopes.

B. Verify that all areas to receive erosion control treatments are free of vegetation and other objectionable material.

C. Verify that grades are final for permanently treated areas and within reasonable standards for temporary treatments.

D. All sloped areas will be uniformly compacted.

E. A critical root area shall be established by an arborist around the existing trees to protect. Within the critical tree root area, the soil may not be disturbed or compacted. Heavy equipment, stored materials, and vehicles may not enter critical root areas, nor may any other activity occur that will result in soil compaction.

3.2 SCHEDULING OF HYDROSEEDING

A. Hydroseeded requires 24 hours to dry before rainfall occurs to be effective.

B. The timing of hydroseeding and the irrigation regime for establishment shall occur from September 1 through February 15th, before a 5-day period of precipitation.

C. Irrigation is required if precipitation does not occur. Contractor to plan for the need to irrigate in the case precipitation does not occur.

3.3 MONITORING AND MAINTENANCE

A. Hydromulched areas and slopes should be inspected periodically for damage due to wind, water, or human disturbance.

B. No transit of vehicles or people should be allowed in hydroseeded areas. Transit patterns shall be established and followed

C. Damaged areas shall be repaired immediately using hydro mulching at the original specifications; small areas may be repaired using organic mulch (2.1)(D).

END OF SECTION 32 93 20

PROVOST&PRITCHARD
CONSULTING GROUP

455 W Fir Ave, Clovis, CA 93611 • (559) 449-2700
www.provostandpritchard.com

DESIGN MEMORANDUM

To:	Yue Lehman Capital Projects Department – City of Fresno
From:	Andy Kositsky, GE
Job No:	1561-22-025
Subject:	Design – Ramp and Stairs at Palm Avenue and Earthwork on Slope Below Palm Avenue – River West Eaton Trail Extension
Date:	August 7, 2026



DATE SIGNED 8-7-2026

INTRODUCTION

This document presents geotechnical engineering design criteria, design evaluations, and analyses/calculations by Provost & Pritchard Consulting Group (P&P) for the subject ramp, the subject concrete stairs, and earthwork on the fill slope below Palm Avenue at the proposed ramp and stairs. P&P incorporated the designs described herein in our May 11, 2026 project drawings.

BSK Associates (BSK) prepared a May 11, 2023 Geotechnical Investigation Report for the project that presents subsurface data. BSK did not develop geotechnical engineering design criteria for these improvements and design criteria in this document supersede BSK's criteria for lateral earth pressures and footing resistance to loads.

P&P performed our work under our September 29, 2022 agreement.

GEOTECHNICAL ENGINEERING DESIGN CRITERIA

P&P expects that the temporary cutslopes that the contractor makes at the ramp for retaining walls supporting cuts and footing subgrades will expose medium dense silty sand and very stiff to hard sandy silt. We expect that wall backfill will be compacted silty sand and sandy silt – earth material generated from excavations of ground near the constructed walls. We expect that there will be phreatic surfaces that descend to backs of walls supporting cuts as perched groundwater during and soon after wet weather but that subdrains behind walls supporting cuts will intercept most groundwater that would otherwise seep downslope to retaining walls on the downslope sides of the ramp.

P&P expects that temporary cutslopes that the contractor makes for walls for stairs, mat foundations for stairs, and footings for fill walls along stairs will expose medium dense silty sand and very stiff to hard sandy silt. We expect that backfill will be compacted silty sand and sandy silt – earth material generated from excavations of ground near the constructed walls. We expect that there will be no static groundwater in ground that is within 5 vertical feet of mat and footing bottoms.

The subsections that follow present P&P's geotechnical engineering design criteria for various improvements.

RAMP RETAINING WALLS

P&P developed the following geotechnical engineering design criteria for various wall types for the ramp:

Walls Supporting Cuts on the Upslope Side with a Retained Ground Surface that Descends to the Top of Wall

- Lateral earth load: calculate using an equivalent fluid unit weight of 62 pounds per cubic foot (pcf) for the following conditions:
  - Unrestrained
  - 1.5:1 or flatter backfill slope that descends to the top of the wall
  - Drained backfill (with a subdrain)
- Allowable footing bearing capacity: 8,500 pounds per square foot (psf) for dead plus normal duration live loads
- Resistance to lateral loads
  - Passive resistance: calculate using an equivalent fluid unit weight of 345 pcf
    - Ignore the top 10 inches of soil to calculate the passive resistance (considering the contractor will place the proposed fill and pavement over the footing toe after wall construction and the design depth to top of footing is 10 inches beneath the finish grade)
  - Base friction coefficient = 0.35
  - Calculate the total resistance to lateral loads as the sum of the calculated passive and base friction resistance without reduction

Walls Parallel to the Slope with a Retained Ground Surface that is Nearly Level

- Lateral earth load: calculate using an equivalent fluid unit weight of 30 pounds per cubic foot (pcf) for the following conditions:
  - Unrestrained
  - Nearly level finish grade behind the back of wall
  - Drained backfill (with no subdrain considering that groundwater will flow downgradient along the wall alignments)
- Allowable footing bearing capacity: 6,500 pounds per square foot (psf) for dead plus normal duration live loads (lowered considering the slope that will descend from the footing)
- Resistance to lateral loads
  - Passive resistance: calculate using an equivalent fluid unit weight of 100 pcf
    - Ignore the top 12 inches of soil for calculating passive resistance (considering the contractor will place the proposed fill and pavement over the footing toe after wall construction and the design depth to top of footing is 12 inches beneath the finish grade)
  - Base friction coefficient = 0.35
  - Calculate the total resistance to lateral loads as the sum of the calculated passive and base friction resistance without reduction

Walls Supporting Fill on the Downslope Side with a Retained Ground Surface that is Nearly Level

- Lateral earth load: calculate using an equivalent fluid unit weight of 30 pounds per cubic foot (pcf) for the following conditions:
  - Unrestrained
  - Nearly level finish grade behind the back of wall
  - Drained backfill (from subdrain behind cut wall above)
- Allowable footing bearing capacity: 6,500 pounds per square foot (psf) for dead plus normal duration live loads (lowered considering the slope that will descend from the footing)

- Resistance to lateral loads
  - Passive resistance: calculate using an equivalent fluid unit weight of 100 pcf
    - Ignore the top 19 inches of soil for calculating passive resistance (considering the slope that descends from the footing)
  - Base friction coefficient = 0.35
  - Calculate the total resistance to lateral loads as the sum of the calculated passive and base friction resistance without reduction

P&P developed the criteria for lateral earth pressure by using a design internal friction angle of 36 degrees (and omitting cohesion), considering the proposed inclination of the back of the stem (vertical), a design friction angle between a geocomposite drainage blanket and the concrete of 12 degrees, considering the inclination of the finish ground surface behind the wall, and using a design moist to saturated backfill unit weight of 134 pcf. We note that the friction angle between drainage aggregate or a geotextile filter fabric and the wall stem concrete would be higher than 12 degrees (so our design criteria for lateral earth pressure is conservative if the contractor uses drainage aggregate or drainage aggregate wrapped with filter fabric). P&P's design incorporates applying the lateral earth pressure from the finish ground surface over the footing heel to the bottom of the footing heel. We reduced the design equivalent fluid unit weights for the passive resistance by decreasing the estimated ultimate value by a 1.5-factor to limit lateral footing movement. We reduced the allowable bearing capacity and passive resistance for footings supporting walls on the downslope side considering that the descending slope causes a reduced footing capacity.

P&P concludes that drained conditions will occur in backfill behind walls on the downslope sides without subdrains because the subdrains on the upslope sides will intercept seepage and reduce pore pressures in ground behind the downslope walls. Buildup of significant pore pressures in ground behind walls parallel to the slope is unlikely because groundwater will tend to seep downslope and parallel to those walls. Our design therefore includes no subdrains for walls parallel to the slope (at switchback turns) and for walls on downslope sided.

P&P did not develop geotechnical engineering criteria for seismic design because we conclude that static conditions govern considering that the potential ground surface accelerations from earthquake ground motions is low and that the proposed retaining wall heights are relatively low.

P&P evaluated whether the design requires added lateral loads from surcharges. Sources of surcharges would be from footings above walls and from traffic imposed on ground surfaces above walls. We conclude that the design requires no additional lateral earth loads from surcharge. We illustrate this with Section A and Section B (Figure 2 and Figure 3). Figure 1 shows the section locations.

Section A illustrates that there are no footings above the proposed retaining walls that support cuts on the upslopes sides of ramp legs at this section (and that footings supporting low fill walls beyond the section are setback relatively far from those retaining walls supporting cuts).

Section B illustrates that:

- Footings supporting low fill walls on the downslope sides of the ramp legs are set back significantly (horizontally) from cut walls below them
- Footings supporting cut walls are set back significantly from fill walls below them
- The proposed driveway for Phase 2 of the project (and traffic imposed on this driveway) is set back significantly from the cut wall beneath it

STAIRS

P&P developed the following geotechnical engineering design criteria for the stairs for various loading conditions and directions:

Mat – Resistance to Vertical Loads and Lateral Loads from the Longitudinally Aligned Retaining Walls

- Allowable footing bearing capacity: 8,500 pounds per square foot (psf) for dead plus normal duration live loads
- Resistance to lateral loads
  - Passive resistance: calculate using an equivalent fluid unit weight of 400 pcf
  - Base friction coefficient = 0.35
  - Calculate the total resistance to lateral loads as the sum of the calculated passive and base friction resistance without reduction

Mat – Resistance to Vertical Loads and Lateral Loads Directed Downslope

- Allowable footing bearing capacity: 6,500 pounds per square foot (psf) for dead plus normal duration live loads
- Resistance to lateral loads
  - Passive resistance: calculate using an equivalent fluid unit weight of 100 pcf
  - Base friction coefficient = 0.35
  - Calculate the total resistance to lateral loads as the sum of the calculated passive and base friction resistance without reduction

Lateral Earth Loads

- Cross-slope direction: calculate using an equivalent fluid unit weight of 30 pounds per cubic foot (pcf)
- Downslope direction: calculate using an equivalent fluid unit weight of 30 pounds per cubic foot (pcf)
- Additional uniform lateral earth pressure from surcharge imposed on retained ground surface from concrete: calculate using 0.5 times the vertical pressure imposed on the ground surface

The same assumptions for and discussions about the retaining walls for the pedestrian path apply. There are no sources of significant surcharge loads imposed on retained ground surfaces from traffic, footings above walls, and from any other sources.

EARTHWORK ON THE SLOPES

P&P designed parapets with heights of 6 inches for retaining walls on upslopes sides of the ramps that control surface drainage. We conclude that the designed parapets are high enough to prevent overtopping of surface water considering the relatively smaller extents of drainage areas above each ram leg and the expected relatively high infiltration of runoff beneath the ground surface (because the soil consists of sand that has a relatively high hydraulic conductivity). Each ramp leg except for Ramp Leg 1, Ramp Leg 8, and a Portion of Ramp Leg 7 have retaining walls with parapets on the upslope side (see Figure 1 for Ramp Leg locations). For Ramp Leg 1, P&P designed a curb on the upslope side (beneath a cutslope) for surface water control. Ramp Leg 8 and portions of Ramp Leg 7 require no surface drainage along the ramp edges because those areas have no slopes descending to the ramps.

P&P designed hydroseeding for the slope surfaces for erosion control. P&P designed energy dissipators to reduce erosion potential where concentrated surface water flows discharge on ground surfaces. The concentrated surface water flow conditions occur at the upslope side of each switchback for the ramp except

for the first/upper switchback between Ramp Leg 1 and Ramp Leg 2 where surface water that flows behind the retaining wall parapets discharges on the slope beyond the switchback and at the downstream end of the parapet along the upslope side of Ramp 7.

P&P designed retaining walls beneath fill slopes to stabilize those fill slopes. There are no other fill slopes on existing ground surfaces that are sloping (for which additional stabilization measures such as key and bench excavations are required).

DESIGN EVALUATIONS, ANALYSES, AND CALCULATIONS

The subsections that follow summarize our work for the various proposed improvements. Appendix A contains calculations and Figure 1 shows where various calculations apply.

RAMP WALLS

P&P used the ENERCALC computer program to analyze the wall/perform calculations for the wall. Appendix A contains output.

P&P modeled maximum retain heights and steepest backslope inclinations in our design schedule. We modeled the top of wall as being at least 6 inches above the retained ground surface by design (and note that higher parapets provide more weight and more resistance to overturning and sliding). We modeled the thickness of soil over the top of the toe per design. For the walls on the downslope side, we modeled the average thickness of soil over the toe by design (and considering the ground surface will slope over the footing toe). We incorporated the geotechnical engineering design criteria. We modeled the unit weight (soil density) of soil over the footing heel and toe as 134 pounds per cubic foot (pcf).

Because there will be no significant external loads from surcharge pressures and structural connections imposed on the retained ground surface and the wall stem, P&P modeled no surcharge load or loads applied to the stem. Because there will be no significantly high parapet for the stem, we modeled no wind or seismic loads imposed on the stem. Because there is a conclusion that static conditions govern the design, we did not model seismic loads.

P&P input the iterated thickness of the stem, the stem rebar size/spacing/position, the 28-day concrete compressive strength (per design), and the rebar yield strength/grade (per design) – to meet strength design requirements. We modeled a concrete density of 150 pcf.

P&P modeled/iterated the footing toe/heel dimensions, thickness, and depth according to design and to meet requirements for stability safety factors (for overturning and sliding) and strength design. We input the depth of soil to neglect for calculating passive resistance consistent with the geotechnical engineering design criteria, the base friction coefficient from the geotechnical engineering design criteria and let the program check that the design results in the minimum required safety factors (by code) for overturning and sliding.

For the footing (and as we did for the stem), P&P modeled the 28-day concrete compressive strength (per design) and the rebar yield strength/grade/position (per design) – to meet strength design requirements. We modeled a concrete density of 150 pcf.

The program applies the code-based load factors, checks for the code minimum stability safety factors (for service level conditions), and reinforced concrete design (for strength level conditions).

P&P designed the reinforcement to have the minimum requirements for concrete cover (clear spacing). In addition, we designed the horizontal reinforcement to meet code requirements for plastic/shrinkage

reinforcement. The program output contains the requirements depending on element thickness and reinforcement position relative to ground and exposure to air/elements.

The output in Appendix A shows that the bearing pressure at the footing is less than the allowable bearing capacity. The output shows that our designs meet the required safety factors for stability and reinforced concrete strength design.

P&P notes that our design includes a subdrain to reduce pore and seepage pressures and a detail for stepping the footing consistent with code requirements.

P&P incorporated the results and our evaluations in our designs. Our drawings incorporate the designs. We note that we performed calculations for the wall parallel to the slopes along switchbacks, but that we conservatively scheduled those walls consistent with the schedules for walls on the downslope sides.

STAIRS

P&P used the ENERCALC computer program to analyze the wall/perform calculations for the stair side walls. Appendix A contains output.

P&P modeled maximum retain heights in our design schedule. Because there will be no significant external loads from surcharge pressures and structural connections imposed on the retained ground surface and the wall stem, P&P modeled no surcharge load or loads applied to the stem.

P&P input the iterated thickness of the stem, the stem rebar size/spacing/position, the 28-day concrete compressive strength (per design), and the rebar yield strength/grade (per design) – to meet strength design requirements. We modeled a concrete density of 150 pcf.

P&P modeled/iterated the footing toe/heel dimensions, thickness, and depth according to design and to meet requirements for stability safety factors (for overturning and sliding) and strength design.

For the footing (and as we did for the stem), P&P modeled the 28-day concrete compressive strength (per design) and the rebar yield strength/grade/position (per design) - to meet strength design requirements. We modeled a concrete density of 150 pcf.

The program applies the code-based load factors, checks for the code minimum stability safety factors (for service level conditions), and reinforced concrete design (for strength level conditions).

The output in Appendix A shows that the bearing pressure at the footing is less than the allowable bearing capacity. The output shows that our designs meet the required safety factors for stability and reinforced concrete strength design.

P&P verified that the global sliding of the stair met the minimum safety factor. The calculation in Appendix A shows the design that incorporates the overall sliding component based on the weight of the stair, the friction resistance, and the passive resistance of the footing key at each stair landing.

P&P incorporated the results of our designs into our drawings.

PROTECTION AND MAINTENANCE

Imposing heavy and/or concentrated loads on ground surfaces behind the retaining walls must not occur unless P&P re-evaluates our design. Example sources of loads not covered by our design include stockpiles, heavy construction equipment, buildings and improvements imposed on the ground surface behind the walls.

Site maintenance should include periodic cleaning out of drainpipes, surface drainage facilities, and maintaining erosion control provisions/controlling ground surface erosion.

Attached:

Figure 1 – Site Plan
Figure 2 – Ramp Sections
Appendix A – Analyses and Calculations

Figures

KEY TO LOCATIONS OF APPLICABILITY OF CALCULATIONS

1. UPSLOPE SIDES - MAXIMUM RETAINED HEIGHT = 5'-1"
2. UPSLOPE SIDES - MAXIMUM RETAINED HEIGHT = 2'-7"
3. PARALLEL TO SLOPES AT SWITHCHBACKS - RETAINING CUTS MAXIMUM RETAINED HEIGHT = 5'-7"
4. PARALLEL TO SLOPES AT SWITHCHBACKS - RETAINING FILLS MAXIMUM RETAINED HEIGHT = 5'-11"
5. DOWNSLOPE SIDES - MAXIMUM RETAINED HEIGHT OF 6'-8"
6. DOWNSLOPE SIDES OF RAMP - MAXIMUM RETAINED HEIGHT OF 4'-6"
7. 2'-6" RETAINED HEIGHT DESIGN

RAMP LEG 8
RAMP LEG 7
RAMP LEG 6
RAMP LEG 5
RAMP LEG 4
RAMP LEG 3
RAMP LEG 2
RAMP LEG 1
STAIRS
PHASE 2 PALM AVENUE ACCESS ROAD
SD
W
A
B

SCALE IN FEET
0 5 10 20

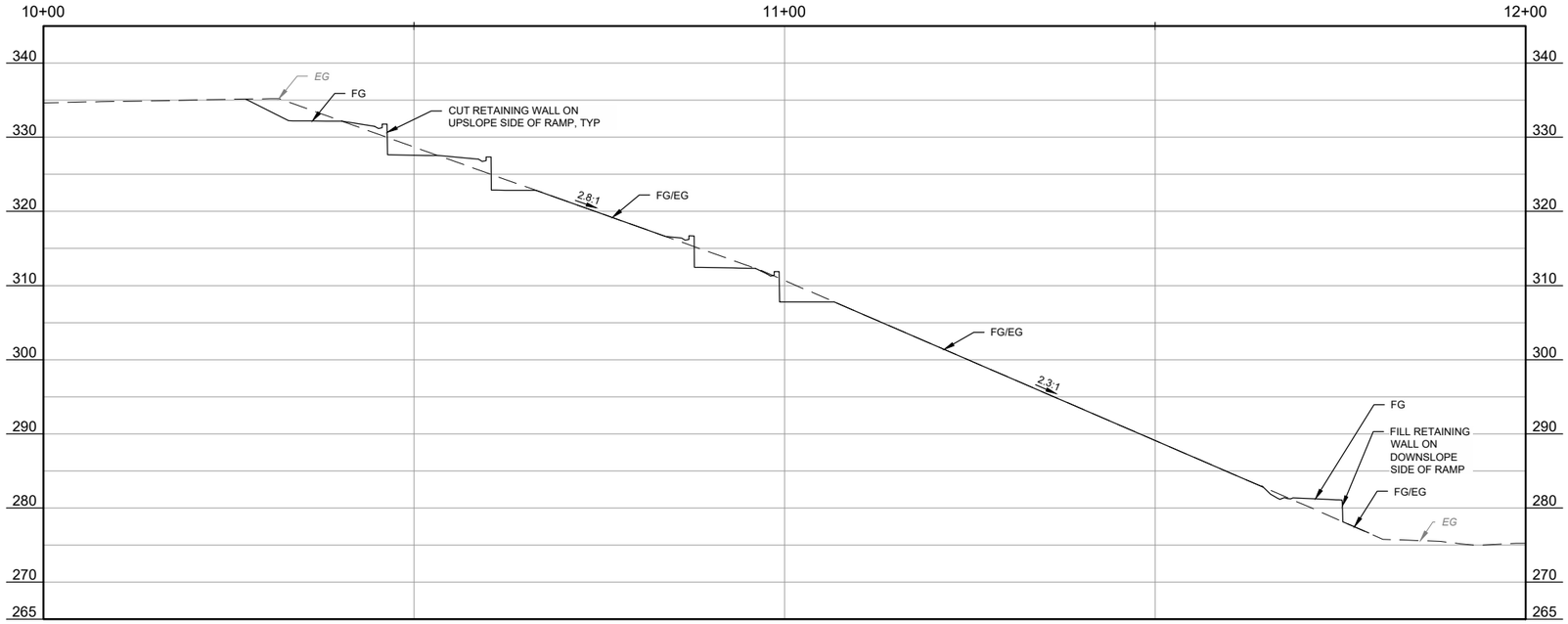
KEYMAP
SAN JOAQUIN RIVER
N. PALM AVE.
W. BLUFF AVE.
W. RIVERVIEW DR.
PERRIN AVE.
COBB RANCH BLVD
41

	RIVER WEST EATON TRAIL EXTENSION CITY OF FRESNO RAMPS SITE PLAN	DESIGN ENGINEER: Michael Osborn DATE: 08-12-2026 JOB NO: 15612205 FIGURE 1

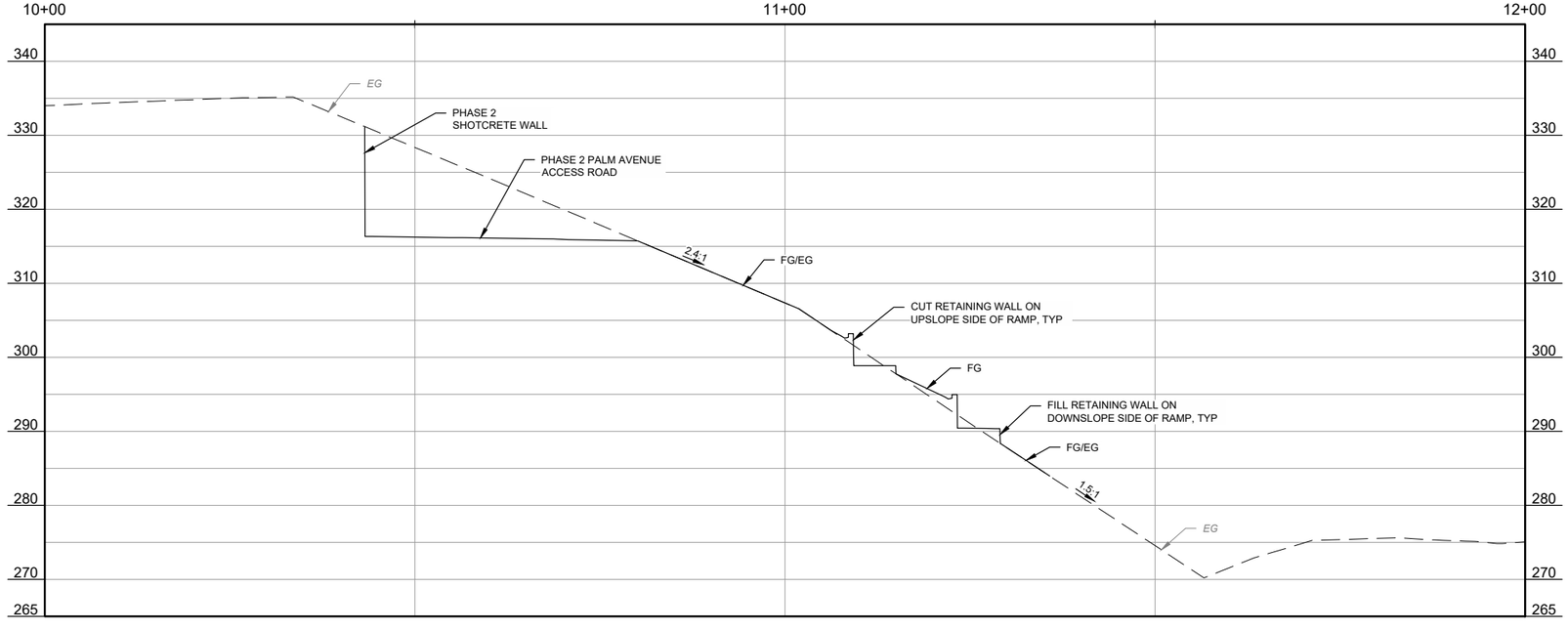
7.100

8/12/2026 8:03 AM G:\fresno_city of-1561115612025-river west eaton trail extension\300 CAD\340 sheet sets\99_Exhibits\FIGURE 1 EXHIBIT.dwg - Jordan Noel

SECTION A



SECTION B



SCALE IN FEET
0 5 10 20

7.101

	RIVER WEST EATON TRAIL EXTENSION	DESIGN ENGINEER: Michael Osborn
		DATE: 08-12-2026
	CITY OF FRESNO	JOB NO: 15612205
	RAMP SECTIONS	FIGURE 2

8/12/2026 8:02 AM G:\fresno_city of\-15611\15612205-river west eaton trail extension\300 CAD\340 sheet sets\99_Exhibits\FIGURE 2 AND 3 EXHIBIT.dwg -Jordan Noel

Appendix A

Analyses and Calculations

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet

Code Reference

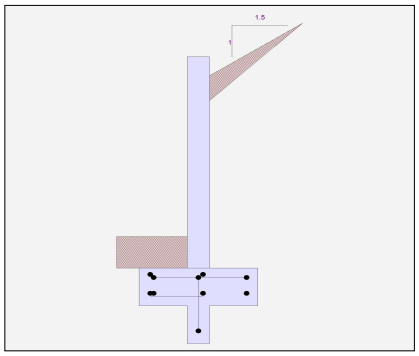
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	5.10 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	1.50
Height of Soil over Toe	=	10.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	8,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	62.0 psf/ft
	=	
Passive Pressure	=	345.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	10.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet

Design Summary

Wall Stability Ratios

Overturning	=	1.55	OK
Sliding	=	1.51	OK
Global Stability	=	1.51	
Total Bearing Load	=	2,614 lbs	
...resultant ecc.	=	3.91 in	
Soil Pressure @ Toe	=	1,177 psf	OK
Soil Pressure @ Heel	=	180 psf	OK
Allowable	=	8,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,648 psf	
ACI Factored @ Heel	=	252 psf	
Footing Shear @ Toe	=	4.3 psi	OK
Footing Shear @ Heel	=	18.2 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	1,441.9 lbs	
less 100% Passive Force	-	1,265.0 lbs	
less 100% Friction Force	-	914.8 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	14.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.696**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	1,290.1		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	2,193.2		
Moment.....Allowable	=	3,148.5		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	25.3		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.124 in2/ft		
(4/3) * As :	0.1653 in2/ft	Min Stem T&S Reinf Area 0.806 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1653 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1714 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	1.08 ft
Heel Width	=	1.58
Total Footing Width	=	2.66
Footing Thickness	=	12.00 in
Key Width	=	6.00 in
Key Depth	=	12.00 in
Key Distance from Toe	=	1.08 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	1,648	252	psf
Mu' : Upward	=	851	257	ft-#
Mu' : Downward	=	183	2,026	ft-#
Mu: Design	=	668	1,769	ft-#
phiMin	=	12,983	12,983	ft-#
Actual 1-Way Shear	=	4.34	18.22	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 7.00 in
Heel Reinforcing = # 4 @ 7.00 in
Key Reinforcing = # 4 @ 14.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.69 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#		.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)		1,441.9	2.27	3,277.9	Soil Over HL (ab. water tbl)	738.1	2.12	1,564.7
HL Act Pres (be water tbl)					Soil Over HL (bel. water tbl)		2.12	1,564.7
Hydrostatic Force					Watre Table			
Buoyant Force	=				Sloped Soil Over Heel	52.1	2.30	119.8
Surcharge over Heel	=				Surcharge Over Heel			
Surcharge Over Toe	=				Adjacent Footing Load			
Adjacent Footing Load	=				Axial Dead Load on Stem			
Added Lateral Load	=				* Axial Live Load on Stem			
Load @ Stem Above Soil	=				Soil Over Toe	120.6	0.54	65.1
	=				Surcharge Over Toe			
					Stem Weight(s)	420.0	1.33	558.6
					Earth @ Stem Transitions			
					Footing Weight	399.0	1.33	530.7
					Key Weight	75.0	1.33	99.8
					Vert. Component	808.9	2.66	2,151.7
Total	=	1,441.9	**O.T.M.** =	3,277.9	**Total =**	2,613.7 lbs	**R.M.=**	5,090.4

Resisting/Overturning Ratio = **1.55**

Vertical Loads used for Soil Pressure = 2,613.7 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.069	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.39 in
As Provided =	0.1714 in2/ft
As Required =	0.1653 in2/ft

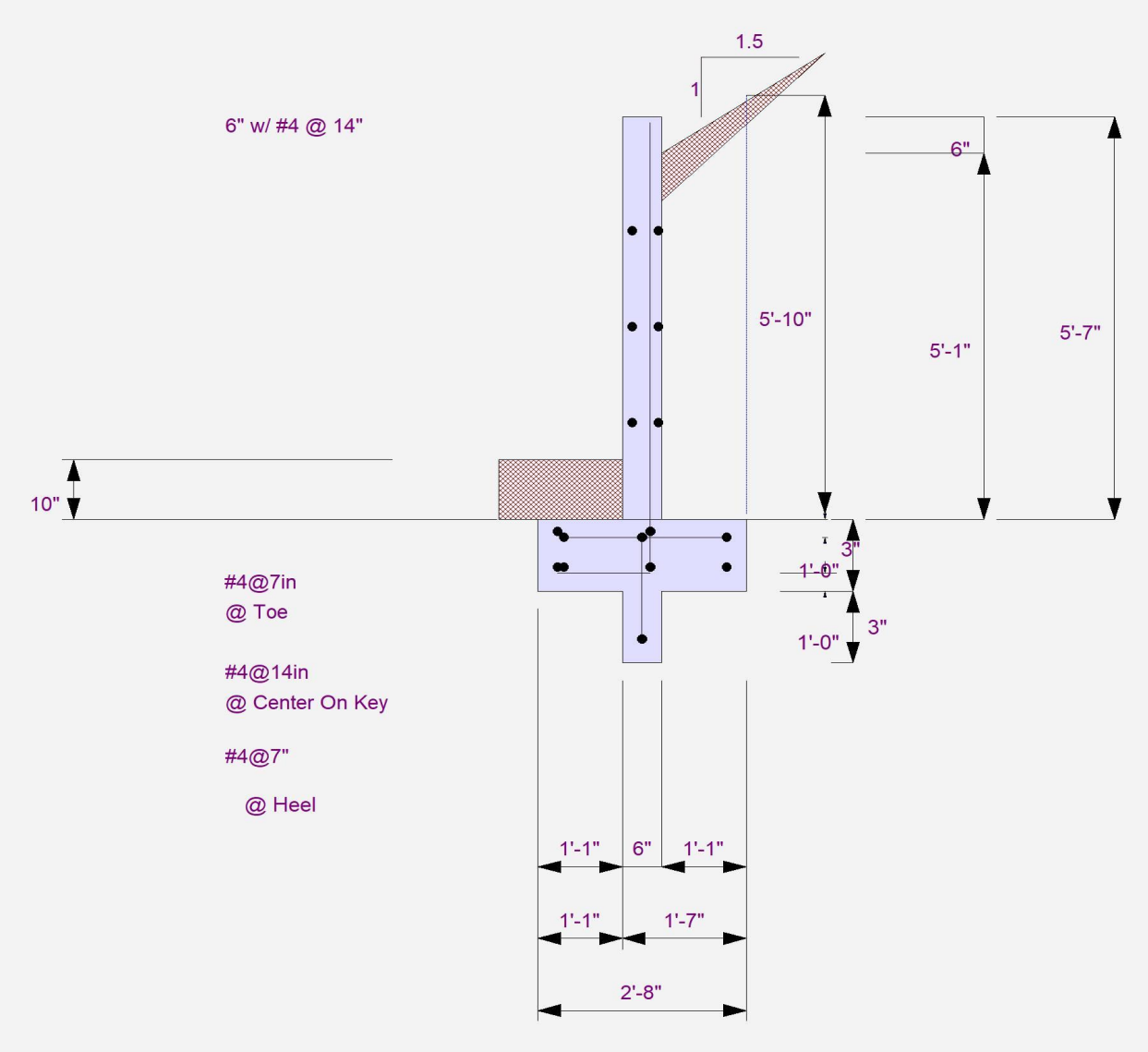
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet



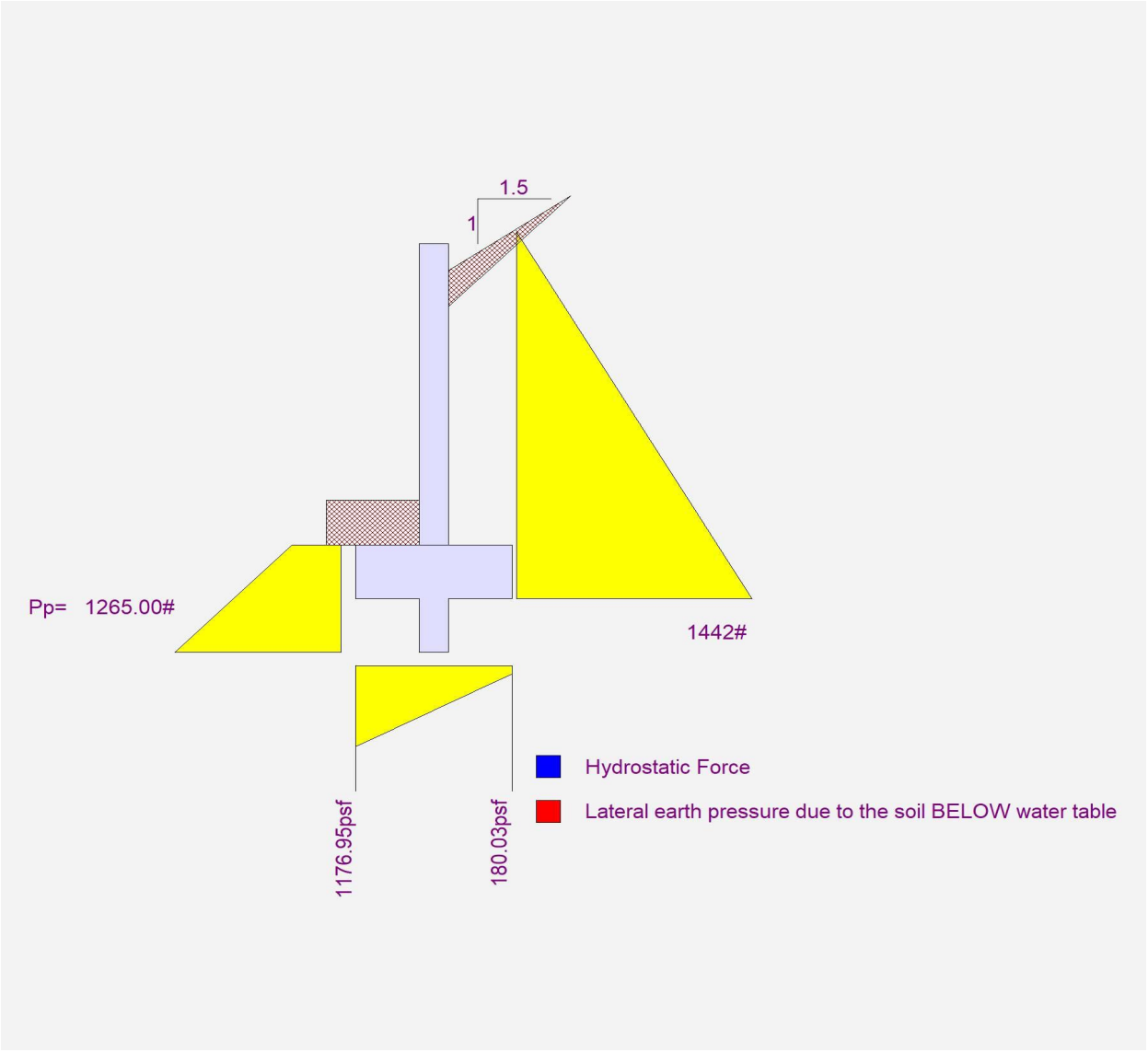
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 5.1 feet



Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet

Code Reference

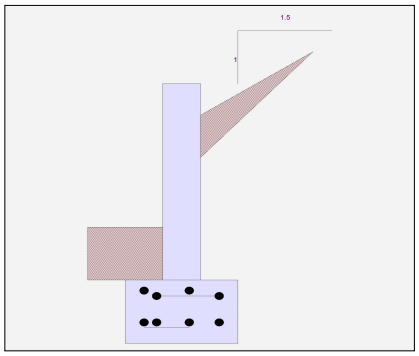
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	2.60 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	1.50
Height of Soil over Toe	=	10.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	8,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	62.0 psf/ft
	=	
Passive Pressure	=	345.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	10.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet

Design Summary

Wall Stability Ratios			
Overturning	=	1.58	OK
Sliding	=	1.67	OK
Global Stability	=	2.58	
Total Bearing Load	=	968 lbs	
...resultant ecc.	=	2.74 in	
Soil Pressure @ Toe	=	891 psf	OK
Soil Pressure @ Heel	=	40 psf	OK
Allowable	=	8,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,248 psf	
ACI Factored @ Heel	=	57 psf	
Footing Shear @ Toe	=	0.7 psi	OK
Footing Shear @ Heel	=	6.0 psi	OK
Allowable	=	82.2 psi	
Sliding Calcs			
Lateral Sliding Force	=	479.6 lbs	
less 100% Passive Force	-	460.0 lbs	
less 100% Friction Force	-	338.7 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	18.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.117**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	335.3		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	290.6		
Moment.....Allowable	=	2,471.3		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	6.6		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0164 in2/ft		
(4/3) * As :	0.0219 in2/ft	Min Stem T&S Reinf Area 0.446 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1296 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1333 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	0.50 ft
Heel Width	=	1.00
Total Footing Width	=	1.50
Footing Thickness	=	12.00 in
Key Width	=	6.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.50 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	1,248	57	psf
Mu' : Upward	=	139	24	ft-#
Mu' : Downward	=	39	294	ft-#
Mu: Design	=	100	271	ft-#
phiMin	=	10,188	10,188	ft-#
Actual 1-Way Shear	=	0.73	6.03	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 9.00 in
Heel Reinforcing = # 4 @ 9.00 in
Key Reinforcing = # 4 @ 14.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.39 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#		.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)		479.6	1.31	628.8	Soil Over HL (ab. water tbl)	174.2	1.25	217.8
HL Act Pres (be water tbl)					Soil Over HL (bel. water tbl)		1.25	217.8
Hydrostatic Force					Watre Table			
Buoyant Force	=				Sloped Soil Over Heel	= 11.2	1.33	14.9
Surcharge over Heel	=				Surcharge Over Heel	=		
Surcharge Over Toe	=				Adjacent Footing Load	=		
Adjacent Footing Load	=				Axial Dead Load on Stem	=		
Added Lateral Load	=				* Axial Live Load on Stem	=		
Load @ Stem Above Soil	=				Soil Over Toe	= 55.8	0.25	14.0
	=				Surcharge Over Toe	=		
					Stem Weight(s)	= 232.5	0.75	174.4
					Earth @ Stem Transitions	=		
					Footing Weight	= 225.0	0.75	168.8
					Key Weight	=	0.75	
					Vert. Component	= 269.1	1.50	403.6
Total	=	479.6	**O.T.M.** =	628.8	**Total =**	967.8 lbs	**R.M.=**	993.3

Resisting/Overturning Ratio = **1.58**
Vertical Loads used for Soil Pressure = 967.8 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.051	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.45 in
As Provided =	0.1333 in2/ft
As Required =	0.1296 in2/ft

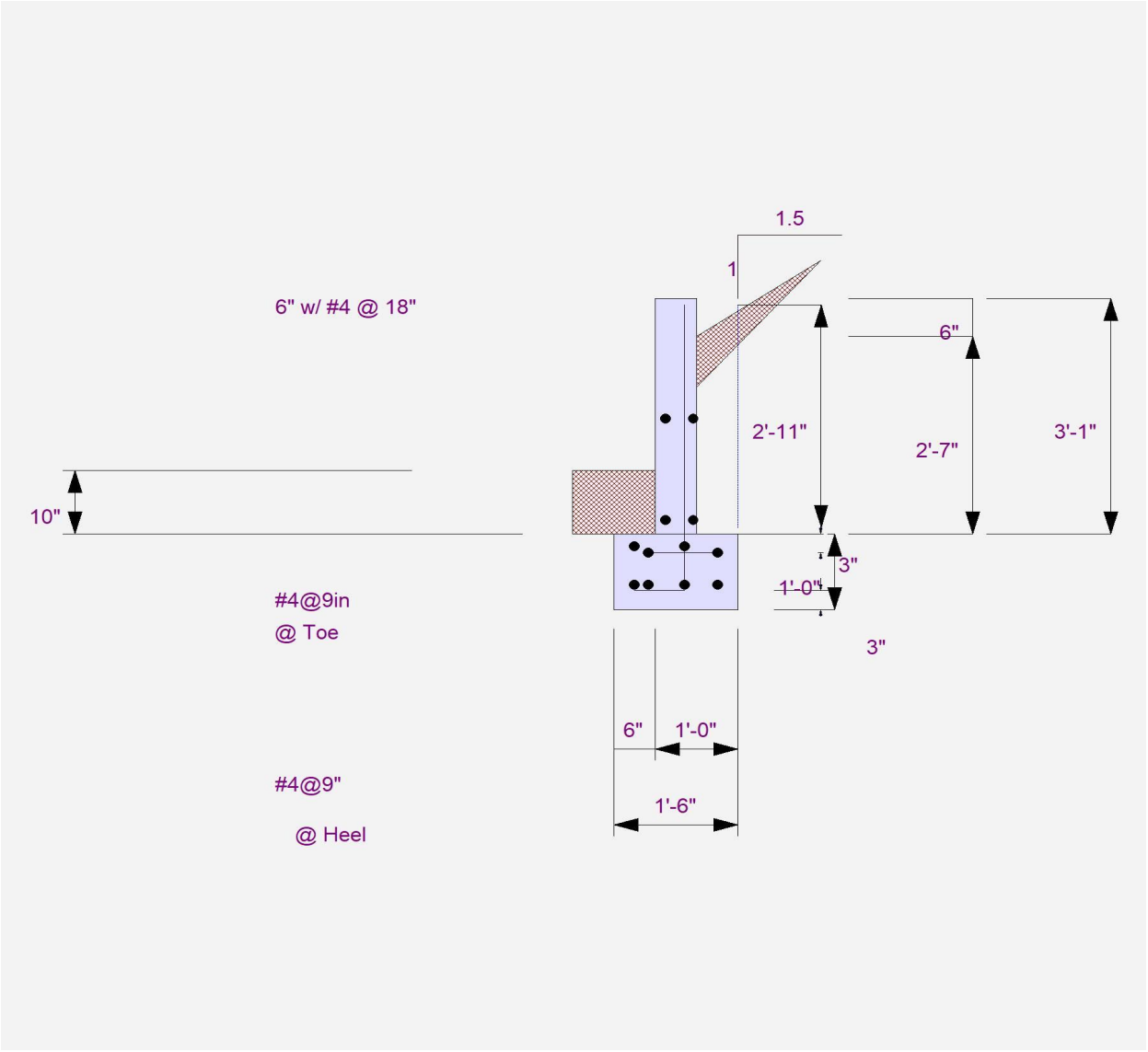
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet



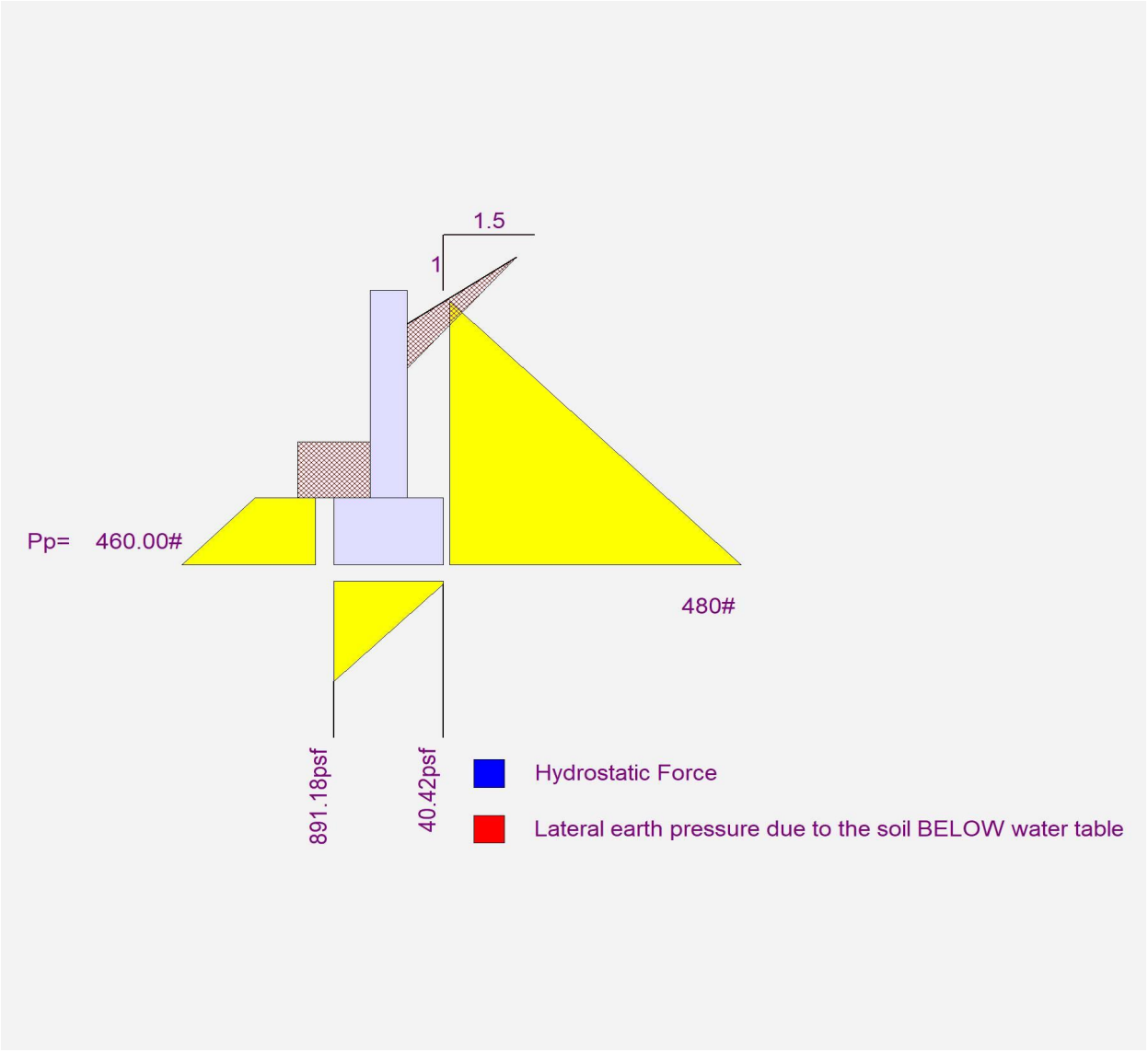
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Upslope sides - maximum retained height = 2.6 feet



Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet

Code Reference

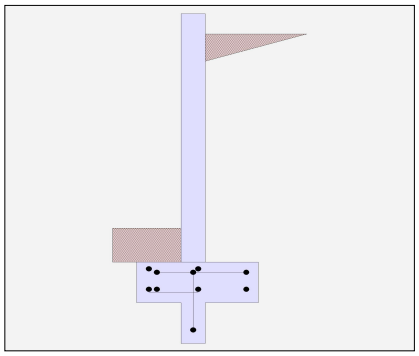
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	5.60 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	10.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	6,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	30.0 psf/ft
	=	
Passive Pressure	=	100.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	10.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet

Design Summary

Wall Stability Ratios

Overturning	=	1.93	OK
Sliding	=	1.55	OK
Global Stability	=	2.78	
Total Bearing Load	=	1,839 lbs	
...resultant ecc.	=	6.41 in	
Soil Pressure @ Toe	=	1,688 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	6,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	2,363 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	3.9 psi	OK
Footing Shear @ Heel	=	8.6 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	653.4 lbs	
less 100% Passive Force	-	366.7 lbs	
less 100% Friction Force	-	643.5 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	18.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.568**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	752.6		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	1,404.9		
Moment.....Allowable	=	2,471.3		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	14.8		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0794 in2/ft		
(4/3) * As :	0.1059 in2/ft	Min Stem T&S Reinf Area 0.878 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1296 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1333 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	0.92 ft
Heel Width	=	1.60
Total Footing Width	=	2.52
Footing Thickness	=	12.00 in
Key Width	=	6.00 in
Key Depth	=	12.00 in
Key Distance from Toe	=	0.92 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	2,363	0	psf
Mu' : Upward	=	859	79	ft-#
Mu' : Downward	=	133	654	ft-#
Mu: Design	=	726	575	ft-#
phiMin	=	10,188	10,188	ft-#
Actual 1-Way Shear	=	3.92	8.59	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 9.00 in
Heel Reinforcing = # 4 @ 9.00 in
Key Reinforcing = # 4 @ 9.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.65 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#	.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	653.4	2.20	1,437.5			
HL Act Pres (be water tbl)						
Hydrostatic Force						
Buoyant Force =						
Surcharge over Heel =						
Surcharge Over Toe =						
Adjacent Footing Load =						
Added Lateral Load =						
Load @ Stem Above Soil =						
=						
Soil Over HL (ab. water tbl)				825.4	1.97	1,626.1
Soil Over HL (bel. water tbl)					1.97	1,626.1
Watre Table						
Sloped Soil Over Heel =						
Surcharge Over Heel =						
Adjacent Footing Load =						
Axial Dead Load on Stem =						
* Axial Live Load on Stem =						
Soil Over Toe =				102.7	0.46	47.3
Surcharge Over Toe =						
Stem Weight(s) =				457.5	1.17	535.3
Earth @ Stem Transitions =						
Footing Weight =				378.0	1.26	476.3
Key Weight =				75.0	1.17	87.8
Vert. Component =						
Total =	653.4	**O.T.M.** =	1,437.5	**Total =** 1,838.7 lbs	**R.M.=**	2,772.7

Resisting/Overturning Ratio = **1.93**

Vertical Loads used for Soil Pressure = 1,838.7 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.114	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.67 in
As Provided =	0.1333 in2/ft
As Required =	0.1296 in2/ft

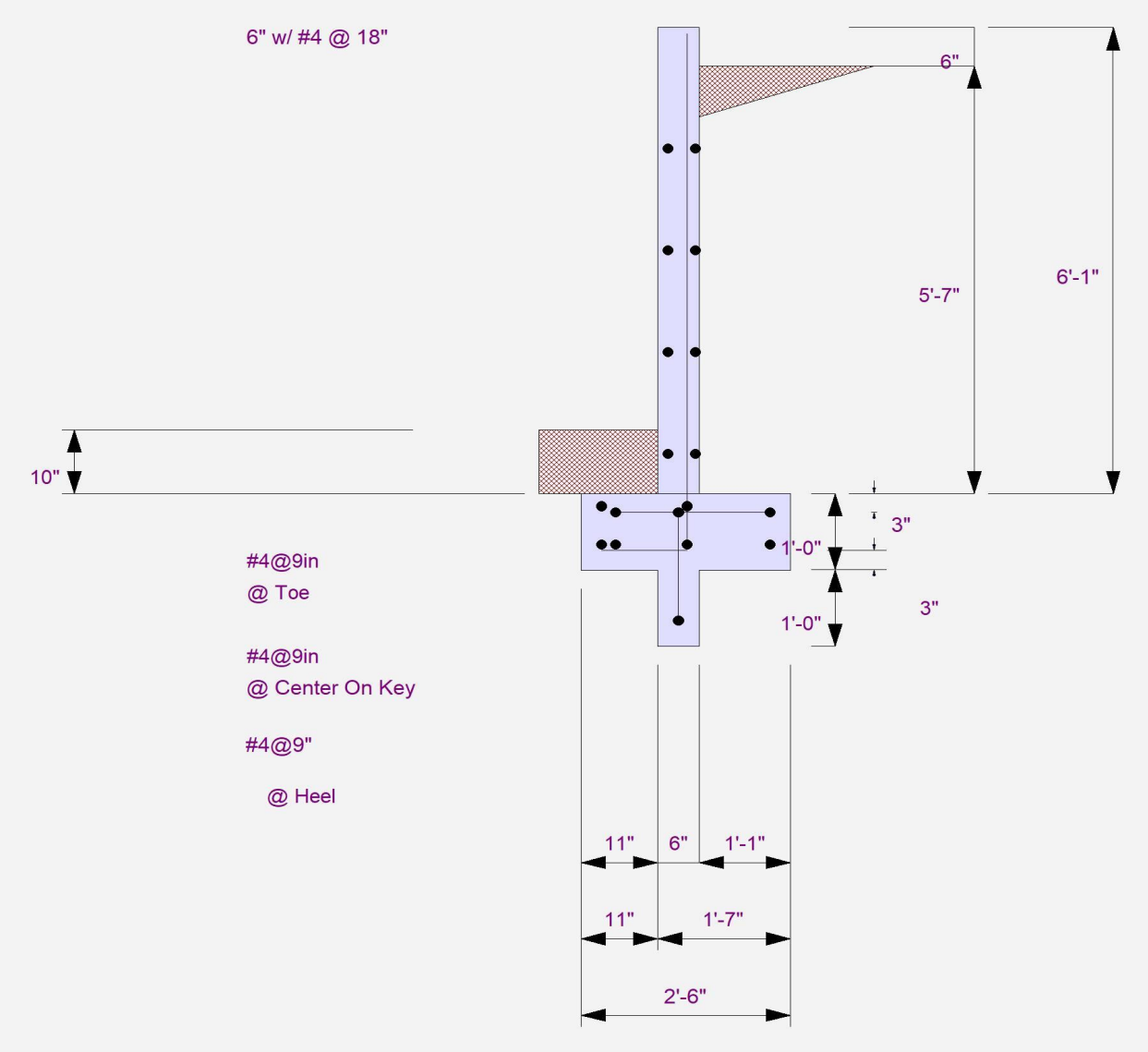
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet



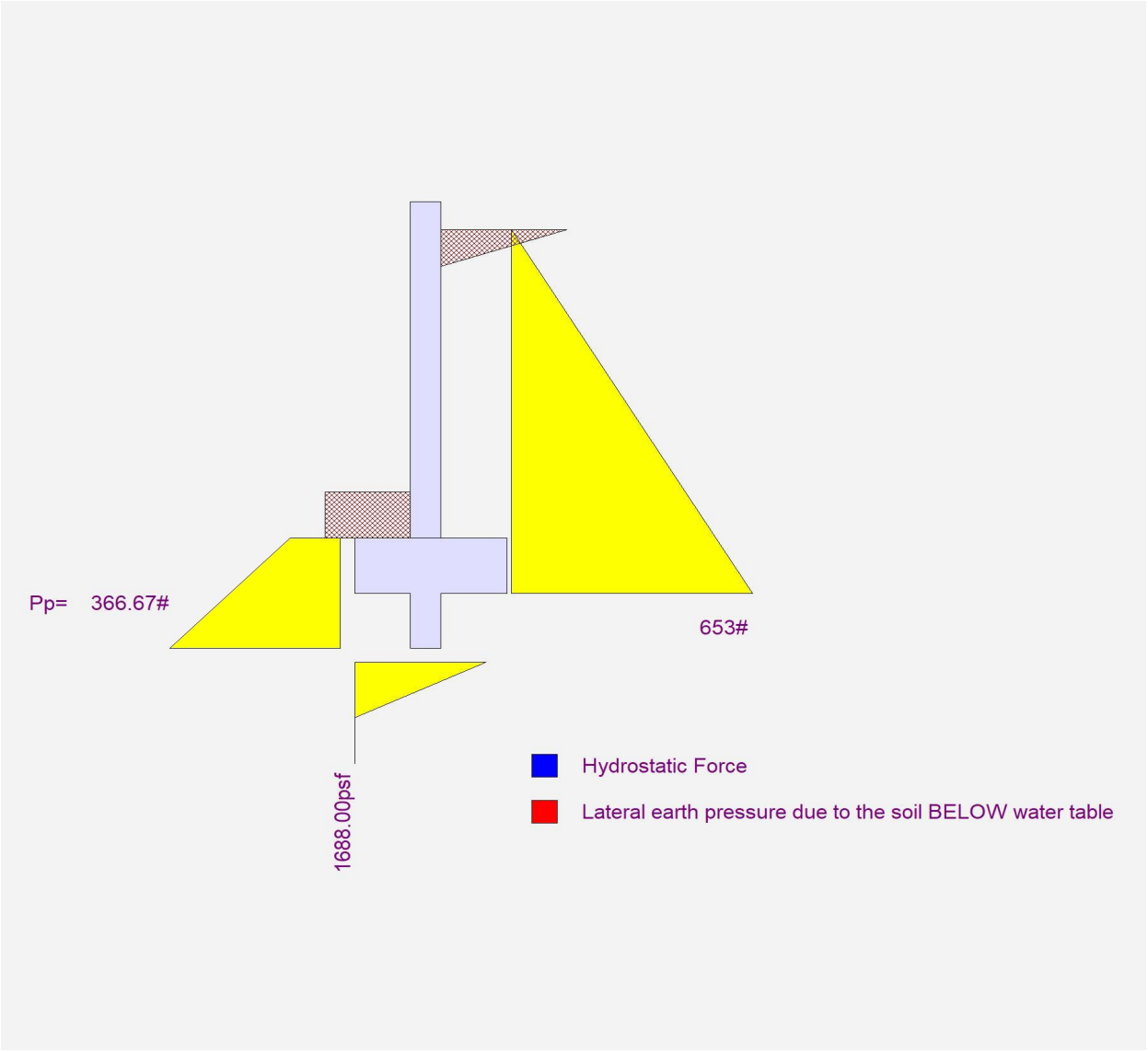
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting cuts - maximum retained height = 5.6 feet



Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet

Code Reference

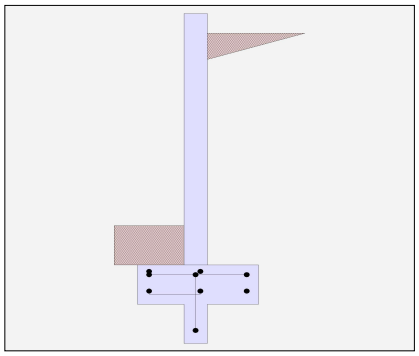
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	5.90 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	12.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	6,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	30.0 psf/ft
	=	
Passive Pressure	=	100.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	12.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet

Design Summary

Wall Stability Ratios

Overturning	=	1.86	OK
Sliding	=	1.52	OK
Global Stability	=	2.78	
Total Bearing Load	=	1,949 lbs	
...resultant ecc.	=	6.93 in	
Soil Pressure @ Toe	=	1,798 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	6,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	2,517 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	5.6 psi	OK
Footing Shear @ Heel	=	9.6 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	714.2 lbs	
less 100% Passive Force	-	400.0 lbs	
less 100% Friction Force	-	682.0 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	18.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.664**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	835.4		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	1,643.0		
Moment.....Allowable	=	2,471.3		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	16.4		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0929 in2/ft		
(4/3) * As :	0.1238 in2/ft	Min Stem T&S Reinf Area 0.922 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1296 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1333 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	1.00 ft
Heel Width	=	1.60
Total Footing Width	=	2.60
Footing Thickness	=	12.00 in
Key Width	=	6.00 in
Key Depth	=	12.00 in
Key Distance from Toe	=	1.00 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	2,517	0	psf
Mu' : Upward	=	1,065	58	ft-#
Mu' : Downward	=	170	683	ft-#
Mu: Design	=	895	625	ft-#
phiMin	=	10,188	10,188	ft-#
Actual 1-Way Shear	=	5.59	9.64	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 9.00 in
Heel Reinforcing = # 4 @ 9.00 in
Key Reinforcing = # 4 @ 9.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.67 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#	.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	714.2	2.30	1,642.5			
HL Act Pres (be water tbl)						
Hydrostatic Force						
Buoyant Force =						
Surcharge over Heel =						
Surcharge Over Toe =						
Adjacent Footing Load =						
Added Lateral Load =						
Load @ Stem Above Soil =						
=						
				Soil Over HL (ab. water tbl)	869.7	2.05	1,782.8
				Soil Over HL (bel. water tbl)		2.05	1,782.8
				Watre Table			
				Sloped Soil Over Heel =			
				Surcharge Over Heel =			
				Adjacent Footing Load =			
				Axial Dead Load on Stem =			
				* Axial Live Load on Stem =			
				Soil Over Toe =	134.0	0.50	67.0
				Surcharge Over Toe =			
				Stem Weight(s) =	480.0	1.25	600.0
				Earth @ Stem Transitions =			
				Footing Weight =	390.0	1.30	507.0
				Key Weight =	75.0	1.25	93.8
				Vert. Component =			
Total =	714.2	**O.T.M.** =	1,642.5	**Total =**	1,948.7 lbs	**R.M.=**	3,050.6

Resisting/Overturning Ratio = **1.86**
Vertical Loads used for Soil Pressure = 1,948.7 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.123	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.67 in
As Provided =	0.1333 in2/ft
As Required =	0.1296 in2/ft

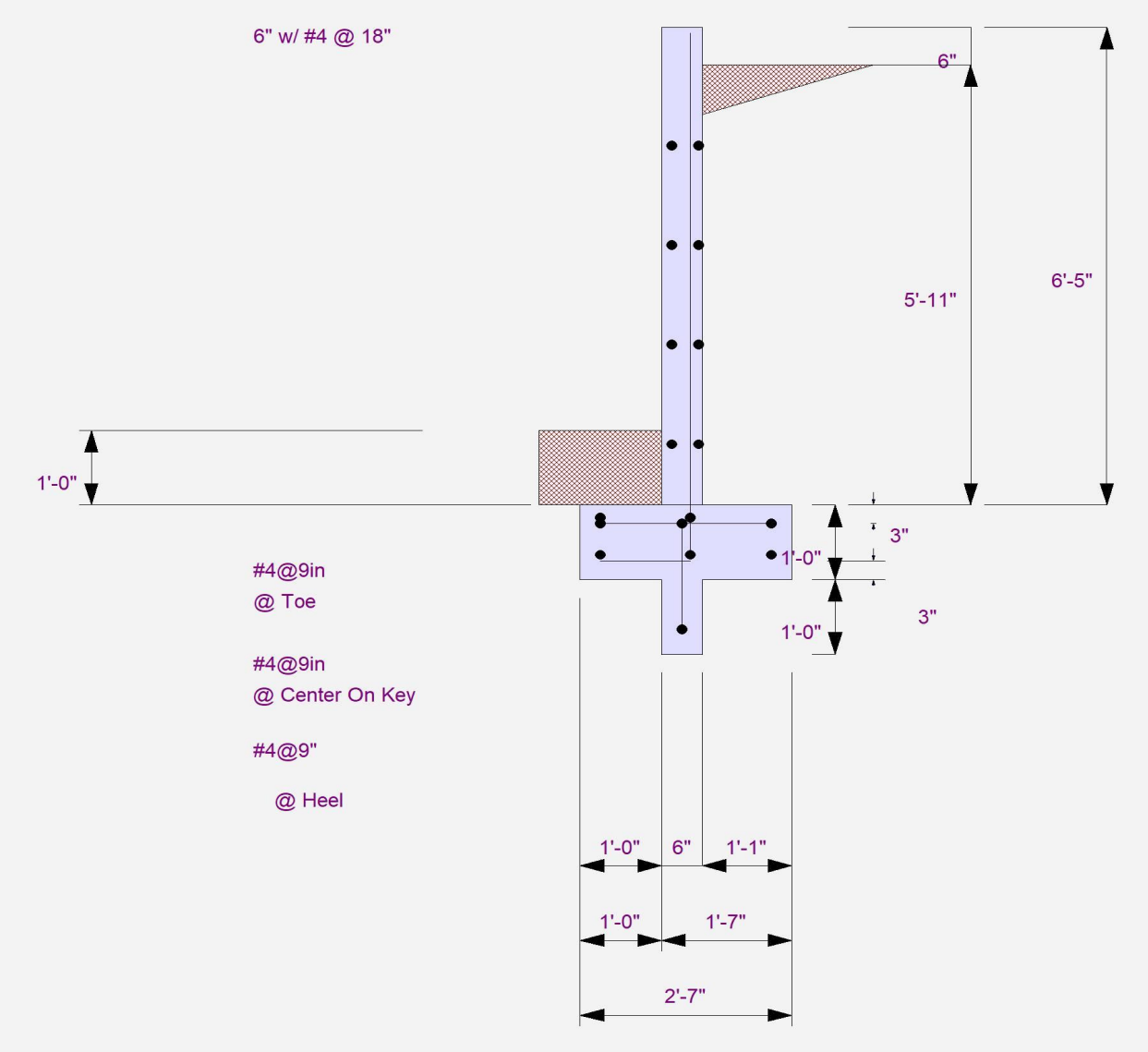
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet



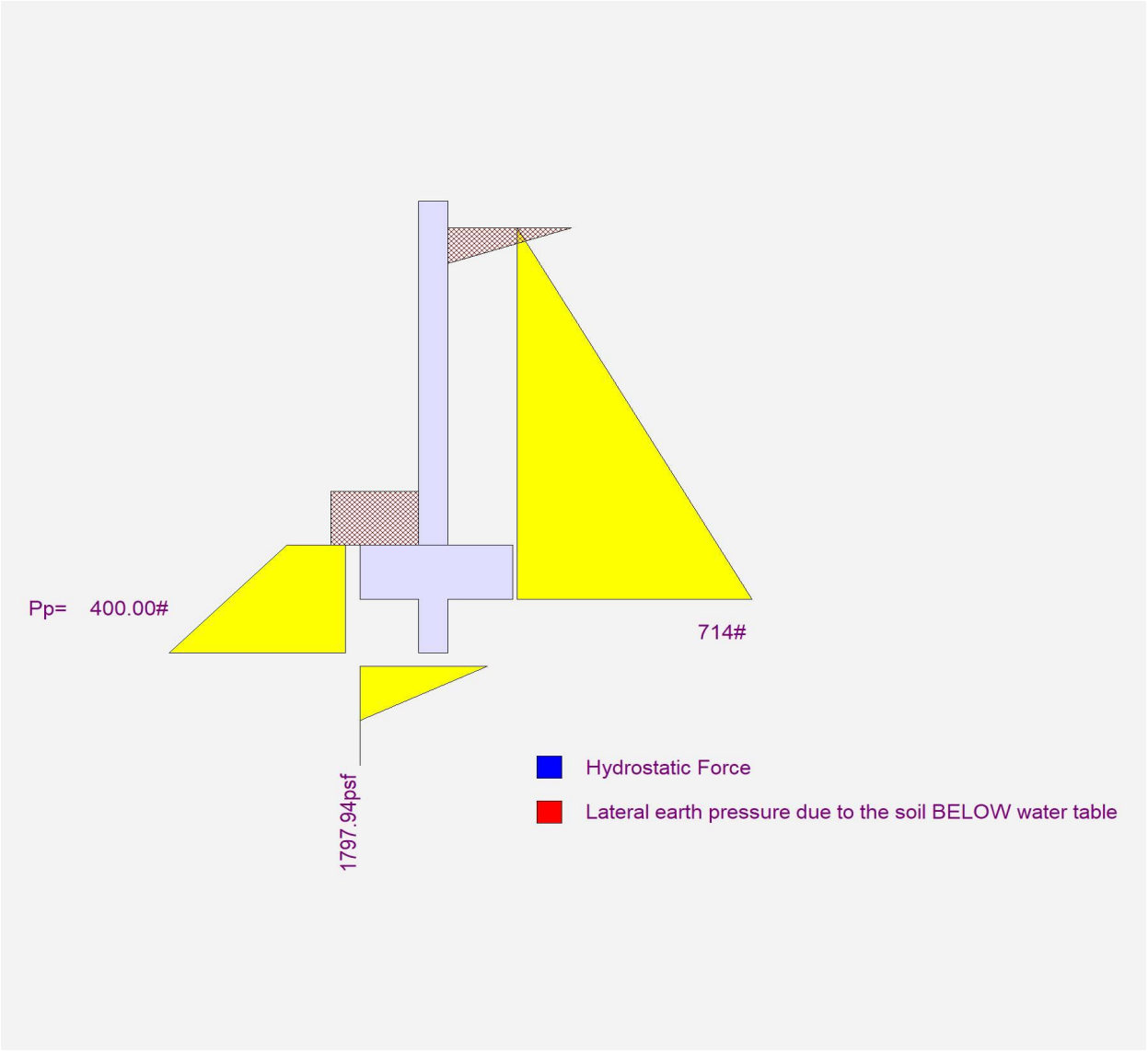
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Parallel to slopes at switchbacks - supporting fills - maximum retained height = 5.9 feet



Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet

Code References

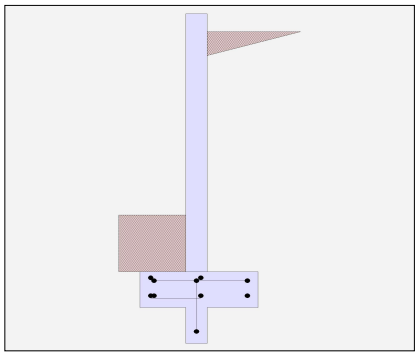
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	6.70 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	19.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	6,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	30.0 psf/ft
	=	
Passive Pressure	=	100.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	19.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet

Design Summary

Wall Stability Ratios			
Overturning	=	1.70	OK
Sliding	=	1.50	OK
Global Stability	=	2.92	
Total Bearing Load	=	2,339 lbs	
...resultant ecc.	=	8.53 in	
Soil Pressure @ Toe	=	2,297 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	6,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	3,216 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	8.8 psi	OK
Footing Shear @ Heel	=	13.2 psi	OK
Allowable	=	82.2 psi	
Sliding Calcs			
Lateral Sliding Force	=	889.4 lbs	
less 100% Passive Force	-	516.7 lbs	
less 100% Friction Force	-	818.5 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	14.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.764**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	1,077.4		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	2,406.1		
Moment.....Allowable	=	3,148.5		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	21.1		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.136 in2/ft		
(4/3) * As :	0.1813 in2/ft	Min Stem T&S Reinf Area 1.037 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.17 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1714 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	1.08 ft
Heel Width	=	1.70
Total Footing Width	=	2.78
Footing Thickness	=	12.00 in
Key Width	=	6.00 in
Key Depth	=	12.00 in
Key Distance from Toe	=	1.08 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	3,216	0	psf
Mu' : Upward	=	1,544	25	ft-#
Mu' : Downward	=	253	905	ft-#
Mu: Design	=	1,290	880	ft-#
phiMin	=	12,983	12,983	ft-#
Actual 1-Way Shear	=	8.75	13.18	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 7.00 in
Heel Reinforcing = # 4 @ 7.00 in
Key Reinforcing = # 4 @ 14.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.72 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#		.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)		889.4	2.57	2,282.7	Soil Over HL (ab. water tbl)	1,077.4	2.18	2,348.6
HL Act Pres (be water tbl)					Soil Over HL (bel. water tbl)		2.18	2,348.6
Hydrostatic Force					Watre Table			
Buoyant Force	=				Sloped Soil Over Heel	=		
Surcharge over Heel	=				Surcharge Over Heel	=		
Surcharge Over Toe	=				Adjacent Footing Load	=		
Adjacent Footing Load	=				Axial Dead Load on Stem	=		
Added Lateral Load	=				* Axial Live Load on Stem	=		
Load @ Stem Above Soil	=				Soil Over Toe	=	229.1	0.54	123.7
	=				Surcharge Over Toe	=		
					Stem Weight(s)	=	540.0	1.33	718.2
					Earth @ Stem Transitions	=			
					Footing Weight	=	417.0	1.39	579.6
					Key Weight	=	75.0	1.33	99.8
					Vert. Component	=			
Total	=	889.4	**O.T.M.** =	2,282.7	**Total =**		2,338.5 lbs	**R.M.=**	3,870.0

Resisting/Overturning Ratio = **1.70**
Vertical Loads used for Soil Pressure = 2,338.5 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.165	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.67 in
As Provided =	0.1714 in2/ft
As Required =	0.1700 in2/ft

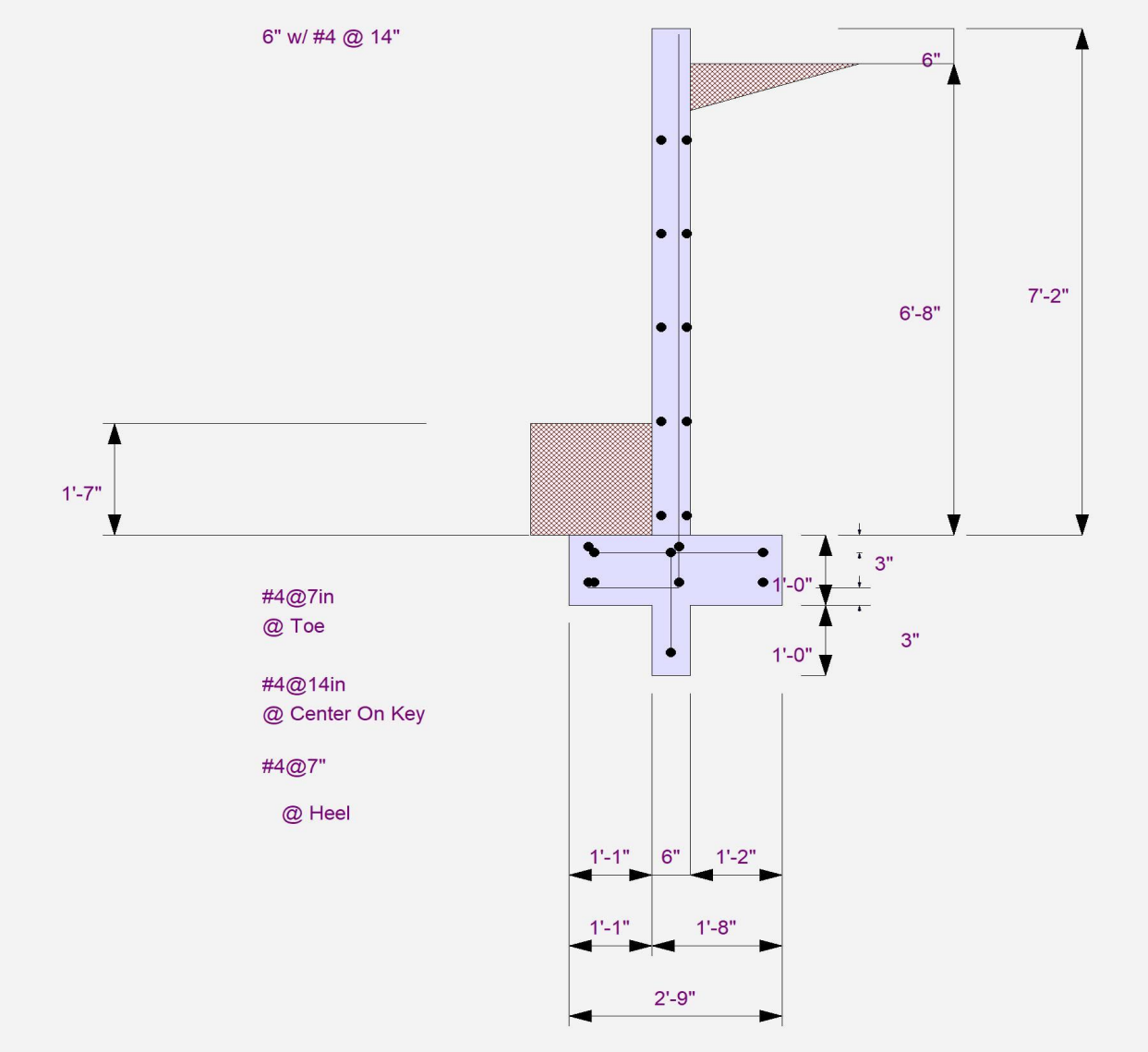
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet



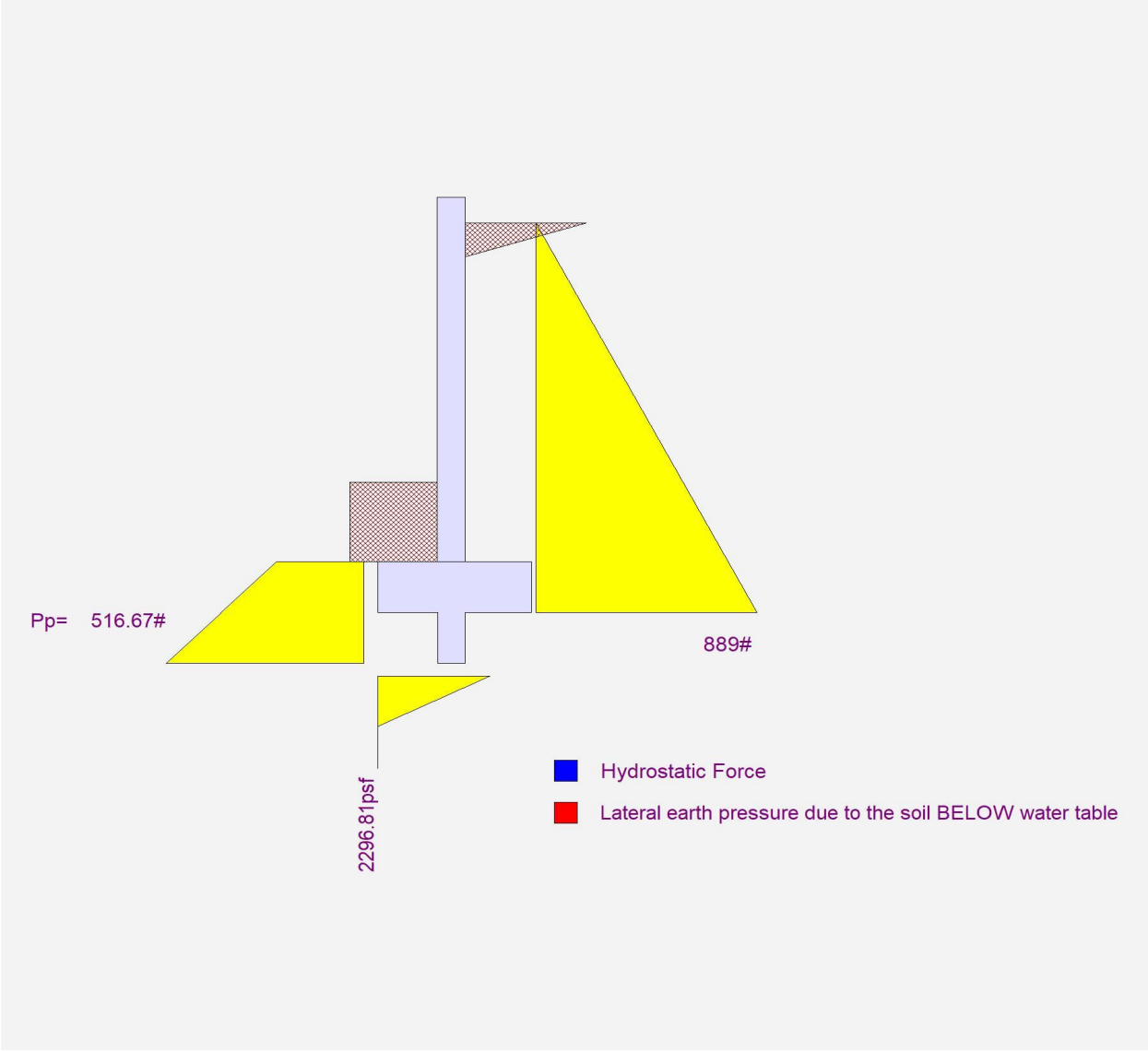
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides - maximum retained height of 6.7 feet



Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet

Code Reference

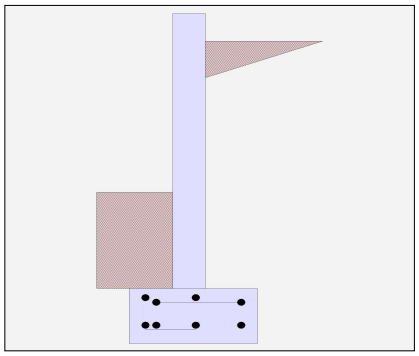
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16

Criteria

Retained Height	=	4.50 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	21.00 in
Water height over heel	=	0.0 ft

Soil Data

Allow Soil Bearing	=	6,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	30.0 psf/ft
	=	
Passive Pressure	=	100.0 psf/ft
Soil Density, Heel	=	134.00 pcf
Soil Density, Toe	=	134.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	21.00 in



Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Spread Footing
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet

Design Summary

Wall Stability Ratios

Overturning	=	1.74	OK
Sliding	=	1.51	OK
Global Stability	=	4.37	
Total Bearing Load	=	1,310 lbs	
...resultant ecc.	=	6.19 in	
Soil Pressure @ Toe	=	1,863 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	6,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	2,608 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	0.2 psi	OK
Footing Shear @ Heel	=	6.6 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	453.8 lbs	
less 100% Passive Force	-	225.0 lbs	
less 100% Friction Force	-	458.5 lbs	
Added Force Req'd	=	0.0 lbs	OK
....for 1.5 Stability	=	0.0 lbs	OK

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	6.00		
Rebar Size	=	# 4		
Rebar Spacing	=	18.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.294**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	486.0		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	729.0		
Moment.....Allowable	=	2,471.3		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	9.5		
Shear.....Allowable	psi =	82.2		
Anet (Masonry)	in2 =			
Rebar Depth 'd'	in =	4.25		
Masonry Data				
f'm	psi =			
Fs	psi =			
Solid Grouting	=			
Modular Ratio 'n'	=			
Wall Weight	psf =	75.0		
Short Term Factor	=			
Equiv. Solid Thick.	=			
Masonry Block Type	=			
Masonry Design Method	=	ASD		
Concrete Data				
f'c	psi =	3,000.0		
Fy	psi =	60,000.0		

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0412 in2/ft		
(4/3) * As :	0.0549 in2/ft	Min Stem T&S Reinf Area 0.720 in2	
200bd/fy : 200(12)(4.25)/60000 :	0.17 in2/ft	Min Stem T&S Reinf Area per ft of stem Height : 0.144 in2/ft	
0.0018bh : 0.0018(12)(6) :	0.1296 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1296 in2/ft	#4@ 16.67 in	#4@ 33.33 in
Provided Area :	0.1333 in2/ft	#5@ 25.83 in	#5@ 51.67 in
Maximum Area :	0.6909 in2/ft	#6@ 36.67 in	#6@ 73.33 in

Footing Data

Toe Width	=	0.67 ft
Heel Width	=	1.30
Total Footing Width	=	1.97
Footing Thickness	=	12.00 in
Key Width	=	12.00 in
Key Depth	=	0.00 in
Key Distance from Toe	=	0.67 ft

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 3.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	2,608	0	psf
Mu' : Upward	=	492	4	ft-#
Mu' : Downward	=	104	289	ft-#
Mu: Design	=	389	285	ft-#
phiMin	=	10,188	10,188	ft-#
Actual 1-Way Shear	=	0.21	6.58	psi
Allow 1-Way Shear	=	82.16	82.16	psi

Toe Reinforcing = # 4 @ 9.00 in
Heel Reinforcing = # 4 @ 9.00 in
Key Reinforcing = # 5 @ 12.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, phi Tu = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe:
Heel:
Key:

Min footing T&S reinf Area 0.51 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#	.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	453.8	1.83	831.9			
HL Act Pres (be water tbl)						
Hydrostatic Force						
Buoyant Force =						
Surcharge over Heel =						
Surcharge Over Toe =						
Adjacent Footing Load =						
Added Lateral Load =						
Load @ Stem Above Soil =						
=						
				Soil Over HL (ab. water tbl)	482.4	1.57	757.4
				Soil Over HL (bel. water tbl)		1.57	757.4
				Watre Table			
				Sloped Soil Over Heel =			
				Surcharge Over Heel =			
				Adjacent Footing Load =			
				Axial Dead Load on Stem =			
				* Axial Live Load on Stem =			
				Soil Over Toe =	157.1	0.34	52.6
				Surcharge Over Toe =			
				Stem Weight(s) =	375.0	0.92	345.0
				Earth @ Stem Transitions =			
				Footing Weight =	295.5	0.99	291.1
				Key Weight =		1.17	
				Vert. Component =			
Total =	453.8	**O.T.M.** =	831.9	**Total =**	1,310.0 lbs	**R.M.=**	1,446.1

Resisting/Overturning Ratio = **1.74**
Vertical Loads used for Soil Pressure = 1,310.0 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.131	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #4 bar specified in this stem design segment =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	7.67 in
As Provided =	0.1333 in2/ft
As Required =	0.1296 in2/ft

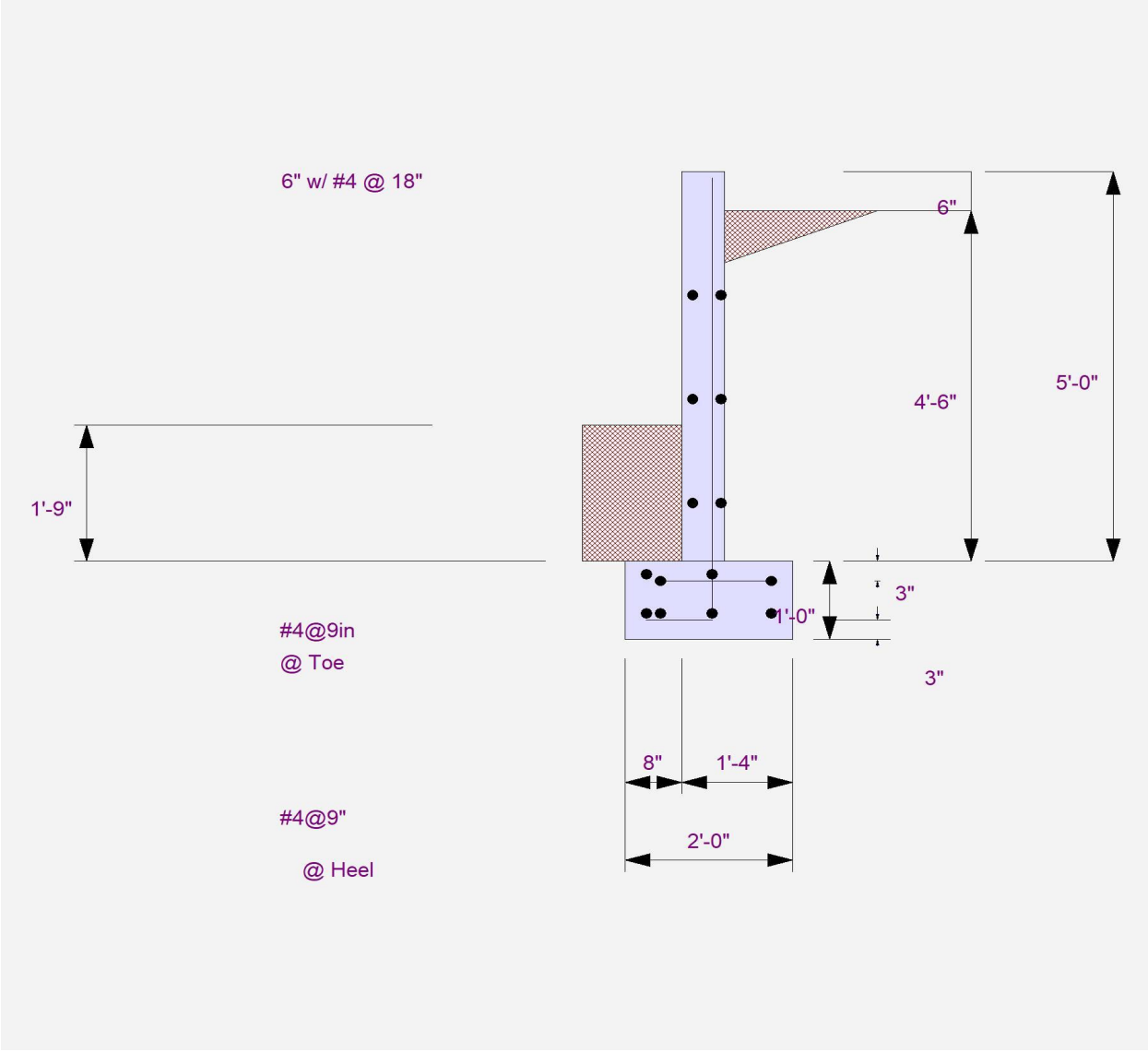
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet



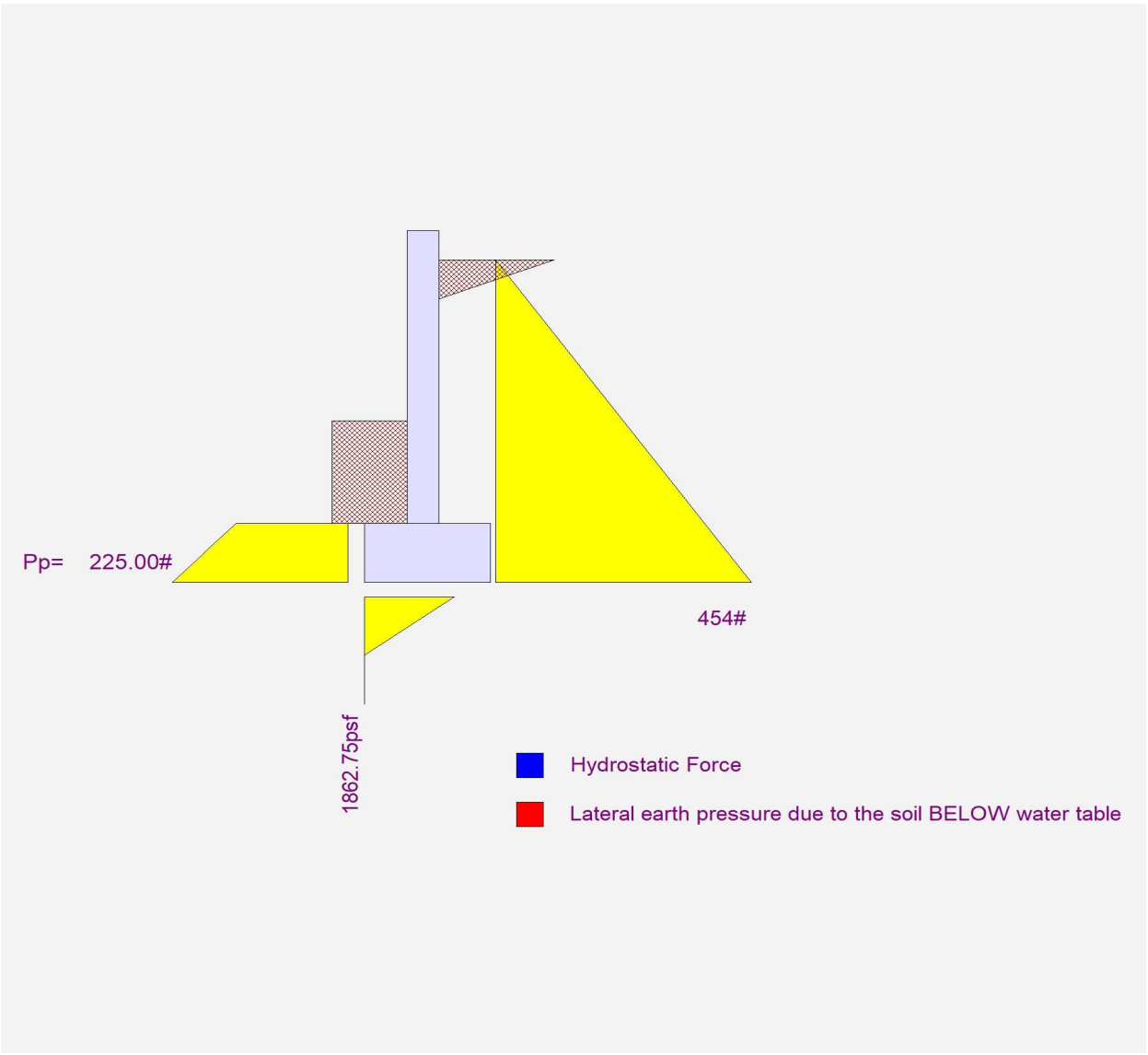
Project Title: River West Eaton Trail Extension
Engineer: Andy Kositsky
Project ID: 1561-22-025
Project Descr: Ramp - Palm Avenue

Cantilevered Retaining Wall

Project File: A.ec6

LIC# : KW-06015395, Build:20.22.2.2 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC INC 1983-2022

DESCRIPTION: Downslope sides of ramp - maximum retained height of 4.5 feet



Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: Eaton Trail Retaining Design.ec6

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

DESCRIPTION: 2'-6" Retained Ht. Design

Code References

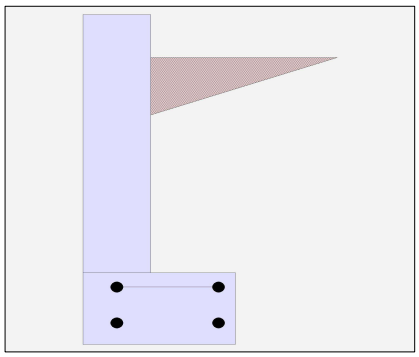
Governing Code : IBC 2024
Referenced Design Standard(s) : ACI 318-19

Criteria

Retained Height	=	2.50 ft
Wall height above soil	=	0.50 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	6.00 in
Water table above bottom of footing	=	0.0 ft

Soil Data

Allow Soil Bearing	=	6,500.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	30.0 psf/ft
	=	
Passive Pressure	=	400.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	0.00 in



Surcharge Loads

Surcharge Over Heel	=	50.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	0.0 lbs
Axial Live Load	=	0.0 lbs
Axial Load Eccentricity	=	0.0 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	0.00 ft
...Height to Bottom	=	0.00 ft
Load Type	=	Wind (W) (Strength Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Line Load
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Design Summary

Wall Stability Ratios

Overturning	=	2.05	OK
Sliding	=	2.93	OK
Global Stability	=	4.09	

Total Bearing Load	=	838	lbs
...resultant ecc.	=	4.68	in
Eccentricity outside middle third			
Soil Pressure @ Toe	=	1,404 psf	OK
Soil Pressure @ Heel	=	0 psf	OK
Allowable	=	6,500 psf	
Soil Pressure Less Than Allowable			
ACI Factored @ Toe	=	1,965 psf	
ACI Factored @ Heel	=	0 psf	
Footing Shear @ Toe	=	0.0 psi	OK
Footing Shear @ Heel	=	3.5 psi	OK
Allowable	=	82.2 psi	

Sliding Calcs

Lateral Sliding Force	=	212.1 lbs

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom
		Stem OK
Design Height Above Ftg	ft =	0.00
Wall Material Above "Ht"	=	Concrete
Design Method	=	SD SD SD
Thickness	=	8.00
Rebar Size	=	# 4
Rebar Spacing	=	12.00
Rebar Placed at	=	Center
Design Data		
fb/FB + fa/Fa	=	**0.056**
Total Force @ Section		
Service Level	lbs =	
Strength Level	lbs =	204.5
Moment....Actual		
Service Level	ft-# =	
Strength Level	ft-# =	193.2
Moment.....Allowable	=	3,423.0
Shear.....Actual		
Service Level	psi =	
Strength Level	psi =	4.3
Shear.....Allowable	psi =	52.9
Anet (Masonry)	in2 =	
Wall Weight	psf =	100.0
Rebar Depth 'd'	in =	4.00
Masonry Data		
f'm	psi =	
Fs	psi =	
Solid Grouting	=	
Modular Ratio 'n'	=	
Equiv. Solid Thick.	=	
Masonry Block Type	=	
Masonry Design Method	=	ASD
Concrete Data		
f'c	psi =	3,000.0
Fy	psi =	60,000.0

7.145

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

DESCRIPTION: 2'-6" Retained Ht. Design

Summary of Sliding Forces

	FS = 1.0	FS = 1.5
Lateral Force @ Base of Footing	212.12 lbs	318.18 lbs
less 100% Passive Force	- 355.556 lbs	- 355.556 lbs
less 100% Friction Force	- 265.42 lbs	- 265.42 lbs
Added Resisting Force Required	0.0 lbs	
Added Resisting Force Required for 1.5 Factor of Safety		0.00 lbs

Sliding Factor of Safety = 2.927: 1.00

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: Eaton Trail Retaining Design.ec6

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

DESCRIPTION: 2'-6" Retained Ht. Design

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0117 in2/ft		
0.0018bh : 0.0018(12)(8) :	0.1728 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.1728 in2/ft	#4@ 13.89 in	#4@ 27.78 in
Provided Area :	0.2 in2/ft	#5@ 21.53 in	#5@ 43.06 in
Maximum Area :	0.6503 in2/ft	#6@ 30.56 in	#6@ 61.11 in

Footing Data

Toe Width	=	0.00 ft
Heel Width	=	1.50
Total Footing Width	=	1.50
Footing Thickness	=	10.00 in

f'c = 3,000 psi Fy = 60,000 psi
Footing Concrete Density = 150.00 pcf
Min. As % = 0.0018
Cover @ Top 2.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	1,965	0	psf
Mu' : Upward	=	0	21	ft-#
Mu' : Downward	=	0	194	ft-#
Mu: Design	=	0	173	ft-#
φ Mn	=	OK - Flush	18,831	
Actual 1-Way Shear	=	0.00	3.46	psi
Allow 1-Way Shear	=	46.85	61.68	psi

Toe Reinforcing = Flush toe condition. No reinforcing required.
Heel Reinforcing = # 7 @ 12.00 in
Key Reinforcing = # 5 @ 16.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, φ Tn = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: Flush toe condition. No reinforcing required.

Heel: #4@ 11.11 in, #5@ 17.22 in, #6@ 18 in, #7@ 18 in, #8@ 18 in, #9@ 18 in, #10@ 18 in

Key: No key defined

Min footing T&S reinf Area 0.32 in2
Min footing T&S reinf Area per foot 0.22 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 11.11 in	#4@ 22.22 in
#5@ 17.22 in	#5@ 34.44 in
#6@ 24.44 in	#6@ 48.89 in

Project Title:
Engineer:
Project ID:
Project Descr:

Cantilevered Retaining Wall

Project File: Eaton Trail Retaining Design.ec6

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

DESCRIPTION: 2'-6" Retained Ht. Design

Summary of Overturning & Resisting Forces & Moments

Item		.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#		.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)		166.7	1.11	185.2	Soil Over HL (ab. water tbl)	229.2	1.08	248.3
HL Act Pres (be water tbl)					Soil Over HL (bel. water tbl)		1.08	
Hydrostatic Force					Water Table			
Buoyant Force	=				Sloped Soil Over Heel	=		
Surcharge over Heel	=	45.5	1.67	75.8	Surcharge Over Heel	= 41.7	1.08	45.1
Surcharge Over Toe	=				Adjacent Footing Load	=		
Adjacent Footing Load	=				Axial Dead Load on Stem	=		
Added Lateral Load	=				* Axial Live Load on Stem	=		
Load @ Stem Above Soil	=				Soil Over Toe	=		
	=				Surcharge Over Toe	=		
					Stem Weight(s)	= 300.0	0.33	100.0
					Earth @ Stem Transitions	=		
					Footing Weight	= 187.5	0.75	140.6
					Key Weight	=	0.33	
					Vert. Component	=		
Total	=	212.1	**O.T.M.** =	260.9	**Total =**	758.3 lbs	**R.M.=**	534.0

Resisting/Overturning Ratio = **2.05**

Vertical Loads used for Soil Pressure = 838.4 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	200.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.097	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

DESCRIPTION: 2'-6" Retained Ht. Design

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom
Stem Design Height: 0.00 ft above top of footing

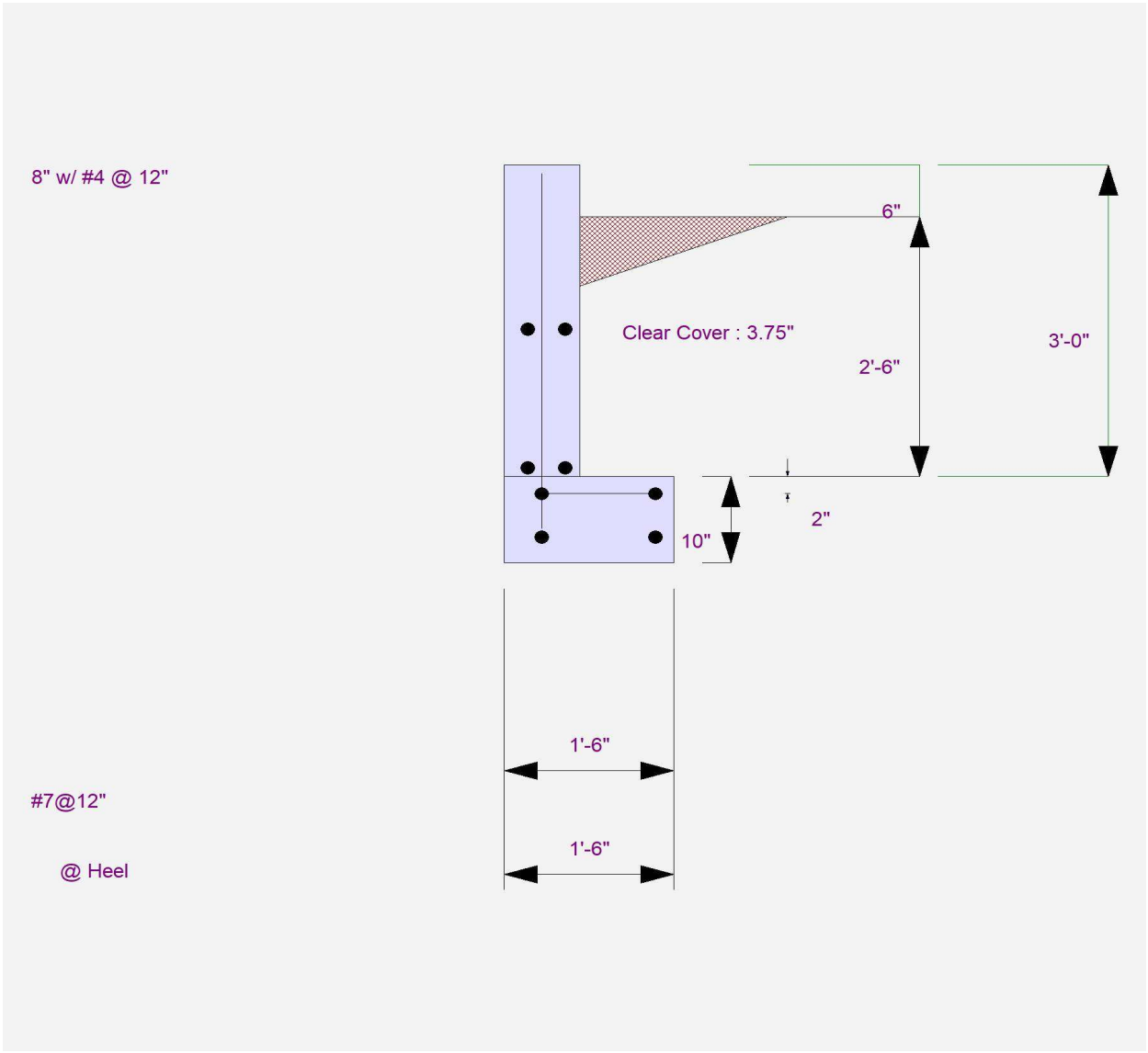
Stem Design Segment: Bottom

Lap Splice length for #4 bar specified in this stem design segment (25.4.2.4a) =	17.09 in
Development length for #4 bar specified in this stem design segment =	13.15 in
Hooked embedment length into footing for #4 bar specified in this stem design segment =	6.00 in
As Provided =	0.2000 in2/ft
As Required =	0.1728 in2/ft
Ψ r: Confining Reinforcement Factor =	1.00
Ψ o: Location Factor =	1.00
Ψ c: Concrete Strength Factor =	0.80

Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

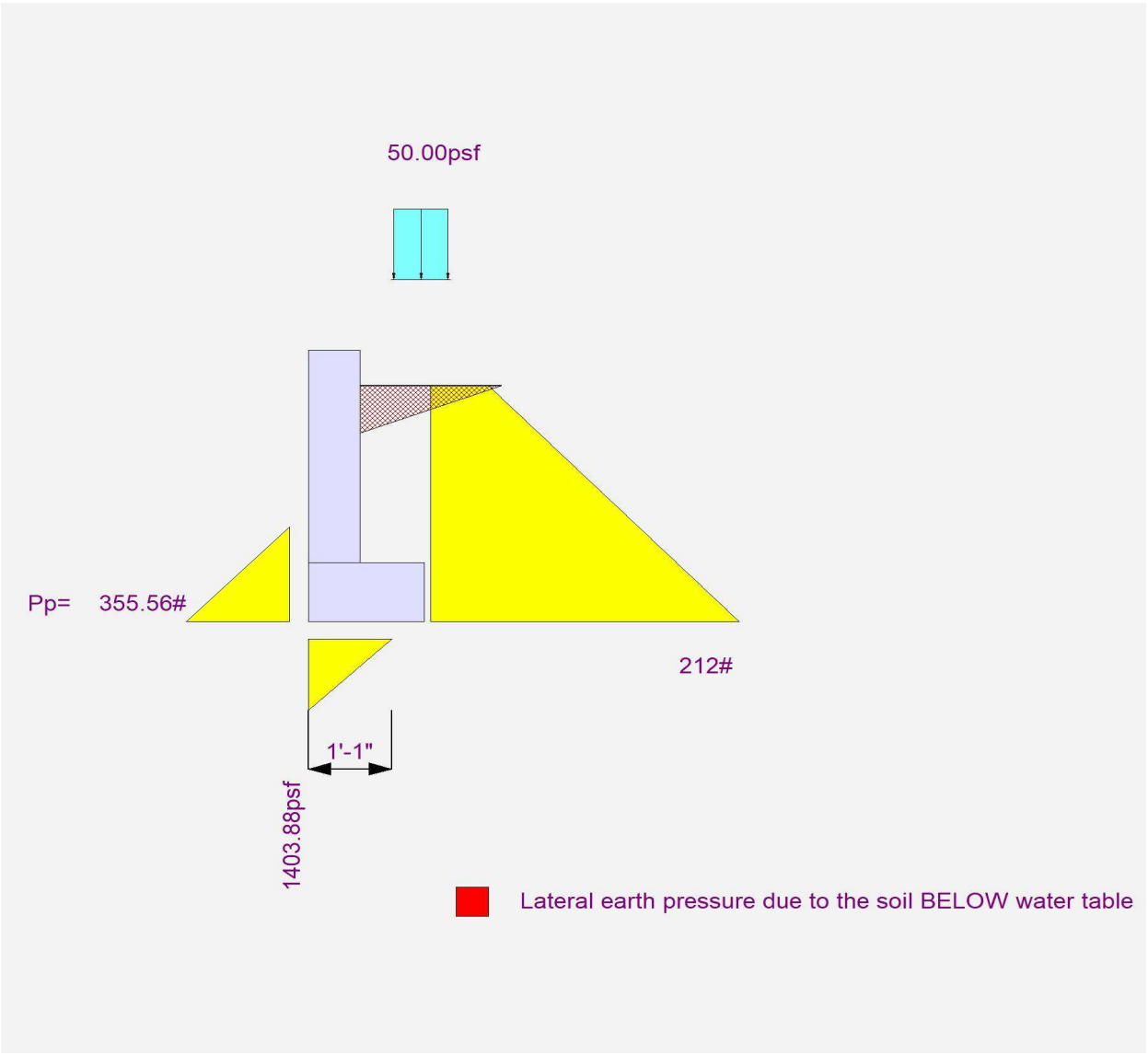
DESCRIPTION: 2'-6" Retained Ht. Design



Cantilevered Retaining Wall

LIC# : KW-06015395, Build:20.26.01.14 PROVOST & PRITCHARD ENGINEERING GROUP INC (c) ENERCALC, LLC 1982-2026

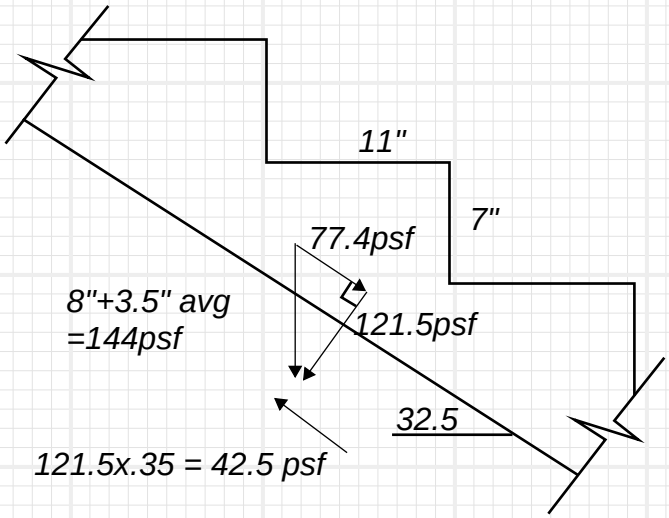
DESCRIPTION: 2'-6" Retained Ht. Design

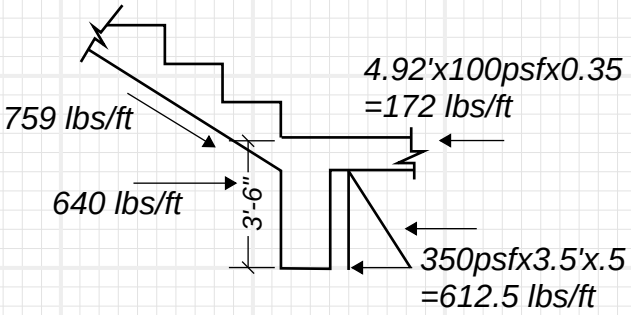


PROVOST & PRITCHARD
PARRISH HANSEN
STRUCTURAL DIVISION

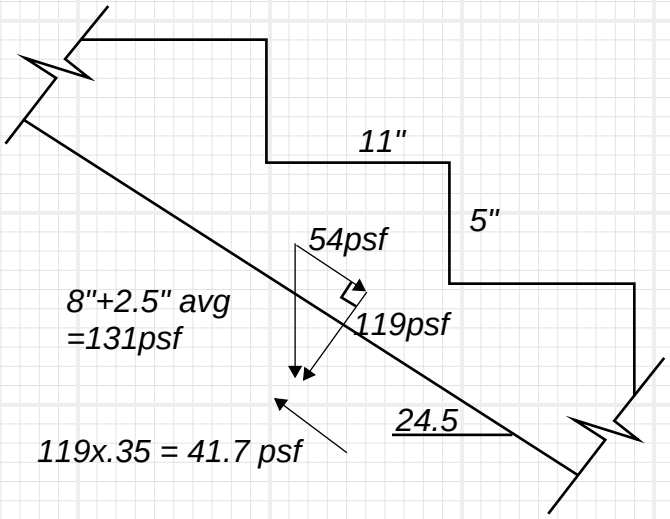
PROJECT: RIVER WEST EATON TRAIL
STAIR GLOBAL SLIDING
CLIENT: CITY OF FRESNO

PAGE:
DATE:
BY:
JOB #:





NET SLIDING = 77.4psf -42.5psf = 34.9psf
SLIDING AT BOTTOM OF STAIR = 34.9psf x 21.75' = 759 lbs/ft



NET SLIDING = 54psf -41.7psf = 12.3psf
SLIDING AT BOTTOM OF STAIR = 12.3psf x 28.17' = 347 lbs

DIVISION VIII

CONTRACTOR COMMUNICATION REQUIREMENTS

DIVISION VIII

CONTRACTOR COMMUNICATION REQUIREMENTS

CONTRACTOR COMMUNICATION REQUIREMENTS

The Contractor shall support the City of Fresno Capital Projects/Public Works Department in delivering clear, consistent, and branded public outreach throughout construction. All communications must comply with the standards outlined below.

1.0 COMMUNICATION BOUNDARIES

The City of Fresno retains ownership of all external communications related to the project.

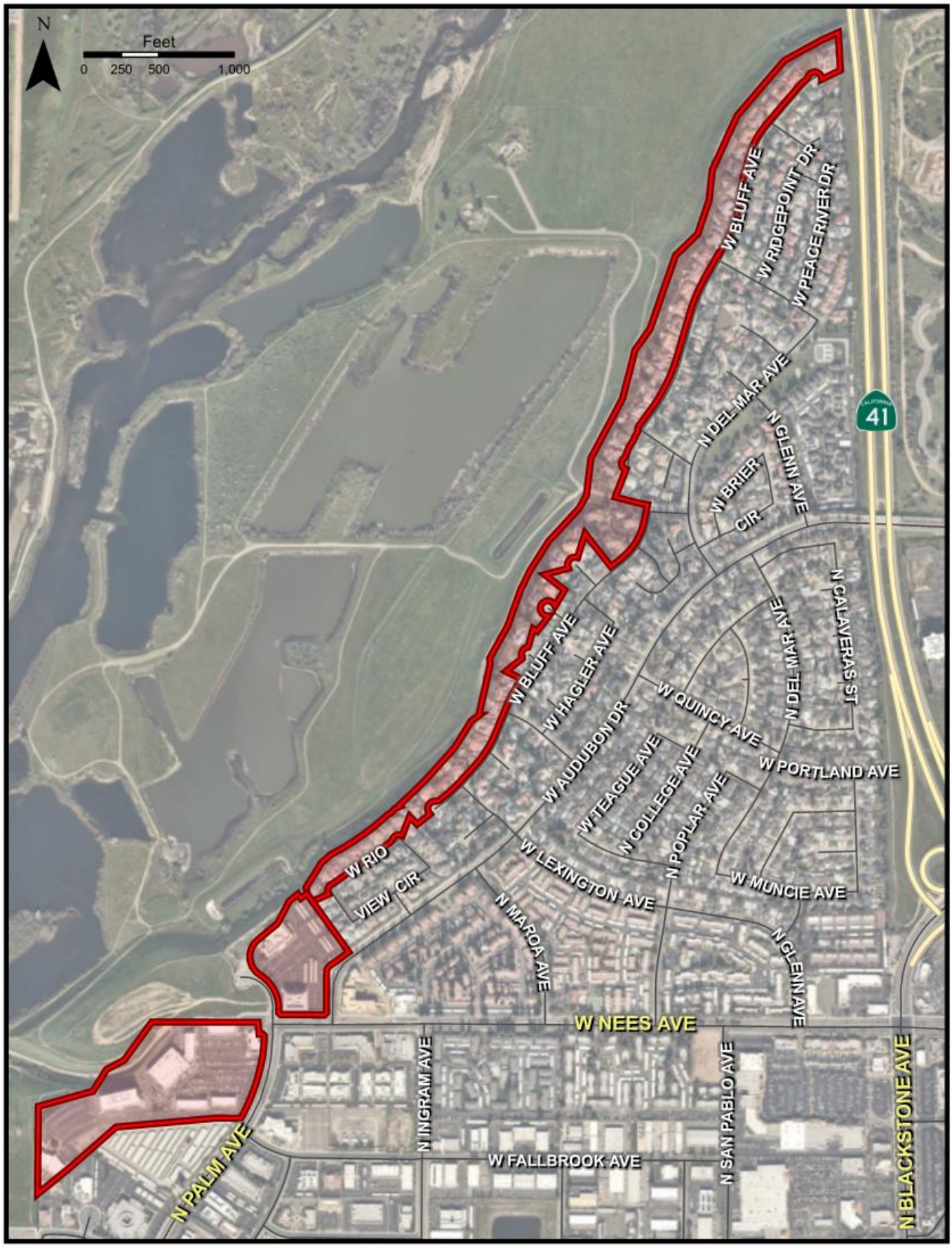
The Contractor **shall not:**

- Make public statements or respond to media inquiries. All inquiries must be referred to the City of Fresno Communications Department and Department of Public Works Projects and Communications Liaison.
- Communicate directly with Council offices.
- Post project information to social media or online platforms without the permission of the City of Fresno Communications Department.

The Contractor **shall:**

- Communicate with residents, property owners, businesses and school officials for construction-related notifications.
- Supply their contact information on all construction related communications.
- Coordinate all messaging in advance with the Department of Public Works, Projects and Communications Liaison.
- Boundaries are subject to change and could expand or minimize depending on proposed work.

See the following Communication Boundaries for the River West Eaton Trail Extension, Phase 1 project:


N
Feet
0 250 500 1,000
W BLUFF AVE
W RIDGEPOINT DR
W PEACE RIVER DR
N DEL MAR AVE
N GLENN AVE
W BRIER CIR
41
N CALAVERAS ST
W QUINCY AVE
W PORTLAND AVE
W HAGLER AVE
W AUDUBON DR
W TEAGUE AVE
N COLLEGE AVE
N POPLAR AVE
W MUNCIE AVE
W RIO VIEW CIR
W LEXINGTON AVE
N MAROA AVE
W NEES AVE
N INGRAM AVE
N SAN PABLO AVE
N BLACKSTONE AVE
W FALLBROOK AVE
N PALM AVE

2.0 REQUIRED COMMUNICATION MATERIALS

Door Hanger/Rack Card Notifications

The contractor shall provide printed door hanger/rack card project communications to all residents, businesses and properties within the City supplied boundary area map.

Door Hanger/Rack Card Specifications:

- **Size:** 4.25 x 11 (Door Hanger or Rack Card)
- **Layout:** Two (2) Door Hangers/Rack Cards per one 8.5 x 11-inch sheet
- **Paper:** 16 pt Cover Stock (or equivalent), Smooth, 120 lb.
- **Hole:** If printing door hanger 1.25 – 1.5 die-cut hanging hole with slanted perforation opening
- **Printing:** Double-sided (if applicable), full color
- **Language:** Provided by City
- **Content:**
    - Project Name
    - Project Limits
    - Description
    - Duration
    - Contractor Contact Information
    - Parking restrictions/impacts
    - Project schedule
- **Distribution:**
    - The contractor shall distribute communications a minimum of 7 days in advance of project start unless otherwise directed by Construction Management with concurrence from the City.
- **Quantity:**
    - The contractor shall distribute to all homes, businesses, and schools within the boundary area. Plus, anything else noted by the City outside the boundary.

3.0 SAMPLE COMMUNICATIONS

The City will provide approved templates for:

- **Door hangers/Rack Cards** (Canva or PDF)
    - Written Copy (text) for Door Hangers/ Rack Cards shall be written by Contractor. All door hangers/ rack cards shall be approved by the Project and Communication Liaison prior to printing.

Below is a sample of a one-sided Door Hanger / Rack Card communications:

TRAIL WORK

END OF PALM AVENUE TO
STATE ROUTE 41 AND PERRIN AVENUE

Construction Begins
WEDNESDAY, FEBRUARY 10

SCHEDULE
6 AM - 5 PM

THE WORK WILL TAKE PLACE BETWEEN
FEBRUARY 10, 2027 AND OCTOBER 22, 2027

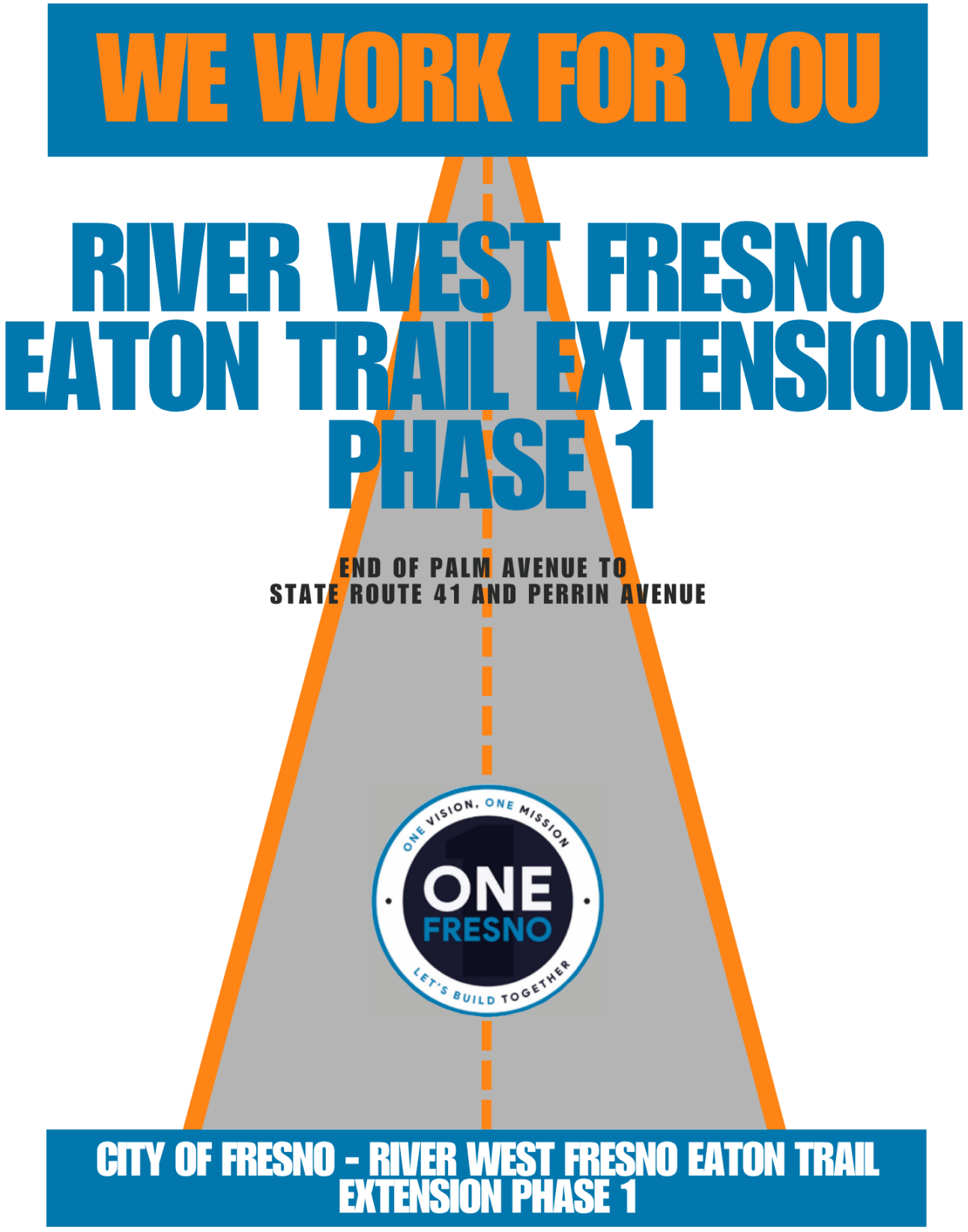


Expect brief traffic delays. To minimize noise impacts, residents should keep windows closed during working hours. The construction schedule is pending construction and weather delays

ONE VISION, ONE MISSION
ONE FRESNO
LET'S BUILD TOGETHER

QUESTIONS?
TBD Construction Contractor
(XXX) XXX-XXXX
or
City of Fresno
Call 311


WE WORK FOR YOU
RIVER WEST FRESNO
EATON TRAIL EXTENSION
PHASE 1
END OF PALM AVENUE TO
STATE ROUTE 41 AND PERRIN AVENUE
ONE VISION, ONE MISSION
ONE
FRESNO
LET'S BUILD TOGETHER
CITY OF FRESNO - RIVER WEST FRESNO EATON TRAIL
EXTENSION PHASE 1


WE WORK FOR YOU
RIVER WEST FRESNO
EATON TRAIL EXTENSION
PHASE 1
END OF PALM AVENUE TO
STATE ROUTE 41 AND PERRIN AVENUE
ONE VISION, ONE MISSION
ONE
FRESNO
LET'S BUILD TOGETHER
CITY OF FRESNO - RIVER WEST FRESNO EATON TRAIL
EXTENSION PHASE 1

4.0 COMMUNICATION COORDINATION & SUBMITTALS

The Contractor shall submit the following to the Projects and Communication Liaison during pre-construction of the River West Fresno Eaton Trail Extension Phase 1 project:

- Draft door hanger layout (using City template)
- Communication distribution plan:
    - Includes schedule for notification
    - Phases of distribution (if any)

No materials shall be printed or distributed without City approval.

5.0 COMMUNICATION CONTACT REQUIREMENTS

The Contractor shall provide:

- Phone number and email on all notification materials

All resident or business concerns received by the Contractor shall be forwarded to the Project and Communication Liaison within 24 hours.

DIVISION IX

MMRP COMPLIANCE

MITIGATION MONITORING AND REPORTING PROGRAM

CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENT

Where a California Environmental Quality Act (CEQA) document has identified significant environmental effects, Public Resources Code Section 21081.6 requires adoption of a "reporting or monitoring program for the changes to the project which it has adopted or made a condition of a project approval to mitigate or avoid significant effects on the environment."

This Environmental Mitigation Monitoring and Reporting Program (MMRP) has been prepared to provide for the monitoring of mitigation measures required of the River West Fresno, Eaton Trail Extension Project (Alternative 1 & 5B), as set forth in the Final Environmental Impact Report (FEIR).

The San Joaquin River Conservancy (Conservancy) is the Lead Agency that must adopt the MMRP for development and operation of the project. This report will be kept on file with San Joaquin River Conservancy, 5469 E. Olive Avenue, Fresno, CA 93727.

The CEQA Statutes and Guidelines provide direction for clarifying and managing the complex relationships between a Lead Agency and other agencies with implementing and monitoring mitigation measures. In accordance with CEQA Guidelines Section 15097(d), "each agency has the discretion to choose its own approach to monitoring or reporting; and each agency has its own special expertise." This discretion will be exercised by implementing agencies at the time they undertake any of portion of the project, as identified in the FEIR.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

The intent of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures. The MMRP is intended to be used by Conservancy staff and others responsible for project implementation.

This document identifies the individual mitigation measures, the party responsible for monitoring implementation of the measure, the timing of implementation, and space to confirm implementation of the mitigation measures.

ROLES AND RESPONSIBILITIES

The Conservancy will oversee monitoring and documenting the implementation of mitigation measures. The project applicant or its construction contractor is responsible for fully understanding and effectively implementing all of the mitigation measures contained within this MMRP. Certain mitigation measures also will require that the Conservancy coordinate or consult with one or more other public agencies in implementing mitigation measures specified herein.

CHANGES TO MITIGATION MEASURES

Any substantive change in the MMRP is required to be reported in writing. Modifications to the mitigation measures may be made by the Conservancy, subject to one of the following findings, and documented by evidence included in the public record:

- The mitigation measure included in the FEIR and the MMRP is no longer required because the significant environmental impact identified in the FEIR has been found not to exist, or to occur at a level which makes the impact less than significant as a result of changes in the project, changes in environment conditions, or other factors.

OR,

- The modified or substitute mitigation measure provides a level of environmental protection equal to, or greater than that afforded by the mitigation measure included in the FEIR and the MMRP; and,

- The modified or substitute mitigation measure or measures do not have significant adverse effects on the environment in addition to, or greater than those which were considered by the responsible hearing bodies in their decisions on the FEIR and the proposed project; and,

- The modified or substitute mitigation measures are feasible, and the Conservancy, through measures included in the MMRP or other City procedures, can ensure implementation.

SUPPORT DOCUMENTATION

Findings and related documentation supporting the findings involving modifications to mitigation measures shall be maintained in the project file with this MMRP and shall be made available to the public upon request.

This MMRP will be kept on file at:

San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727.

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	**Timing/Schedule**	**Implementation Responsibility**	**Completion of Implementation**	
			Action	**Date Completed**
3.2. Aesthetics				
Mitigation Measure Aesthetics and Visual Resources-1 The Conservancy shall use native plants for landscaping portions of the trail extension to allow for naturalization of these features. Landscaping and recreation facilities shall be designed to create visual buffers and in a manner complementary and/or compatible with the scenic nature of the area. Newly landscaped vegetation shall be irrigated until permanently established. The Conservancy shall select materials and colors for all facilities (e.g., vault toilet restrooms) that shall be compatible with the surrounding natural environment.	Project design and construction	Conservancy	**Incorporated into Plans.**	
Mitigation Measure Aesthetics and Visual Resources-2 The Conservancy shall implement Mitigation Measure Aesthetics and Visual Resources-1.	Project design and construction	Conservancy	**Incorporated into Plans.**	
Mitigation Measure Aesthetics and Visual Resources-3 The Conservancy shall implement the following measures regarding lighting design features: • All outdoor lights shall be fully shielded with full cutoff luminaires. • All up-lighting for any purpose shall be avoided. • Tree-mounted lights shall be avoided unless they are fully shielded and pointing downward toward the ground or shining into dense foliage.	Project design and construction	Conservancy	**Incorporated into Plans.**	
3.5 Biological Resources				
Mitigation Measure Biological Resources-1 (Special-Status Plant Species) Before any ground-disturbing activities, a qualified botanist shall conduct a botanical survey for California satintail and Sanford's arrowhead during their respective floristic periods (September to May and November to May). If it is determined that suitable habitat for special-status plants is present, the botanist shall conduct a focused survey for	Prior to construction	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
special-status plants during the appropriate time of the year to adequately identify special-status plants that could occur in the study area. The surveys will be performed according to the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communitie*s (DFG 2009). Surveys shall be performed before the final alignment has been established to avoid special-status plants, and if the species are present before the start of construction as well. One or more of the following measures shall be implemented to avoid and/or minimize impacts on sensitive natural communities and special-status plants as appropriate, per the botanist's recommendation: • Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural communities to be protected. Clearly mark all such areas to be avoided on construction plans and designate these areas as "no construction" zones. • Allow adequate buffers around plants or habitat; show the location of the buffer zone on the maintenance design drawings. Mark this exclusion zone in the field with stakes and/or flagging so that it is visible to maintenance personnel, without causing excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). • Time construction or other activities during dormant and/or noncritical life cycle period. • Limit the operation of construction equipment to established roads wherever possible.				

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
Mitigation Measure Biological Resources-3 (American Badger) The Conservancy shall conduct a preconstruction survey no less than 14 days and no more than 30 days before the beginning of ground-disturbing activities. If active American badger den sites are present, the Conservancy shall consult with CDFW and implement the following measures: • The entrances to dens shall be blocked for 3–5 days to discourage use. • After the 3- to 5-day period, the dens shall be hand-excavated with a shovel to prevent reuse during construction. • No disturbance of active dens shall take place when cubs may be present and dependent on parent care.	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	
Mitigation Measure Biological Resources-4 (Avian Species) If project-related construction must occur during the breeding season (February through mid-September), the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	
Mitigation Measure Biological Resources-5 (Bald Eagle) Before initiating ground-disturbing activities, the Conservancy shall have preconstruction surveys performed for bald eagle nesting habitat and roost sites and foraging areas along the River within 2 miles of the project. Surveys shall be conducted in accordance	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
with the CDFW *Bald Eagle Breeding Survey Instructions* (DFG 2010) or current guidance. If an active eagle's nest is found within 0.5 mile of the project, construction shall not occur during the breeding season, typically January through July or August. If project-related construction must occur during the breeding season, the Conservancy shall have surveys performed for active nests no more than 30 days before commencing project-related activities. The surveys shall be conducted by a qualified biologist. A minimum no-disturbance buffer of 250 feet shall be delineated around active nests until the breeding season has ended, a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or the biologist determines that the nest is no longer active. The results of the preconstruction survey and any subsequent monitoring shall be provided to CDFW.				
Mitigation Measure Biological Resources-6 (Burrowing Owl) The Conservancy shall implement the following measures before initiating ground-disturbing activities: • Focused surveys shall be conducted following the survey methodology developed by the California Department of Fish and Game (now CDFW) *Staff Report on Burrowing Owl Mitigation* (DFG 2012). • If burrowing owls are found within the project footprint as a result of the required surveys, the recommendations of the *Staff Report on Burrowing Owl Mitigation* (DFG 2012) are mandatory; avoiding nesting sites must include implementation of no-disturbance buffer zones, unless a qualified biologist approved by CDFW verifies through noninvasive methods that either	Prior to and ongoing during construction	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
(1) the birds have not begun egg laying and incubation, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. • If burrowing owls must be removed, passive relocation is required during the nonbreeding season. A burrowing owl relocation plan to be approved by CDFW shall be developed and implemented, including passive measures such as installing one-way doors in active burrows for up to 4 days, carefully excavating all active burrows after 4 days to ensure that no owls remain underground, and filling all burrows in the construction area to prevent owls from using them. Replacement of burrows with artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) is required.				
Mitigation Measure Biological Resources-7 (Swainson's Hawk) The Conservancy shall implement the following measure before construction starts: • To avoid impacts on Swainson's hawks, no construction project shall occur between March 1 and August 31 unless a qualified biologist has performed nesting surveys following the survey methodology developed by the Swainson's Hawk Technical Advisory Committee (DFG 2000) before the start of project activities. Additional pre-project surveys for active nests within a 0.5-mile radius of the project site shall be conducted by a qualified biologist no more than 10 days before the start of project activities and during the	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
appropriate time of day to maximize detectability. A minimum no-disturbance buffer of 0.5 mile shall be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.				
Mitigation Measure Biological Resources-8 (Raptors/Migratory Birds) If construction begins between February 1 and August 31, the Conservancy shall conduct surveys for nesting raptors and migratory birds within 1,000 feet of the trail extension, parking lot, and other construction areas. If active nests are found, a buffer of 250 feet shall be established. A smaller buffer area may be sufficient if, in consultation with CDFW, it is determined sufficient to avoid impacts. Buffers shall be maintained until the young have fledged or the nests become inactive.	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	
Mitigation Measure Biological Resources-9 (Silvery Legless Lizard) The Conservancy shall perform a survey for legless lizard presence and shall evaluate and map specific habitat areas within the riparian habitat along the unimproved hiking paths before construction. The survey shall use standard coverboard techniques for herpetofauna. If silvery legless lizard or specific habitat areas are found, the area shall be avoided.	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	
Mitigation Measure Biological Resources-10 (Wildlife Movement) The Conservancy shall implement the following measures: • The multiuse trail shall be located outside the riparian corridor in conformance to the buffers established in the Parkway Master Plan. • All ground-disturbing work, including construction and routine maintenance, and routine	Project design and construction	Conservancy	**Incorporated into Plans/Specs** • **Incorporated into Plans/Specs** • **Contractor's Responsibility, see Division IV, Par. 23**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
recreational operating hours shall occur during daylight hours. • At a minimum, dogs shall be required to be leashed at all times.			• **Incorporated into Plans/Specs**	
Mitigation Measure Alternative 5B-Biological Resources-1 All mature sycamore trees to be removed during construction of Alternative 5B shall be replaced at a ratio of 5 western Sycamore trees planted for every tree removed, or as otherwise required by the California Department of Fish and Wildlife (CDFW). The replacement trees shall be a minimum of 10 gallons in size and shall be planted within the project site. Irrigation shall be provided for to achieve the survival rate required by CDFW.	Project design and construction	Conservancy	**Incorporated into Plans/Specs.**	
3.6 Cultural Resources				
Mitigation Measure Cultural Resources-1 The Conservancy shall perform Extended Phase I subsurface testing along the alignment of the trail extension to determine the boundary of site CA-FRE-980 and identify the presence of additional archaeological deposits. The testing shall be performed before the start of any construction. The Conservancy shall ensure that all cultural resources identified shall be evaluated for eligibility for inclusion in the CRHR. All additional testing shall be performed by individuals who meet the United States Secretary of the Interior's professional standards in archaeological history. If archaeological resources are determined to be eligible for the CRHR, and if the impacts of project construction and visitor use of the alignment render these resources as ineligible for the CRHR, the alignment shall be moved a minimum of 100 feet.	Prior to Construction	Conservancy	**Not Contractor's Responsibility**	
Mitigation Measure Cultural Resources-2 After completing the cultural resources investigations as described in Mitigation Measure Cultural Resources-1, and prior to commencing grading, earth work, or other disturbance of native soil, the Conservancy shall retain and enter into a service contract	Prior to and ongoing during construction	Conservancy and Contractor	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	**Timing/Schedule**	**Implementation Responsibility**	**Completion of Implementation**	
			Action	**Date Completed**
with a qualified professional for monitoring. The cultural resources monitor shall provide monitoring for all initial ground disturbing activities and earth disturbance on portions of the project site that have not been mined for gravel, including clearing, grubbing, tree removal, grading, trenching, stockpiling materials, rock crushing, etc. The monitor shall have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources. The Conservancy shall provide an opportunity for an appropriate tribal monitor to also enter a service agreement to be on-site during these activities to supplement the project monitor's services for advisory purposes and to serve the tribe's interests.				
Mitigation Measure Cultural Resources-3 If human remains or bones of unknown origin are found during any future project construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. The Native American Heritage Commission shall notify the person considered to be the most likely descendant. The most likely descendant shall work with the Conservancy to develop a program for the reinternment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been completed.	Ongoing during construction	Conservancy and Contractor	**Contractor's Responsibility**	
3.7 Geology and Soils				
Mitigation Measure Geology and Soils-1 The Conservancy shall implement the following measures: • Grading plans and design shall be signed by a professional engineer and submitted for approval within a reasonable	Project design and construction	Conservancy and Contractor	**Incorporated into Plans/Specs** • **Incorporated into Plans/Specs**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed

time frame before the start of construction.
• Construction slopes and grading shall be designed to limit the potential for slope instability and minimize the potential for erosion during and after construction.
• In developing grading and construction procedures, the stability of both temporary and permanent cut, fill, and otherwise affected slopes shall be analyzed and properly addressed.
• Development of the project site shall comply with the then-most-recent California Building Standards Code design standards and performance thresholds for construction on steep slopes to avoid or minimize potential damage from erosion.
• Where soft or loose soils are encountered during investigations, design, or project construction, appropriate measures shall be implemented to avoid, accommodate, replace, or improve such soils. Depending on site-specific conditions and permit requirements, these measures may include:
  • locating construction facilities and operations away from areas of soft and loose soil;
  • over excavating soft or loose soils and replacing them with engineered backfill materials;
  • increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction;
			• **Contractor's Responsibility (related to temporary construction slopes)**
			• **Contractor's Responsibility**
			• **Incorporated into Plans/Specs**
			• **Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	**Timing/Schedule**	**Implementation Responsibility**	**Completion of Implementation**	
			Action	**Date Completed**
• installing material over construction access roads such as aggregate rock, steel plates, or timber mats; and • treating soft or loose soils in place with binding or cementing agents. • At the beginning of each construction day, the proposed staircase and trail along the bluff slope shall be evaluated for slope stability by qualified construction staff. • Fiber rolls shall be placed along the perimeter of the site to prevent sediment and construction-related debris and sediment from leaving the site. • Silt fences shall be placed downgradient of disturbed areas to slow runoff and sediment. • During construction, slopes affected by construction activities shall be monitored by qualified construction staff and maintained in a stable condition. • Construction activities likely to result in slope instability shall be stabilized and suspended, as necessary, during and immediately after periods of heavy precipitation when unstable slopes are more susceptible to failure.			• **Contractor's Responsibility** • **Contractor's Responsibility** • **Contractor's Responsibility** • **Contractor's Responsibility** • **Contractor's Responsibility**	
Mitigation Measure Alt 5B-Geology-1 The Conservancy shall work with the City of Fresno to obtain a variance from the requirements of the Bluff Overlay District to permit construction of the access road and staircase down the slope of the bluff. The variance must be approved by the City of Fresno prior to construction along the slope of the bluff.	Prior to Construction	Conservancy	**Not Contractor's Responsibility** (Determined by City to not be necessary)	
3.9 Hazards and Hazardous Materials				
Mitigation Measure Hazards and Hazardous Materials-1	Project design and ongoing	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
Safe access for emergency and wildland fire suppression equipment and civilian evacuation shall be provided at three entrance points and throughout the site on the paved trail system. Response agency–approved emergency responder access locks shall be maintained on all gates.	through life of project		(as applies to the one access point in Phase 1)	
Mitigation Measure Hazards and Hazardous Materials-2 Signs shall be posted that clearly indicate entrances and egresses for the multiuse trail (e.g., Perrin Avenue entrance, West Riverview Drive entrance), to minimize delay in response times to any wildfires that may occur.	Project design and ongoing through life of project	Conservancy	**Contractor's Responsibility** (at Woodward West only in Phase 1)	
Mitigation Measure Hazards and Hazardous Materials-3 Any internal combustion engine that uses hydrocarbon fuels shall not be used on any grass- or brush-covered lands unless the engine is equipped with a spark arrester. All vehicles and construction equipment shall be equipped with an improved muffler.	During construction and ongoing through life of project	Conservancy	**Contractor's Responsibility**	
Mitigation Measure Hazards and Hazardous Materials-4 Signage containing the following or equally effective language shall be placed at all trail access points: Wildland fires destroy habitat and can threaten lives and structures—be fire safe! The following prohibitions apply throughout the trail area: (a) No open fires, campfires, or fireworks. (b) No burning of any trash, vegetation, brush, stumps, logs, fallen timber, or any other flammable material. (c) Portable barbecues or grills may not be used. (d) No smoking.	Project design and ongoing through life of project	Conservancy	**Incorporated into Plans/Specs.**	
Mitigation Measure Hazards and Hazardous Materials-5 The Conservancy shall maintain a fire-defensible firebreak or comply with the	Ongoing through life of project	Conservancy	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
standards in the City of Fresno's weed abatement/fire prevention ordinance by annually disking or mowing at the site. The shoulders of developed trails shall also be mowed or disked no less often than annually. Ladder fuels and fuel loads shall be evaluated periodically and management measures such as trimming and fuel reduction activities shall be implemented in public use areas.				
Mitigation Measure Hazards and Hazardous Materials-6 Before the start of construction, a fire prevention plan for construction activities shall be prepared and implemented in coordination with the appropriate emergency service and/or fire suppression agencies of the applicable local or State jurisdictions. The plan shall describe fire prevention and response methods, including fire precaution, requirements for spark arrestors on equipment, and suppression measures that are consistent with the policies and standards of the affected jurisdictions. If heavy equipment is used for construction during the dry season, a water truck shall be maintained on the construction site. Materials and equipment required to implement the fire prevention plan shall be available on-site. Before construction begins, all construction personnel shall be trained in fire safety and informed of the contents of the fire prevention plan.	During construction	Conservancy and Contractor	**Contractor's Responsibility**	
Mitigation Measure Alt. 5B–Hazards and Hazardous Materials-1 Consistent with State of California procedures and in conjunction with the Conservancy's real property acquisition process, the Conservancy will obtain: 1.0 A Phase II Environmental Site Assessment prepared by a licensed environmental professional and performed to ASTM standards (ASTM E1903-11) at the locations of the proposed paved pedestrian/bicycle path (adjacent to the existing access road) and new parking area and associated facilities (at the base of the existing access road). Testing shall include sampling of soil and groundwater for constituents of concern such as volatile organic compounds, along with vapor	Before acquisition of land by Conservancy, during project design, during construction.	Conservancy and relevant land owners	**Not Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
monitoring for ambient air emissions of constituents such as methane. Laboratory results shall be presented and summarized in a report, which shall be submitted to the County of Fresno Department of Public Health. The report shall recommend specific additional site investigation needs if appropriate, remedial activities to clean up the property, and any project design features that are necessary to assure human and environmental health and safety with the implementation of Alternative 5B; 2.0 Any further site investigations recommended as part of the Phase II Environmental Site Assessment; and 3.0 A post closure land use plan prepared in compliance with 27 CCR Sections 20950–21420. As required by Section 21190, the post closure land use shall be designed and maintained to: • protect public health and safety and prevent damage to structures, roads, utilities, and gas monitoring and control systems; • prevent public contact with waste, landfill gas, and leachate; and • prevent landfill gas explosions The land use plan would be submitted to the County of Fresno Department of Public Health and the Central Valley RWQCB for review and approval. Upon approval, the plan shall be implemented before the Conservancy acquires the land for the Parkway project. After real property acquisition, and in conjunction with final design of Alternative 5, the Conservancy will develop the design to avoid or minimize locating the planned pedestrian/bicycle path, proposed parking lot, and amenities on the landfill material and will ensure consistency with the approved post closure land use plan.				
Mitigation Measure Alt. 5B–Hazards and Hazardous Materials-2 A worker health and safety plan shall be prepared before the start of construction activities within the Alternative 5B project site. The plan shall identify, at a minimum: • the potential types of contaminants that could be encountered during construction activity;	During construction	Conservancy and contractor	**Not Contractor's Responsibility** (landfill is inert and a Post Closure Land Use Plan has been approved and incorporated into site grading.)	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
• all appropriate equipment and procedures to be used during project activities to protect workers, public health, and the environment; • emergency response procedures; • the most direct route to the nearest hospitals; and • an on-site safety officer. The plan shall describe actions to be taken should hazardous materials be encountered during construction, including protocols for handling hazardous materials and preventing their spread, and procedures for notifying local and/or State regulatory agencies in case of an emergency. The plan shall specify that if evidence of hazardous materials contamination is observed or suspected during site preparation or construction through either obvious or implied measures (i.e., stained or odorous soil or groundwater), construction activities shall immediately cease in the area of the find. A qualified hazardous materials specialist shall assess the site and collect and analyze soil and/or groundwater samples, if needed. If the samples identify contaminants, the Conservancy shall employ measures in accordance with federal and State regulations, or shall coordinate with the landowner or other responsible party to employ such measures, before construction activities can resume at the site.				
3.10 Hydrology and Water Quality				
Mitigation Measure Hydrology and Water Quality-1 Construction staging areas, including hazardous-material storage areas and temporary stockpiles, shall be located outside the 100-year floodplain and designated floodway and away from drainages. Appropriate BMPs shall be implemented to ensure that runoff from these areas does not directly flow to surface waters. Before construction begins, locations for storage of hazardous materials, temporary stockpiles, and demolition debris piles within staging areas shall be designated outside the 100-year floodplain and designated floodway and away from drainages. Major storage and stockpile areas shall be designated in the SWPPP, as required for NPDES General Permit coverage	During construction	Conservancy and Contractor	**Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
for construction. Stockpile areas shall be identified in the SWPPP and appropriate BMPs shall be installed accordingly. The mitigation shall be implemented before any ground disturbance and shall continue throughout construction, as conditions require.				
Mitigation Measure Hydrology and Water Quality-2 The project design shall include structural BMPs for project operation to reduce and treat post-construction stormwater runoff from the proposed parking lot and other impervious features. The runoff shall be treated through the use of detention basins or other means before it reaches on-site surface waters, wetlands, and the River. The selected BMPs shall minimize the velocity of stormwater flows and disperse the flows to the extent practicable. The selected BMPs also shall serve to infiltrate, filter, store, evaporate, and detain runoff close to its source, and shall enhance on-site recharge of groundwater. The structural BMPs shall be designed in accordance with applicable local and State regulations. BMPs such as bioswales, surface sand, other media filters, vegetated filter strips, and detention basins may be implemented to treat, detain, and percolate stormwater runoff. The mitigation shall be implemented before project designs are finalized.	Project design and construction	Conservancy and Contractor	**Incorporated into Plans.**	
Mitigation Measure Hydrology and Water Quality-3 The proposed equestrian trails shall be sited, graded, and constructed consistent with Policy RDP11 of the Parkway Master Plan. The equestrian trail and staging area shall drain to detention swales, with no direct discharges to on-site waters or the River. Signage shall be posted, animal waste containers shall be provided, animal waste removal procedures shall be implemented, and the site shall be inspected periodically to determine the effectiveness of the measures. Vault toilets shall be cleaned daily and waste periodically trucked off-site for treatment.	Project Design and ongoing during life of the project	Conservancy	**Incorporated into Plans.**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
Mitigation Measure Hydrology and Water Quality-4 For improvements that require an encroachment permit and approval from the CVFPB, drainage and hydromodification studies shall be performed to evaluate and avoid modifications that would increase flooding in upstream or downstream areas, or that would cause obstructions during flood events. A professional civil engineer shall: • conduct a drainage and hydromodification study evaluating the location of all existing and proposed drainage features; • perform stormwater calculations for surface drainage flows occurring before and after project construction; • evaluate the potential for drainage and floodplain modifications to increase erosion on adjacent properties; and • determine the base flood elevation before and after construction, so that no net displacement of floodwaters shall occur. As necessary, the filling of floodplain or floodway areas below the base flood elevation shall be compensated for and balanced by excavation of a hydraulically equivalent area, taken from below the base flood elevation, to achieve no net increase in the base flood elevation greater than 0.10 foot, as measured at the property lines of the parcels being developed. The Conservancy shall perform hydraulic studies in accordance with applicable floodplain management regulations, prepare an encroachment permit application, and obtain an encroachment permit before construction begins.	Project design and construction	Conservancy	**Completed during EP application process and incorporated into plans.**	
Mitigation Measure Hydrology and Water Quality-5 Mitigation Measure Hydrology and Water Quality-2 shall be implemented as described above, to prevent and reduce potential	Project design and construction	Conservancy	**Incorporated into Plans**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	Timing/Schedule	Implementation Responsibility	Completion of Implementation	
			Action	Date Completed
alterations to drainage patterns that can result in erosion or siltation.				
Mitigation Measure Hydrology and Water Quality-6 Mitigation Measures Hydrology and Water Quality-2, Hydrology and Water Quality-4, and Hydrology and Water Quality-5 shall be implemented as described above.	Project design and construction	Conservancy	**Incorporated into Plans**	
Mitigation Measure Hydrology and Water Quality-7 Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce pollutants in runoff from project construction and post-construction activities.	Project design and construction	Conservancy and Contractor	**Contractor's Responsibility**	
Mitigation Measure Hydrology and Water Quality-8 Mitigation Measures Hydrology and Water Quality-1, Hydrology and Water Quality-2, and Hydrology and Water Quality-3 shall be implemented to reduce project-related degradation of water quality.	Project design and construction	Conservancy and Contractor	**Incorporated into Plans**	
Mitigation Measure Hydrology and Water Quality-9 Mitigation Measure Hydrology and Water Quality-4 shall be implemented to reduce potential impacts from flood hazards.	Project design and construction	Conservancy	**Incorporated into Plans**	
Mitigation Measure Alt. 5B–Hydrology and Water Quality-1 Before any surface-disturbing construction begins, the Conservancy shall implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-1, requiring completion of a subsurface assessment, avoidance, and post closure plan (if required) for land within and adjacent to the alignment of the access road, multiuse trail, and parking lot, to determine the presence of contaminants of concern. The assessment shall be completed along the face of the slope adjacent to the trail and access road alignment. If contaminants of concern are present, the area shall be remediated as recommended in the assessment and as required by regulatory agencies. In addition, the Conservancy shall	Project design and construction	Conservancy and Contractor	**Incorporated into Plans & Coordinated with County/ Cal Recycle; PCLUP & new SWIS # pending**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	**Timing/Schedule**	**Implementation Responsibility**	**Completion of Implementation**	
			Action	**Date Completed**
implement Mitigation Measure Alt. 5–Hazards and Hazardous Materials-2, requiring preparation of a worker health and safety plan.				
Mitigation Measure Alternative 5B-Land Use-1 In accordance with Mitigation Measure Alternative 5B-Land Use 1, the Conservancy shall work with the City of Fresno to obtain a variance from the requirements of the Bluff Overlay District to permit construction of the access road and staircase down the slope of the bluff. The variance must be approved by the City of Fresno prior to construction along the slope of the bluff.	Project design	Conservancy	**Not Contractor's Responsibility** (Determined by City to not be required.)	
3.13 Noise				
Mitigation Measure Noise-1 The plans, specifications, and bid documents for each construction project shall include noise control measures to reduce noise impacts to the extent feasible. The measures shall include the following: • The project shall be designed to meet the City of Fresno's standards for nonscheduled, intermittent, short-term operations of mobile construction equipment (e.g., backhoes, bulldozers, motor graders, and scrapers), and the noise standards for repetitively scheduled and relatively long-term construction operation of stationary equipment (e.g., compressors and generators). • Muffled construction equipment shall be used whenever possible. • Impact noise associated with construction shall be minimized by using noise control techniques, procedures, and acoustically treated equipment.	During Construction	Conservancy and Contractor	**Contractor's Responsibility**	

Mitigation Monitoring and Reporting Program for the River West Fresno, Eaton Trail Extension Project EIR (Alternative 1 & 5B)				
Mitigation Measure	**Timing/Schedule**	**Implementation Responsibility**	**Completion of Implementation**	
			Action	**Date Completed**
For example, when practical, bins used to transport excavated material, including rocks and debris, could be constructed of nonmetallic liner to reduce impact noise; similarly, dump trucks could have resilient bed liners installed to minimize impact noise. • Construction hours shall be restricted to meet City of Fresno standards, which restrict hours of construction to between 7 a.m. and 9 p.m., Monday through Saturday, and prohibit activity on Sundays and federal holidays.				
5.6.17 Transportation				
Mitigation Measure Alt. 1- Traffic-1 Installing either a traffic signal or other effective traffic control such as a traffic roundabout, designed by the City for the Audubon Drive/Del Mar Avenue intersection, would improve access to the West Riverview Drive entrance by reducing wait time for traffic entering the intersection from Del Mar Avenue and would reduce the potential for traffic accidents. A traffic signal is on the City's priority list, but the City has not committed to a date for construction of these improvements. The Conservancy will work with the City on timing and funding to get an effective traffic control measure in place and negotiate with the City to provide a fair-share contribution to fund these traffic safety improvements. The Conservancy will proceed with the project even if an effective traffic control is not yet in place	P Ongoing	Conservancy and the City of Fresno	**Completed by the City of Fresno**	2023

DIVISION X

PG&E RULE 16

NOTES:

09-18-18

REFER TO ELECTRIC & GAS SERVICE REQUIREMENTS (GREEN BOOK) OR SEPARATE PG&E STANDARD DRAWINGS. CONTACT YOUR PG&E REPRESENTATIVE FOR COPIES, OR ACCESS www.pge.com/greenbook

CONDUIT, TRENCHING, AND BACKFILL:

1) ALL DIMENSIONS AND LOCATIONS ARE ESTIMATED, APPROXIMATE AND MAY BE SUPERSEDED BY A JOINT TRENCH DRAWING. REFER TO THE JOINT TRENCH COMPOSITE DRAWING FOR EXACT TRENCH LOCATION

2) MAINTAIN MAXIMUM PRACTICABLE HORIZONTAL CLEARANCE BETWEEN PG&E FACILITIES AND "WET" UTILITIES (WATER, SEWER, STORM DRAIN, ETC.). THE MIN. ALLOWABLE SEPARATION BETWEEN PG&E FACILITIES AND ANY PARALLEL "WET" UTILITY IS 3/FT. WITH A PRESENCE OF 1/FT. OF UNDISTURBED EARTH OR THE INSTALLATION OF A SUITABLE BARRIER. THIS MEASUREMENT IS BETWEEN THE OUTER EDGE OF THE PG&E FACILITY AND THE OUTER EDGE OF THE PARALLEL "WET" FACILITY. IF 3/FT. CANNOT BE MAINTAINED, A FORMAL VARIANCE MUST BE OBTAINED FROM PG&E WORK WITH THE PG&E INSPECTOR (REFERENCE PG&E UO STANDARD S5453).

3) BOX, PAD, AND CONDUIT SIZES AND LOCATIONS SHALL CONFORM TO THE PG&E ELECTRIC CONSTRUCTION DRAWING.

4) PROVIDE LONG CONDUIT SWEEPS WHERE INDICATED. RECOMMENDED SWEEP RADIUS (10' OF RADIUS PER INCH OF CONDUIT DIAMETER) EXAMPLE: 4" CONDUIT = 40' RADIUS

5) DO NOT EXCEED 300 DEGREES OF BENDS IN ANY CONDUIT RUN (INCLUDING FEED LOCATION). NOTE: SECONDARY AND SERVICE RUNS OF 200 FEET OR LESS MAY HAVE UP TO 315 DEGREES OF BENDS (REFERENCE PG&E DOCUMENT 038193).

6) MANUFACTURED BENDS OR APPLICATION OF HEAT SHALL NOT BE USED TO OBTAIN LONG CONDUIT SWEEPS.

7) ALL CONDUITS SHALL BE PROVEN AND A POLYESTER PULLING TAPE INSTALLED.

8) MANUFACTURED BENDS ARE NOT TO BE CUT, SHORTENED, OR ALTERED IN ANY WAY.

9) IDENTIFY ENDS OF BURIED CONDUIT WITH AN ELECTRONIC MARKER AND A VERTICAL CONDUIT SCRAP INSTALLED FROM RIGID CAP TO GROUND LEVEL.

10) CONDUITS ENTERING PRIMARY BOXES SHALL BE AT A RIGHT ANGLE TO THE WINDOW OR WALL.

11) STUB CONDUITS AT RISER POLES IN QUADRANTS AS SHOWN. AT IDENTIFIED POLE LOCATIONS, THE TRENCHING AGENT IS TO EXCAVATE TO TRENCH DEPTH AND INSTALL A 30" DIAMETER CARDBOARD TUBE. THE RISER CONDUIT BEND IS TO BE PLACED OUTSIDE AND ADJACENT TO THE TUBE AT THE POLE QUADRANT INDICATED. BACKFILL AROUND AND INSIDE TUBE WITH CLEAN NATIVE FILL.

12) LS2 STREET LIGHT CONDUIT GOING TO PG&E BOXES OR PEDESTALS NOT DESIGNATED AS P.O.S. (INCLUDING TRANSFORMERS) WILL NOT BE ACCEPTED OR CONNECTED.

13) ONLY ONE LS2 STREET LIGHT (P.O.S.) CONNECTION PER BOX OR PEDESTAL.

LAND RIGHTS AND EASMENTS:

14) APPLICANT TO PROVIDE ADEQUATE P.U.E'S AND/OR ROW'S FOR PG&E FACILITIES. ANY ADDITIONAL REQUIRED RIGHTS OF WAY ARE TO BE SURVEYED AND DOCUMENTED BY PG&E AT THE APPLICANT'S EXPENSE.

SAFETY AND WORKMANSHIP:

15) CALL 811 (UNDERGROUND SERVICE ALERT) 48 HOURS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATION MARKING.

16) 48 HOUR NOTICE REQUIRED FOR UNDERGROUND INSPECTION.

17) MATERIALS AND WORKMANSHIP SHALL BE FIRST QUALITY IN EVERY RESPECT, PLUMB AND TRUE, AND ACCORDING TO THE SPECIFIC REQUIREMENTS OF THE DRAWINGS AND THE ABOVE APPLICABLE NOTES AND SPECIFICATIONS.

18) THE APPLICANT IS TO VERIFY ALL PROPOSED INSTALLATIONS, CONDITIONS & SPECIFICATIONS PRIOR TO COMMENCING WITH ANY PORTION OF WORK. ANY DISCREPANCIES, DELETIONS OR INCONSISTENCIES ARE TO BE REPORTED TO THE PG&E REPRESENTATIVE IMMEDIATELY. THE APPLICANT SHALL COMPLY WITH ALL APPLICABLE SPECIFICATIONS. ANY VARIATIONS FROM PLANS OR SPECIFICATIONS RELIEVES PG&E OF ALL RESPONSIBILITY FOR THE SUBSTRUCTURE OR DESIGN.

---WORK AGENT RESPONSIBILITIES---
PG&E TO INSTALL ELEC. DISTRIBUTION FACILITIES APPLICANT TO INSTALL DIST. CONDUIT & SUBSTRUCTURES
PG&E TO INSTALL ELEC SERVICE FACILITIES APPLICANT TO INSTALL SERVICE CONDUITS & SUBSTRUCTURES

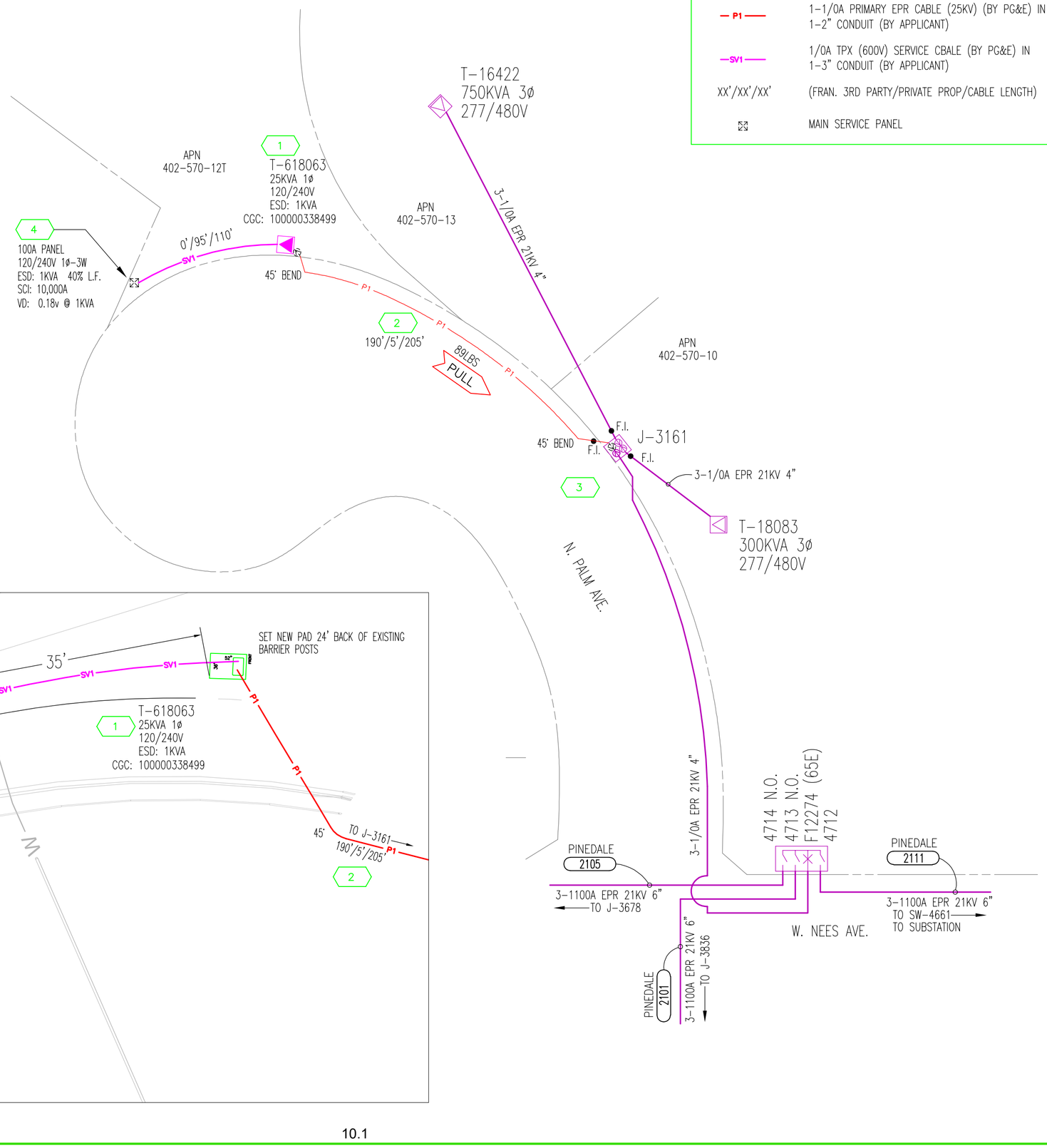
REQUIRED PERMITS

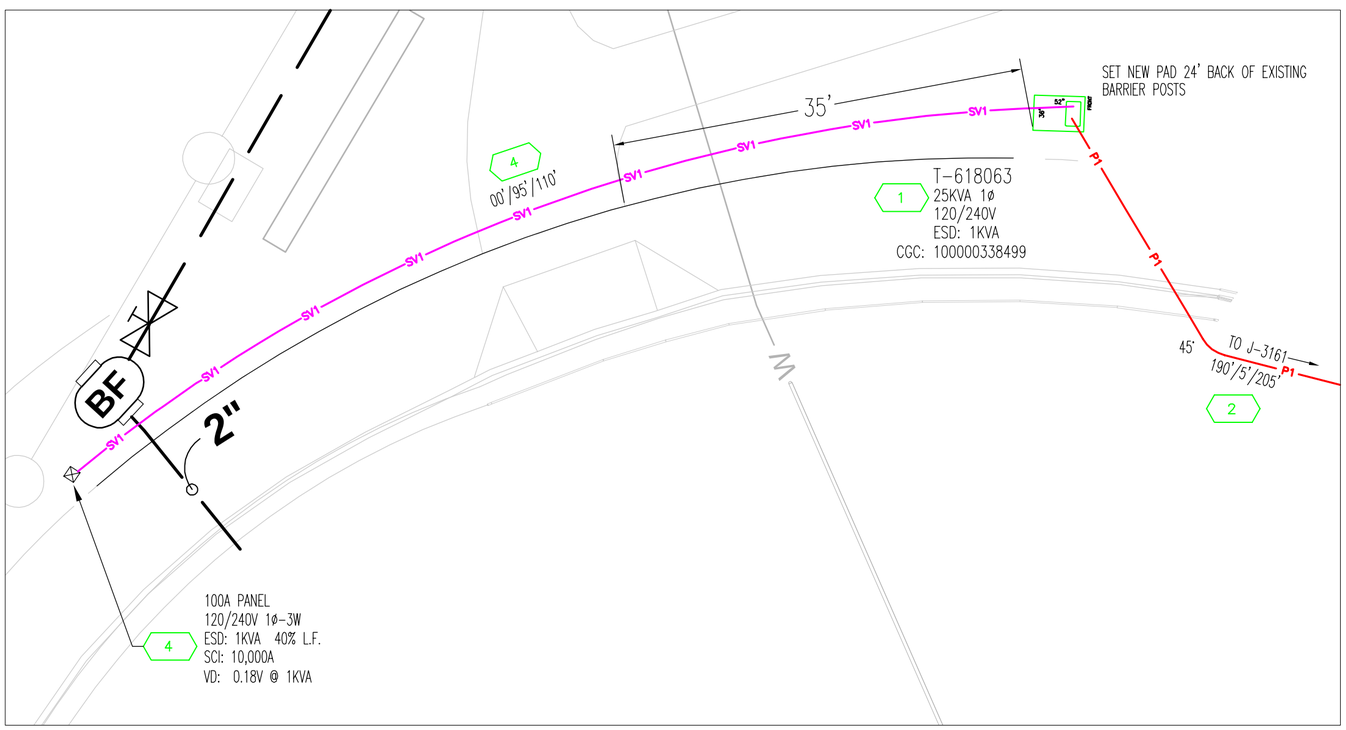
☐ COUNTY ☒ CITY

☒ TRAFFIC CONTROL

LEGEND

INSTALL	DESCRIPTION
FRONT	PM TRANSFORMER, DF-LB, (SIZE SHOWN) BY PG&E 36'"x52"x18" PAD (M360001) BY APPICANT
— P1 —	1-1/0A PRIMARY EPR CABLE (25KV) (BY PG&E) IN 1-2" CONDUIT (BY APPLICANT)
—SV1—	1/0A TPX (600V) SERVICE CBALE (BY PG&E) IN 1-3" CONDUIT (BY APPLICANT)
XX'/XX'/XX'	(FRAN. 3RD PARTY/PRIVATE PROP/CABLE LENGTH)
	MAIN SERVICE PANEL





10.1

EST: MICHAEL TAYLOR 559-978-9810
ADE: LIAM JOHNSON 559-341-5305
SUPV: HENRY DIAZ 559-341-5283
REP: J.B. ROTH 559-246-0169
PLNR: NICK GARGANO 559-304-1299

JPA#:
DATE: 08/28/2026
SHEET: 1 OF 1 REV. 0
NOTIF: 133606395
SCALE: 1"=40'
PM: 35795891

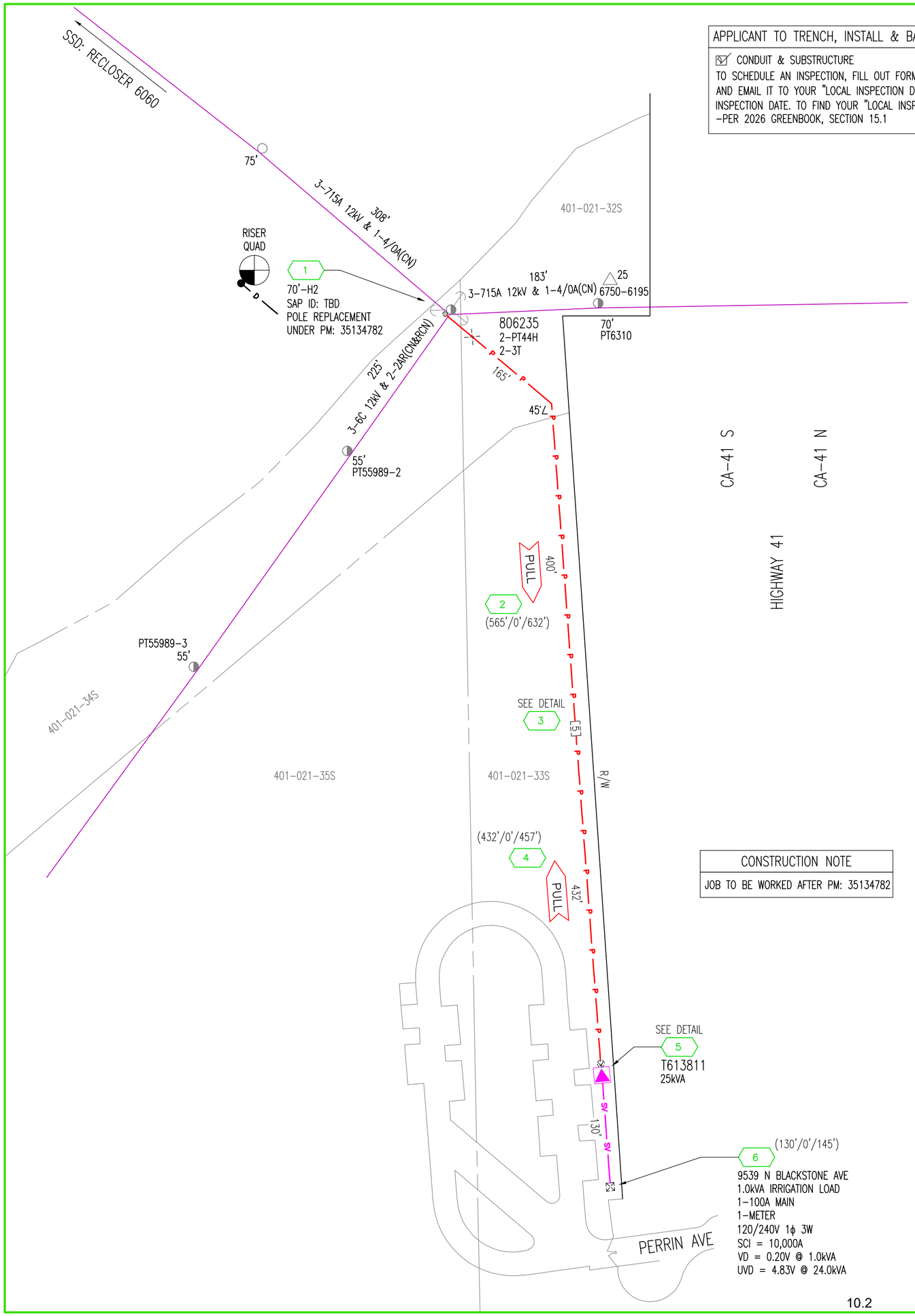
ENGINEERING AND PLANNING DEPT.
1385 E. SHAW AVE.
FRESNO CA 93710

NO ENVIRONMENTAL ISSUES
NEAR LOC: 2
Know what's below. Call before you dig.
811
GAS CONFLICT: YES

PRIMARY VOLTAGE: 21KV kV
LATITUDE: 36.852800
SOURCE SIDE DEVICE: F12274
SUB & CIRCUIT: PINEDALE 2111
DSGN SAG: N/A
LOADING AREA: LIGHT
CORROSION AREA: NON
INSULATION DIST: C
LONGITUDE: -119.806080
RAPTOR ZONE: YES
ARRESTER DIST: 2
EXEMPT EQUIP INST.: N/A
FIRE AREA: LRA-TIER 1

UNDERGROUND SERVICE - COMMERCIAL

8090 NORTH PALM AVENUE
FRESNO



APPLICANT TO TRENCH, INSTALL & BACKFILL

☑ CONDUIT & SUBSTRUCTURE

TO SCHEDULE AN INSPECTION, FILL OUT FORM TD-4462M-F02, "REQUEST FOR INSPECTION" AND EMAIL IT TO YOUR "LOCAL INSPECTION DESK" 48 HOURS IN ADVANCE OF PREFERRED INSPECTION DATE. TO FIND YOUR "LOCAL INSPECTION DESK," SEE CONTACT LIST.
-PER 2026 GREENBOOK, SECTION 15.1

CONDUIT BENDING RADIUS		
SIZE	VERTICAL	HORIZONTAL
3"	24"	36"
4"	36"	60"

LAND DEPT.
ACQUIRE LAND RIGHTS

TRANSFORMER DATA

100000338235
T613811
1ϕ 25kVA Tx PM DF-LB
120/240V 12/21GrdY
ESD=1.0kVA @ 100% LF, 85% PF
PG&E CODE: 261507

LEGEND

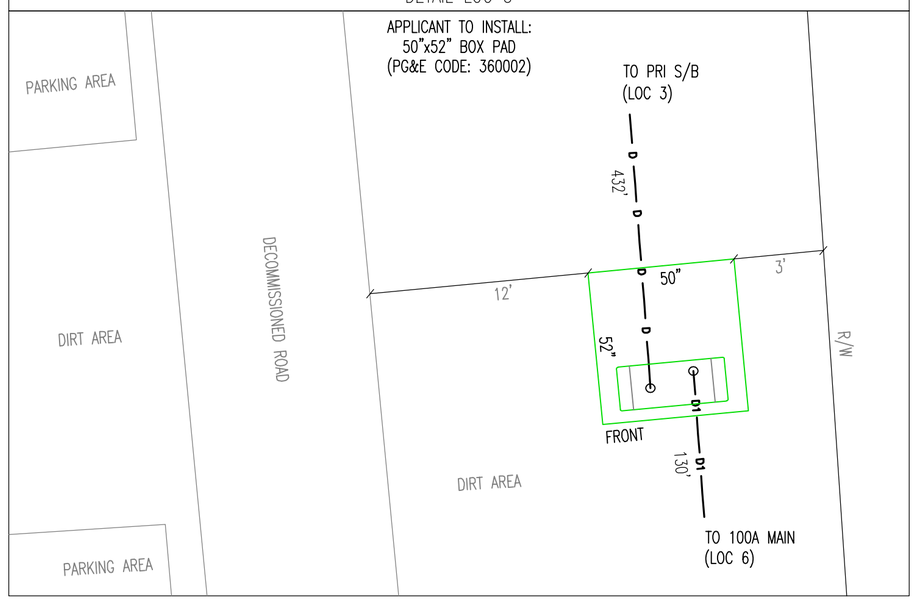
SYMBOL	DESCRIPTION
	PG&E TO INSTALL – 3" RISER
	PG&E TO INSTALL – FUSED CUTOUTS
	PG&E TO INSTALL – PM Tx
	PG&E TO INSTALL – LOAD BREAK ELBOWS
– P –	PG&E TO INSTALL – UG PRI CABLE: 2-1/0A EPR IN APPLICANT INSTALLED 1-4" SCHD-40 CONDUIT
– SV –	PG&E TO INSTALL – UG SVC CABLE: 1-1/0A TPX IN APPLICANT INSTALLED 1-3" SCHD-40 CONDUIT
[5]	APPLICANT TO INSTALL – ENCLOSURE
– D –	APPLICANT TO INSTALL – 1-4" SCHD-40 CONDUIT
– D1 –	APPLICANT TO INSTALL – 1-3" SCHD-40 CONDUIT
	PG&E TO INSTALL – ELECTRIC METER
(XX'/XX'/XX')	FRANCHISE-3RD PARTY CONDUIT/PRIVATE PROPERTY/TOTAL CABLE LENGTH

CABLE PULLING DATA			
LOC. OF PULL	CALCULATED PULLING TENSION	MAXIMUM ALLOWABLE TENSION	ACTUAL PULLING TENSION
2	275 LBS	2018/2018 LBS	
4	196 LBS	2018/2018 LBS	

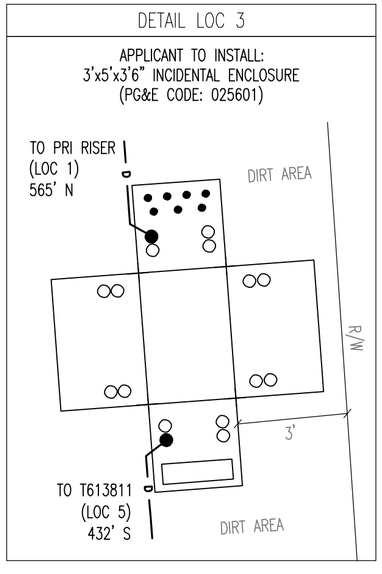
CONSTRUCTION NOTE

JOB TO BE WORKED AFTER PM: 35134782

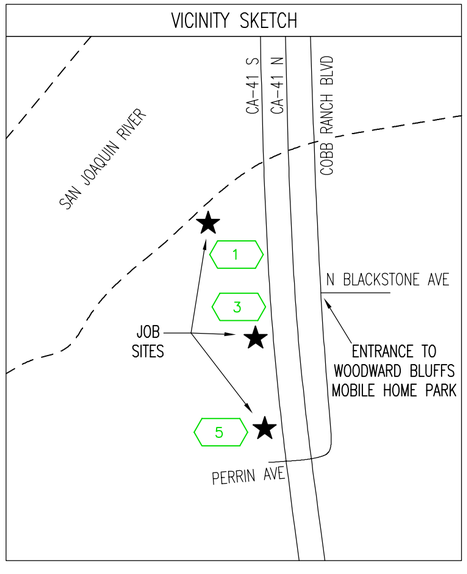
DETAIL LOC 5



DETAIL LOC 3



VICINITY SKETCH





CONSTRUCTION SKETCH
9539 N BLACKSTONE AVE
FRESNO

ENGINEERING AND PLANNING DEPT.
4101 WIBLE RD
BAKERSFIELD CA 93313

NO ENVIRONMENTAL ISSUES

811 Know what's below. Call before you dig.

GAS CONFLICT:NO

NEAR LOC: N/A

EST: LUIS ALBERTO	559-470-8273	NOTIF: 133606396	JPA#: N/A
ADE: JESSE HILL	661-912-3725	SCALE: 1"=100'	DATE: 08/25/2026
SUPV: SUZANNE ADAM	661-808-9330		SHEET: 1 OF 1 REV. 0
REP: J.B. ROTH	559-246-0169		
PLNR: NICK GARGANO	559-304-1299		

PRIMARY VOLTAGE: 12 kV		INSULATION DIST: C	
LATITUDE: 36.873893		LONGITUDE: -119.794000	
SOURCE SIDE DEVICE: RECLOSER 6060			
SUB & CIRCUIT: CASSIDY 2108			
DSGN SAG: LT RURAL		RAPTOR ZONE: YES	
LOADING AREA: LIGHT		ARRESTER DIST: 2	
CORROSION AREA: NON			
EXEMPT EQUIP.INST.: N/A		FIRE AREA: LRA-TIER 1	

DIVISION XI

GEOTECHNICAL REPORT

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
RIVER WEST LEWIS EATON TRAIL EXTENSION
PROPOSED TRAIL AND PARKING LOTS
FRESNO, CALIFORNIA 93711

BSK PROJECT G00000706

PREPARED FOR:

PROVOST AND PRITCHARD CONSULTING GROUP
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611

MAY 11, 2023

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
RIVER WEST LEWIS EATON TRAIL EXTENSION
PROPOSED TRAIL AND PARKING LOTS
FRESNO, CALIFORNIA 93711

Prepared for:

Provost And Pritchard Consulting Group
455 W Fir Avenue
Clovis, California 93611

BSK Project: G00000706

May 11, 2023

Prepared by:

Tolleman Gorham, EIT
Staff Engineer II

Neva M. Popenoe, PE, GE
Geotechnical Group Manager



BSK Associates
691 N Laverne Avenue, Suite 101
Fresno, California 93727
(559) 497-2880
www.bskassociates.com

Distribution: Client (Email: mosborn@ppeng.com)

TABLE OF CONTENTS

1. Introduction 1
1.2. Purpose and Scope of Services 1
2. Field Investigation and Laboratory Testing 1
2.1. Field Exploration 1
2.2 Laboratory Testing 2
3. Site Conditions 2
3.1 Site Description and Surface Conditions 2
3.2 Subsurface Conditions 2
3.3 Groundwater Conditions 3
4. Conclusions and Recommendations 3
4.1 Soil Corrosivity 3
4.2 Seismic Design Criteria 3
4.3 Slope Stability Analysis 4
4.4 Shallow and Mat Foundations 5
4.4.1 Shallow Foundations 5
4.4.2 Mat Foundations 6
4.5 Lateral Earth Pressures and Frictional Resistance 7
4.6 Site Preparation and Earthwork Construction 7
4.7 Excavation Stability 9
4.8 Conventional Pavement Section Recommendations 9
4.9 Utility Trench Excavation and Backfill 11
4.10 Surface Drainage Control 11
5. Plans and Specifications Review 11
6. Construction Testing and Observations 11
7. Limitations 12

Tables

Table 1: Seismic Design Parameters
Table 2: Slope Stability Soil Parameters
Table 3: Critical Factors of Safety
Table 4: Allowable Bearing Pressure
Table 5: Estimated Post-Construction Settlement
Table 6: Lateral Earth Pressures
Table 7: Boring Summaries
Table 8: Conventional Pavement Section Recommendations – Riverview Drive
Table 9: Conventional Pavement Section Recommendations

Appendices

Figures

Figure 1: Site Vicinity Map
Figure 2: Boring Location Map

Appendix A: Field Exploration
Appendix B: Laboratory Testing
Appendix C: Slope Stability Analysis Results
Appendix D: Data Report for Spano Park Improvements

1. INTRODUCTION

This report presents the results of a geotechnical engineering investigation conducted by BSK Associates (BSK), for the proposed Lewis Eaton Trail Extension adjacent to the San Joaquin River West of CA-41 in Fresno, California (Site). The site consists of a new trail with improvements including three proposed parking lots and an access road situated along the San Joaquin River west of CA-41, as shown on the Site Vicinity Map, Figure 1. The access road is north of Spano Park, and is on a slope. The geotechnical engineering investigation was conducted in accordance with BSK Proposal G00000706, dated October 5, 2022.

This report provides a description of the geotechnical conditions at the Site and provides specific recommendations for earthwork and flexible pavement design recommendations. In the event that changes occur in the design of the project, this report's conclusions and recommendations will not be considered valid unless the changes are reviewed with BSK, and the conclusions and recommendations are modified or verified in writing.

1.1. Planned Construction

BSK understands that the project will include a new trail extending from the existing Lewis Eaton Trail at Cobb Ranch Boulevard, and extend west adjacent to the San Joaquin River. Trail amenities including new parking lots, restroom and viewing facilities will be included as part of the project. New parking areas are proposed at Cobb Ranch Boulevard west of SR 41, at Riverview Drive, and north of Spano Park on an extension of Palm Avenue. This roadway extension of Palm Avenue is anticipated to be placed along the existing slope on the north side of Spano Park. A shotcrete retaining wall is anticipated to be constructed on the uphill side of the proposed roadway along the slope. It is understood the shotcrete retaining wall will be designed by others. The new viewing area is planned at the extension of Riverview Drive area and will include an ADA compliant seating area supported by a retaining wall.

1.2. Purpose and Scope of Services

The objective of this geotechnical investigation was to characterize the subsurface conditions at the project site and provide geotechnical engineering recommendations for the preparation of plans and specifications. The scope of the investigation included a field exploration, laboratory testing, engineering analyses, and preparation of this report. This report does not address the road or retaining wall to be located north of Spano Park; however, boring logs and laboratory tests for use by designers are presented in Appendix D.

2. FIELD INVESTIGATION AND LABORATORY TESTING

2.1. Field Exploration

The field exploration for this investigation was conducted under the oversight of a BSK engineer. Ten (10) borings were drilled at the Site on January 23 to 24, 2023, February 9 to 10, 2023, and April 28, 2023 using a portable drill rig, a truck mounted drill rig, and hand auger technique. The borings were drilled to a maximum depth of 71.5 feet below the existing ground surface (bgs). The borings in the vicinity of the

proposed parking lots were drilled to an approximate depth of 11.5 feet bgs. The borings were backfilled with neat cement grout upon completion.

The soil materials encountered in the borings were visually classified in the field, and the logs were recorded during the drilling and sampling operations. Visual classifications of the materials encountered in the borings were made in general accordance with the Unified Soil Classification System (ASTM D 2488). A soil classification chart is presented in Appendix A.

Boring logs are presented in Appendix A and should be consulted for more details concerning subsurface conditions. Stratification lines were approximated by the field staff based on observations made at the time of drilling, while the actual boundaries between soil types may be gradual and soil conditions may vary at other locations.

2.2 Laboratory Testing

Laboratory tests were performed on selected soil samples to evaluate resistance-value (R-value), density, moisture content, and fines content. A description of the laboratory test methods and results are presented in Appendix B. Other laboratory testing was performed for the Spano Park roadway and is presented in Appendix D.

3. SITE CONDITIONS

The following sections address the site descriptions and surface conditions, subsurface conditions, and groundwater conditions at the site. This information is based on BSK's field exploration and published maps and reports.

3.1 Site Description and Surface Conditions

The site contained grassy fields and slopes at the time of our investigation and was located southwest of the SR-41 and the San Joaquin River. There were three locations for the proposed parking lots. One adjacent to SR-41, one at the River Trail entrance at W Riverview Drive and W Bluff Avenue, and one North of Spano Park. The site was generally bounded by grassy fields with the San Joaquin River beyond to the north and west and by bluffs with residences and commercial development beyond to the south and east.

3.2 Subsurface Conditions

The predominant general soil profile for the borings consisted of silty sand, sandy silt, and poorly graded sand to the maximum depth of exploration, 71.5 feet bgs. Based on the soils encountered during the drilling operation and historical maps, the surface soils are believed to be artificial fill material in borings B-1, B-2, B-3, and B-4 from depths of 5 to 15 feet bgs, which included concrete pieces as well as very dense silty sands and sandy silts.

The boring logs in Appendix A provide a more detailed description of the materials encountered, including the applicable Unified Soil Classification System symbols.

3.3 Groundwater Conditions

Groundwater was not encountered at the Site during our exploration on January 23 to 24, 2023 or February 9 to 10, 2023. The California Department of Water Resources indicates the historic high elevation for groundwater was approximately 260 feet above sea level. This indicates the depth to groundwater was greater than 15 feet below ground surface at the location of our borings performed adjacent to the San Joaquin River. Groundwater is not anticipated to affect construction. However, fluctuations in the groundwater level or the presence of perched groundwater may occur due to variations in rainfall, irrigation, seasonal factors, pumping from wells and other factors that were not evident at the time of our investigation.

4. CONCLUSIONS AND RECOMMENDATIONS

Based upon the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that the soil conditions would not preclude the construction of the proposed improvements.

4.1 Soil Corrosivity

Based on test results, on-site near-surface soils have low soluble sulfate and chloride contents, and are alkaline. Thus, on-site soils are considered to have a low corrosion potential with respect to buried concrete. Buried reinforcing steel protection be provided with the minimum concrete cover required by the American Concrete Institute (ACI) Building Code for Structural Concrete, ACI 318, Chapter 7.7. Buried metal must have protective coatings in accordance with the manufacturer's specifications. If detailed recommendations for corrosion protection are desired, a corrosion specialist should be consulted.

4.2 Seismic Design Criteria

There are no known active fault zones within the vicinity of the project site. In accordance with Section 1613.2.2 of the 2022 California Building Code (CBC) and Table 20.3-1 of ASCE 7-16, the site can be classified as Site Class D (stiff soil profile).

Use of the 2022 California Building Code (CBC) seismic design criteria is considered appropriate and the following parameters are considered applicable for the structural design of foundations.

Table 1: Seismic Design Parameters			
Seismic Design Parameter	**2022 CBC Value**		**Reference**
MCE Mapped Spectral Acceleration (g)	S_S = 0.562	S_1 = 0.221	USGS Mapped Value
Amplification Factors (Site Class D)	F_a = 1.351	F_v = null[1](2.158)[2]	ASCE Table 11.4
Site Adjusted MCE Spectral Acceleration (g)	S_{MS} = 0.759	S_{M1} = null[1](0.477)[2]	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.506	S_{D1} = null[1] (0.318)[2]	ASCE Equations 11.4.1-4
Geometric Mean PGA (g)	PGA_M = 0.33		Section 11.8.3, ASCE 7-16
Site Short Period – T_s (seconds)	T_s = 0.628		$T_s = S_{D1}/ S_{DS}$
Site Long Period – T_L (seconds)	T_L = 12		USGS Mapped Value

Notes: [1] Requires site-specific ground motion procedure or exception as per ASCE 7-16 Section 11.4.8.

[2] Values from ASCE 7-16 supplement shall only be used to calculate T_s. Values provided based on use of exception, as provided in Section 11.4.8.2 to Site-Specific Ground Motion Procedures and assumes the value of the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. 12.8-3 for $T_L \geq T > 1.5T_s$ or Eq. 12.8-4 for $T > T_L$.

As shown above, the short period design spectral response acceleration coefficient, S_{DS}, is greater than 0.5, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. The long period design spectral response acceleration coefficient, S_{D1}, is greater than 0.2, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. In accordance with the 2022 CBC, each structure shall be assigned to the more severe seismic design category in accordance with Table 1613.2.5(1) or 1613.2.5(2), irrespective of the fundamental period of vibration of the structure.

4.3 Slope Stability Analysis

The evaluation of the stability of cut slopes and accompanying geo-structural design for the roadway north of Spano Park will be provided by Provost & Pritchard. Fill slopes associated with the roadway north of Spano Park are anticipated to have a maximum height of 10 feet with proposed 1:1 (H:V) slopes. However, slopes up to 2:1 (H:V) were analyzed, steeper slopes will require additional improvement such as geogrid reinforcement and surficial stability, such as erosion control, to be designed by others. The stability of the fill slopes was analyzed for the static and pseudo-static condition using Janbu's and Bishop's Simplified Method of Slices and modeled in the computer program, Slide v7.0. The slope model was analyzed for stability using circular slip surfaces originating and terminating at critical points along the cross sections analyzed. The inputs required for the site include slope geometry, subsurface profile data, groundwater conditions, horizontal ground acceleration, as well as constraints on the upper and lower limits of the search region for the critical slip circle, numbers and locations of initiation and termination points of trial surfaces, and number of trial surfaces for each initiation point.

The values used in our analysis are summarized in the following table:

Table 2: Slope Stability Soil Parameters			
Material	**Unit Weight (pcf)**	**Cohesion (psf)**	**Friction Angle (degrees)**
Fill Soil (Silty Sand (SM))	130	100	33

The horizontal ground motion site coefficient of 0.11g (1/3 of PGA_M) was used in the slope stability analysis. Vertical ground motions and groundwater conditions were not considered in the analysis. For each cross section, 25,640 randomly generated slip circles were analyzed for the critical factor of safety.

A summary of the critical factors of safety is provided in the following table:

Table 3: Critical Factors of Safety Maximum Slope Height – 20’		
Maximum Slope (H:V) and Method	**STATIC**	**PSEUDO-STATIC**
2:1	1.9	1.5

Based upon the data collected during this investigation and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed project provided that the recommendations presented in this report are incorporated into the project design and construction. The engineered fill must be placed in accordance with Section 4.3 of this report. The proposed fill slopes must be designed to be 2H:1V or flatter to a maximum height of 20 feet. Steeper slopes will require additional improvement such as geogrid reinforcement and surficial stability and erosion control, to be designed by others.

4.4 Shallow and Mat Foundations

Provided the recommendations contained in this report are implemented during design and construction, it is our opinion that the structures can be supported on mat or shallow foundations. A structural engineer should evaluate reinforcement and embedment depth based on the requirements for the structural loadings, shrinkage and temperature stresses.

4.4.1 Shallow Foundations

The proposed structures may be supported on reinforced concrete spread footings bearing on engineered fill or native cut material.

The allowable bearing pressure applies to the dead load plus live load (DL + LL) condition. Footing design must follow the criteria listed below:

Table 4: Allowable Bearing Pressure				
Footing Embedment[1] (inches)	Minimum Footing Width (inches)		Allowable Bearing Capacity[2] (psf)	
	Continuous Footing	Spread Footing	Continuous Footing	Isolated Spread Footing
12	12	24	3,000	3,000

Note (1) – The bearing pressure can be increased one-third for transient loading such as wind or seismic.
(2) – Measure with respect to the lowest adjacent subgrade surface.

The estimated total and differential settlement for the recommended spread footings is shown below:

Table 5: Estimated Post-Construction Settlement			
Footing Type	Post-Construction Settlement (inches)	Differential Settlement (inches)	Angular Distortion
Continuous	1.0	--	0.001
Isolated	1.0	0.5	--

Isolated footing differential settlement is based on adjacent similarly loaded footings spaced at 30-feet. The settlement values given above are applicable to the maximum loading conditions. For loads, other than the design maximum loads, the settlements can be decreased proportionally.

4.4.2 Mat Foundations

Assuming a square mat foundation 10 feet wide, the allowable bearing capacity exceeds 2,000 psf. Based on analysis, the proposed mat foundations will have approximately up to 1.0 inch of total and approximately 0.5 inch of differential settlement for a design load of 2,000 psf. The mat foundations may be designed for a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) due to dead plus live loads. This value may be increased by one-third for transient loads such as seismic or wind. If settlement analysis for other conditions is desired, we can provide settlement based on geometry and loading.

4.5 Lateral Earth Pressures and Frictional Resistance

Provided the site is prepared as recommended above, the following earth pressure parameters for footings may be used for design purposes. The parameters shown in the table below are for drained conditions of select engineered fill or properly compacted and moisture conditioned native soil.

Table 6: Lateral Earth Pressures	
Lateral Pressure Conditions	**Equivalent Fluid Pressure**
Active Pressure	30 psf/ft
At-Rest Pressure	45 psf/ft
Passive Pressure	500 psf/ft
Dynamic Increment	$7.3H^{1}$ psf

[1]Where H is the height of the wall.

The lateral earth pressures listed herein are obtained by the conventional equation for active, at rest, and passive conditions assuming level backfill and a bulk unit weight of 130 pcf for the site soils. A coefficient of friction of 0.84 may be used between soil sub-grade and the bottom of cast-in-place footings. The coefficient of friction and passive earth pressure values given above represent ultimate soil strength values.

BSK recommends that a safety factor consistent with the design conditions be included in their usage in accordance with Sections 1806.3.1 through 1806.3.3 of the 2022 CBC. For stability against lateral sliding that is resisted solely by the passive earth pressure against footings or friction along the bottom of footings, a minimum safety factor of 1.5 is recommended. For stability against lateral sliding that is resisted by combined passive pressure and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral stability against seismic loading conditions, a minimum safety factor of 1.2 is recommended.

4.6 Site Preparation and Earthwork Construction

The following procedures must be implemented during site preparation for the proposed improvements. It should be noted that references to maximum dry density, optimum moisture content, and relative compaction are based on ASTM D1557 (latest test revision) laboratory test procedures.

1. Prior to any site grading, all miscellaneous surface obstructions must be removed from the improvement area. Near surface soils containing vegetation, roots, organics, or other objectionable material must be stripped to a depth of at least 3-inches to expose a clean soil surface. Surface strippings must not be incorporated into engineered fill unless the organic content is less than 3 percent by weight (ASTM D2974).
2. Within the area of the planned improvements, remove existing vegetation, underground utilities, landfill materials, and debris to expose a clean soil surface free of deleterious material. Landfill materials, if encountered, must be tested and properly disposed.

Existing utilities or irrigation pipes must be removed to a point at least 5-feet horizontally outside the proposed improvement area. Resultant cavities must be backfilled with engineered fill. Abandoned pipelines to remain that are less than 2 inches in diameter must be capped at the cutoff point, while pipelines greater than 2 inches in diameter must be filled with a 1-sack sand-cement slurry.

3. Soil disturbed as a result of undocumented fill, debris, and abandoned underground structures must be excavated to expose undisturbed native soil.

4. Following the required stripping, and/or removal of underground structures, the exposed soil surface in proposed at-grade improvement areas must be over-excavated uniformly to a depth of 24 inches below existing site grade or 12 inches below the bottom of the proposed foundation, whichever is deeper. The over-excavation must extend at least 5 feet laterally beyond the outside edge of the proposed foundation or areas to receive fill, whichever distance is greater. The exposed subgrade must be proof-rolled under the observation of a BSK field representative to detect soft or pliant areas. Soft or pliant areas must be over-excavated to firm native soil. The exposed surface must be scarified at minimum of 8 inches, uniformly moisture conditioned to 2 percent above optimum moisture, and compacted to 90 percent relative compaction.

5. Engineered fill must consist of non-expansive soil (EI < 20), moisture conditioned to at or above optimum moisture, and compacted to 90 percent relative compaction. Excavated soils meeting the requirements of imported engineered fill in item 7 and free of deleterious substances (organic matter, demolition debris, landfill materials, tree roots, etc.), may be reused as engineered fill for the backfill.

6. Engineered fill must be placed in uniform layers not exceeding 8-inches in loose thickness, moisture-conditioned and compacted as recommended above. Acceptance of engineered fill placement must be based on both moisture content at time of compaction and relative compaction.

7. Imported fill materials must be free of deleterious substances and have less than 3 percent organic content by weight. The project specifications must require the contractor to contact BSK for review of the proposed import fill materials for conformance with these recommendations at least two weeks prior to importing to the site, whether from on-site or off-site borrow areas. Imported fill soils must be non-hazardous and be derived from a single, consistent soil type source conforming to the following criteria:

Maximum Particle Size:	3-inches
Percent Passing #4 Sieve:	65 – 100
Percent Passing #200 Sieve:	20 – 45
Plasticity Index:	less than 12
Expansion Index:	< 20
Low Corrosion Potential:	
Soluble Sulfates:	< 1,500 mg/kg
Soluble Chlorides:	< 300 mg/kg

Soil Resistivity: > 2,000 ohm-cm

Grading operations must be scheduled as to avoid working during periods of inclement weather. Should these operations be performed during or shortly following periods of inclement weather, unstable soil conditions may result in the soils exhibiting a "pumping" condition. This condition is caused by excess moisture, in combination with compaction, resulting in saturation and near zero air voids in the soils. If this condition occurs, the affected soils must be over-excavated to the depth at which stable soils are encountered and replaced with suitable soils compacted as engineered fill. Alternatively, the Contractor may proceed with grading operations after utilizing a method to stabilize the soil subgrade, which must be subject to review by BSK prior to implementation.

4.7 Excavation Stability

Open trench excavation depths, if any, are expected to be less than 5 feet. Soils encountered within the depth explored are generally classified as Type C soils in accordance with OSHA (Occupational Safety and Health Administration). If areas of sand layers are encountered along the alignment, slopes should be laid back.

Certified trench shields or boxes may also be used to protect workers during construction in excavations.

Temporary excavations for the project construction should be left open for as short a time as possible and should be protected from water runoff. In addition, equipment and/or soil stockpiles must be maintained at least 10 feet away from the top of the excavations. Because of variability in soils, BSK must be afforded the opportunity to observe and document sloping and shoring conditions at the time of construction. Slope height, slope inclination, and excavation depths (including utility trench excavations) must in no case exceed those specified in local, state, or federal safety regulations, (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations).

4.8 Conventional Pavement Section Recommendations

R-value testing was completed for selected near surface samples. Results are presented in Table 1 and Appendix B.

TABLE 7
Boring Summaries

Boring	Location	Soil Classification	R-Value
B-5	Spano Park	Poorly Graded Sand with Silt (SP-SM)	54
B-7	Cobb Ranch Boulevard	Silty Sand (SM)	53
B-8	Riverview Drive	Silty Sand (SM)	43

BSK calculated the conventional pavement section thicknesses using a design subgrade R-Value of 43 for the Riverview area and R-value of 50 for Spano Park and Cobb Ranch Boulevard areas with Traffic Indexes of 5 through 7. BSK has presented a summary of its pavement section thickness recommendations in Tables 2 and 3, *Conventional Pavement Section Recommendations.*

TABLE 8
Conventional Pavement Section Recommendations – Riverview Drive
(R-Value = 43, 20-yr design life)

Traffic Index	Conventional Section	
	HMA (inches)	AB (inches)
5.0 or less	3.0	4.0
5.5	3.0	4.5
6.0	3.5	4.5
6.5	3.5	6.0
7.0	4.0	6.0

Notes: HMA: Hot Mix Asphalt
AB: Caltrans Class 2 Aggregate Base (Minimum R-Value = 78)

TABLE 9
Conventional Pavement Section Recommendations – Spano Park and Cobb Ranch Boulevard Areas
(R-Value = 50, 20-yr design life)

Traffic Index	Conventional Section	
	HMA (inches)	AB (inches)
5.0 or less	3.0	4.0
5.5	3.0	4.0
6.0	3.5	4.0
6.5	3.5	4.0
7.0	4.0	4.0

Notes: HMA: Hot Mix Asphalt
AB: Caltrans Class 2 Aggregate Base (Minimum R-Value = 78)

Hot mix asphalt, Class 2 aggregate base, and Class 2 aggregate subbase should conform to and be placed in accordance with the latest revision of Caltrans Standard Specifications. It is recommended subgrade be scarified to a depth of 12 inches, moisture conditioned and compacted to at least 95 percent maximum density, based on ASTM D1557 prior to placing new aggregate base/subbase section.

4.9 Utility Trench Excavation and Backfill

Pipes and conduits must be bedded and shaded in accordance with the requirements of the pipe manufacturer. Where no specific requirements exist, we recommend a minimum of 6-inches of sand bedding material for pipe installations 12 to 24-inches in diameter. For pipe diameters, smaller than 12-inches, the bedding thickness may be reduced to 4-inches. The bedding material and envelope (up to 6-inches above the pipe) must consist of sand (Sand Equivalent greater than 30), be placed in loose lifts not exceeding 8-inches in thickness, compacted to at least 90 percent of the maximum dry density, and moisture conditioned to within 2 percent of optimum moisture content. Water jetting to attain compaction must not be allowed.

Adequate excavation width must be provided to permit uniform compaction on both sides of utility lines installed within the trench. The trench backfill material may consist of engineered fill. Trench backfill outside the containment area must be placed in loose lifts not to exceed 8-inches in loose thickness, compacted to 90 percent of the maximum dry density, and moisture conditioned to 2 percent above optimum moisture content. Conduits extending through or below footings must be “sleeved” as determined by the Project Structural Engineer.

4.10 Surface Drainage Control

Final grading around site improvements must provide for positive and enduring drainage. Ponding of water must not be allowed on or near the proposed structures. Saturation of the soils immediately adjacent to or below structures must not be allowed. Although landscaping is not anticipated, irrigation water must be applied in amounts not exceeding those required to offset evaporation, sustain plant life, and maintain a relatively uniform moisture profile around and below, site improvements. Fill elevations are anticipated to be less than 15 feet above natural grade to achieve positive site drainage. Slope faces should be hydro-seeded or an erosion blanket placed to prevent erosion.

5. PLANS AND SPECIFICATIONS REVIEW

BSK recommends that it be retained to review the draft plans and specifications for the project, with regard to foundations and earthwork, prior to their being finalized and issued for construction bidding.

6. CONSTRUCTION TESTING AND OBSERVATIONS

Geotechnical testing and observation during construction is a vital extension of this geotechnical investigation. BSK recommends that it be retained for those services. Field review during Site preparation and grading allows for evaluation of the exposed soil conditions and confirmation or revision of the assumptions and extrapolations made in formulating the design parameters and recommendations. BSK’s observations must be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. BSK must also be called to the Site to observe excavations, prior to placement of pavement, in order to assess whether the actual conditions are compatible with the conditions anticipated during the preparation of this report.

If a firm other than BSK is retained for these services during construction, then that firm must notify the owner, project designers, governmental building officials, and BSK that the firm has assumed the responsibility for all phases (i.e., both design and construction) of the project within the purview of the geotechnical engineer. Notification must indicate that the firm has reviewed this report and any subsequent addenda, and that it either agrees with BSK's conclusions and recommendations, or that it will provide independent recommendations.

7. LIMITATIONS

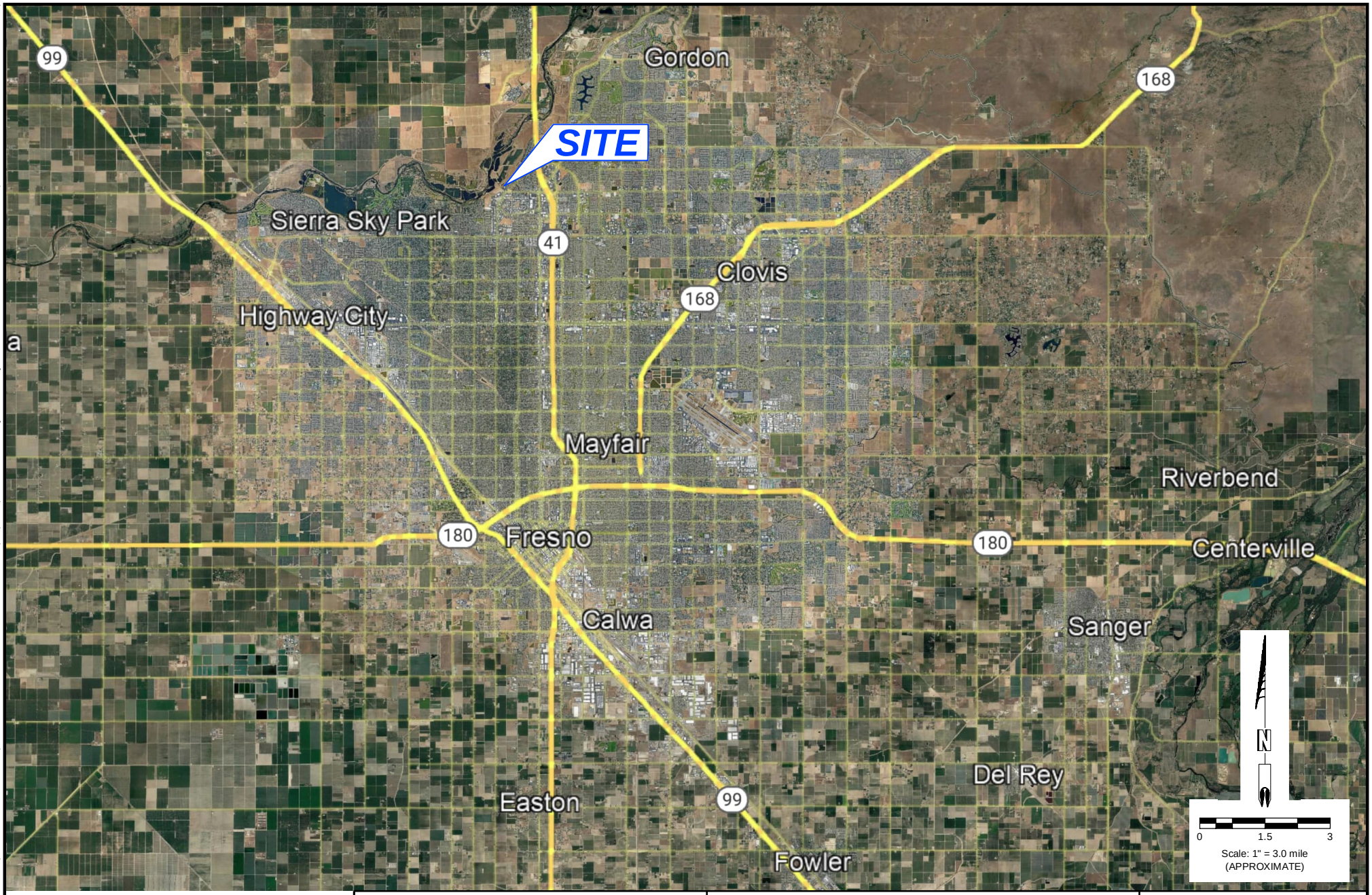
The analyses and recommendations submitted in this report are based upon the data obtained from the Borings performed at the locations shown on the Boring Location Map, Figure 2. The report does not reflect variations which may occur between or beyond the Borings. The nature and extent of such variations may not become evident until construction is initiated. If variations then appear, a re-evaluation of the recommendations of this report will be necessary after performing on-Site observations during the excavation period and noting the characteristics of the variations.

The validity of the recommendations contained in this report is also dependent upon an adequate testing and observation program during the construction phase. BSK assumes no responsibility for construction compliance with the design concepts or recommendations unless it has been retained to perform the testing and observation services during construction as described above.

The findings of this report are valid as of the present. However, changes in the conditions of the Site can occur with the passage of time, whether caused by natural processes or the work of man, on this property or adjacent property. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation, governmental policy or the broadening of knowledge.

BSK has prepared this report for the exclusive use of the Client and members of the project design team. The report has been prepared in accordance with generally accepted geotechnical engineering practices which existed in Fresno County at the time the report was written. No other warranties either expressed or implied are made as to the professional advice provided under the terms of BSK's agreement with Client and included in this report.

FIGURES



C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706-River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:Feb 13, 2023 - 1:51pm Last Save:Dec 09, 2022 - 2:08pm

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.18

SITE VICINITY MAP

River West Eaton Trail
Fresno, California

FIGURE 1

JOB NO. G00-000-706
DATE February 13, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS



LEGEND:

B-5 APPROXIMATE BORING LOCATIONS

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.19

BORING LOCATION MAP

River West Eaton Trail Extention
Fresno, California

FIGURE 2

JOB NO. G00-000-706
DATE February 22, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706-River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:Feb 22, 2023 - 11:27am Last Saved:Feb 13, 2023 - 1:53pm



LEGEND:

APPROXIMATE BORING LOCATIONS

B-10

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.20

BORING LOCATION MAP

River West Eaton Trail Extention
Fresno, California

FIGURE 2

JOB NO. G00-000-706
DATE May 1, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 3
OF 3 SHEETS

C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706 - River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:May 01, 2023 - 10:19am Last Save:May 01, 2023 - 10:19am



LEGEND:

B-7 APPROXIMATE BORING LOCATIONS

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.21

BORING LOCATION MAP

River West Eaton Trail Extention
Fresno, California

FIGURE 2

JOB NO. G00-000-706
DATE February 22, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 2
OF 3 SHEETS

C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706-River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:Feb 22, 2023 - 11:34am Last Save:Feb 22, 2023 - 11:31am

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

The field exploration for this investigation was conducted under the oversight of a BSK engineer. Nine (9) borings were drilled at the Site on January 23 to 24, 2023 and February 9 to 10, 2023 using a portable drill rig and a truck mounted drill rig. One (1) additional boring was drilled using hand auger equipment on April 28, 2023. The borings were drilled to a maximum depth of 71.5 feet below the existing ground surface (bgs). The borings in the vicinity of the proposed parking lots were drilled to an approximate depth of 11.5 feet bgs. The borings were backfilled with neat cement grout upon completion.

The soil materials encountered in the test borings were visually classified in the field and logs were recorded during the drilling and sampling operations. Visual classification of the materials encountered in the test borings were made in general accordance with the Unified Soil Classification System (ASTM: D2487). A soil classification chart is presented herein. Boring logs are presented herein and should be consulted for more details concerning subsurface conditions. Stratification lines were approximated by the field staff based on observations made at the time of drilling while the actual boundaries between different soil types may be gradual and soil conditions may vary at other locations.

Subsurface samples were obtained at the successive depths shown on the boring logs by driving samplers which consisted of a 2.5-inch inside diameter (I.D.) California Sampler or a 1.4-inch I.D. Standard Penetration Test (SPT) Sampler. The samplers were driven 18 inches using a 140-pound, automatic hammer dropping 30 inches. The number of blows required to drive the last 12 inches was recorded as the blow count (blows/foot) on the log of borings. The relatively undisturbed soil core samples were capped at both ends to preserve the samples at their natural moisture content. Disturbed soil samples were obtained using the Split-Spoon Sampler (marked X in logs) and were placed and sealed in polyethylene bags. At the completion of the field exploration, the test borings were backfilled with the neat cement grout and soil cuttings, as set forth in BSK's proposal.

It should be noted that the use of terms such as "loose", "medium dense", "dense" or "very dense" to describe the consistency of a soil is based on sampler blow count and is not necessarily reflective of the in-place density or unit weight of the soils being sampled. The relationship between sampler blow count and consistency is provided in the following Tables A-1 and A-2 for coarse grained (sandy and gravelly) soils and fine grained (silty and clayey) soils, respectively.

Table A-1: Density of Coarse-Grained Soil versus Sampler Blow Count		
Consistency	**SPT Blow Count Blows / Foot)**	**2.5" I.D. Cal. Sampler (Blows / Foot)**
Very Loose	<4	<6
Loose	4 – 10	6 – 15
Medium Dense	10 – 30	15 – 45
Dense	30 – 50	45 – 80
Very Dense	>50	>80

Table A-2: Consistency of Fine-Grained Soil versus Sampler Blow Count		
Consistency	**SPT Blow Count (Blows / Foot)**	**2.5" I.D. Cal. Sampler (Blows / Foot)**
Very Soft	<2	<3
Soft	2 – 4	3 – 6
Medium Stiff	4 – 8	6 – 12
Stiff	8 – 15	12 – 24
Very Stiff	15 – 30	24 – 45
Hard	>30	>45

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM	SILTY SANDS, POOORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

■	Modified California	RV	R-Value
⊠	Standard Penetration Test (SPT)	SA	Sieve Analysis
☒	Split Spoon	SW	Swell Test
◪	Pushed Shelby Tube	TC	Cyclic Triaxial
▯	Auger Cuttings	TX	Unconsolidated Undrained Triaxial
✋	Grab Sample	TV	Torvane Shear
⊘	Sample Attempt with No Recovery	UC	Unconfined Compression
CA	Chemical Analysis	(1.2)	(Shear Strength, ksf)
CN	Consolidation	WA	Wash Analysis
CP	Compaction	(20)	(with % Passing No. 200 Sieve)
DS	Direct Shear	▽	Water Level at Time of Drilling
PM	Permeability	▼	Water Level after Drilling(with date measured)
PP	Pocket Penetrometer		

SOIL CLASSIFICATION CHART AND LOG KEY

Figure A-1

BSK ASSOCIATES

LGD A NNNN02 TEST.GPJ 5/10/18

BSK Associates
691 N Laverne Ave, # 101
Fresno, CA 93727
Telephone: (559) 497-2888

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-1**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1									**Surface** - bricks/concrete miscellaneous debris in top 1 foot.	
2								SM	**FILL: Silty SAND** - olive brown, moist, fine to medium grained sand, medium dense	
3	■		32	132.7	11.5					
4										
5	■							ML	**Sandy SILT** - dark brown, moist, fine to medium grained sand, very stiff	
6			42	103.4	10.8					
7										
8										
9										
10	■							SC	**Clayey SAND** - dark brown, moist, fine to medium grained sand, very dense ... concrete encountered	hard auger
11			50/ 5"							
12										
13										
14										
15	■							ML	**NATIVE: Sandy SILT** - olive brown, moist, fine to medium grained sand, strongly cemented, hard	
16			50/ 5.5"							
17										
18										
19										
20	■									
21			83	119.2	12.1					
22										
23										
24										
25	■							ML	**SILT** - yellowish brown, moist, fine grained sand, lightly cemented, hard	
26			81					SP	**Poorly Graded SAND** - gray, moist, fine grained sand, very dense Boring terminated at approximately 26.5 feet bgs. No groundwater encountered. Boring backfilled with grout.	
27										
28										
29										

Drilling Contractor: Clear Heart
Drilling Method: Portable Drill Rig
Drilling Equipment: Solid Flight Auger
Date Started: 1/23/23
Date Completed: 1/23/23

Surface Elevation: 321.0
Sample Method: 2.5" Modified Cal
Groundwater Depth: Not Encountered
Completion Depth: 26.5 Feet
Borehole Diameter: 4"

* See key sheet for symbols and abbreviations used above.

GEO_BORING LOGS.GPJ_BSK.GDT_10/10/24

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-2**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–5			60	117.2	8.3			ML	**FILL: Sandy SILT** - olive brown, moist, fine to medium grained sand, hard soil chunks up to 3/4 inch diameter, hard	
5–10			33	114.6	13.6			SM	**NATIVE: Silty SAND** - yellowish brown, moist, fine to medium grained, cemented, medium dense	
10–15			10	104.1	5.2			SP	**Poorly Graded SAND** - yellowish brown, moist, fine to coarse grained sand, loose	
15–20			9	96.9	6.5			SM	**Silty SAND** - olive brown, moist, fine to medium grained sand, loose	
20–21			15					ML	**Sandy SILT** - light olive brown, moist, fine grained sand, cemented, stiff	hand auger
21–22								SM	**Silty SAND** - olive brown, moist, fine to medium grained sand, medium dense	
23–24			49					ML	**Sandy SILT** - light brown, moist, fine grained sand, hard	
24–29									Boring terminated at approximately 24 feet bgs due to refusal. No groundwater encountered. Boring backfilled with grout.	

Drilling Contractor: Clear Heart
Drilling Method: Portable Drill Rig
Drilling Equipment: Solid Flight Auger
Date Started: 1-24-23
Date Completed: 1-24-23

Surface Elevation: 314.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 24 Feet
Borehole Diameter: 4"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1								SM	**Silty Sand** - olive brown, moist, fine to coarse grained sand, medium dense	
2										
3			47							
4										
5										
6			48						... fine to medium grained sand, dense	
7										
8										
9										
10										
11			50	128.6	6.9				... fine to coarse grained sand	
12										
13										
14										
15									... cemented	
16			70					SP	**Poorly Graded Sand** - yellowish brown, moist, fine to coarse grained sand	SP did not appear to cave after augers were removed
17										
18										
19										
20								ML	**Sandy Silt** - very dark brown, moist, fine to medium grained sand, cemented, very hard	
21			50/ 5"							
22										
23										
24										
25								SM	**Silty Sand** - gray, moist, fine, very dense	
26			81	95.7	21.0					
27										
28										
29										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 51.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
31			36	83.8	17.8				**Silty Sand** - gray, moist, fine, very dense *(continued)* ... medium dense	
32										
33										
34										
35										
36			19	90.5	14.9					
37										
38										
39										
40								ML	**Sandy Silt** - olive brown, moist, fine grained sand, hard	
41			71			46		SP	**Poorly Graded Sand** - gray, moist, fine to medium grained sand, dense	
42										
43										
44										
45								ML	**Sandy Silt** - gray, moist, fine grained sand, very hard	
46			50/ 2"							
47										
48										
49										
50								SP	**Poorly Graded Sand** - yellowish brown, moist, fine to medium grained sand, medium dense	
51			37						Boring terminated at 51.5 feet bgs No groundwater encountered Backfilled with neat cement grout	
52										
53										
54										
55										
56										
57										
58										
59										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 51.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1								SM	**Silty Sand** - olive brown, moist, fine to medium grained sand, dense	
2										
3			59							
4										
5										
6			30						... medium dense	
7										
8										
9										
10										
11			55						... dense	
12										
13										
14										
15									... fine to coarse grained sand, 1/4 inch gravel, very dense	
16			92	119.1	8.1					
17										
18										
19										
20										
21			35	113.0	13.9				... brown, fine to medium grained sand, cemented, increased fines, medium dense	
22										
23										
24										
25									... yellowish brown, decreased fines, medium dense	
26			43	91.3	19.9					
27										
28										
29										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
31			24	90.6	23.3				**Silty Sand** - olive brown, moist, fine to medium grained sand, dense *(continued)*	
32									... olive brown	
33										
34										
35								SP	**Poorly Graded Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense	
36			42	99.8	6.0					
37										
38										
39										
40										
41			50			7			... gray, fine to medium grained sand, dense	
42										
43										
44										
45										
46			64							
47								ML	**Sandy Silt** - very light brown, moist, fine grained sand, firm	
48										
49										
50										
51			41	84.3	29.7					
52										
53										
54										
55								SM	**Silty Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense	
56			49							
57										
58										
59										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
61			50/ 3"						**Silty Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense *(continued)*	
62									... very dense	
63										
64										
65								ML	**Sandy Silt** - very light brown, moist, fine grained sand, very hard	
66			50/ 3"					SM	**Silty Sand** - gray, moist, fine grained sand, very dense	
67										
68										
69										
70									... fine to coarse grained sand, dense	
71			62							
72									Boring terminated at 71.5 feet bgs No groundwater encountered Backfilled with neat cement grout	
73										
74										
75										
76										
77										
78										
79										
80										
81										
82										
83										
84										
85										
86										
87										
88										
89										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-5**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–5			36					SP-SM	**Poorly Graded Sand with Silt** - yellowish brown, moist, fine to coarse grained sand, medium dense	
5–10			27					SM	**Silty Sand** - brown, moist, fine to coarse grained sand, medium dense	
10–11			45							
11–29									Boring terminated at 11.5 feet bgs No groundwater encountered Backfilled with neat cement grout	

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-10-23
Date Completed: 2-10-23

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 11.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-6**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1								SM	**Silty Sand** - yellowish brown, moist, fine grained sand, loose	
2										
3			12							
4										
5									... medium dense	
6			18							
7										
8										
9										
10								SP	**Poorly Graded Sand** - yellowish brown, moist, fine to medium grained sand, loose	
11			9							
12									Boring terminated at 11.5 feet bgs No groundwater encountered Backfilled with neat cement grout	
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-10-23
Date Completed: 2-10-23

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 11.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-7**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–10								SM	**Silty Sand** - brown, moist, fine to medium grained sand, very loose	
2–3	■		5							
5–6	■		15						... yellowish brown, increased fines, loose	
10–11	■		15					ML	**Sandy Silt** - yellowish brown, moist, fine to medium grained sand, firm	
11–29									Boring terminated at 11.5 feet bgs No groundwater encountered Backfilled with neat cement grout	

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-10-23
Date Completed: 2-10-23

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 11.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-8**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–29			6					SM	**Silty Sand** - reddish brown, moist, fine to coarse grained sand, very loose, 1 inch rounded cobbles	
			5						... no cobbles	
			82						... very dense	
									Boring terminated at 11.5 feet bgs No groundwater encountered Backfilled with neat cement grout	

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-10-23
Date Completed: 2-10-23

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 11.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-9**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–4								ML	**Sandy Silt** - olive brown, moist, fine grained sand, firm	
3			43							
5–9								SM	**Silty Sand** - yellowish brown, moist, fine to coarse grained sand, very dense, 1/4 inch rounded gravel	
6			50/ 4"							
10–11								SP	**Poorly Graded Sand** - gray, moist, fine grained sand, dense	
11			66							
12–29									Boring terminated at 11.5 feet bgs No groundwater encountered Backfilled with neat cement grout	

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-10-23
Date Completed: 2-10-23

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 11.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave, # 101
Fresno, CA 93727
Telephone: (559) 497-2888

Project: River West Eaton Trail Extension

Location: Fresno, Ca

Project No.: G00000706

Logged By: D.Ferrer

Checked By: N. Popenoe

Boring: **B-10**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–4								SM	**Silty SAND**, moist, grayish brown, fine to coarse grained sand, fine gravel	Auger Difficulty: Medium
4–6				98.5	6.1			SP	**Poorly Graded SAND**, moist, grayish brown, fine to coarse grained sand	Auger Difficulty: Easy-Medium
6–10								SM	**Silty SAND**, moist, grayish brown, fine to coarse grained sand, fine gravel, trace clay	Auger Difficulty: Medium
10									Boring Terminated at 10 feet BGS No Groundwater Encountered Backfilled with Soil Cuttings	

Drilling Contractor: BSK Associates
Drilling Method: Hand Auger
Drilling Equipment: Hand Auger
Date Started: 4/28/23
Date Completed: 4/28/23

Surface Elevation:
Sample Method: Bulk
Groundwater Depth: Not Encountered
Completion Depth: 10 Feet
Borehole Diameter: 4 Inches

* See key sheet for symbols and abbreviations used above.

GEO BORING LOG 4-28-23.GPJ BSK.GDT 10/10/24

APPENDIX B

LABORATORY TESTING RESULTS

APPENDIX B
LABORATORY TESTING

R-Value Test

The Resistance-Value of three (3) samples of the surficial soil were tested in accordance with California Department of Transportation's Test Method CT 301. The results of the R-Value tests are presented on Figures B-1 through B-3.

Direct Shear Test

One (1) Direct Shear Test was performed on a test specimen trimmed from a selected soil sample. The three-point shear tests were performed in general accordance with ASTM Test Method D3080, Direct Shear Test for Soil under Consolidated Drained Conditions. The test specimens, each 2.42 inches in diameter and 1 inch in height, were subjected to shear along a plane at mid-height after allowing for pore pressure dissipation. The results are presented on Figure B-4.

Additional Laboratory Testing to support the Palm Avenue extension is presented in Appendix D.

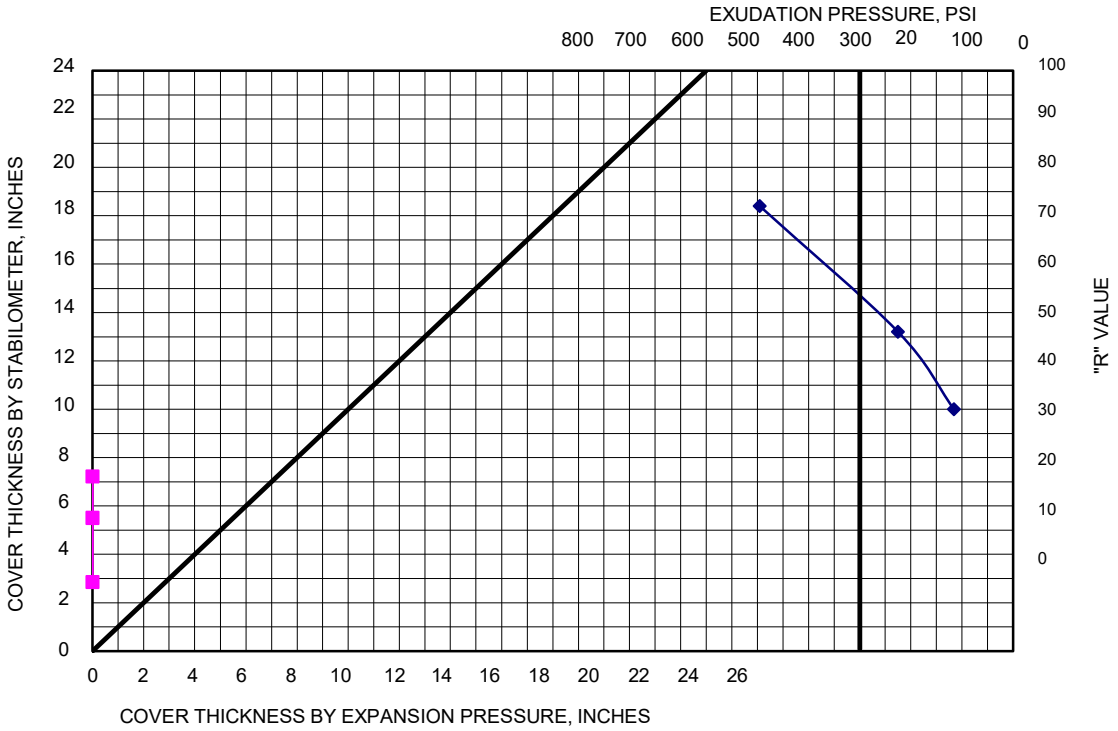
Standard Test Methods for Resistance R-Value and Expansion Pressure of Compacted Soil

ASTM D-2844

FIGURE B-1
700 22nd St.
Bakersfield, CA 93301
Ph: (661) 327-0670

Project Name: River West Eaton Trail Extension
Project Number: G00-000-706
Lab Tracking ID: B23-046
Sample Location: B-5 @0.0-2.0 Feet bgs

Sample Date: N / P
Test Date: 10-03-23
Report Date: 13-03-23
Tested By: ILT Remotigue



Sample Description: SM: SILTY SAND, Brown, Fine to Coarse, Moist.

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	6223.1	2825.5	1456
EXUDATION PRESSURE, PSI	495	225	116
EXPANSION, * 0.0001 IN	0.004	0.005	0.0004
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	32	56	87
DISPLACEMENT	3.87	5.41	5.01
RESISTANCE VALUE "R"	72	46	30
"R" VALUE CORRECTED FOR HEIGHT	72	46	30
% MOISTURE AT TEST	13.2	14.2	15.2
DRY DENSITY AT TEST, PCF	111.5	110.5	109.1
"R" VALUE AT 300 PSI EXUDATION PRESSURE	**54**		
"R" VALUE BY EXPANSION PRESSURE TI = 4.0, GF=1.50	**N/A**		

Reviewed By: *Ian Leo T. Remotigue*

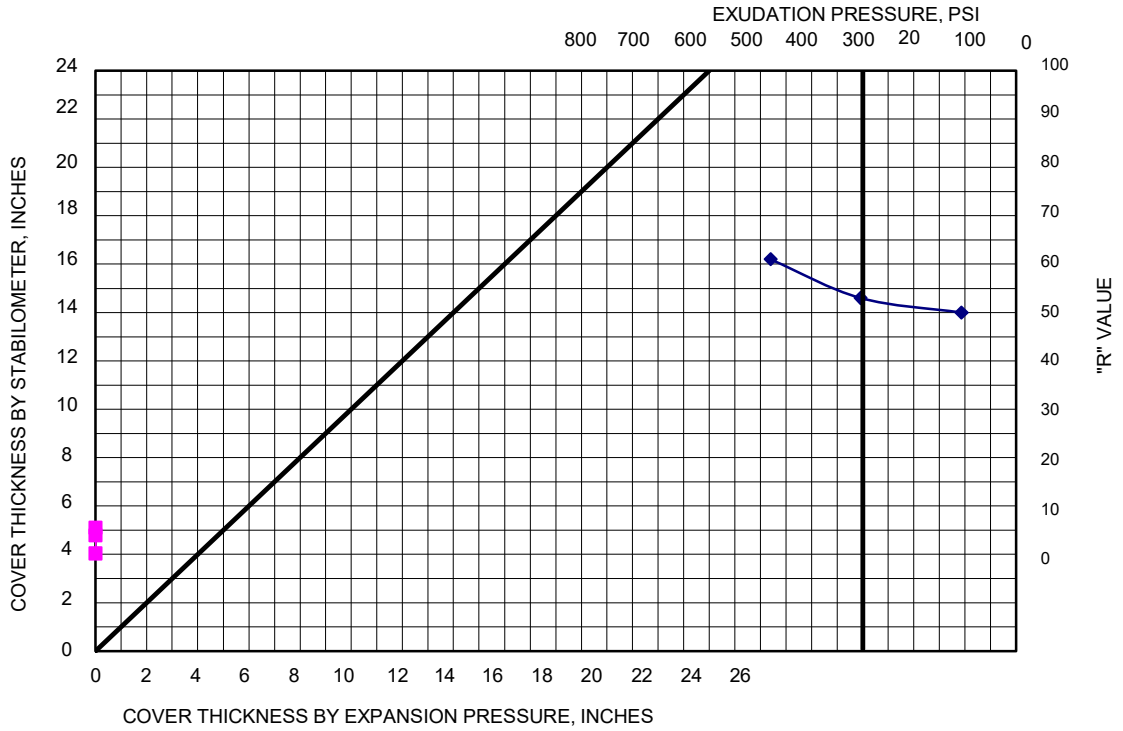
Standard Test Methods for Resistance R-Value and Expansion Pressure of Compacted Soil

ASTM D-2844

FIGURE B-2
700 22nd St.
Bakersfield, CA 93301
Ph: (661) 327-0670

Project Name: River West Eaton Trail Extension
Project Number: G00-000-706
Lab Tracking ID: B23-046
Sample Location: B-7 @0.0-1.0 Feet bgs

Sample Date: N / P
Test Date: 10-03-23
Report Date: 13-03-23
Tested By: ILT Remotigue



Sample Description: SM/ML: SILTY SAND/SANDY SILT, Brown, Fine Grained, some organic, Moi

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	6023.6	3823.3	1338
EXUDATION PRESSURE, PSI	480	304	107
EXPANSION, * 0.0001 IN	0.015	0.01	0.0140
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	42	52	54
DISPLACEMENT	4.56	4.56	4.86
RESISTANCE VALUE "R"	61	53	50
"R" VALUE CORRECTED FOR HEIGHT	61	53	50
% MOISTURE AT TEST	16.7	17.7	18.7
DRY DENSITY AT TEST, PCF	110.1	105.7	102.2
"R" VALUE AT 300 PSI EXUDATION PRESSURE	**53**		
"R" VALUE BY EXPANSION PRESSURE TI = 4.0, GF=1.50	**N/A**		

Reviewed By: *Ian Leo T. Remotigue*

BSK ASSOCIATES

Standard Test Methods for Resistance R-Value and Expansion Pressure of Compacted Soil

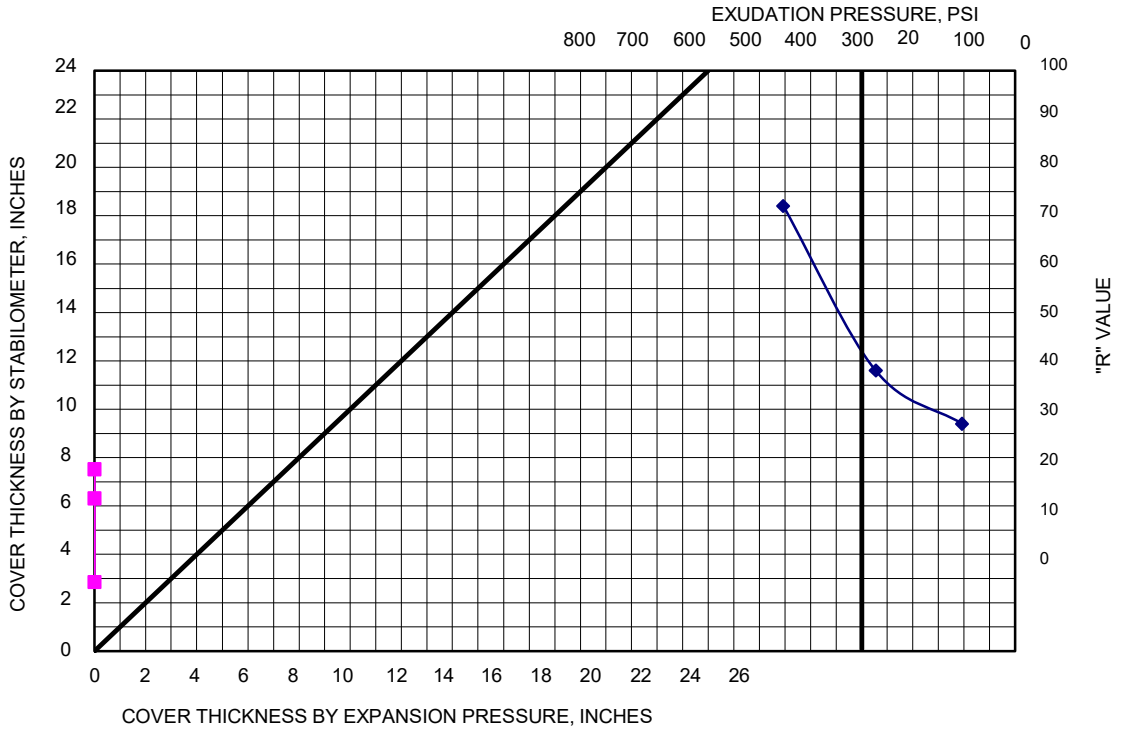
ASTM D-2844

FIGURE B-3

700 22nd St.
Bakersfield, CA 93301
Ph: (661) 327-0670

Project Name: River West Eaton Trail Extension
Project Number: G00-000-706
Lab Tracking ID: B23-046
Sample Location: B-8 @0.0-1.0 Feet bgs

Sample Date: N / P
Test Date: 10-03-23
Report Date: 13-03-23
Tested By: ILT Remotigue



Sample Description: SM/ML: SILTY SAND/SANDY SILT, Brown, Fine to Coarse, Moist.

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	5693.2	3423.6	1303.2
EXUDATION PRESSURE, PSI	453	273	104
EXPANSION, * 0.0001 IN	0.004	0.005	0.0004
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	32	78	94
DISPLACEMENT	3.87	4.23	4.86
RESISTANCE VALUE "R"	72	38	27
"R" VALUE CORRECTED FOR HEIGHT	72	38	27
% MOISTURE AT TEST	11.8	12.8	13.8
DRY DENSITY AT TEST, PCF	117.4	114.7	111.7
"R" VALUE AT 300 PSI EXUDATION PRESSURE	**43**		
"R" VALUE BY EXPANSION PRESSURE TI = 4.0, GF=1.50	**N/A**		

Reviewed By: *Ian Leo T. Remotigue*

ASSOCIATES

691 N Laverne, Ste 101
Fresno, CA 93727
Ph: (559) 497-2880

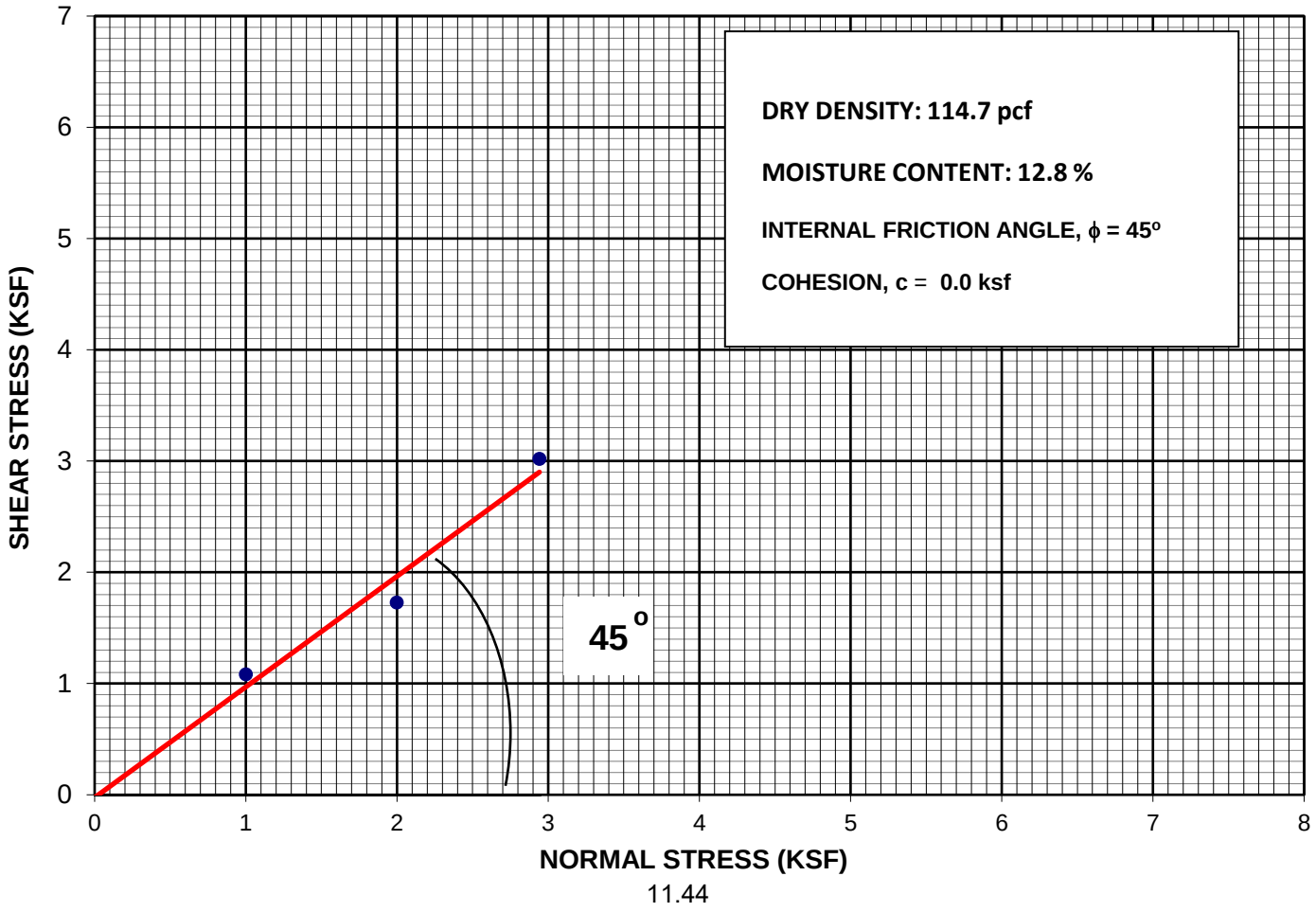
Direct Shear Test

ASTM D-3080

FIGURE B-4

Project Name:	LEWIS EATON	**Sampled By:**	D.F	**Sample Date:**	4/28/23
		Tested By:	D. Messfin	**Test Date:**	05-02-23
Project Number:	G00000706	**Lab Tracking ID:**	N/A	**Report Date:**	05-03-23
Sample Location:	B-10 @ 4'	**Sample Description:**	Poorly Graded Sand (SP) - moist, grayish brown, fine to coarse grained sand		

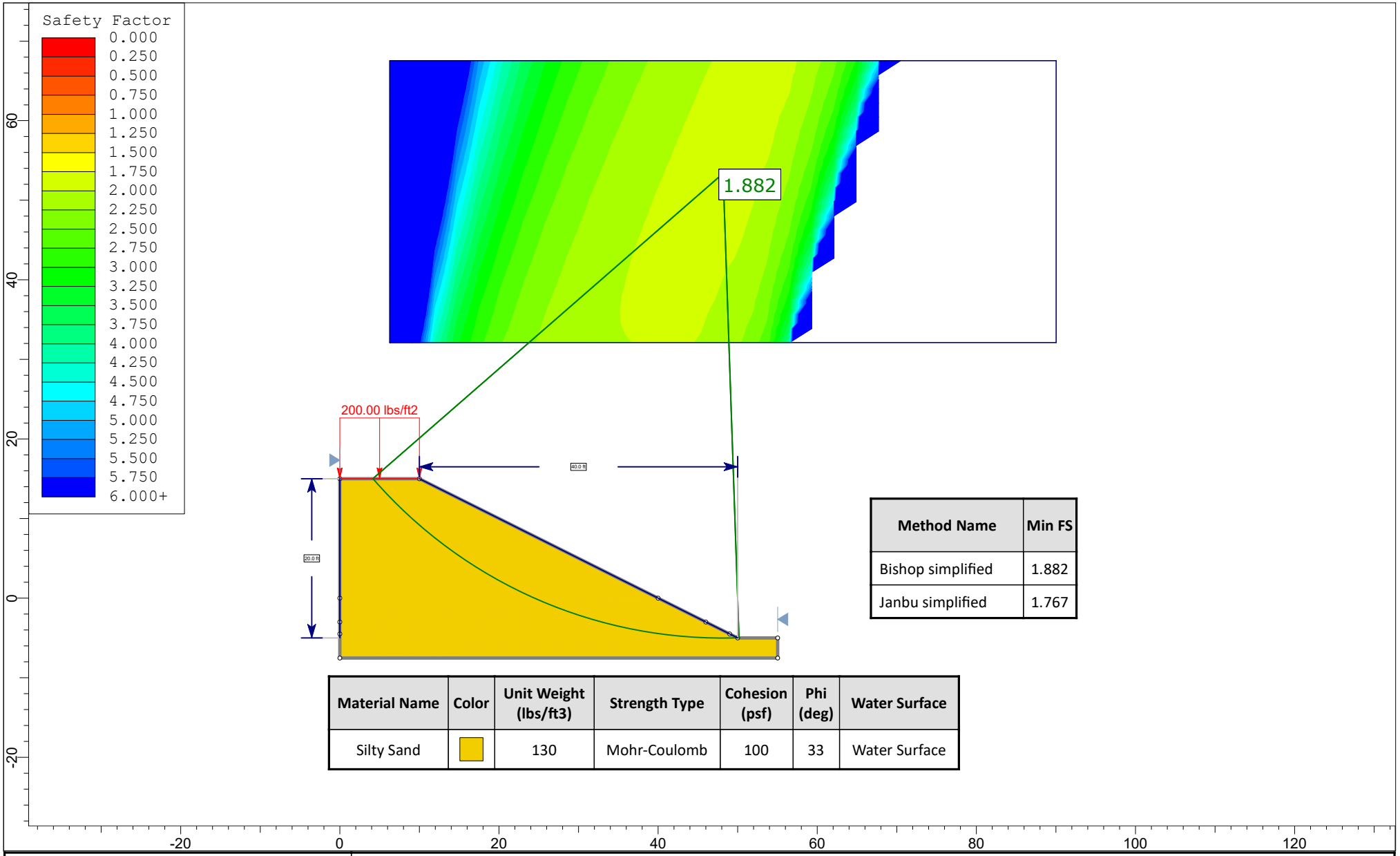
SHEAR STRENGTH DIAGRAM



11.44

APPENDIX C

SLOPE STABILITY ANALYSIS RESULTS



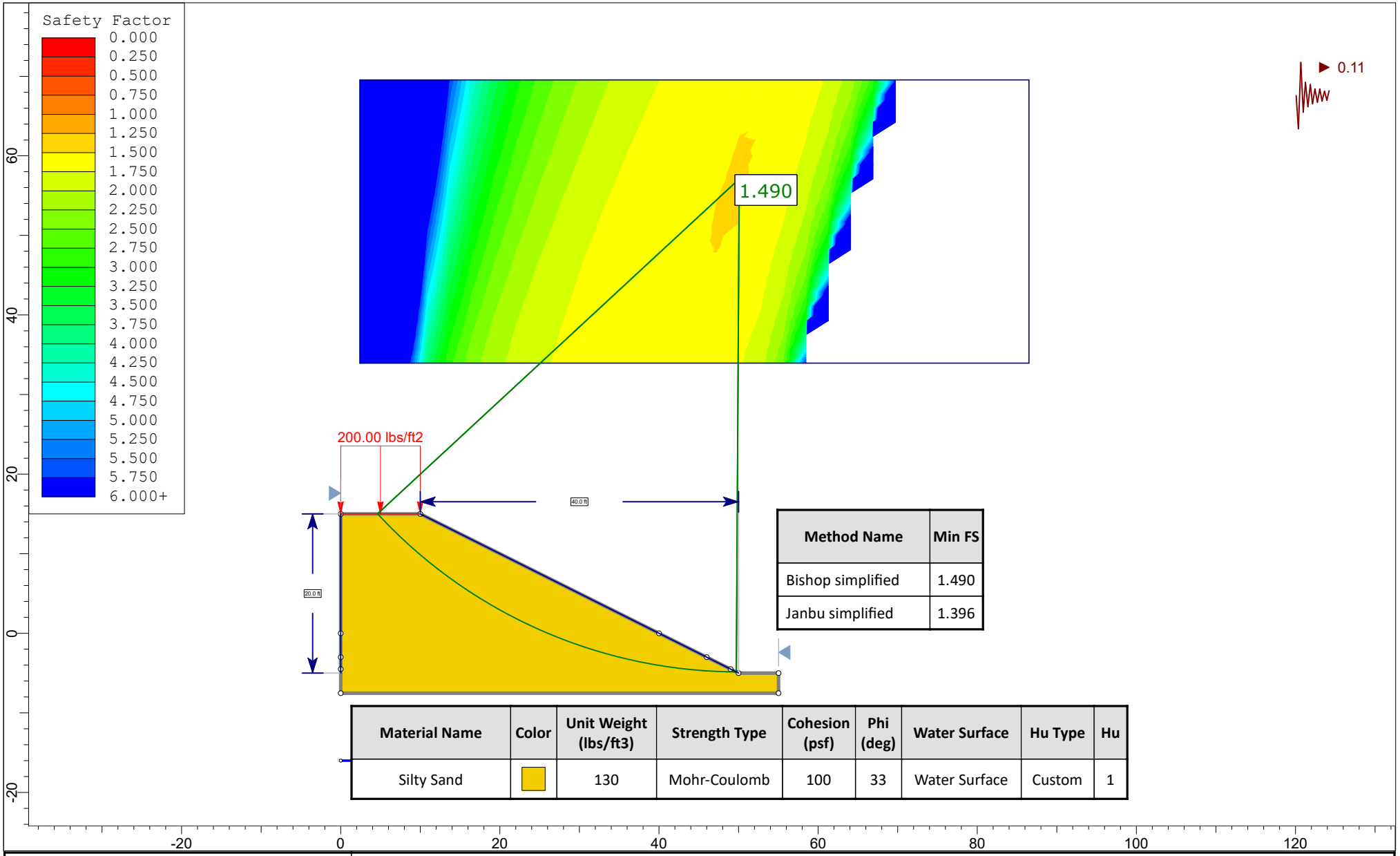
Method Name	Min FS
Bishop simplified	1.882
Janbu simplified	1.767

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface
Silty Sand		130	Mohr-Coulomb	100	33	Water Surface

rocscience

SLIDEINTERPRET 7.038

Project	Lewis Eaton Trail		
Analysis Description	G00-000-706		
Drawn By	TG	Scale 1:200	Company BSK Associates
Date	3/31/23		File Name G00000706 - Lewis Eaton Trail.slmd



Method Name	Min FS
Bishop simplified	1.490
Janbu simplified	1.396

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Hu Type	Hu
Silty Sand		130	Mohr-Coulomb	100	33	Water Surface	Custom	1

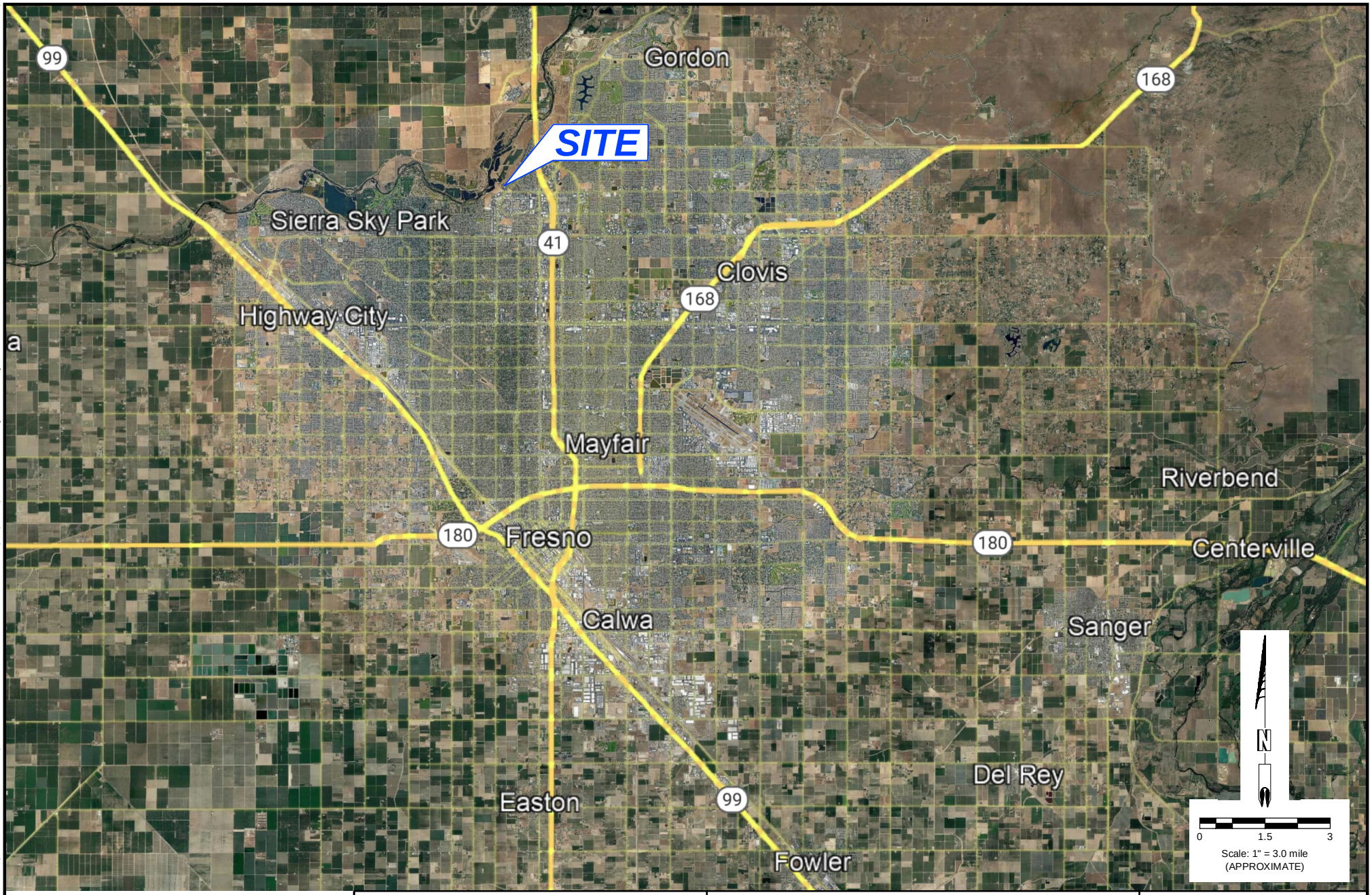
rocscience

SLIDEINTERPRET 7.038

Project	Lewis Eaton Trail		
Analysis Description	G00-000-706		
Drawn By	TG	*Scale* 1:200	*Company* BSK Associates
Date	3/31/23	*File Name*	G00000706 - Lewis Eaton Trail.slmd

APPENDIX D

DATA REPORT FOR SPANO PARK IMPROVEMENTS



C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706-River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:Feb 13, 2023 - 1:51pm Last Save:Dec 09, 2022 - 2:08pm

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.49

SITE VICINITY MAP

River West Eaton Trail
Fresno, California

FIGURE 1

JOB NO. G00-000-706
DATE February 13, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS



LEGEND:

B-5 APPROXIMATE BORING LOCATIONS

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
550 West Locust Avenue
Fresno, California 93650
Tel. (559) 497-2880

11.50

BORING LOCATION MAP

River West Eaton Trail Extention
Fresno, California

FIGURE 2A

JOB NO. G00-000-706
DATE February 22, 2023
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G00000706-River West Eaton Trail Extension\Graphics\G00-000-706.dwg User:tgonzalez Plotted:Feb 22, 2023 - 11:27am Last Saved:Feb 13, 2023 - 1:53pm

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM	SILTY SANDS, POOORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

■	Modified California	RV	R-Value
⊠	Standard Penetration Test (SPT)	SA	Sieve Analysis
☒	Split Spoon	SW	Swell Test
◪	Pushed Shelby Tube	TC	Cyclic Triaxial
▯	Auger Cuttings	TX	Unconsolidated Undrained Triaxial
✋	Grab Sample	TV	Torvane Shear
⊘	Sample Attempt with No Recovery	UC	Unconfined Compression
CA	Chemical Analysis	(1.2)	(Shear Strength, ksf)
CN	Consolidation	WA	Wash Analysis
CP	Compaction	(20)	(with % Passing No. 200 Sieve)
DS	Direct Shear	▽	Water Level at Time of Drilling
PM	Permeability	▼	Water Level after Drilling(with date measured)
PP	Pocket Penetrometer		

SOIL CLASSIFICATION CHART AND LOG KEY

Figure A-1

BSK ASSOCIATES

LGD A NNNN02 TEST.GPJ 5/10/18

BSK Associates
691 N Laverne Ave, # 101
Fresno, CA 93727
Telephone: (559) 497-2888

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-1**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1								SM	**Surface** - bricks/concrete miscellaneous debris in top 1 foot. **FILL: Silty SAND** - olive brown, moist, fine to medium grained sand, medium dense	
2										
3	■		32	132.7	11.5					
4										
5								ML	**Sandy SILT** - dark brown, moist, fine to medium grained sand, very stiff	
6	■		42	103.4	10.8					
7										
8										
9										
10								SC	**Clayey SAND** - dark brown, moist, fine to medium grained sand, very dense ... concrete encountered	hard auger
11	■		50/ 5"							
12										
13										
14										
15								ML	**NATIVE: Sandy SILT** - olive brown, moist, fine to medium grained sand, strongly cemented, hard	
16	■		50/ 5.5"							
17										
18										
19										
20										
21	■		83	119.2	12.1					
22										
23										
24										
25								ML	**SILT** - yellowish brown, moist, fine grained sand, lightly cemented, hard	
26	■		81					SP	**Poorly Graded SAND** - gray, moist, fine grained sand, very dense Boring terminated at approximately 26.5 feet bgs. No groundwater encountered. Boring backfilled with grout.	
27										
28										
29										

Drilling Contractor: Clear Heart
Drilling Method: Portable Drill Rig
Drilling Equipment: Solid Flight Auger
Date Started: 1/23/23
Date Completed: 1/23/23

Surface Elevation: 321.0
Sample Method: 2.5" Modified Cal
Groundwater Depth: Not Encountered
Completion Depth: 26.5 Feet
Borehole Diameter: 4"

* See key sheet for symbols and abbreviations used above.

GEO_BORING LOGS.GPJ_BSK.GDT_10/10/24

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-2**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–5			60	117.2	8.3			ML	**FILL: Sandy SILT** - olive brown, moist, fine to medium grained sand, hard soil chunks up to 3/4 inch diameter, hard	
5–10			33	114.6	13.6			SM	**NATIVE: Silty SAND** - yellowish brown, moist, fine to medium grained, cemented, medium dense	
10–15			10	104.1	5.2			SP	**Poorly Graded SAND** - yellowish brown, moist, fine to coarse grained sand, loose	
15–20			9	96.9	6.5			SM	**Silty SAND** - olive brown, moist, fine to medium grained sand, loose	
20–21			15					ML	**Sandy SILT** - light olive brown, moist, fine grained sand, cemented, stiff	hand auger
21–22								SM	**Silty SAND** - olive brown, moist, fine to medium grained sand, medium dense	
23–24			49					ML	**Sandy SILT** - light brown, moist, fine grained sand, hard	
24–29									Boring terminated at approximately 24 feet bgs due to refusal. No groundwater encountered. Boring backfilled with grout.	

Drilling Contractor: Clear Heart
Drilling Method: Portable Drill Rig
Drilling Equipment: Solid Flight Auger
Date Started: 1-24-23
Date Completed: 1-24-23

Surface Elevation: 314.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 24 Feet
Borehole Diameter: 4"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–2								SM	**Silty Sand** - olive brown, moist, fine to coarse grained sand, medium dense	
3	■		47							
4										
5	■									
6	■		48						... fine to medium grained sand, dense	
7–9										
10	■									
11	■		50	128.6	6.9				... fine to coarse grained sand	
12–14										
15	■								... cemented	
16	■		70					SP	**Poorly Graded Sand** - yellowish brown, moist, fine to coarse grained sand	SP did not appear to cave after augers were removed
17–19										
20	■							ML	**Sandy Silt** - very dark brown, moist, fine to medium grained sand, cemented, very hard	
21	■		50/ 5"							
22–24										
25	■							SM	**Silty Sand** - gray, moist, fine, very dense	
26	■		81	95.7	21.0					
27–29										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 51.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
31			36	83.8	17.8				**Silty Sand** - gray, moist, fine, very dense *(continued)* ... medium dense	
32										
33										
34										
35										
36			19	90.5	14.9					
37										
38										
39										
40								ML	**Sandy Silt** - olive brown, moist, fine grained sand, hard	
41			71			46		SP	**Poorly Graded Sand** - gray, moist, fine to medium grained sand, dense	
42										
43										
44										
45								ML	**Sandy Silt** - gray, moist, fine grained sand, very hard	
46			50/ 2"							
47										
48										
49										
50								SP	**Poorly Graded Sand** - yellowish brown, moist, fine to medium grained sand, medium dense	
51			37						Boring terminated at 51.5 feet bgs No groundwater encountered Backfilled with neat cement grout	
52										
53										
54										
55										
56										
57										
58										
59										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 51.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1								SM	**Silty Sand** - olive brown, moist, fine to medium grained sand, dense	
2										
3			59							
4										
5										
6			30						... medium dense	
7										
8										
9										
10										
11			55						... dense	
12										
13										
14										
15									... fine to coarse grained sand, 1/4 inch gravel, very dense	
16			92	119.1	8.1					
17										
18										
19										
20										
21			35	113.0	13.9				... brown, fine to medium grained sand, cemented, increased fines, medium dense	
22										
23										
24										
25									... yellowish brown, decreased fines, medium dense	
26			43	91.3	19.9					
27										
28										
29										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
31			24	90.6	23.3				**Silty Sand** - olive brown, moist, fine to medium grained sand, dense *(continued)*	
32									... olive brown	
33										
34										
35								SP	**Poorly Graded Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense	
36			42	99.8	6.0					
37										
38										
39										
40										
41			50			7			... gray, fine to medium grained sand, dense	
42										
43										
44										
45										
46			64							
47								ML	**Sandy Silt** - very light brown, moist, fine grained sand, firm	
48										
49										
50										
51			41	84.3	29.7					
52										
53										
54										
55								SM	**Silty Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense	
56			49							
57										
58										
59										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

BSK Associates
691 N Laverne Ave. Suite 101
Fresno, CA 93727
Telephone: (559) 497-2880

Project: River West Eaton Trail Extension

Location: Fresno, CA

Project No.: G00-000-706

Logged By: T. Gorham

Checked By: N. Popenoe

Boring: **B-4**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
61	■		50/ 3"						**Silty Sand** - yellowish brown, moist, fine to coarse grained sand, medium dense *(continued)*	
62									... very dense	
63										
64										
65	■							ML	**Sandy Silt** - very light brown, moist, fine grained sand, very hard	
66	■		50/ 3"					SM	**Silty Sand** - gray, moist, fine grained sand, very dense	
67										
68										
69										
70	■								... fine to coarse grained sand, dense	
71	■		62							
72									Boring terminated at 71.5 feet bgs No groundwater encountered Backfilled with neat cement grout	
73										
74										
75										
76										
77										
78										
79										
80										
81										
82										
83										
84										
85										
86										
87										
88										
89										

Drilling Contractor: Baja Exploration
Drilling Method: Mobil B-61
Drilling Equipment: Hollow Stem Auger
Date Started: 2-9-23
Date Completed: 2-9-23

Surface Elevation: 335.0
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 71.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 5-5-23

FIGURE D-1

COOPER TESTING LABORATORY

Corrosivity Tests Summary

CTL # 664-477 **Date:** 16-03-23 **Tested By:** PJ **Checked:** PJ
Client: BSK Associates **Project:** Lewis Eaten Trail **Proj. No:** G00000706
Remarks:

Sample Location or ID			Resistivity @ 15.5 °C (Ohm-cm)			Chloride	Sulfate		pH	ORP (Redox)		Sulfide	Moisture	Soil Visual Description
			As Rec.	Min	Sat.	mg/kg	mg/kg	%				Qualitative	At Test	
						Dry Wt.	Dry Wt.	Dry Wt.		E_H (mv)	At Test	by Lead	%	
Boring	Sample, No.	Depth, ft.	ASTM G57	Cal 643	ASTM G57	ASTM D4327	ASTM D4327	ASTM D4327	ASTM G51	ASTM G200	Temp °C	Acetate Paper	ASTM D2216	
B-3	Cal Tube	21	-	-	4,320	3	36	0.0036	8.2	497	19	-	20.7	Olive Brown Clayey SAND, trace Gravel
B-2	Bulk Bag	0-5	-	-	5,100	10	42	0.0042	8.2	502	19	-	11.4	Strong Brown Sandy CLAY

ASSOCIATES

691 N. Laverne, ste 101
Fresno, CA 93727
Ph: (559) 497-2880

FIGURE D-2

MINIMUM RESISTIVITY OF SOILS

CTM-643

Project Name: Lewis Eaton **Sample Date:** 2/9/2023

Project Number: G00000706 **Test Date:** 3/9/2023

Lab Tracking ID: N/A **Report Date:** 3/22/2022

Sample Location: B - 3 @ 21'

Sample Description:

Sampled By: T.G **Tested By:** D. Ferrer

Soil temperature at minimum resistance = 21.26 ^{0}C

Total Moisture Added (ml)	Meter Dial Reading	Multiplier Setting	Resistance Measured (ohms)	Resistivity (ohm-cm)
15	4.4	10,000	44,000	29,698
30	2.4	10,000	24,000	16,199
45	2.2	10,000	22,000	14,849
60	2.0	10,000	20,000	13,499
75	1.9	10,000	19,000	12,824
90	1.7	10,000	17,000	11,474
105	2.4	10,000	24,000	16,199
Minimum Resistivity at 15.5^{o}C, Ohm-cm				11,470

pH	7.75
Sulfate (ppm)	N/D
Chloride (ppm)	N/D

*n/d - non-detect

ASSOCIATES

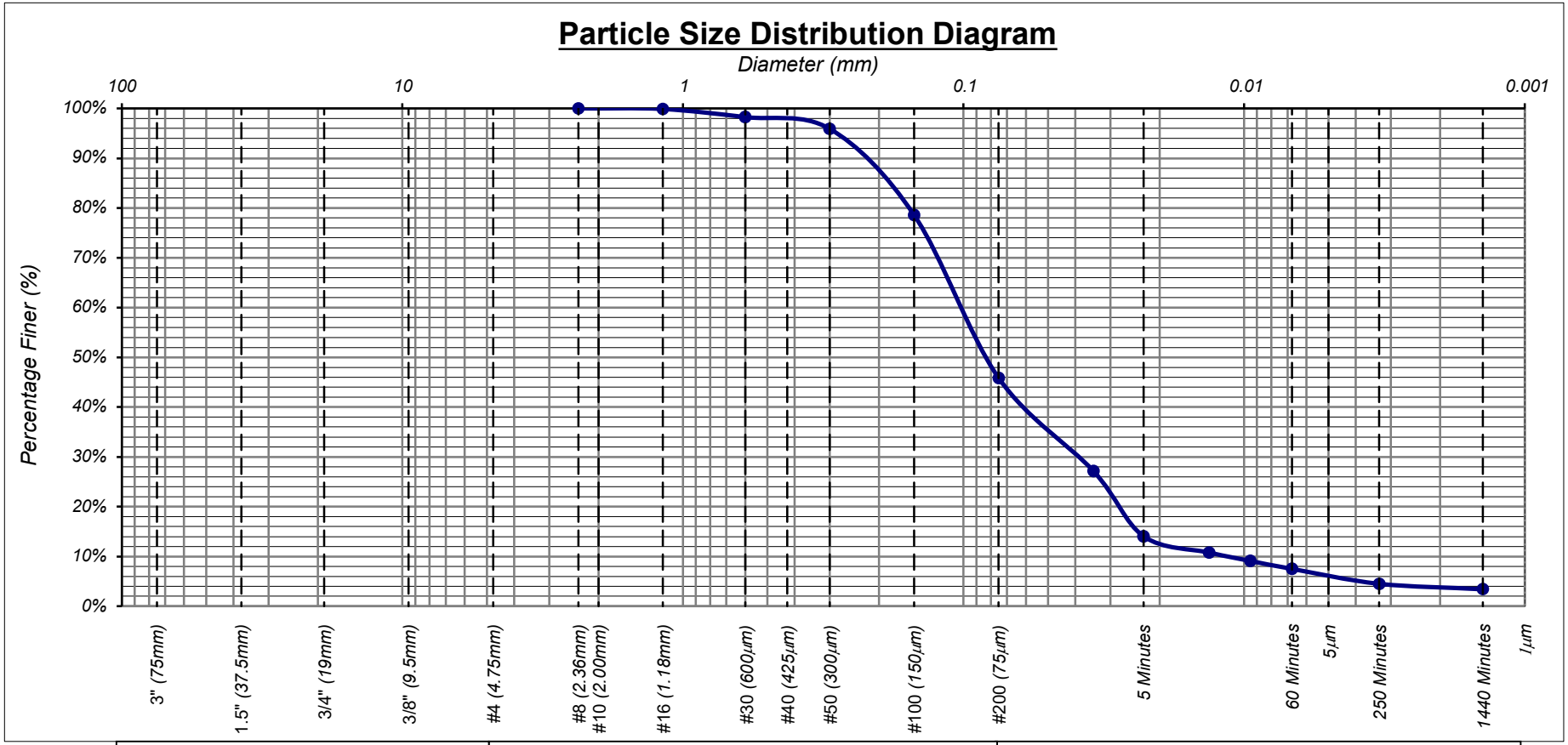
691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

FIGURE D-3

Gradation Analysis Report
ASTM D-422 / ASTM C-136

Project Name:	Lewis Eaton	**Project Number:**	G00000706	**Report Date:**	03-17-23
Sample Location:	B - 3 @ 41'	**Sample Lab ID:**		**Sample Date:**	2/9-10/23
Sample Description:	Silty Sand (SM)			**Test Date:**	03-15-23

Particle Size Distribution Diagram



Clear Square Openings (ASTM C-136)			US Standard Series (ASTM D-422)			Hydrometer Readings (ASTM D-422)
Cobble	Gravel		Sand			Silt (Non-Plastic) to Clay (Plastic)
	Coarse	Fine	Coarse	Medium	Fine	

% Gravel =	0%	% Sand =	54%	% Silt =	40%	% Clay =	6%

ASSOCIATES

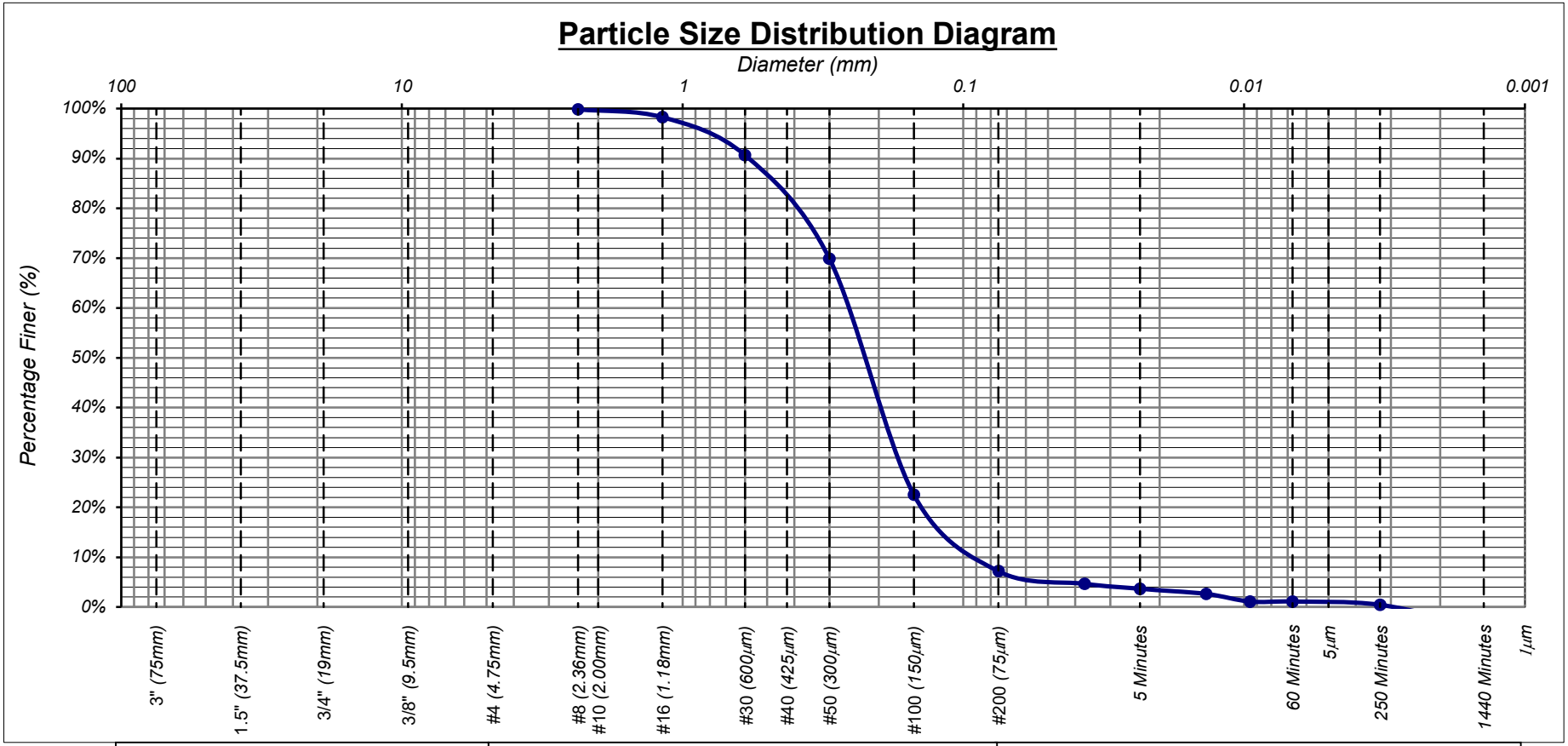
691 N. Laverne,Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

FIGURE D-4

Gradation Analysis Report
ASTM D-422 / ASTM C-136

Project Name:	Lewis Eaton Trail	**Project Number:**	G00000706	**Report Date:**	3/31/23
Sample Location:	B-4 @ 40.5'-41'	**Sample Lab ID:**	N/A	**Sample Date:**	2/10/23
Sample Description:	Poorly Graded Sand (SP)			**Test Date:**	3/22/23

Particle Size Distribution Diagram



Clear Square Openings (ASTM C-136)			US Standard Series (ASTM D-422)			Hydrometer Readings (ASTM D-422)
Cobble	Gravel		Sand			Silt (Non-Plastic) to Clay (Plastic)
	Coarse	Fine	Coarse	Medium	Fine	

% Gravel =	0%	% Sand =	93%	% Silt =	6%	% Clay =	1%

ASSOCIATES

691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

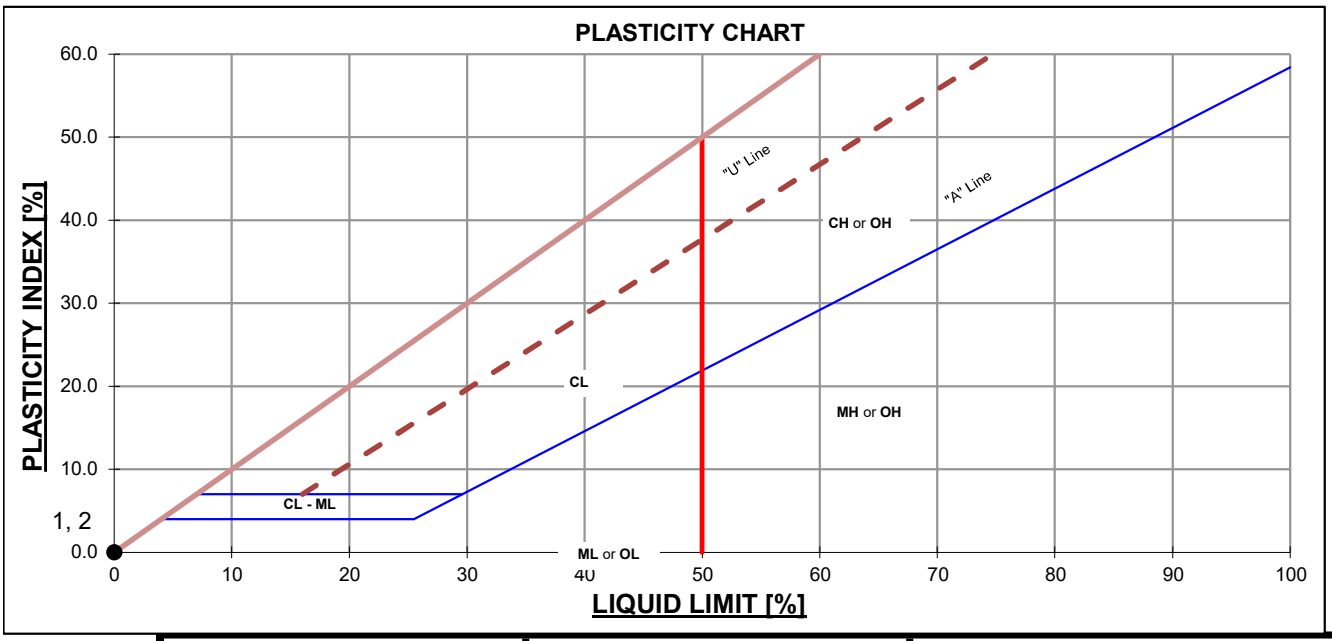
FIGURE D-5

LIQUID LIMIT (LL), PLASTIC LIMIT (PL), AND PLASTICITY INDEX (PI) OF SOILS

ASTM D-4318

Project Name: Lewis Eaton
Project Number: G00000706
Sampled By: T.G **Tested By:** D.M

Report Date: 22-03-23
Sample Date: 2/9-10/23
Test Date: 09-03-23



Sample #	1	2	3
Sample ID Location Description	B - 1 @ 15'		B - 2 @ 0 - 5'

Wet+Tare (g)									
Dry+Tare (g)									
Tare (g)	8.46	8.50	8.56				8.46	8.50	8.56
Spec. Blows	25-35	20-30	15-25	25-35	20-30	15-25	25-35	20-30	15-25
No. of Blows									
LL	NON PLASTIC						NON PLASTIC		
Corrected LL									

Plastic Limit Data

Wet+Tare (g)									
Dry+Tare (g)									
Tare (g)	20.00	20.13					20.00	20.13	
M.C.									

	Results	Specification	Results	Specification	Results	Specification
AVG L.L.	0					
AVG P.L.						
P.I.	0					
USCS Symbol						

Remarks:

Reviewed By: N. Popenoe **Date:** 3/31/23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

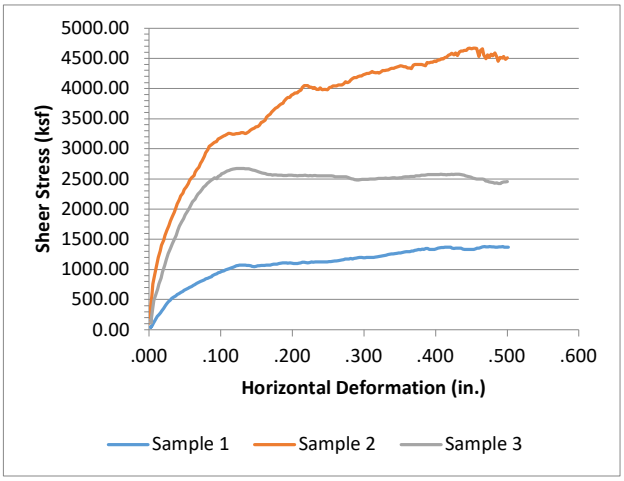
FIGURE D-6

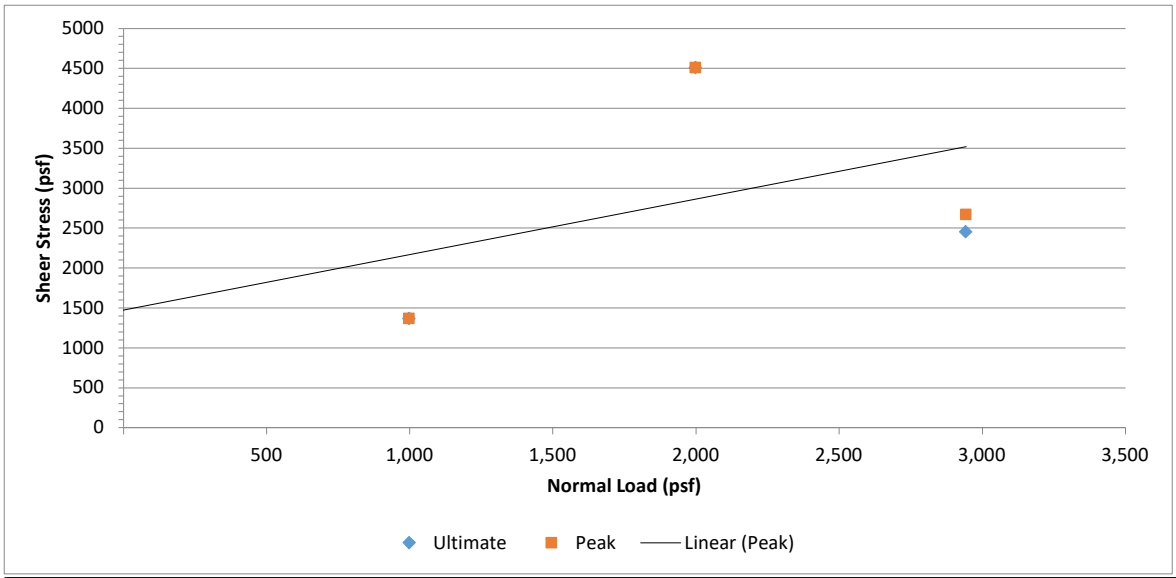
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 1 @ 5'			Test Date:	3/7/23
Sample Description:	Sandy Silt (ML) - dark brown, moist, fine to medium grained sand, very stiff				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	1550		33
Ultimate	1620		30
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			10.8
Dry Density (pcf)			103.4
Saturation (%)			47.8
Soil Height Before Shearing (in.)			0.9839





Normal Stress (psf)		1000	2000	3000
Peak Shear Stress (psf)		1368.117	4511.34312	2673.62
HDSP at Peak		0.4131	0.5	0.13
Shear Stress @ End of Test (psf)		1368.117	4511.34	2454.471205
HDSP @ End of Test (in)	HDSP at Ultimate	0.5	0.5	0.5
Deformation Rate (in./min.)		8.0E-05	8.10807E-05	8.08931E-05

Reviewed by: N. Popenoe Date: 23-03-23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

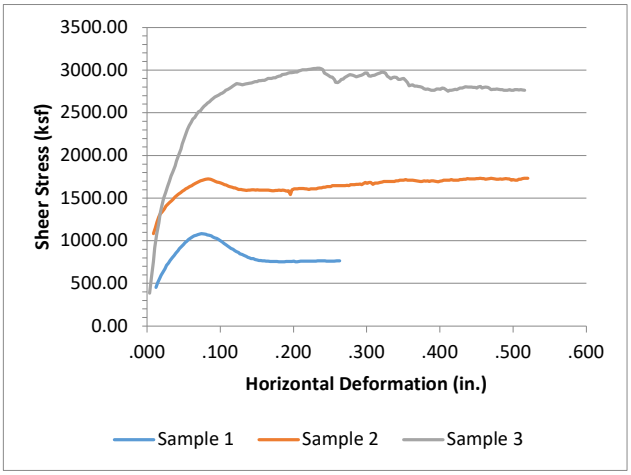
FIGURE D-7

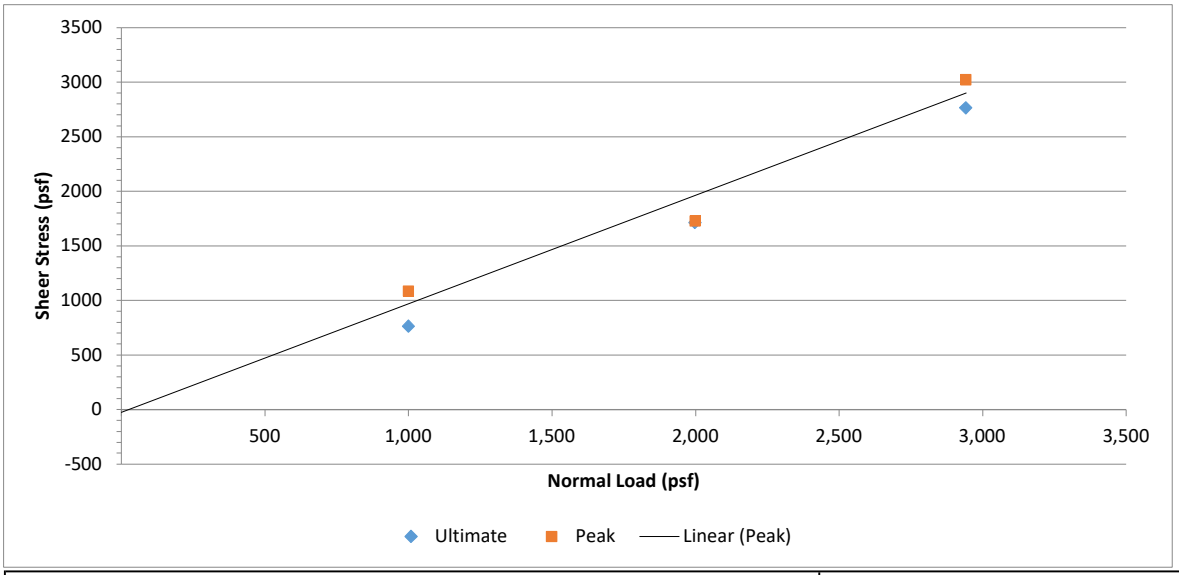
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 1 @ 20'			Test Date:	3/8/23
Sample Description:	Sandy Silt (ML) - olive brown, moist, fine to medium grained sand, strongly cemented, hard				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	0		45
Ultimate	0		46
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			12.1
Dry Density (pcf)			119.2
Saturation (%)			82.8
Soil Height Before Shearing (in.)			0.9853





Normal Stress (psf)	1000.000	2000.000	3000.000
Peak Shear Stress (psf)	1083.2233	1728.148093	3021.13
HDSP at Peak	0.0742	0.4897	0.23
Shear Stress @ End of Test (psf)	763.89155	1712.49	2764.410809
HDSP @ End of Test (in)	0.5	0.5	0.5
Deformation Rate (in./min.)	8.5E-05	1.2E-05	8.3E-05

Reviewed by: N. Popenoe Date: 23-03-23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

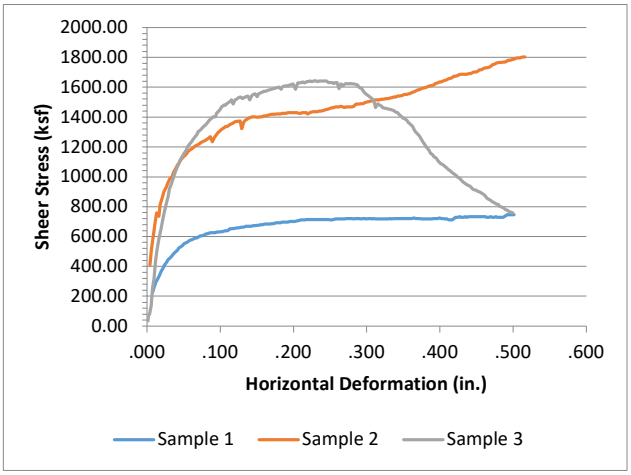
FIGURE D-8

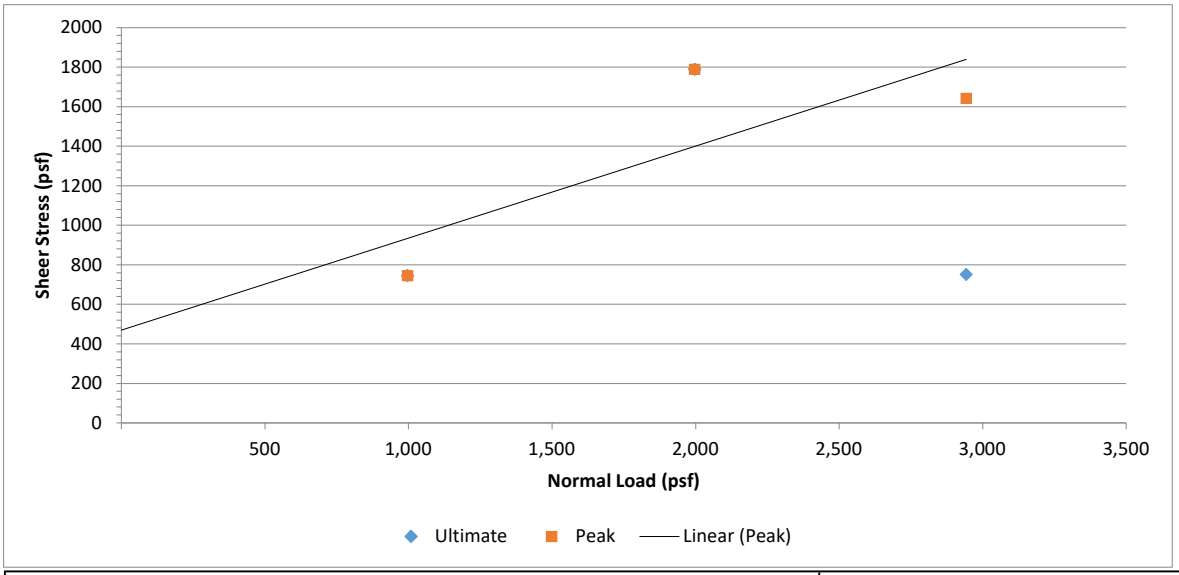
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 2 @ 16'			Test Date:	3/9/23
Sample Description:	Silty Sand (SM) - olive brown, moist, fine to medium grained sand, loose				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	470		25
Ultimate	1070		1
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			6.5
Dry Density (pcf)			96.9
Saturation (%)			24.4
Soil Height Before Shearing (in.)			0.9654





Normal Stress (psf)	1000.000	2000.000	3000.000
Peak Shear Stress (psf)	745.10733	1787.631452	1640.49
HDSP at Peak	0.5014	0.5012	0.25
Shear Stress @ End of Test (psf)	745.10733	1787.63	751.3687362
HDSP @ End of Test (in)	0.5	0.5	0.5
Deformation Rate (in./min.)	8.2E-05	8.3E-05	8.1E-05

Reviewed by: N. Popenoe Date: 23-03-23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

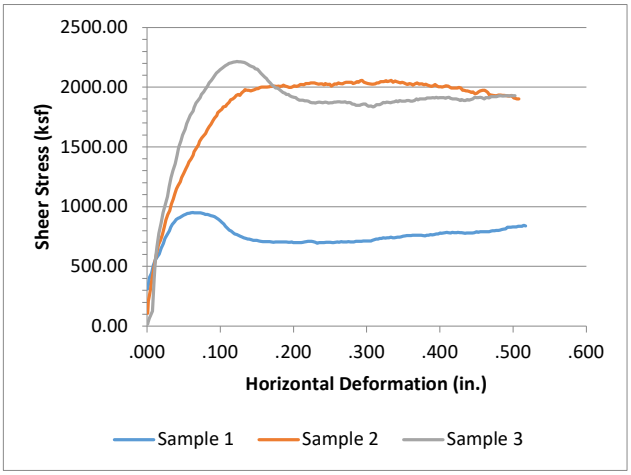
FIGURE D-9

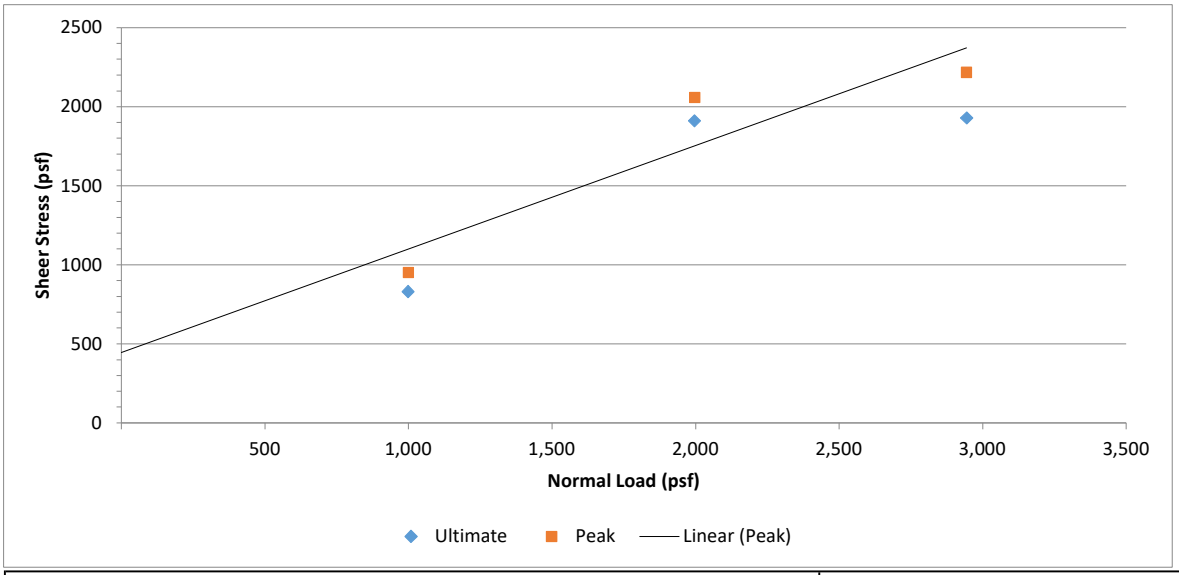
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 3 @ 11'			Test Date:	3/6/23
Sample Description:	Silty Sand (SM) - olive brown, moist, fine to coarse grained sand, dense				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	440		33
Ultimate	430		30
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			6.9
Dry Density (pcf)			128.6
Saturation (%)			64.0
Soil Height Before Shearing (in.)			0.9654





Normal Stress (psf)	1000.000	2000.000	3000.000
Peak Shear Stress (psf)	951.73373	2056.871915	2216.54
HDSP at Peak	0.0623	0.2936	0.12
Shear Stress @ End of Test (psf)	829.63631	1909.73	1928.51309
HDSP @ End of Test (in)	0.5	0.5	0.5
Deformation Rate (in./min.)	8.2E-05	1.1E-05	8.1E-05

Reviewed by: N. Popenoe Date: 23-03-23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

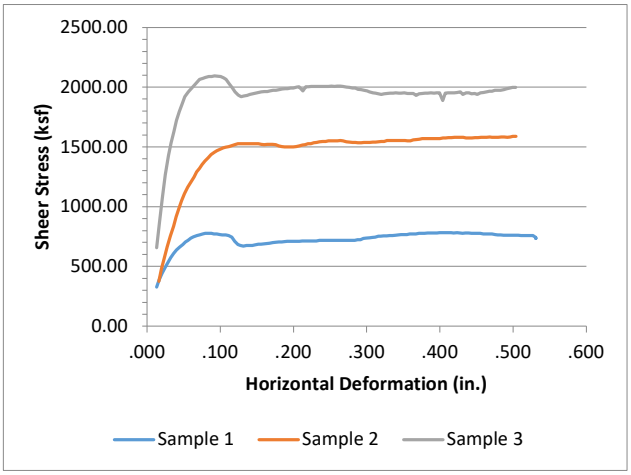
FIGURE D-10

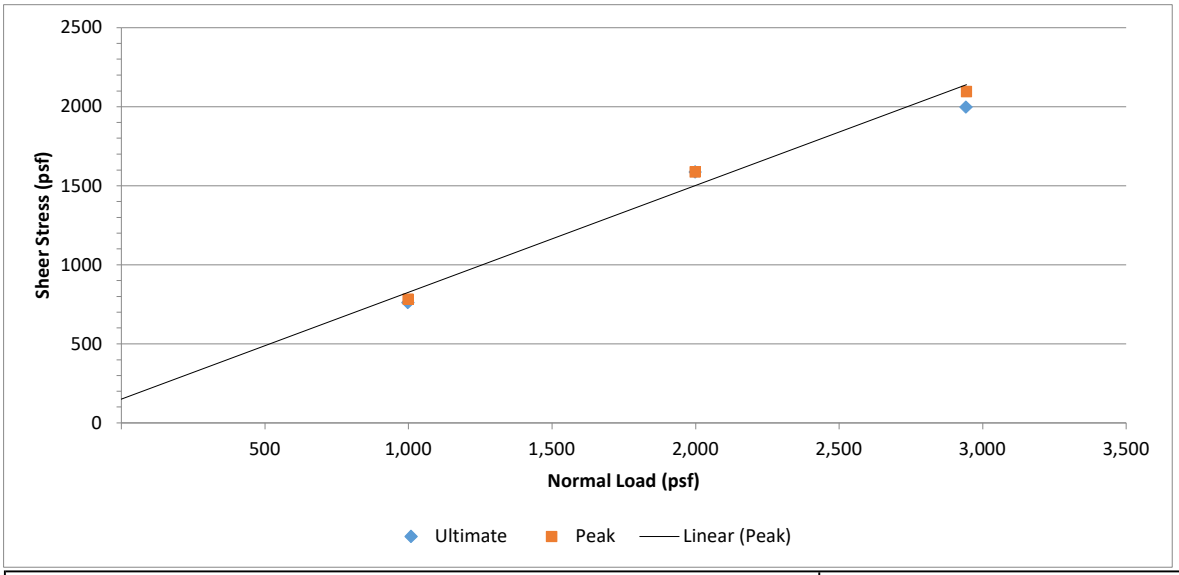
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 3 @ 36'			Test Date:	3/6/23
Sample Description:	Silty Sand (SM) - gray, moist, fine, medium dense				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	150		34
Ultimate	190		33
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			14.9
Dry Density (pcf)			90.5
Saturation (%)			47.7
Soil Height Before Shearing (in.)			0.9654





Normal Stress (psf)	1000.000	2000.000	3000.000
Peak Shear Stress (psf)	782.67577	1587.266455	2094.44
HDSP at Peak	0.4152	0.5038	0.09
Shear Stress @ End of Test (psf)	760.76085	1587.27	1997.388557
HDSP @ End of Test (in)	0.5	0.5	0.5
Deformation Rate (in./min.)	1.3E-04	1.3E-04	1.3E-04

Reviewed by: N. Popenoe Date: 23-03-23

BSK ASSOCIATES
691 N Laverne Ave, Suite 101
Fresno, CA 93727
Ph: (559) 497-2868

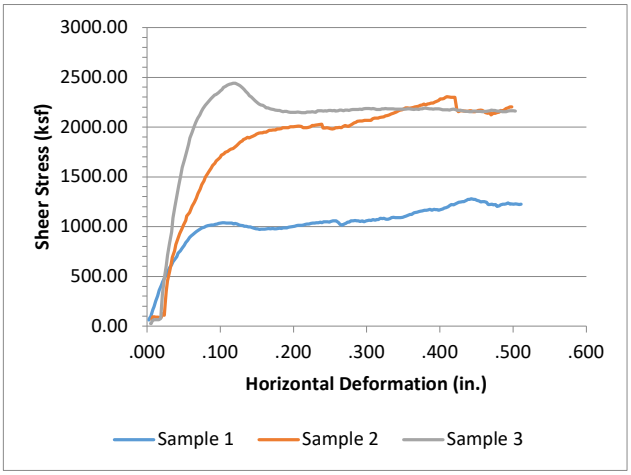
FIGURE D-11

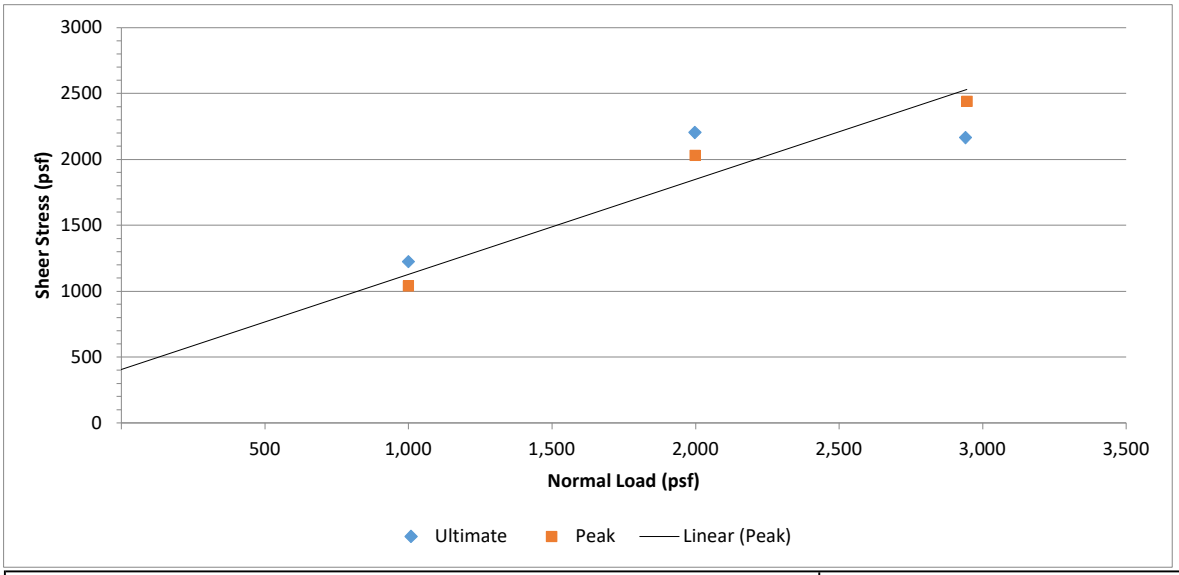
Direct Shear Test

ASTM D-3080

Project Name:	Lewis Eaton Trail			Figure No:	
Project Number:	G00000706	Sampled By:	T. Gorham	Report Date:	3/31/23
Lab Tracking ID:	NA	Tested By:	D. M	Sample Date:	2/9/23
Sample Location:	B - 4 @ 21'			Test Date:	3/10/23
Sample Description:	Silty Sand (SM) - brown, moist, fine to medium grained sand, cemented, medium dense				

Boring No.			
Depth (ft)			
Drive			
Soil Identification:			
Yellow silt (ML)			
Strength Parameters			
	C(PSF)		ϕ(°)
PSAR	410		36
Ultimate	900		26
Initial Sample Height (in.)			1
Diameter (in.)			2.5
Initial Moisture Content (%)			13.9
Dry Density (pcf)			113
Saturation (%)			79.5
Soil Height Before Shearing (in.)			0.9654





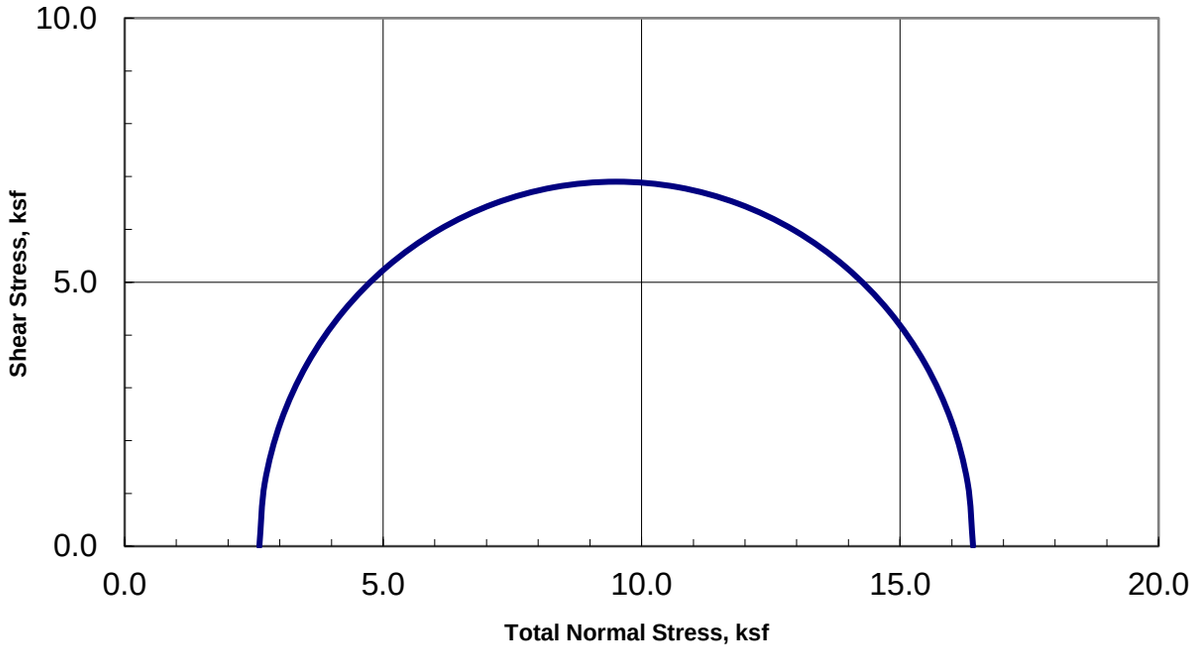
Normal Stress (psf)	1000.000	2000.000	3000.000
Peak Shear Stress (psf)	1039.3934	2028.695588	2438.82
HDSP at Peak	0.1056	0.2385	0.12
Shear Stress @ End of Test (psf)	1224.1049	2204.01	2163.31582
HDSP @ End of Test (in)	0.5	0.5	0.5
Deformation Rate (in./min.)	8.0E-05	8.0E-05	8.1E-05

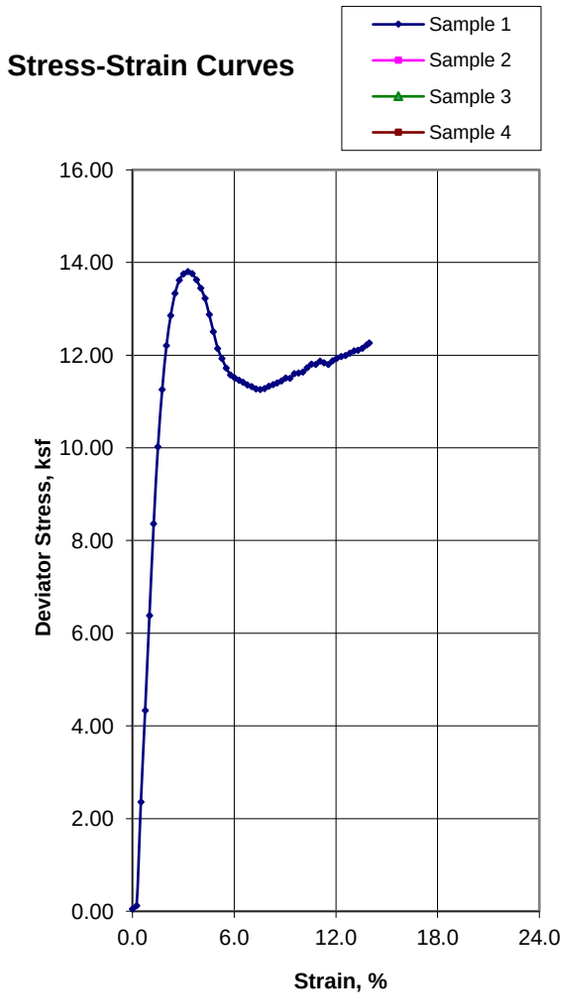
Reviewed by: N. Popenoe Date: 23-03-23

Cooper Testing Labs, Inc.
937 Commercial Street
Palo Alto, CA 94303

FIGURE D-12

Unconsolidated-Undrained Triaxial Test
ASTM D2850





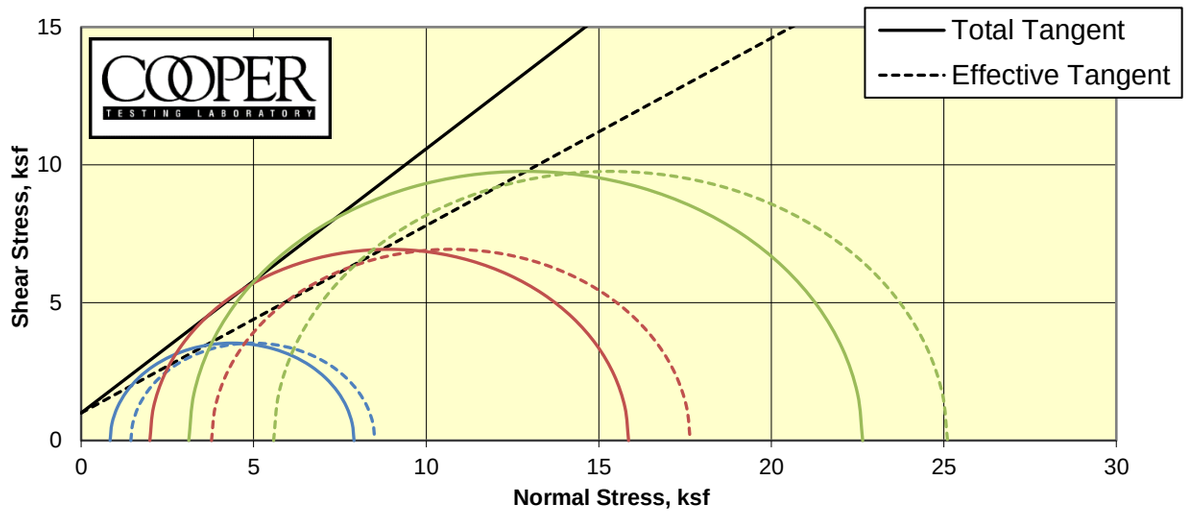
Sample Data	1	2	3	4
Moisture %	19.9			
Dry Den,pcf	91.3			
Void Ratio	0.847			
Saturation %	63.5			
Height in	4.97			
Diameter in	2.40			
Cell psi	18.1			
Strain %	3.27			
Deviator, ksf	13.806			
Rate %/min	0.00			
in/min	0.000			
Job No.:	664-477			
Client:	BSK Associates			
Project:	G00000706			
Boring:	B-4			
Sample:				
Depth ft:	26			

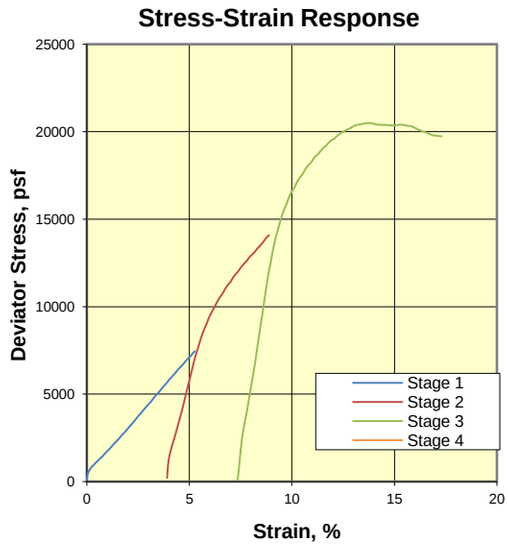
Visual Soil Description	
Sample #	
1	Brown Clayey SAND, trace Gravel
2	
3	
4	

Remarks:

Note: Strengths are picked at the peak deviator stress or 15% strain which ever occurs first per ASTM D2850.

Staged Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767m



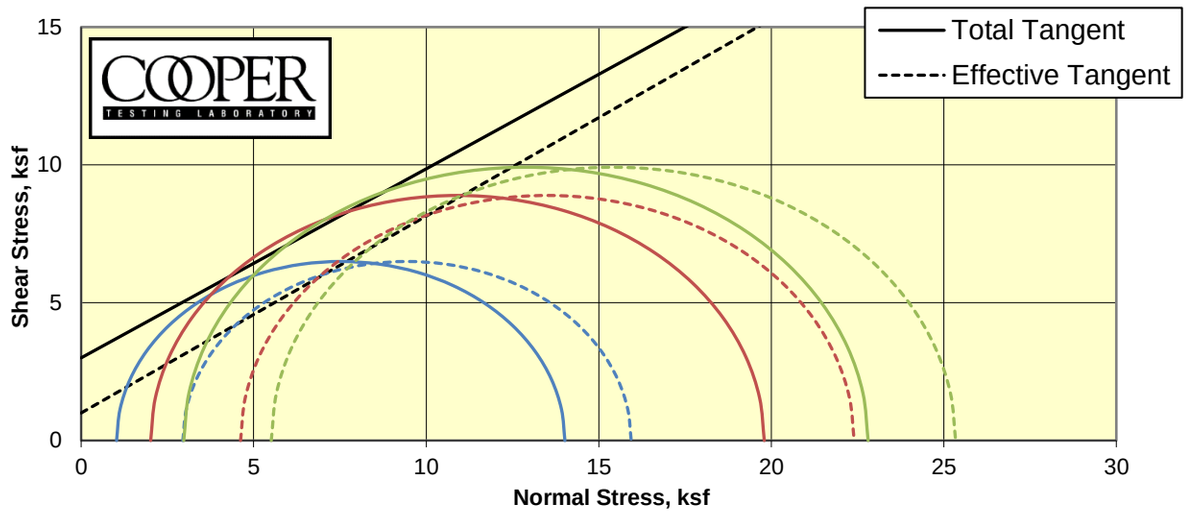


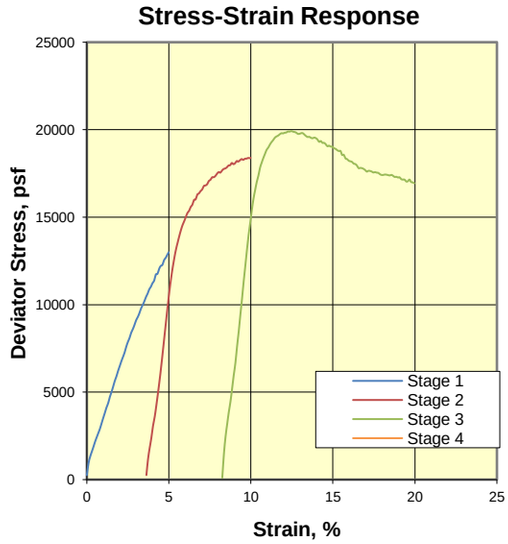
CTL Number:	664-477
Client Name:	BSK Associates
Project Name:	Lewis Eaton Trail
Project Number:	G00000706
Date:	3/16/2023 **By:** MD/DC
Total C	**1.000** **ksf**
Total phi	**43.8** **degrees**
Eff. C	**1.000** **ksf**
Eff. Phi	**34.2** **degrees** ©

Remarks: Engineering judgement is required to determine phi and cohesion, no phi or cohesion is reported. To add phi and cohesion to the report go to the “Report” tab and in cells M18 through P19 enter end points for a line through the Mohr’s circles. The points plotted can be changed on the "Shear Values" tab using cells B3, F3, and J3.

Stage	**1**	**2**	**3**	**4**
Boring	B-3			
Sample				
Depth	31			
Visual Description	Pale Brown Sandy SILT			
MC (%)	17.8			
Dry Density (pcf)	83.8			
Saturation (%)	48.4			
Void Ratio	0.975			
Diameter (in)	2.39			
Height (in)	5.03			
	Final			
MC (%)	35.4	34.8	34.3	
Dry Density (pcf)	85.4	86.1	86.7	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.938	0.922	0.909	
Diameter (in)	2.37	2.41	2.44	
Height (in)	5.03	4.83	4.66	
Cell Pressure (psi)	115.5	123.9	131.3	
Back Pressure (psi)	109.6	110.1	109.6	
	Effective Stresses At:			
Strain (%)	5.0	5.0	5.0	
Deviator (ksf)	7.070	13.874	19.530	
Excess PP (psi)	-4.2	-12.4	-17.1	
Sigma 1 (ksf)	8.510	17.652	25.107	
Sigma 3 (ksf)	1.440	3.778	5.578	
P (ksf)	4.975	10.715	15.343	
Q (ksf)	3.535	6.937	9.765	
Stress Ratio	5.909	4.672	4.501	
Rate (in/min)	0.0005	0.0005	0.0005	

Staged Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767m





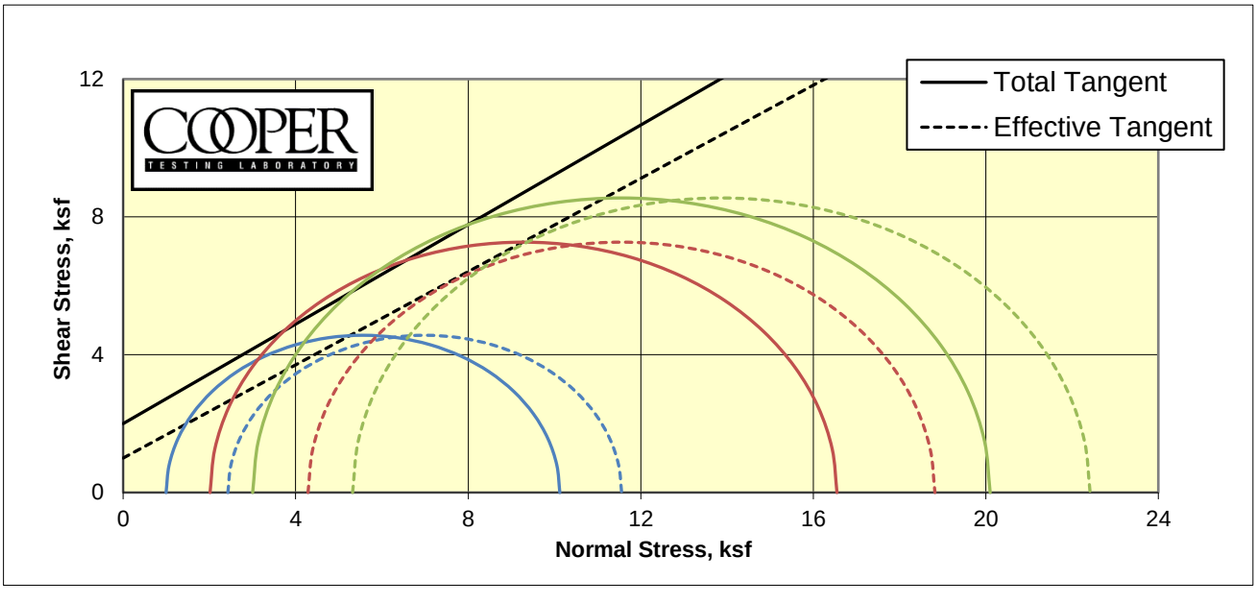
CTL Number:	664-477
Client Name:	BSK Associates
Project Name:	Lewis Eaton Trail
Project Number:	G00000706
Date:	3/17/2023 By: MD/DC
Total C	3.000 ksf
Total phi	34.4 degrees
Eff. C	1.000 ksf
Eff. Phi	35.5 degrees ©

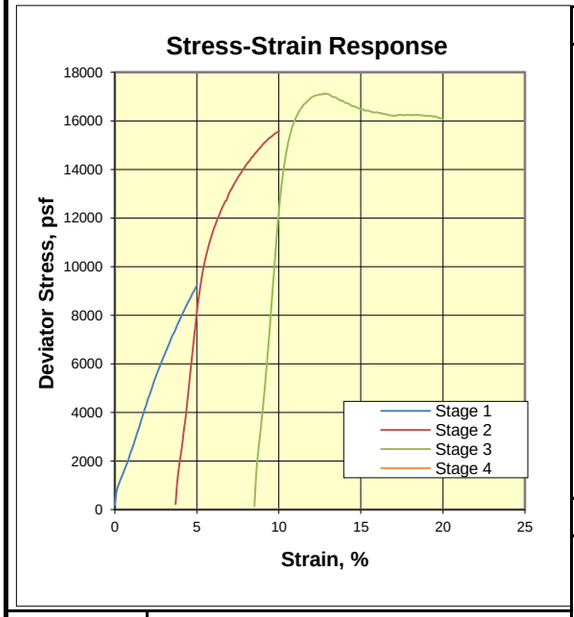
Remarks: Engineering judgement is required to determine phi and cohesion, no phi or cohesion is reported. To add phi and cohesion to the report go to the "Report" tab and in cells M18 through P19 enter end points for a line through the Mohr's circles. The points plotted can be changed on the "Shear Values" tab using cells B3, F3, and J3.

Stage	1	2	3	4
Boring	B-4			
Sample				
Depth	31			
Visual Description	Grayish Brown Silty SAND (slightly plastic)			
MC (%)	23.3			
Dry Density (pcf)	90.6			
Saturation (%)	74.6			
Void Ratio	0.826			
Diameter (in)	2.39			
Height (in)	5.03			
	Final			
MC (%)	29.6	29.3	28.8	
Dry Density (pcf)	92.8	93.1	93.8	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.783	0.777	0.763	
Diameter (in)	2.37	2.41	2.46	
Height (in)	5.01	4.83	4.60	
Cell Pressure (psi)	75.9	82.4	89.3	
Back Pressure (psi)	68.8	68.4	68.7	
	Effective Stresses At:			
Strain (%)	5.0	5.0	5.0	
Deviator (ksf)	12.993	17.783	19.833	
Excess PP (psi)	-13.3	-18.1	-17.6	
Sigma 1 (ksf)	15.940	22.403	25.343	
Sigma 3 (ksf)	2.947	4.620	5.510	
P (ksf)	9.444	13.511	15.426	
Q (ksf)	6.496	8.892	9.917	
Stress Ratio	5.408	4.850	4.600	
Rate (in/min)	0.0005	0.0005	0.0005	

FIGURE D-15

Staged Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767m





CTL Number:	664-477
Client Name:	BSK Associates
Project Name:	Lewis Eaten Trail
Project Number:	G00000706
Date:	3/17/2023 By: MD/DC
Total C	2.000 ksf
Total phi	35.8 degrees
Eff. C	1.000 ksf
Eff. Phi	34.1 degrees ©

Remarks: Engineering judgement is required to determine phi and cohesion, no phi or cohesion is reported. To add phi and cohesion to the report go to the “Report” tab and in cells M18 through P19 enter end points for a line through the Mohr’s circles. The points plotted can be changed on the "Shear Values" tab using cells B3, F3, and J3.

Stage	1	2	3	4
Boring	B-4			
Sample				
Depth	51			
Visual Description	Pale Brown SILT			
MC (%)	29.7			
Dry Density (pcf)	84.3			
Saturation (%)	80.1			
Void Ratio	1.000			
Diameter (in)	2.39			
Height (in)	5.03			
	Final			
MC (%)	36.8	36.5	36.3	
Dry Density (pcf)	84.6	84.9	85.1	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.992	0.985	0.980	
Diameter (in)	2.40	2.44	2.50	
Height (in)	4.99	4.81	4.57	
Cell Pressure (psi)	65.9	72.9	79.8	
Back Pressure (psi)	59.0	58.9	58.9	
	Effective Stresses At:			
Strain (%)	5.0	5.0	5.0	
Deviator (ksf)	9.129	14.535	17.099	
Excess PP (psi)	-10.0	-15.8	-16.1	
Sigma 1 (ksf)	11.557	18.821	22.419	
Sigma 3 (ksf)	2.428	4.286	5.320	
P (ksf)	6.993	11.553	13.869	
Q (ksf)	4.565	7.268	8.549	
Stress Ratio	4.759	4.392	4.214	
Rate (in/min)	0.0005	0.0005	0.0005	

DIVISION XII

CENTRAL VALLEY FLOOD PROTECTION BOARD

ENCROACHMENT PERMIT

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609

July 13, 2026

San Joaquin River Conservancy
Attn: Kari Daniska
5469 E Olive Avenue
Fresno, CA 93727

Subject: Permit No. 20044-1 EO

Enclosed is your approved Central Valley Flood Protection Board (Board) Encroachment Permit No. 20044-1 EO.

Please note this permit only authorizes the features listed in the project description. This permit, in addition to the twelve (12) General Conditions, includes special conditions that may place limitations on these features. You are advised to read all conditions in the permit.

The existing encroachment(s) were found to be conforming to current CCR, Title 23, Waters, Division 1 Standards and USACE Section 408 Standards where applicable. You must contact this office prior to commencing with any modifications to the authorized encroachment(s) or for any other work you may intend to do at this location as a new permit may be required. This permit does not relieve you from the responsibility, when required by law, to secure the written order or consent from all other State, local, or federal agencies having jurisdiction.

Please be advised, routine inspections may be conducted by the Board or its designee depending on the type of encroachment.

If you have any questions regarding your permit 20044-1EO, please contact Humberto Negrete of my staff at (916) 837-3721 or by e-mail at humberto.negrete@cvflood.ca.gov. Please reference the permit number 20044-1EO that has been assigned to your permit on all correspondence.

Sincerely,

Chris Lief

Chris Lief, Executive Officer

Enclosure

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 20044-1 EO

This Permit is issued to:

San Joaquin River Conservancy
5469 E Olive Avenue
Fresno, CA 93727

To construct an approximately 2.4mile-long, multi-purpose trail extension to the existing Lewis S. Eaton Trail (Eaton Trail) with ancillary recreation support features within the San Joaquin River Designated Floodway. The project includes landscaping, a parking lot, and public restroom structure. This permit supplements and where in conflict supersedes the conditions in Permit No. 20044.

The project is located within the San Joaquin River Designated Floodway, approximately 8 miles north of the City of Fresno, at 36.85425˚N 119.80880˚W, San Joaquin River, Fresno County.

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of the proposed project as described above.

(SEAL)

Dated: 7/13/2026

Chris Lief
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the Central Valley Flood Protection Board (Board) or the California Department of Water Resources (DWR), and the permittee shall conform to all requirements of the Board or DWR.

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of the Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by the Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents, or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interference with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of the Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS:

THIRTEEN: This permit supplements and where in conflict supersedes the conditions in Permit No. 20044, which is attached to this permit as Exhibit A.

LIABILITY AND INDEMNIFICATION

FOURTEEN: The permittee shall defend, indemnify, and hold harmless the Board and the State of California, including its agencies or departments thereof, including but not limited to, any and all boards, commissions, officers, agents, employees, and representatives (Indemnitees), against any and all claims, liabilities, charges, losses, expenses, and costs including the State's attorneys' fees (Liabilities), that may arise from, or by reason of: (1) any action or inaction by the Indemnitees in connection with the issuance or denial of any permit, lease, or other entitlement; (2) as a result of approvals or authorizations given by the Board to the permittee pursuant to, or as a result of, permittee's permit application; (3) provisions of the issued permit or lease, provisions of CEQA, an environmental document certified or adopted by the Board related to the permit application, or any other regulations, requirements, or programs by the State, except for any such Liabilities caused solely by the gross negligence or intentional acts of the State or its officers, agents, and employees.

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

FIFTEEN: Permittee shall reimburse the Board in full for all reasonable costs and attorneys' fees, including, but not limited to, those charged to it by the California Office of Attorney General, that the Board incurs in connection with the defense of any action brought against the Board challenging this permit or any other matter related to this permit, or the work performed by the State in its issuance of this permit. In addition, the permittee shall reimburse the Board for any court costs and reasonable attorneys' fees that the Board/Indemnitees may be required by a court to pay as a result of such action. The permittee may participate in the defense of the action, but its participation shall not relieve it of its obligations under the conditions of this permit.

SIXTEEN: Neither the Board nor DWR shall be held liable for any damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

AGENCY CONDITIONS

SEVENTEEN: The structure authorized by this permit shall not be used for human habitation.

EIGHTEEN: Granting of this permit does not convey any interest in real property. The permittee shall be responsible, at permittee's expense, for obtaining an easement or other appropriate interest in real property for construction and maintenance of the bicycle trail from the fee owner of the property.

NINETEEN: Maintenance of the trail shall be the responsibility of the permittee unless the permittee submits evidence of an agreement by which a public agency has assumed the responsibility of maintaining the trail. The trail shall be maintained to a level that is safe for bicycle traffic and acceptable to the local flood control maintaining agency and the Board.

TWENTY: The Board and local flood control maintaining agency retain the right to temporarily close the trail for improvement, maintenance, and emergency flood fight activities.

TWENTY-ONE: The permittee shall submit final construction drawings before any work may commence. Any changes to the design may require additional approval. All work approved by this permit shall be in accordance with the final submitted drawings and specifications, except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Board.

TWENTY-TWO: The permittee shall arrange for an inspector to be at the site prior to any excavation and during all backfill operations. For availability and scheduling of an inspector, contact the Board at (916) 574-0609 or by email at inspections@cvflood.ca.gov at least 10 working days prior to the start of work.

TWENTY-THREE: The Board, or its designee, may conduct periodic routine inspections of the permitted encroachment(s) at its discretion. The Board will provide advance notice to the permittee of any planned routine inspection.

TWENTY-FOUR: The permittee shall pay inspection fees to the Board to cover the costs of inspections, including staff and consultant time and expenses, for inspections conducted during construction and as required thereafter.

TWENTY-FIVE: In the event that erosion injurious to the Adopted Plan of Flood Control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

TWENTY-SIX: The permittee shall be responsible for the repair of any damage to the channel, banks, floodway, or other flood control facilities due to construction, operation, or maintenance of the permitted encroachment(s).

TWENTY-SEVEN: Correspondence dated 1/13/2026 was sent to the Department of the Army (U.S. Army Corps of Engineers, Sacramento District), signifying that the proposed work does not affect a federally constructed project.

TWENTY-EIGHT: The permittee agrees to notify any new property/encroachment owner(s) that they are required to submit a permit Name Change request form to the Board upon completion of the transfer of ownership. The new owner(s) will be required to comply with all permit conditions. Name Change forms are available at http://cvfpb.ca.gov/, or by contacting the Board by telephone at (916) 574-0609.

TWENTY-NINE: The Board reserves the right to add additional, or modify existing, conditions when there is a change in ownership and/or maintenance responsibility of the work authorized under this permit.

PRE-CONSTRUCTION

THIRTY: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609 or by email at inspections@cvflood.ca.gov to schedule a preconstruction conference with the inspector who is assigned to the project. Failure to do so at least 10 working days prior to start of work may result in a delay of the project.

CONSTRUCTION

THIRTY-ONE: No construction work of any kind shall be done during the flood season from November 1 to July 15 without prior approval of the Board. Failure to submit a Time Variance Request to the Board at least 10 working days prior to the start of work may result in a delay of the project.

THIRTY-TWO: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

THIRTY-THREE: Fill material shall be placed only within the area indicated on the approved plans.

THIRTY-FOUR: The permittee must install permanent signs at all trail access points to control all unauthorized use of the trail.

POST-CONSTRUCTION

THIRTY-FIVE: All debris generated by this project shall be properly disposed of outside the San Joaquin River Designated Floodway, and/or off all Project Works and Project Rights-of-Way.

THIRTY-SIX: The work areas shall be restored to at least the condition that existed prior to commencement of work.

THIRTY-SEVEN: Upon completion of the project, the permittee shall submit as-constructed drawings to the Board, Attention: Inspection, 3310 El Camino Avenue, Suite 170, Sacramento, California 95821

THIRTY-EIGHT: Upon completion of the project, compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the levee section or within 10 feet of the levee toe.

Docusign Envelope ID: 3DBBFCFA-5463-8AB1-81F3-9CAD8D4650CF

OPERATIONS AND MAINTENANCE

THIRTY-NINE: After each period of high water, debris that accumulates at the site shall be completely removed from the San Joaquin River Designated Floodway, and off all Project Works.

FORTY: The permittee shall maintain the permitted encroachment(s) and the Project Works within the utilized area in the manner required and as requested by the authorized representative of the Board, DWR, or any other agency responsible for maintenance and flood control and shall, at all times, allow officials from these agencies to access the levee, levee slope, and any adjacent areas as necessary for maintenance and flood control.

FORTY-ONE: The permitted encroachment(s) shall not interfere with the operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) within 30 days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply, the Board, or a designated agency or company authorized by the Board, may modify, or remove the encroachment(s) at the permittee's expense.

PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL

FORTY-TWO: If the permitted encroachment(s), or any portion thereof, is abandoned in the future, the permittee or successor shall abandon the permitted encroachment(s) under direction of the Board at the permittee's or successor's cost and expense.

FORTY-THREE: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the permitted encroachment(s) are not maintained or are damaged by any cause. The permittee shall remove the encroachment(s) within 30 days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply the Board will remove the encroachment(s) at the permittee's expense.

END OF CONDITIONS

Exhibit A

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 20044 EO
This Permit is issued to:

San Joaquin River Conservancy
5469 E. Olive Avenue
Fresno, CA 93727

To construct an approximately 2.4-mile-long, multi-purpose trail extension to the existing Lewis S. Eaton Trail (Eaton Trail) with ancillary recreation support features within the San Joaquin River Designated Floodway. The project includes landscaping, a parking lot, and public restroom structure.

The project is located within the San Joaquin River Designated Floodway, approximately 8 miles north of the City of Fresno, at 36.854251˚N 119.808802˚W, San Joaquin River, Fresno County.

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of the proposed project as described above.

(SEAL)

Dated: 5/13/2026

Chris Lief
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the Central Valley Flood Protection Board (Board) or the California Department of Water Resources (DWR), and the permittee shall conform to all requirements of the Board or DWR.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of the Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by the Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents, or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interference with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of the Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS:

LIABILITY AND INDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold harmless the Board and the State of California, including its agencies or departments thereof, including but not limited to, any and all boards, commissions, officers, agents, employees, and representatives (Indemnitees), against any and all claims, liabilities, charges, losses, expenses, and costs including the State's attorneys' fees (Liabilities), that may arise from, or by reason of: (1) any action or inaction by the Indemnitees in connection with the issuance or denial of any permit, lease, or other entitlement; (2) as a result of approvals or authorizations given by the Board to the permittee pursuant to, or as a result of, permittee's permit application; (3) provisions of the issued permit or lease, provisions of CEQA, an environmental document certified or adopted by the Board related to the permit application, or any other regulations, requirements, or programs by the State, except for any such Liabilities caused solely by the gross negligence or intentional acts of the State or its officers, agents, and employees.

FOURTEEN: The permittee shall reimburse the Board in full for all reasonable costs and attorneys' fees, including, but not limited to, those charged to it by the California Office of Attorney General, that

the Board incurs in connection with the defense of any action brought against the Board challenging this permit or any other matter related to this permit, or the work performed by the State in its issuance of this permit. In addition, the permittee shall reimburse the Board for any court costs and reasonable attorneys' fees that the Board/Indemnitees may be required by a court to pay as a result of such action. The permittee may participate in the defense of the action, but its participation shall not relieve it of its obligations under the conditions of this permit.

FIFTEEN: Neither the Board nor DWR shall be held liable for any damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

AGENCY CONDITIONS

SIXTEEN: The structure authorized by this permit shall not be used for human habitation.

SEVENTEEN: Granting of this permit does not convey any interest in real property. The permittee shall be responsible, at permittee's expense, for obtaining an easement(s) or other appropriate interest in real property for construction and maintenance of the bicycle trail from the fee owner(s) of the property.

EIGHTEEN: Maintenance of the trail shall be the responsibility of the permittee unless the permittee submits evidence of an agreement by which a public agency has assumed the responsibility of maintaining the trail. The trail shall be maintained to a level that is safe for bicycle traffic and acceptable to the local flood control maintaining agency and the Board.

NINETEEN: The permittee shall adopt and enforce restrictions on the use of the trail that are acceptable to the Board. Such restrictions, at a minimum, shall restrict public access to the trail and designated adjacent areas only; shall prohibit equestrian and motorized vehicle traffic, except as may be necessary for maintenance, enforcement, and public safety; and shall prohibit interference with the primary purpose of the project feature upon which the trail is constructed.

TWENTY: The Board and local flood control maintaining agency retain the right to temporarily close the trail for improvement, maintenance, and emergency flood fight activities.

TWENTY-ONE: The permittee shall submit final construction drawings before any work may commence. Any changes to the design may require additional approval. All work approved by this permit shall be in accordance with the final submitted drawings and specifications, except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Board.

TWENTY-TWO: The permittee shall arrange for an inspector to be at the site prior to any excavation and during all backfill operations. For availability and scheduling of an inspector, contact the Board at (916) 574-0609 or by email at inspections@cvflood.ca.gov at least 10 working days prior to the start of work.

TWENTY-THREE: The Board, or its designee, may conduct periodic routine inspections of the permitted encroachment(s) at its discretion. The Board will provide advance notice to the permittee of any planned routine inspection.

TWENTY-FOUR: The permittee shall pay inspection fees to the Board to cover the costs of inspections, including staff and consultant time and expenses, for inspections conducted during construction and as required thereafter.

TWENTY-FIVE: In the event that erosion injurious to the Adopted Plan of Flood Control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

TWENTY-SIX: The permittee shall be responsible for the repair of any damage to the channel, banks, floodway, or other flood control facilities due to construction, operation, or maintenance of the permitted encroachment(s).

TWENTY-SEVEN: Correspondence dated 1/13/2026 was sent to the Department of the Army (U.S. Army Corps of Engineers, Sacramento District), signifying that the proposed work does not affect a federally constructed project.

TWENTY-EIGHT: The permittee agrees to notify any new property/encroachment owner(s) that they are required to submit a permit Name Change request form to the Board upon completion of the transfer of ownership. The new owner(s) will be required to comply with all permit conditions. Name Change forms are available at http://cvfpb.ca.gov/, or by contacting the Board by telephone at (916) 574-0609.

TWENTY-NINE: The Board reserves the right to add additional, or modify existing, conditions when there is a change in ownership and/or maintenance responsibility of the work authorized under this permit.

PRE-CONSTRUCTION

THIRTY: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609 or by email at inspections@cvflood.ca.gov to schedule a preconstruction conference with the inspector who is assigned to the project. Failure to do so at least 10 working days prior to start of work may result in a delay of the project.

CONSTRUCTION

THIRTY-ONE: No construction work of any kind shall be done during the flood season from November 1 to July 15 without prior approval of the Board. Failure to submit a Time Variance Request to the Board at least 10 working days prior to the start of work may result in a delay of the project.

THIRTY-TWO: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

THIRTY-THREE: Fill material shall be placed only within the area indicated on the approved plans.

THIRTY-FOUR: The permittee must install permanent signs at all trail access points to control all unauthorized use of the trail.

POST-CONSTRUCTION

THIRTY-FIVE: All debris generated by this project shall be properly disposed of outside the San Joaquin River Designated Floodway, and off all Project Works and Project Rights-of-Way.

THIRTY-SIX: The work areas shall be restored to at least the condition that existed prior to commencement of work.

THIRTY-SEVEN: Upon completion of the project, the permittee shall submit as-constructed drawings to the Board, Attention: Inspection, 3310 El Camino Avenue, Suite 170, Sacramento, California 95821

THIRTY-EIGHT: Upon completion of the project, compaction tests by a certified soils laboratory will be required to verify compaction of backfill within the levee section or within 10 feet of the levee toe.

OPERATIONS AND MAINTENANCE

THIRTY-NINE: After each period of high water, debris that accumulates at the site shall be completely removed from the San Joaquin River Designated Floodway, and off all Project Works.

FORTY: The permittee shall maintain the permitted encroachment(s) and the Project Works within the utilized area in the manner required and as requested by the authorized representative of the Board, DWR, or any other agency responsible for maintenance and flood control and shall, at all times, allow officials from these agencies to access the levee, levee slope, and any adjacent areas as necessary for maintenance and flood control.

FORTY-ONE: The permitted encroachment(s) shall not interfere with the operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) within 30 days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply, the Board, or a designated agency or company authorized by the Board, may modify, or remove the encroachment(s) at the permittee's expense.

PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL

FORTY-TWO: If the permitted encroachment(s), or any portion thereof, is abandoned in the future, the permittee or successor shall abandon the permitted encroachment(s) under direction of the Board at the permittee's or successor's cost and expense.

FORTY-THREE: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the permitted encroachment(s) are not maintained or are damaged by any cause. The permittee shall remove the encroachment(s) within 30 days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply the Board will remove the encroachment(s) at the permittee's expense.

END OF CONDITIONS

DIVISION XIII

CALTRANS ENCROACHMENT PERMIT

PERSONAL INFORMATION NOTICE

Pursuant to the Federal Privacy Act (5 U.S.C, Section 552 et seq.) and the Information Practices Act of 1977 (IPA) (Civil Code Sections 1798 et seq.) declares that the right to privacy is a personal and fundamental right protected by the California and United States Constitutions. Please be advised that this form requests personal information. The term “personal information” means any information that is maintained by an agency that identifies or describes an individual, including, but not limited to, the individual’s name, social security number, physical description, home address, home telephone number, education, financial matters, and medical or employment history. It includes statements made by, or attributed to, the individual. (Civil Code, § 1798.3, subdivision (a).)

Information Collection and Access: California law requires the following information to be provided when collecting information from individuals. (See, for example, Civil Code, § 1798.17.)

Agency Name and Division Within the Agency Requesting the Information:

California Department of Transportation, Division of Traffic Operations, Office of Encroachment & Outdoor Advertising Permits (OEOAP), Encroachment Permits Branch.

Title of Official Responsible for Information Maintenance:

For more information, please contact the Permits Office Chief for the Encroachment Permits Branch (EP) at (916) 594-6593 or at HQEP@dot.ca.gov. In writing at the California Department of Transportation, Division of Traffic Operations, Office of OEOAP MS-36, 1120 N Street, Sacramento, CA 95814. Information can also be obtained on our website at https://dot.ca.gov/programs/traffic-operations/ep-oda

Maintenance of the Information Authorized By:

Streets and Highway Code (SHC) section 670 et.al.

Consequences of Not Providing All or Any Part of the Requested Information:

Disclosure of this information is voluntary. Failure to provide all or any part of the requested information may delay processing of this form.

Principal Purpose(s) for Which the Information Will Be Used:

To communicate with the applicant regarding their Permit request and associated activities.

Known Disclosures:

The information obtained through the use of this form can be made available when requested by the public through the California Public Records Act (CPRA).

Right of Access to Records:

Individuals have the right to access information provided and may request a correction or deletion of records. Exceptions may include, but are not limited to, investigations and public transparency laws. Personal Information will only be disclosed as permitted by the Information Practices Act, Civil Code, §§ 1798–1798.83, or as otherwise required by law. To request access to, or to request correction or deletion of, information provided in this form you may contact the Official Responsible for Information Maintenance identified above.

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

Copyright 2018 California Department of Transportation. All rights reserved.

STANDARD ENCROACHMENT PERMIT APPLICATION

DOT TR-0100 (REV 08/2025)

TRACKING NO.

Page 2 of 5

FOR CALTRANS USE

TRACKING NO.

DIST/CO/RTE/PM

SIMPLEX STAMP

DATE OF SIMPLEX STAMP

Complete ALL fields, write "N/A" if not applicable. Type or print clearly.

This application is not complete until all requirements have been approved.

Permission is requested to encroach on the State Highway right-of-way as follows:

1. COUNTY	2. ROUTE	3. POST MILE
Fresno	041	32.880

4. ADDRESS OR STREET NAME
Perrin Ave

5. CITY
Fresno

6. CROSS STREET (Distance and direction from project site)
at the intersection of Perrin Avenue and Cobb Ranch Blvd

7. WORK TO BE PERFORMED BY
☐ APPLICANT ☒ CONTRACTOR

8. IS THIS APPLICATION FOR A RIDER?
☒ NO ☐ YES. If "YES", provide the Parent Permit Number N/A

9. ESTIMATE START DATE
11/02/2026

10. ESTIMATED COMPLETION DATE
12/21/2027

11. ESTIMATED NUMBER OF WORKING DAYS WITHIN STATE HIGHWAY RIGHT-OF-WAY
30

12. ESTIMATED CONSTRUCTION COSTS WITHIN STATE HIGHWAY RIGHT-OF-WAY
$6,500

13. HAS THE PROJECT BEEN REVIEWED BY ANOTHER CALTRANS BRANCH?
☒ NO ☐ YES. If "YES", which branch? N/A

14. FUNDING SOURCE(S)
☐ FEDERAL ☒ STATE ☒ LOCAL ☐ PRIVATE ☐ SB 1 (ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017)

15. CALTRANS PROJECT CODE (ID)	16. APPLICANT'S REFERENCE / UTILITY WORK ORDER NUMBER
N/A	N/A

17. DESCRIBE WORK TO BE DONE WITHIN STATE HIGHWAY RIGHT-OF-WAY (in 20 lines or less)
Attach 6 complete sets of plans (folded to 8.5" x 11") and any applicable specifications, calculations, maps, traffic control plans, etc.

The Project is part of the overall River West Eaton Trail Extension project, which will provide enhanced public access by extending the existing Lewis S. Eaton Trail in the City of Fresno, including approximately 2.4 miles of a new multipurpose 22’ wide trail, three separate trailhead parking lots, various trail amenities, and a bus parking area. The work to be done within the State ROW includes replacing the existing dirt walkway between the existing Curb & Gutter and the concrete embankment on the south side of the undercrossing of SR41, with accessible concrete sidewalk. The project will also include adding an accessible curb ramp at the east side to provide a pedestrian connection to the current terminus of the existing Lewis S. Eaton Trail, and bike lane pavement symbols to the existing bike lanes.

18 (a). PORTION OF STATE HIGHWAY RIGHT-OF-WAY WHERE WORK IS BEING PROPOSED (check all that apply)
☒ Traffic lane ☒ Shoulder ☒ Sidewalk ☐ Median ☒ At or near an intersection ☐ Mobile work
☐ Outside of the shoulder, feet from edge of pavement ☐ Other

18 (b). PROPOSED TRAFFIC CONTROL PLANS AND METHOD
☐ No traffic control needed ☐ State Standard Plans (T-Sheets) # N/A
☐ Project specific Traffic Control Plans included ☒ To be submitted by contractor

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

STANDARD ENCROACHMENT PERMIT APPLICATION

DOT TR-0100 (REV 08/2025)

TRACKING NO.

19. EXCAVATION	MAX. DEPTH (in) 6	MIN. DEPTH (in) 0	AVG. WIDTH (in) 120	LENGTH (ft) 315	SURFACE TYPE (e.g. Asphalt, concrete, soil, etc.) soil, concrete
20. PIPES	PRODUCT BEING TRANSPORTED N/A	CARRIER PIPE DIAMETER N/A (in.) MATERIAL N/A		CASING PIPE DIAMETER N/A (in.) MATERIAL N/A	

PROPOSED INSTALLATION METHOD (e.g. HDD, Bore & Jack, Open Cut, etc.)
N/A

VOLTAGE / PSIG
N/A

DOES THE PROPOSED PROJECT INVOLVE THE REPLACEMENT AND/OR ABANDONMENT OF AN EXISTING FACILITY?

☒ NO ☐ YES. If "YES", provide a description N/A

21. IS A CITY, COUNTY OR OTHER PUBLIC AGENCY INVOLVED IN THE APPROVAL OF THIS PROJECT?

☒ YES (if "YES", check the type of project AND attach the environmental documentation and conditions of approval)

☐ COMMERCIAL DEVELOPMENT ☐ BUILDING ☒ GRADING ☒ OTHER Multi-purpose trail & parking lot

☐ CATEGORICALLY EXEMPT ☐ NEGATIVE DECLARATION ☒ ENVIRONMENTAL IMPACT REPORT ☐ OTHER

☐ NO (if "NO", check the category below which best describes the project AND answer questions A-K)

☐ DRIVEWAY OR ROAD APPROACH, RECONSTRUCTION, MAINTENANCE OR RESURFACING ☐ FENCE ☐ EROSION CONTROL

☐ PUBLIC UTILITY MODIFICATION, EXTENSIONS, HOOKUPS ☐ MAILBOX ☐ LANDSCAPING

☐ FLAGS, SIGNS, BANNERS, DECORATIONS, PARADES AND CELEBRATIONS ☐ OTHER N/A

The following questions must be answered when a City, County or other public agency IS NOT involved in the approval of this project.

Your answers to these questions will assist Caltrans staff in identifying any physical, biological, social or economic resources that may be affected by your proposed project within State Highway right-of-way and to determine which type of environmental studies may be required to approve your application for an encroachment permit. It is the applicant's responsibility for the production of all required environmental documentation and supporting studies and in some cases this may be costly and time consuming. If possible, attach photographs of the location of the proposed project. Answer these questions to the best of your ability. Provide a description of any "YES" answers (type, name, number, etc.).

A. Will any existing vegetation and/or landscaping within State Highway right-of-way be disturbed?
N/A

B. Are there waterways (e.g. river, creek, pond, natural pool or dry streambed) adjacent to or within the limits of the proposed project?
N/A

C. Is the proposed project located within five miles of the coast line?
N/A

D. Will the proposed project generate construction noise levels greater than 86 decibels (dBA) (e.g. Jack-hammering, pile driving)?
N/A

E. Will the proposed project incorporate land from a public park, recreation area or wildlife refuge open to the public?
N/A

F. Are there any recreational trails or paths within the limits of the proposed project?
N/A

G. Will the proposed project impact any structures, buildings, rail lines or bridges within State Highway right-of-way?
N/A

H. Will the proposed project impact access to any businesses or residences?
N/A

I. Will the proposed project impact any existing public utilities or public services?
N/A

J. Will the proposed project impact any existing pedestrian facilities, such as sidewalks, crosswalks or overcrossings?
N/A

K. Will new lighting be constructed within or adjacent to State Highway right-of-way?
N/A

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

STANDARD ENCROACHMENT PERMIT APPLICATION

DOT TR-0100 (REV 08/2025)

TRACKING NO.

22. Will the proposed project cause a substantial change in the significance of a historical resource (45 years or older), or cultural resource? ☐ YES ☒ NO (if "YES", provide a description)
N/A

23. Will the proposed project be on an existing State Highway or street where the activity involves removal of a scenic resource? (e.g. A significant tree or stand of trees, a rock outcropping or a historic building) ☐ YES ☒ NO (if "YES", provide a description)
N/A

24. Is work being done on the applicant's property in addition to State Highway right-of-way? ☒ YES ☐ NO
(If "YES", attach 6 complete sets of site and grading plans)

25. Will the proposed project require the disturbance of soil? ☒ YES ☐ NO
If "YES", estimate the area of disturbed soil within State Highway right-of-way in acres: 0.07
and estimate the area of disturbed soil outside State Highway right-of-way in acres: 8.7

26. Will the proposed project require dewatering? ☐ YES ☒ NO
If "YES", estimate Total gallons AND gallons/month. N/A (Total gallons) AND N/A (gallons/month)
SOURCE*: ☐ STORMWATER ☐ NON-STORMWATER
(*See Caltrans SWMP for definition of non-storm water discharge:
https://www.dot.ca.gov/programs/environmental-analysis/stormwater-management-program)

27. How will any storm water or ground water be disposed?
☐ Storm Drain System ☐ Combined Sewer / Stormwater System ☒ Stormwater Retention Basin ☐ N/A
☐ Other (explain) _____

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

STANDARD ENCROACHMENT PERMIT APPLICATION

DOT TR-0100 (REV 08/2025)

TRACKING NO.

READ THE FOLLOWING CLAUSES PRIOR TO SIGNING THIS ENCROACHMENT PERMIT APPLICATION.

The applicant's submission of this application to the California Department of Transportation constitutes the applicant's agreement and representation that the work or other activity contemplated by the encroachment permit application shall comply with all applicable standards, specifications, policies, requirements, conditions, and regulations of the California Department of Transportation, and the applicant understands the application may be denied if there is non-compliance with any of the above. An exception process exists and may result in approval of a non-compliant encroachment, in the discretion of the California Department of Transportation, but the exception process may require additional time to complete. The applicant understands and agrees all work or other activity contemplated by the encroachment permit application is subject to inspection and oversight by the California Department of Transportation. The applicant understands and agrees encroachment permit fees must still be paid if an application is withdrawn or denied. The applicant understands a denial may be appealed, in accordance with California Streets and Highways Code, Section 671.5, and the related regulations found in California Code of Regulations, Title 21, Division 2, Chapter 8, Article 2.

The applicant understands and agrees that immediately upon issuance of the encroachment permit the applicant is bound by, subject to, and must comply with the "Encroachment Permit General Provisions" (TR-0045), "Stormwater Special Provisions" (TR-0400) and any other applicable Special Provisions and Conditions of the encroachment permit. The "Encroachment Permit General Provisions" (TR-0045), and the Stormwater Special Provisions (TR-0400) are available at: *https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/encroachment-permits/appendix-k-ada-a11y.pdf*. If a paper copy is needed of the "Encroachment Permit General Provisions" (TR-0045) and/or "Stormwater Special Provisions" (TR-0400), please contact the District Office of Encroachment Permits. Their contact information is available at: *https://dot.ca.gov/programs/traffic-operations/ep/district-contacts*. The "Encroachment Permit General Provisions" (TR-0045) and any other applicable Special Provisions and Conditions will be provided as part of the encroachment permit. Information about Stormwater requirements is available at the Internet address: *https://dot.ca.gov/programs/environmental-analysis/stormwater-management-program*.

The applicant understands an encroachment permit may be denied, revoked, and/or a bond may be required, for non-payment of prior or present encroachment permit fees. An encroachment permit is not a property right and does not transfer with the property to a new owner.

Each of the persons purporting to execute this application on behalf of the applicant and/or on behalf of the applicant's authorized agent or engineer represents and warrants such person has full and complete legal authority to do so and to thereby bind applicant to the terms and conditions herein and to the terms and/or conditions of the encroachment permit. Applicant understands and agrees this application may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Executed copies of this application and/or its counterparts may be reproduced and/or exchanged by copy machine, mailing, facsimile, or electronic means (such as e-mail), and such copies shall be deemed to be effective as originals.

28. NAME OF APPLICANT (Project or Property Owner or Organization) Yue Lehman		
ADDRESS OF APPLICANT (Include City, State and Zip Code) 747 R Street, 2nd Floor, Fresno, CA 93721		
E-MAIL ADDRESS Yue.Lehman@fresno.gov	PHONE NUMBER (559) 621-8880	FAX NUMBER
29. NAME OF AUTHORIZED AGENT / ENGINEER / APPLICANT'S EMPLOYEE (A "Letter of Authorization" is required if different from #28) Michael Osborn		IS A LETTER OF AUTHORIZATION ATTACHED? ☒ YES ☐ NO
ADDRESS OF AUTHORIZED AGENT / ENGINEER (Include City, State and Zip Code) 455 W. Fir Avenue, Clovis, CA 96311		
E-MAIL ADDRESS mosborn@ppeng.com	PHONE NUMBER (559) 449-2700	FAX NUMBER
30. NAME OF BILLING CONTACT (Same as #28 ☒ Same as #29 ☐)		
BILLING ADDRESS WHERE INVOICE(S) IS / ARE TO BE MAILED (Include City, State and Zip Code)		
E-MAIL ADDRESS	PHONE NUMBER	FAX NUMBER

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

31. SIGNATURE OF APPLICANT OR AUTHORIZED AGENT* Michael Osborn Digitally signed by Michael Osborn Date: 2026.04.27 07:09:21 -07'00'	32. PRINT OR TYPE NAME Michael Osborn	
33. TITLE Principal Engineer		34. DATE 04/27/2026

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

STANDARD ENCROACHMENT PERMIT APPLICATION

DOT TR-0100 (REV 08/2025)

INSTRUCTIONS

Complete ALL fields, write "N/A" if not applicable. Type or print clearly. All dimensions must be in U.S. Customary (English) units.

Print your application single sided and submit all of the required attachments (See Section VII A&B of the "Encroachment Permit Application Guide Booklet" found at: https://dot.ca.gov/programs/traffic-operations/ep/guidelines).

1. County (e.g. Fresno, San Francisco, Los Angeles, etc.)
2. State Highway Route Number (e.g. I-5, SR-99, etc.)
3. Highway Postmile: (location of work, see https://postmile.dot.ca.gov/) If unable to determine, contact the appropriate District Encroachment Permits Office for assistance at: https://dot.ca.gov/programs/traffic-operations/ep/district-contacts
4. Address of project site (if the property has a physical address with a Number and Street/Road Name)
5. City (e.g. Sacramento, Redding, Irvine, etc.)
6. Distance and the direction from the nearest cross street to the project site (e.g. 500 ft. north of "C" Street).
7. Indicate whether the work will be performed by the applicant (your own forces) or by a contractor.
8. Indicate if you are applying for a "Rider Permit" (Time extension, change in scope of work, etc. and provide the “Parent Permit Number”.
9. Estimated start date for the proposed work. (Allow a minimum of 60 calendar days from the submittal date of your application for processing)
10. Estimated completion date for the proposed work.
11. Estimated number of working days within State Highway right-of-way.
12. Estimated construction costs for all work to be done within State Highway right-of-way.
13. Has another Caltrans' branch seen or reviewed your project? Which branch? (e.g. Design, Project Management, Right-of-Way, Environmental, etc.)
14. Identify funding source(s) for the proposed work.
15. Caltrans’ Project Code (ID) if this is a State project, capital project, or joint venture project.
16. Your company’s reference number or utility work order number for this project.
17. Describe the proposed work to be done entirely. If applicable, attach six (6) complete sets of FOLDED plans (folded 8-½” X 11”) and any applicable specifications, calculations, maps, etc.
18. (a) Identify portion(s) of State right-of-way where work will occur and (b) proposed traffic control plans to be used if any.
19. Maximum and minimum depth, average width, and length of the excavation area. Existing surface type (e.g. Asphalt, concrete, soil, etc.)
20. Product being transported (e.g. water, natural gas, etc.) Carrier pipe, diameter (inches) and material (e.g. Steel, HDPE, etc.) Casing pipe (if any), diameter and material Proposed installation method, Voltage of electrical current or pressure of liquid or gas. Replacement and/or abandonment of an existing facility (e.g. Abandoning pipe and filling it with two-sack slurry cement)
21. Check “YES”, if you are getting a permit or approval from another agency (City, County, etc.), and an environmental determination has been made. Then check the Categorically Exempt, Negative Declaration, Environmental Impact Report box or Other if one has been prepared. Attach a copy of the approved document and a copy of the Notice of Determination. Skip questions A-K.

    If you checked “NO”, check the box of the appropriate type of work to be done,or check “other” and fill in the type of work to be done. Also answer questions A-K.
22. A Historical Resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that has historical or archaeological significance, or significance in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
23. In this context a Scenic Resource includes, but is not limited to, trees that display outstanding features of form or age; unique, massive rock formations; historic buildings that are rare examples of their period, style, design, or which have special architectural features and details of importance.
24. Is there any work being done on the applicant’s property?
25. Indicate if the proposed project will require the disturbance of soil. If “YES,” estimate the area within AND outside of State Highway right-of-way in acres.
26. Indicate if the proposed project will require dewatering. If “YES,” estimate volume in total gallons AND gallons per month. Also indicate the source: Stormwater or Non-Stormwater (see Caltrans Stormwater Management Plan for definitions of non-stormwater discharge at: https://dot.ca.gov/programs/environmental-analysis/stormwater-management-program).
27. Indicate how any stormwater or ground water will be disposed of from or near the limits of the proposed project.
28. Name of the applicant or organization applying for the permit. List the mailing address, e-mail address, phone and fax numbers.
29. Name of the authorized agent or engineer acting on behalf of the applicant or organization. Attach a letter of authorization signed by the applicant or organization. List the mailing address, e-mail address, phone and fax numbers.
30. Name of the billing contact. List the mailing address where invoices are to be mailed, email address, phone and fax numbers.
31. Signature of the applicant or applicant's authorized agent.
32. Name of the applicant or applicant's authorized agent.
33. Title (owner, president, etc.) of the applicant or applicant's authorized agent.
34. Date of the signature.

Americans with Disabilities Act (ADA) Notice: This document is available in alternative accessible formats. For more information, please contact the Forms Management Unit at (279) 234-2284, TTY 711, in writing at Forms Management Unit, 1120 N Street, MS-89, Sacramento, CA 95814, or by email at Forms.Management.Unit@dot.ca.gov.

DIVISION XIV

FUNDING SIGNAGE

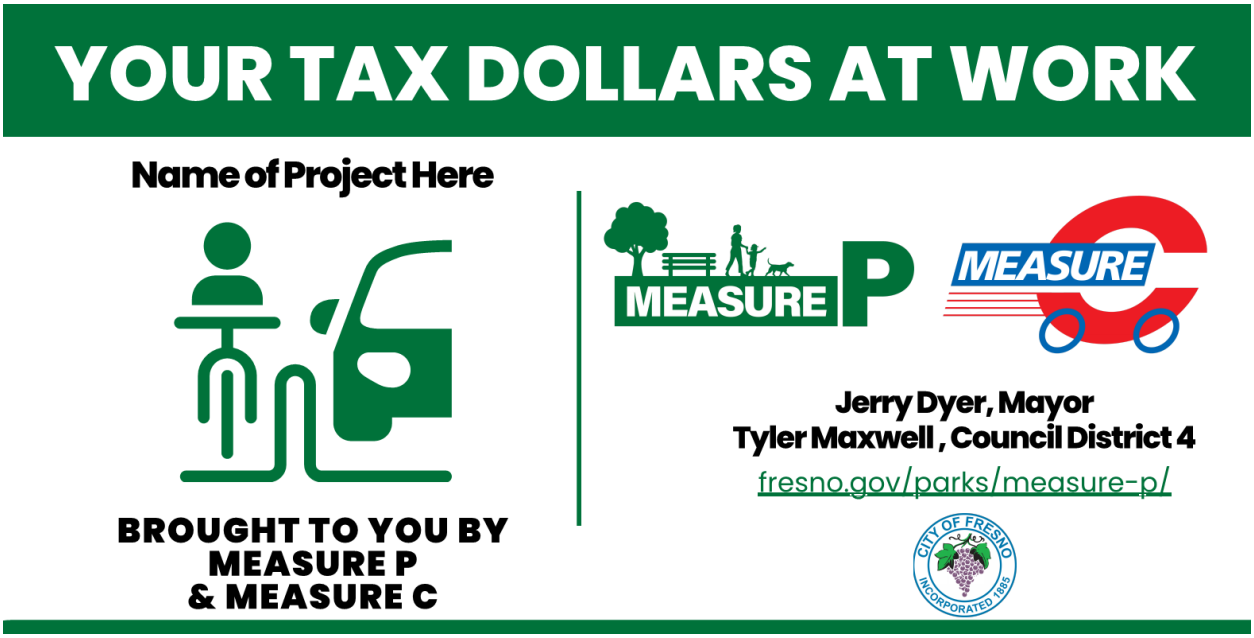
1.0 FUNDING SIGNAGE

Funding signage shall be provided at the trail access points: Palm Avenue, Riverview Drive, and State Route 41 & Perrin Avenue. The duration of the funding signage shall be provided from beginning of construction to substantial completion as directed by Engineer.

Size of the funding signage shall be: 84 in x 60 in

The Contractor shall submit funding signage for approval prior to installation.

Example:



2.0 ACCESS SIGNAGE

Access signage shall be provided at the trail access points: Palm Avenue and Riverview Drive. The duration of the funding signage shall be provided from beginning of construction to substantial completion as directed by Engineer.

Size of the funding signage shall be: 84 in x 60 in

The Contractor shall submit access signage for approval prior to installation.

Example:

DIVISION XV

FMFCD CONDITIONAL LICENSE

DRAFT CONDITIONAL LICENSE

BETWEEN FRESNO METROPOLITAN FLOOD CONTROL DISTRICT (FMFCD)

AND CITY OF FRESNO

File 220.161
140.76

CONDITIONAL LICENSE

Basins "DH2" & "DI"
River West Eaton Trail Extension

THIS LICENSE AGREEMENT ("License Agreement") is made and entered into this _____ day of_____, 2026 (the "Effective Date") by and between the FRESNO METROPOLITAN FLOOD CONTROL DISTRICT, a public corporation, hereinafter referred to as "Licensor," the City of Fresno, a municipal corporation, hereinafter referred to as "Licensee," and the San Joaquin River Conservancy, a California state agency formed and operating pursuant to Division 22.5 of the California Public Resources Code, hereinafter referred to as "Third-Party Beneficiary," (individually, a "Party," and collectively, the "Parties") on the terms and conditions that follow.

W I T N E S S E T H

A. By this License Agreement, Licensor desires to grant to Licensee a license to construct a portion of the River West Fresno Eaton Trail Extension (herein referred to as the "Trail"), on behalf of Third-Party Beneficiary, within the property lines of Basins "DH2" and "DI" (hereinafter referred to as the "Basins"), to be maintained by Licensee, within the County of Fresno, State of California, under the terms and conditions herein stated.

B. Licensee and Licensor shall modify their Master Maintenance Agreement to confirm Licensee's acceptance of maintenance responsibilities for the Trail on behalf of Third-Party Beneficiary.

NOW, THEREFORE, in consideration of the recitals set forth above, which are incorporated herein, and the mutual covenants and undertakings contained herein, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. TERM. The term of this License Agreement is at the will of Licensor and shall commence on the Effective Date and continue until the earliest occurrence of one of the following: (a) upon the Parties' modification of their Master Maintenance Agreement to include Licensee's acceptance of maintenance responsibilities of the Trail on behalf of Third-Party Beneficiary; or (b) upon revocation of this License Agreement as provided in Section 3 below. Should the Licensor revoke the License Agreement, the Licensee shall be required to immediately remove the Trail and restore Licensor's property to its original condition, at no cost to Licensor.

2. PURPOSE. This License Agreement authorizes Licensee to construct a portion of the Trail for the benefit of Third-Party Beneficiary within the property lines of the Basins as depicted in the attached Exhibit No. 1, to be maintained by Licensee, and for no other purpose.

3. REVOCATION. Licensor shall have the right in its sole and absolute discretion to terminate or cancel this License Agreement at any time upon giving the Licensee and Third-Party Beneficiary seven (7) days' written notice at the address set forth in paragraph 13 hereof.

4. HOLD HARMLESS. To the fullest extent permitted by law, Licensee agrees to be solely responsible for and indemnify Licensor, its directors, officers, agents, employees and authorized volunteers and consultants (collectively "Indemnified Parties") from and against any and all injuries, damages, and claims to persons or property arising out of its actions taken pursuant to this License Agreement, except for any such claims arising out of the sole active negligence or willful misconduct of the Indemnified Parties; provided nothing herein shall constitute a waiver by Licensee of governmental immunities including California Government Code section 810 et seq. Licensee's obligation to indemnify the Indemnified Parties shall survive the termination or completion of this License Agreement for the full period of time allowed by law for a claim to be brought, and shall not be restricted by the insurance requirements contained in this License

Agreement or to insurance proceeds, if any, received by Licensee, or its directors, officers, employees, or authorized volunteers.

5. INSURANCE REQUIREMENTS**.** Licensee and its contractor(s) shall procure and maintain for the duration of this License Agreement insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Licensee, its agents, representatives, employees or sub-contractors. Licensee may satisfy the following requirements with policies of self-insurance.

Insurance Coverage - Coverage shall be at least as broad as the following:

1. **Commercial General Liability (CGL) -** Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with a limit of at least two million dollars ($2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to Licensor) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability -** Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Licensee has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars ($1,000,000) for bodily injury and property damage each accident.
3. **Workers' Compensation Insurance -** as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease. **Waiver of Subrogation:** The insurer(s) named

above agree to waive all rights of subrogation against the Licensor, its elected or appointed officers, officials, agents, authorized volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Licensor; but this provision applies regardless of whether or not the Licensor has received a waiver of subrogation from the insurer.

If the Licensee maintains broader coverage and/or higher limits than the minimums shown above, the Licensor requires and shall be entitled to the broader coverage and/or higher limits maintained by the Licensee. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Licensor.

Other Required Provisions - The general liability policy must contain, or be endorsed to contain, the following provisions:

1. **Additional Insured Status:** Licensor, its directors, officers, agents, employees and authorized volunteers and consultants are to be given insured status (at least as broad as ISO Form CG 20 10 10 01), with respect to liability arising out of work or operations performed by or on behalf of the Licensee including materials, parts, or equipment furnished in connection with such work or operations.
2. **Primary Coverage:** For any claims related to the Trail, the Licensee's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the Licensor, its directors, officers, agents, employees and authorized volunteers and consultants. Any insurance or self-insurance maintained by the Licensor, its directors, officers, agents, employees and authorized volunteers and consultants shall be in excess of the Licensee's insurance and shall not contribute with it.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with prior notice to the Licensor.

Self-Insured Retentions - Self-insured retentions must be declared to and approved by the Licensor. The Licensor may require the Licensee to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or Licensor.

Acceptability of Insurers - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or as otherwise approved by Licensor.

Verification of Coverage – Licensee shall furnish the Licensor with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Licensor before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Licensee's obligation to provide them. The Licensor reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration pages and Endorsement pages.

Sub-Licensees - Licensee shall require and verify that all sub-Licensees maintain insurance meeting all the requirements stated herein, and Licensee shall ensure that Licensor its directors, officers, employees, and authorized volunteers are an additional insured on Commercial General Liability Coverage.

6. COMPLIANCE WITH LAW. Licensee shall comply with all applicable local, State and Federal laws, regulations, and ordinances, and shall secure any and all permits that may be required by any government agency having jurisdiction to require the same for the use of the Basins for the purposes herein described. Any of the costs related to compliance by Licensee within the provisions of this License Agreement, whether directly or indirectly related, shall be borne by Licensee. Licensee further warrants that it shall not allow any liens or encumbrances to

arise out of any costs or obligations herein described, and that if any lien or encumbrance creates a cloud on Licensor's title, Licensee must pay all reasonable costs and expenses, including attorneys' fees, upon thirty (30) days written demand for payment by Licensor.

7. PROPERTY DAMAGE. Licensee shall be responsible for any and all damage to the Basins and any facilities located therein or thereon occasioned by the use thereof by Licensee, and consent is hereby given to Licensor to have any such damage repaired at the expense of Licensee.

8. NON-ASSIGNABILITY. This License Agreement is personal to Licensee, and may not be assigned to any other person, firm, or corporation by Licensee without the express prior written consent of Licensor.

9. ENTRY BY LICENSEE. Licensee, or its representatives, shall have the right to enter into and upon the Basins without notice. The right to entry by Licensee shall be a priority right of use of the Basins.

10. ENTRY BY LICENSOR. Licensor, or its representatives, shall have the right to enter into and upon the Basins, without notice, for the conduct of any operation reasonably necessary or desirable to effectuate the purpose for which Licensor was organized. It is expressly understood that the rights of Licensor to improve, operate and/or maintain the Basins in accordance with the purposes and objectives for which Licensor was created and to perform all functions of maintenance necessary thereto shall be superior to any and all rights of Licensee.

11. IMPROVEMENTS. Licensee shall place no improvements of any kind or nature within or upon the Basins without the prior written permission of Licensor, except as herein stated.

12. POLICIES. Licensee agrees to comply with any and all lawful written policies, ordinances, and directives of Licensor that pertain to Licensee's use of the Basins contemplated in this License Agreement.

13. NOTICE. Any notice to be given to either Party by the other shall be in writing and shall be served either personally or by first class mail, addressed as follows:

To Licensor: Fresno Metropolitan Flood Control District
5469 East Olive Avenue
Fresno, CA 93727

To Licensee: City of Fresno
2600 Fresno Street
Fresno, CA 93721

To Third-Party Beneficiary: San Joaquin River Conservancy
Attention: Kari Daniska
Chief Executive Officer
P.O. Box 28338
Fresno, CA 93729

14. SAFETY. In the performance of this License Agreement, the Licensee shall comply with all applicable federal, state and local statutory and regulatory requirements including, but not limited to California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act, related to their scope of work and operations. In case of conflict in regulations, the most stringent shall apply. The Licensee shall provide all safeguards, safety devices and protective equipment and take any other needed actions necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by this License Agreement. Safety precautions shall include but shall not be limited to: adequate life protection and life-saving equipment; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection, and other safety devices; equipment and wearing apparel as are necessary or lawfully required to prevent accidents, injuries, or illnesses (including but not limited to exposure to the Coccidioides

fungus and Valley Fever); and adequate facilities for the proper inspection and maintenance of all safety measures.

Licensee must obtain all applicable Division of Occupational Safety and Health (CAL-OSHA) permit(s) and others required by California Labor Code and California Government Code, prior to the initiation of any practices, work, method, operation, or process related to the work covered in the contract. Permits required by governmental authorities will be obtained at Licensee's expense.

It is a condition of this License Agreement, and shall be made a condition of each subcontract which the Licensee enters into pursuant to this License Agreement, that the Licensee and any subcontractor shall not permit any employee, in performance of the License Agreement and construction of the Trail, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under Cal/OSHA safety and health standards.

15. SPECIAL PROVISIONS. Licensor will make an inspection of the Basins upon expiration or termination of this License Agreement, and any damage proximately caused by Licensee or its representatives shall be repaired at Licensee's expense. Licensee shall be responsible for all maintenance of the Trail during the term of this License Agreement. Licensee agrees to accept, accommodate and pay for any restoration, reconstruction, or repairs of the Trail necessitated by Licensor's exercise of its right of access to existing storm drain facilities, as identified in the attached Exhibit A, Sheet 15-E-14616, approximate Station 15+75. All Parties acknowledge Licensor's access may result in the disturbance, excavation, or removal of portions of the Trail. Licensor shall provide notice to Licensee whenever access to the existing storm drain facilities is required, resulting in disturbance to the Trail.

The Licensee shall contact the Licensor's Construction Manager two working days prior to beginning construction.

16. AUTHORITY. Each individual executing this License Agreement on behalf of Licensee represents and warrants that the individual is duly authorized to execute and deliver this License Agreement on behalf of the Parties, and that this License Agreement is binding upon the Parties in accordance with its terms. The terms of this License Agreement are intended by the Parties as a final expression of their agreement with respect to such terms as are included in this License Agreement and may not be contradicted by evidence of any prior or contemporaneous agreement, arrangement, understanding, or negotiation (whether oral or written).

17. COUNTERPARTS. This License Agreement may be signed in counterparts, each of which is an original, and all of which together constitute this License Agreement.

18. ENTIRE AGREEMENT. This License Agreement constitutes the entire agreement between Licensor and Licensee relating to the License. Any prior agreements, promises, negotiations, or representations not expressly set forth in this License Agreement are of no force and effect. Any amendment to this License Agreement shall be of no force and effect unless it is in writing and signed by Licensor and Licensee.

IN WITNESS WHEREOF, the Parties have executed this Agreement at Fresno, California, as of the Effective Date.

Licensor:
FRESNO METROPOLITAN FLOOD CONTROL DISTRICT, a public corporation

By: _____
Peter Sanchez, General Manager Date

Licensee:
CITY OF FRESNO,
A California municipal corporation

By: _____
Georgeanne White Date
City Manager

APPROVED AS TO FORM:
ANDREW JANZ
City Attorney

By: _____
Heather Thomas Date
Deputy City Attorney

ATTEST:
AMY K. ALLER
City Clerk

By: _____
Deputy Date

Third-Party Beneficiary:
SAN JOAQUIN RIVER CONSERVANCY, a California state agency formed and operating pursuant to Division 22.5 of the California Public Resources Code

By: _____
Kari Kyler Daniska Date
Chief Executive Officer

Attachment – Exhibit A

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

SECTION LINE

SECTION LINE

SEE SHEET 5

SEE SHEET 6

SEE SHEET 7

SEE SHEET 8

SEE SHEET 9

SEE SHEET 10

SAN JOAQUIN RIVER

SAN JOAQUIN RIVER

SAN JOAQUIN RIVER

O POND

I POND

H POND

E POND

BASIN DH2

BASIN DI

N PALM AVE

W AUDUBON DR

W NEES AVE

W RIVERVIEW DR

W BLUFF AVE

N DEL MAR AVE

W AUDUBON DR

COBB RANCH BLVD

PROPERTY LINE

SECTION LINE

SECTION LINE

LEGEND

- EXISTING ROAD TO BE DECOMMISSIONED, SEE NOTES ON SHEET 3
- EXISTING TRAILS TO REMAIN AS SECONDARY PATHWAY, SEE NOTES ON SHEET 3

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY

SCALE IN FEET
0 150 300 600

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER
MICHAEL L. OSBORN
No. 86022
CIVIL
STATE OF CALIFORNIA

15.12

PROVOST& PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C001

DEPARTMENT OF PUBLIC WORKS
2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ. ID. PW00986
FUND NO. 72006
ORG. NO. 189901
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
EXISTING CONDITIONS & DEMOLITION PLANS
EXISTING CONDITIONS KEY MAP

REVIEWED
OFFICE ENG._____ CITY ENG._____
DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED
SHEET NO. 4
OF 133 SHEETS
15-E-14585

9/19/2026 10:15 PM Q:\Fresno_City of-15611\15612\2025-River West Eaton Trail Extension\300 CAD\LND Sheet Sets\02_Exist Topo and Demo\X EXISTING CONDITIONS KEY MAP.dwg -Jordan Noel

MATCHLINE

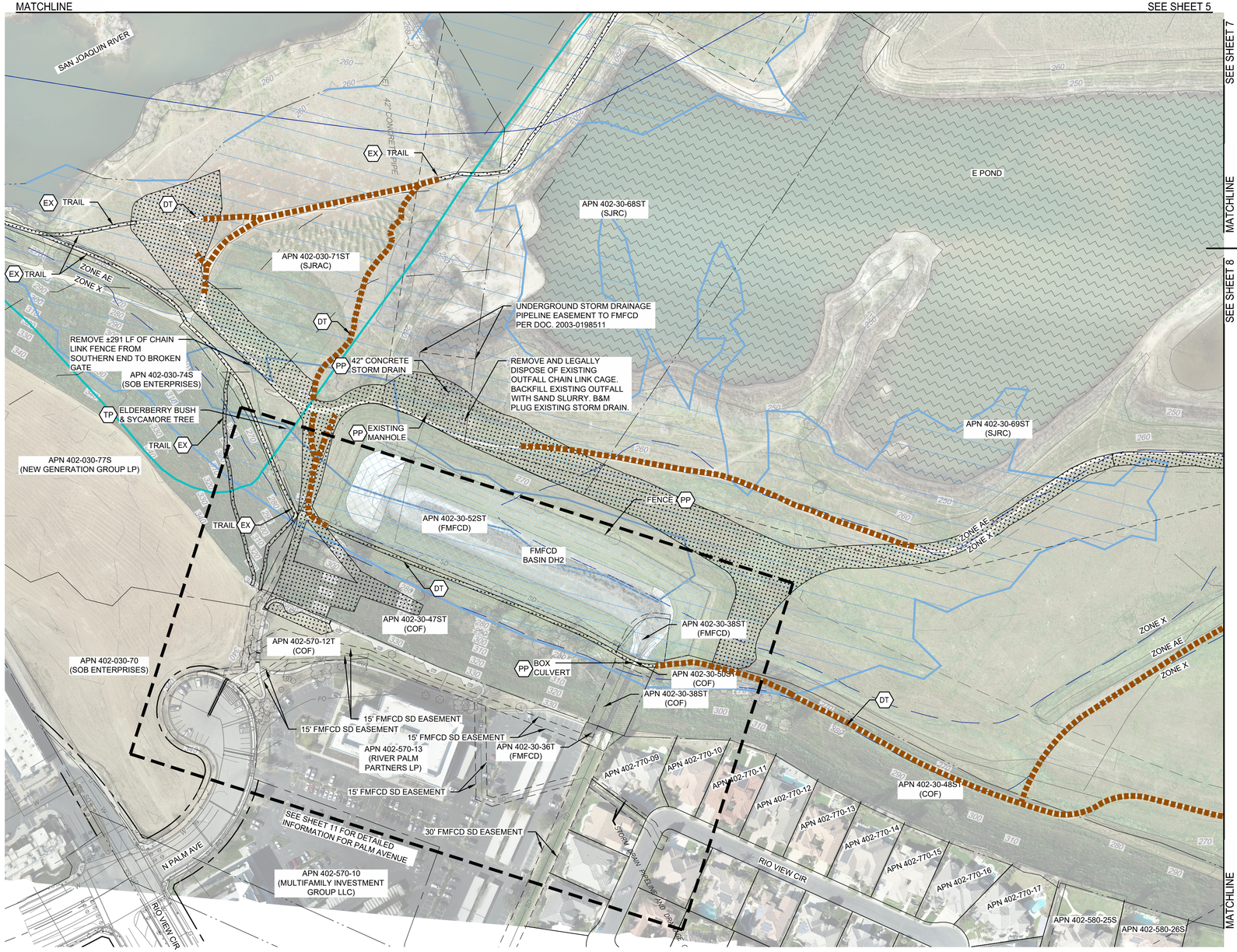
SEE SHEET 5

SEE SHEET 7

MATCHLINE

SEE SHEET 8

MATCHLINE



/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

- CLEAR AND GRUB WITHIN LIMITS SHOWN. 6 FEET WIDE CLEAR MIN. SEE NOTES ON SHEET 3
- REMOVE EXISTING CONCRETE
- REMOVE AND SAWCUT EXISTING PAVEMENT
- DT DECOMMISSION TRAIL
- EX EXISTING TRAIL TO REMAIN
- PP PROTECT IN PLACE, ITEM AS NOTED
- SP SAWCUT AND REMOVE PAVEMENT
- TP INSTALL TREE PROTECTION FENCE
- EXISTING ROAD TO BE DECOMMISSIONED, SEE NOTES ON SHEET 3

1/105

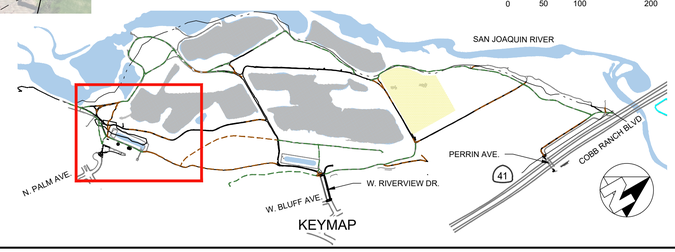
GENERAL NOTES

1. CLEAR AND GRUB PER PROJECT SPECIFICATIONS, REMOVE ANY (E) IRRIGATION AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
2. TEMPORARY ACCESS TO FMFCD BASIN DI SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY

SCALE IN FEET
0 50 100 200



WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.13

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C003

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW. FILE NO. 13245
PROJ. ID. PW00086
FUND NO. 21056
ORG. NO. 180901
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
EXISTING CONDITIONS & DEMOLITION PLANS
EXISTING SITE CONDITIONS 2

REVIEWED
OFFICE ENG. _____ CITY ENG. _____

DR. BY: MN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 6
OF 133 SHEETS

15-E-14587

8/17/2026 12:16 PM G:\Fresno_City of-1561\1561202025-River West Eaton Trail Extension\300 CAD\340 Sheet Sets\02_Civil Topo and Demo\6 EXISTING SITE CONDITIONS 2.dwg — Jordon Noel



/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

- CLEAR AND GRUB WITHIN LIMITS SHOWN. 6 FEET WIDE CLEAR MIN. SEE NOTES ON SHEET 3
- REMOVE EXISTING CONCRETE
- REMOVE AND SAWCUT EXISTING PAVEMENT
- DT DECOMMISSION TRAIL
- EX EXISTING TRAIL TO REMAIN
- PP PROTECT IN PLACE, ITEM AS NOTED
- SAWCUT AND REMOVE PAVEMENT
- INSTALL TREE PROTECTION FENCE (1/105)
- EXISTING ROAD TO BE DECOMMISSIONED, SEE NOTES ON SHEET 3

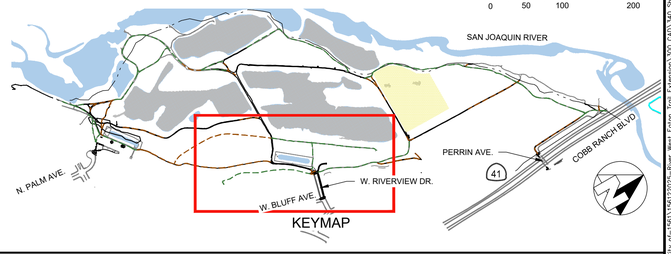
GENERAL NOTES

1. CLEAR AND GRUB PER PROJECT SPECIFICATIONS, REMOVE ANY (E) IRRIGATION AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
2. TEMPORARY ACCESS TO FMFCD BASIN DI SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY

SCALE IN FEET
0 50 100 200



KEYMAP

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.14

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C005

DEPARTMENT OF PUBLIC WORKS
2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ. ID. PWC0986
FUND NO. 22995
ORG. NO. 185001
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
EXISTING CONDITIONS & DEMOLITION PLANS
EXISTING SITE CONDITIONS 4

REVIEWED
OFFICE ENG._____ CITY ENG._____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 8
OF 133 SHEETS

15-E-14589

8/19/2026 12:17 PM G:\Fresno_City of-15961\22025-River West Eaton Trail Extension\300 CAD\340 Sheet Sets\02_East Topo and Demo\8 EXISTING SITE CONDITIONS 4.dwg -Jordan Noel

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

FMFCD BASIN DH2

(E) 42" CONCRETE PIPE
(E) 24" CONCRETE PIPE
(E) 12" DOUBLE VEHICLE ACCESS GATE
APN 402-030-71ST
CHAIN LINK FENCE
ACCESS EASEMENT TO APN 402-030-71ST PER INSTRUMENT NO. 22018-0090556 FCOR
ELDERBERRY BUSH
(E) TREE, TYP.
136 LF WROUGHT IRON FENCE
(E) BENCH
SURVEY CONTROL POINT
WALKWAY
(E) TRASH RECEPTACLE
(E) BURIED SDMH
BENCH
TRASH RECEPTACLE
CITY OF FRESNO SPANO PARK
(E) DRINKING FOUNTAIN
(E) SD INLET
(E) ABANDONED SD EASEMENT PER INSTRUMENT NO. 1999-0053355 FCOR
REMOVE (E) SD PIPE APPROX 9' AND CAP
12" PVC
(E) 2" BFP
(E) REDUCED PRESSURE VACUUM BREAKER
(E) 2" WATER METER
(E) STREET LIGHT & VAULT
(E) DOUBLE TYPE D INLET
(E) FIRE HYDRANT
STORM DRAIN EASEMENT PER INSTRUMENT NO. 1999-0053355 FCOR
IRRIGATION BOOSTER PUMP & CONTROLLERS
(E) ACCESSIBLE VAN PARKING SPACE AND ACCESS AISLE
CITY OF FRESNO RIGHT OF WAY
(E) WALKWAY
(E) STORM DRAIN EASEMENT, INSTRUMENT NO. 1995-5752 FCOR
N. PALM AVE

SCALE IN FEET
0 15 30 60

/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

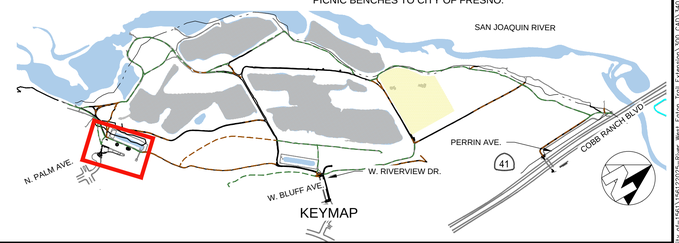
- CLEAR AND GRUB WITHIN LIMITS SHOWN. 6 FEET WIDE CLEAR MIN. SEE NOTES ON SHEET 3
- REMOVE AND SAWCUT EXISTING PAVEMENT
- REMOVE EXISTING CONCRETE
- LIMITS OF WORK
- PP PROTECT IN PLACE, ITEM AS NOTED
- RA REMOVE AMENITY, ITEM AS NOTED
- REMOVE BOLLARD
- RF REMOVE FENCE
- RI REMOVE INLET
- REMOVE KEYPAD
- REMOVE PAVEMENT MARKING
- RP REMOVE PAVEMENT
- REMOVE SIGNAGE
- RT REMOVE TREE
- SC LIMITS OF SAWCUT AND PAVEMENT REMOVAL
- TP INSTALL TREE PROTECTION FENCE (1/105)

GENERAL NOTES

1. CLEAR AND GRUB PER PROJECT SPECIFICATIONS, REMOVE ANY (E) IRRIGATION AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS
2. SALVAGE AND DELIVER REMOVED TRASH RECEPTACLES AND PICNIC BENCHES TO CITY OF FRESNO.

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY



No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.15

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C008

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW PROJ. ID: 13245
FUND NO.: PWC09986
ORG NO.: 72006
REF. & REV.: 185901

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
EXISTING CONDITIONS & DEMOLITION PLANS
PALM AVE DEMOLITION PLAN

REVIEWED
OFFICE ENG._____ CITY ENG._____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 11
OF 133 SHEETS

15-E-14592

9/21/2026 11:58 AM G:\Projects_City of\561\561022025-River West Eaton Trail Extension\300 CAD\430 Sheet Sets\02_Exist Topo and Demo\01 PALM AVE DEMOLITION PLAN.dwg -Andrew D'Oler

Know what's **below.** **Call** before you dig.

WARNING
POWER LINES OVERHEAD

PP POWER POLE
WELL AND FENCE PP
PP POWER SERVICE POLE & METER
IRRIGATION STAND PIPE PP
PP GUY WIRE & WOOD PEDESTAL
ACCESS ROAD EX
PP DRAIN INLET
WOOD/DIRT STEPS
PP CHAIN LINK FENCE
SDMH PP
(E) 42" CONCRETE PIPE
PP SDMH
(E) 42" CONCRETE PIPE
PP SDMH
PP SDMH
±125 LF OF CHAIN LINK FENCE AND GATE REMOVAL
(E) 24" HDPE PIPE
(E) 15" CONCRETE PIPE
(E) 10" CMP IRRIGATED STRAIGHT PIPE
CONCRETE DITCH PP
(E) DRAINAGE DITCH
PP FMFCD CHAIN LINK FENCE
PP CHAIN LINK FENCE
FMFCD BASIN DI
(E) 24" CONCRETE PIPE
(E) DIRT ROAD
(E) BLUFF TRAIL

/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

- CLEAR AND GRUB WITHIN LIMITS SHOWN. 6 FEET WIDE CLEAR MIN. SEE NOTES ON SHEET 3
- REMOVE EXISTING CONCRETE
- REMOVE AND SAWCUT EXISTING PAVEMENT
- DT DECOMMISSION TRAIL
- EX EXISTING TRAIL TO REMAIN
- PP PROTECT IN PLACE, ITEM AS NOTED
- SP SAWCUT AND REMOVE PAVEMENT
- TP INSTALL TREE PROTECTION FENCE (1/105)
- EXISTING ROAD TO BE DECOMMISSIONED, SEE NOTES ON SHEET 3

GENERAL NOTES

1. CLEAR AND GRUB PER PROJECT SPECIFICATIONS. REMOVE ANY (E) IRRIGATION AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
2. TEMPORARY ACCESS TO FMFCD BASIN DI SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

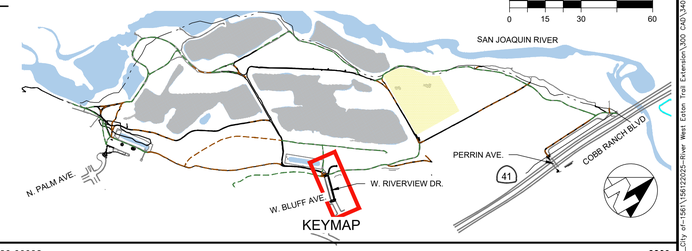
CITY OF FRESNO
WASTEWATER LIFT STATION NO. 4
(298 RIVERVIEW DR.)

NORTHEAST CORNER OUTLOT B 42-PLATS-10, O.R.F.C.
(E) VEHICULAR SWING GATE
(E) SOLAR PANEL FOR GATE
(E) MAN GATE
PP LOOP SENSOR, TYP.
SC
(E) GATE KEY PAD
(E) BOLLARDS
(E) METAL FENCE
N. DEL MAR AVE
W. RIVERVIEW DR
W. BLUFF AVE

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY

SCALE IN FEET
0 15 30 60



No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER
MICHAEL L. OSBORN
No. 86,022
CIVIL
STATE OF CALIFORNIA

15.16

PROVOST& PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C009

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW. FILE NO. 13245
PROJ. ID. PWC0986
FUND NO. 22056
ORG. NO. 16990
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
EXISTING CONDITIONS & DEMOLITION PLANS
RIVERVIEW DRIVE DEMOLITION PLAN

REVIEWED
OFFICE ENG. _____ CITY ENG. _____
DR. BY: MN
CH. BY: MLO
DATE: 08/07/2026
SCALE: AS NOTED
SHEET NO. 12
OF 133 SHEETS

15-E-14593

8/10/2026 12:20 PM G:\Fresno_City of-1561\2025\2025-River West Eaton Trail Extension\300 CAD\340 Sheet Sets\02_Civil Tops and Demo\12 RIVERVIEW DRIVE DEMOLITION PLAN.dwg -Jordan Noel

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

CVFPB DESIGNATED FLOODWAY (JURISDICTIONAL BOUNDARY)

SECTION LINE

CVFPB DESIGNATED FLOODWAY (JURISDICTIONAL BOUNDARY)

SECTION LINE

FEMA REGULATORY FLOODWAY (ZONE AE)

150' BUFFER BETWEEN RIPARIAN CORRIDOR AND MULTI-USE TRAIL

O POND

SAN JOAQUIN RIVER

CSLC LOW WATER LINE

I POND

MINIMUM 150' BUFFER BETWEEN RESIDENTIAL AND MULTI-USE TRAIL

200' RIPARIAN CORRIDOR
SAN JOAQUIN RIVER

ORDINARY LOW WATER MARK

PALM AVENUE

16 - SITE PLAN 2

CSLC HIGH WATER LINE

E POND

H POND

ZONE X
ZONE AE

MINIMUM 300' BUFFER BETWEEN RESIDENTIAL AND HIGH INTENSITY USE

15 - SITE PLAN 1

BASIN DH2

SPANO PARK

ZONE X
ZONE AE

ZONE AE
ZONE X

ZONE X
ZONE A

WOODWARD WEST

APPROXIMATE LIMITS OF 2024 RESTORATION PLANTING

BASIN DI

(E) ACCESS ROAD TO REMAIN

ZONE X

41

COBB RANCH BLVD

27 - SITE PLAN 1

28 - SITE PLAN 2

N PALM AVE

W AUDUBON DR

W INGLES AVE

(E) PEDESTRIAN CONNECTION TO W BLUFF AVE

W. RIVERVIEW DR.

W BLUFF AVE

N DEL MAR AVE

W AUDUBON DR

SECTION LINE

SECTION LINE

REGULATORY LINE LEGEND

- CSLC PUBLIC TRUST EASEMENT OVER LANDS BETWEEN THE HIGH AND LOW WATER LINES
- FMFCD BASIN, NOT A PART
- PRIVATE PROPERTY, NOT A PART
- POND
- FEMA FLOOD ZONE
- FEMA REGULATORY FLOODWAY
- CENTRAL VALLEY FLOOD PROTECTION BOARD (CVFPB) DESIGNATED FLOODWAY

LEGEND

- EATON TRAIL EXTENSION
- NEW SECONDARY PATHWAY. SEE NOTES ON SHEET 3
- EXISTING ROAD TO BE DECOMMISSIONED, SEE NOTES ON SHEET 3
- EXISTING TRAILS TO REMAIN AS SECONDARY PATHWAY. SEE NOTES ON SHEET 3

SCALE IN FEET
0 150 300 600

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER
MICHAEL L. OSBORN
No. 66,022
CIVIL
STATE OF CALIFORNIA

15.17

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C100

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ. ID. PW00986
FUND NO. 72024
ORG. NO. 183901
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
ACCESS POINTS
ACCESS POINT KEYMAP

REVIEWED
OFFICE ENG. _____ CITY ENG. _____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

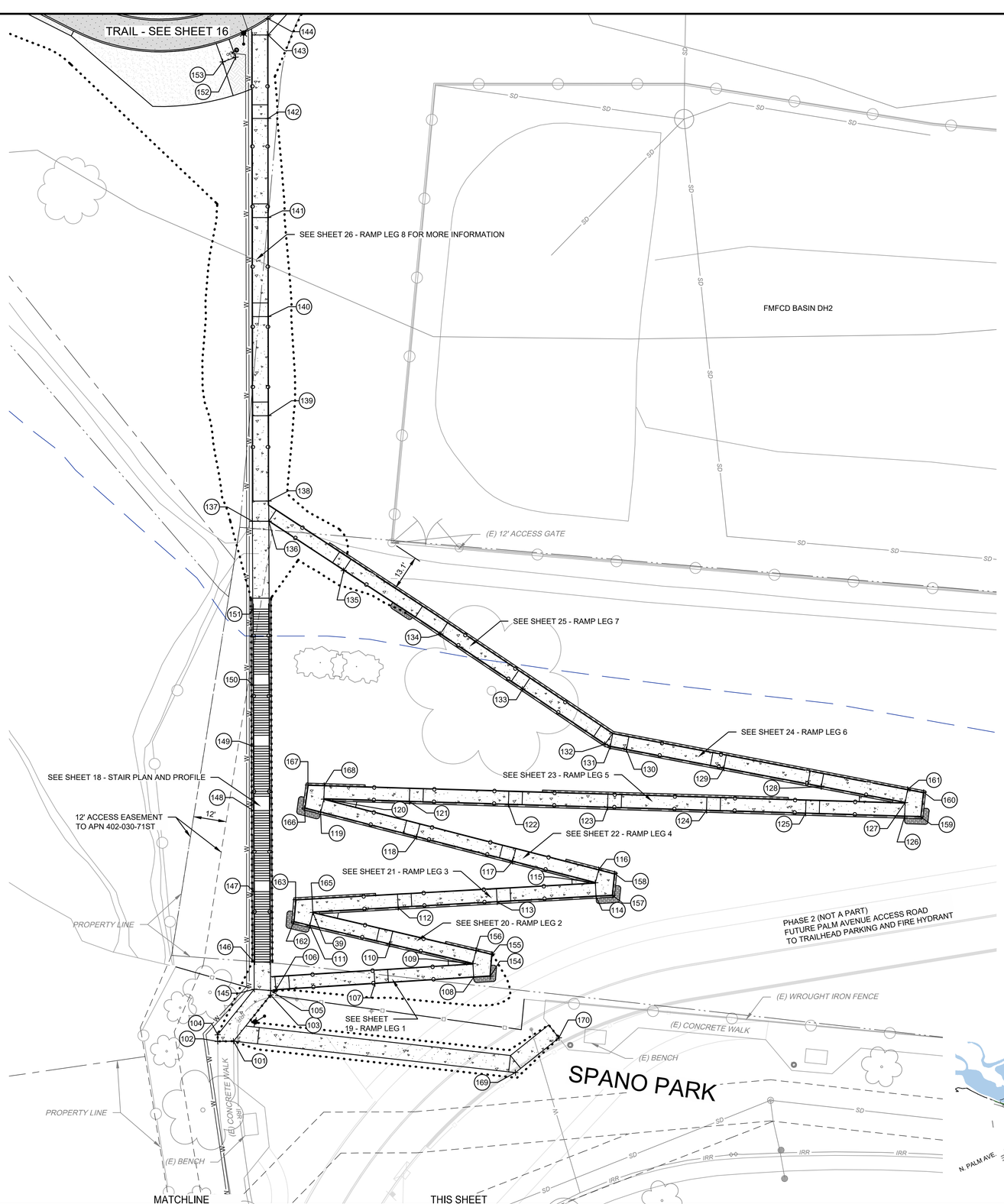
SHEET NO. 14
OF 133 SHEETS

15-E-14595

8/19/2026 12:20 PM G:\Fresno_City of-1561\1561220\25-River West Eaton Trail Extension\300 CAD\CAD Sheet Sets\GA_Trail Access Sheet\1 ACCESS POINT KEYMAP.dwg -Jordan Noel

POINT TABLE		
POINT #	NORTHING	EASTING
39	2194736.61	6325757.25
101	2194682.19	6325767.52
102	2194678.26	6325763.30
103	2194703.86	6325766.18
104	2194680.04	6325761.64
105	2194705.06	6325765.05
106	2194706.51	6325766.37
107	2194732.58	6325791.56
108	2194758.65	6325816.75
109	2194762.12	6325813.16
110	2194746.88	6325785.88
111	2194732.24	6325759.69
112	2194758.91	6325779.14
113	2194784.78	6325804.53
114	2194810.66	6325829.92
115	2194814.16	6325826.35
116	2194818.58	6325824.01
117	2194799.52	6325798.74
118	2194782.54	6325766.71
119	2194765.57	6325734.68
120	2194769.98	6325732.34
121	2194790.32	6325756.06
122	2194813.91	6325783.59
123	2194837.50	6325811.11
124	2194861.09	6325838.63
125	2194884.69	6325866.15
126	2194908.28	6325893.68
127	2194912.07	6325890.42
128	2194895.73	6325863.79
129	2194876.77	6325832.89
130	2194857.81	6325801.99
131	2194854.68	6325796.88
132	2194853.97	6325794.83
133	2194848.63	6325758.98
134	2194843.30	6325723.12
135	2194836.72	6325681.39
136	2194831.57	6325649.01
137	2194827.52	6325644.59
138	2194837.00	6325644.01
139	2194860.08	6325622.94
140	2194886.85	6325598.50
141	2194913.62	6325574.06
142	2194940.39	6325549.62
143	2194962.97	6325529.01
144	2194967.33	6325525.02
145	2194701.37	6325760.32
146	2194708.67	6325753.62
147	2194727.65	6325736.21
148	2194749.51	6325716.15
149	2194766.87	6325700.22
150	2194783.33	6325685.13
151	2194803.84	6325666.31
152	2194948.93	6325525.71
153	2194944.51	6325523.36
154	2194763.01	6325820.97
155	2194769.44	6325816.01
156	2194766.49	6325810.72
157	2194814.99	6325834.17
158	2194821.42	6325829.37
159	2194912.19	6325898.25

POINT TABLE		
POINT #	NORTHING	EASTING
160	2194919.48	6325892.94
161	2194916.33	6325887.81
162	2194729.28	6325754.40
163	2194735.78	6325749.44
165	2194740.11	6325753.68
166	2194762.74	6325729.35
167	2194769.85	6325724.50
168	2194773.78	6325729.08
169	2194743.12	6325851.49
170	2194763.22	6325854.69
171	2194616.21	6325838.88
172	2194621.07	6325842.18
173	2194625.79	6325824.85
174	2194630.60	6325828.16



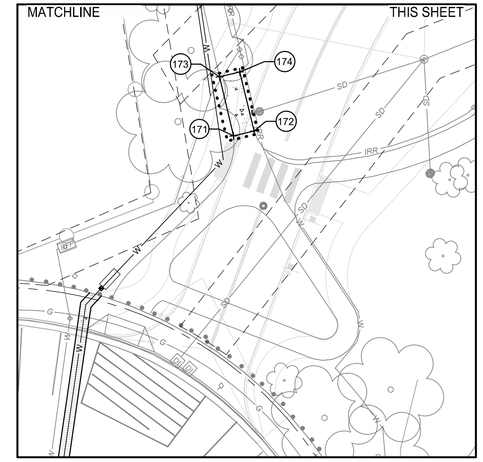
WARNING
POWER LINES OVERHEAD

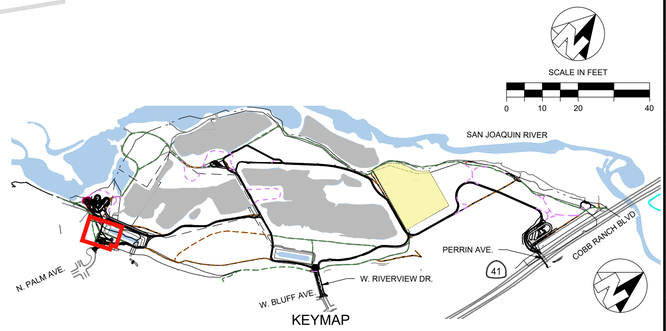
811 Know what's below. Call before you dig.

NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

- CONSTRUCT ROADWAY (VEHICULAR) ASPHALT — 2/71
- CONSTRUCT TRAIL (NON-VEHICULAR) ASPHALT — 1/71
- CONSTRUCT 3.5" THICK CONCRETE WALK PER CITY OF FRESNO STD DWG P-5 & P-9
- CONSTRUCT DECOMPOSED GRANITE SURFACING — 8/70
- CONSTRUCT AGGREGATE BASE SURFACING — 3/71
- CONSTRUCT COMPACTED NATIVE SURFACING — 5/71





No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.18

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C101

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ. ID. PW00986
FUND NO. 22006
ORG. NO. 189901
REF. & REV.

CITY OF FRESNO — DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
PALM AVENUE
SITE PLAN 1

REVIEWED
OFFICE ENG. _____ CITY ENG. _____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 15
OF 133 SHEETS

15-E-14596

8/19/2026 12:21 PM G:\Fresno_City of-15613\15612025-River West Eaton Trail Extension\300 CAD\300 Sheet Sets\GA_Trail Access Site\15 SITE PLAN 1.dwg --Jordon Noel

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

SAN JOAQUIN RIVER

(E) FEMA 100-YR FLOODPLAIN (ZONE AE)

(E) VEGETATION

(E) CSLC HIGH WATER LINE

APN 402-030-71ST (SJRAC)

PHASE 2 (NOT A PART)
FUTURE TRAILHEAD PARKING ON SJRAC PARCEL AND ACCESS ROAD PARALLEL TO TRAIL

PROPERTY LINE

REFER TO SHEET 77 FOR PALM AVENUE PARKING LANDSCAPING IMRPOVEMENTS

FL 258.3± MATCH (E)

FL 258.45

STA 8+92.79 (0.0')
FG 258.78

FG 258.3± MATCH (E)

FG 258.86

C 258.65

STA 9+18.62 (0.0')
C 259.15
C 259.05
C 259.02
C 259.55
C 259.14
C 259.76
C 260.40
C 260.33
C 260.07
C 260.11
C 260.09

FG 258.42

FG 259.78

STA 9+77.01 (8.0' LT)
C 259.44

FL 258.65
STA 9+81.54 (0.5' RT)
C 259.54

259.54 EL
BC 10+00.00

259.55 EL
EC 10+48.25

STA 10+03.81 (50.0' RT)

STA 10+11.58 (32.1' RT)
FG 260.02

STA 10+29.73 (22.1' RT)
FG 259.95

FG 260.1± MATCH (E)

FL 258.78
EL 259.62

GB 11+27.14
EL 260.27

STA 11+59.18 GB (8.0' LT)

FG 259.44

FL 259.04

FG 259.17

C 259.41
C 259.85
C 259.47

FG 259.25
FL 259.05

C 259.63
C 259.84

262.59 EL
BC 13+31.55

STA 13+31.55 (12.0' RT)
C 262.77

FG 264.77

LIMITS OF GRADING

PROPERTY LINE

(E) DIRT PATH TO REMAIN

(E) CHAIN LINK FENCE

(E) 150' BUFFER BETWEEN RIPARIAN CORRIDOR AND MULTI-USE TRAIL

(E) TREE

E POND

UNDERGROUND STORM DRAINAGE PIPELINE EASEMENT TO FMFCD PER DOC. 2003-0198511

ABANDONED OUTFALL STRUCTURE AND PLUGGED PIPE PER SHEET 6

LIMITS OF GRADING

17+00 SEE SHEET 36

FG 264.06

GB 16+49.56
EL 259.70

GB 16+15.56
EL 259.72

GB 15+98.28
EL 260.28

GB 15+49.28
EL 259.98

GB 15+15.28
EL 260.27

GB 14+99.56
EL 259.70

16+00

FG 264.24

MH
FL 42" 241.9± (NW)
FL 42" 250.9± (SE)
(E) 42" CONCRETE PIPE

EC 15+08.11
EL 262.96

STA 15+08.11 (14.0' RT)
FG 263.17

15+00

GB 14+33.07
EL 259.80

264.59 EL
BRC 14+15.95

FL 258.9± MATCH (E)

1.50%

14+00

GB 13+47.27
EL 260.27

13+00

SL

BASIN DH2

(E) CHAIN LINK FENCE

SCALE IN FEET
0 15 30 60

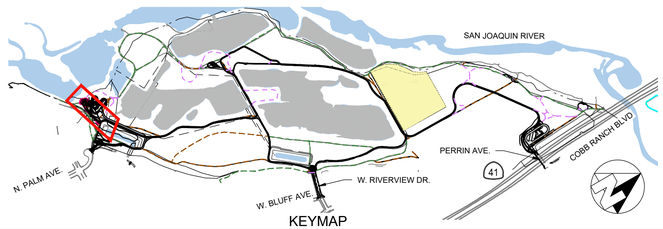
/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

	CONSTRUCT ROADWAY (VEHICULAR) ASPHALT	2/71
	CONSTRUCT TRAIL (NON-VEHICULAR) ASPHALT	1/71
	CONSTRUCT 3.5" THICK CONCRETE WALK PER CITY OF FRESNO STD DWG P-5 & P-9	
	CONSTRUCT DECOMPOSED GRANITE SURFACING	8/70
	CONSTRUCT AGGREGATE BASE SURFACING	3/71
	CONSTRUCT COMPACTED NATIVE SURFACING	5/71
SL	INSTALL 25' TALL SOLAR SMART LIGHT FONROCHE FIXTURE T54-K 16B, OR APPROVED EQUAL AND FOUNDATION	3/70
MH	EXISTING FMFCD TYPE II LOW PRESSURE MANHOLE, WITH BOLT DOWN LID BELOW GRADE; PROTECT IN PLACE AND CONSTRUCT TRAIL IN FILL ABOVE IT	

GENERAL NOTES

1. CONTRACTOR TO REMOVE EXISTING DETERIORATED IRRIGATION SYSTEM ALONG THE TRAIL CORRIDOR PLUS AN ADDITIONAL 10' ON EITHER SIDE. RECENTLY REPLACED IRRIGATION TUBING INSTALLED WITHIN RESTORATION PLANTING AREAS TO BE PROTECTED IN PLACE UNLESS OTHERWISE DIRECTED.
2. REFER TO LANDSCAPING PLANS AND DETAILS FOR LANDSCAPING AND TRAIL FURNISHINGS LOCATED ALONG THE TRAIL.



KEYMAP

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.19

PROVOST& PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C305

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW. FILE NO. 13245
PROJ. ID. PWC0986
FUND NO. 22056
ORG. NO. 16990
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
TRAIL IMPROVEMENTS
PRIMARY TRAIL STA 10+00 – 17+00

REVIEWED
OFFICE ENG. _____ CITY ENG. _____

DR. BY: MN
CH. BY: MLO
DATE: 08/07/2026
SCALE: AS NOTED

SHEET NO. 35
OF 133 SHEETS

15-E-14616

8/10/2026 12:31 PM G:\Fresno_City of-15851\25225-River West Eaton Trail Extension\300 CAD\340 Sheet Sets\35_Trail Site\35 PRIMARY TRAIL STA 10+00 - 17+00.dwg -Jordon Noel

811 Know what's below. Call before you dig.

WARNING
POWER LINES OVERHEAD



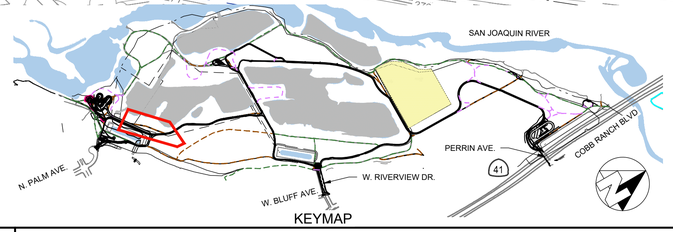
/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

- CONSTRUCT ROADWAY (VEHICULAR) ASPHALT — 2/71
- CONSTRUCT TRAIL (NON-VEHICULAR) ASPHALT — 1/71
- CONSTRUCT 3.5" THICK CONCRETE WALK PER CITY OF FRESNO STD DWG P-5 & P-9
- CONSTRUCT DECOMPOSED GRANITE SURFACING — 8/70
- CONSTRUCT AGGREGATE BASE SURFACING — 3/71
- CONSTRUCT COMPACTED NATIVE SURFACING — 5/71
- BO — INSTALL BOLLARD PER CITY OF FRESNO STD. DWG P-61

GENERAL NOTES

1. CONTRACTOR TO REMOVE EXISTING DETERIORATED IRRIGATION SYSTEM ALONG THE TRAIL CORRIDOR PLUS AN ADDITIONAL 10' ON EITHER SIDE. RECENTLY REPLACED IRRIGATION TUBING INSTALLED WITHIN RESTORATION PLANTING AREAS TO BE PROTECTED IN PLACE UNLESS OTHERWISE DIRECTED.
2. REFER TO LANDSCAPING PLANS AND DETAILS FOR LANDSCAPING AND TRAIL FURNISHINGS LOCATED ALONG THE TRAIL.



No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.20

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C306

DEPARTMENT OF PUBLIC WORKS

2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ. ID. PW00986
FUND NO. 72024
ORG. NO. 185901
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
TRAIL IMPROVEMENTS
PRIMARY TRAIL STA 17+00 – 27+00

REVIEWED OFFICE ENG. _____ CITY ENG. _____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 36
OF 133 SHEETS

15-E-14617

8/19/2026 12:32 PM G:\Fresno_City of-15611\DB\22025-River West Eaton Trail Extension\300 CAD\LDD Sheet Sets\05_Trail Sht\05 PRIMARY TRAIL STA 17+00 – 27+00.dwg – Jordon Noel

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

(E) IRRIGATION UTILITY
H POND
HIGH WATER LINE
SECTION RANGE: STA 230+71.89 TO STA 237+00
BC 230+71.89 EL 268.96
BC 232+82.45
GB 232+82.45 EL 268.00
GB 232+10 EL 268.57
GB 233+50 EL 269.89
(E) DIRT PATH TO REMAIN
(E) TREE, TYP.
(E) FMFCD ACCESS EASEMENT
MID 234+53.19 EL 269.38
LIMITS OF GRADING
GB 235+50 EL 268.89
20'
(E) CHAIN LINK FENCE
FMFCD BASIN "DI"
MATCHLINE 239+00 SEE SHEET 55
SECTION RANGE: STA 237+00 TO STA 244+70.63
EC 236+23.93
GB 236+23.93 EL 270.30
GB 236+47.75 EL 271.47
BC 237+00.00 EL 270.80
(E) 8' FMFCD ACCESS GATE
GB 239+67.10 EL 269.85
EC/BC 238+80.71 EL 270.15
MID 238+23.02 EL 269.49
BC/LP 237+65.33
GB 237+65.33 EL 269.03
(E) CHAIN LINK FENCE
PROPERTY LINE
PROTECT IN PLACE IRRIGATION LINES
PROTECT EXISTING 30" CONCRETE PIPE
(E) 30' STORM DRAIN EASEMENT
MATCHLINE STA 231+50 SEE SHEET 38
L23
L24
C36
C37
2.80%
0.70%
0.30%
0.50%
1.90%
0.81%
230+00
231+00
232+00
233+00
234+00
235+00
236+00
237+00
238+00
42+00
43+00
41+00

/ NOT APPLICABLE THIS SHEET

CONSTRUCTION LEGEND

CONSTRUCT ROADWAY (VEHICULAR) ASPHALT	2/71
CONSTRUCT TRAIL (NON-VEHICULAR) ASPHALT	1/71
CONSTRUCT 3.5" THICK CONCRETE WALK PER CITY OF FRESNO STD DWG P-5 & P-9	
CONSTRUCT DECOMPOSED GRANITE SURFACING	8/70
CONSTRUCT AGGREGATE BASE SURFACING	3/71
CONSTRUCT COMPACTED NATIVE SURFACING	5/71

GENERAL NOTES

1. CONTRACTOR TO REMOVE EXISTING DETERIORATED IRRIGATION SYSTEM ALONG THE TRAIL CORRIDOR PLUS AN ADDITIONAL 10' ON EITHER SIDE. RECENTLY REPLACED IRRIGATION TUBING INSTALLED WITHIN RESTORATION PLANTING AREAS TO BE PROTECTED IN PLACE UNLESS OTHERWISE DIRECTED.
2. REFER TO LANDSCAPING PLANS AND DETAILS FOR LANDSCAPING AND TRAIL FURNISHINGS LOCATED ALONG THE TRAIL.

SCALE IN FEET
0 15 30 60

KEYMAP
SAN JOAQUIN RIVER
PERRIN AVE.
COBB RANCH BLVD
N. PALM AVE.
W. RIVERVIEW DR.
W. BLUFF AVE.
41

No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.21

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C324

DEPARTMENT OF PUBLIC WORKS
2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW FILE NO. 13245
PROJ ID. PW00986
FUND NO. 22054
ORG. NO. 1809901
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

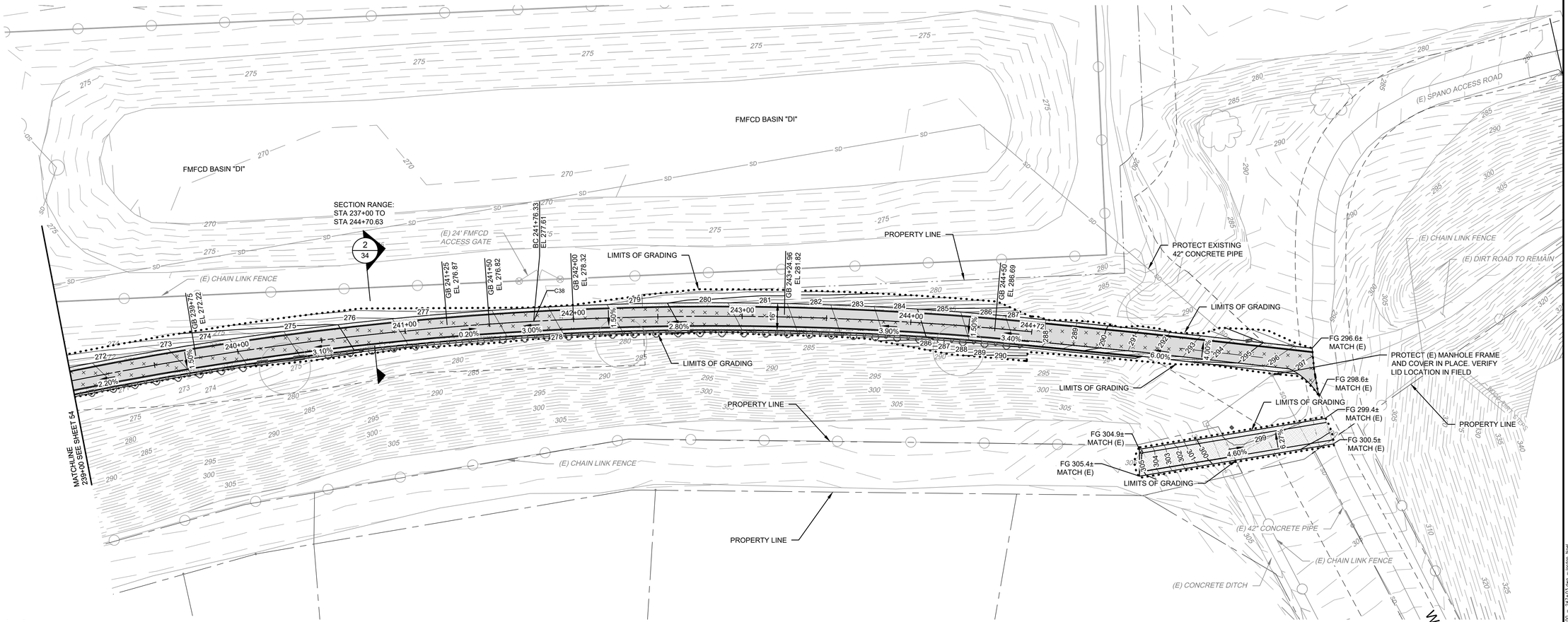
RIVER WEST EATON TRAIL EXT. PH 1
TRAIL IMPROVEMENTS
RIVERVIEW SPUR STA 230+00 – 239+00

REVIEWED OFFICE ENG._____ CITY ENG._____
DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED
SHEET NO. 54
OF 133 SHEETS
15-E-14635

8/19/2026 12:47 PM G:\Yrenis_City of\15611\562\2025-River West Eaton Trail Extension\300 CAD\LXD Sheet Sets\02_Trail SheSet\02_Trail SheSet.dwg — Jordon Noel

WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.



/ NOT APPLICABLE THIS SHEET

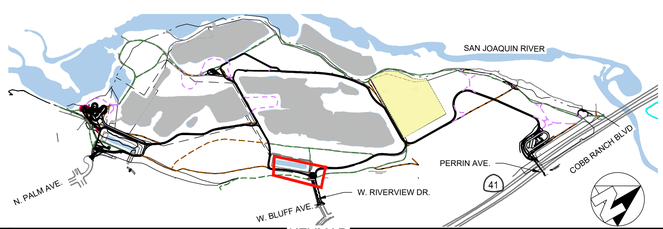
CONSTRUCTION LEGEND

CONSTRUCT ROADWAY (VEHICULAR) ASPHALT	2/71
CONSTRUCT TRAIL (NON-VEHICULAR) ASPHALT	1/71
CONSTRUCT 3.5" THICK CONCRETE WALK PER CITY OF FRESNO STD DWG P-5 & P-9	
CONSTRUCT DECOMPOSED GRANITE SURFACING	8/70
CONSTRUCT AGGREGATE BASE SURFACING	3/71
CONSTRUCT COMPACTED NATIVE SURFACING	5/71

GENERAL NOTES

1. CONTRACTOR TO REMOVE EXISTING DETERIORATED IRRIGATION SYSTEM ALONG THE TRAIL CORRIDOR PLUS AN ADDITIONAL 10' ON EITHER SIDE. RECENTLY REPLACED IRRIGATION TUBING INSTALLED WITHIN RESTORATION PLANTING AREAS TO BE PROTECTED IN PLACE UNLESS OTHERWISE DIRECTED.
2. REFER TO LANDSCAPING PLANS AND DETAILS FOR LANDSCAPING AND TRAIL FURNISHINGS LOCATED ALONG THE TRAIL.

SCALE IN FEET
0 15 30 60



No.	REVISION	BY	DATE
4			
3			
2			
1			

100% CONSTRUCTION DOCUMENT SUBMITTAL
ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER MICHAEL L. OSBORN No. 66,022 CIVIL STATE OF CALIFORNIA

15.22

PROVOST & PRITCHARD
www.provostandpritchard.com
455 W FIR AVENUE
CLOVIS, CA 93611
PH 559/449-2700
FAX 559/449-2715

GRADING PERMIT NUMBER: BG26-00092

C325

DEPARTMENT OF PUBLIC WORKS
2600 FRESNO ST.
FRESNO, CALIFORNIA 93721
(559) 621-8650

PW. FILE NO. 13245
PROJ. ID. FWC0086
FUND NO. 22956
ORG. NO. 1899011
REF. & REV.

CITY OF FRESNO | DEPARTMENT OF PUBLIC WORKS

RIVER WEST EATON TRAIL EXT. PH 1
TRAIL IMPROVEMENTS
RIVERVIEW SPUR STA 239+00 – 247+03

REVIEWED
OFFICE ENG. _____ CITY ENG. _____

DR. BY: JMN
CH. BY: MLO
DATE: 08/17/2026
SCALE: AS NOTED

SHEET NO. 55
OF 133 SHEETS

15-E-14636

6/19/2026 12:48 PM JC K:\Fresno_City of (SR)\15612022\5-River West Eaton Trail Extension\300 CAD\340 Sheet Sets\05_Trail Sht\US RIVERVIEW SPUR STA 239+00 – 247+03.dwg – Jordan Noel