City of Los Banos
Public Works Department
411 Madison Ave. Los Banos, CA 93635

City of Los Banos
At the Crossroads of California

ADDENDUM NO. 2
December 6, 2024

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION IMPROVEMENT PROJECT

ITEM NO. 1:

Bidders' attention is brought to Agreement, Page 1, Section 3, Liquidated Damages. This section is amended as follows: 'Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner **Five Thousand Dollars ($ 5,000)** for each day that passes after the time specified in Paragraph 2 herein.'

ITEM NO. 2:

Bidders' attention is brought to Special Provisions, Page 1, Section 5, City Permits. This section is clarified as follows: **The City of Los Banos and County of Merced will issue the required encroachment permits at no cost to the Contractor. No additional insurance will be required by the City of Los Banos as a condition of approval of the encroachment permit. For the County of Merced encroachment permit, the contractor shall complete an on-line application at the following website address:**

https://permits.countyofmerced.com/Permitting-Licensing-Divisions/Public-Works-Department/Encroachment-Permit

It is the Contractor's responsibility to comply with the Merced County Encroachment Permit General Provisions, including insurance requirements, which can be accessed online at the following website address:

https://www.countyofmerced.com/DocumentCenter/View/36639/Encroachment-Permit-General-Provisions?bidId=

ITEM NO. 3:

Bid opening has been moved to Wednesday December, 11, 2024, at 2:00pm.

ITEM NO. 4:

Bidders' attention is brought to the Contract Documents (including the Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Sample Forms, General Provisions, Special Provisions, and Technical Provisions), Addendum #2. Any items that have been deleted are shown in red text with a strikethrough. Any items that have been added are shown in blue underline text.

ITEM NO. 5:

Bidders attend is brought to the Plans, Addendum #2. Any items that have been modified have been identified using red cloud markups.

ITEM NO. 6:

Bidders attention is brought to the Addendum #2, General Provision 12. County is providing the staging area at no cost, and are willing to accept segregated demolition materials (AC Grindings and clean dirt) at no cost – delivered to their Corp yard to at their designated stockpile area.

RESPONSE TO QUESTIONS & CLARIFICATIONS

1. Contractor: Bruce Bloom, TBS Contractors
   For the ADL Removal, will lead awareness training be required?

   Response:
   Bidders attention is brought to Item #14 of the Technical Specifications, which refers Contractor to Section 7-1.02K(6)(j)(ii) of the 2023 Caltrans Standard Specifications. Please refer to Section 7-1.02K(6)(j)(ii) and CA Code of Regs § 1532.1 for training requirements.

2. Contractor: Bruce Bloom, TBS Contractors
   For the ADL Removal, it is mentioned that the material can be buried. Is this acceptable to the City? If so is there a location and depth that the City would deem acceptable?

   Response:
   Yes, this is acceptable to the City. Per Item #14 of the Technical Specifications, Regulated material that may be reused on the job site if placed at least 5 feet above the maximum historical elevation of the water table and covered with at least 1 foot of unregulated material with a pH greater than 5 or pavement. The Contactor is required to submit an Excavation and Transportation plan for review and approval. One of the required items to be included is the location and depth of the Type R-1 material burial location.

3. Contractor: Bruce Bloom, TBS Contractors
   For the ADL Removal, who will need to provide the air and soil testing that goes along with the removal

   Response:
   Per Item #14 of the Technical Specifications, "...any testing and analysis of ADL removal as necessary," See the Addendum #2 Special Provisions.

4. Contractor: Sheree Schoenherr, Graniterock
   A Geotechnical Report was previously requested. Can you please provide as soon as possible? There is important information that is usually found in this report relevant to bidding.

   Response:
   Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

5. Contractor: Sheree Schoenherr, Graniterock
   Does Contractor provide survey?

Response:
Please see section 16 of the General Provisions. The City will provide survey services at no cost to the contractor.

6. Contractor: Sheree Schoenherr, Graniterock
   Is there a Temporary Erosion Control plan available? This helps to fairly and properly bid Erosion Control amongst the bidders.

Response:
Temporary Erosion Control plans are not provided.

7. Contractor: Sheree Schoenherr, Graniterock
   What are the details of the existing culvert to be removed? Thickness of concrete, etc.

Response:
See Addendum #2, Plan Sheet D-4 and D-5 for existing culvert material.

8. Contractor: Sheree Schoenherr, Graniterock
   For Bid Item #15 - Hydroseed – please provide the Hydroseed mixture details/requirements.

Response:
Refer to Addendum #2 Technical Specifications, Item #15.

9. Contractor: Sheree Schoenherr, Graniterock
   For Bid Item # 44 - Relocate Custom Business Sign - please provide details regarding this sign: current location, size, weight, installation requirements etc.

Response:
See SS-2, Addendum #2. See item #44 in the Technical Specification, Addendum #2.

10. Contractor: Sheree Schoenherr, Graniterock
    For Bid Item # 49 - Relocate Propane Tank - please provide details regarding size, weight, installation requirements etc. Is a pad required? If so, what are the details? Are there any other protective requirements?

Response:
Please see Item #49 in the Technical Specifications, Addendum #2 for further clarification on the propane tank relocation.

11. Contractor: Sheree Schoenherr, Graniterock
    For Bid Item #8 – Tree Removal – please provide the size and types of trees to be removed.

Response:
Contractor to review the Technical Specifications, Item #8.

12. Contractor: Sheree Schoenherr, Graniterock
    Where does the 1.2' Deep Lift for the Storm Drain trench on Ortigalita Rd get paid?

Response:
Contractor to see Addendum #2 Technical Specifications, Item #18.

13. Contractor: Sheree Schoenherr, Graniterock
Please provide Fencing details/requirements.
Response:
Contractor to review Technical Specifications, Item #33.

14. Contractor: Sheree Schoenherr, Graniterock
Is the excavated material suitable for use as general fill on site?
Response:
Project is a net cut. Refer to Addendum #2, Technical Specification Item #13, that the Roadway Excavation material can be used in the fill areas if it meets the requirements for particle gradation and the requirements within Caltrans Standard Specifications Section 19.

15. Contractor: Sheree Schoenherr, Graniterock
If import material is required for grading purposes, what are the requirements and where would that get paid?
Response:
Project is a net cut. Refer to Technical Specification Item #13, that the Roadway Excavation material can be used in the fill areas if it meets the requirements for particle gradation and the requirements within Caltrans Standard Specifications Section 19.

16. Contractor: Sheree Schoenherr, Graniterock
Can you provide an estimated cost for the County Encroachment Permit that is required?
Response:
County encroachment permit will be free of charge, provided that the contractor pulls a permit before starting work. See Section 5 of the Special Provisions from Addendum #2.

17. Contractor: Sheree Schoenherr, Graniterock
Please consider postponing this bid a few extra days if possible.
Response:
See Item No. 3, this Addendum #2.

18. Contractor: Sheree Schoenherr, Granite Rock
Is there a geotechnical report available? Please advise.
Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

19. Contractor: Sheree Schoenherr, Granite Rock
Please confirm that the Mandatory Pre-Bid is to be held at the actual project site.
Response:

Yes. Pre-Bid meeting was held at the project site.

20. Contractor: Sheree Schoenherr, Granite Rock
Can you please provide the analytical data for the soil?

Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

21. Contractor: Billy Hauff, Granite Construction
Please provide detail for Minor Concrete (Textured Paving) complete with color and stamp pattern requirements.

Response:
Refer to Addendum #2 Technical Specifications, Item #31.

22. Contractor: Billy Hauff, Granite Construction
Please provide soils report. Please provide depth/cores of existing asphalt/road sections.

Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

23. Contractor: Bruce Bloom, TBS Contractors
Are specific dates that work can be performed in the irrigation facilities? Will irrigation water be shut off during certain times?

Response:
The contractor must maintain access to irrigation waters throughout construction. The irrigation ditch is most active during the peak dry season from April to October. During this time, a maximum flow of 7 cfs is anticipated. During other times of the year, the irrigation flows are not as high, but the ditch still serves as a drainage conveyance during the wet season. It is the Contractor's responsibility to stage the construction of the irrigation and drainage facilities to minimize impacts and ensure that property owners downstream of the project can utilize irrigation water throughout the construction period.

24. Contractor: Sheree Schoenherr, Graniterock
Will dewatering be required for the Underground Utility work? What elevation is the water table estimated to be at? Are there any special requirements for dewatering that need to be accounted for in the bid proposal?

Response:
Based on the geotechnical investigations performed, the water table was observed to be at least 25 feet deep. For this reason, dewatering is not anticipated, but if groundwater is encountered during construction, the Contractor will be responsible for performing dewatering. Dewatering requirements are provided in Section 56 of the General Provisions.

25. Contractor: Lorena Ortiz-Vasquez, TBS Contractors
Could you please provide us with the soils report for this project?

Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

26. Contractor: Rick Spielman, Teichert Construction
Is there a Geotechnical Soils Report available for this job, Please provide?

Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

27. Contractor: Kellie Reid, Granite
Is the Good Faith Efforts Documentation DBE Submittal to be submitted by all bidders or the three lowest bidders?

Response:
The Good Faith Efforts Documentation DBE Submittal shall be submitted by all bidders.

28. Contractor: Lorena Ortiz-Vasquez, TBS Contractors
Will delays be added if utility companies encounter any conflicts as per sheet 19, note 1 and 2?

Response:
Per Notes 1 and 2 on page 19 of the project plans, it is the Contractor's responsibility to investigate and confirm the locations of existing utilities during construction. If an unanticipated conflict is identified during construction, the Contractor shall notify the Engineer as soon as possible to discuss the best course of action to minimize delays and impacts.

29. Contractor: Lorena Ortiz-Vasquez, TBS Contractors
Have utility companies relocated utilities as shown on sheet 32?

Response:
The utility relocations are anticipated to be completed by late January 2025.

30. Contractor: Lorena Ortiz-Vasquez, TBS Contractors
Who is responsible for relocating holding poles, if needed to relocate?

Response:
The utility pole relocations have been coordinated with the utility companies (AT&T, PG&E, and Comcast). When the pole relocations have been completed, all old poles will be removed by the utility companies. The Contractor is not responsible for removing any utility poles.

31. Contractor: Lorena Ortiz-Vasquez, TBS Contractors
As per sheet 36, note 6 and 9, the profile shows bling flange for the future, but the plan looks like it is a tie end at that location. Could you please clarify?

Response:
A blind flange shall be installed at this location per plan sheet 36. Along the west, south, and east legs of the intersection, there are no existing water lines. In the future, the City intends to expand its water system further, beyond the limits of this intersection project. For reference, these future planned waterlines have been shown on the plans. Please refer to the legend to help clarify which waterlines are proposed with this project, existing, and future planned extensions. With this project, the only point along the proposed waterline that will be connecting to an existing waterline is along the north leg of Ortigalita Road, near Gabbro Way (as shown on plan sheet 39).

32. Contractor: Rick Spielman, Teichert Construction
Please provide the schedule for the removal and replacement of existing utilities relocation (AT&T, PG&E, Comcast, etc.), to be performed by others.

Response:
The utility relocations are anticipated to be completed by late January 2025.

33. Contractor: Rick Spielman, Teichert Construction
Please provide a bid item for the removal of the existing monitoring well at approximately STA "O" 18+75 Right.

Response: Monitoring well will be protected in place.

34. Contractor: Rick Spielman, Teichert Construction
There seems that there are additional trees to remove on the West Side of Ortigalita Road, please provide updated plans.

Response:
Please see the Plan and Profile sheets in the plans issued with this Addendum #2 for updated tree removals.

35. Contractor: Rick Spielman, Teichert Construction
In the Stage Construction drawings (SC-1 &2), it requires the use of Temporary Railing (Type K) – 4,120 LF. Please provide bid items for this.

Response:
All traffic control items, including Temporary Railing (Type K), have been accounted for under the lump sum Traffic Control System bid item. Please see Item # 3 - Traffic Control System in the Technical Specifications.

36. Contractor: Rick Spielman, Teichert Construction
Please provide detail drawings (layouts and cross sections, etc.) for the temporary road widenings.

Response:
See sections 15, 16, and 17 of the Special Provisions. It is the Contractor's responsibility to establish and implement a Traffic Control Plan, including the temporary paving limits necessary for stage construction.

37. Contractor: Rick Spielman, Teichert Construction

Per Sheet X-1, it states the existing structural sections on both streets as: 0.25' AC / 0.35' AB. Please provide back-up corings that supports this.

Response:
Geotechnical Memo for the Ortigalita Intersection Project and the Draft Geotechnical Design Materials Report for the Pioneer Road Complete Streets Project has been included with this Addendum #2.

38. Contractor: Rick Spielman, Teichert Construction
Please provide that oil type (Performance Grade "PG") that is required for the Hot Mix Asphalt (Type A).

Response:
Consistent with the 2023 Caltrans Standard Specifications, please use PG 64-10.

39. Contractor: Rick Spielman, Teichert Construction
Please provide a bid item for the Tack oil that is required between lifts of HMA.

Response:
Per the Technical Specifications, Tack Coat is included in the bid item for Hot Mix Asphalt (Type A).

40. Contractor: Rick Spielman, Teichert Construction
Is the Asphalt Oil Indexed per Caltrans Standard Specifications?

Response: Yes, Item #18 of the Technical Specification will be updated to reference Caltrans Standard Specification Section 9-1.07.

41. Contractor: Matthew Machado, George Reed Contractors
What will be the QC requirements for the Asphalt Paving?

Response:
Per the Technical Specifications, please refer to Section 39-2 of the 2023 Caltrans Standard Specifications. Quality Control requirements are outlined section 39-2.01A(3)(c).

42. Contractor: Matthew Machado, George Reed Contractors
Will survey be provided by the City at no cost to the contractor?

Response:
Please see section 16 of the General Provisions. The City will provide survey services at no cost to the contractor.

43. Contractor: Matthew Machado, George Reed Contractors
Will the Contractor be able to use the County yard for an equipment staging area or the area in front of the yard

Response:
Bidders attention is brought to the Addendum #2, General Provision Section 12. County is providing the staging area at no cost, and are willing to accept segregated demolition materials (AC Grindings and clean dirt) at no cost – delivered to their Corp yard to at their designated stockpile area.

44. Contractor: Matthew Machado, George Reed Contractors
Will a City Fire Hydrant water source be available to the Contract at the North end of the project and will it be at no cost to the contractor?

Response:
Please refer to section 20 of the Special Provisions.

45. Contractor: Matthew Machado, George Reed Contractors
Will the City provide Survey and Construction Staking at no Cost to the Contractor?

Response:
Please see section 16 of the General Provisions. The City will provide survey services at no cost to the contractor.

46. Contractor: Matthew Machado, George Reed Contractors
Will the EEO form be required to submit for all listed Subcontractors at the time of bid or can they be submitted after Award?

Response:
The EEO form for all Contractors and Subcontractors shall be submitted at the time of bid.

47. Contractor: Matthew Machado, George Reed Contractors
Can you please verify if the Asphalt for the project will be ¾" or ½", Specs. Plans only state Type A.

Response:
Please refer to Section 39-2.02B(4)(b) of the 2023 Caltrans Standard Specifications for aggregate gradation requirements based on thickness of HMA lift.

48. Contractor: Matthew Machado, George Reed Contractors
Can you please verify that the Liquidated damages are $7,000 per Calander day.

Response:
Please see the information provided in Item #1 above, and in the Agreement, Page 1, Section 3, Liquidated Damages. The Liquidated damages costs have been amended to $5,000 per day.

49. Contractor: Matthew Machado, George Reed Contractors
Can you please verify that all utilities will be moved (AT&T, PG&E, Comcast, Etc.) in conflict with the project by Dec. 31, 2024.

Response:
The utility relocations are anticipated to be completed by late January 2025.

50. Contractor: Matthew Machado, George Reed Contractors
Can you please verify all the items of work in regards to moving the propane tank and the company of the tank.

Response:
Please see Item #49 in the Technical Specifications, Addendum #2 for further clarification on the propane tank relocation.

51. Contractor: Matthew Machado, George Reed Contractors

Will the contractor be required to acquire an encroachment permit with the City or County? If so what will that cost be?

Response:

Please see the information provided in Item #2 above, and in the Special Provisions, Page 1, Section 5, City Permits.

52. Contractor: Matthew Machado, George Reed Contractors

Would it be possible to get a more detailed plans for the temporary paving limits?

Response:

See sections 15, 16, and 17 of the Special Provisions. It is the Contractor's responsibility to establish and implement a Traffic Control Plan, including the temporary paving limits necessary for stage construction.

This Addendum forms a part of the Proposal Documents and will be incorporated into the Contract Documents, as applicable. All other conditions of the Contract Documents remain unchanged. The following changes, additions, or deletions as set forth herein shall apply to the Contract Documents and shall be made a part thereof and shall be subject to all the requirements thereof as through originally shown and/or specified.

Proposals shall be submitted in accordance with this Addendum. All consultants MUST acknowledge receipt of this Addendum by signing and returning this Addendum with your Proposal.

City of Los Banos

By: Charles Bergson P.E.
Public Works Director/City Engineer
120624

Firm Name: _____

By: _____

Title: _____

Date: December _____, 2024

City of Los Banos
At the Crossroads of California

Contract Documents
for
Construction of

Los Banos Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements

Project No. 23ST0013

November 2024

Bid Proposals must be received no later than 2:00 p.m. December ~~9~~11, 2024
City of Los Banos City Clerk
520 J Street
Los Banos, CA 93635

City of Los Banos
Public Works Department

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Advertisement for Bids

CITY OF LOS BANOS
520 J Street
Los Banos, California 93635

Notice is hereby given that separate sealed bids for the award of contract for the **Construction of Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements** will be received by the City of Los Banos at the office of the City Clerk until 2:00 p.m. Pacific Standard Time, December ~~9~~11, 2024 and then at said office publicly opened and read aloud.

The major work consists of reconstructing and signalizing the intersection of Pioneer Road and Ortigalita Road. Right and left turn pockets will be added for all intersection approaches and a Class 1 trail will be installed along the north side of Pioneer Road. ADA improvements including curb ramps and crosswalks will be installed with the project. Storm drain and water facilities will be installed within the intersection consistent with the City of Los Banos' Utility Master Plans. The purpose of the project is to improve operation and pedestrian network of the intersection. The project is needed to reduce congestion and improve air quality.

The time for completion shall be three hundred sixty-five (365) calendar days. ~~two hundred sixty (260) working days.~~

The Contract Documents, in their entirety, can be viewed and/or obtained from the City of Los Banos website at www.losbanos.org or at the following locations:

Central California Builders Exchange (www.cencalbx.com)

Builders Exchange of Stockton (www.besonline.com)

Valley Builders Exchange, Inc. (www.valleybx.com)

Builders Exchange of Santa Clara County (www.bxscco.com)

Dodge Data & Analytics (www.construction.com/plans/)

A payment bond prepared and executed in accordance with California Civil Code Section 9550 and a bond for faithful performance of the contract will be required of the successful bidder who is awarded the contract.

The successful bidder must comply with the latest general prevailing rate of per diem wages as determined by the Director of Industrial Relations, State of California, Department of Industrial Relations and is to be paid to the various craftsmen and laborers required to construct said improvements and is made a part of the specifications and contract for said work to which reference is hereby made for further particulars.

No contractor or subcontractor may be listed on a bid proposal or awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor registration information can be found at:

http://www.dir.ca.gov/Public-Works/PublicWorks.html

Each bid shall be accompanied by cashier's or certified check or by a bidder's bond, made payable to the City of Los Banos and executed by a corporate surety licensed to issue surety bonds in the State of California, for an amount equal to at least ten percent (10%) of the amount of said bid and no bid shall be considered unless such cashier's or certified check or bidder's bond is enclosed therewith.

The successful bidder of this project shall have the following current and active California State Contractor's License at the time of the submission of the bid and throughout the duration of the contract: **Class A**.

Bidders shall refer to the Contract Document's Information for Bidders for complete instructions.

Bidders are solely responsible for the cost of preparing their bids.

The City specifically reserves the right, in its sole discretion, to reject any or all bids, to re-bid, or to waive inconsequential defects, in bidding not involving time, or quality of the work. The City may reject any and all bids and waive any minor irregularities in the bids.

Information for Bidders

Sealed bids will be received by the City of Los Banos (herein called the "Owner"), at the office of the City Clerk until 2:00 p.m. Pacific Standard Time (PST), on December ~~9~~11, 2024, then at said office, publicly opened and read aloud. Owner shall reject all bids received after the specified time and will return such bids to bidder, unopened. Bidders must submit bids in accordance with these instructions. No emailed or faxed bids will be accepted.

The major work consists of reconstructing and signalizing the intersection of Pioneer Road and Ortigalita Road. Right and left turn pockets will be added for all intersection approaches and a Class 1 trail will be installed along the north side of Pioneer Road. ADA improvements including curb ramps and crosswalks will be installed with the project. Storm drain and water facilities will be installed within the intersection consistent with the City of Los Banos' Utility Master Plans. The purpose of the project is to improve operation and pedestrian network of the intersection. The project is needed to reduce congestion and improve air quality. The time for completion shall be three hundred sixty-five (365) calendar days.~~is three hundred sixty-five (365) calendar days.~~

Each bid must be submitted in a sealed envelope and addressed to the City of Los Banos at 520 J Street, Los Banos, CA 93635. Each sealed envelope containing a bid must be plainly marked on the outside as "**Construction of Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements: Attention City Clerk**", and the envelope shall also bear on the outside, the name of the bidder, and their address. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the City of Los Banos at 520 J Street, Los Banos, CA, 93635, and also clearly state, "**Construction of Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements: Attention City Clerk**".

A complete bid includes the Bid Form, List of Subcontractors, Equal Employment Opportunity, Non-Collusion Affidavit, Debarment and Suspension Certification, Bid Schedule, Experience, Bid Bond with surety, and a copy of a current California State Contractor's License. A signed Addendum, if issued, must also be submitted with the sealed bid. The Total Bid Amount must be filled in, in ink or typewritten, and the bid must be fully completed and executed when submitted. Only one set of original bid forms are required to be submitted. Mistakes must be corrected and the correction inserted; correction must be initialed in ink by person or persons signing the bid. No conditional bids will be accepted.

The bid shall be signed by a person or persons legally authorized to bind bidder to the contract. The individual or individuals signing each document shall warrant that they are authorized to bind the bidder.

The Owner may waive any informalities or minor defects or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 30 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the bidder.

Each bid must be accompanied by a bid bond payable to the Owner for ten percent (10%) of the total amount of the bid. As soon as the bid amounts have been compared, the Owner will return the bid security of all except the three lowest responsive and responsible bidders. Once a bid has been awarded, and the payment bond and performance bond of the successful bidder has been received by the Owner, the bid security of the three remaining lowest responsive and responsible bidders will be returned.

All bonds must be acknowledged before a Notary Public by both the bidder and the surety. Attorneys-in-fact who sign bid bonds or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

Award and Execution of Contract

The party to whom the contract is awarded will be required to execute the Agreement, and obtain the performance bond and payment bond along with satisfactory evidence of insurance within ten (10) calendar days from the date when the Notice of Award is delivered to the successful bidder. The Notice of Award shall be accompanied by the necessary agreement and bond forms. In case of failure of the bidder to execute the Agreement, the Owner may, at his option, consider the bidder in default, in which case the bid bond accompanying the bid shall become the property of the Owner.

A performance bond and a payment bond, each in the amount of 100 percent of the Contract Price, with a corporate surety named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570, will be required for the faithful performance of the contract. The payment bond must be issued by an admitted surety insurer holding a certificate of authority to transact surety insurance in California issued by the Insurance Commissioner.

All bonds must be acknowledged before a Notary Public by both the bidder and the surety. Attorneys-in-fact who sign bid bonds or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

The Owner, within 15 days of receipt of the performance bond, payment bond and agreement signed by the party to whom the contract was awarded, shall sign the Agreement and return to such party an executed duplicate of the agreement. Should the Owner not execute the Agreement within such period, the bidder may, by written notice, withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed shall be issued within 10 days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed has not been issued within such period, the time may be extended by mutually agreed upon, and the bidder may terminate the Agreement without further liability on the part of either party.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout.

Subcontractors

The subcontractors listed by bidder in the bid shall list therein the name and address of each subcontractor to whom the bidder proposes to subcontract portions of the work in an amount in excess of one-half of one percent of the total bid or $10,000, whichever is greater, in accordance with the Subletting and Subcontracting Fair Practices Act, commencing with Section 4100 of the Public Contract Code. The bidder's attention is invited to other provisions of the Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.

Registration with California Department of Industrial Relations (DIR)

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. Labor Code Section 1771.1(a) requires contractors and their subcontractors to possess and maintain such registration with DIR in order to be awarded and to perform on public works projects (regardless of funding source).

Pursuant to Section 1771.4, each contractor and subcontractor shall furnish certified payroll records to the Labor Commissioner at least monthly and in a format prescribed by the

Labor Commissioner of the DIR. Until such time that the DIR gives awarding agencies direct access to all certified payrolls submitted by contractors and subcontractors, contractor and his subcontractors are also required to submit copies of payroll records to Owner on a monthly basis. Information on the above can be found at:

http://www.dir.ca.gov/Public-Works/PublicWorks.html

Prevailing Wage

This work is subject to prevailing wage requirements. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the prevailing wage rates determined by the Director of the Department of Industrial Relations of the State of California for similar classification of labor, the contractor and his subcontractor shall not pay less than the higher wage rate. In accordance with the provisions of Section 1773 of the Labor Code of the State of California, the Owner has obtained from the Director of the Department of Industrial Relations, the general prevailing rate for each craft, classification, or type of workman required for execution of the Agreement. A copy of said prevailing rate of per diem wages is on file in the office of the Owner, and available from the California Department of Industrial Relations' Internet web site at **http://www.dir.ca.gov/DLSR/PWD**.

The Federal minimum wage rates for this work as predetermined by the United States Secretary of Labor may be examined at the offices described above where the Contract Documents may be seen. Addenda to modify the Federal minimum wage rates, if necessary, will be posted on the internet at **www.losbanos.org**. Future effective general prevailing wage rates, which have been predetermined are on file with the California Department of Industrial Relations and are referenced but not printed in the general prevailing wage rates.

Investigation/ Bid Questions

Bidders must satisfy themselves as to the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the drawings and specifications including addenda. After bids have been submitted, the bidder shall not assert that there was misunderstanding concerning the quantities of work or the nature of the work to be done. The failure or omission of any bidder to do any of the foregoing shall not relieve any bidder from any obligation with respect to his bid.

The Contract Documents contain the provisions required for the construction of the project. The Owner will not be responsible for, nor be bound by, any oral instructions, interpretations, or explanations issued by the Owner or its representatives. Any request for clarifications or questions of the Contract Documents shall be made in writing or email and deliverable to:

City of Los Banos Public Works Department
Attn: Charles Bergson, P.E.
charles.bergson@losbanos.org
411 Madison Avenue
Los Banos, CA 93635

Requests for clarification or questions shall be delivered to the Owner before 5:00 p.m. PST on December 42, 2024. Any Owner response to a request for clarification, questions and answers will be posted to the City's website at www.losbanos.org no later than 5:00 p.m. PST on December 64, 2024 and if necessary, shall become a part of the bid as an addendum.

Proposed timeline of events associated with the awarding of bid:

Release of Advertisement for Bid		November 13, 2024
Pre-Bid Meeting – On Site - Mandatory	10:00 a.m.	November 22, 2024
Deadline to Submit Questions/Clarifications	5:00 p.m.	December 42, 2024
Addendum/Questions/Clarifications posted	5:00 p.m.	December 64, 2024
Bid Opening	2:00 p.m.	December 119, 2024
City Council Considers Bid		December 18, 2024 (tentative)
Issuance of a Notice to Proceed	On or before:	December 23January 11, 20254 (tentative)
Construction to Begin	On or before:	December 30, 2024January 26, 2025 (tentative)

Qualification of Bidder

The Owner may make such investigation as it deems necessary to determine the ability of the bidder to provide the services requested, and the bidder shall furnish to the Owner all information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid should the evidence submitted by, or investigation of, the bidder fail to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the bid and to complete the requirements contemplated therein.

Governing Law and Venue

This bid, or any contract that may result from the award of this bid, shall be deemed to be made under, and shall be governed by and construed in accordance with, the laws of the State of California. Any action brought to enforce the terms, or provision of this bid or any contract that may result from the award of this bid, shall have venue in the County of Merced, State of California.

Mandatory Bid Protest Procedure

The lack of prompt procedure to resolve disputes regarding the bidding process would impair the Owner's ability to carry out its purpose of contracting this project in a timely manner. Therefore, to the maximum extent authorized by law and notwithstanding any other procedures specified in these Contract Documents, all disputes and/or protests regarding the bidding process shall be subject to the following procedure. In submitting a bid to the Owner for this work, the bidder agrees to comply with and to be bound by this procedure.

Any bid protest must be submitted in writing to the Owner before 5:00 p.m. on the fifth (5^{th}) business day following bid opening.

1. The initial protest document must contain a complete statement of the basis for the protest, and all supporting documentation. A non-refundable fee of One Thousand Dollars ($1,000.00) made payable to the "City of Los Banos" shall accompany the protest documents and will be used by the Owner to recover costs in evaluating the bid protest. A bid protest submitted without the requisite fee shall not be considered by the Owner.
2. The party filing the protest must have actually submitted a bid for the work. A subcontractor of a party submitting a bid for the work may not submit a bid protest. Only bidders who the Owner otherwise determines are responsive and responsible are eligible to protest a bid.
3. A party may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.
4. The protest must refer to the specific portion of the Contract Documents which forms the basis for the protest.
5. The protest must include the name, address and telephone number of the person representing the protesting party.

6. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the outcome of the protest. Such parties shall include all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

7. The Owner will give the protested bidder five (5) business days after the receipt of the protest to submit a written response. The responding bidder shall transmit the response to the protesting bidder concurrent with the delivery to the Owner.

8. The procedure and time limits set forth in this paragraph are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.

If the Owner determines that a protest is frivolous, the protesting bidder may be determined to be non-responsive and/or non-responsible and that bidder may be determined to be ineligible for future contract awards.

Cancellation of Contract

The Owner may terminate any contract derived from this bid as follows:

- WITHOUT CAUSE at any time by giving thirty (30) calendar days written notice to the successful bidder;
- WITH CAUSE (Default) at any time by giving ten (10) calendar days written notice to the successful bidder. Cancellation for cause shall be at the discretion of the Owner and shall be, but is not limited to, failure to supply the items, materials, equipment or services specified within the time allowed or within the terms, conditions or provisions of this bid. The successful bidder may not cancel any contract derived from this bid, without prior written consent of the Owner.

EXHIBIT 12-G: REQUIRED FEDERAL-AID CONTRACT LANGUAGE

(For Local Assistance Construction Projects)

The following language must be incorporated into all Local Assistance Federal-aid construction contracts. The following language, with minor edits, was taken from the Code of Federal Regulations.

MAINTAIN RECORDS AND SUBMIT REPORTS DOCUMENTING YOUR PERFORMANCE UNDER THIS SECTION

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1. DISADVANTAGED BUSINESS ENTERPRISES (DBE)

The contractor, subrecipient or subcontractor shall take necessary and reasonable steps to ensure that DBEs have opportunity to participate in the contract (49 CFR 26). To ensure equal participation of DBEs provided in 49 CFR 26.5, the Agency shows a contract goal for DBEs. The prime contractor shall make work available to DBEs and select work parts consistent with available DBE subcontractors and suppliers.

The prime contractor shall meet the DBE goal shown elsewhere in these special provisions or demonstrate that they made adequate Good Faith Efforts (GFE) to meet this goal. An adequate GFE means that the bidder must show that it took all necessary and reasonable steps to achieve a DBE goal that, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to meet the DBE goal.

If the DBE goal is not met, the contractor needs to complete and submit the DBE GFE documentation as described in Local Assistance Procedures Manual (LAPM) Chapter 9, Section 9.8 within 5 (five) days of bid opening.

It is the prime contractor's responsibility to verify that the DBE firm is certified as a DBE on the date of bid opening by using the California Unified Certification Program (CUCP) database and possesses the most specific available North American Industry Classification System (NAICS) codes and Work Code applicable to the type of work the firm will perform on the contract. Additionally, the prime contractor is responsible to document this verification by printing out the CUCP data for each DBE firm. A list of DBEs certified by the CUCP can be found at: https://dot.ca.gov/programs/civil-rights/dbe-search.

DBE participation will only count toward the California Department of Transportation's federally mandated statewide overall DBE goal if the DBE performs a commercially useful function under 49 CFR 26.55.

Credit for materials or supplies the prime contractor purchases from DBEs counts towards the goal in the following manner:

- 100 percent counts if the materials or supplies are obtained from a DBE manufacturer.
- 60 percent counts if the materials or supplies are obtained from a DBE regular dealer.
- Only fees, commissions, and charges for assistance in the procurement and delivery of materials or supplies count if obtained from a DBE that is neither a manufacturer nor regular dealer. 49 CFR 26.55 defines "manufacturer" and "regular dealer."

The prime contractor receives credit towards the goal if they employ a DBE trucking company that performs a commercially useful function as defined in 49 CFR 26.55(d) as follows:

- The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
- The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures, and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement.
- The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE truck leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

- A lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

A. Nondiscrimination Statement

The contractor, subrecipient or subcontractor will never exclude any person from participation in, deny any person the benefits of, or otherwise discriminate against anyone in connection with the award and performance of any contract covered by 49 CFR 26 on the basis of race, color, sex, or national origin. In administering the Local Agency components of the DBE Program Plan, the contractor, subrecipient or subcontractor will not, directly, or through contractual or other arrangements, use criteria or methods of administration that have the effect of defeating or substantially impairing accomplishment of the objectives of the DBE Program Plan with respect to individuals of a particular race, color, sex, or national origin.

B. Contract Assurance

Under 49 CFR 26.13(b): The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federal-aid contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;

(2) Assessing sanctions;

(3) Liquidated damages; and/or

(4) Disqualifying the contractor from future bidding as non-responsible.

C. Prompt Progress Payment

In accordance with California Business and Professions Code section 7108.5, the prime contractor or subcontractor shall pay to any subcontractor, not later than seven days after receipt of each progress payment, unless otherwise agreed to in writing, the respective amounts allowed the contractor on account of the work performed by the subcontractors, to the extent of each subcontractor's interest therein. In the event that there is a good faith dispute over all or any portion of the amount due on a progress payment from the prime contractor or subcontractor to a subcontractor, the prime contractor or subcontractor may withhold no more than 150 percent of the disputed amount. Any violation of this requirement shall constitute a cause for disciplinary action and shall subject the licensee to a penalty, payable to the subcontractor, of 2 percent of the amount due per month for every month that payment is not made.

In any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to his or her attorney's fees and costs. The sanctions authorized under this requirement shall be separate from, and in addition to, all other remedies, either civil, administrative, or criminal. This clause applies to both DBE and non-DBE subcontractors.

D. Prompt Payment of Withheld Funds to Subcontractors

The Agency may hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Agency, of the contract work, and pay retainage to the prime contractor based on these acceptances. The Agency shall designate one of the methods below in the contract to ensure prompt and full payment of any retainage kept by the prime contractor or subcontractor to a subcontractor. The Agency shall include either Method 1, Method 2, or Method 3 below and delete the other two.

Method 1: No retainage will be held by the Agency from progress payments due to the prime contractor. Prime contractors and subcontractors are prohibited from holding retainage from subcontractors. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies, otherwise available to the

contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Method 2: No retainage will be held by the Agency from progress payments due to the prime contractor. Any retainage kept by the prime contractor or by a subcontractor must be paid in full to the earning subcontractor within seven (7) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies, otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor, deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Method 3: The Agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Agency of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from all subcontractors within seven (7) days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the Agency. Any delay or postponement of payment may take place only for good cause and with the Agency's prior written approval. Any violation of these provisions shall subject the violating prime contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor; deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

Any violation of these provisions of Prompt Progress Payment and Prompt Payment of Withheld Funds to Subcontractors shall subject the violating prime contractor or subcontractor to the penalties, sanctions and other remedies specified therein. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the prime contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

E. Termination and Replacement of DBE Subcontractors

The prime contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains the Agency's written consent. The prime contractor shall not terminate or replace a listed DBE for convenience and perform the work with their own forces or obtain materials from other sources without prior written authorization from the Agency. Unless the Agency's prior written consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE on the Exhibit 15-G Construction Contract DBE Commitment form, included in the Bid.

Termination of DBE Subcontractors

After a contract with a specified DBE goal has been executed, termination of a DBE may be allowed for the following, but not limited to, justifiable reasons with prior written authorization from the Agency:

1. Listed DBE fails or refuses to execute a written contract based on plans and specifications for the project.
2. The Local Agency stipulated that a bond is a condition of executing the subcontract and the listed DBE fails to meet the Local Agency's bond requirements.
3. Work requires a contractor's license and listed DBE does not have a valid license under Contractors License Law, or is not properly registered with the California Department of Industrial Relations as a public works contractor.
4. Listed DBE fails or refuses to perform the work or furnish the listed materials (failing or refusing to

perform is not an allowable reason to remove a DBE if the failure or refusal is a result of bad faith or discrimination).

5. Listed DBE's work is unsatisfactory and not in compliance with the contract.
6. Listed DBE is ineligible to work on the project because of suspension or debarment.
7. Listed DBE becomes bankrupt or insolvent or exhibits credit unworthiness.
8. Listed DBE voluntarily withdraws with written notice from the Contract
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. The Agency determines other documented good cause.

To terminate a DBE or to terminate a portion of a DBE's work, the contractor must use the following procedures:

1. Send a written notice to the DBE of Contractor's intent to use other forces or material sources and include one or more justifiable reasons listed above. Simultaneously send a copy of this written notice to the Agency. The written notice to the DBE must request they provide any response within five (5) business days to both the Contractor and the Agency by either acknowledging their agreement or documenting their reasoning as to why the use of other forces or sources of materials should not occur.
2. If the DBE does not respond within 5 business days, Contractor may move forward with the request as if the DBE had agreed to Contractor's written notice.
3. Submit Contractor's DBE termination request by written letter to the Agency and include:
    - One or more above listed justifiable reasons along with supporting documentation.
    - Contractor's written notice to the DBE regarding the request, including proof of transmission and tracking documentation of Contractor's written notice
    - The DBE's response to Contractor's written notice, if received. If a written response was not provided, provide a statement to that effect.

The Agency shall respond in writing to Contractor's DBE termination request within 5 business days.

Replacement of DBE Subcontractors

After receiving the Agency's written authorization of DBE termination request, the Contractor must obtain the Agency's written agreement for DBE replacement. The Contractor must find or demonstrate GFEs to find qualified DBE replacement firms to perform the work to the extent needed to meet the DBE commitment.

The following procedures shall be followed to request authorization to replace a DBE firm:

1. Submit a request to replace a DBE with other forces or material sources in writing to the Agency which must include:
    a. Description of remaining uncommitted work items made available for replacement DBE solicitation and participation.
    b. The proposed DBE replacement firm's business information, the work they have agreed to perform, and the following:
        - Quote for bid item work and description of work to be performed
        - Proposed subcontract agreement and written confirmation of agreement to perform on the Contract
        - Revised Subcontracting Request form
        - Revised Exhibit 15-G: Construction Contract DBE Commitment
2. If Contractor has not identified a DBE replacement firm, submit documentation of the Contractor's GFEs

to use DBE replacement firms within 7 days of Agency's authorization to terminate the DBE. The Contractor may request the Agency's approval to extend this submittal period to a total of 14 days. Submit documentation of actions taken to find a DBE replacement firm, such as:

- Search results of certified DBEs available to perform the original DBE work identified and/or other work the Contractor had intended to self-perform, to the extent needed to meet the DBE commitment
- Solicitations of DBEs for performance of work identified
- Correspondence with interested DBEs that may have included contract details and requirements
- Negotiation efforts with DBEs that reflect why an agreement was not reached
- If a DBE's quote was rejected, provide Contractor's reasoning for the rejection, such as why the DBE was unqualified for the work, or why the price quote was unreasonable or excessive
- Copies of each DBE's and non-DBE's price quotes for work identified, as the Agency may contact the firms to verify solicitation efforts and determine if the DBE quotes are substantially higher
- Additional documentation that supports the GFE

The Agency shall respond in writing to the Contractor's DBE replacement request within five (5) business days. The Contractor must submit a revised Subcontracting Request form if the replacement plan is authorized by the Agency.

F. Commitment and Utilization

The Agency's DBE program must include a monitoring and enforcement mechanism to ensure that DBE commitments reconcile to DBE utilization.

The bidder shall complete and sign Exhibit 15-G: Construction Contract DBE Commitment included in the contract documents regardless of whether DBE participation is reported. The bidder shall provide written confirmation from each DBE that the DBE is participating in the Contract. LAPM Exhibit 9-I: DBE Confirmation or equivalent form and DBE's quote must be submitted. The written confirmation must be submitted no later than 4pm on the 5th day after bid opening. If a DBE is participating as a joint venture partner, the bidder shall submit a copy of the joint venture agreement.

If the DBE Commitment form, Exhibit 15-G, is not submitted with the bid, it must be completed and submitted by all bidders to the Agency within five (5) days of bid opening. If the bidder does not submit the DBE Commitment form within the specified time, the Agency will find the bidder's bid nonresponsive.

The prime contractor shall use each DBE subcontractor as listed on Exhibit 15-G: Construction Contract DBE Commitment unless they receive written authorization for a termination or replacement from the Agency.

The Agency shall request the prime contractor to:

1. Notify the Resident Engineer or Inspector of any changes to its anticipated DBE participation
2. Provide this notification before starting the affected work
3. Maintain records including:
    - Name and business address of each 1st-tier subcontractor
    - Name and business address of each DBE subcontractor, DBE vendor, and DBE trucking company, regardless of tier
    - Date of payment and total amount paid to each DBE (see Exhibit 9-F: Monthly Disadvantaged Business Enterprise Payment)

If the prime contractor is a DBE contractor, they shall include the date of work performed by their own forces and the corresponding value of the work.

Before the 15th of each month, the prime contractor shall submit a Monthly DBE Trucking Verification (LAPM Exhibit 16-Z1) form.

If a DBE is decertified before completing its work, the DBE must notify the prime contractor in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify the prime contractor in writing of the certification date. The prime contractor shall submit the notifications. Upon work completion, the prime contractor shall complete a Disadvantaged Business Enterprises (DBE) Certification Status Change, Exhibit 17-O, form and submit the form within 30 days of contract acceptance.

Upon work completion, the prime contractor shall complete Exhibit 17-F: Final Report – Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors and submit it within 90 days of contract acceptance. The Agency will withhold $10,000 until the form is submitted. The Agency releases the withhold upon submission of the completed form.

G. Running Tally of Attainments

For projects awarded on or after March 1, 2020, but before September 1, 2023:

After submitting an invoice for reimbursement that includes a payment to a DBE, but no later than the 10th of the following month, the prime contractor/consultant must complete and email the Exhibit 9-F: Disadvantaged Business Enterprise Running Tally of Payments to business.support.unit@dot.ca.gov with a copy to local administering agencies.

For projects that are awarded on or after September 1, 2023:

Exhibit 9-F is no longer required. Instead, by the 15th of the month following the month of any payment(s), the prime contractor must now submit Exhibit 9-P to the Local Agency administering the contract. If the Contractor does not make any payments to subcontractors, supplier(s) and/or manufacturers they must report "no payments were made to subs this month" and write this visibly and legibly on Exhibit 9-P.

H. Commercially Useful Function

DBEs must perform a commercially useful function (CUF) under 49 CFR 26.55 when performing work or supplying materials listed on the DBE Commitment form. The DBE value of work will only count toward the DBE commitment if the DBE performs a CUF. A DBE performs a CUF when it is responsible for execution of the work on the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. If a DBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that the DBE is not performing a CUF. Additionally, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable), and paying for the material itself.

The Contractor must perform CUF evaluation for each DBE company working on a federal-aid contract, with or without a DBE goal. Perform a CUF evaluation at the beginning of the DBE's work, and continue to monitor the performance of CUF for the duration of the project.

The Contractor must provide written notification to the AGENCY at least 15 days in advance of each DBE's initial performance of work or supplying materials for the Contract. The notification must include the DBE's name, work the DBE will perform on the contract, and the location, date, and time of where their work will take place.

Within 10 (ten) days of a DBE initially performing work or supplying materials on the contract, the Contractor shall submit to the LPA the initial evaluation and validation of DBE performance of a CUF using the LAPM 9-J: Disadvantaged Business Enterprise Commercially Useful Function Evaluation. Include the following information with the submittal:

- Subcontract agreement with the DBE
- Purchase orders
- Bills of lading
- Invoices
- Proof of payment

The Contractor must monitor all DBE's performance of CUF by conducting quarterly evaluations and validations throughout their duration of work on the contract using the LAPM 9-J: DBE Commercially Useful Function Evaluation. The Contractor must submit to the AGENCY these quarterly evaluations and validations by the 5th of the month for the previous three (3) months of work.

The Contractor must notify the AGENCY immediately if the Contractor believes the DBE may not be performing a CUF.

The AGENCY will verify DBEs performance of CUF by reviewing the initial and quarterly submissions of LAPM 9-J: DBE Commercially Useful Function Evaluation, submitted supporting information, field observations, and through any additional AGENCY evaluations. The AGENCY must evaluate DBEs and their CUF performance throughout the duration of a Contract. The AGENCY will provide written notice to Contractor and DBE at least two (2) business days prior to any evaluation. The Contractor and DBE must participate in the evaluation. Upon completing the evaluation, the AGENCY must share the evaluation results with the Contractor and DBE. An evaluation could include items that must be remedied upon receipt. If the AGENCY determines the DBE is not performing a CUF the Contractor must suspend performance of the noncompliant work.

The Contractor and DBEs must submit any additional CUF related records and documents within five (5) business days of AGENCY's request such as:

- Proof of ownership or lease and rental agreements for equipment
- Tax records
- Employee rosters
- Certified payroll records
- Inventory rosters

Failure to submit required DBE Commercially Useful Function Evaluation forms or requested records and documents can result in withholding of payment for the value of work completed by the DBE.

If the Contractor and/or the AGENCY determine that a listed DBE is not performing a CUF in performance of their DBE committed work, immediately suspend performance of the noncompliant portion of the work. The AGENCY may deny payment for the noncompliant portion of the work. The AGENCY will ask the Contractor to submit a corrective action plan (CAP) to the AGENCY within five (5) days of the noncompliant CUF determination. The CAP must identify how the Contractor will correct the noncompliance findings for the remaining portion of the DBE's work. The AGENCY has five (5) days to review the CAP in conjunction with the prime contractor's review. The Contractor must implement the CAP within five (5) days of the AGENCY's approval. The AGENCY will then authorize the prior noncompliant portion of work for the DBE's committed work.

If corrective actions cannot be accomplished to ensure the DBE performs a CUF on the Contract, then the Contractor may have good cause to request termination of the DBE.

I. Use of Joint Checks

A joint check may be used between the Contractor or lower-tier subcontractor and a DBE subcontractor purchasing materials from a material supplier if the contractor obtains prior approval from the LPA for the proposed use of joint check upon submittal of the LAPM 9-K: DLA Disadvantaged Business Enterprises (DBE) Joint Check Agreement Request form.

To use a joint check, the following conditions must be met:

- All parties, including the Contractor, must agree to the use of a joint check
- Entity issuing the joint check acts solely to guarantee payment
- DBE must release the check to the material supplier
- LPA must authorize the request before implementation
- Any party to the agreement must provide requested documentation within 10 days of the LPA's request for the documentation
- Agreement to use a joint check must be short-term, not to exceed 1 year, allowing sufficient time needed to establish or increase a credit line with the material supplier

A request for a joint check agreement may be initiated by any party. If a joint check is used, the DBE remains responsible for all elements of 49 CFR 26.55(c)(1).

Failure to comply with the above requirements disqualifies DBE participation and results in no credit and no payment to the Contractor for DBE participation.

A joint check may not be used between the Contractor or subcontractor and a DBE regular dealer, bulk material supplier, manufacturer, wholesaler, broker, trucker, packager, manufacturer's representative, or other persons who arrange or expedite transactions.

2. BID OPENING
The Agency publicly opens and reads bids at the time and place shown on the Notice to Contractors.

3. BID RIGGING
The U.S. Department of Transportation (DOT) provides a toll-free hotline to report bid rigging activities. Use the hotline to report bid rigging, bidder collusion, and other fraudulent activities. The hotline number is (800) 424-9071. The service is available 24 hours 7 days a week and is confidential and anonymous. The hotline is part of the DOT's effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General.

4. CONTRACT AWARD
If the Agency awards the contract, the award is made to the lowest responsible and responsive bidder.

5. CONTRACTOR LICENSE
The Contractor must be properly licensed as a contractor from contract award through Contract acceptance (23 CFR 635.110).

6. CHANGED CONDITIONS

A. Differing Site Conditions

1. During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.
2. Upon written notification, the engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of the determination whether or not an adjustment of the contract is warranted.
3. No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.
4. No contract adjustment will be allowed under this clause for any effects caused on unchanged work. [*This provision may be omitted by the Local Agency, at their option.*]

B. Suspensions of Work Ordered by the Engineer

1. If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
2. Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The contractor will be notified of the engineer's determination whether or not an adjustment of the contract is warranted.

3. No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.
4. No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract.

C. Significant Changes in the Character of Work

1. The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.
2. If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.
3. If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.
4. The term "significant change" shall be construed to apply only to the following circumstances:
   - When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
   - When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

7. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

The Contractor shall begin work within 15 calendar days after the issuance of the Notice to Proceed.

This work shall be diligently prosecuted to completion before the expiration of_____WORKING DAYS beginning on the fifteenth calendar day after the date shown on the Notice to Proceed.

The Contractor shall pay to the City/County_____the sum of $_____per day, for each and every calendar days' delay in finishing the work in excess of the number of working days prescribed above.

8. BUY AMERICA

Buy America Requirements apply to steel and iron, manufactured products, and construction materials permanently incorporated into the project.

Steel and Iron Materials

All steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials [60 Fed Reg 15478 (03/24/1995)];
2. If the total combined cost of the materials produced outside the United States does not exceed the greater of 0.1 percent of the total contract amount or $2,500, materials produced outside the United States may be used if authorized.

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured. All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

Manufactured Products

Iron and steel used in precast concrete manufactured products must meet the requirements of the above section (Steel and Iron Materials) regardless of the amount used. Iron and steel used in other manufactured products must meet the requirements of the above section (Steel and Iron Materials) if the weight of steel and iron components constitute 90 percent or more of the total weight of the manufactured product.

Construction Materials

Buy America requirements apply to the following construction materials that are or consist primarily of:

1. Non-ferrous metals
2. Plastic and polymer-based products such as:
   2.1 Polyvinylchloride
   2.2 Composite Building Materials
3. Glass
4. Fiber optic cable (including drop cable)
5. Optical fiber
6. Lumber
7. Engineered wood
8. Drywall

All manufacturing processes for these materials as defined in 2 CFR 184.6 must occur in the United States.

Where one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified.

Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to Buy America compliance.

All manufacturing processes for these materials must occur in the United States.

Buy America requirements do not apply to the following:

1. Tools and construction equipment used in performing the work
2. Temporary work that is not incorporated into the finished project

Waivers

If Buy America waivers are granted, use the following language to include in the contract:

The following steel and iron products, manufactured products, or construction materials have received an approved Buy America waiver for this contract, and therefore, are not subject to Buy America requirements:

1. _____
2. _____

9. QUALITY ASSURANCE

The Local Agency uses a Quality Assurance Program (QAP) to ensure a material is produced to comply with the Contract. The Local Agency may examine the records and reports of tests the prime contractor performs if they are available at the job site. Schedule work to allow time for QAP.

10. PROMPT PAYMENT

A. FROM THE AGENCY TO THE CONTRACTORS

The Local Agency shall make all project progress payment within 30 days after receipt of an undisputed and properly submitted payment request from the Contractor on a construction contract. If the Local Agency fails to pay promptly, the Local Agency shall pay interest to the Contractor, which accrues at the rate of 10 percent per annum on the principal amount of a money judgment remaining unsatisfied and pro-rated as necessary. Upon receipt of the payment request, the Local Agency shall act in accordance with both of the following:

1. The Local Agency shall review each payment request as soon as feasible after receipt to verify it is a proper payment request.
2. The Local Agency must return any payment request deemed improper by the Local Agency to the Contractor as soon as feasible, but not later than seven (7) days, after receipt. A request returned pursuant to this paragraph shall include documentation setting forth in writing the reasons why it is an improper payment request.

B. SUBMITTAL OF EXHIBIT 9-P

For projects awarded on or after September 1, 2023:

The Contractor must submit Exhibit 9-P to the Local Agency administering the contract by the 15th of the month following the month of any payment(s). If the Contractor does not make any payments to subcontractors, supplier(s) and/or manufacturers they must report "no payments were made to subs this month" and write this visibly and legibly on Exhibit 9-P.

The Local Agency must verify all Exhibit 9-P information, monitor compliance with prompt payment requirements for DBE and non-DBE firms, and address any shortfall to the DBE commitment and prompt payment issues until the end of the project. The Local Agency must email a copy of Exhibit 9-P to DBE.Forms@dot.ca.gov before the end of the month after receiving the Exhibit 9-P from the Contractor.

11. FORM FHWA-1273 REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONTRACTS

[Form FHWA-1273 must be physically inserted into the contract without modification, excluding ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS.]

[The current version of Form FHWA-1273 is accessible at FHWA's website: https://www.fhwa.dot.gov/programadmin/contracts/1273/1273.pdf]

12. FEMALE AND MINORITY GOALS

To comply with Section II, "Nondiscrimination," of "Required Contract Provisions Federal-Aid Construction Contracts," the following are for female and minority utilization goals for Federal-aid construction contracts and subcontracts that exceed $10,000:

The nationwide goal for female utilization is 6.9 percent.

The goals for minority utilization (45 Fed Reg 65984 (10/3/1980)) are as follows:

MINORITY UTILIZATION GOALS

Economic Area		Goal (Percent)
174	Redding CA: Non-SMSA (Standard Metropolitan Statistical Area) Counties: CA Lassen; CA Modoc; CA Plumas; CA Shasta; CA Siskiyou; CA Tehama	6.8
175	Eureka, CA Non-SMSA Counties: CA Del Norte; CA Humboldt; CA Trinity	6.6
176	San Francisco-Oakland-San Jose, CA: SMSA Counties: 7120 Salinas-Seaside-Monterey, CA CA Monterey 7360 San Francisco-Oakland CA Alameda; CA Contra Costa; CA Marin; CA San Francisco; CA San Mateo 7400 San Jose, CA CA Santa Clara, CA 7485 Santa Cruz, CA CA Santa Cruz 7500 Santa Rosa CA Sonoma 8720 Vallejo-Fairfield-Napa, CA CA Napa; CA Solano Non-SMSA Counties: CA Lake; CA Mendocino; CA San Benito	 28.9 25.6 19.6 14.9 9.1 17.1 23.2
177	Sacramento, CA: SMSA Counties: 6920 Sacramento, CA CA Placer; CA Sacramento; CA Yolo Non-SMSA Counties CA Butte; CA Colusa; CA El Dorado; CA Glenn; CA Nevada; CA Sierra; CA Sutter; CA Yuba	 16.1 14.3
178	Stockton-Modesto, CA: SMSA Counties: 5170 Modesto, CA CA Stanislaus 8120 Stockton, CA CA San Joaquin Non-SMSA Counties CA Alpine; CA Amador; CA Calaveras; CA Mariposa; CA Merced; CA Tuolumne	 12.3 24.3 19.8
179	Fresno-Bakersfield, CA SMSA Counties: 0680 Bakersfield, CA CA Kern 2840 Fresno, CA CA Fresno Non-SMSA Counties: CA Kings; CA Madera; CA Tulare	 19.1 26.1 23.6

180	Los Angeles, CA: SMSA Counties: 0360 Anaheim-Santa Ana-Garden Grove, CA CA Orange 4480 Los Angeles-Long Beach, CA CA Los Angeles 6000 Oxnard-Simi Valley-Ventura, CA CA Ventura 6780 Riverside-San Bernardino-Ontario, CA CA Riverside; CA San Bernardino 7480 Santa Barbara-Santa Maria-Lompoc, CA CA Santa Barbara Non-SMSA Counties CA Inyo; CA Mono; CA San Luis Obispo	11.9 28.3 21.5 19.0 19.7 24.6
181	San Diego, CA: SMSA Counties 7320 San Diego, CA CA San Diego Non-SMSA Counties CA Imperial	16.9 18.2

For the last full week of July during which work is performed under the contract, the prime contractor and each non material-supplier subcontractor with a subcontract of $10,000 or more must complete Form FHWA PR-1391 (Appendix C to 23 CFR 230). Submit the forms by August 15.

13. TITLE VI ASSURANCES

[The U.S. Department of Transportation Order No.1050.2A requires all federal-aid Department of Transportation contracts between an agency and a contractor to contain Appendix A and E.
Note: Appendix B only requires inclusion if the contract impacts deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein. Appendices C and D only require inclusion if the contract impacts deeds, licenses, leases, permits, or similar instruments entered into by the recipient.]

APPENDIX A

During the performance of this Agreement, the contractor, for itself, its assignees and successors in interest (hereinafter collectively referred to as CONTRACTOR) agrees as follows:

a. Compliance with Regulations: CONTRACTOR shall comply with the regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the REGULATIONS), which are herein incorporated by reference and made a part of this agreement.

b. Nondiscrimination: CONTRACTOR, with regard to the work performed by it during the AGREEMENT, shall not discriminate on the grounds of race, color, sex, national origin, religion, age, or disability in the selection and retention of sub-applicants, including procurements of materials and leases of equipment. CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the agreement covers a program set forth in Appendix B of the Regulations.

c. Solicitations for Sub-agreements, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by CONTRACTOR for work to be performed under a Sub- agreement, including procurements of materials or leases of equipment, each potential sub-applicant or supplier shall be notified by CONTRACTOR of the CONTRACTOR'S obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

d. Information and Reports: CONTRACTOR shall provide all information and reports required by the

Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the recipient or FHWA to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of CONTRACTOR is in the exclusive possession of another who fails or refuses to furnish this information, CONTRACTOR shall so certify to the recipient or FHWA as appropriate, and shall set forth what efforts CONTRACTOR has made to obtain the information.

e. Sanctions for Noncompliance: In the event of CONTRACTOR's noncompliance with the nondiscrimination provisions of this agreement, the recipient shall impose such agreement sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
    i. withholding of payments to CONTRACTOR under the Agreement within a reasonable period of time, not to exceed 90 days; and/or
    ii. cancellation, termination or suspension of the Agreement, in whole or in part.
f. Incorporation of Provisions: CONTRACTOR shall include the provisions of paragraphs (1) through (6) in every sub-agreement, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

CONTRACTOR shall take such action with respect to any sub-agreement or procurement as the recipient or FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance, provided, however, that, in the event CONTRACTOR becomes involved in, or is threatened with, litigation with a sub-applicant or supplier as a result of such direction, CONTRACTOR may request the recipient enter into such litigation to protect the interests of the State, and, in addition, CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

APPENDIX B

CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the recipient will accept title to the lands and maintain the project constructed thereon in accordance with Title 23 U.S.C., the regulations for the administration of the preceding statute, and the policies and procedures prescribed by the FHWA of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the recipient all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the recipient and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the recipient, its successors and assigns. The recipient, in consideration of the conveyance of said lands and interest in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the recipient will use the lands and interests in lands and interest in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title

VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said lands, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

APPENDIX C

CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the recipient pursuant to the provisions of Assurance 7(a):

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, the recipient will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*

C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the recipient will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the recipient and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX D

CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by the recipient pursuant to the provisions of Assurance 7(b):

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest ,and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishings of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits or, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.

B. With respect to (licenses, leases, permits, etc.) in the event of breach of any of the above of the above Non-discrimination covenants, the recipient will have the right to terminate the (license, permits, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*

C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, the recipient will there upon revert to and vest in and become the absolute property of the recipient and its assigns.

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), prohibits discrimination on the basis of sex;
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such

programs or activities are Federally funded or not);

- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination of the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Federal Trainee Program Special Provisions
(to be used when applicable)

14. FEDERAL TRAINEE PROGRAM

For the Federal training program, the number of trainees or apprentices is___.

This section applies if a number of trainees or apprentices is shown on the Notice of Bidders.

As part of the prime contractor's equal opportunity affirmative action program, provide on-the-job training to develop full journeymen in the types of trades or job classifications involved.

The prime contractor has primary responsibility for meeting this training requirement.

If the prime contractor subcontracts a contract part, they shall determine how many trainees or apprentices are to be trained by the subcontractor. Include these training requirements in each subcontract.

Where feasible, 25 percent of apprentices or trainees in each occupation must be in their 1st year of apprenticeship or training.

Distribute the number of apprentices or trainees among the work classifications on the basis of the prime contractor's needs and the availability of journeymen in the various classifications within a reasonable recruitment area.

Before starting work, the prime contractor shall submit to the City/County of_____ :

1. Number of apprentices or trainees to be trained for each classification
2. Training program to be used
3. Training starting date for each classification

The prime contractor shall obtain the City/County of _____approval for this submitted information before the prime contractor starts work. The City/County of_____credits the prime contractor for each apprentice or trainee the prime contractor employs on the job who is currently enrolled or becomes enrolled in an approved program.

The primary objective of this section is to train and upgrade minorities and women toward journeyman status. The prime contractor shall make every effort to enroll minority and women apprentices or trainees, such as conducting systematic and direct recruitment through public and private sources likely to yield minority and women apprentices or trainees, to the extent they are available within a reasonable recruitment area and show that they have made the efforts. In making these efforts, the prime contractor shall not discriminate against any applicant for training.

The prime contractor shall not employ as an apprentice or trainee an employee:

1. In any classification in which the employee has successfully completed a training course leading to journeyman status or in which the employee has been employed as a journeyman
2. Who is not registered in a program approved by the US Department of Labor, Bureau of Apprenticeship and Training

The prime contractor shall ask the employee if the employee has successfully completed a training course leading to journeyman status or has been employed as a journeyman. The prime contractor's records must show the employee's answers to the questions.

In the training program, the prime contractor shall establish the minimum length and training type for each classification. The City/County of _____ and FHWA approves a program if one of the following is met:

1. It is calculated to:
   - Meet the equal employment opportunity responsibilities
   - Qualify the average apprentice or trainee for journeyman status in the classification involved by the end of the training period
2. It is registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and it is administered in a way consistent with the equal employment responsibilities of Federal-aid highway construction contracts

The prime contractor shall obtain the State's approval for their training program before they start work involving the classification covered by the program.

The prime contractor shall provide training in the construction crafts, not in clerk-typist or secretarial-type positions. Training is allowed in lower-level management positions such as office engineers, estimators, and timekeepers if the training is oriented toward construction applications. Training is allowed in the laborer classification if significant and meaningful training is provided and approved by the division office. Off-site training is allowed if the training is an integral part of an approved training program and does not make up a significant part of the overall training.

The City/County of_____reimburses the prime contractor 80 cents per hour of training given an employee on this contract under an approved training program:

1. For on-site training
2. For off-site training if the apprentice or trainee is currently employed on a Federal-aid project and prime contractor does at least one of the following:
   a. Contribute to the cost of the training
   b. Provide the instruction to the apprentice or trainee
   c. Pay the apprentice's or trainee's wages during the off-site training period
3. If the prime contractor complies with this section.

Each apprentice or trainee must:

1. Begin training on the project as soon as feasible after the start of work involving the apprentice's or trainee's skill
2. Remain on the project as long as training opportunities exist in the apprentice's or trainee's work classification or until the apprentice or trainee has completed the training program

Furnish the apprentice or trainee a:

1. Copy of the training plan approved by the U.S, Department of Labor or a training plan for trainees approved by both Caltrans and FHWA
2. Certification showing the type and length of training satisfactorily completed

Maintain records and submit reports documenting contractor's performance under this section.

15. PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE EQUIPMENT AND SERVICES

In response to significant national security concerns, the agency shall check the prohibited vendor list before making any telecommunications and video surveillance purchase because recipients and subrecipients of federal funds are prohibited from obligating or expending loan or grant funds to:

- Procure or obtain;
- Extend or renew a contract to procure or obtain; or
- Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

The prohibited vendors (and their subsidiaries or affiliates) are:

- Huawei Technologies Company;
- ZTE Corporation;
- Hytera Communications Corporation;
- Hangzhou Hikvision Digital Technology Company;
- Dahua Technology Company; and
- Subsidiaries or affiliates of the above-mentioned companies.

In implementing the prohibition, the agency administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

The contractors should furnish telecommunications and video surveillance equipment with a certificate of compliance. The certificate must state telecommunications and video surveillance equipment was not procured or obtained from manufacturers identified in the above list.

Bid Form

TO: City of Los Banos
520 J Street
Los Banos, CA 93635

In compliance with the Advertisement for Bids the undersigned, as bidder, hereby offers to provide to the Owner, in accordance with the terms and conditions in the provisions set forth in the Contract Documents the stated total bid amount quoted on this Bid Form for the work of

Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements

Total Bid Amount: $_____

_____
(Total Bid Amount in Written Form)

The undersigned certifies under penalty of perjury under the laws of the State of California and the United States of America, that the above quotation constitutes a bona-fide offer for the work, that undersigned is a duly authorized representative of the company listed, that the quotation is in no way sham or collusive, and that the executed Agreement between the bidder and Owner constitutes acceptance of bidder's total bid for the work stated in the Contract Documents. The undersigned has read the General Provisions, Special Provisions, and Technical Specifications in these Contract Documents. The undersigned further certifies, under penalty of perjury that the Non-Collusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

The undersigned acknowledges receipt of the following addenda: _____

_____

Signature: _____ Date: _____

Print Name: _____ Title: _____

Name of Business: _____

Doing business as: (*Circle One*): An Individual A Partnership A Corporation

Business Address: _____

Telephone No.: _____ Fax No.: _____

E-Mail Address: _____

License Number: _____ Class & Expiration Date: _____

List of Subcontractors

As of March 1,2015, Contractors (and sub-contractors) wishing to bid on public works contracts shall be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at: https://www.dir.ca.gov/Public-Works/Contractor-Registration.html

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid of $10,000 (whichever is greater). **Photocopy this form for additional firms.**

Project: **Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements**

The following work will be performed (or provided) by the following subcontractors, and coordinated by bidder:

Bid Item No.	Description of Work to be Performed	Percent of Total Contract	Subcontractor's License No.	DIR Registration No.	Subcontractor's Name and Address

Equal Employment Opportunity Certification

The bidder_____, proposed subcontractor _____, hereby certifies that he has ___ , has not ___ , participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filling requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

Non-Collusion Affidavit

TITLE 23 UNITED STATES CODE SECTION 112 AND PUBLIC CONTRACT CODE 7106

To the City of Los Banos Department of Public Works.
In conformance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Non-collusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Non-collusion Affidavit.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Debarment and Suspension Certification

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, and manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions to an additional sheet of paper and include with the bid.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate on an additional sheet of paper to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.
The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

NPDES/MS4 Compliance Certification

All construction projects within the City limits must comply with the National Pollutant Discharge Elimination System (NPDES) storm water regulation adopted by the EPA and the Phase II Small Municipal Separate Storm Sewer System (MS4) General Permit requirements, regardless of size.

The City is required under these permits to provide information to Contractors performing work within City limits about training opportunities to assist in managing potential pollutants from construction –related activities, selection, installation, implementation, and maintenance of Best Management Practices (BMPs), as well as overall program compliance. The City has provided such information and helpful links on their website at http://www.losbanos.org/city-government/departments/public-works/, under the Storm Water Management Plan tab.

The Bidder acknowledges that they are aware of the necessity to be in compliance with the NPDES and MS4 permits while working within City limits, and that information regarding such is available on the City's website.

Note: The above certifications are part of the bid. Signing this bid on the signature portion thereof shall also constitute signature of these certifications.

NONLOBBYING CERTIFICATION FOR FEDERAL-AID CONTRACTS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in conformance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

DISCLOSURE OF LOBBYING ACTIVITIES

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

1. Type of Federal Action:
- a. contract
- b. grant
- c. cooperative agreement
- d. loan
- e. loan guarantee
- f. loan insurance

2. Status of Federal Action:
- a. bid/offer/application
- b. initial award
- c. post-award

3. Report Type:
- a. initial
- b. material change

For Material Change Only:
year ____ quarter ____
date of last report ____

4. Name and Address of Reporting Entity

Prime Subawardee
Tier ____ , if known

Congressional District, if known

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, if known

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, if applicable

8. Federal Action Number, if known:

9. Award Amount, if known:

10. a. Name and Address of Lobby Entity
(If individual, last name, first name, MI)

b. Individuals Performing Services (including address if different from No. 10a)
(last name, first name, MI)

(attach Continuation Sheet(s) if necessary)

11. Amount of Payment (check all that apply)
$____ actual planned

12. Form of Payment (check all that apply):
- a. cash
- b. in-kind; specify: nature ____
  value ____

13. Type of Payment (check all that apply)
- a. retainer
- b. one-time fee
- c. commission
- d. contingent fee
- e deferred
- f. other, specify ____

14. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 11:

(attach Continuation Sheet(s) if necessary)

15. Continuation Sheet(s) attached: **Yes** **No**

16. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: ____
Print Name: ____
Title: ____
Telephone No.: ____ Date: ____

Authorized for Local Reproduction
Standard Form - LLL

Federal Use Only:

Experience

Bidder shall identify three (3) most recently completed projects similar to work described in these Contract Documents.

	1	2	3
Project Title			
Public Agency			
Address			
Telephone No.			
Engineer in Charge			
Project Value ($)			
Date Accepted			
Claims Filed?*			

* If yes, please explain below:

Bid Schedule For
Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements

Bidder agrees to perform all the work described in the Contract Documents for the following unit and lump sum prices and understands that the quantity of work shown is approximate only. The schedule shall be completed by the bidder with the unit and lump sum prices entered in numerals. The extensions shall be made by the bidder. In case of discrepancy between the unit prices and the extension thereof, the unit price shall be considered as correct when evaluating bids.

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0	MOBILIZATION	1	LS	$	$
1	LEAD COMPLIANCE PLAN	1	LS	$	$
2	CONSTRUCTION AREA SIGNS	1	LS	$	$
3	TRAFFIC CONTROL SYSTEM	1	LS	$	$
4	PORTABLE CHANGEABLE MESSAGE SIGN (EA)	4	EA	$	$
5	JOB SITE MANAGEMENT	1	LS	$	$
6	STORM WATER POLLUTION PREVENTION PLAN	1	LS	$	$
7	CLEARING AND GRUBBING (LS)	1	LS	$	$
8	TREE REMOVAL (LS)	1	LS	$	$
9	REMOVE CONCRETE (SQYD)	640	SQYD	$	$
10	REMOVE PIPE (LF)	39~~8~~0	LF	$	$
11	REMOVE MANHOLE	1	EA	$	$
12	REMOVE INLET	1	EA	$	$
13	ROADWAY EXCAVATION	9040	CY	$	$
14	ROADWAY EXCAVATION (TYPE R-1) (AERIALLY DEPOSITED LEAD)	350	CY	$	$
15	HYDROSEED	97200	SQFT	$	$
16	DECOMPOSED GRANITE	1380	SQFT	$	$
17	CLASS 2 AGGREGATE BASE (CY)	9100	CY	$	$
18	HOT MIX ASPHALT (TYPE A)	~~6550~~6960	TON	$	$
19	PLACE HOT MIX ASPHALT DIKE (TYPE A)	590	LF	$	$
20	12" REINFORCED CONCRETE PIPE (CLASS IV)	140	LF	$	$

21	24" REINFORCED CONCRETE PIPE (CLASS IV)	110	LF	$	$
22	DETECTABLE WARNING SURFACE	310	SQFT	$	$
23	CONCRETE (DITCH LINING)	30	CY	$	$
24	IRRIGATION JUNCTION BOX	1	LS	$	$
25	IRRIGATION CONNECTION	7	EA	$	$
26	CONCRETE COLLAR	1	EA	$	$
27	GRATED LINE DRAIN	80	LF	$	$
28	MINOR CONCRETE (CURB) (CY)	47	CY	$	$
29	MINOR CONCRETE (CURB AND GUTTER)	18	CY	$	$
30	MINOR CONCRETE (DRIVEWAY)	41	CY	$	$
31	MINOR CONCRETE (TEXTURED PAVING)	42	CY	$	$
32	MINOR CONCRETE (CURB RAMP)	70	CY	$	$
33	CHAIN LINK FENCE	1050	LF	$	$
34	10' CHAIN LINK SWING GATE	1	EA	$	$
35	16' CHAIN LINK ROLLING GATE	2	EA	$	$
36	20' CHAIN LINK ROLLING GATE	2	EA	$	$
37	RESTABLISH MONUMENT	1	EA	$	$
38	REMOVE FENCE	1280	LF	$	$
39	SALVAGE FENCE	120	LF	$	$
40	REMOVE ROADSIDE SIGN (METAL POST)	8	EA	$	$
41	RELOCATE ROADSIDE SIGN-ONE POST	3	EA	$	$
42	ROADSIDE SIGN - ONE POST	24	EA	$	$
43	PEDESTRIAN BARRICADE	2	EA	$	$
44	RELOCATE CUSTOM BUSINESS SIGN	1	EA	$	$
45	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	3170	LF	$	$
46	6" THERMOPLASTIC TRAFFIC STRIPE	8060	LF	$	$

47	8" THERMOPLASTIC TRAFFIC STRIPE	1370	LF	$		$	
48	THERMOPLASTIC PAVEMENT MARKING	1740	SQFT	$		$	
49	RELOCATE PROPANE TANK	1	LS	$		$	
50	12" C-900 DR-14 PVC PIPE	2140	LF	$		$	
51	18" C-900 DR-14 PVC PIPE	1010	LF	$		$	
52	12" DUCTILE IRON PIPE FLANGE COUPLING	1	EA	$		$	
53	12" DUCTILE IRON PIPE BLIND FLANGE	1	EA	$		$	
54	18" DUCTILE IRON PIPE BLIND FLANGE	2	EA	$		$	
55	6" DUCTILE IRON PIPE 45° ELBOW	2	EA	$		$	
5~~5~~6	12" DUCTILE IRON PIPE 45° ELBOW	4~~8~~	EA	$		$	
5~~6~~7	18" DUCTILE IRON PIPE 45° ELBOW	8	EA	$		$	
5~~7~~8	18"X12" DUCTILE IRON MECHANICAL JOINT CROSS	1	EA	$		$	
5~~8~~9	2" WATER SERVICE	1	EA	$		$	
60~~59~~	WATER VALVE	15	EA	$		$	
6~~10~~	FIRE HYDRANT	8	EA	$		$	
62	BLOW OFF VALVE	3	EA	$		$	
6~~3~~1	THRUST BLOCK	20~~19~~	EA	$		$	
6~~4~~2	TYPE 36RX CATCH BASIN	7	EA	$		$	
6~~5~~3	STORM DRAIN MANHOLE	15	EA	$		$	
6~~6~~4	18" REINFORCED CONCRETE PIPE (CLASS III)	550	LF	$		$	
6~~7~~5	24" REINFORCED CONCRETE PIPE (CLASS III)	160	LF	$		$	
6~~8~~6	27" REINFORCED CONCRETE PIPE (CLASS III)	620	LF	$		$	
6~~9~~7	48" REINFORCED CONCRETE PIPE (CLASS III)	2300	LF	$		$	
70~~68~~	60" REINFORCED CONCRETE PIPE (CLASS III)	640	LF	$		$	

71~~69~~	TRAFFIC SIGNAL AT PIONEER ROAD AND ORTIGALITA ROAD	1	LS	$		$	
72~~0~~	LIGHT POLES AND ELECTRICAL OUTLET ON PRIVATELY OWNED PROPERTIES	1	LS	$		$	
			TOTAL:	**$**			

Note: The representations made herein are made under penalty of perjury. Any information contained in the bid which is proven false shall be considered nonresponsive and this bid shall be rejected.

Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 1

As of March 1, 2015 Contractors (and sub-contractors) wishing to bid on public works contracts must be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at https://www.dir.ca.gov/Public-Works/Contractor-Registration.html. The local agency will verify registration of all contractors and subcontractors on public works projects at bid and thereafter annually to assure that yearly registration is maintained throughout the life of the project.

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid or $10,000 (whichever is greater).

FEDERAL PROJECT NUMBER:

Photocopy this form for additional firms.

Subcontractor Name & Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Subcontracted	Contractor License Number / DIR Reg Number	DBE (Y/N)	DBE Cert Number	Annual Gross Receipts
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years

Distribution – Original: Local Agency File; Copy: DLAE w/Award Package

Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 2

In accordance with Title 49, Section 26 of the Code of Federal Regulations, the Bidder shall list all subcontractors who provided a quote or bid but **were not selected** to participate as a subcontractor on this project.

Photocopy this form for additional firms.

FEDERAL PROJECT NUMBER:

Subcontractor Name & Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Subcontracted	Contractor License Number / DIR Reg Number	DBE (Y/N)	DBE Cert Number	Annual Gross Receipts
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years
NAME City, State							< $1 million < $5 million < $10 million < $15 million Age of Firm in years

Distribution – Original: Local Agency File; Copy: DLAE w/Award Package

Exhibit 15-G: Construction Contract DBE Commitment

1. Local Agency: City of Los Banos 2. Contract DBE Goal: 22%
3. Project Description: Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements
4. Project Location: The intersection of Pioneer Road and Ortigalita Road in Merced County
5. Bidder's Name: 6. Prime Certified DBE: ☐ 7. Bid Amount:
8. Total Dollar Amount for **ALL** Subcontractors: 9. Total Number of **ALL** Subcontractors:

10. Bid Item Number	11. Description of Work, Service, or Materials Supplied	12. NAICS or Work Category Codes	13. DBE Certification Number	14. DBE Contact Information (Must be certified on the date bids are opened)	15. DBE Dollar Amount

Local Agency to Complete this Section upon Execution of Award	
22. Local Agency Contract Number:	
23. Federal-Aid Project Number:	
24. Bid Opening Date:	
25. Contract Award Date:	
26. Award Amount:	

16. TOTAL CLAIMED DBE PARTICIPATION **$ 0.00**

0.00 %

IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above must be consistent, where applicable with the names and items of the work in the "Subcontractor List" submitted with your bid. Written confirmation of each listed DBE is required.

Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.

27. Local Agency Representative's Signature	28. Date	17. Preparer's Signature	18. Date
29. Local Agency Representative's Name	30. Phone	19. Preparer's Name	20. Phone
31. Local Agency Representative's Title		21. Preparer's Title	

DISTRIBUTION: 1. Original – Local Agency
2. Copy – Caltrans District Local Assistance Engineer (DLAE). Failure to submit to DLAE within 30 days of contract execution may result in de-obligation of federal funds on contract.
3. Include additional copy with award package.

INSTRUCTIONS – CONSTRUCTION CONTRACT DBE COMMITMENT

CONTRACTOR SECTION

1. Local Agency - Enter the name of the local agency that is administering the contract.
2. Contract DBE Goal - Enter the contract DBE goal percentage as it appears on the project advertisement.
3. Project Description - Enter the project description as it appears on the project advertisement (Bridge Rehab, Seismic Rehab, Overlay, Widening, etc).
4. Project Location - Enter the project location(s) as it appears on the project advertisement.
5. Bidder's Name - Enter the contractor's firm name.
6. Prime Certified DBE - Check box if prime contractor is a certified DBE.
7. Bid Amount - Enter the total contract bid dollar amount for the prime contractor.
8. Total Dollar Amount for ALL Subcontractors – Enter the total dollar amount for all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
9. Total number of ALL subcontractors – Enter the total number of all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
10. Bid Item Number - Enter bid item number for work, services, or materials supplied to be provided.
11. Description of Work, Services, or Materials Supplied - Enter description of work, services, or materials to be provided. Indicate all work to be performed by DBEs including work performed by the prime contractor's own forces, if the prime is a DBE. If 100% of the item is not to be performed or furnished by the DBE, describe the exact portion to be performed or furnished by the DBE. See LAPM Chapter 9 to determine how to count the participation of DBE firms.
12. NAICS or Work Category Codes - Enter NAICS or Work Category Codes from the California Unified Certification Program database.
13. DBE Certification Number - Enter the DBE's Certification Identification Number. All DBEs must be certified on the date bids are opened.
14. DBE Contact Information - Enter the name, address, and phone number of all DBE subcontracted contractors. Also, enter the prime contractor's name and phone number, if the prime is a DBE.
15. DBE Dollar Amount - Enter the subcontracted dollar amount of the work to be performed or service to be provided. Include the prime contractor if the prime is a DBE. See LAPM Chapter 9 for how to count full/partial participation.
16. Total Claimed DBE Participation - $: Enter the total dollar amounts entered in the "DBE Dollar Amount" column. %: Enter the total DBE participation claimed ("Total Claimed DBE Participation Dollars" divided by item "Bid Amount"). If the total % claimed is less than item "Contract DBE Goal," an adequately documented Good Faith Effort (GFE) is required (see Exhibit 15-H DBE Information - Good Faith Efforts of the LAPM).
17. Preparer's Signature - The person completing the DBE commitment form on behalf of the contractor's firm must sign their name.
18. Date - Enter the date the DBE commitment form is signed by the contractor's preparer.
19. Preparer's Name - Enter the name of the person preparing and signing the contractor's DBE commitment form.
20. Phone - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
21. Preparer's Title - Enter the position/title of the person signing the contractor's DBE commitment form.

LOCAL AGENCY SECTION

22. Local Agency Contract Number - Enter the Local Agency contract number or identifier.
23. Federal-Aid Project Number - Enter the Federal-Aid Project Number(s).
24. Bid Opening Date - Enter the date contract bids were opened.
25. Contract Award Date - Enter the date the contract was executed.
26. Award Amount – Enter the contract award amount as stated in the executed contract.
27. Local Agency Representative's Signature - The person completing this section of the form for the Local Agency must sign their name to certify that the information in this and the Contractor Section of this form is complete and accurate.
28. Date - Enter the date the DBE commitment form is signed by the Local Agency Representative.
29. Local Agency Representative's Name - Enter the name of the Local Agency Representative certifying the contractor's DBE commitment form.
30. Phone - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
31. Local Agency Representative Title - Enter the position/title of the Local Agency Representative certifying the contractor's DBE commitment form.

EXHIBIT 15-H: PROPOSER/CONTRACTOR GOOD FAITH EFFORTS

~~Cost Proposal Due Date _____ PE/CE~~
Federal-aid Project No(s). ~~_____~~ CML-5160(031)
Bid Opening Date ~~_____~~ December 11, 2024 CON

The City of Los Banos established a Disadvantaged Business Enterprise (DBE) goal of 22% for this contract. The information provided herein shows the required good faith efforts to meet or exceed the DBE contract goal.

Proposers or bidders submit the following information to document their good faith efforts within five (5) calendar days from cost proposal due date or bid opening. Proposers and bidders are recommended to submit the following information even if the Exhibit 10-O1: Consultant Proposal DBE Commitments or Exhibit 15-G: Construction Contract DBE Commitment indicate that the proposer or bidder has met the DBE goal. This form protects the proposer's or bidder's eligibility for award of the contract if the administering agency determines that the bidder failed to meet the goal for various reasons, e.g., a DBE firm was not certified at bid opening, or the bidder made a mathematical error.

The following items are listed in the Section entitled "Submission of DBE Commitment" of the Special Provisions, **please attach additional sheets as needed**:

A. The names and dates of each publication in which a request for DBE participation for this project was placed by the bidder (please attach copies of advertisements or proofs of publication):

Publications~~–~~	Dates of Advertisement

B. The names and dates of written notices sent to certified DBEs soliciting bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

Names of DBEs Solicited	Date of Initial Solicitation	Follow Up Methods and Dates

C. The items of work made available to DBE firms including those unbundled contract work items into economically feasible units to facilitate DBE participation. It is the bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation in order to meet or exceed the DBE contract goal.

Items of Work	Proposer or Bidder Normally Performs Item (Y/N)	Breakdown of Items	Amount ($)	Percentage Of Contract
				0.00%
				0.00%
				0.00%
				0.00%

D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the bidder's rejection of the DBEs, the firms selected for that work (please attach copies of quotes from the firms involved), and the price difference for each DBE if the selected firm is not a DBE:

Names, addresses and phone numbers of rejected DBEs and the reasons for the bidder's rejection of the DBEs:

Names, addresses and phone numbers of firms selected for the work above:

E. Efforts (e.g. in advertisements and solicitations) made to assist interested DBEs in obtaining information related to the plans, specifications and requirements for the work which was provided to DBEs:

F. Efforts (e.g. in advertisements and solicitations) made to assist interested DBEs in obtaining bonding, lines of credit or insurance, necessary equipment, supplies, materials, or related assistance or services, excluding supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate:

G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.):

Name of Agency/Organization	Method/Date of Contact	Results

H. Any additional data to support a demonstration of good faith efforts:

Bid Bond

We, _____

as Contractor, and _____

as Surety, jointly and severally, bind ourselves, our heirs, representatives, successors and assigns, as set forth herein, to the **City of Los Banos** (herein called "Owner") for payment of the penal sum of _____

_____ Dollars ($_____),

lawful money of the United States. Contractor has submitted the accompanying bid proposal for the construction of: **Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements**

If the Contractor is awarded the contract and enters into a written agreement, in the form prescribed by the Owner, at the price designated by Bid Schedule, and files a payment bond and performance bond with the Owner, or substitute security in lieu thereof, in the time and manner specified by the Owner, and carries all insurance in type and amount which conforms to the General Provisions, Special Provisions, and Technical Specifications in these Contract Documents and furnishes required certificates and endorsements thereof, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Forfeiture of this bond, or any deposit made in lieu thereof, shall not preclude the Owner from seeking all other remedies provided by law to cover losses sustained as a result of the Contractor's failure to do any of the foregoing.

Contractor and Surety agree that if the Owner is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay Owner's reasonable attorney's fees incurred with or without suit.

Executed on _____, 20____

_____
Contractor

(Seal of Corporation)

By: _____

Title _____

[SIGNATURE SHEET CONTINUES ONTO NEXT PAGE]

Any claims under this bond may be addressed to:

_____ (name and address of Surety)

_____

_____

_____ (name and address of Surety's agent for service of process in California, if different from above)

_____

_____

_____

_____ (phone number of Surety's agent in California)

(Attach Acknowledgment)

_____
Surety

By _____
(Attorney-in-Fact)

Notice: No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for service of process in California.

All bond forms must be acknowledged before a Notary Public by both the Contractor and the Surety. Attorneys-in-fact who sign bond forms must file with each bond a certified and effective dated copy of their power of attorney.

Agreement

SAMPLE

Note: Particulars left blank in this sample will be filled with project specific information as outlined in these bid documents.

THIS Agreement is dated as of the _____day of _____in the year 20__ by and between the **City of Los Banos, a California municipal corporation** ("Owner") and [ENTER NAME AND TYPE OF ENTITY] ("Contractor").

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

1. WORK. Contractor shall complete the work indicated in Owner's Contract Documents entitled "Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements."

The work is generally described as follows:

- Reconstructing and signalizing the intersection of Pioneer Road and Ortigalita Road. Right and left turn pockets will be added for all intersection approaches and a Class 1 trail will be installed along the north side of Pioneer Road. ADA improvements including curb ramps and crosswalks will be installed with the project. Storm drain and water facilities will be installed within the intersection consistent with the City of Los Banos' Utility Master Plans. The purpose of the project is to improve operation and pedestrian network of the intersection. The project is needed to reduce congestion and improve air quality.
- Contractor shall furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the work described herein.

2. CONTRACT TIME. Contractor shall commence the work required by the Contract Documents within ~~10~~15 calendar days after the date of the Notice to Proceed and will complete the same within the time period set forth in the bid, unless the period for completion is extended otherwise by the Contract Documents.

3. LIQUIDATED DAMAGES. Owner and Contractor recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the work is not completed within the time specified in Paragraph 2 herein, plus any extensions thereof allowed in accordance with Paragraph 21, Time for Completion and Liquidated Damages, of the General Provisions. The parties also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner ~~Eight Hundred~~ Five Thousand Dollars ($ 5,000.00~~800.00~~) for each day that passes after the time specified in Paragraph 2 herein.

4. CONTRACT PRICE. Owner shall pay Contractor for completion of the work in accordance with the Contract Documents in current funds the amount set forth in the Bid Schedule(s). The Contractor agrees to perform all of the work described in the Contract Documents for the unit and lump sum prices set forth in the Bid Schedule(s).

5. PAYMENT PROCEDURES. Contractor shall submit applications for payment in accordance with Paragraph 24, Progress Estimates, of the General Provisions. Applications for payment will be processed by Owner as provided in the General Provisions.

6. CONTRACT DOCUMENTS. The Contract Documents which comprise the entire agreement between Owner and Contractor concerning the work consists of this Agreement and the following attachments to this Agreement:

(A) Advertisement for Bids
(B) Information for Bidders
(C) Bid
(D) Bid Bond
(E) Agreement
(F) Payment Bond
(G) Performance Bond
(H) Notice of Award
(I) Notice to Proceed
(J) Change Order
(K) General Provisions
(L) Special Provisions
(M) Technical Specifications prepared by ~~Ed Noriega~~Mark Thomas entitled "Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements Technical Specifications", dated _June 2024_.
(N) Drawings prepared by ~~Ed Noriega~~Mark Thomas numbered _1__ through _~~49~~50__.
(O) Addenda

No. _____, dated_____20__

No. _____, dated_____20__

There are no Contract Documents other than those listed in this Paragraph 6. The Contract Documents may only be amended by change order as provided in Paragraph 19, Changes in the Work, of the General Provisions.

7. MISCELLANEOUS.

A. Terms used in this Agreement which are defined in Paragraph 1 of the General Provisions will have the meanings indicated in the General Provisions.

B. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

C. Owner and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

D. The Laws of the State of California shall govern this Agreement. Venue is Merced County. The provisions of this paragraph shall survive expiration or other termination of this Agreement regardless of the cause of such termination.

E. All bids become property of the Owner. All bids, including the accepted bid and any subsequent contract become public records per the requirements of the California

Government Code, Sections 6250-6270, “California Public Records Act”. Proprietary material must be clearly marked as such. Pricing and service elements of the successful bid are not consider proprietary information. The Owner will treat all information submitted in a bid as available for public inspection once the Owner has selected a contractor. If you believe that you have a legally justifiable basis under the California Public Records Act (Government Section 6250 et. seq.) for protecting the confidentiality of any information contained within your bid, you must identify any such information, together with the legal basis of your claim in your bid. In order for the Owner to assess confidentiality of any such information on your behalf, you must request, execute and submit an Owner-prepared written agreement to defend and indemnify the Owner for any liability, costs, and expenses incurred in asserting such confidentiality as part of your bid. The final determination as to whether the Owner will assert your claim of confidentiality on your behalf shall be sole discretion of the Owner.

F. This Agreement shall not be interpreted in favor of any Party by virtue of said Party not having prepared this Agreement.

G. If any time period provided for in this Agreement ends on the day other than a Business Day, the time period shall be extended to the next Business Day.

IN WITNESS WHEREOF, Owner and Contractor have caused this Agreement to be executed the day and year first above written.

_____ By: _____
Date Authorized Representative of Owner

Title: _____

ATTEST:

_____
Lucille L. Mallonee
City Clerk

APPROVED AS TO FORM:

_____
William A. Vaughn
City Attorney

_____ By: _____
Date Authorized Representative of Contractor

Title: _____

(Seal if Corporation)

(Attach Acknowledgement for Authorized Representative of Contractor)

Certificate of Contractor

I, _____
(Name)

certify that I am a/the _____
(Title)

designate sole proprietor, partner in partnership, or corporate officer with Contractor License Number _____ in the entity named as Contractor in the foregoing Agreement. I hereby expressly certify that the name of the entity to which I am associated is

_____
(Company Name)

that this entity is in good standing and has complied with all applicable laws and regulations, and that I have been expressly authorized by the proper parties in this entity to execute the Agreement on behalf of the above-named entity.

ATTEST:

Signature:_____

This form must be acknowledged before a Notary Public. The acknowledgement must be attached.

Payment Bond

We, _____

as Contractor, and _____

as Surety, jointly and severally, bind ourselves, our heirs, representatives, successors and assigns, as set forth herein, to the **City of Los Banos** (herein called "Owner") for payment of the penal sum of _____

_____Dollars ($ _____),

lawful money of the United States. Owner has awarded the contract and entered into an Agreement with the Contractor for the construction of:

Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements

If Contractor or any of his subcontractors fails to pay any of the persons named in Section 9100 of the California Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract or during the one-year guarantee period, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the Contractor and his subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, then Surety will pay the same in an amount not exceeding the sum specified above, and also will pay, in case suit is brought upon this bond, such reasonable attorney's fees as shall be fixed by the court.

This bond shall insure to the benefit of any of the persons named in Section 9100 of the California Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Surety agrees that no change, extension of time, alteration, or addition to the terms of the Contract, or the work to be performed, or the Provisions shall in any way affect its obligation on this bond, and it does hereby waive notice thereof.

Contractor and Surety agree that should Owner become a party to any action on this bond that each will also pay Owner's reasonable attorney's fees incurred therein in addition to the above sum.

[SIGNATURE SHEET BEGINS ON NEXT PAGE]

Executed in four original counterparts on: _____, 20_____

_____
Contractor

(Seal if Corporation) By: _____

Title: _____

(Attach Acknowledgment of Authorized Representative of Contractor)

Any claims under this bond may be addressed to:

_____ (name and address of Surety)

_____

_____

_____ (name and address of Surety's agent for service of process in California, if different from above)

_____

_____

_____

_____ (phone number of Surety's agent in California)

(Attach Acknowledgment)

_____
Surety

By _____
(Attorney-in-Fact)

Notice: No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for service of process in California.

All bond forms must be acknowledged before a Notary Public by both the Contractor and the Surety. Attorneys-in-fact who sign bond forms must file with each bond a certified and effective dated copy of their power of attorney.

Performance Bond

We, _____

as Contractor, and _____

as Surety, jointly and severally, bind ourselves, our heirs, representatives, successors and assigns, as set forth herein, to the **City of Los Banos** (herein called "Owner") for payment of the penal sum of _____

_____Dollars ($ _____),

lawful money of the United States. Owner has awarded the contract and entered into an Agreement with the Contractor for the construction of:

Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements

The condition of this obligation is such that if the Contractor shall in all things abide by and well and truly keep and perform the covenants, and agreements in the said Contract Agreement, and any alteration thereof made as therein provided, on his part to be kept and performed at the time and in the manner therein specified, and shall faithfully fulfill the one-year guarantee of all materials and workmanship, and shall indemnify and save harmless the Owner and the Owner's Representative, and their consultants, and each of their directors, officers, employees and agents, as therein stipulated, this obligation shall become null and void, otherwise, it shall be and remain in full force and effect.

This Performance Bond shall remain in full effect during the one-year guaranty period following the completion of the work.

Surety agrees that no change, extension of time, alteration, or addition to the terms of the General Provisions, Special Provisions, and Technical Specifications in these Contract Documents shall in anyway affect its obligation in the bond, and it does hereby waive notice thereof.

Contractor and Surety agree that if the Owner is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay Owner's reasonable attorney's fees incurred with or without suit, in addition to the above sum.

[SIGNATURE SHEET BEGINS ON NEXT PAGE]

Executed in four original counterparts on : _____, 20_____

_____
Contractor

(Seal if Corporation) By: _____

Title: _____

(Attach Acknowledgment of Authorized Representative of Contractor)

Any claims under this bond may be addressed to:

_____ (name and address of Surety)

_____

_____

_____ (name and address of Surety's agent for service of process in California, if different from above)

_____

_____

_____

_____ (phone number of Surety's agent in California)

(Attach Acknowledgment)

_____
Surety

By _____
(Attorney-in-Fact)

Notice: No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for service of process in California.

All bond forms must be acknowledged before a Notary Public by both the Contractor and the Surety. Attorneys-in-fact who sign bond forms must file with each bond a certified and effective dated copy of their power of attorney.

Notice of Award

To: _____ Date: _____

_____ Project: _____

_____ _____

The Owner has considered the bid submitted by you for the above described work dated_____, 20_____.

You are hereby notified that your bid has been accepted for the unit and lump sum prices set forth in the Bid Schedule totaling $_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required Contractor's performance bond and payment bond within ten (10) calendar days for the date of this Notice to you.

Before the Notice to Proceed can be issued, all required certificates of insurance, as stated in Section 29 of the General Provisions, and a copy of your Los Banos Business License must be submitted.

If you fail to execute said Agreement and to furnish said bonds within ten days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

_____
Owner

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by

_____
(Name of Contractor)

this _____ day of _____ ,20_____

By _____

Title _____

Notice to Proceed

To: _____ Date: _____

_____ Project: _____

_____ _____

You are hereby notified to commence work in accordance with the Agreement dated _____, 20_____, on or before _____20_____, and you are to complete the work by _____, 20_____.

You are required to return an acknowledged copy of this Notice to Proceed to the Owner.

_____
Owner

By _____

Title _____

ACCEPTANCE OF NOTICE
Receipt of the above Notice to Proceed is hereby
acknowledged by
_____
(Name of Contractor)

this _____ day of _____ ,20_____

By _____

Title _____

Change Order

Order No._____

Date: _____

Agreement Date:_____

Project: _____

Owner: _____

Contractor: _____

The following changes are hereby made to the Contract Documents:

Justification:

Change to Contract Price:

Original Contract Price: $_____

Current Contract Price adjusted by previous Change Order: $_____

The Contract Price due to this Change Order will be (increased) (decreased) by: $_____

The new Contract Price including this Change Order will be: $_____

Change to Contract Time:

The Contract Time will be (increased) (decreased) by calendar days. _____

The date for completion of all work will be: _____

The undersigned hereby agrees to the above-described amendment of the Agreement.

_____

Contractor

_____

Owner

This Change Order shall become a part of the Contract Documents only upon signature of both parties.

General Provisions

1. Terms and Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

Addenda - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, by additions, deletions, clarifications or corrections.

ANSI – American National Standards Institute, current designation as of the Bid date unless otherwise indicated.

ASME – American Society of Mechanical Engineers, current designation as of the Bid date unless otherwise indicated.

ASTM – American Society for Testing Materials, current designation as of the Bid date unless otherwise indicated.

AWWA – American Water Works Association, current designation as of the Bid date unless otherwise indicated.

Bid - The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the work to be performed.

Bidder - Any person, firm or corporation submitting a bid for the work.

Bonds - Bid, Performance and Payment Bonds and other instruments of security, furnished by the Contractor and his surety in accordance with the Contract Documents.

Change Order - A written order to the Contractor authorizing an addition, deletion or revision in the work within the general scope of the Contract Documents, or authorizing an adjustment in the contract price or contract time.

Completion - That date as certified by the Engineer when the construction of the project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the project or specified part can be utilized for the purposes for which it is intended.

Contract Documents - the contract, including Advertisement for Bids, Information for Bidders, Bid, including Bid Representations and Certifications, Bid Bond, Agreement, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Change Order, General Provisions, Special Provisions, Technical Specifications, Drawings, and Addenda.

Contract Price – The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

Contract Time – The number of calendar or working days as stated in the Contract Documents for the completion of the work.

Contractor – The person, firm or corporation with whom the Owner has executed the Agreement.

Drawings – The part of the Contract Documents which shows the characteristics and scope of the work to be performed and which have been prepared or approved by the Engineer.

Engineer – City Engineer of the City of Los Banos, acting either directly or through properly authorized agents, such agents, acting within the scope of the particular duties entrusted to them.

Field Order – A written order effecting a change in the work not involving an adjustment in the contract price or an extension of the contract time, issued by the Engineer to the Contractor during construction.

IEEE – Institute of Electrical and Electronics Engineers, current designation as of the bid date unless otherwise indicated.

NEMA – National Electrical Manufacturers Association, current designation as of the bid date unless otherwise indicated.

Notice of Award – The written notice of the acceptance of the Bid from the Owner to the successful bidder.

Notice to Proceed – Written communication issued by the Owner to the Contractor authorizing him to proceed with the work and establishing the date of commencement of the work.

Owner – City of Los Banos.

Production Data – All illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the work.

Project – The undertaking to be performed as provided in the Contract Documents.

REA – Rural Electrification Association, current designation as of the bid date unless otherwise indicated.

Samples – Physical examples which illustrate materials, equipment or workmanship, and establish standards by which the work will be judged.

Shop Drawings – All drawings, diagrams, schedules and other data which are specifically prepared for the work by the Contractor, a subcontractor, manufacturer, supplier or distributor, to illustrate some portion of the work.

Specifications – A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

Standards - City of Los Banos Standard Specifications, The Standard Specifications of the Department of Transportation of the State of California (Caltrans) dated ~~2010~~2023 and subsequent updates to that ~~2010~~2023 edition, and The Standard Plans of the Department of Transportation of the State of California (Caltrans) dated ~~2010~~2023 and subsequent updates to this ~~2010~~2023 edition.

Subcontractor – An individual, firm or corporation having a direct contract with the Contractor or with any other subcontractor for the performance of a part of the work at the site.

Supplier – Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design, but who does not perform labor at the site.

Work – All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the project.

Written Notice – Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the work.

2. Order of Precedence of Contract Documents

In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:

1. Permits from other agencies as may be required by law
2. Change orders
3. Agreement
4. Addenda
5. Contractor's Bid (Bid Form)
6. Advertisement for Bids
7. Information for Bidders
8. Supplementary General Conditions
9. General Provisions
10. Special Provisions
11. Technical Specifications
12. Drawings
13. Referenced Standard Specifications

If the conflicts cannot be resolved by the precedence prescribed above, the most stringent requirements shall prevail.

3. Venue

Contractor, and any subcontractor, supplier and any other person or organization performing any part of work, agree that each of them will waive jurisdiction and venue and shall submit to the jurisdiction of the courts of the State of California in the County of Merced, regardless of residence or domicile, with respect to any actions or suits at law or in equity arising under or related to the bidding, award or performance of the work or with regard to any matter whatsoever arising out of or relating to the validity, construction, interpretation or reinforcement of the Agreement as against Owner or any of their consultants, and/or any of their respective directors, officers, employees, representatives or agents.

4. Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

5. Cumulative Remedies

The duties and obligations imposed by these General Provisions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor by the General Provisions and all of the rights and remedies available to Owner thereunder are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by laws or regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

6. Non-discrimination

During the performance of the project, Contractor and subcontractors shall not unlawfully discriminate

against any employee or applicant for employment because of race, color, ancestry, religion, sex, national origin, marital status, age, medical condition (cancer related), physical handicap (including AIDS), or sexual orientation. Equal employment extends, but is not limited to recruitment, compensation, benefits, layoff, termination, and all other conditions of employment. Contractor and subcontractors shall ensure that the evaluation/treatment of their employees and applicants for employment are free of such discrimination. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.) and the applicable regulations promulgated there under (California Administrative Code, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12900, set forth in Chapter 5 of Division 4 of Title 2 of the California Administrative Code and incorporated into this agreement by reference and made a part hereof as if set forth in full.

Contractor and any subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

Contractor shall include the nondiscrimination and compliance provisions of the clause in all subcontracts to perform work under the contract.

Contractor shall grant access by representative of the Department of Fair Employment and Housing and the Owner upon reasonable notice at any time during normal business hours, but in no case less than twenty-four (24) hours notice, to such of its books, records, accounts, other sources of information and its facilities as said Owner shall require to ascertain compliance with this clause.

7. Non-discrimination of the Disabled

The Owner will not aid or perpetuate discrimination against a qualified disabled individual by funding as an agency, organization, or person that discriminates on the basis of handicap in providing aid, benefit, or service to beneficiaries of the program or activity. The Owner is committed to provide access to all Owner services, programs, and meetings open to the public for people with disabilities. In this regard the Owner and all of its vendors and Contractor will take all reasonable steps to ensure that disabled individuals have the maximum opportunity for the same level of aid, benefit, or service as any other individual.

8. Additional Instructions and Detail Drawings

The Contractor may be furnished additional instructions and detail drawings by the Engineer, as necessary to carry out the work required by the Contract Documents. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions.

9. Schedules, Reports and Records

The Contractor shall submit to the Owner such schedules, reports, records and other data as the Owner may request concerning work performed or to be performed.

Prior to the first partial payment estimate, the Contractor shall submit schedules showing the order in which he proposed to carry on the work, including dates at which he will start the various parts of the work, estimated date of completion of each part and, as applicable:

A. A detailed cost breakdown of the work under each bid item awarded. The breakdown, after receiving favorable review by the Engineer, will become the basis for partial payment determination. Elements of work shall be grouped by building, structure, pipeline, system, etc. Within each grouping, work shall be itemized by readily measurable quantities of work completed in place. For example, concrete should be in units of cubic yard including form work and reinforcing steel. Mobilization costs, bond and insurance costs, and overhead costs shall not be prorated over items of work. In the event the cost breakdown is not favorably reviewed by the Engineer, another cost breakdown shall be submitted that is mutually acceptable to the Contractor and the Engineer.

B. The dates at which special detail drawings will be required; and respective dates for

submission of shop drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment. The Contractor shall also submit a schedule of payments that he anticipates he will earn during the course of the work.

10. Drawings and Specifications

The intent of the drawings and specifications is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary to complete the project in an acceptable manner, ready for use, occupancy or operation by the Owner.

In case of conflict between the drawings and specifications, the specifications shall govern. Figure dimensions on drawings shall govern over scale dimensions and detailed drawings shall govern over general drawings.

Any discrepancies found between the drawings and specifications and site condition or any inconsistencies or ambiguities in the drawings or specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

The Owner ~~will furnish to the Contractor, free of charge, six copies of drawings and specifications for the work~~will provide the Contractor with digital copies of the project drawings and specifications. The Contractor shall keep one copy of all current drawings and specifications on the job site, in good order, available to the Engineer and his representatives.

All drawings, specifications, and copies thereof furnished by the Owner are the property of the Owner. They are not to be used on other work, and, with the exception of the signed contract set, are to be returned to the Owner on request, at the completion of the work.

11. Shop Drawings, Production Data and Samples

The Contractor shall review, approve and submit to the Engineer all Shop Drawings, Production Data and Samples as may be necessary for prosecution of the Work and as required by the Contract Documents. The Contractor shall review and approve all Shop Drawings, Production Data and Samples prior to submitting them to the Engineer. By approving and submitting Shop Drawings, Production Data and Samples, the Contractor represents that he has determined and verified all materials, measurements and criteria related thereto, and that he has checked and coordinated the information contained within such submittals with the requirements of the Contract Documents. Any Shop Drawing, Production Data or Sample submitted to the Engineer without having been approved by the Contractor will be returned unreviewed to the Contractor.

For each item where shop drawings, production data or samples are required, the Contractor shall submit a minimum of six approved sets, hard copies, or one set, electronically. The Engineer shall review all shop drawings, production data and samples and retain three sets after his review. The remaining sets shall be returned to the Contractor with actions defined as follows:

A. NO EXCEPTIONS TAKEN – Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission.

B. MAKE CORRECTIONS NOTED – Same as NO EXCEPTIONS TAKEN except that minor corrections as noted shall be made by the Contractor.

C. REVISE AND RESUBMIT – Rejected because of major inconsistencies or errors which shall be resolved by the Contractor prior to subsequent review by the Engineer.

D. REJECTED – Submitted material does not conform to Contract Documents in major respect.

The Engineer's review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. It shall not include review of quantities, dimensions, weights or gauges, fabrications processes, construction methods, coordination

with other trades, or construction safety precautions, all of which are the responsibility of the Contractor.

The Engineer shall not be responsible for any deviations from the Contract Documents not brought to the attention of the Engineer in writing by the Contractor and acknowledged in writing by the Engineer.

Portions of the work requiring shop drawings, production data and samples shall not begin until the submission has been favorably reviewed by the Engineer. A copy of each favorably reviewed shop drawing, product data and sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

12. Materials, Services and Facilities

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the work shall be located so as to facilitate prompt inspection.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and reviewed by the Engineer.

The Merced County Road Maintenance Equipment Yard at 20925 Pioneer Rd, Los Banos, CA 93635 may be used as an equipment staging area. The staging area is to be at the North East corner of the property, 135' from the eastern property line. This staging area will be provided to the Contractor at no cost.

The County Yard will also accept segregated demolition materials, such as AC grinding and clean dirt, at no cost to the Contractor. The material must be delivered to a designated location on the property.

Please coordinate with the below contact for use of the previously mentioned staging and stockpiling areas:

Name: David Engbrecht
Phone Number: (209) 628-5876
Email: david.engbrecht2@countyofmerced.com

Materials, supplies or equipment to be incorporated into the work shall not be purchased by the Contractor or any subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

13. Inspection and Testing

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

The Contractor shall provide, at his expense, the necessary testing and inspection services required by the Contract Documents, unless otherwise provided. (See Section 6 of the Special Provisions)

The Owner shall provide all other inspections and testing services not required by the Contract Documents. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction specifically require any work to be inspected, tested, approved by someone other than the Contractor, the Contractor will give the Engineer timely notice of readiness. The Contractor will then furnish the Engineer the required certificates of inspection, testing or approval.

Neither observations by the Engineer nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the

requirements of the Contract Documents.

The Engineer and his representatives will at all times have access to the Work. In addition, authorized representatives and agents of the Owner and appropriate Federal or State agencies shall be permitted to inspect all work, material, payrolls, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.

If any work is covered contrary to the written request of the Engineer, it must, if requested by the Engineer be uncovered of his observation and replaced at the Contractor's expense.

If any work has been covered which the Engineer has not specifically requested to observe prior to it being covered, or if the Engineer considers it necessary or advisable that covered work be inspected or tested by others, the Contractor, at the Engineer's request, will uncover expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such work is not found to be defective, the Contractor will be allowed an increase in the contract price of an extension of the contract time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate change order shall be issued.

14. Substitutions

Whenever a material, article or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance of other salient requirements and that other products of equal capacities, quality and function shall be considered. The Contractor may recommend the substitution of a material, article or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal substance and function to that specified, the Engineer may approve its substitution and use by the Contractor. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the contract price or contract time.

15. Patents

The Contractor shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Engineer.

16. Surveys, Permits and Regulations

The Engineer will furnish lines and grades as required for the construction of the work. The Contractor shall make a general check of all lines, dimensions and elevations and shall make all necessary rechecks during the progress of the work to avoid errors in construction. The Contractor shall be responsible for proper dimensions and fittings of all items of work being performed by him. Should any discrepancy be found in lines, dimensions or elevations, they shall be reported to the Engineer immediately.

The Contractor shall protect all existing property and survey monuments, including survey control monuments for this work. The Contractor is responsible for protecting and preserving survey monuments and other survey markers. Any survey monuments damaged as a direct or indirect result of construction activities shall be re-established by a duly licensed land surveyor at the Contractor's sole expense. A corner record shall be filed in accordance with State law for any reset monuments at the Contractor's sole expense.

The Contractor shall carefully preserve benchmarks, reference points and stakes and, in case of willful or

careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Paragraph 19 of these General Provisions, Changes in the Work.

17. Protection of Work, Property and Persons

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He will take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the work and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. He shall notify owners of adjacent utilities when prosecution of the work may affect them. The Contractor shall remedy all damages, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.

In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or Owner, shall act to prevent threatened damage, injury or loss. He will give the Engineer prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby, and a change order shall thereupon be issued covering the changes and deviations involved.

18. Supervision by Contractor

The Contractor shall supervise and direct the work. He shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor shall employ and maintain on the work, a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor’s representative at the site. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

19. Changes in the Work

The Owner may at any time, as the need arises, order changes within the scope of the work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the work, an equitable adjustment shall be authorized by written change order.

The Engineer may also, at any time, by issuing a field order, make changes in the details of the work. The Contractor shall proceed with the performance of any changes in the work so ordered by the Engineer unless the Contractor believes that such field order entitles him to a change in contract price or contract time, or both, in which event he shall give the Engineer written notice thereof within seven (7) days after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of an executed change order or further instruction from the Owner.

20. Changes in Contract Price

The contract price may be changed only by a written change order. The value of any work covered by a change order or of any claim for increase or decrease in the contract price shall be determined by one or more of the following methods in the order of precedence listed below:

A. Unit prices previously approved.

B. An agreed lump sum.

C. If a lump sum or unit price cannot be mutually agreed upon, the Contractor shall be entitled to the sum of the following costs of doing the extra work:

1. Direct Labor Costs. Charges for cost of all the labor furnished and used by the Contractor shall be made for manual classifications up to and including general foreman. It will not include charges for assistant superintendents, superintendents, office personnel, timekeepers, and maintenance and mechanics. The time charged to extra work shall be subject to the daily approval of the Engineer and evidence of such daily approval shall be submitted with the billing. Labor rates used to calculate the costs shall be those so designated in the Advertisement for Bids. No time or charges will be allowed, except when the men are actually engaged in the proper, efficient, and diligent performance or completion of the extra work as authorized. Overtime shall not be worked without prior approval by the Engineer.

2. Equipment Costs. Charges for the rental and operation of the equipment furnished and used by the Contractor shall be made for all prime construction and automotive equipment. It will not include charges for equipment or tools with a new cost of $1,000.00 or less. Equipment time charges must be subject to the daily approval submitted with the billing. The equipment rental and operation rates used shall be those agreed upon by the Engineer and the Contractor prior to commencement of the extra work. No time or charges will be allowed except when equipment is actually being used for the proper and efficient performance or completion of the extra work as authorized.

3. Material Costs. Charges for the cost of materials furnished by the Contractor shall be made providing such furnishing was specifically authorized in the extra work order and the actual use verified by the Engineer. Charges must be net cost to the Contractor delivered at the job, and vendor's invoice must accompany the billing along with verification of use of such materials by the Engineer.

4. Tools, Supplies, Overhead, Supervision and Profit. A charge for tools, supplies, overhead, supervision and profit will be allowed in the amount of 15% of the Total Direct Labor Costs, and Material Costs, as defined above.

Any extra work performed hereunder shall be subject to all of the provisions of the contract and the Contractor's sureties shall be bound with reference thereto as under the Contract.

21. Time for Completion and Liquidated Damages

The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on a date specified in the Notice to Proceed.

Time is of the essence in this Agreement. The Contractor shall proceed with the work at such a rate of progress to ensure full completion within the contract time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the contract time for the completion of the work described herein is a reasonable time.

The parties hereto agree that it is extremely difficult and impractical in this case to determine the actual damages the Owner will suffer if the Contractor fails to complete the work within the contract time and for said reason, if the Contractor shall fail to complete the work within the contract time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages as specified in the Agreement for each calendar day that the Contractor shall be in default after the time

stipulated in the Contract Documents. The time for completion of the work shall be extended, and the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to the following, and the Contractor has promptly given written notice of such delay to the Engineer:

A. To any preference, priority or allocation order duly issued by the Owner.

B. To unforeseeable caused beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God or of the public enemy, acts of the Owner, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics quarantine restrictions, strikes, freight embargoes, and climatic conditions which, in the opinion of the Engineer, make prosecution of the work unreasonably difficult.

C. To any delays of subcontractors occasioned by any of the causes specified in the above paragraphs.

22. Correction of Work

The Contractor shall promptly remove from the premises all work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

23. Suspension of Work, Termination and Delay

The Owner may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety days, or such further time as agreed upon by the Contractor, by written notice to the Contractor and the Engineer, which notice shall fix the date on which work shall be resumed. The Contractor will resume that work on the date so fixed. The Contractor will be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to any such suspension.

If the Contractor is adjudged as bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver if appointed for the Contractor or for any of his property, or if he files a petition to take advantage of any debtor's act or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he fails to make prompt payments to subcontractors or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction over the work or if he disregards the authority of the Engineer, or if he otherwise violates any provision of the Contract Documents, then the Owner may, without prejudice to any other right or remedy and after giving the Contractor and his surety a minimum of ten (10) days from delivery of a written notice, terminate the services of the Contractor, and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance, the Contractor shall pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Engineer and incorporated in a change order.

Where the Contractor's services have been so terminated by the Owner, said termination shall not affect any right of the Owner against the Contractors then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents.

After ten (10) days from delivery of a written notice to the Contractor and the Engineer, the Owner may without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the contract. In such case, the Contractor shall be paid for all work executed and any expense sustained plus reasonable profit.

If, through on act or fault of the Contractor, the work is suspended for a period of more than ninety (90) days by the Owner or under an order of court or other public authority, or the Engineer fails to act on any request for payment within thirty (30) days after it is submitted, or the Owner fails to pay the Contractor

substantially the sum approved by the Engineer or awarded by arbitrators within thirty (30) days of its approval and presentation, then the Contractor may, after the (10) days from delivery of a written notice to the Owner and the Engineer stop the work until he has been paid all amounts then due, in which event and upon resumption of the work, change orders shall be issued for adjusting the contract price or extending the contract time or both to compensate for the costs and delays attributable to the stoppage of the work.

24. Progress Estimates

On or about the last day of the calendar month, the Contractor will, except as hereinafter provided, make in writing and certify to the Owner an estimate which, in his opinion, is just and fair of the amount and value of the work completed by the Contractor up to that time in the performance of the contract. In case of work for which unit prices are named in the contract, the estimate shall be computed on the basis of said unit prices. In the case of work for which a lump sum is named in the contract, the Engineer may use a breakdown of the lump sum price submitted by the Contractor, provided that such breakdown is submitted within 10 calendar days after the execution of the Agreement in a form acceptable to the Engineer. No payment will be made to the Contractor until such schedule has been submitted to and reviewed by the Engineer. To the figure thus arrived at shall be added any amounts due the Contractor for extra work and the amount of any approved claims for extra costs to the date of the progress estimate the retained percentage hereinafter provided for shall be deducted from the total thus computed; and from the remainder, there shall be further deducted any amounts due the Owner from the Contractor for supplies or materials furnished or services rendered and any other amounts that may be due the Owner under the terms of the contract. In preparing estimates for partial payment, consideration shall be given to delivery on the site of pipe, and fittings which will become a part of the finished construction work and for which payment in full has been made by the Contractor, but no consideration will be given to preparatory work done or other materials on hand. From the balance thus determined shall be deducted the amount of all previous payments and the remainder shall constitute the partial estimate for that month. Such partial estimates shall not be required to be made by strict measurement, but may be made by measurement or by estimation or partly by one method and partly by the other and it shall be sufficient if they are approximate only. Partial estimates may be withheld or reduced if, in the opinion of the Engineer, the Contractor is not diligently and efficiently endeavoring to comply with the intent of the Agreement.

25. Progress Payments

The Owner will make payments on account of the contract as follows: Not later than the 30th day of the month following the month in which the contract is awarded, and the 30th day of each calendar month thereafter, the Owner will pay to the Contractor 95% of the amount earned by the Contractor during the preceding month at the rate of prices set forth in the contract, based on the estimate of the Engineer.

The retention will be held by the Owner until 35 days following filing of the Notice of Completion.

26. Prompt Payment

The Contractor shall promptly pay all subcontractors and suppliers within ten (10) days of receipt of any progress payment, final payment or retention paid by the Owner to the Contractor. Contractor shall advise all subcontractors and suppliers that all second-tier subcontractors and suppliers must be paid within then (10) days of their receipt of payment from the Contractor.

27. Acceptance and Final Payment

Upon receipt of written notice from the Contractor that the work is ready for final inspection and acceptance, the Engineer will promptly make such inspection, and when he finds the work acceptable under the contract, and the contract fully performed, he will promptly issue a final certificate, over his own signature, stating that the work required by this contract has been completed. The Owner then shall issue a formal Notice of Completion, and the entire balance found to be due shall be paid to the Contractor by the Owner 35 days from the date of recording by the Owner of the Notice of Completion of

all work covered by this contract.

Before issuance of the Notice of Completion, the Contractor shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid, or if not paid, then the Contractor shall submit evidence of the status of any unpaid indebtedness.

The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner except the following:

A. those arising from unsettled liens;

B. those arising from faulty work appearing within 12 months after the date of filing of the Notice of Completion;

C. those arising from failure to meet the requirements of the Contract Documents or the specifications; or,

D. those arising from manufacturers' guarantees.

The acceptance by Contractor of the final payment referred to in this paragraph 27 herein, shall be a release of Owner from all claims of liability to Contractor for anything done or furnished for, or relating to, the work or for any act or neglect of Owner or of any person relating to or affecting the work, except demands against Owner for the remainder, if any, of the amounts kept or retained under the provisions of Paragraph 25, Progress Payments, herein; and excepting pending, unresolved claims.

28. Quantities and Unit Prices

The quantities noted in the schedule are approximation for comparing bids, and no claim shall be made against the Owner for excess or deficiency therein. Payment at the unit prices set forth in the schedule will constitute payment in full for the completed work and will include materials, supplies, labor, tools, machinery, and all other expenditures incident to satisfactory compliance with the contract, unless otherwise specifically provided.

The quantities of work performed will be computed for payment by the Engineer on the basis of measurements taken by the Engineer, and these measurements shall be final and binding.

29. Insurance

The Contractor shall not commence work under this Agreement until he has obtained all the insurance required under this section and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved. All insurance required under this section shall be maintained at the expense of the Contractor continuously during the life of the contract up to the date of acceptance of the work by the Owner.

Commercial General Liability and Automobile Liability Insurance – The Contractor shall provide and maintain the following commercial general liability and automobile liability insurance:

A. Coverage – Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office Commercial General Liability coverage (Occurrence Form CG 0001)

2. Insurance Service Office Form Number CA 0001 (ed. 1/87) covering Automobile Liability, Code 1 (any auto)

B. Limits – The Contractor shall maintain limits no less than the following:

1. General Liability – Two million dollars ($2,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit

shall apply separately to the project/location (with the ISO CG 2501 or insurer's equivalent endorsement provided to the Owner) or the general aggregate limit shall be twice the required occurrence limit.

2. Automobile Liability – One million dollars ($1,000,000) per accident for bodily injury and property damage combine single limit.

C. Required provisions – The general liability and automobile liability policies are to contain, to be endorsed to contain the following provisions:

1. The Owner and its directors, officers, employees, agents and volunteers are to be covered as insured as respects: liability arising out of activities performed by or on behalf of the Contractor, products and completed operations of the Contractor, premises owned, occupied or used by the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Owner and its directors, officers, employees, agents, and volunteers.

2. For any claims related to this work, the Contractor's insurance shall be the primary insurance as respects the Owner and its directors, officers, employees, agents and volunteers. Any insurance, pooled coverage or self-insurance maintained by the Owner and its directors, officers, employees, agents and volunteers shall not contribute to it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the Owner and their directors, officers, employees, agents and volunteers.

4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Owner.

D. Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by the Owner. At the option of the Owner, either the insurer shall reduce or eliminate such deductibles or self-insured retentions.

E. Acceptability of Insurers – Insurance is to be placed with insurers having a current A.M. Best's rating of no less than A-: VII or equivalent.

Workers' Compensation and Employer's Liability Insurance – The Contractor and all subcontractors shall cover or insure under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, regardless of whether such coverage or insurance is mandatory or merely elective under law, and the Contractor shall defend, protect and save harmless the Owner and its directors, officers, employees, agents and volunteers from and against all claims, suits, and actions arising from any failure of the Contractor or any subcontractor to maintain such insurance. Before beginning work, Contractor shall furnish to the Owner satisfactory proof that Contractor has taken out for the period covered by the work under this Contract, full compensation insurance for all persons employed directly by Contractor or through subcontractors in carrying out the work contemplated under this Contract, all in accordance with the "Workers' Compensation and Insurance Act," Division IV of the Labor Code of the State of California and any Acts amendatory thereof.

The Contractor shall provide employer's liability insurance in the amount of, at least, $1,000,000 per accident for bodily injury and disease.

The Contractor shall provide the Owner with a certificate of Workers' Compensation and Employers liability insurance coverage.

In signing the Agreement, Contractor makes the following certification required by Section 1861 of the Labor Code:

"I am aware of the provisions of Section 3700 of the Labor Code which requires each employer to be insured against liability for workmen'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 the work of this contract."

Evidences and Cancellation of Insurance – Prior to execution of the Agreement, the Contractor shall file with the Owner evidence of insurance from an insurer or insurers certifying to the coverage of all insurance required herein. Such evidence shall include original copies of the ISO CG 2010 (or insurer's equivalent) signed by the insurer's representative and certificate of insurance (Accord Form 25-S or equivalent). All evidence of shall be certified by a properly authorized officer, agent or qualified representative of the insurer and shall certify the names of the insured, any additional primary insurers, where appropriate, the type and amount of the insurance, the location and operations to which the insurance applies, the expiration date, and that the insurer will give by certified mail, written notice to the Owner at least thirty (30) days prior to the effective date of any cancellation, lapse or material change in the policy.

The Contractor shall, upon demand of the Owner, deliver to the Owner all such policy or policies of insurance and the receipts for payment of premiums thereon; and should the Contractor neglect to obtain and maintain in force any such insurance or deliver such policy or policies and receipts to the Owner, then it shall be lawful for the Owner to obtain and maintain such insurance, and the Contractor hereby appoints the Owner the true and lawful attorney-in-fact to do all things necessary for this purpose. All money paid by the Owner for insurance premiums under the provisions of this article shall be charged to the Contractor.

30. Contract Security

The Contractor shall, within ten (10) days after the receipt of the Notice of Award, furnish the Owner with a performance bond and a payment bond in penal sums equal to 100% of the contract price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of the Contract Documents, and upon the prompt payment by the Contractor to all persons supplying labor and materials in the prosecution of the work provided by the Contract Documents. Such bonds shall be executed by the Contractor and corporate bonding company licensed to transact such business in the state in which the Work is to be performed and named on the current list of "Surety Companies Acceptable Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these bonds shall be borne by the Contractor. If at any time a surety on any such bond is declared a bankrupt or loses its right to do business in the state in which the work is to be performed or is removed from the list of surety companies accepted on Federal bonds, Contractor shall within ten (10) days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such bond (s) shall be paid by Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Owner.

Attached to the bonds shall be the original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws or other instrument which entitles and authorizes the person to execute the bond to do so, a certified copy of the certificate of authority or the insurer issued by the Insurance Commissioner of the county in which the Owner is located which would state that the certificate of authority of the insurer (the bonding company) has not been surrendered, revoked, cancelled, annulled, or suspended.

The performance bond shall remain in full force and effect during the warranty period of 12 months from the date of acceptance of the work by the Owner.

If requested by the Owner or Engineer, copies of the insurer's most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code, shall be provided to the Owner or Engineer within 10 calendar days of the insurer's receipt of the request to submit the statements.

31. Assignments

Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the contract or any portion thereof, or of his right, title or interest therein, or his obligation thereunder, without written consent of the other party.

32. Indemnification

Contractor shall indemnify and hold harmless and defend the Owner and the Engineer and their directors, officers, employees, agents or volunteers, and each of them from and against:

A. Any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind and nature whatsoever for, but not limited to, injury to or death of any person including Owner and/or Engineer and/or Contractor, or any directors, officers, employees, agents volunteers of the Owner, Engineer or Contractor, and damages to or destruction of property of any person, including but not limited to, Owner, Engineer and/or Contractor and their directors, officers, employees, agents or volunteers arising out of or in any manner directly or indirectly connected with the work to be performed under this Agreement, however caused regardless of any negligence of the Owner or the Engineer or their directors, officers, employees, agents, or volunteers, except the sole negligence of willful misconduct or active negligence of the Owner or the Engineer or their directors, officers, employees, agents or volunteers:

B. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities in law or equity, of every kind or nature whatsoever, arising out of , resulting from or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of Contractor.

Contractor shall defend, at Contractor's own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against the Owner and the Engineer or their directors, officers, employees, agents or volunteers.

Contractor shall pay and satisfy any judgment, award or decree that may be rendered against the Owner and their directors, officers, employees, agents, or volunteers in any such suit, action or other legal proceedings.

Contractor shall reimburse the Owner and their directors, officers, employees, agents and/or volunteers, for any and all legal expenses and costs incurred by them in connection therewith or in enforcing the indemnity herein provided.

Contractor agrees to carry insurance for this purpose as set out in the specifications. See Paragraph 29 of these General Provisions for insurance specifications and coverage. Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Owner and the Engineer or their directors, officers, employees, agents and/or volunteers.

33. Separate Contracts

The Owner reserves the right to let other contracts in connection with this project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. If the proper execution or results of any part of the Contractor's work depend upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results.

The Owner may perform additional work related to the project by himself, or he may let other contracts

containing provisions similar to these. The Contractor will afford the Contractors who are parties to such contracts (or the Owner, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his work with theirs.

In the performance of additional work by other contractors or the Owner is not noted in the Contract Documents prior to the execution of the Agreement, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such requires additional expense or entitles him to an extension of the contract time, he may make a claim therefore as provided in Items 19 and 20 of these General Provisions.

34. Subcontracting

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall be fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is of the acts and omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all contracts relative to the work to bind subcontractors to the Contractor by the terms of the Contract Documents in so far as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.

35. Employment of Apprentices

The Contractor and any subcontractor under him shall comply with the requirements of Sections 1777.5 and 1777.6 of the Labor Code in the employment of apprentices. The responsibility for compliance with the provisions of said Section 1777.5 for all apprenticeship occupations shall rest with the Contractor. Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California, or from its branch offices.

36. Payment of Prevailing Wages

The Contractor and all subcontractors under him shall pay all laborers, workmen and mechanics on all work included in this contract no less than the general prevailing rate of per diem wages for work performed, (to-wit, within the limits of the City), and no less than the general prevailing rate of per diem wages for legal holiday and overtime work in said locality, which per diem wages shall not be less than the stipulated rate contained in a schedule thereof which has been ascertained and determined by the Council to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this contract, and which is now on file with the City Clerk, as set forth in the Information for Bidders, and by reference it is incorporated herein and made a part hereof.

The Contractor shall forfeit, as a penalty to the Owner, two hundred dollars ($200.00) for each laborer, workman or mechanic employed for each calendar day or portion thereof such laborer, workman or mechanic is paid less than the said stipulated rates for any work done under this contract by him or by any subcontractor under him in violation of Articles 1 and 2 of Chapter 1 Part 7 of Division 11 of the Labor Code of the State of California, and said sums and amounts which shall have been so forfeited pursuant to the herein paragraph and the said terms of said Labor Code shall

be withheld and retained from payments due to the Contractor under said contract, pursuant to this contract and the said terms of said Labor Code; but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the Division of Labor law Enforcement of the State Department of Industrial Relations or by said Council.

The difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day, or a portion thereof, for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor. The Contractor shall comply with the provisions of Section 1775 of the Labor Code of the State of California.

The Contractor and his subcontractors shall submit certified payroll information electronically to the Department of Industrial Relations as well as a hard copy of said certified payrolls to the Owner on a monthly basis.

37. Registration to Train Apprentices

Pursuant to Labor Code Section 1777.5, all contractors shall file with the appropriate Joint Apprenticeship Training Committee, a DAS-140 form registering to train apprentices. This requirement to register to train apprentices is mandated by Section 1777.5 whether or not you are signatory to or a party of any approved training program. Only those programs approved by the California Apprenticeship Council are applicable to accept DAS-140 registration forms.

If the contractor is approved to train apprentices, then apprentices must be called in a ratio not less than one apprentice hour for each five journeyman hours.

However, if the entire contract may be completed within 20 working days or the entire contract (nor subcontracts) is less than thirty thousand ($30,000), then the Contractor is exempt from requesting apprentices under Labor Code Section 1777.5.

In addition, all contractors are required to make appropriate training contributions as set forth in the prevailing wage determination to each appropriate JATC, or in the alternative, to the California Apprenticeship Council. Payments shall be made not less than monthly, calculated and paid by the fifteenth of each month, for work performed that prior month.

The address for the applicable Joint Apprenticeship Training Committee and for the California Apprenticeship Council can be obtained by calling the Division of Apprenticeship Standards.

38. Penalties

Failure to pay the appropriate prevailing wage can result in penalties being assessed as follows:

A. Up to $50.00 per day per worker for each and every violation; and,

B. debarment from future public works for a period not to exceed three years.

C. $50.00 per day per worker for each failure to comply with the payment of overtime for all hours worked in excess of 8 in one day or 40 in one week.

Failure to register to train apprentices or failure to pay the appropriate training contribution can result in penalties being assessed as follows:

A. $100.00 per day for each day of violation; and,

B. debarment from future public works for a period not to exceed three years.

39. Engineer's Authority

The Engineer shall act as the Owner's representative. He shall decide questions which may arise as to quality and acceptability of materials furnished and work performed. He shall interpret the intent of the Contract Documents in a fair and unbiased manner. The Engineer will make visits to the site and determine if the work is proceeding in accordance with the Contract Documents.

The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship and execution of the work. Inspections may be made at the factory or fabrication plant of the source of material supply.

The Engineer will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

40. Land and Rights-of-Way

Prior to issuance of the Notice to Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the Contract Documents, unless otherwise mutually agreed.

The Owner shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

The Contractor shall provide, at his own expense and without liability to the Owner, any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

41. Warranty and Guarantee

Contractor warrants and guarantees to Owner that all work will be in accordance with the Contract Documents and will not be defective. Prompt notice of defects known to Owner shall be given to Contractor. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in Paragraph 19, Changes in the Work, of these General Provisions. Defective work may be rejected even if approved by prior inspection.

42. One (1) Year Warranty Period

The warranty period shall commence when the Notice of Completion is issued, at notice of beneficial occupancy or at notice of partial utilization of the work to be warranted has been issued, or a later date if so specified in the Agreement, or mutually agreed to, and extend until one (1) year after that date or whatever longer period may be prescribed by laws or regulations or by the terms of any applicable special guarantee or specific provision of the Contract Documents.

43. Correction of Defective Work

If within the designated warranty period, or such longer period as may be required by Laws or Regulations, the work, or any part of the work, is discovered to be defective, Contractor shall promptly, without an adjustment in contract price and in accordance with Owner's written instructions, either correct that defective work, or if it has been rejected by Owner, remove it from the site and replace it with non-defective work. If circumstances warrant it, including but not limited to, in an emergency, Owner may have the defective work corrected or the rejected work removed and replaced. In that event, Contractor shall not be allowed to recover any associated costs, and he shall reimburse Owner for all direct, indirect and consequential costs of Owner, and Owner shall be entitled to an appropriate decrease in contract price, to withhold a set-off against amount recommended for payment, or make a claim on Contractor's bond if Contractor has been paid in full. Where defective work (and damage to other work resulting therefrom) has been corrected, removed or replaced during the warranty period, the one (1) year warranty period with respect to such work will be extended for an additional period of one (1) year after such correction or removal and replacement has been satisfactorily completed.

44. Early Completion

The one (1) year warranty period will not begin until the Notice of Completion is filed. If Contractor completes the work or portions thereof prior to this time, he shall preserve the equipment and/or facilities by developing and implementing a preventive maintenance program in compliance with manufacturer's recommendations to maintain the equipment and/or facilities unless Owner has issued a notice of

beneficial occupancy or notice of partial utilization for the warranted work. At start up, Contractor will be required to get his equipment and/or facilities ready to put into service.

45. Extended Warranties and Guarantees

Owner may at its sole discretion extend the one (1) year warranty period up to twenty-four (24) months, in which case Contractor shall maintain the warranties and guarantees. If such extension of the one (1) year warranty period causes an increase in the cost of the warranties and guarantees provided by Contractor, an adjustment in contract price shall be made as provided by the Contract Documents.

46. Arbitration

With the prior approval of the Owner and the Contractor, all claims, disputes and other matters in question arising out of, or relation to, the Contract Documents or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Item 27 of these General Provisions, may be decided by arbitration in accordance with the Arbitration Rules of the American Arbitration Association. If entered into, the agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

Notice of the request for arbitration shall be filed in writing with the other party to the Contract Documents and with the American Arbitration Association, and a copy shall be filed with the Engineer. The request for arbitration shall set forth specifically the dispute to be arbitrated. Acceptance by the other party of the request to arbitrate shall constitute the agreement to arbitrate and arbitration shall proceed forthwith. No legal proceedings other than to enforce arbitration shall be commenced on any issue covered by the arbitration agreement.

The Contractor shall carry on the work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

47. Taxes

The Contractor shall pay all sales, consumer, use and other similar taxes required by the law of the place where the work is performed.

48. Contractor's Understanding

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and extent of the work, the character, quality, and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of the Engineer or the Owner, either before or after the execution of this Agreement, shall affect or modify any of the terms or obligations herein contained.

49. Accidents

The Contractor shall provide, at the site, such equipment and medical facilities as are necessary to supply first-aid service to anyone who may be injured in connection with the work. The Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with the performance of the work, whether on or adjacent to the site which causes death, personal injury, or property damages, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Engineer and the Owner. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

50. Safety and Sanitation

The Contractor shall provide adequate safety and sanitation facilities according to State laws and local ordinances.

The Contractor will assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and equipment. This responsibility shall apply continuously and not be limited to normal working hours.

51. Climatic Conditions

The Engineer may order the Contractor to suspend any work that may be subject to damage by climatic conditions. The Contractor may suspend work if climatic conditions are such that the Contractor is unable to work. In such case, the Contractor, within seven days, shall request in writing a change order to extend the contract time.

52. Officials Not To Benefit

No official of the Owner shall receive any benefit that may arise by reason of this contract.

53. Clean-Up

During the progress of the work, the Contractor shall maintain the site and related structures and equipment in a clean, orderly condition and free from unsightly accumulations of rubbish. Upon completion of the work, the Contractor shall remove from the vicinity of the work all plants, buildings, rubbish, unused materials, concrete forms, temporary bridging, and other like material, belonging to him or used under his direction during construction, and in the event of his failure to do so, the same may be removed by the Owner after 10 calendar days notice to the Contractor at the expense of the Contractor, and his surety or sureties shall be liable therefore.

As part of the final clean-up, the Contractor shall dress up and grade the right-of-way to match existing ground surfaces, and shall remove therefrom all weeds and other growth. Where the construction has crossed yards or driveways, they shall be restored to a condition equivalent to the condition existing prior to the construction as determined by the Engineer.

No direct payment will be made to the Contractor for any clean-up work, but all compensation therefore shall be included in the prices bid in the schedule for the various items of work.

54. Notice to Owner

In the event this contract involves digging trenches or excavations that extend deeper that four feet below the surface, the Contractor shall promptly, and before the following conditions are disturbed, notify Owner, in writing, of any:

A. Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health 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;

B. Subsurface or latent physical conditions at the site differing from those indicated;

C. 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 the contract.

Owner shall promptly investigate the conditions. If Owner 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, Owner shall issue a change order under the procedures described in the contract.

In the event a dispute arises between Owner and 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 Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between Contractor and Owner.

55. Payment of Withheld Funds

The Owner shall retain 5**%** of each payment from Contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Owner, of the agreed upon work, and pay retention to the Contractor based on these acceptances. The Contractor, or subcontractor, shall return all monies withheld in retention from a subcontractor within 30 days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract agreement work by the Owner. Federal law (49CFR26.29) requires that any delay or postponement of payment over 30 days may take place only for good cause and with the Owner's prior written approval. Any violation of this provision shall subject the violating Contractor or subcontractor to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor, deficient subcontract performance, or noncompliance. When the work is complete, the Owner will issue a Notice of Completion to the County. The Owner will pay all retention funds to the Contractor thirty-five (35) Days after Notice of Completion has been recorded.

56. Storm Water Pollution Prevention Measures

Storm Water Pollution Prevention Measures shall be performed in accordance with the provisions in Section 13-3, "Storm Water Pollution Prevention Plan," of the Caltrans Standard Specifications.

A. GENERAL

In compliance with the State and Federal regulations regarding storm water management during construction, the Contractor shall not allow any debris, waste materials or pollutants, originating from the Contractor's operations, to enter the storm drainage system, which leads to contamination of local creeks and ponding basins.

The Contractor shall properly dispose of all wastes and excess materials in a legal manner to the satisfaction of the Owner.

B. SELECTIVE BMPS FOR STORM WATER POLLUTION PREVENTION

As applicable to the project or directed by the Engineer, the Contractor shall implement any or all of the following Best Management Practices (BMPs):

1. Material Handling and Storage

a. Nonhazardous Materials

i. Designated Delivery and Storage Area

The Contractor shall propose areas in the vicinity of or within the project site or within the Contractor's staging site, which are suitable for material delivery and storage. To the maximum extent practicable, these areas shall be away from gutters, catch basins, drainage courses or creeks. The Contractor shall submit the proposed areas to and shall obtain the approval from the Engineer in writing prior to bringing in materials.

ii. Storage of Granular Materials

The Contractor shall store granular materials at least ten feet (10') away from any inlet or curb return and shall prevent the granular materials from entering the storm drain system, drainage courses or creeks. During wet weather or when rain is forecast within 24 hours, the Contractor shall cover granular materials with a tarpaulin and surround the material with

sandbags or other approved heavy objects.

b. Hazardous Materials

i. Hazardous materials include, but are not limited to, petroleum products, antifreeze, paints, thinners, solvents, pesticides, herbicides and various other toxic chemicals.

ii. The Contractor shall propose, within the project site or the Contractor's staging site, an area that is suitable for hazardous material delivery and storage. To the maximum extent practicable, the area shall be away from inlets, gutters, drainage courses or creeks. The Contractor shall submit the proposed area to and shall obtain approval from the Engineer in writing prior to bringing in hazardous materials.

iii. The Contractor shall label and store all hazardous materials and hazardous wastes in accordance with secondary containment regulations, the City of Los Banos Hazardous Materials Storage Ordinance and all applicable Merced County, State and Federal laws and regulations.

iv. The Contractor shall keep all hazardous materials or waste in containers and fully covered to avoid contamination of storm runoff.

v. The Contractor shall keep an accurate, up-to-date inventory, including Materials Safety Data Sheets (MSDSs), of hazardous materials and hazardous wastes stored on-site to assist emergency response personnel in the event of a hazardous material incident.

2. Hazardous Material Usage

a. The Contractor shall follow all local, State and Federal policies, laws and regulations governing the use of hazardous materials.

b. The Contractor shall use only Category III pesticides for pest control. If Category III pesticides are unavailable, have been tried but proven ineffective, or when it is necessary to prevent a pest outbreak that poses an immediate threat to public health or significant economic loss, the City may consider allowing the use of Category II pesticides with a dose of up to LD50 (a dose that kills 50 percent of the targeted pest population in the laboratory) provided that the risk to the applicator and impact to the environment can be justified. Use of Category I pesticides is prohibited.

c. Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging non-degraded pesticides into storm water system, drainage courses and creeks.

d. Mix only as much material as is necessary for treatment. Calibrate application equipment prior to and during use to ensure desired application rate. Do not mix or load pesticides adjacent to storm drain system, drainage courses or creeks.

e. The Contractor shall not overapply herbicides, pesticides or fertilizers and shall follow the manufacturer's instructions regarding uses, protective equipment, ventilation, flammability and mixing of chemicals. Over-application of a pesticide is a "label violation" subject to an enforcement action by the Merced County Agriculture Department.

f. When rain is forecast within 24 hours or during wet weather, the Contractor shall not apply chemicals in outside areas unless otherwise allowed by the Engineer in writing.

3. Integrated Pest Management Methods

The Contractor shall employ, in place of pesticides, integrated pest management methods including:

a. No control

b. Physical or mechanical methods

c. Least toxic chemicals (insecticidal soaps and oil, etc.)

4. Vehicle and Equipment Cleaning, Maintenance and Fueling

a. Cleaning

The Contractor shall not clean or wash vehicles or equipment on- site or in the streets. If allowed by the Engineer in writing, cleaning and washing shall be performed in a designated and bermed area approved by the Engineer using water only. No soaps, solvents, degreasers, steam cleaning equipment or similar methods are permitted. The Contractor shall not allow wash water to flow into streets, gutters, storm drain system, drainage courses or creeks.

b. Maintenance and Fueling

i. The Contractor shall perform maintenance and fueling of vehicles or equipment in a designated, bermed area or over a drip pan that will prevent waste, leaks or spills from entering streets, gutters, storm drain system, drainage courses or creeks.

ii. The Contractor shall inspect all vehicles and equipment arriving on-site for leaking fluids and shall promptly repair leaking vehicles and equipment. Drip pans shall be used to catch leaks until repairs can be made. Shut-off valves on equipment must be working properly.

5. Spill Prevention and Control

a. If hazardous materials are used on the project, the Contractor shall keep a stockpile of spill clean-up materials, such as rags or absorbents, readily accessible on-site.

b. Above-ground storage tanks and their installations shall comply with City, State and Federal requirements.

c. The Contractor shall immediately contain and prevent spills or leaks from entering storm drain system, drainage courses or creeks and shall properly clean up and dispose of the spills or leaks. The Contractor shall not wash the spills or leaks into streets, gutters, storm drain system, drainage courses or creeks and shall not bury the spills or leaks.

d. In case of a hazardous material spillage, the Contractor shall immediately call 911 and shall handle the spilled material in accordance with the requirements of 6, “Disposal of Hazardous Waste,” below.

6. Disposal of Hazardous Waste

a. Unless the Contractor is a licensed hazardous waste handler, the Contractor shall contract with a licensed hazardous waste handler to remove and dispose of hazardous waste materials unless the waste quantities to be transported are below threshold limits for transportation as specified in the State and Federal regulations.

b. The Contractor shall arrange for regular hazardous waste collection to comply with limits for storage of hazardous waste.

c. The Contractor may dispose of dry, empty paint cans, buckets,

paintbrushes, rollers, rags and drop cloths in the trash.

d. The Contractor shall dispose of hazardous waste at facilities authorized for treatment, storage and disposal of hazardous waste only.

7. Street Sweeping

At the end of each day or as directed by the Engineer, the Contractor shall sweep roadways of all debris and excess materials attributed to the Contractor's operations.

8. Water Usage

a. The Contractor shall use the least amount of water necessary for dust control and street sweeping operations.

b. The Contractor shall not use water to flush dust and debris down the street in place of street sweeping.

9. Dumpsters and Portable Sanitary Facilities

a. If dumpsters or portable sanitary facilities are used, they shall be stationed at least ten feet (10') away from storm drain facilities.

b. The Contractor shall arrange for regular waste collection to keep dumpsters and portable sanitary facilities from overflowing and shall regularly inspect these facilities for leaks. If a leak is discovered, the Contractor shall arrange for the repair or replacement of facilities that leak. The Contractor shall not wash the dumpsters or portable sanitary facilities on-site.

10. Earthwork

The Contractor shall maximize the control of erosion and sediment by using the Best Management Practices for erosion and sedimentation control described in the California Storm Water Best Management Practice Handbook—Construction Activity or ABAG Manual of Standards for Erosion and Sediment Control Measures.

11. Dewatering

a. The Contractor shall route water through a control device, such as a sediment trap, sediment basin or Baker tank, to remove settleable solids prior to discharging the water into the storm drain system. Refer to the California Storm Water Management Practice Handbook for these sediment control measures.

b. Approval of the control device shall be obtained in advance from the Engineer.

c. Filtration of the water following the control device may be required on a case-by-case basis.

d. If the Engineer determines that the dewatering operation would not generate an appreciable amount of settleable solids, the control device may be waived.

12. Saw Cutting

a. During saw cutting or grinding operation, use as little water as possible.

b. During saw cutting, the Contractor shall cover or barricade catch basins using filter fabric, straw bales, sandbags or fine gravel dams to keep slurry out of the storm drain system. When protecting a catch basin, the Contractor shall ensure that the entire opening of the catch basin is covered. Refer to California Storm Water Best Management Practice Handbook for these control

measures.

c. The Contractor shall shovel, absorb or vacuum saw cut slurry and pick up the waste as the work progresses prior to moving to the next location, as specified elsewhere in these specifications or as directed by the Engineer.

d. If saw cut slurry enters catch basins, the Contractor shall, at the Contractor's cost, clean up the storm drain system immediately.

13. Concrete, Grout and Mortar Related Work

a. Material Handling

i. The Contractor shall avoid mixing excess amounts of fresh concrete or cement mortar on-site.

ii. The Contractor shall store concrete, grout and mortar away from storm drain facilities or drainage courses and shall ensure that these materials do not enter the storm drain system.

b. Washing of Concrete Truck and Tools

i. The Contractor shall not wash out concrete trucks or equipment into streets, gutters, storm drain system, drainage courses or creeks.

ii. The Contractor shall perform washing of concrete trucks and tools off-site or in a designated area on-site where the water will flow onto dirt or into a temporary pit in a dirt area. The Contractor shall let the water percolate into the soil and dispose of the hardened concrete in a trash container. If a suitable dirt area is not available, the Contractor shall collect the wash water and dispose of it off-site.

14. Asphalt Concrete Paving

a. Project Site Management

i. When rain is forecast within 24 hours or during wet weather, the Engineer may prevent the Contractor from paving.

ii. The Engineer may direct the Contractor to protect drainage courses by using earth dike, straw wattle or sandbag to trap and filter sediment. Refer to California Storm Water Best Management Practice Handbook for these control measures.

iii. The Contractor shall place drip pans or absorbent material under paving equipment when not in use.

iv. The Contractor shall cover catch basins and manholes when paving or applying prime coat, tack coat, seal coat, fog seal or slurry seal.

v. If the paving operation includes an on-site mixing plant, the Contractor shall comply with Merced County NPDES General Industrial Activities Storm Water Permit requirements.

vi. The Contractor shall preheat, transfer or load hot bituminous material away from storm drain system, drainage courses or creeks.

b. Paving Waste Management

The Contractor shall not sweep or wash down excess sand (placed as part of a sand seal or to absorb excess oil) into streets, gutters, storm drain system or creeks but shall collect the sand and dispose of it off-site. The Contractor shall not wash fresh asphalt concrete pavement.

15. Painting

a. General

i. The Contractor shall remove as much excess paint as possible from brushes, rollers and other tools before starting cleanup.

ii. The Contractor shall conduct cleaning of painting equipment and tools in a designated area approved by the Engineer.

iii. The Contractor shall not allow wash water from cleaning of painting equipment and tools into streets, gutters, storm drain system, drainage courses or creeks.

b. Water-Based Paint

To the maximum extent practicable, the Contractor shall dispose of wash water from water cleaning of brushes, rollers and other tools used in water-based painting work to the sanitary sewer or direct wash water onto dirt area and spade in.

c. Oil-Based Paint

The Contractor shall dispose of waste thinner and solvent and sludge from cleaning of brushes, rollers and other tools used in oil- based painting work as hazardous waste and the Contractor shall handle the waste as described in Section 6, "Disposal of Hazardous Waste," above. To the maximum extent practicable, the Contractor shall filter paint thinner and solvents for reuse.

16. Thermoplastic

a. The Contractor shall transfer and load hot thermoplastic away from drainage systems or drainage courses or creeks.

b. The Contractor shall sweep thermoplastic grindings into plastic bags. Yellow thermoplastic grindings may require special handling as they may contain paint.

C. CONTRACTOR TRAINING AND AWARENESS

1. The Contractor shall train all employees and subcontractors on the storm water pollution prevention requirements contained in these specifications.

2. The Contractor shall inform subcontractors of the storm water pollution prevention contract requirements and include appropriate subcontract provisions to ensure that these requirements are met.

3. The Contractor shall post warning signs in areas treated with chemicals.

D. BMP IMPLEMENTATION

The Contractor shall be responsible throughout the duration of the construction period for installing and maintaining the applicable BMPs and for removing and legally disposing of temporary control measures. Unless otherwise directed by the Engineer or specified elsewhere in these specifications, the Contractor's responsibility for BMP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.06, "Suspensions," of the Standard Specifications.

Throughout the rainy season, all soil-disturbed areas of the site shall be fully protected with soil stabilization and sediment control device approved by the Engineer at the end of the same day the soil is disturbed unless fair weather is predicted the next day and the protective measures are exempt by the Engineer. The Contractor shall monitor the weather forecast on a daily basis and inform the Engineer of the forecast. The National Weather Service forecast shall be used for this purpose. If precipitation is predicted for the following day, construction schedule shall be altered as required to install appropriate BMPs or to ensure that the already installed

BMPs are in good operating condition prior to the onset of rain.

E. BMP MAINTENANCE

To ensure proper implementation and effectiveness of the BMPs, the Contractor shall regularly inspect and maintain the deployed BMPs throughout the construction site. The Contractor shall identify corrective actions and the time needed to address any deficient BMPs or reinitiate any BMPs that have been discontinued. The Contractor shall keep written records of all BMP inspections, maintenance and corrective actions.

The frequency of the BMP inspection shall be as follows:

1. Prior to a forecast storm;
2. After any precipitation that causes runoff;
3. At 24-hour intervals during extended rain events; and
4. Routinely, at a minimum of once every week.

If the Contractor or the Engineer identifies a deficiency in the deployment or functioning of a BMP, the deficiency shall be corrected immediately. If requested by the Contractor and approved by the Engineer in writing, the deficiency may be corrected at a later time or date but the corrective action shall not be later than the onset of the subsequent rain event. The correction of deficient BMPs shall be at no additional cost to the City.

F. RESPONSIBILITIES, CONSEQUENCES, AND REMEDIES

1. Conformance with the provisions of this section or other requirements in various other sections of these specifications shall not relieve the Contractor from the Contractor's responsibilities as provided in various relevant articles of Section 7, "Legal Relations and Responsibilities to the Public," of the Standard Specifications, and as specified herein.
2. For purposes of this section, costs and liabilities include, but are not limited to, fines, penalties and damages, whether assessed against the City or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Act.
3. If solid or liquid materials or waste, hazardous or otherwise, or pollutants originating from the Contractor's operation enter the storm drain system or water courses, the Contractor will be required to thoroughly clean up the affected storm drain facilities and water courses to the satisfaction of the Engineer. If the Contractor fails to clean up the affected facilities as required, the City will issue a stop-work order and take necessary actions to effect the cleanup of the affected facilities.
4. The Contractor shall be responsible for all costs, including fines, the City's cost of defense, the cost of cleanup by others ordered by the City, and liabilities imposed by law as a result of the Contractor's failure or negligence in complying with the requirements specified herein.
5. In accordance with the provisions of Section 7-1.05, "Indemnification," of the standard Specifications if the Contractor fails to accept or reject a tender of defense and indemnity within fifteen (15) calendar days, the City may, in addition to the remedies authorized by law, retain any sum due the Contractor until disposition has been made of all claims or suits for damages or until the Contractor accepts or rejects the tender of defense, whichever occurs first.

G. PAYMENT

Full compensation for storm water pollution control shall be considered as included in the payment for various other items of work and no additional compensation will be made

therefore.

Special Provisions

1. Requirements

It is required that there be constructed and completed in accordance with the Contract Documents for

“Construction of Pioneer Road/ Ortigalita Road Signalization & Traffic Flow Improvements" for the City of

Los Banos, all work as described in these Contract Documents.

2. Description of Work

The principal components of the work to be performed under these Contract Documents include the following:

The major work consists of reconstructing and signalizing the intersection of Pioneer Road and Ortigalita Road. Right and left turn pockets will be added for all intersection approaches and a Class 1 trail will be installed along the north side of Pioneer Road. ADA improvements including curb ramps and crosswalks will be installed with the project. Storm drain and water facilities will be installed within the intersection consistent with the City of Los Banos' Utility Master Plans. The purpose of the project is to improve operation and pedestrian network of the intersection. The project is needed to reduce congestion and improve air quality.

Any incidental work not described in the Contract Documents which is necessary to complete the Work shall be furnished and installed as part of this contract at no additional cost to the Owner. The work shall be complete and ready for service to the satisfaction of the Owner. The Contractor is responsible to inspect the site and observe actual working conditions prior to bidding the project.

3. Commencement, Prosecution and Completion of Work

The Contractor shall commence work and shall complete all of the work in accordance with the schedule and within the time stated in the bid. The capacity of the Contractor’s construction plant, sequence of operations, method of operations, and the forces employed shall at all times during the continuance of the contract, be subject to the approval of the Engineer and shall be such as to ensure the completion of the work within the time specified.

4. Hours of Work

Construction work shall be completed between the hours of 7:00 a.m. and 9:00 p.m. Monday through Friday using normal construction practices. No work shall be performed on Saturday or Sunday. The Contractor may request to the Owner to perform construction outside of these specified hours. Any overtime or special inspection expenses incurred by the City at request of the Contactor will be at the expense of the Contractor.

5. Permits and Business Licenses

The Contractor will need to obtain Encroachment Permits from the Public Works Department of the City of Los Banos and the Public Works Department of Merced County prior to the start of construction. The City of Los Banos and County of Merced will issue the required encroachment permits at no cost to the Contractor. No additional insurance will be required by the City of Los Banos as a condition of approval of the encroachment permit. For the County of Merced encroachment permit, the contractor shall complete an on-line application at the following website address: https://permits.countyofmerced.com/Permitting-Licensing-Divisions/Public-Works-Department/Encroachment-Permit
It is the Contractor's responsibility to comply with the Merced County Encroachment Permit General Provisions, including insurance requirements, which can be accessed online at the following website

address:
https://www.countyofmerced.com/DocumentCenter/View/36639/Encroachment-Permit-General-Provisions?bidId=

The Contractor and all subcontractors working within the city limits of Los Banos shall apply for and have issued a business license from the City of Los Banos (209-827-7000) prior to commencement of work.

6. Testing

Field density tests shall be made of each compacted layer (subbase and aggregate base) as directed by the Engineer. When these tests indicate that the density of any layer of fill or portion thereof is less than the specified density, that layer shall be reworked unit the required density has been obtained.

Field density tests (compaction testing) shall be performed by a geotechnical laboratory retained by the Owner and under the supervision of a registered geotechnical engineer.

Initial compaction testing will be paid by the Owner. Retesting of areas that failed the initial testing will be paid for by the Contractor.

7. Responsibility Regarding Existing Utilities and Private Property

The existence and location of public and private utilities indicated on the drawings are not guaranteed and any additional utilities and facilities not shown on the drawings shall be investigated and protected by the Contractor. The Contractor shall be held responsible for damage to and for maintenance and protection of existing pipelines, public utilities, drives, curbs and gutters, sidewalks, and fences. Excavation in the vicinity of existing public utility structures, underground electrical or telephone cable, oil or gas pipelines, and waterlines shall be carefully done by hand. The Contractor shall adequately protect all adjoining property and structures from damage, whether within or without of the Owner furnished rights-of-way, and shall be fully responsible for any damage to adjoining property and structures which may result from work done under this contract. The Contractor shall use extreme care during construction to prevent damage from dust to crops and adjacent property. The Contractor shall sprinkle the areas where the passage of operation of vehicles and equipment creates a dust problem, or take other preventive measures as directed by the Engineer. The Contractor shall furnish all labor, equipment, materials and means required to control dust which is in any way a result of the Contractor's operations.

The Contractor shall be responsible for all damage or injury which may result to any property, outside of the construction right-of-way or within the right-of-way where so noted, from the Contractor's operations hereunder, or otherwise, from the performance of the Agreement by said Contractor or any of his subcontractors or employees.

The Contractor shall attempt to maintain access to the residential and commercial driveways within the construction area at all times during working hours and shall provide access during non-working hours, weekends and holidays.

Payment for all work specified above shall be included in the unit or lump sum prices bid in the schedule for the various items of work.

8. Obstructions

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installation at least 3 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Failure to contact the notification center prohibits excavation. Regional notification centers include but are not limited to the following:

NOTIFICATION CENTER	TELEPHONE
Underground Service Alert	811 or

Northern California (USA) 1-800-227-2600
www.usanorth811.org

9. Materials Furnished By Owner

No labor, material, or other facilities shall be provided by the Owner unless otherwise indicated on the drawings or in the Contract Documents.

10. Materials Furnished By Contractor

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary for the execution and completion of the work.

11. Schedule of Values, Material List and Substitutions

Prior to the commencement of work, and within 10 days following the signing of the contract by the Owner and the Contractor, the Contractor shall submit 2 copies of a Schedule of Values for all lump sum bid items in the Bid Schedule and a *complete* list of equipment and materials to be furnished, including all substitutions proposed to the Engineer for approval. Partial or incomplete material lists will not be considered. No substitutions will be considered thereafter. Only one request for substitution will be considered on each item of material or equipment.

12. Request for Extension of Time

All extension of time requests shall be made in writing to the Engineer within seven (7) calendar days from the delay occurrence date. In the case of continuing cause of delay, only one claim is necessary.

13. Rights-of-Way

The Contractor shall not be entitled to extra compensation for hardships and increased cost caused by the work being adjacent to telephone-telegraph lines and guy wires, power lines and guy wires, buildings, fences, pipelines, ditches, roadways, and other obstacles which may physically restrict or limit the use of construction equipment. In some cases, such physical confinement may necessitate special methods of construction of the work. If the Contractor desires to utilize additional area, he shall obtain the necessary approvals from the landowner. No additional compensation shall be paid to the Contractor for the cost of obtaining additional right-of-way or for the inability to obtain such.

During the right of way acquisition process, agreements were made with the property owners of APN 431-280-011 and APN 083-180-029 that specific work activities may be completed within private property. These activities include the following:

APN 431-280-011

- Tree Removal
- Custom Business Sign Relocation
- Private Light Pole Relocation
- Fence and Gate Relocation

APN 083-180-029

- Tree Removals
- Private Light Pole Relocation
- Propane Tank Relocation
- Fence and Gate Relocation

14. Coordination with Other Work

Other work including but not necessarily restricted to relocation of power and telephone poles, installation of a gas line and relocation of water meters may be in progress near or at the construction site at the time the Contractor is in performance of the work specified herein. The Contractor shall coordinate his work with that of others so that prosecution of all work will proceed smoothly.

As part of this project, AT&T, PG&E, and Comcast will be relocating overhead and underground utilities within the project area. It is the Contractor's responsibility to coordinate with utility owners and anticipate utility relocation as part of the general prosecution of Contractor's work. The Contractor is expected to consider utility relocation schedules when planning the phasing of construction and necessary stage construction measures. The Contractor shall also confirm depths that underground utilities are installed at during the relocation process. Contact information for each utility company is provided below:

AT&T

Adam Criswell

Email: AC9040@att.com

Phone: (209) 412-8543

PG&E

Laura Valencia

Email: l2sl@pge.com

Phone: (559) 240-0979

Comcast

Frank Castro

Email: frank_castro@comcast.com

Phone: (559) 217-9222

15. Closure of Streets

The Contractor will be allowed to temporarily close the streets being paved to vehicular traffic between the hours 7:00 a.m. and 5:00 p.m. on the day the streets are being paved. All street closure dates shall be coordinated with and approved by the Engineer for approval no later than 10 working days prior to the earliest proposed closures and detours.

16. Construction Signs, Barricades, Lights and Flagmen

The Contractor shall furnish, erect and maintain adequate barricades, lights, signs and other devices and take other protective measures to prevent damage to the public. The Contractor shall also furnish adequate warning to the public of dangerous conditions to be encountered. Where one lane of a public road is closed, the Contractor shall furnish flagmen at each end of the closed lane to control traffic in the open lane. The Contractor shall also furnish adequate warning to the public of dangerous conditions to be encountered.

Payment for traffic control and other safety measures shall be included in the Traffic Control ~~Plan~~System lump sum price bid in the Bid Schedule.

17. Traffic Control Plan

It is the Contractor's sole responsibility to establish and implement a Traffic Control Plan conforming to Sections 7-1.08, "Public Convenience" 7-1.09, "Public Safety", and Section 12, "Construction Area Traffic Control Devices", of the Caltrans Standard Specifications. Nothing in these Contract Documents shall be construed as relieving the Contractor from his responsibility.

The Traffic Control Plan shall be prepared, stamped and signed by a professional engineer registered in California, and three copies provided to the Engineer before the Contractor is issued a Notice to Proceed.

Payment for the preparation and implementation of the Traffic Control Plan shall be ~~made at~~included in the ~~applicable~~Traffic Control System lump sum price bid in the Bid Schedule.

18. Disposal of Waste Materials

Waste material shall be disposed of in accordance with local regulatory requirements. Provide watertight conveyance for liquid, semi-liquid or saturated solids which tend to bleed during transport. Liquid loss from transported materials is not permitted, whether being delivered to construction site or hauled away for disposal. Fluid materials hauled for disposal must be specifically acceptable at selected disposal site.

19. Noise Control

Conduct operations to cause least annoyance to residents in vicinity of work, and comply with applicable local ordinances. Equip compressors, hoists, and other apparatus with mechanical devices necessary to minimize noise and dust. Equip compressors with silencers on intake lines. Equip gasoline or oil-operated equipment with silencers or mufflers on intake and exhaust lines.

20. Water Supply

Water will be available to the Contractor in performance of the work without charge from all Owner fire hydrants. Prior to the use of any hydrant the Contractor shall notify the Owner and obtain and install a meter furnished by the Public Works Department on the fire hydrant. It will be the Contractor's responsibility to convey the water to the work site. Regardless of the method of conveyance chosen, it shall not be cause for closure of any streets nor shall it create a nuisance to nearby residents. An air gap shall be maintained between the hose or pipe discharge to prevent possible backflow in the event of distribution system pressure loss. The Contractor shall pay a One Thousand Dollar ($1,000) deposit per meter for the use of the fire hydrant meter. The deposit may be refunded in full if the fire hydrant meter is returned undamaged.

21. Notifications

The Owner will notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the Owner, of any non-compliance with State or local requirements. The Contractor shall, after receipt of such notice from the Owner or from the regulatory agency through the Owner, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance**.**

22. Work Not Listed in Proposal

It is the intent of the plans, specifications and contract documents to provide for the construction of completed and finished facilities and works of improvement unless otherwise specifically provided. Except for authorized changes in the work, payment for said complete and finished facilities and works of improvement will be made only on the basis of the contract items of work listed in the proposal. All other work, including the furnishing of plants, labor, materials, tools, equipment, and incidentals, provided for in the plans, specifications and contract documents, or required for the proper completion of the work as a whole, for which no separate payment has been provided shall be a supplementary obligation of the Contractor and payment therefore shall be considered included in the prices paid for the various contract items of work listed in the proposal.

23. Submittals

The Contractor shall submit to the Engineer, a minimum of six sets, hard copies, or one electronic copy of the following submittals for review and approval:

1. Water Pipeline Appurtenances (Fittings, Couplings, Saddles)
2. Water Service Tubing and Appurtenances
3. Storm Drain Pipeline and Appurtenances (Fittings, etc.)
4. Manholes
5. Aggregate Base
6. Concrete Mix Design
7. Asphalt Concrete Mix Design
8. Thermoplastic
9. Pavement Paint
10. Reinforcing Steel

Within 10 days after the effective date of the Agreement and before starting to perform any work, the Contractor shall submit to the Engineer for review and approval:

1. A work schedule indicating the times for starting and completing the various stages of the work. No progress payment shall be made to Contractor until an acceptable schedule has been submitted to the Engineer.
2. Traffic Control Plan
3. Notice to Residents in English and Spanish
4. A Schedule of Values - a breakdown of each lump sum price to be used to determine deductive change orders, if necessary.
5. A complete list of equipment and materials to be furnished
6. City of Los Banos Business License for Contractor and all subcontractors

If more than TWO submittals for a single item are required because of incorrect or insufficient data, or the submittal is unacceptable, or because the Contractor wishes to change previously approved material, then all costs incurred by the Owner for the additional review shall be deducted from monies due the Contractor.

A revised work schedule shall be submitted within 5 days of request by the Engineer. No future progress payments shall be made to Contractor until an acceptable schedule has been submitted to Engineer.

24. Bid Item Descriptions

Item #0 - Mobilization

Item #1 - Lead Compliance Plan

Item #2 - Construction Area Signs

Item #3 - Traffic Control System

Item #4 - Portable Changeable Message Sign (EA)

Item #5 - Job Site Management

Item #6 - Storm Water Pollution Prevention Plan

Item #7 - Clearing and Grubbing
Item #8 - Tree Removal
Item #9 - Remove Concrete
Item #10 - Remove Pipe
Item #11 - Remove Manhole
Item #12 - Remove Inlet
Item #13 - Roadway Excavation
Item #14 - Roadway Excavation (Type R-1) (Aerially Deposited Lead)
Item #15 - Hydroseed
Item #16 - Decomposed Granite
Item #17 - Class 2 Aggregate Base
Item #18 - Hot Mix Asphalt (Type A)
Item #19 - Place Hot Mix Asphalt Dike (Type A)
Item #20 - 12" Reinforced Concrete Pipe (Class IV)
Item #21 - 24" Reinforced Concrete Pipe (Class IV)
Item #22 - Detectable Warning Surface
Item #23 - Concrete (Ditch Lining)
Item #24 - Irrigation Junction Box
Item #25 - Irrigation Connection
Item #26 - Concrete Collar
Item #27 - Grated Line Drain
Item #28 - Minor Concrete (Curb)
Item #29 - Minor Concrete (Curb and Gutter)
Item #30 - Minor Concrete (Driveway)
Item #31 - Minor Concrete (Textured Paving)
Item #32 - Minor Concrete (Curb Ramp)
Item #33 - Chain Link Fence
Item #34 - 10' Chain Link Swing Gate
Item #35 - 16' Chain Link Rolling Gate
Item #36 - 20' Chain Link Rolling Gate
Item #37 - Reestablish Monument
Item #38 - Remove Fence
Item #39 - Salvage Fence
Item #40 - Remove Roadside Sign (Metal Post)
Item #41 - Relocate Roadside Sign-One Post
Item #42 - Roadside Sign - One Post
Item #43 - Pedestrian Barricade
Item #44 - Relocate Custom Business Sign

Item #45 - Remove Yellow Thermoplastic Traffic Stripe (Hazardous Waste)

Item #46 - 6" Thermoplastic Traffic Stripe

Item #47 - 8" Thermoplastic Traffic Stripe

Item #48 - Thermoplastic Pavement Marking

Item #49 - Relocate Propane Tank

Item #50 - 12" C-900 DR-14 PVC Pipe

Item #51 - 18" C-900 DR-14 PVC Pipe

Item #52 - 12" Ductile Iron Flange Coupling

Item #53 - 12" Ductile Iron Blind Flange

Item #54 - 18" Ductile Iron Blind Flange

Item #55 - 6" Ductile Iron Pipe 45° Elbow

Item #565 - 12" Ductile Iron Pipe 45° Elbow

Item #576 - 18" Ductile Iron Pipe 45° Elbow

Item #587 - 18" X 12" Ductile Iron Mechanical Joint Cross

Item #598 - 2" Water Service

Item #6059 - Water Valve

Item #610 - Fire Hydrant

Item #62 - Blow Off Valve

Item #631 - Thrust Block

Item #642 - Type 36RX Catch Basin

Item #653 - Storm Drain Manhole

Item #664 - 18" Reinforced Concrete Pipe (Class III)

Item #675 - 24" Reinforced Concrete Pipe (Class III)

Item #686 - 27" Reinforced Concrete Pipe (Class III)

Item #697 - 48" Reinforced Concrete Pipe (Class III)

Item #7068 - 60" Reinforced Concrete Pipe (Class III)

Item #7169 - Traffic Signal at Pioneer Road and Ortigalita Road

Item #720 - Light Poles and Electrical Outlet on Privately Owned Properties

PIONEER ROAD/ ORTIGALITA ROAD SIGNALIZATION & TRAFFIC FLOW IMPROVEMENTS

TECHNICAL SPECIFICATIONS

PROJECT No. 23ST0013

NOVEMBER 2024

Prepared By:



Technical Provisions
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 Los Banos for all work listed in the bid items. If a conflict arises between the City Specifications, the Merced County Improvement Standards and Specifications, and the Caltrans Specifications, the City Specifications will take precedence. If a conflict arises between the Merced County Improvement Standards and Specifications, and the Caltrans Specifications, the County Specifications will take precedence.

Item # 0 – Mobilization

This item shall be bid lump sum and shall conform to the provisions of Section 9-1.16D (Mobilization) of the 2023 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 paid for Mobilization shall include full compensation for the contract documents and for the moving of personnel, equipment, supplies and incidentals to the project site, and no additional payment will be made.

Item # 1 – Lead Compliance Plan

This item shall be bid lump sum and shall conform to Section 7-1.02K(6)(j)(ii) (Lead Compliance Plan) of the 2023 Caltrans Standard Specifications.

The lump sum price paid for Lead Compliance Plan shall include full compensation for the preparation, submittal, and implementation of the lead compliance plan and no additional payment will be made.

Item # 2 – Construction Area Signs

This item shall be bid per lump sum and shall conform to Section 12-3.11 (Construction Area Signs) of the 2023 Caltrans Standard Specifications and the latest edition of the California Manual on Uniform Traffic Control Devices (CAMUTCD).

The Construction Area Signs shall be placed as shown on the plans or as directed by the Engineer. This bid item shall include all Construction Area Signs, including the Funding Identification Sign. Details for the Funding Identification Sign are shown below.



Full compensation for furnishing all labor, materials, tools equipment and incidentals required to place the Construction Area Signs shall be included in this bid item and no additional payment will be made.

Item # 3 – Traffic Control System

This item shall be bid lump sum and shall conform to the provisions of the latest edition(s) of: Section 12 (Temporary Traffic Control) of the 2023 Caltrans Standard Specifications, Chapter 5 of Caltrans Traffic Manual (Traffic Controls for Construction and Maintenance Work Zones), California Manual on Uniform Traffic Control Devices (CAMUTCD), 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 to both the City and Merced County, with all approvals necessary to implement said Traffic Control Plan, at least 2 weeks prior to starting work, and for furnishing, placing, maintaining, repairing, replacing and removing barricades, temporary pavement delineation, 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; all field set up and traffic control maintenance shall be performed by a C-31 licensed contractor. Traffic control plans shall show the placement of all signs, barricades, delineators and other traffic control devices required by the Contractor's operation. The Contractor is to maintain traffic on Pioneer Road and Ortigalita Road at all times, except as noted below.

Emergency vehicles access shall be available along all streets within the construction area at all times.

As shown on the Plans, the intersection is proposed to be constructed in 2 stages:

Construction Stage 1 Description

During Stage 1, the east leg of the intersection will be closed to traffic. The west, north, and south legs will remain open to traffic. During construction, all intersection approaches will be stop controlled.

Prior to traffic being shifted during this stage, the contractor shall construct the temporary pavement areas as shown in the plans.

Once the temporary pavement areas are complete, traffic will be shifted as follows:

Along Pioneer Road, traffic along the west leg will be shifted north utilizing the existing roadway pavement and the temporary pavement areas.

Along Ortigalita Road, traffic will be shifted west utilizing the existing roadway pavement and the temporary pavement areas.

Temporary railing (type k) shall be placed between traffic and the work area wherever necessary. Temporary railing (type k) shall conform to Section 12 (Temporary Traffic Control) of the 2023 Caltrans Standard Specifications and the 2023 Caltrans Standard Plans.

Construction Stage 2 Description

During Stage 2, the north leg of the intersection will be closed to traffic. The east, west, and south legs will remain open to traffic. During construction, all intersection approaches will be stop controlled.

Prior to traffic being shifted during this stage, the contractor shall construct the full depth HMA pavement section areas as shown in the plan view. The full depth HMA section areas will be constructed at the finished grade elevations as shown on the plan and profile sheets.

Once the full depth HMA pavement section areas are complete, traffic will be shifted as follows:

Along Pioneer Road, traffic will be shifted south onto the new pavement that was constructed during Stage 1.

Along Ortigalita Road, traffic along the south leg will be shifted east onto the new pavement that was constructed during Stage 1.

All remaining project improvements will be constructed at this time. Temporary railing (type k) shall be placed between traffic and the work area wherever necessary. Temporary railing (type k) shall conform to Section 12 (Temporary Traffic Control) of the 2023 Caltrans Standard Specifications and the 2023 Caltrans Standard Plans.

The following traffic control requirements shall apply to the project:

Street Name	Closure Duration Allowed	Traffic Control
Pioneer Road	6 months	Contractor shall minimize impacts to traffic traveling along Pioneer Road. Full road closure will be allowed along the east leg of Pioneer Road during construction. While the east leg is closed, the other 3 legs of the intersection must remain open to traffic. Road closures along the west leg will not be permitted. Detours shall be provided as shown in the Plans during road closures.
Ortigalita Road	6 months	Contractor shall minimize impacts to traffic traveling along Ortigalita Road. Full road closure will be allowed along the north leg of Ortigalita Road during construction. While the north leg is

		closed, the other 3 legs of the intersection must remain open to traffic. Road closures along the south leg will not be permitted. Detours shall be provided as shown in the Plans during road closures.

Besides the closures noted in the table above, the Contractor shall provide a minimum of two 11-foot lanes along Pioneer Road and Ortigalita Road when flaggers are not present. When flaggers are present, the Contractor shall provide a minimum of one 11-foot lane along Pioneer Road and Ortigalita Road utilizing reversing lane control.

The Contractor must provide reasonable means for all property owners that are adjacent to construction to access their properties at all times unless coordinated with otherwise. Any driveway closures must be coordinated with the property owners at least 72~~24~~ hours in advance.

Full compensation for furnishing all labor (including flagging), materials, tools, equipment and incidentals, Traffic Control Plan submittals, 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. This includes flagging, signage, channelizers, delineators, removal of existing white pavement markings, removal of existing white traffic stripe, temporary striping, temporary pavement markings, temporary railing, temporary pavement, temporary railings/ barriers, crash cushions, and all other items necessary to safely convey traffic through the project area, or to detour traffic around the project area during construction. Payments shall be prorated over the term of the contract.

Item # 4 – Portable Changeable Message Sign (EA)

This item shall be bid per the each and shall conform to the provisions of Section 12 (Temporary Traffic Control) of the 2023 Standard Specifications.

The Contractor shall furnish, place, operate, and maintain Portable Changeable Message Signs as shown on the Construction Area Sign Plans or where designated by the Engineer, for the duration of the project or as directed by the Engineer. Start displaying the message on the sign 30 minutes before closing the lane or shoulder or when directed by the Engineer.

Full compensation for furnishing, placing and maintaining Portable Changeable Message Signs as specified in this special provision or as directed by the Engineer shall be considered as included in the contract price paid for the Portable Changeable Message Signs, and no additional compensation will be allowed.

Item # 5 – Job Site Management

This item shall be bid lump sum and shall conform to the provisions of Section 13-4 (Job Site Management) of the 2023 Caltrans Standard Specifications.

Full compensation for furnishing all labor, materials, tools equipment and incidentals required to complete Job Site Management tasks shall be included in this bid item and no additional payment will be made.

Item # 6 – Storm Water Pollution Prevention Plan

This item shall be bid lump sum and shall conform to Section 56 of the General Provisions and Section 13 (Water Pollution Control) of the 2023 Caltrans Standard Specifications.

This item shall include preparing, coordinating, obtaining approval of, revising, and amending the SWPPP. SWPPP preparation must be by a Qualified SWPPP Developer (QSD) and includes obtaining SWPPP approval, amending the SWPPP, and preparing a Construction Site Monitoring Program (CSMP) at the job

site.

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.

Full compensation for preparing, receiving approval, and implementing the SWPPP and other SWPPP documents or reports necessary for the project, including all labor, materials and incidentals, and all work necessary to carry out all training, inspection, monitoring programs, furnishing, installing, maintaining and removing Construction BMPs, and to perform any other necessary to comply with the requirements in the General Construction Permit, shall be included in the lump sum amount bid for this item, and no additional payment will be made.

Item # 7 – Clearing and Grubbing (LS)

This item shall be bid lump sum and shall conform to Section 17-2 of the 2023 Caltrans Standard Specifications.

The following is a list of various items of work to be performed in this bid item.

1. Removal of trees, shrubs, stumps, and bushes. Any tree removals with a trunk diameter greater than or equal to 4" are covered under a separate Tree Removal bid item. Any tree or shrub less than 4" shall be considered in the bid item for Clearing and Grubbing. The tree's diameter shall be measured at a height of 2' above the existing ground. All trees, existing stumps and roots, buried logs, and all other organic material shall be removed 3 feet below the existing ground surface, or 6 feet below finished grade, whichever is deeper. Backfill holes resulting from stump and root removal to original grade.
2. Removal of Concrete (Foundations, sidewalk, ramps, driveways, mow curb)
3. Removal of irrigation facilities (culverts, ditches, flow gates)
4. Removal of any other obstructions, improvements, or facilities lying within the limits of the improvements, or as directed by the Engineer
5. Sawcutting necessary for the neat removal of concrete and asphalt where is shown on the plans and as directed by the Engineer

The work under this bid item shall not be limited to the foregoing list items but shall include all work as specified in Section 17-2 of the Caltrans 2023 Standard Specifications, the Plans, and as directed by the Engineer.

Full compensation for all costs involved in clearing and grubbing, including removal of all existing materials shown for removal on the Plans, removal and/or relocation of various facilities, and all work incidentals shall be included in the lump sum bid for this item, and no additional payments will be made.

Item # 8 – Tree Removal (LS)

This item shall be bid lump sum and shall conform to these specifications as outlined below.

Any tree removals with a trunk diameter greater than or equal to 4" are covered under this Tree Removal bid item. Any tree or shrub less than 4" shall be considered in the bid item for Clearing and Grubbing. The tree's diameter shall be measured at a height of 2' above the existing ground. All trees, existing stumps and roots, buried logs, and all other organic material shall be removed 3 feet below the existing ground surface, or 6 feet below finished grade, whichever is deeper. Backfill holes resulting from stump and root removal to original grade.

Trees and plants that are not designated for removal shall be fully protected from injury by the Contractor at their expense. Trees shall be removed in such a manner as not to injure standing trees, plants, and

improvements which are to be preserved.

Contractor is responsible for repairing or replacing any irrigation lines damaged during tree removal. The repair or replacement must be equal or better in quality than the original portion. Access for the trees being removed will be directed by the City.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the Tree Removal shall be considered as included in the contract unit price paid for Tree Removal and no additional compensation will be allowed.

Item # 9 – Remove Concrete (SQYD)

This item shall be bid per cubic yard and shall conform to Section 15-1.03B (Removing Concrete) of the 2023 Caltrans Standard Specifications.

The concrete removal limits will be determined based on the quantities/ areas of removal shown on the plans.

Full compensation for furnishing all labor, materials, tools equipment and incidentals required to remove the existing concrete shall be included in this bid item.

Item # 10 – Remove Pipe (LF)

This item shall be bid per linear foot and shall conform to Section 71-2 (Remove Drainage Facilities) of the 2023 Caltrans Standard Specifications, and these Specifications.

This work shall include the pipe removal, pipe disposal, and any grading work necessary at the locations shown on the plans, and in accordance with the details shown on the Plans.

The contract price paid per linear foot of Remove Pipe (LF) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in removing existing pipes and no additional payment will be made.

Item # 11 – Remove Manhole

This item shall be bid per the each and shall conform to Section 71-2 (Remove Drainage Facilities) of the 2023 Caltrans Standard Specifications, and these Specifications.

This work shall include all work associated with the removal of the existing manhole including the material removal, material disposal, and any grading work necessary at the locations shown on the plans, and in accordance with the details shown on the Plans. All components of the existing manhole shall be removed including the frame and cover, concrete barrel, manhole base, reinforcement, and any other remaining material included in the existing manhole.

The contract price paid per each Remove Manhole shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in removing the existing manhole and no additional payment will be made.

Item # 12 – Remove Inlet

This item shall be bid per the each and shall conform to Section 71-2 (Remove Drainage Facilities) of the 2023 Caltrans Standard Specifications, and these Specifications.

This work shall include all work associated with the removal of the existing inlet including the material removal, material disposal, and any grading work necessary at the locations shown on the plans, and in accordance with the details shown on the Plans. All components of the existing inlet shall be removed

including the frame and cover, inlet box, inlet base, reinforcement, and any other remaining material included in the existing inlet.

The contract price paid per each Remove Inlet shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in removing the existing inlet and no additional payment will be made.

Item # 13 – Roadway Excavation

This item shall be bid per cubic yard and shall conform to Section 220 (Earthwork) of the City of Los Banos Standard Specifications, Section 19-2 (Roadway Excavation) of the 2023 Caltrans Standard Specifications, these Specifications, and as shown on the Plans. Upon the Contractor's Request, the City will provide the Geotechnical Design Report that was prepared for the project area.

This item shall consist of the removal of the existing roadway section, any and all material in conflict with the proposed improvements, and any necessary sawcutting, as directed by the Engineer, and as shown on the plans. Roadway excavation shall include excavating, sloping, rounding tops and ends of excavations, loading, hauling, depositing, spreading, and compacting the material complete in place, and preparing subgrade at the grading plane. Once removed, this 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 2023 Caltrans Standard Specifications.

Roadway Excavation shall include backfill, spreading, and compaction, of areas that specify asphalt grindings. In areas where the existing roadway pavement is not in conflict with the proposed roadway pavement section, the contractor may choose to leave the existing asphalt concrete in place. If the Contractor does leave the existing asphalt concrete in place at these locations, they shall pulverize the asphalt to ensure proper drainage is maintained under the proposed roadway pavement section.

All fill material should be tested and approved by the resident engineer prior to placing and used as compacted fill. Any imported fill used at and to at least 3 ft below subgrade level is required to meet or exceed the design R-value of 20. Fill material should meet the following criteria; have a maximum particle size of 3-inches with at least 50% passing the No. 4 sieve and at least 15% passing the No. 200 sieve; and have low expansion potential (i.e. Expansion Index (EI) ≤ 50 and Sand Equivalent (SE) ≥ 20).

The cubic yard price paid for Roadway Excavation shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for performing the preparation and compaction of subgrade. The quantity of Roadway Excavation shall be considered a final pay quantity. No additional payment will be made.

Item # 14 – Roadway Excavation (Type R-1) (Aerially Deposited Lead)

This item shall be bid per cubic yard and shall conform to Section 14-11 (Hazardous Waste and Contamination) of the 2023 Caltrans Standard Specifications, these Specifications, and as shown on the Plans.

Manage regulated material containing ADL under the rules and regulations of the following agencies:

1. US Department of Transportation
2. US EPA
3. California Environmental Protection Agency
4. CDPH
5. DTSC
6. Cal/OSHA
7. California Department of Recycling and Recovery
8. California Air Resources Board
9. RWQCB, Region 5, Central Valley Region
10. San Joaquin Valley APCD

The Department (Caltrans) entered into agreement Docket No. ESPO-SMA 15/16-001 Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils with the DTSC (ADL Agreement) regarding the management of regulated material containing ADL. As the responsible entity and the generator of waste, only the Department determines material classification. For the ADL agreement, go to the Caltrans Hazardous Waste Management website.
https://dot.ca.gov/programs/environmental-analysis/hazardous-waste
https://dot.ca.gov/programs/environmental-analysis/hazardous-waste/contaminants-waste/aerially-deposited-lead

Regulated material containing ADL is present within the project limits and the ADL Agreement applies. Management of regulated material containing ADL exposes workers to health hazards that must be addressed in your lead compliance plan under section 7-1.02K(6)(j)(ii) of the 2023 Caltrans Standard Specifications.

Definitions:

average ADL concentration: Average ADL concentration calculated using the 95 percent upper confidence limit.

regulated material: ADL-contaminated material that has average ADL concentrations over 80 mg/kg total lead or equal to or greater than 5 mg/L soluble lead tested using the California Waste Extraction Test (CA-WET) or equal to or greater than 5 mg/L soluble lead tested using the Toxicity Characteristic Leaching Procedure (TCLP).

Type R-1: Regulated material that may be reused on the job site if placed at least 5 feet above the maximum historical elevation of the water table and covered with at least 1 foot of unregulated material with a pH greater than 5 or pavement.

Consistent with the Caltrans ADL Agreement, Type R-1 material can also be handled using the following methods:

- may be reused on the job site if placed at least 5 feet above the maximum historical elevation of the water table and covered with pavement.
- may be disposed of at an appropriately permitted California Class II or California Class III disposal facility.

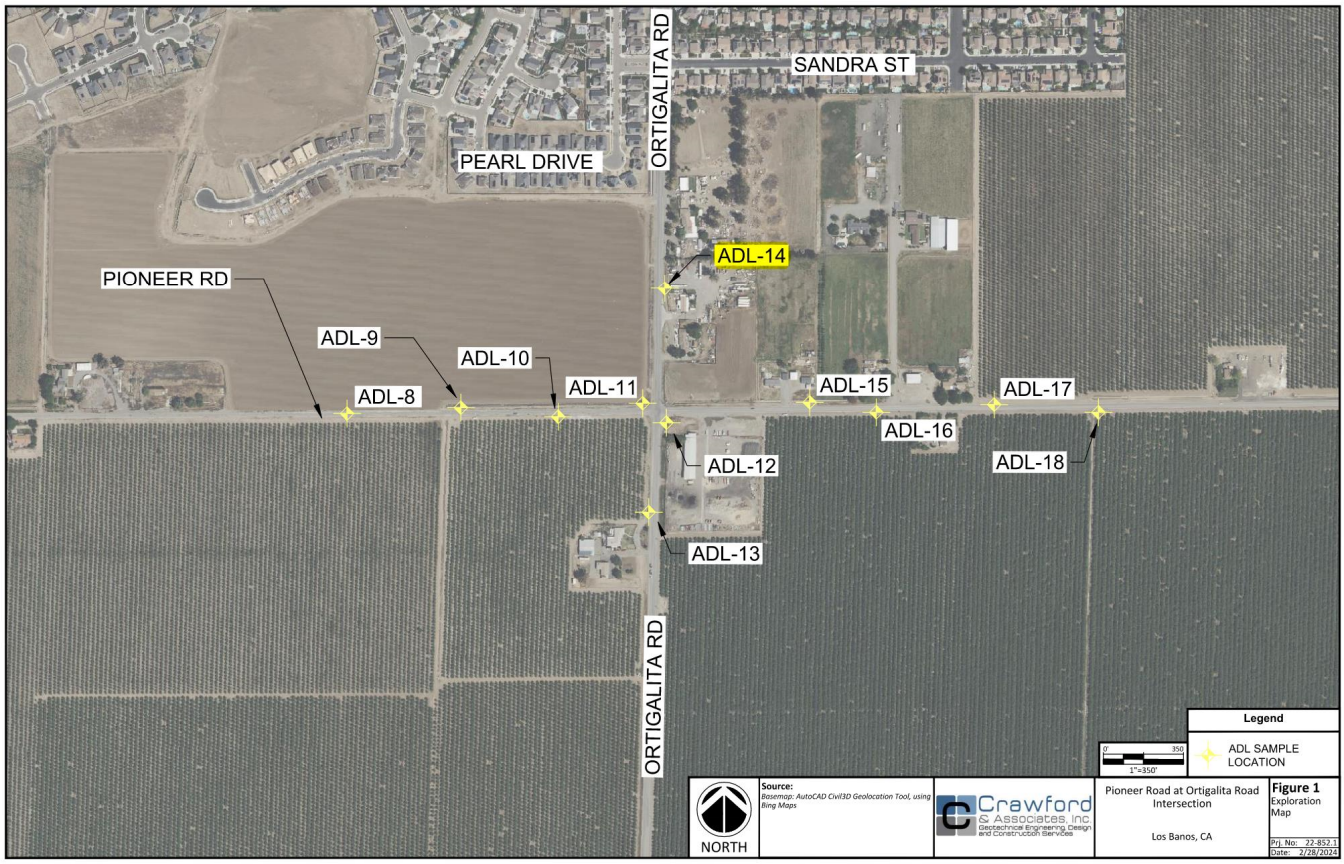
It is the Contractor's responsibility to manage the Type R-1 material in a method that is in compliance with the Caltrans ADL Agreement. Depending on which method of management/ disposal the Contractor elects to use, the following procedures may be necessary:

- Excavating
- Loading and unloading containers or trucks
- Stockpiling
- Transporting
- Placing
- Disposal

The following sections of these specifications discuss the requirements for each procedure listed above.

Site Conditions:

Concentration data and sample location maps for regulated material are included in the exhibit and table below. Upon the Contractor's Request, the City will provide the ADL Memo that was prepared for the project area.


SANDRA ST
ORTIGALITA RD
PEARL DRIVE
PIONEER RD
ADL-14
ADL-9
ADL-10
ADL-8
ADL-11
ADL-15
ADL-17
ADL-16
ADL-18
ADL-12
ADL-13
ORTIGALITA RD
Legend
ADL SAMPLE LOCATION
0'
350'
1"=350'
NORTH
Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps
Crawford & Associates, Inc.
Geotechnical Engineering, Design, and Construction Services
Pioneer Road at Ortigalita Road Intersection
Los Banos, CA
Figure 1
Exploration Map
Prj. No: 22-852-1
Date: 2/28/2024

Summary of ADL Results
Ortigalita Road - Pioneer Road Intersection
Los Banos, California

Sample ID	Total Pb (mg/kg)	Soluble Pb-WET (mg/L)	Soluble Pb-TCLP (mg/L)	pH
ADL-8A	13	---	---	---
ADL-8B	14	---	---	---
ADL-8C	6.7	---	---	---
ADL-9A	9.5	---	---	---
ADL-9B	9.8	---	---	---
ADL-9C	8.6	---	---	---
ADL-10A	13	---	---	---
ADL-10B	13	---	---	---
ADL-10C	11	---	---	---
ADL-11A	13	---	---	---
ADL-11B	10	---	---	---
ADL-11C	8.4	---	---	---
ADL-12A	12	---	---	---
ADL-12B	51	1.3	<0.030	---
ADL-12C	15	---	---	---
ADL-13A	16	---	---	---
ADL-13B	12	---	---	---
ADL-13C	4.8	---	---	---
ADL-14A	120	5.5	0.073 J	---
ADL-14B	6.8	---	---	7.67
ADL-14C	32	---	---	---
ADL-15A	3.4	---	---	---
ADL-15B	18	---	---	---
ADL-15C	16	---	---	---
ADL-16A	6.1	---	---	6.71
ADL-16B	11	---	---	---
ADL-16C	5.2	---	---	---
ADL-17A	2.4 J	---	---	---
ADL-17B	5.7	---	---	---
ADL-17C	4.7	---	---	---
ADL-18A	10	---	---	---
ADL-18B	13	---	---	---
ADL-18C	4.2	---	---	---
Hazardous waste limits	**1,000**	**5.0**	**5.0**	**X≤2.0 or X≥12.5**

Explanation

Pb - lead
mg/kg - milligrams/kilogram
mg/L - milligrams/liter
WET - Waste Extraction Test
TCLP - Threshold TCLP - Toxic Characteristic Leaching Potential
--- = not analzyed
J = estimated value
Concentration exceeds CA hazardosu waste limit.

As shown in the exhibit and table above, and in the Plans, Type R-1 material exists from the surface to below the existing grade as shown and listed in the following table:

Location	Elements of work	Depth
"O" Sta 20+16.64 to Sta 28+55.00 Rt	Lane/Shoulder widening Driveway Reconstruction Place HMA Dike Construct drainage facilities Curb Ramp Construction Traffic Signal/ Lighting Construction	0" to 6"

Excavation and Transportation Plan

Within 15 days of Contract approval, submit 3 copies of an excavation and transportation plan for regulated material. Allow 14 days for review. If the plan requires revisions, the City provides comments. Submit a revised plan within 7 days of receiving comments. The Engineer may allow construction to proceed while minor revisions or amendments are being completed.

The excavation and transportation plan must comply with:

- DTSC regulations
- ADL Agreement
- Cal/OSHA regulations

The excavation and transportation plan must include:

- Procedures for managing the material.
- Excavation schedule by location and date.
- Locations for temporary stockpiles.
- Survey methods for burial locations for Type R-1 material.
- Type R-1 material soil cover source area.
- Dust control measures.
- ~~Air monitoring locations.~~
- Transportation equipment and routes.
- Method for preventing spills and tracked material onto public roads.
- Truck waiting and staging areas.
- Example of a bill of lading to be carried by trucks transporting Type R-1 material on public roads outside the controlled access construction zone. The bill of lading must include:
    - US Department of Transportation description, including shipping name
    - Hazard class
    - Identification number
    - Handling codes
    - Quantity of material
    - Volume of material
- Spill contingency plan for regulated material containing ADL.
- Copies of the contract plan sheets where the location and depth of the existing regulated material are shown, as an attachment.
- Copies of the contract plan sheets where the location and depth of Type R-1 material burial locations are shown, as an attachment.

Burial Location Report

Within 5 business days of completing placement of Type R-1 material at a burial location, submit a report for that burial location that includes:

- "Burial Location of Soil Containing Aerially Deposited Lead (Topographic Survey)" form
- Electronic geospatial vector survey data shapefiles of the top and bottom of the burial location with polygon feature classes containing the location and attributes of the burial site. Provide polygon feature classes in a shapefile that is comprised of a minimum of four files with the extensions of .shp, .shx, .dbf and .prj. Include the following attribute data:

- Contractor
- Contract number
- District
- County
- Route
- PM Start
- PM End
- Project EA
- Project name
- Burial location number

Submit the report to the City Engineer.

The Engineer will notify the Contractor of acceptance or rejection of the burial location report within 5 business days of receipt. If the report is rejected, you have 5 business days to submit a corrected report. Each burial location report prepared, including electronic files, is considered a submittal required by the contract. Failure to submit more than one submittal is considered multiple performance failures under section 9-1.16E(3) of the 2023 Caltrans Standard Specifications.

~~Full compensation for furnishing all labor, materials, tools equipment and incidentals required to complete the ADL Burial Location Report shall be included in this bid item and no additional payment will be made.~~

Bill of Lading

Submit copies of the bills of lading used as an informational submittal upon placement of Type R-1 material in its final location.

Dust Control

Prevent visible dust migration under section 14-11.04 of the 2023 Caltrans Standard Specifications during management of regulated material.

Stockpiling

Stockpile Type R-1 material under section 14-11.05 of the 2023 Caltrans Standard Specifications for no more than 90 days. The City does not pay for stockpiling unless stockpiling is ordered.

Placement

Place Type R-1 material in compliance with the requirements provided in these specifications and the Caltrans ADL Agreement.

Surveying Burial Site

Topographically survey the location of the bottom and top of each area where you bury Type R-1 material (burial locations). Topographic surveys must be performed by or under the direction of one of the following:

- Land surveyor licensed under the Bus & Prof Code Ch 15, starting with § 8700
- Civil engineer licensed before January 1, 1982 under the Bus & Prof Code Ch 7 starting with § 6700

At a minimum, topographic surveys consist of collecting northing, easting, and elevation information of survey points along cross sections lines of the Type R-1 material burial locations, where the cross section line intervals are 25 feet, at a maximum, with a minimum of 5 cross sections surveyed per burial location. Collect a survey point at each change in terrain elevation with a minimum of 5 survey points per cross section line. The same cross section lines are used to survey the ground surface just before placing Type R-1 material and used to survey the finished grade immediately after the placement of the Type R-1 material.

Report each burial location in California state plane coordinates in US survey feet within the appropriate zone of the California Coordinate System of 1983 (CCS83) and in latitude and longitude. Reference horizontal positions to CCS83. Use epoch 2017.50. Perform the survey to a horizontal accuracy of 0.3 ft as described in Figure 5.1A of the Caltrans Surveys Manual. Reference each horizontal position to a roadway

horizontal alignment, indicating a station and offset. The elevation of points identifying the burial location must locate the bottom and top of Type R-1 material to an accuracy of 0.3 ft vertically. Reference elevations of the bottom and top of Type R-1 material to the project vertical datum. Report accuracy of spatial data in US Survey feet under Caltrans Orders of Accuracy in the Caltrans Surveys Manual Chapter 5.

Material Transportation
Before traveling on public roads outside the controlled access construction zone, remove loose and extraneous regulated material from outside surfaces of containers and the cargo areas of trucks. Place tarpaulins or other cover over the cargo as described in the authorized excavation and transportation plan. You are responsible for costs due to spillage of regulated material during transport. Transportation routes for Type R-1 material must only include the highway within the job site limits.

Use a bill of lading while transporting excavated Type R-1 material on public roads outside of the controlled access construction zone.

Disposal
Laws and regulations that govern disposal of regulated material include:

- Health & Safety Code § 25100 et seq
- 22 CA Code of Regs § 66250 et seq
- 8 CA Code of Regs

The City does not pay for additional sampling and analysis required by disposal facilities.

The contract unit price paid per cubic yard of Roadway Excavation (Type R-1) (Aerially Deposited Lead) shall include full compensation for furnishing all labor, materials, tools, any testing and analysis of ADL removal as necessary, equipment and incidentals and for doing all the work involved in Roadway Excavation (Type R-1) (Aerially Deposited Lead~~)~~), including management of regulated materials containing ADL, as specified in Caltrans Standard Specifications and these Special Provisions, and no additional payment will be made.

Item # 15 – Hydroseed

This item shall be bid per square foot and shall conform to Section ~~20-5.03D (Decomposed Granite~~21 (Erosion Control) of the Caltrans Standard Specifications 2023.

~~Decomposed granite~~Hyrdoseed shall be ~~placed~~applied to all disturbed soil areas once the ~~thickness shown on the plans.~~final grading work has been completed.

Submit the Hydroseed mix to the City Engineer for approval.

Full compensation for furnishing all labor, materials, tools equipment and incidentals required to ~~spread and compact the decomposed granite~~place Hydroseed shall be included in this bid item~~.~~, and no additional payments will be made.

Item # 16 – Decomposed Granite

This item shall be bid per square foot and shall conform to Section 20-5.03D (Decomposed Granite) of the Caltrans Standard Specifications 2023.

Decomposed granite shall be placed to the thickness shown on the plans.

Full compensation for furnishing all labor, materials, tools equipment and incidentals required to spread and compact the decomposed granite shall be included in this bid item.

Item # 17 – Class 2 Aggregate Base (CY)

This item shall be bid per cubic yard and shall conform to Section 230 (Aggregate Subbase and Base) of the City of Los Banos Standard Specifications, Section 26 (Aggregate Bases) of the 2023 Caltrans Standard Specifications, and these Specifications.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing aggregate base, complete in place, as specified in the Standard Specifications and these Specifications, and as directed by the Engineer shall be considered as included in the contract unit price paid for Class 2 Aggregate Base and no additional compensation will be allowed.

Item # 18 – Hot Mix Asphalt (Type A)

This item shall be bid per ton and shall conform to Section 240 (Paving and Resurfacing) of the City of Los Banos Standard Specifications, Section 39-2 (Hot Mix Asphalt) of the 2023 Caltrans Standard Specifications, and these Specifications. This item includes all hot mix asphalt work shown in the project plans including the roadway ~~widenings.~~pavement (including the 1.5 foot deep lift for the Storm Drain and Water Trenches), HMA Dike (including the HMA under the Dike per the Caltrans Std Plan A78B), and HMA Driveways.

Hot Mix Asphalt (Type A) will be measured by the ton of asphalt concrete actually placed accompanied by weight certificates which shall be furnished by the Contractor to the Engineer at the job site upon delivery of the material. Certificates shall be legible copy of a licensed weigh master's certificate showing tare, and net weight of each truckload of asphalt concrete.

The contract unit price paid for each ton of Hot Mix Asphalt (Type A) shall include full compensation for furnishing all labor, materials~~,~~ (including tack coat), tools, equipment and incidentals, and for doing all the work involved in placing Hot Mix Asphalt (Type A) and no additional payment will be made. Asphalt oil indexed per Caltrans Standard Specifications Section 9-1.07.

Item # 19 – Place Hot Mix Asphalt Dike (Type A)

This item shall be bid per linear foot and shall conform to Section 240 (Paving and Resurfacing) of the City of Los Banos Standard Specifications, Section 39-2 (Hot Mix Asphalt) of the 2023 Caltrans Standard Specifications, and these Specifications.

Place Hot Mix Asphalt Dike (Type A) will be measured by the linear foot from end to end of the dike, as shown on the Plans. This bid item includes the length of any necessary dike transitions.

The contract unit price paid per linear foot of Place Hot Mix Asphalt Dike (Type A) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in Place Hot Mix Asphalt Dike (Type A) and no additional payment will be made.

Item # 20 – 12" Reinforced Concrete Pipe (Class IV)

12" Reinforced Concrete Pipe (Class IV) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 12" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not

horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6.

Full compensation for all costs involved in furnishing and installing 12" Reinforced Concrete Pipe (Class IV) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 21 – 24" Reinforced Concrete Pipe (Class IV)

24" Reinforced Concrete Pipe (Class IV) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 24" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6.

Full compensation for all costs involved in furnishing and installing 24" Reinforced Concrete Pipe (Class IV) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 22 – Detectable Warning Surface

This item shall be bid per square foot and shall conform to Section 73 (Concrete Curb and Sidewalks) of the 2023 Caltrans Standard Specifications, and these Specifications. Per the Caltrans Standard Specifications, the Detectable Warning Surface used must be on the Caltrans Authorized Material List. The Detectable Warning Surface Authorized Materials List can be found online here: https://dot.ca.gov/-/media/dot-media/programs/engineering/documents/mets/detectable-warning-surface-a11y.pdf

The Detectable Warning Surfaces shall be constructed per City of Los Banos Standard Drawing ST-14 (Wheel Chair Ramp Detail) and as shown on the plans.

The contract price paid per square foot of Detectable Warning Surface shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the Detectable Warning Surfaces on the curb ramps and no additional payment will be made.

Item # 23 – Concrete (Ditch Lining)

This item shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section 72 (Slope Protection) of the 2023 Caltrans Standard Specifications, and these Specifications.

This Concrete (Ditch Lining) item will cover the construction of the irrigation ditch lining throughout the project area as shown on the plans.

This work shall include the preparation of subgrade, furnishing and placing concrete for the ditch lining at the location and grades shown on the plans, and in accordance with the details shown on the Plans.

The contract price paid per cubic yard of Concrete (Ditch Lining) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the ditch lining and no additional payment will be made.

Item # 24 – Irrigation Junction Box

This item shall be bid lump sum and shall conform to Section 310 (Structural Concrete) and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, Section 75 (Miscellaneous Metal) of the Caltrans 2023 Standard Specifications, these Specifications, and as shown on the plans as the Junction Box Plan and Elevation View Details on sheet DD-1 of the plan set.

This work includes any and all work involved with the construction of the Irrigation Junction Box, including the excavation, compaction, backfill, forming, reinforcement, pouring of concrete, and the material and installation of the frame and grate as well as the side gate and safety grate for irrigation ditch.

Waterstop (Waterstop RX or approved equal) shall be used at all cold joints and shall be installed in accordance with the instructions recommended by the manufacturer.

Dewatering due to high groundwater may be required. Should groundwater be encountered, the applicant shall contact the Los Banos engineering department representative for approval of dewatering methods and before commencing backfill operations.

Where the plans or specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used.

The contract price paid per lump sum for Irrigation Junction Box shall include full compensation for all labor, materials, tools and equipment associated with the construction of the irrigation junction box including excavation, backfill, compaction, removal and/or replacement of existing improvements, and all other associated and/or incidental work, and no additional payment will be made.

Item # 25 – Irrigation Connection

This item shall be bid per the each and shall conform to Section 530 (Steel Pipe) and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, Section 75 (Miscellaneous Metal) of the Caltrans 2023 Standard Specifications, and these Specifications, and as shown on the plans, as well as the Irrigation Connection Detail on sheet DD-2 of the plan set.

This work includes any and all work involved with the construction of the Irrigation Connection, including the excavation, compaction, backfill, any and all materials included in the connection including the material and installation of the Canal Gate. The Canal Gate shall be a Pohl Metal Products, Inc. 10” Canal Gate or a different, equal gate product.

This bid item includes the material and installation of the Canal Gate, and any extra concrete required for this Irrigation Connection that is not already required for the Irrigation Ditch. The contract price paid per the each for the Irrigation Connection shall include full compensation for all labor, materials, tools and equipment associated with the construction of the connection including excavation, compaction, backfill, any and all materials included in the connection, all other associated and/or incidental work, and no additional payment will be made.

Item # 26 – Concrete Collar

This item shall be bid per the each and shall conform to Section 220 (Earthwork), Section 310 (Structural Concrete), and Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section ~~75 (Miscellaneous Metal~~52 (Reinforcement) of the Caltrans 2023 Standard Specifications, these Specifications, and as shown on the plans.

The Concrete Collar shall be constructed per the detail included on DD-2 in the Plans. This work includes any and all work involved with the construction of the concrete collar, including the excavation, compaction, backfill, forming, rebar, reinforcement, waterstops, and pouring of concrete.

The contract price paid per the each for Concrete Collar shall include full compensation for all labor, materials, tools and equipment associated with the construction of the Concrete Collar including excavation, backfill, compaction, removal and/or replacement of existing improvements, and all other associated and/or incidental work, and no additional payment will be made.

Item # 27 – Grated Line Drain

This item shall be bid per the linear foot and shall conform to Section 70-6 (Grated Line Drains) of the Caltrans 2023 Standard Specification, Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The payment quantity for 4 7/16" Grated Line Drain is the length measured along the centerline of the drain and parallel with the slope line. This work to include any trenching excavation and backfill needed to install drain as shown and specified on the Plans.

The contract price paid per linear foot of 4 7/16" Grated Line Drain shall include full compensation for all labor, materials, tools and equipment associated with the construction of the 4 7/16" Grated Line Drain including excavation, concrete backfill, compaction, and all other associated and/or incidental work, and no additional payment will be made.

Item # 28 – Minor Concrete (Curb) (CY)

Minor Concrete (Curb) (CY) shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, and Section ~~75 (Miscellaneous Metal~~52 (Reinforcement) and Section 73-2 (Curbs) of the 2023 Caltrans Standard Specifications, and these Specifications.

This Minor Concrete (Curb) (CY) item will cover the construction of the 8” median curbs and mow curbs throughout the project area. As shown on the plans, the 8” median curb will be constructed using 2 different methods. The 8” median curb along the east, north, and south legs of the intersection shall be constructed per the 2023 Caltrans Standard Plans A87A (Type A1-8). The 8” median curb along the west leg of the intersection shall be constructed per the 2023 Caltrans Standard Plans A87A (Type A3-8). The mow curbs throughout the project area will be constructed per the detail shown on the plans.

This work shall include the preparation of subgrade, furnishing and placing concrete for the curb at the location and grades shown on the plans, and in accordance with the details shown on the Plans. For the dowelled 8” median curbs and the mow curb, this work shall also include necessary reinforcement and/ or epoxy.

The contract price paid per cubic yard of Minor Concrete (Curb and Gutter) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the curbs and no additional payment will be made.

Item # 29 – Minor Concrete (Curb and Gutter)

Minor Concrete (Curb and Gutter) shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section 73-3 (Sidewalks, Gutter

Depressions, Island Paving, Curb Ramps, and Driveways) of the 2023 Caltrans Standard Specifications, and these Specifications.

The concrete curb and gutter shall be constructed per City of Los Banos Standard Drawing ST-5 (Standard Curb & Gutter Section) and as shown on the plans.

This work shall include the preparation of subgrade, furnishing and placing concrete for the curb and gutter at the location and grades shown on the plans, and in accordance with the details shown on the Plans.

The contract price paid per cubic yard of Minor Concrete (Curb and Gutter) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the curb and gutter and no additional payment will be made.

Item # 30 – Minor Concrete (Driveway)

This item shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section 73-3 (Sidewalks, Gutter Depressions, Island Paving, Curb Ramps, and Driveways) of the 2023 Caltrans Standard Specifications, Chapter 7 (Driveways) of the Merced County Improvement Standards and Specifications, and these Specifications.

The concrete driveway shall be constructed per Merced County Standard Drawing DW-03 and DW-04A (Rural Driveway Approach - Concrete) and as shown on the plans.

This work shall include the preparation of subgrade, furnishing and placing concrete for the driveway at the location and grades shown on the plans, and in accordance with the details shown on the Plans.

Cubic yard quantity for the Minor Concrete (Driveway) shall consist of the area bounded by:
The edge of pavement
The back of driveway and flares
And the depth as reported in the plans.

The contract price paid per cubic yard of Minor Concrete (Driveway) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing Concrete Driveway and no additional payment will be made.

Item # 31 – Minor Concrete (Textured Paving)

This item shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section 73-3 (Sidewalks, Gutter Depressions, Island Paving, Curb Ramps, and Driveways) of the 2023 Caltrans Standard Specifications, and these Specifications.

The Minor Concrete (Textured Paving) will be placed in the raised median as shown on the plans. Minor Concrete (Textured Paving) shall be 3.5" of Portland Cement Concrete with a 12" slate pattern and colored with Davis colors San Diego Buff or approved by the City Engineer and shall be installed per the Manufacturer's recommendations. The color shall be uniform throughout. When installing stamped concrete, consult the City Engineer for color and pattern.

The cubic yard quantity for the Minor Concrete (Textured Paving) shall consist of the area bounded by:
The top back of the median curbs
And the depth as reported in the plans.

This work shall include the preparation of subgrade, furnishing and placing concrete for the textured paving areas at the locations and grades shown on the plans, and in accordance with the details shown on the Plans.

The contract price paid per cubic yard of Minor Concrete (Textured Paving) shall include full compensation

for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the textured paving and no additional payment will be made.

Item # 32 – Minor Concrete (Curb Ramp)

This item shall be bid per cubic yard and shall conform to Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, Section 73-3 (Sidewalks, Gutter Depressions, Island Paving, Curb Ramps, and Driveways) of the 2023 Caltrans Standard Specifications, and these Specifications.

The concrete curb ramps shall be constructed per City of Los Banos Standard Drawing ST-14 (Wheel Chair Ramp Detail) and as shown on the plans.

This cubic yard quantity for ramps shall consist of the area bounded by:
The top back of curb,
The back of sidewalk,
And the thickness as specified in the City of Los Banos Standard Drawing ST-14 (Wheel Chair Ramp Detail).

This work shall include the preparation of subgrade, furnishing and placing concrete for the curb ramp at the location and grades shown on the plans, and in accordance with the details shown on the Plans. All curb ramps will be constructed with Detectable Warning Surface, which is included as a separate contract bid item.

The contract price paid per cubic yard of Minor Concrete (Curb Ramp) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in constructing the curb ramps and no additional payment will be made.

Item # 33 – Chain Link Fence

This item shall be bid per linear foot and shall conform to Section 80-3 (Chain Link Fences) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work shall include the preparation, furnishing and placing of chain link fence at the locations shown on the plans, and in accordance with the ~~details~~information shown on the Plans~~.~~ and in these Specifications.

The Chain Link Fence shall be 7 foot tall galvanized commercial with a galvanized top rail and a 1 foot barb wire top. The size and spacing of the posts shall be per the manufacturer's recommendation. The fence is also to include beige 95% privacy slates.

The contract price paid per linear foot for Chain Link Fence shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the Chain Link Fence and no additional payment will be made.

Item # 34 – 10' Chain Link Swing Gate

This item shall be bid per the each and shall conform to Section 80-10 (Gates) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work shall include the preparation, furnishing and placing of the chain link gate, including gate latch, at the location shown on the plans, and in accordance with the ~~details~~information shown on the Plans~~.~~ and in these Specifications.

The Chain Link Swing Gate shall be 7 foot tall with a 10 foot opening, galvanized steel commercial with a galvanized steel top rail and a 1 foot barb wire top. The gate is also to include beige 95% privacy slates. The latch will be per manufacturer's recommendation.

The contract price paid per each 10' Chain Link Swing Gate shall include full compensation for furnishing all

labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the gate and latch, and no additional payment will be made.

Item # 35 – 16' Chain Link Rolling Gate

This item shall be bid per the each and shall conform to Section 80-10 (Gates) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work shall include the preparation, furnishing and placing of chain link gates, including gate latch, at the locations shown on the plans, and in accordance with the ~~details~~information shown on the Plans~~.~~ and in these Specifications.

The 16' Chain Link Rolling Gates shall be a manual 7 foot tall with an 16 foot opening, galvanized steel commercial with a galvanized steel top rail and a 1 foot barb wire top. The gates shall also include beige 95% privacy slates. The latch to be used for the double rolling gate will be the Hoover Fence Co. Strong Arm Double Gate Latch or an equivalent to.

The contract price paid per each 16' Chain Link Rolling Gate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the gates and latch, and no additional payment will be made.

Item # 36 – 20' Chain Link Rolling Gate

This item shall be bid per the each and shall conform to Section 80-10 (Gates) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work shall include the preparation, furnishing and placing of chain link gates at the locations shown on the plans, and in accordance with the ~~details~~ information shown on the Plans, and in these Specifications.

The 20' Chain Link Rolling Gates shall be a manual 7 foot tall with a 20 foot opening, galvanized steel commercial with a galvanized steel top rail and a 1 foot barb wire top. The gates shall also include beige 95% privacy slates. The latch to be used for the double rolling gate will be the Hoover Fence Co. Strong Arm Double Gate Latch or an equivalent to.

The contract price paid per each 20' Chain Link Rolling Gate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the gates and latch, and no additional payment will be made.

Item # 37 – Reestablish Monument

This item shall be bid per the each and shall comply with Section 7-1 (Monumentation) of the City of Los Banos Standard Specifications, and Section 78-2 (Survey Monuments) of the 2023 Caltrans Standard Specifications and these Specifications.

Survey Monuments shall be re-established in accordance with the City of Los Banos Standard Drawing M-1. The Contractor shall re-establish survey monuments affected by the work included in the contract in accordance with Section 8771 of the Professional Land Surveyors Act in the Business and Professions Code of the State of California. Locations of existing monuments known to the Engineer that are within the area of work in this contract have been included on the Plans.

A new monument and lid shall be obtained from The City of Los Banos Public Works. The existing marker disks shall not be used. After roadway construction is complete contractor shall contact the City of Los Banos' Surveyor's Office to mark the location for the placement of the monument box. The contractor shall install the monument box and lid to finished grade as marked. The City of Los Banos Surveyor's Office will then install the monument inside the existing box at a later date.

The contract price paid for each Reestablish Monument shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in preserving the survey monument prior to removal of existing pavement, and constructing the new survey monument, and no additional compensation will be allowed.

Item # 38 – Remove Fence

This item shall be bid per linear foot and shall conform to Section 80-15 (Existing Fences) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work includes removal and disposal of any existing fences, fence gates, or walls in conflict with the plan improvements. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area.

The contract price paid per linear foot for Remove Fence shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Remove Fence and no additional payment will be made.

Item # 39 – Salvage Fence

This item shall be bid per linear foot and shall conform to Section 80-15 (Existing Fences) of the Caltrans Standard Specifications 2023, these Specifications, and as shown on the plans.

This work includes removal of existing fences in conflict with the plan improvements and returning of the removed fence to the appropriate property owner. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area. To the maximum extent possible, the fence to be salvaged will not be damaged during the removal process.

The contract price paid per linear foot for Salvage Fence shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in Salvage Fence and no additional payment will be made.

Item # 40 – Remove Roadside Sign (Metal Post)

Remove Roadside Sign (Metal Post) shall be bid per the each and shall be in accordance with Section 82 (Signs and Markers) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

Existing roadside signs, shown to be removed, shall be removed and properly disposed of off-site. They shall not be removed until no longer required for the direction of traffic, unless otherwise directed by the Engineer. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area.

The per each price paid for Remove Roadside Sign (Metal Post) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer, and no additional payment will be made.

Item # 41 – Relocate Roadside Sign – One Post

Relocate Roadside Sign – One Post shall be bid per the each and shall be in accordance with Section 82 (Signs and Markers) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

Existing roadside signs to be removed and relocated as shown on the Plans shall be installed at the new location on the same day that the sign is removed from its original location. Any trenches, holes, depressions,

or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area.

The per each price paid for Relocate Roadside Sign – One Post shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer, and no additional payment will be made.

Item # 42 - Roadside Sign – One Post

Roadside Sign – One Post shall be bid per the each and shall be in accordance with Section 82 (Signs and Markers) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

New roadside signs shall be furnished and installed at the locations shown on the plans or where designated by the Engineer. The Contractor shall furnish roadside sign panels that shall be attached to Ulti-Mate Sign Post per City of Los Banos Standard Drawing ST-15.

This bid item includes all components associated with furnishing and installing the new signs, including any excavation, compaction, backfill, sign posts, sign panels, and any necessary hardware. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area.

The per each price paid for Roadside Sign – One Post shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer, and no additional payment will be made.

Item # 43 - Pedestrian Barricade

Pedestrian Barricade shall be bid per the each and shall be in accordance with Section 56 (Overhead Sign Structures, Standards, and Poles) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

Pedestrian Barricades shall be furnished and installed at the locations shown on the plans or where designated by the Engineer. This bid item includes all components associated with furnishing and installing the pedestrian barricades, including any excavation, compaction, and backfill. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area.

The per each price paid for Pedestrian Barricades shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer, and no additional payment will be made.

Item # 44 - Relocate Custom Business Sign

Relocate Custom Business Sign shall be bid per the each and shall be in accordance with these Specifications, and as shown on the Plans.

Relocate Custom Business Sign shall be furnished and installed at the location shown on the plans or where designated by the Engineer. The Contractor shall reuse the existing sign panel, existing post caps, and any existing hardware. The relocated sign shall be raised so that the bottom of the sign panel is one foot higher than the top of the existing fence, as shown on the project plans. The Contractor shall furnish new sign posts that are long enough to accommodate the raised sign panel and achieve necessary post embedment, as

shown on the plans. Besides the longer length, the new posts shall match the size and appearance of the existing sign posts. The existing Custom Business Sign has an electrical outlet installed on it. This existing electrical outlet shall be relocated with the sign, as shown on the electrical sheets in the Plans.

This bid item includes all components associated with furnishing, relocating, and installing the Relocated Custom Business Sign, including any excavation, compaction, backfill, sign posts, sign panel, and any necessary hardware. Any trenches, holes, depressions, or pits caused by performing this work shall be graded and backfilled to drain and blend in with the surrounding area. The sign shall be relocated within a timely manner. The Contractor must complete the sign relocation within 72 hours of when the existing sign is removed.

The per each price paid for Relocate Custom Business Sign shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer, and no additional payment will be made.

Item # 45 – Remove Yellow Thermoplastic Traffic Stripe (Hazardous Waste)

This item shall be bid per linear foot and must conform to Section 14 (Environmental Stewardship) of the 2023 Caltrans Standard Specifications.

This quantity shall be measured per linear foot of striping regardless of the existing stripe's detail number. The quantity as shown in the Plans is the total linear foot measurement and does not account for gaps or double line stripes.

The contract price paid per linear foot of Remove Yellow Thermoplastic Traffic Stripe (Hazardous Waste) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, proper disposal and for doing all work involved in Removing Yellow Thermoplastic Traffic Stripe (Hazardous Waste) and no additional payments will be made.

Item # 46 – 6" Thermoplastic Traffic Stripe

6" Thermoplastic Traffic Stripes shall be bid per linear foot and shall conform to Section 84 (Markings) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

The contractor shall submit the product specifications to the City Engineer for approval prior to performing the work.

This work will also include furnishing and installing raised pavement markers where called for and removing existing markings in conflict with the proposed striping.

The linear foot price paid for 6" Thermoplastic Stripe shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer. No additional payment will be made.

Item # 47 – 8" Thermoplastic Traffic Stripe

8" Thermoplastic Traffic Stripes shall be bid per linear foot and shall conform to Section 84 (Markings) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

The contractor shall submit the product specifications to the City Engineer for approval prior to performing the work.

This work will also include furnishing and installing raised pavement markers where called for and removing

existing markings in conflict with the proposed striping.

The linear foot price paid for 8" Thermoplastic Stripe shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer. No additional payment will be made.

Item # 48 – Thermoplastic Pavement Marking

Thermoplastic Pavement Marking shall be bid per square foot and shall conform to Section 84 (Markings) of the 2023 Caltrans Standard Specifications, the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD), these Specifications, and as shown on the Plans.

The contractor shall submit the product specifications to the City Engineer for approval prior to performing the work.

The square foot price paid for Thermoplastic Pavement Marking shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved therein as shown on the Plans, as set forth in the Specifications and as directed by the Engineer. No additional payment will be made.

Item # 49 – Relocate Propane Tank

Relocate Propane Tank shall be bid per lump sum and shall conform to these Specifications and as shown on the Plans.

This work consists of all coordination and work involved in relocating the propane tank and other existing materials located on Merced County's property to a location a minimum of 6 feet East of its existing location. Ferrellgas is the owner of the propane tank and will be responsible for relocating the propane tank itself. Ferrellgas will be responsible for relocating the tank and all work necessary to reconnect the tank to the gas line at its new location, including pipe fittings, risers, regulators, and miscellaneous fittings that are necessary. The Contractor will be responsible for removing the existing concrete pad under the tank, and constructing a new concrete pad for the relocated tank to sit on. The new concrete pad shall be 4' wide by 10' long by 0.5' thick. The Contractor will need to coordinate with Ferrellgas and Merced County for work on this item. The Contractor will be responsible for relocating the existing bollard fence and signs around the propane tank ~~as well as any other existing materials~~ to the new location that is suitable for both Ferrellgas and Merced County and is a minimum of 6 feet East of its existing location. Based on Ferrellgas' standards for tank placement and spacing, Ferrellgas will dictate where the new tank shall be placed. The relocation of the bollard fence and signs shall be equivalent to the existing conditions. The Contractor shall be responsible for any damages done to the existing material and will need to replace the material to meet the previous existing conditions. Below is the contact information for both parties. To provide Ferrellgas adequate time to schedule the work, the Contractor shall begin coordination with Ferrellgas at least 3 weeks in advance of when the tank relocation will occur.~~:~~

Propane Tank Owner: Ferrellgas
Contact Person: Lora Brazil (Regional Account Manager)
Phone Number: (831) 227-6567
Email: lorabrazil@ferrellgas.com
Account Number: 231725072
Location ID: 119320053
Propane Tank Size: 500 gal
Address of Propane Tank Location: 20925 Pioneer Rd
Los Banos, CA 93635
Propane Tank Location: Road Maintenance Equipment Yard

Property Owner: Merced County
Contact Person: David Engbrecht

Phone Number: (209) 628-5876
Email: david.engbrecht2@countyofmerced.com

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work and necessary coordination involved in relocating the propane tank as shown on the Plans, as set forth in the Specifications and as directed by the Engineer shall be considered as included in the contract unit price paid for Relocate Propane Tank and no additional compensation will be allowed.

Item # 50 – 12" C-900 DR-14 PVC Pipe

This item shall be bid per the linear foot and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 560 (Polyvinyl Chloride (PVC) Pressure Pipe, and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

Measurement of 12" C-900 DR-14 PVC shall be based on slope lengths, not horizontal lengths. This work shall include any trenching excavation, trench bracing or stabilizing measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, and BF-3. This work will also include any material, labor and equipment required to install the proper fittings and conduct the proper tests, including disinfection, as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications, and as specified in the Specifications.

This bid item does not include the replacement of existing pavement where the 12" C-900 DR-14 PVC Pipe is installed under the existing roadway, outside of the intersection reconstruction limits. In these areas, a full depth HMA (Type A) section shall be used to replace the existing roadway pavement, as shown on the Plans. The HMA (Type A) necessary for this replacement has been quantified under the Hot Mix Asphalt (Type A) bid item.

~~Full compensation for all costs involved in furnishing and installing 12" C-900 DR-14 PVC and fittings as well as conducting any and all required tests shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.~~

Item # 51 – 18" C-900 DR-14 PVC Pipe

This item shall be bid per the linear foot and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 560 (Polyvinyl Chloride (PVC) Pressure Pipe, and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

Measurement of 18" C-900 DR-14 PVC Pipe shall be based on slope lengths, not horizontal lengths. This work shall include any trenching excavation, trench bracing or stabilizing measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, and BF-3. This work will also include any material, labor and equipment required to install the proper fittings and conduct the proper tests, including disinfection, as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications, and as specified in the Specifications.

~~Full compensation for all costs involved in furnishing and installing 18" C-900 DR-14 PVC Pipe and fittings as well as conducting any and all required tests shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.~~

Item # 52 – 12" Ductile Iron Flange Coupling

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 12" Ductile Iron Pipe Flange Coupling, including the material, labor and equipment for the excavation, compaction, backfill, installation of the flange coupling.

The contract price paid per the each for 12" Ductile Iron Pipe Flange Coupling shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the flange coupling as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 53 – 12" Ductile Iron Blind Flange

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 12" Ductile Iron Pipe Blind Flange, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the blind flange.

The contract price paid per the each for 12" Ductile Iron Pipe Blind Flange shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the blind flange as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 54 – 18" Ductile Iron Blind Flange

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 18" Ductile Iron Pipe Blind Flange, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the blind flange.

The contract price paid per the each for 18" Ductile Iron Pipe Blind Flange shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the blind flange as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 55 – 6" Ductile Iron Pipe 45° Elbow

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 6" Ductile Iron Pipe 45° Elbow, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the elbow.

The contract price paid per the each for 6" Ductile Iron Pipe 45° Elbow shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the elbow as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 56~~5~~ – 12" Ductile Iron Pipe 45° Elbow

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 12" Ductile Iron Pipe 45° Elbow, including

the material, labor and equipment for the excavation, compaction, backfill, and installation of the elbow.

The contract price paid per the each for 12" Ductile Iron Pipe 45° Elbow shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the elbow as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 57~~6~~ – 18" Ductile Iron Pipe 45° Elbow

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 18" Ductile Iron Pipe 45° Elbow, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the elbow.

The contract price paid per the each for 18" Ductile Iron Pipe 45° Elbow shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the elbow as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 58~~7~~ – 18"X12" Ductile Iron Mechanical Joint Cross

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 18"X12" Ductile Iron Mechanical Joint Cross, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the cross connection.

The contract price paid per the each for 18"X12" Ductile Iron Mechanical Joint Cross shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the cross connection as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 59~~8~~ – 2" Water Service

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

This work includes any and all work involved with the installation of 2" Water Service, including the material, labor and equipment for the excavation, compaction, backfill, connection to the water main, meter box, and connection pipe.

The contract price paid per the each for 2" Water Service shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the water service connection as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 60~~59~~ – Water Valve

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines) and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The Water Valves shall be constructed per the City of Los Banos' Standard Drawings W-3. This work includes any and all work involved with the construction of water valves, including the material, labor and equipment

for the excavation, compaction, backfill, installation of the water valve, valve box, and any connections to the main water line.

The contract price paid per the each for Water Valves shall include full compensation for all labor, materials, tools and equipment associated with the installation of the water valves as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 610 – Fire Hydrant

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The Fire Hydrants shall be constructed per the City of Los Banos' Standard Drawings W-2. This work includes any and all work involved with the construction of fire hydrants, including the material, labor and equipment for the excavation, compaction, backfill, installation of the fire hydrant, concrete thrust block, T connection to the water main, 90 degree elbows, and lateral water lines. The water valve is not included in this bid item and has been quantified separately.

The contract price paid per the each for Fire Hydrant shall include full compensation for all labor, materials, tools and equipment associated with the installation of the fire hydrant as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 62 – Blow Off Valve

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 513 (Water Service Pipelines), Section 531 (Ductile Iron Pipe), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The Blow Off Valve shall be constructed per Drawing WD-1 of the Plans. This work includes any and all work involved with the construction of blow off valves, including the material, labor and equipment for the excavation, compaction, backfill, installation of the blow off valve, meter box, T connection to the water main, 90 degree elbows, and lateral water lines. The water valves and the thrust blocks have not included in this bid item and have been quantified separately.

The contract price paid per the each for Blow Off Valve shall include full compensation for all labor, materials, tools and equipment associated with the installation of the blow off valve as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 631 – Thrust Block

This item shall be bid per the each and shall conform to Section 5 (Water Service), Section 320 (Concrete Improvements), Section 513 (Water Service Pipelines), and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The Thrust Blocks shall be constructed per the Merced County Standard Drawing SU-14. This work includes any and all work involved with the installation of Thrust Blocks, including the material, labor and equipment for the excavation, compaction, backfill, and installation of the Thrust Blocks, including necessary rebar, wherever indicated on the Plans and in the City of Los Banos Standard Specifications.

The contract price paid per the each for Thrust Blocks shall include full compensation for all labor, materials, tools, and equipment associated with the installation of the Thrust Blocks as described above, and all other associated and/or incidental work, and no additional payment will be made.

Item # 642 – Type 36RX Catch Basin

This item shall be bid per the each and shall conform to Section 310 (Structural Concrete) and Section 220 (Earthwork) of the City of Los Banos Standard Specifications, Section 5.03 (Catch Basins) of the Merced County Improvement Standards and Specifications, Section 52 (Reinforcement) of the 2023 Caltrans Standard Specifications, these Specifications, and as shown on the plans.

The Type 36RX Catch Basins shall be constructed per Merced County's Standard Drawings SD-06 and SD-07. This work includes any and all work involved with the construction of the drainage inlets, including the excavation, compaction, backfill, forming, reinforcement, pouring of concrete, and the material and installation of the frame and grate. This bid item also includes any and all work involved with the furnishing, construction, and installation of the concrete skirting/ apron for inlet depressions as shown in the Plans.

The contract price paid per the each for Type 36RX Catch Basin shall include full compensation for all labor, materials, tools and equipment associated with the construction of the catch basins including excavation, backfill, compaction, removal and/or replacement of existing improvements, and all other associated and/or incidental work, and no additional payment will be made.

Item # 654 – Storm Drain Manhole

This item shall be bid per the each and shall conform to Section 3-7 (Manholes), Section 220 (Earthwork), Section 310 (Structural Concrete), and Section 320 (Concrete Improvements) of the City of Los Banos Standard Specifications, these Specifications, and as shown on the plans.

The storm drain manholes shall be constructed per Fresno Metropolitan Flood Control District Standard Drawing B-1 and per the City of Los Banos' Standard Drawings SD-7, SD-8, SD-9, SD-10, and SD-11. This work includes any and all work involved with the construction of the storm drain manholes, including the excavation, compaction, backfill, forming, reinforcement, pouring of concrete, and the material and installation of the frame and cover. Included with this item are any connections needed to join existing pipes to proposed storm drain manhole.

The contract price paid per the each for Storm Drain Manholes shall include full compensation for all labor, materials, tools and equipment associated with the construction of the storm drain manholes including excavation, backfill, compaction, removal and/or replacement of existing improvements, and all other associated and/or incidental work, and no additional payment will be made.

Item # 665 – 18" Reinforced Concrete Pipe (Class III)

18" Reinforced Concrete Pipe (Class III) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 18" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6.

Full compensation for all costs involved in furnishing and installing 18" Reinforced Concrete Pipe (Class III) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 675 – 24" Reinforced Concrete Pipe (Class III)

24" Reinforced Concrete Pipe (Class III) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 24" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6.

Full compensation for all costs involved in furnishing and installing 24" Reinforced Concrete Pipe (Class III) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 686 – 27" Reinforced Concrete Pipe (Class III)

27" Reinforced Concrete Pipe (Class III) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 27" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6. This bid item also includes any and all materials work involved in furnishing and constructing necessary pipe caps as shown on the Plans.

Full compensation for all costs involved in furnishing and installing 27" Reinforced Concrete Pipe (Class III) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 697 – 48" Reinforced Concrete Pipe (Class III)

48" Reinforced Concrete Pipe (Class III) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 48" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6. This bid item also includes any and all materials work involved in furnishing and constructing necessary pipe caps as shown on the Plans.

This bid item does not include the replacement of existing pavement where the 48" Reinforced Concrete Pipe (Class III) is installed under the existing roadway, outside of the intersection reconstruction limits. In these areas, a full depth HMA (Type A) section shall be used to replace the existing roadway pavement, as shown on the Plans. The HMA (Type A) necessary for this replacement has been quantified under the Hot Mix Asphalt (Type A) bid item.

Full compensation for all costs involved in furnishing and installing 48" Reinforced Concrete Pipe (Class III) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 7068 – 60" Reinforced Concrete Pipe (Class III)

60" Reinforced Concrete Pipe (Class III) shall be bid per the linear foot for estimated amounts of reinforced concrete pipe to be furnished and installed by the Contractor at the locations specifically and exclusively shown on the Plans for 60" Reinforced Concrete Pipe. This item shall conform to Section 220 (Earthwork), Section 511 (Drainage Pipelines), Section 522 (Reinforced Concrete Pipe with Rubber Gasket Joints (RCP)), and Section 520 (Cast-In-Place Pipe (CIPP)) of the City of Los Banos Standard Specifications, Section 65-2 (Reinforced Concrete Pipe) of the 2023 Caltrans Standard Specifications, and these Specifications.

All storm drain pipelines shall be constructed as shown on the Plans and the City of Los Banos Standard Drawings, as specified in the City of Los Banos Standard Specifications and as specified in these Specifications.

Measurement of Reinforced Concrete Pipe shall be based on slope lengths, exclusive of structures, not horizontal lengths. The contractor will be responsible for accurate amount of pipe lengths that span from structure to structure at the lines and grades designated on the plans. This work shall include any trenching excavation, trench bracing or stabilization measures, and backfill needed to install pipe as shown and specified on the Plans. Trenching and backfill shall conform to City of Los Banos Standard Drawings BF-1, BF-2, BF-3, and SD-6.

Full compensation for all costs involved in furnishing and installing 60" Reinforced Concrete Pipe (Class III) shall be included in the unit prices bid per lineal foot and no additional payment will be made therefor.

Item # 7169 – Traffic Signal at Pioneer Road and Ortigalita Road

This item shall be bid lump sum and shall conform to the applicable provisions of Section 1 of the City Standard Specifications, the applicable provisions of the City Standard Drawings, Section 86 & 87 of the State Revised Standard Specifications, these specifications, as shown on the plans, and as directed by the Engineer.

This work shall consist of installing the complete traffic signal system, including all traffic signal poles, mast arms, foundations, loop detectors, conduits, pull boxes, conductors, cabinets, and all other necessary appurtenances, complete in place.

All materials shall be furnished and installed by the Contractor and shall be included in this bid item. All removed equipment and materials not reused or identified as being salvaged shall become property of the contractor.

The Contractor shall furnish the Engineer a schedule of values for this contract lump sum item. Reference Section 86–1.01C ”Submittals” of the State Standard Specifications, latest edition. Schedule of values table shall be submitted to the Engineer for approval prior to start of work. Due to the long lead times that are sometimes encountered with electrical equipment, the Contractor shall order all electrical equipment within 10 working days.

Full compensation for Traffic Signal at Pioneer Rd and Ortigalita Rd and all costs involved in furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing the traffic signal complete in place, shall be included in the lump sum price of this bid item, and no additional payment will be made therefor.

Item # 720 – Light Poles and Electrical Outlet on Privately Owned Properties

This item shall be bid lump sum and shall conform to the applicable provisions of Section 1 of the City Standard Specifications, the applicable provisions of the City Standard Drawings, Section 86 & 87 of the State Revised Standard Specifications, these specifications, as shown on the plans, and as directed by the Engineer.

This work shall consist of the following:

- Relocating the privately owned light poles - This work shall include installing new foundations, relocating the existing light poles to the new foundations, and installing new conduits to reconnect the light poles to the existing electrical equipment and lighting system.
- Replacing the existing electrical outlet on the Titan Towing business sign - This work shall include installing a new electrical outlet on the relocated Titan Towing business sign and installing new conduits and equipment necessary to reconnect the new outlet to the existing electrical system.

The Contractor shall coordinate with the owners of the properties to determine the exact spot for the light pole relocation, light pole foundation type, electrical outlet location and type, and power source. It is the Contractor's responsibility to ensure that the light poles are relocated to areas with adequate clearance from overhead utilities.

All materials shall be furnished and installed by the Contractor, excluding the light poles, and shall be included in this bid item. All removed equipment and materials not reused or identified as being salvaged shall become the property of the contractor.

This bid item does not include the relocation of the Titan Towing sign. The work related to the relocation of the Titan Towing sign is covered by the Relocation Custom Business Sign bid item.

The Contractor shall furnish the Engineer a schedule of values for this contract lump sum item. Schedule of values table shall be submitted to the Engineer for approval prior to start of work. Due to the long lead times that are sometimes encountered with electrical equipment, the Contractor shall order all electrical equipment within 10 working days.

Full compensation for Light Poles and Electrical Outlet on Privately Owned Properties and all costs involved in furnishing all labor, materials including hardware, tools, equipment, and incidentals and for doing all the work involved in relocating the light poles and electrical outlet complete in place, furnishing and installing conduit, cable, pull boxes, trenching, boring, restoring curb, sidewalk, landscaping, pavement, pavement markings and stripes and appurtenances damaged or destroyed during pole and outlet relocation construction, and removing existing materials as shown on the plans shall be included in the lump sum price of this bid item, and no additional payment will be made therefor.



STATE OF CALIFORNIA

CITY OF LOS BANOS

DEPARTMENT OF PUBLIC WORKS

PLANS FOR THE RECONSTRUCTION OF ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION IMPROVEMENTS LOS BANOS, CALIFORNIA

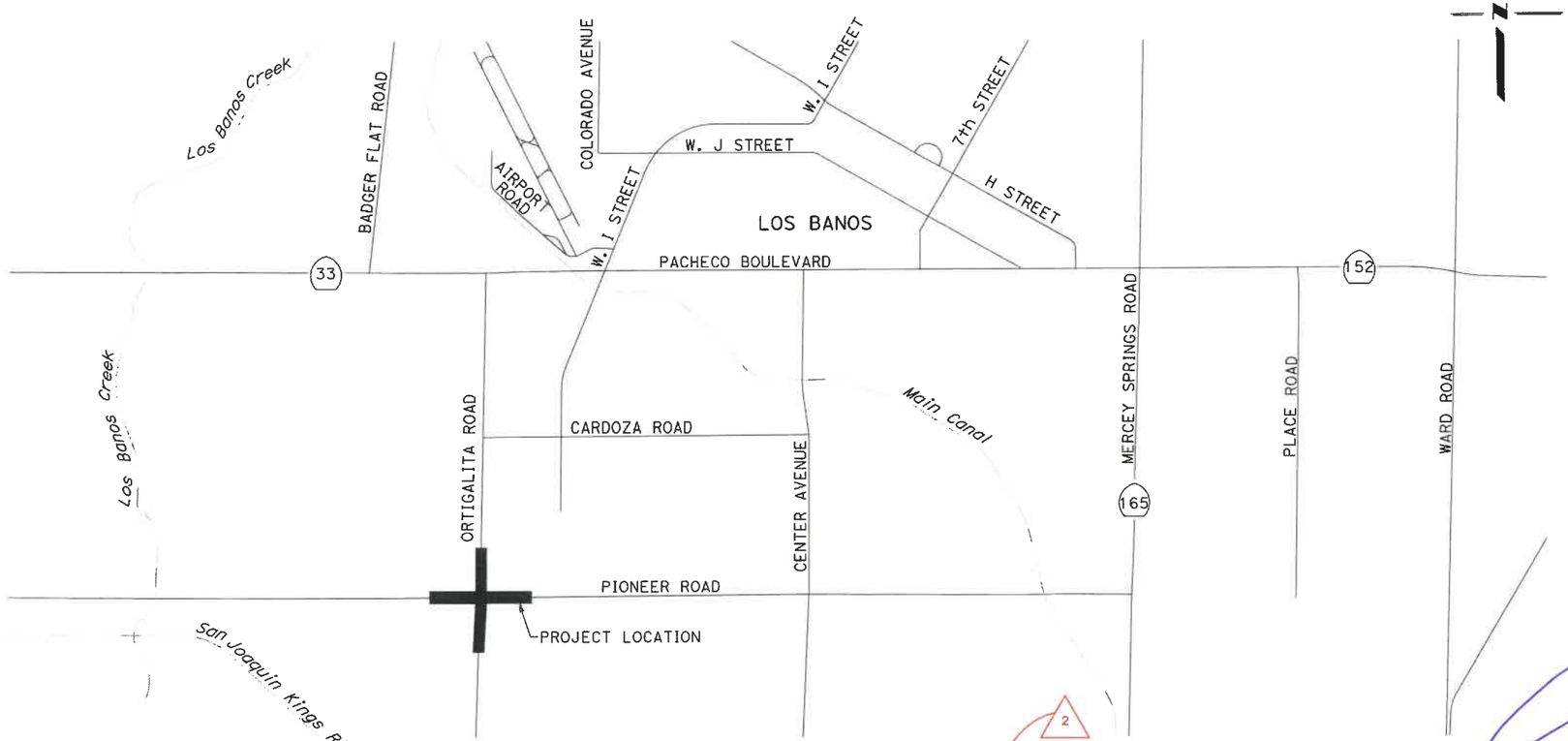
PROJECT No. 23ST0013

2

TO BE SUPPLEMENTED BY:
THE CITY OF LOS BANOS IMPROVEMENT STANDARDS AND SPECIFICATIONS
MERCED COUNTY IMPROVEMENT STANDARDS AND SPECIFICATIONS
THE 2023 CALTRANS STANDARD PLANS AND SPECIFICATIONS

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PROJECT LOCATION MAP

APPROVED BY CITY OF LOS BANOS:

CHARLES BERGSON, P.E. — DATE 06DEC2024
PUBLIC WORKS DIRECTOR

APPROVED BY MERCED COUNTY:

NATHAN BRAY, P.E. — DATE 12/6/24
PUBLIC WORKS DIRECTOR

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY

Dec. 05, 2024 - 10:18am
J:\Los Banos - FH-20192 Pioneer Rd Widening - Phase 2\CAD_2018\Sheets\ORTIGALITA\PW OR_T-1.dwg

811 CALL BEFORE YOU DIG

100% SUBMITTAL

2 ADDENDUM #2 - 2024-12-06

TITLE
T-1

PROJECT NUMBER:	23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE:	12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

SHEET NUMBER
1
OF 50 SHEETS

CONTACT INFORMATION

UTILITY	COMPANY	REPRESENTATIVE	TELEPHONE
COMMUNICATION	COMCAST	FRANK CASTRO	(559) 217-9222
COMMUNICATION	AT&T	ADAM CRISWELL	(209) 412-8543
GAS	PG&E	JEREMIAH CAMARENA	(559) 355-6044
ELECTRICAL	PG&E	LAURA VALENCIA	(559) 240-0979
IRRIGATION	CENTRAL CALIFORNIA IRRIGATION DISTRICT	DAVID MORENO	(209) 826-1422

LEGEND:

- CENTERLINE
- (P) R/W
- (E) R/W
- (E) PROPERTY LINE
- (P) FILL LINE
- (P) CUT LINE
- (P) SAWCUT LINE
- (P) CROWN
- (P) TCE
- (P) IME
- (P) SE
- FLOW ARROW
- (E) AT&T OH COMM
- (E) AT&T UG FIBER
- (E) PG&E OH ELEC
- (E) PG&E GAS
- (E) CCID UG IRR
- (E) CCID IRR DITCH
- (E) JOINT OH COMM/ELEC
- (E) JOINT UG COMM/ELEC
- (P) JOINT UG COMM/ELEC
- (P) PG&E OH ELEC
- (P) OH COMM
- (P) JOINT OH COMM/ELEC
- SLOPE GRADE BREAK
- (P) SWALE FLOWLINE
- (P) CCID IRR DITCH
- (E) CCID IRR DITCH
- (E) CCID UG IRR
- (E) CCID UG IRR
- (P) GB
- FUTURE CITY OF LOS BANOS MASTER PLAN SD
- FUTURE CITY OF LOS BANOS MASTER PLAN WATER
- (P) CITY OF LOS BANOS WATER
- (P) CITY OF LOS BANOS DRAINAGE
- (E) MANHOLE
- (E) UTILITY BOX
- (E) WATER VALVE
- (E) SIGN
- (E) HYDRANT
- (E) TREE
- (E) UTILITY POLE
- (E) GUY ANCHOR
- (E) GAS VALVE
- (P) FENCE
- (E) FENCE
- (E) TRAFFIC SIGNAL
- (E) BOLLARD
- ANGLE POINT
- POINT ON CURVE
- REMOVE TREE

2 ADDENDUM #2 - 2024-12-06

CALL BEFORE YOU DIG

STANDARD PLAN LIST:

APPLICABLE 2023 STATE OF CALIFORNIA CALTRANS STANDARD PLANS:

A3A	A20B	A62D	A86C	ES-1A	ES-4E
A3B	A20C	A62DA	A86D	ES-1B	ES-5C
A3C	A20D	A78B	A87A	ES-1C	ES-7A
A10A	A24A	A85	A87B	ES-2D	ES-7F
A10B	A24C	A85A	A88A	ES-3C	ES-7G
A10C	A24D	A85B	P74	ES-4A	ES-7Q
A10D	A24F	A86	P76	ES-4B	ES-8B
A10E	A24G	A86A	D98A	ES-4C	
A20A	A62A	A86B	D98G	ES-4D	

APPLICABLE CITY OF LOS BANOS STANDARD PLANS:

ST-5	BF-1	SD-6	W-1
ST-14	BF-2	SD-7	W-2
M-1	BF-3	SD-8	W-3

APPLICABLE MERCED COUNTY STANDARD PLANS:

DW-03	SD-06
DW-04	SD-07
DW-04A	SU-14

APPLICABLE FMFCD STANDARD PLANS:

B-1

2

ABBREVIATIONS:

AB	AGGREGATE BASE	IRR	IRRIGATION
AC	ASPHALT CONCRETE	JT	JOINT
ADL	AERIALLY DEPOSITED LEAD	LF	LINEAR FOOT
AT&T	AMERICAN TELEPHONE & TELEGRAPH	Lt	LEFT
AP	ANGLE POINT	MAX	MAXIMUM
Approx	APPROXIMATE	MH	MANHOLE
AVE	AVENUE	MIN/min	MINIMUM
BC	BEGIN CURVE	MJ	MECHANICAL JOINT
Beg	BEGIN	MP	MIDPOINT
BOT	BACK OF TRAIL	Mod	MODIFIED
Br	BRIDGE	N	NORTH
BVC	BEGIN VERTICAL CURVE	NB	NORTHBOUND
BOW	BACK OF WALK	No.	NUMBER
BW	BARBED WIRE	NTS	NOT TO SCALE
CCID	CENTRAL CALIFORNIA IRRIGATION DISTRICT	OG	ORIGINAL GROUND
CITY	CITY OF LOS BANOS	OH	OVERHEAD
CL	CHAIN LINK	PCC	POINT COMPOUND CURVE
CLR	CLEARANCE	PG	PROFILE GRADE
COUNTY	MERCED COUNTY	PG&E	PACIFIC GAS & ELECTRIC
CNS	COMPACTED NATURAL SOIL	P/L	PROPERTY LINE
COMM	COMMUNICATION	PRC	POINT OF REVERSING CURVE
Conc	CONCRETE	Prop,(P)	PROPOSED
CONT	CONTINUOUS	PVC	POLYVINYL CHLORIDE
CR	CROWN	PVI	POINT VERTICAL INTERSECTION
C&G	CURB & GUTTER	PVMT	PAVEMENT
Dbl	DOUBLE	R	RADIUS
DG	DECOMPOSED GRANITE	RCP	REINFORCED CONCRETE PIPE
D.I.	DUCTILE IRON	RSP	ROCK SLOPE PROTECTION
DI	DRAINAGE INLET	Rt	RIGHT
dia.	DIAMETER	R/W	RIGHT OF WAY
DS	DRAINAGE SYSTEM	S	SOUTH / SLOPE
Dwy	DRIVEWAY	SB	SOUTHBOUND
E	EAST	SE	SLOPE EASMENT
EA	EACH	SD	STORM DRAIN
EC	END CURVE	Sta	STATION
ELEC	ELECTRICAL	Std	STANDARD
Elev	ELEVATION	SW	SIDEWALK
EP	EDGE OF PAVEMENT	S/C	SAWCUT
EVC	END VERTICAL CURVE	TC	TOP OF CURB
Exist,(E)	EXISTING	TCE	TEMPORARY CONSTRUCTION EASEMENT
FG	FINISH GRADE	TE	TAPERED EDGE
FL	FLOW LINE	TEMP	TEMPORARY
FMFCD	FRESNO METROPOLITAN FLOOD CONTROL DISTRICT	Tot	TOTAL
		TRANS	TRANSITION
FOC	FACE OF CURB	Typ	TYPICAL
FOT	FRONT OF TRAIL	UG	UNDERGROUND
GB	GRADE BREAK	Var	VARIES
h	HEIGHT	VC	VERTICAL CURVE
HMA	HOT MIX ASPHALT	VG	VALLEY GUTTER
HP	HINGE POINT/HIGH POINT	W	WEST/WATER
HW	HIGH WATER		
IME	IRRIGATION MAINTENANCE EASEMENT		

2

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CALCULATED-DESIGNED BY | CHECKED BY

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REGISTERED PROFESSIONAL ENGINEER
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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

GENERAL NOTES
G-1

SHEET NUMBER 2 OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013 | FEDERAL PROJECT NUMBER CML-5160(031) | DATE: 12/04/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES:

1. FOR IRRIGATION, SWALE, AND DRAINAGE INFORMATION AND LIMITS, SEE DRAINAGE PLAN SHEETS.
2. FOR HMA TRAIL, MEDIAN CURB, AND FENCE INFORMATION AND LIMITS, SEE PLAN AND PROFILE SHEETS. FENCE SHALL BE INSTALLED SUCH THAT THE ENTIRE FENCE FOOTING IS LOCATED OUTSIDE OF THE PUBLIC RIGHT OF WAY.
3. TAPERED EDGE PER CALTRANS Std P74 AND Std P76. (2)
4. ALL SWALE AND CONFORM GRADING SHALL BE SLOPED AT 4:1 OR FLATTER, UNLESS CALLED OUT DIFFERENTLY ON THE SECTIONS.
5. ALL HINGE SLOPES SHALL BE SLOPED AT 2%
6. WHERE REQUIRED FOR STAGE CONSTRUCTION PURPOSES, THE FULL DEPTH HMA SECTION [5] CAN BE USED IN PLACE OF THE CONVENTIONAL SECTION [1]. THIS FULL DEPTH HMA SECTION SHALL ONLY BE UTILIZED WHERE NECESSARY TO MEET STAGING REQUIREMENTS. IN ALL OTHER AREAS, THE CONVENTIONAL SECTION [1] SHALL BE USED. SEE STAGE CONSTRUCTION SHEETS FOR MORE INFORMATION.
7. HYRDOSEED SHALL BE APPLIED TO ALL DISTURBED SOIL AREAS.

PROPOSED SECTIONS:

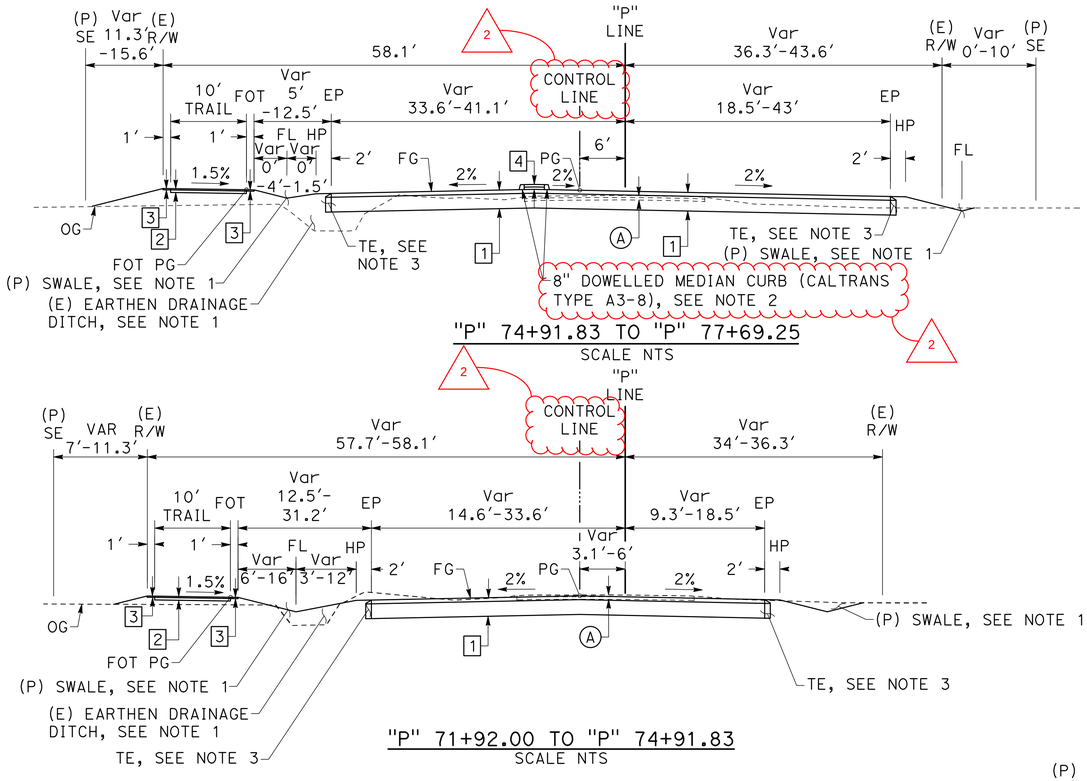
- [1] 0.50′ HMA (TYPE A) / 1.55′ AB (CLASS 2)
- [2] 0.17′ HMA (TYPE A) / 0.33′ AB (CLASS 2)
- [3] 0.17′ DG
- [4] 0.33′ MINOR Conc (TEXTURED PAVING) / 0.33′ AB (CLASS 2)
- [5] 1.50′ HMA (TYPE A) (SEE NOTE 6) (2)

EXISTING SECTIONS:

- (A) Exist 0.25′ AC / Exist 0.33′ AB

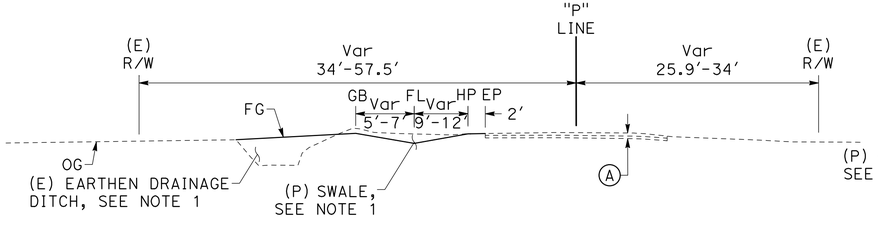
DESIGN DESIGNATIONS

STREET NAME	STATION RANGE	TRAFFIC INDEX	"R" VALUE	CONVENTIONAL SECTION		FULL DEPTH HMA SECTION (2)
				HMA	AB	HMA
PIONEER ROAD - "P" LINE	71+92.00 TO 84+92.00	10	20	0.50′	1.55′	1.50′ SEE NOTE 6
ORTIGALITA ROAD - "O" LINE	13+85.00 TO 28+55.00	10	20	0.50′	1.55′	-

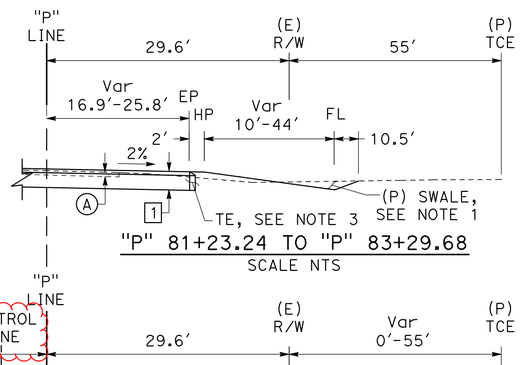


"P" 74+91.83 TO "P" 77+69.25
SCALE NTS

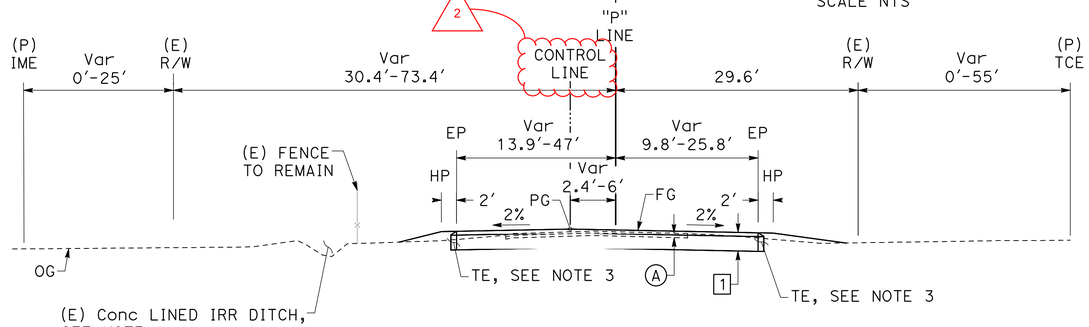
"P" 71+92.00 TO "P" 74+91.83
SCALE NTS



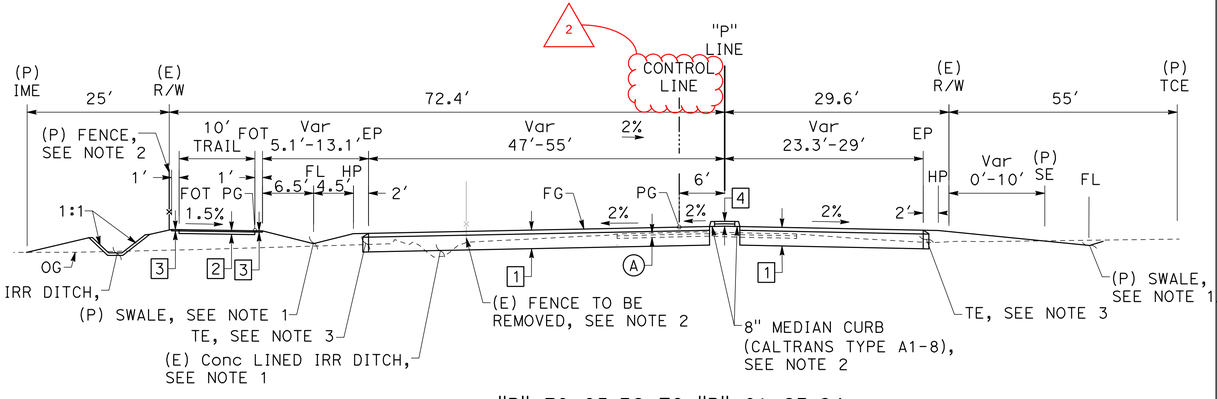
"P" 69+46.50 TO "P" 71+92.00
SCALE NTS



"P" 81+23.24 TO "P" 83+29.68
SCALE NTS



"P" 81+23.24 TO "P" 84+92.00
SCALE NTS



"P" 79+65.32 TO "P" 81+23.24
SCALE NTS

(2) ADDENDUM #2 - 2024-12-06

PIONEER ROAD

TYPICAL SECTIONS X-1

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REVISED PROFESSIONAL ENGINEER — EDGAR A. NORIEGA — No. 91454 — Exp. 6/30/25 — CIVIL — STATE OF CALIFORNIA

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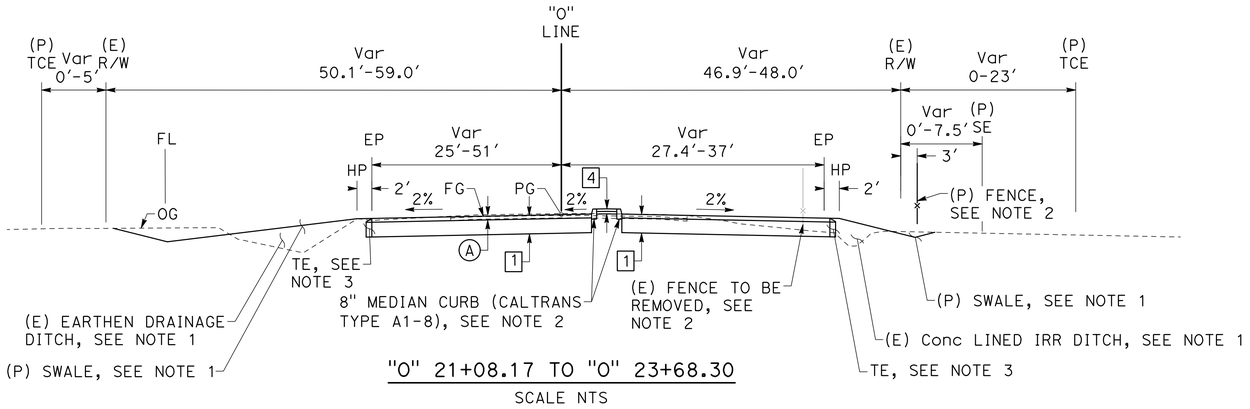
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

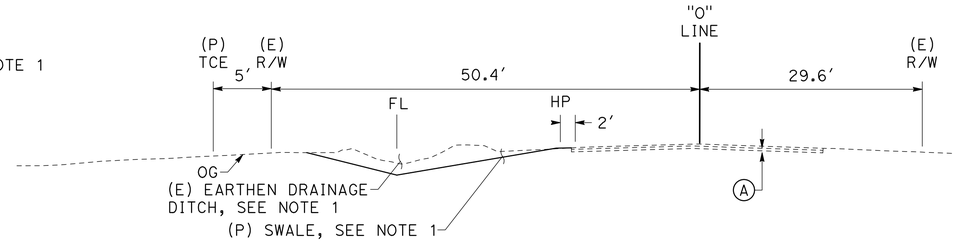
SHEET NUMBER
3
OF 50 SHEETS

100% SUBMITTAL

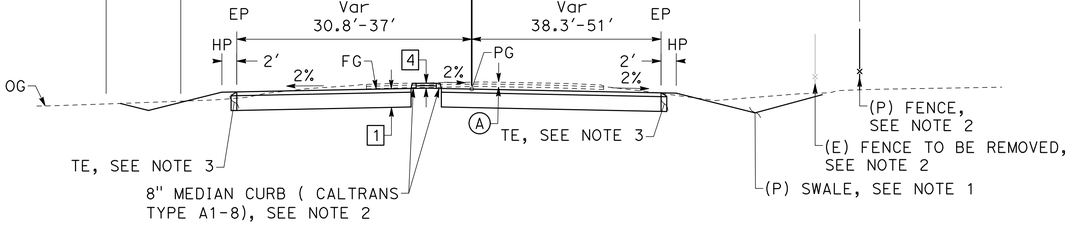
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



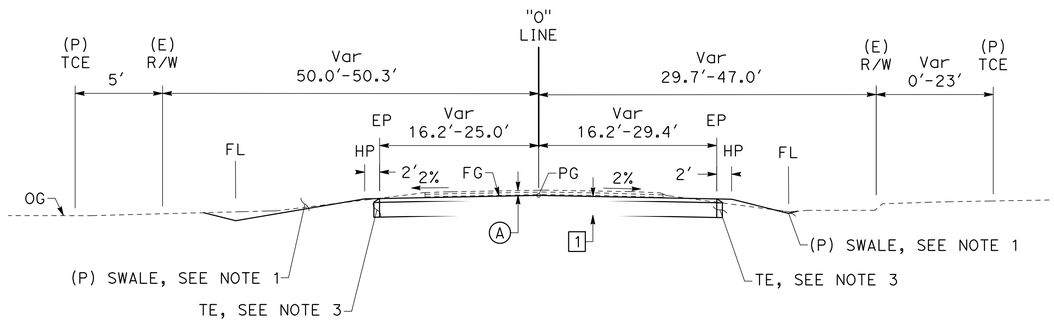
"O" 21+08.17 TO "O" 23+68.30
SCALE NTS



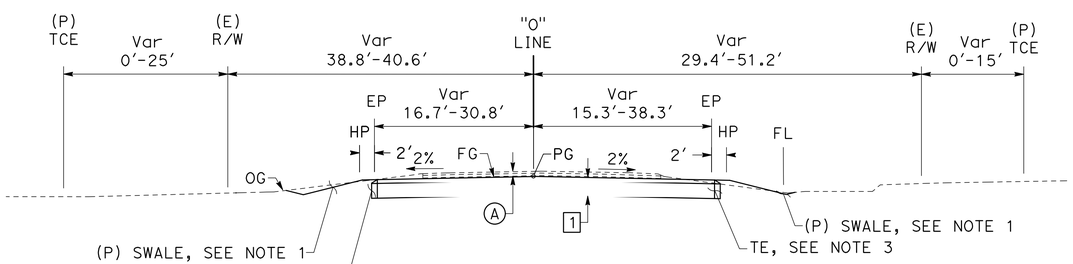
"O" 28+55.00 TO "O" 29+50.42
SCALE NTS



"O" 17+78.72 TO "O" 19+03.84
SCALE NTS



"O" 23+68.30 TO "O" 28+55.00
SCALE NTS



"O" 13+85.00 TO "O" 17+78.72
SCALE NTS

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REGISTERED PROFESSIONAL ENGINEER
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IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
4
OF 50 SHEETS

ORTIGALITA ROAD

TYPICAL SECTIONS X-2

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

REVISED BY | DATE REVISED

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LEGEND:

- (#) BOUNDARY MONUMENT
- (#) HORIZONTAL CONTROL POINT
- (#) SURVEY CONTROL POINT

HORIZONTAL DATUM STATEMENT

THIS SURVEY IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83) PER TIES TO THE CITY OF LOS BANOS GPS SURVEY CONTROL NETWORK, ACCORDING TO THE RECORD OF SURVEY THEREOF FILED FOR THE MERCED COUNTY ASSOCIATION OF GOVERNMENTS BY BESTOR ENGINEERS IN VOLUME 28 OF SURVEYS AT PAGES 9-12, MERCED COUNTY RECORDS. SAID RECORD OF SURVEY DOES NOT SPECIFY ANY FURTHER DETAILS ABOUT THE HORIZONTAL REFERENCE FRAME (SUCH AS ADJUSTMENT OR EPOCH DETAILS), NOR DOES IT CONTAIN SUFFICIENT INFORMATION TO DETERMINE THE EXACT REFERENCE FRAME OF THE FIXED COORDINATES HELD FOR THE PRIMARY REFERENCE STATIONS.

VERTICAL DATUM STATEMENT

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BASIS OF BEARINGS & COORDINATES STATEMENT

COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE III.

GRID FACTOR DETAILS:
COMPUTED AT: POINT # 15008
ELEVATION: 127.973 FEET (NAVD88)
C.S.F.: 1.0000042016
MAPPING ANGLE: -00°12'59.4"
NOTE: NOTE: ALL COORDINATES, BEARINGS, AND DISTANCES SHOWN HEREON ARE IN GRID. DIVIDE GRID DISTANCES MEASURED OR COMPUTED HEREIN BY THE STATED C.S.F. TO CONVERT TO GROUND DISTANCES. MULTIPLY GROUND DISTANCES BY THE STATED C.S.F. TO CONVERT TO GRID DISTANCES.

PROJECT BENCHMARK STATEMENT

SCRIBED "X" ON THE TOP OF A CONCRETE CURB, EAST SIDE OF CENTER AVE, APPROXIMATELY 900 FEET SOUTH OF CARDOZA ROAD (POINT # 16000). THE ELEVATION WAS DERIVED FROM THE OBSERVED ELLIPSOIDAL HEIGHT USING GEOID18. THE ELLIPSOIDAL HEIGHT WAS DETERMINED USING AN UNCONSTRAINED LEAST SQUARES ADJUSTMENT OF STATIC GNSS OBSERVATIONS TO CORS STATIONS "P217", "P302", AND "P305", HOLDING THE ELLIPSOIDAL HEIGHT VALUES PUBLISHED BY THE CSRC FOR CSRS EPOCH 2017.50 (NAD83). STATIC GNSS OBSERVATIONS WERE CONDUCTED IN MAY 2022 (SEE SUPPLEMENTAL NOTE #2, BELOW).

ELEVATION = 127.036 FEET (NAVD88)

SUPPLEMENTAL DETAILS

1. COORDINATES, ELEVATIONS, AND DISTANCES ARE SHOWN IN UNITS OF U.S. SURVEY FEET & DECIMALS THEREOF.
2. THIS AREA IS PRONE TO SUBSIDENCE. ELEVATION INFORMATION MAY NOT HOLD WELL OVER TIME.
3. SEE BELOW FOR A COMPARISON OF NEARBY PUBLISHED BENCHMARK ELEVATIONS TO PROJECT ELEVATIONS:

SOURCE	NAME	PUBLISHED	OBSERVED	DIFFERENCE	DESCRIPTION
N.G.S.	X 1235	138.30'	137.85'	-0.45'	3" N.G.S. BRASS DISK
N.G.S.	Q 880	122.40'	121.39'	-1.01'	3" U.S.C.&G.S. BRASS DISK
LOS BANOS	BM#40	131.76'	126.74'	-5.02'	CUT SQUARE ON CURB
LOS BANOS	BM#55	132.07'	125.62'	-6.45'	CUT SQUARE ON CURB

NOTES

1. CONTRACTOR SHALL COMPLY WITH BUSINESS AND PROFESSIONS CODE SECTION 8771(b) REGARDING REFERENCING AND RECONSTRUCTING MONUMENTS, WHETHER OR NOT MONUMENTS ARE SHOWN IN THESE PLANS.
2. IF ANY MONUMENT IS DAMAGED BY CONTRACTOR'S OPERATIONS, CONTRACTOR SHALL REPLACE AT CONTRACTOR'S COST.

2

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PRIMARY HORIZONTAL CONTROL TABLE

No.	POINT No.	NORTHING	EASTING	DESCRIPTION	APPROX. LOCATION
1	1020	1844060.35	6459133.48	2" C.L.B. BD RCE15310	5TH/"L" ST
2	1021	1843281.39	6469926.41	2" C.L.B. BD RCE15310	2532 E PACHECO
3	1023	1838037.73	6447400.85	2" C.L.B. BD RCE15310	22070 PIONEER
4	1024	1838047.85	6453911.67	2" C.L.B. BD RCE15310	20846 PIONEER
5	1025	1838089.87	6461061.50	2" C.L.B. BD RCE15310	PIONEER/ARROYO (EXT.)
6	1026	1838832.36	6468885.56	2" C.L.B. BD RCE15310	WARD 1,730' S/O S.P.R.R.

SURVEY CONTROL TABLE

No.	POINT No.	NORTHING	EASTING	ELEVATION	DESCRIPTION	APPROX. LOCATION
1	15003	1838075.25	6453010.70	134.62	3/4" IP	PIONEER/ORTIGALITA @NW
2	15004	1838035.78	6453619.22	134.12	3/4" IP	20926 PIONEER
3	15005	1839007.27	6453031.06	134.16	CUT X	16852 ORTIGALITA
4	15009	1838438.96	6453000.33	133.47	REBAR	16944 ORTIGALITA
5	15010	1837471.14	6453055.78	135.18	REBAR	17111 ORTIGALITA
6	15932	1837011.86	6453026.75	138.16	AERIAL TARGET	ORTIGALITA 1,050' S/O PIONEER
7	16000	1839828.35	6458478.73	127.04	SCRIBED X ON CURB	FALASCO/CENTER @NE
8	16009	1839615.46	6453107.00	132.90	CHISELED X	SANDRA/ORTIGALITA @NE
9	16010	1840160.15	6453117.47	131.64	CHISELED X	KEIKO/ORTIGALITA @NE

BOUNDARY MONUMENT TABLE

No.	POINT No.	NORTHING	EASTING	DESCRIPTION	APPROX. LOCATION
1	1030	1838051.14	6453045.63	2" IP NO TAG IN WELL	PIONEER/ORTIGALITA
2	1031	1838095.71	6458405.91	2" IP NO TAG IN WELL	PIONEER/CENTER
3	1048	1838050.04	6450375.05	3/4" IP LS4150 IN WELL	21521 PIONEER
4	1077	1832745.33	6452877.32	2" IP NO TAG IN WELL	SUNSET/ORTIGALITA
5	1079	1839564.06	6453073.66	3/4" IP PLS7788 IN WELL	GABBRO/ORTIGALITA
6	2001	1840657.46	6453093.86	2-1/2" BD LS4071 IN WELL	CARDOZA/ORTIGALITA
7	2002	1840113.82	6453084.39	3/4" IP LS3733 IN WELL	TRAVERTINE/ORTIGALITA
8	2079	1839564.67	6453073.70	3/4" IP RCE29547 IN WELL	SANDRA/ORTIGALITA

2 ADDENDUM #2 - 2024-12-06

PROJECT CONTROL
PC-1

REGISTERED PROFESSIONAL ENGINEER
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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
5
OF 50 SHEETS

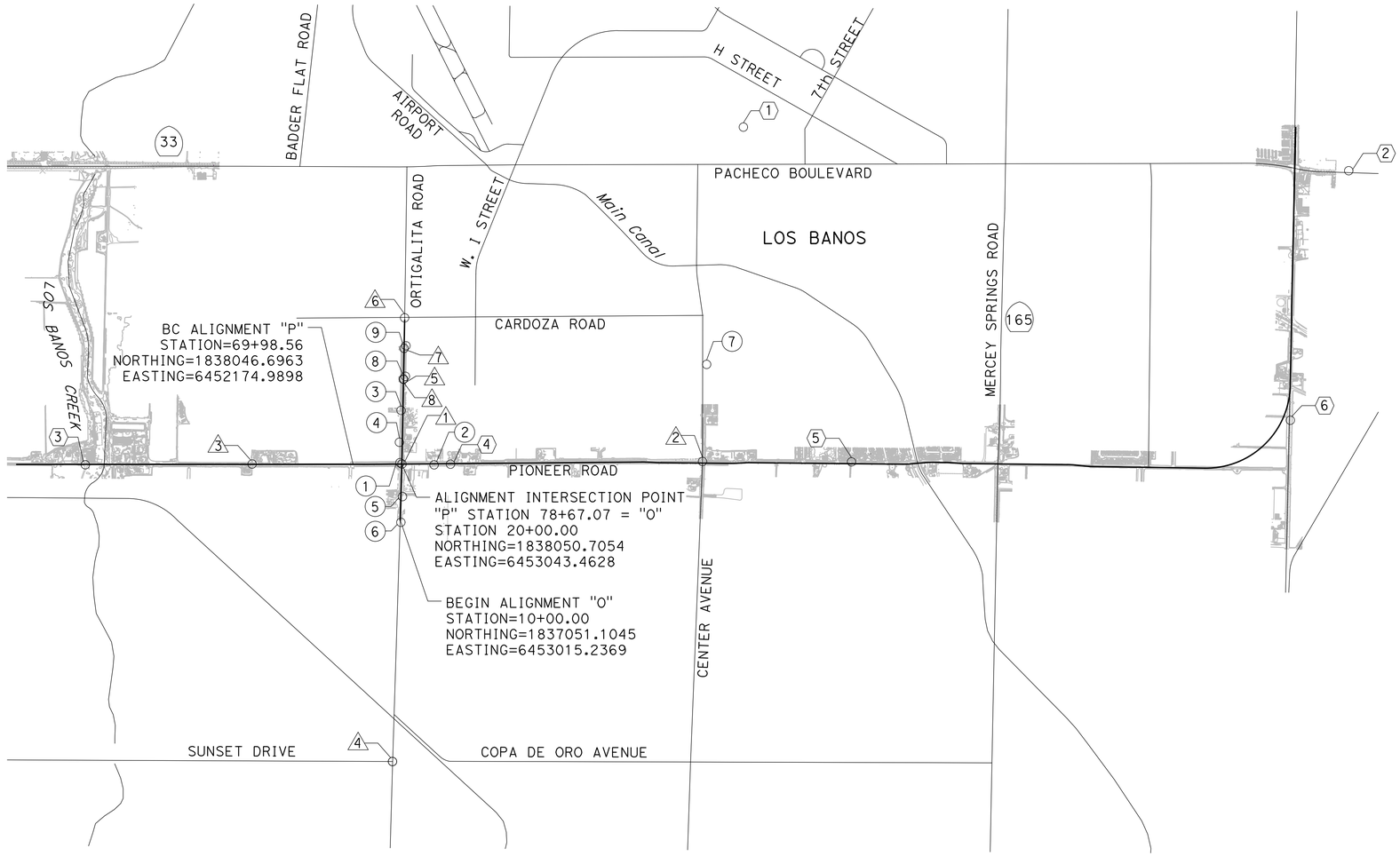
100% SUBMITTAL

PROJECT NUMBER: 23ST0013
FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/04/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

Dec 04, 2024 - 3:59pm
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LEGEND:

- BOUNDARY MONUMENT
- HORIZONTAL CONTROL POINT
- SURVEY CONTROL POINT



PROJECT CONTROL
PC-2

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REGISTERED PROFESSIONAL ENGINEER
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DEPARTMENT OF PUBLIC WORKS
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
6
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER:	23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE:	12/04/2024	RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3

NOTES (PP-1 TO PP-4):

1. ALL STATION OFFSETS TO "P" LINE UNLESS OTHERWISE NOTED.
2. FOR CONTROL LINE & MONUMENT INFORMATION, SEE PROJECT CONTROL SHEETS.
3. FOR UTILITY INFORMATION, SEE UTILITY PLAN SHEETS.
4. FOR SIGN AND STRIPING INFORMATION, SEE SIGNING AND STRIPING SHEETS.
5. FOR IRRIGATION, SWALE, AND DRAINAGE INFORMATION, SEE DRAINAGE PLAN SHEETS.
6. PROTECT EXISTING UTILITIES DURING TREE REMOVAL.
7. FOR CURB AND GUTTER, SEE CITY Std DETAIL ST-5.
8. SEE CD-8 FOR DIKE TRANSITION DETAILS
9. HYRDOSEED SHALL BE APPLIED TO ALL DISTURBED SOIL AREAS.
10. PER CALTRANS Std PLAN A878B, THE TOP LAYER OF HMA SHALL BE EXTENDED UNDER DIKE

CONSTRUCTION NOTES

1 HMA DIKE (TYPE A) PER CALTRANS Std A87B

2 DIKE TRANSITION AT CURB RAMPS - HMA DIKE (TYPE A) (SEE CD-8)

3 REESTABLISH MONUMENT PER CITY Std M-1

4 8" MEDIAN CURB PER CALTRANS Std A87A TYPE A1-8

5 8" DOWELLED MEDIAN CURB PER CALTRANS Std TYPE A3-8

LEGEND (PP-1 TO PP-4):

- (E) R/W
- PROPERTY LINE
- SAWCUT
- (P) TCE
- (P) IME
- (P) SE
- (P) R/W
- (P) CHAIN LINK FENCE
- (P) CONTROL LINE
- (P) SWALE FL
- (P) GB
- (P) DIKE
- ALIGNMENT BC/EC
- ALIGNMENT AP
- REMOVE TREE
- 0.50' HMA (TYPE A) 1.55' AB (CLASS 2)
- CONCRETE (SW, C&G, MEDIAN, Dwy)
- HMA (TYPE A) Dwy
- HMA (TYPE A) TRAIL
- ADL-CONTAMINATED SOIL AREA (DEPTH 0" - 6")
- DETECTABLE WARNING SURFACE PER 2023 CALTRANS Std PLAN A88A
- REMOVE CONCRETE

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	5998.56'	N89°58'35"E
L2	168.22'	S89°30'41"E

ALIGNMENT CURVE DATA

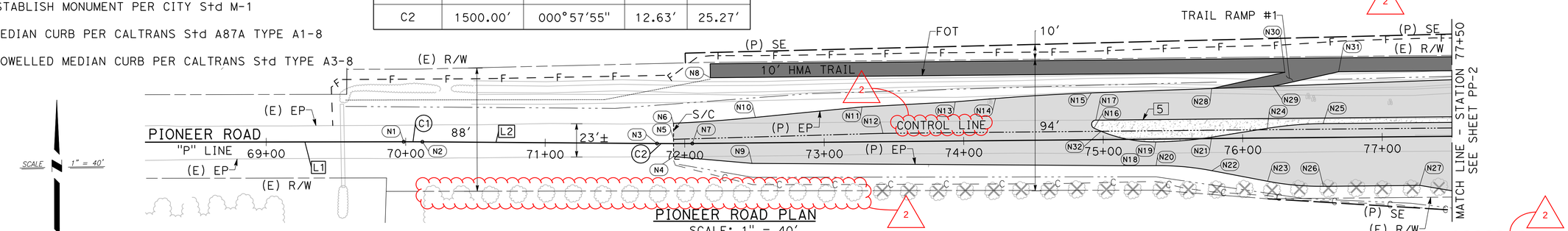
No. X	R	Δ	T	L
C1	1500.00'	000°30'44"	6.71'	13.41'
C2	1500.00'	000°57'55"	12.63'	25.27'

LAYOUT NOTES

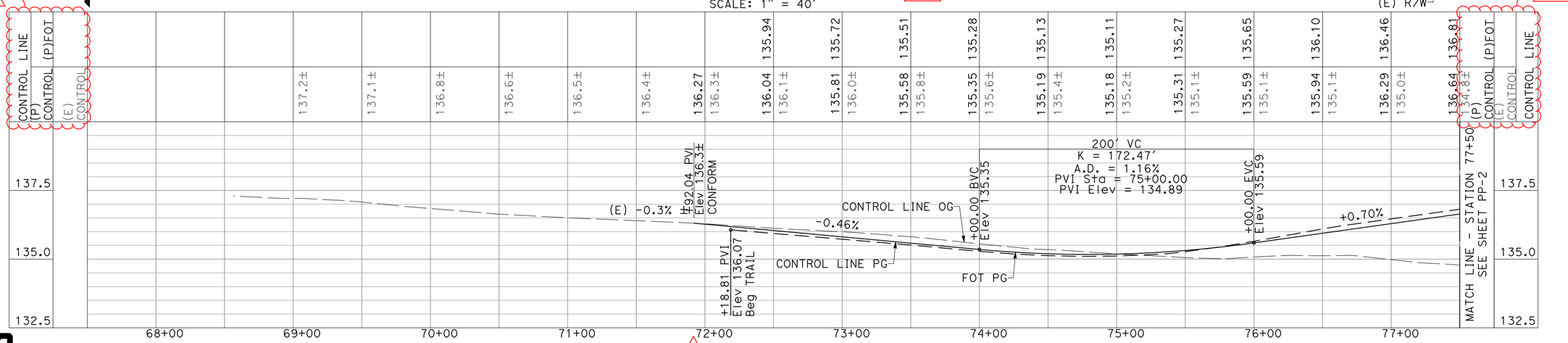
No. X	LOCATION	NOTE
N1	"P" 69+98.56, 0.00'	BC, R=1500'
N2	"P" 70+11.98, 0.00'	EC
N3	"P" 71+80.19, 0.00'	BC, R=1500'
N4	"P" 71+92.00, 9.35' Rt	CONFORM TO Exist, EP
N5	"P" 71+92.00, 3.09' Lt = CONTROL 71+92.04, 0.00'	CONFORM TO Exist, CONTROL
N6	"P" 71+92.00, 14.59' Lt	BC, R=1102' CONFORM TO Exist, EP
N7	"P" 72+05.46, 0.00'	EC
N8	"P" 72+18.81, 47.08' Lt	Beg HMA TRAIL, FOT Elev=136.07
N9	"P" 72+48.11, 14.66' Rt	AP, EP
N10	"P" 72+50.78, 18.29' Lt	EC, EP
N11	"P" 73+27.33, 25.10' Lt	AP, EP
N12	"P" 73+42.17, 6.00' Lt = CONTROL 73+42.17, 0.00'	AP, CONTROL
N13	"P" 73+94.17, 28.13' Lt	AP, EP
N14	"P" 74+23.10, 30.22' Lt	BC, EP, R=1520'
N15	"P" 74+91.81, 33.61' Lt	EC, EP
N16	"P" 74+93.49, 8.31' Lt	PCC, MEDIAN EP, R=3' Beg/END MEDIAN CURB EP Elev = 135.13

LAYOUT NOTES

No. X	LOCATION	NOTE
N17	"P" 74+94.81, 14.00' Lt	EC, MEDIAN EP EP Elev=135.02
N18	"P" 75+14.03, 18.82' Rt	BC, EP, R=1517'
N19	"P" 75+37.71, 2.00' Rt	PCC, MEDIAN EP, R=268' EP Elev=135.12
N20	"P" 75+37.71, 19.00' Rt	PCC, EP, R=202.08'
N21	"P" 75+77.71, 1.00' Lt	EC, MEDIAN EP EP Elev=135.36
N22	"P" 75+77.68, 23.00' Rt	EC, EP
N23	"P" 76+17.57, 31.00' Rt	BC, EP, R=201.47'
N24	"P" 76+17.71, 7.00' Lt	BC, MEDIAN EP, R=268' EP Elev=135.74
N25	"P" 76+57.71, 10.00' Lt	EC, MEDIAN EP EP Elev=136.08
N26	"P" 76+57.52, 35.00' Rt	EC, EP
N27	"P" 77+26.70, 35.00' Rt	AP, EP
N28	"P" 75+78.32, 35.95' Lt	AP, EP
N29	"P" 76+22.44, 37.15' Lt	AP, EP
N30	"P" 76+30.69, 47.08' Lt	AP, FOT Elev=135.93
N31	"P" 76+69.18, 47.08' Lt	AP, FOT Elev=136.25
N32	"P" 74+98.52, 6.00' Lt	CONTROL, MEDIAN EP EP Elev=135.18



PIONEER ROAD PLAN
SCALE: 1" = 40'



PIONEER ROAD CONTROL LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 2'

2 ADDENDUM #2 - 2024-12-06

PLAN AND PROFILE
SCALE: 1" = 40' **PP-1**

100% SUBMITTAL

PROJECT NUMBER:	FEDERAL PROJECT NUMBER	DATE:	RELATIVE BORDER SCALE IS IN INCHES
23ST0013	CML-5160(031)	12/04/2024	0 1 2 3

CALL BEFORE YOU DIG

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY

Doc: 04, 2024 - 3:57pm
J:\Los Banos - PA+20102 Pioneer Rd Widening - Phase 2\CADD_2018\Sheets\ORTIGALITA PR 08_PP-1-4.dwg

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER 7 OF 50 SHEETS

LAYOUT NOTES

No. ⓧ	LOCATION	NOTE
N1	"P" 77+69.25, 41.00′ Lt	BC, FL, R=50′, Beg SW & C&G, END HMA DIKE (TYPE A)
N2	"P" 77+69.25, 47.08′ Lt	END HMA TRAIL, FOT Elev=136.90
N3	"P" 77+76.70, 43.00′ Rt	BC, FL, R=50′, Beg SW & C&G, Beg HMA DIKE (TYPE A)
N4	"P" 77+87.15,14.00′ Lt	BC, MEDIAN EP, R=2′ EP Elev=136.97
N5	"P" 77+87.15, 10.00′ Lt	EC, MEDIAN EP EP Elev=136.97
N6	"P" 78+19.21, 89.22′ Lt	EC, FL, R=50′, END SW & C&G, Beg HMA DIKE (TYPE A)
N7	"P" 78+26.67, 94.78′ Rt	EC, FL, EP END SW & C&G END HMA DIKE (TYPE A)
N8	"P" 79+07.90, 106.78′ Lt	BC, FL, R=50′, Beg SW & C&G, Beg HMA DIKE (TYPE A)
N9	"P" 79+62.70, 72.42′ Lt	Beg CHAIN LINK FENCE
N10	"P" 79+15.35, 77.22′ Rt	BC, FL, R=50′, Beg SW & C&G, END HMA DIKE (TYPE A)
N11	"P" 79+48.32, 2.00′ Rt	BC, MEDIAN EP, R=2′ Beg/END MEDIAN CURB EP Elev=136.94

LAYOUT NOTES

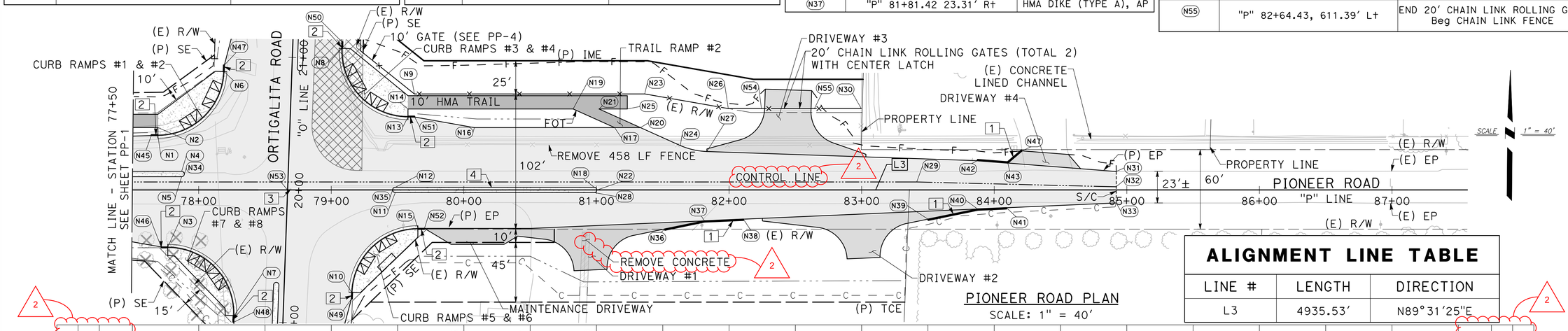
No. ⓧ	LOCATION	NOTE
N12	"P" 79+48.32, 2.00′ Lt	EC, MEDIAN EP EP Elev=136.94
N13	"P" 79+57.86, 55.00′ Lt	EC, FL, R=50′, END SW & C&G, Beg HMA DIKE (TYPE A)
N14	"P" 79+57.86, 61.08′ Lt	Beg HMA TRAIL, FOT Elev=136.41
N15	"P" 79+65.32, 29.00′ Rt	EC, FL, R=50′, END SW & C&G, Beg HMA DIKE (TYPE A)
N16	"P" 80+07.86, 47.00′ Lt	AP, EP
N17	"P" 81+13.72, 47.00′ Lt	AP, EP
N18	"P" 80+98.29, 2.00′ Lt	BC, MEDIAN EP, R=2′ EP Elev=136.14
N19	"P" 80+82.43, 61.08′ Lt	AP, FOT Elev=135.75
N20	"P" 81+33.22, 47.00′ Lt	AP, EP
N21	"P" 81+01.92 61.08′ Lt	AP, FOT Elev=135.69
N22	"P" 81+00.29, 0.00′ Lt	MEDIAN EP EP Elev=136.17
N23	"P" 81+36.38, 72.42′ Lt	AP, FENCE
N24	"P" 81+63.24, 33.49′ Lt	BC, EP, R=55.01′

LAYOUT NOTES

No. ⓧ	LOCATION	NOTE
N25	"P" 81+23.24, 61.08′ Lt	END HMA TRAIL FOT Elev=135.64
N26	"P" 81+99.41, 61.39′ Lt	AP, FENCE
N27	"P" 81+83.24, 28.99′ Lt	EC, EP
N28	"P" 80+98.29, 2.00′ Rt	EC, MEDIAN EP, R=2′ EP Elev=136.14
N29	"P" 83+41.56, 6.00′ Lt = CONTROL 83+41.56, 0.00′	AP, CONTROL
N30	"P" 82+99.74, 61.39′ Lt	END CHAIN LINK FENCE END REMOVE (E) FENCE CONNECT TO (E) FENCE
N31	"P" 84+92, 14.04′ Lt	CONFORM TO Exist, EP
N32	"P" 84+92.00, 2.37′ Lt = CONTROL 84+92, 0.00′	CONFORM TO Exist, CONTROL
N33	"P" 84+92.00 9.82′ Rt	CONFORM TO Exist, EP
N34	"P" 77+89.15, 12.00′ Lt	MEDIAN EP, EP Elev=137.00
N35	"P" 79+46.32, 0.00′	MEDIAN EP, EP Elev=136.97
N36	"P" 81+51.47 29.46′ Rt	Beg HMA DIKE (TYPE A)
N37	"P" 81+81.42 23.31′ Rt	HMA DIKE (TYPE A), AP

LAYOUT NOTES

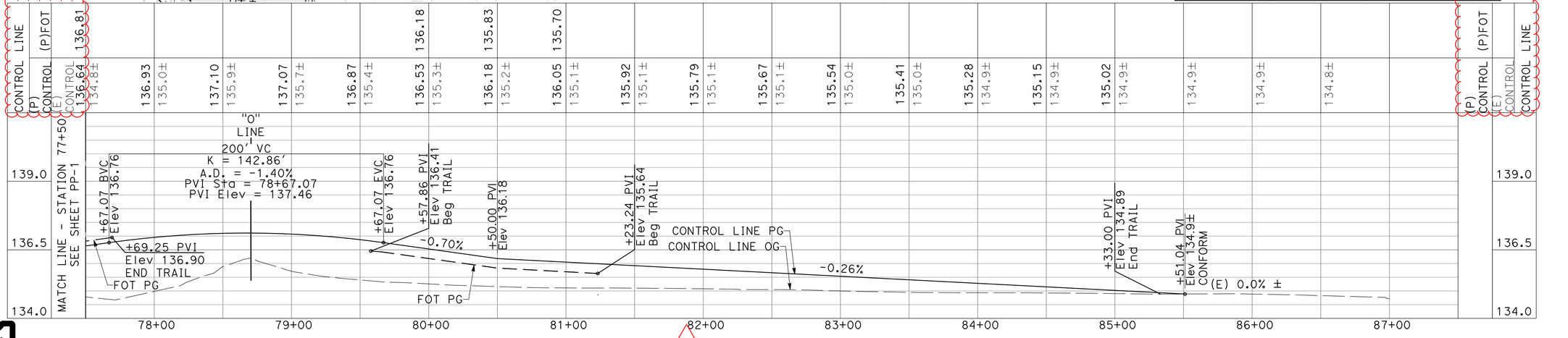
No. ⓧ	LOCATION	NOTE
N38	"P" 82+10.82, 22.03′ Rt	END HMA DIKE (TYPE A)
N39	"P" 83+50.03, 22.03′ Rt	Beg HMA DIKE (TYPE A)
N40	"P" 83+87.47, 14.36′ Rt	HMA DIKE (TYPE A) AP
N41	"P" 84+09.23, 13.45′ Rt	END HMA DIKE (TYPE A)
N42	"P" 83+87.34, 22.07′ Lt	Beg HMA DIKE (TYPE A)
N43	"P" 84+10.31, 20.28′ Lt	HMA DIKE (TYPE A), AP
N47	"P" 84+21.05, 29.48′ Lt	END HMA DIKE (TYPE A)
N45	"P" 77+64.25, 41.00′ Lt	Beg HMA DIKE (TYPE A)
N46	"P" 77+71.70, 43.00′ Rt	Beg HMA DIKE (TYPE A)
N47	"P" 78+19.39, 94.22′ Lt	END HMA DIKE (TYPE A)
N48	"P" 78+26.49, 99.78′ Rt	Beg HMA DIKE (TYPE A)
N49	"P" 79+15.17, 82.22′ Rt	Beg HMA DIKE (TYPE A)
N50	"P" 79+08.03, 111.78′ Lt	END HMA DIKE (TYPE A)
N51	"P" 79+62.86, 55.00′ Lt	END HMA DIKE (TYPE A)
N52	"P" 79+70.32, 29.00′ Rt	END HMA DIKE (TYPE A)
N53	"P" 78+67.07 = "O" 20+0.00	STATION EQUATION
N54	"P" 82+24.41, 61.39′ Lt	END CHAIN LINK FENCE Beg 20′ CHAIN LINK ROLLING GATE
N55	"P" 82+64.43, 611.39′ Lt	END 20′ CHAIN LINK ROLLING GATE Beg CHAIN LINK FENCE



PIONEER ROAD PLAN
SCALE: 1" = 40′

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L3	4935.53′	N89°31′25"E



PIONEER ROAD CONTROL LINE PROFILE
HORIZONTAL SCALE: 1" = 40′
VERTICAL SCALE: 1" = 2′

2 ADDENDUM #2 - 2024-12-06

PLAN AND PROFILE
SCALE: 1" = 40′ **PP-2**

100% SUBMITTAL

PROJECT NUMBER:	23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE:	12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY

Dec 04, 2024 - 3:57pm
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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 84554
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
8
OF 50 SHEETS

LAYOUT NOTES

No. (X)	LOCATION	NOTE
N1	"O" 13+85.00, 15.26' Rt	CONFORM TO Exist, EP Beg HMA DIKE (TYPE A)
N2	"O" 13+85.00, 16.73' Lt	CONFORM TO Exist, EP
N3	"O" 14+35.54, 17.95' Rt	EC, EP
N4	"O" 16+04.17, 24.02' Rt	BC, EP, R=1517'
N5	"O" 16+58.70, 25.00' Rt	EC, EP
N6	"O" 17+80.72, 8.00' Lt	BC, MEDIAN EP, R= 2' Beg/END MEDIAN CURB EP Elev=136.24
N7	"O" 17+80.72, 4.00' Lt	EC, MEDIAN EP EP Elev=136.24
N8	"O" 18+74.55, 41.00' Rt	AP, EP
N9	"O" 13+81.52, 0.00'	AP
N10	"O" 19+28.00, 8.00' Lt	EC, MEDIAN EP EP Elev=136.55
N11	"O" 19+28.00, 4.00' Lt	BC, MEDIAN EP, R=2' EP Elev=136.55
N12	"O" 17+78.72, 6.00' Lt	MEDIAN EP Elev=136.28

LAYOUT NOTES

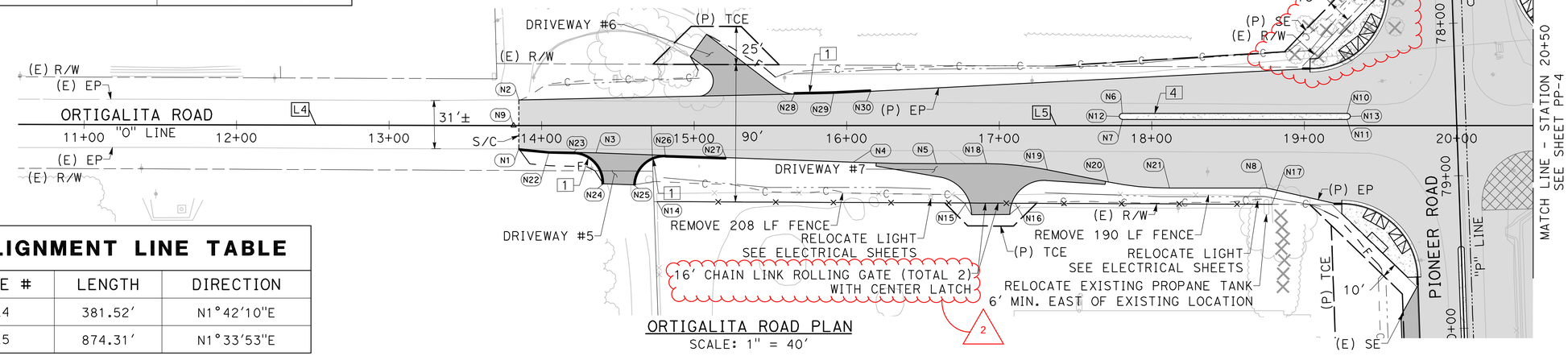
No. (X)	LOCATION	NOTE
N13	"O" 19+30.00, 6.00' Lt	MEDIAN EP EP Elev=136.58
N14	"O" 14+75.73, 50.35' Rt	Beg CHAIN LINK FENCE Beg REMOVE (E) FENCE CONNECT TO (E) FENCE
N15	"O" 16+78.35, 50.74' Rt	END CHAIN LINK FENCE Beg 16' CHAIN LINK ROLLING GATE
N16	"O" 17+10.35, 50.88' Rt	END 16' CHAIN LINK ROLLING GATE Beg CHAIN LINK FENCE
N17	"O" 18+78.83, 51.62' Rt	END CHAIN LINK FENCE END REMOVE (E) FENCE CONNECT TO (E) FENCE

LAYOUT NOTES

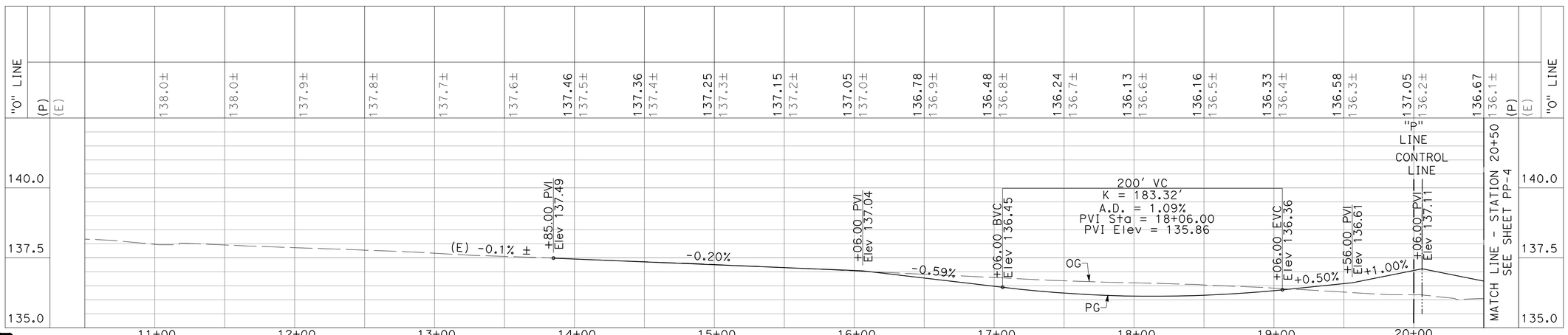
No. (X)	LOCATION	NOTE
N18	"O" 16+91.51, 25.00' Lt	BC, EP, R=206'
N19	"O" 17+31.51, 29.00' Lt	EC, EP
N20	"O" 17+71.51, 37.00' Lt	BC, EP, R=206'
N21	"O" 18+11.51, 41.00' Lt	EC, EP
N22	"O" 14+04.86, 17.17' Rt	HMA DIKE (TYPE A) AP, EP
N23	"O" 14+20.91, 17.50' Rt	HMA DIKE (TYPE A) BC, EP
N24	"O" 14+40.36, 38.20' Rt	END HMA DIKE (TYPE A), EC
N25	"O" 14+60.35, 38.87' Rt	Beg HMA DIKE (TYPE A), BC
N26	"O" 14+81.04, 19.59' Rt	HMA DIKE (TYPE A) EC, EP
N27	"O" 15+20.76, 21.02' Rt	END HMA DIKE (TYPE A), EP
N28	"O" 15+65.62, 20.61' Lt	Beg HMA DIKE (TYPE A), EP
N29	"O" 15+91.41, 21.17' Lt	HMA DIKE (TYPE A) AP, EP
N30	"O" 16+15.58, 22.39' Lt	END HMA DIKE (TYPE A), EP

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L4	381.52'	N1°42'10"E
L5	874.31'	N1°33'53"E



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'



ORTIGALITA ROAD PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 2'

2 ADDENDUM #2 - 2024-12-06

PLAN AND PROFILE
SCALE: 1" = 40' **PP-3**

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REVISED BY | DATE REVISED

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CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
9
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/06/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

LAYOUT NOTES

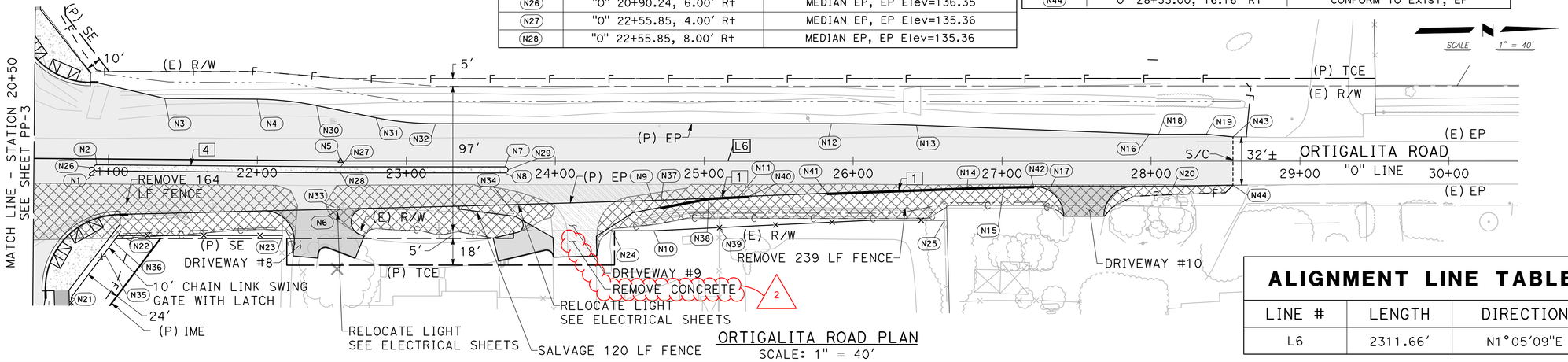
No. X	LOCATION	NOTE
N1	"O" 20+92.24, 8.00' Rt	BC, MEDIAN EP, R=2' Beg/END MEDIAN CURB EP Elev=136.32
N2	"O" 20+92.24, 4.00' Rt	EC, MEDIAN EP EP Elev=136.37
N3	"O" 21+37.46, 41.00' Lt	AP, EP
N4	"O" 21.99.44, 41.00' Lt	BC, EP, R=215.67'
N5	"O" 22+55.83, 0.00'	AP
N6	"O" 22+55.83, 32.30' Rt	BC, EP, R=25122.60'
N7	"O" 23+66.30, 4.00' Rt	BC, EP, R=2' EP Elev=135.51
N8	"O" 24+66.30, 8.00' Rt	EC, MEDIAN EP EP Elev=135.51
N9	"O" 24+65.39, 26.47' Rt	PCC, EP R=2279.93'
N10	"O" 24+66.17, 46.81' Rt	CHAIN LINK FENCE AP
N11	"O" 25+23.01, 23.91' Rt	EC, EP, HMA DIKE (TYPE A) AP
N12	"O" 25+85.34, 25.00' Lt	BC, EP, R=1517'
N13	"O" 26+42.17, 23.92' Lt	EC, EP

LAYOUT NOTES

No. X	LOCATION	NOTE
N14	"O" 26+76.46 18.07' Rt	BC, EP, R=1483', HMA DIKE (TYPE A)
N15	"O" 27+01.19, 17.34' Rt	HMA DIKE (TYPE A) EC, EP
N16	"O" 27+98.82, 18.03' Lt	BC, EP, R=1483'
N17	"O" 27+32.80, 17.00' Rt	EC, EP
N18	"O" 28+05.07, 17.81' Lt	EC, EP
N19	"O" 28+37.18, 17.95' Lt	EP, AP
N20	"O" 28+15.00, 17.00' Rt	EP, AP
N21	"O" 20+75.78, 92.99' Rt	AP, CHAIN LINK FENCE
N22	"O" 21+06.82, 51.22' Rt	AP, CHAIN LINK FENCE
N23	"O" 22+17.22, 50.25' Rt	Beg CHAIN LINK FENCE Beg REMOVE (E) FENCE CONNECT TO (E) FENCE
N24	"O" 24+38.10, 46.83' Rt	Beg CHAIN LINK FENCE Beg REMOVE (E) FENCE CONNECT TO (E) FENCE
N25	"O" 26+61.37, 39.73' Rt	END CHAIN LINK FENCE END REMOVE (E) FENCE CONNECT TO (E) FENCE
N26	"O" 20+90.24, 6.00' Rt	MEDIAN EP, EP Elev=136.35
N27	"O" 22+55.85, 4.00' Rt	MEDIAN EP, EP Elev=135.36
N28	"O" 22+55.85, 8.00' Rt	MEDIAN EP, EP Elev=135.36

LAYOUT NOTES

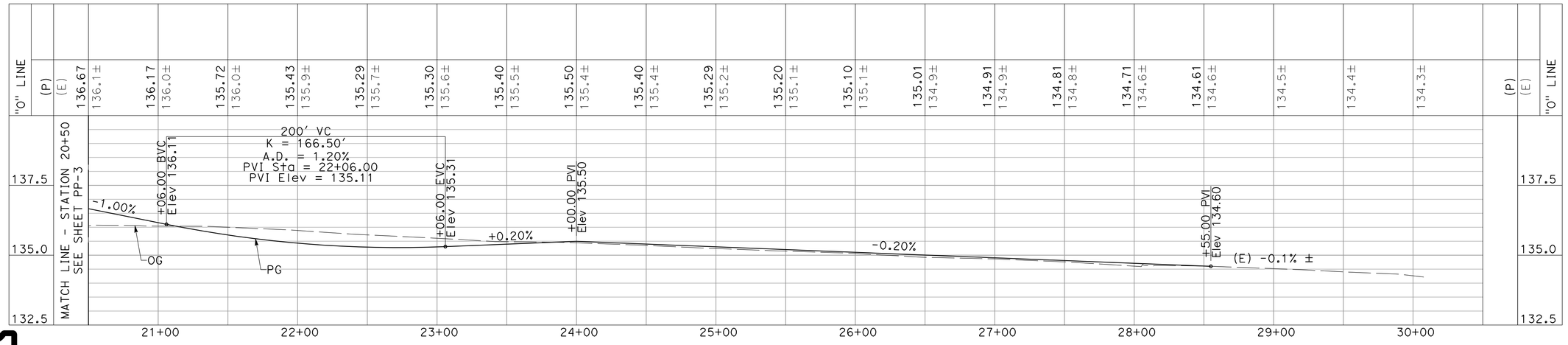
No. X	LOCATION	NOTE
N29	"O" 23+68.30, 6.00' Rt	MEDIAN EP, EP Elev=135.55
N30	"O" 22+39.44, 37.00' Rt	EC, EP
N31	"O" 22+79.61, 29.00' Rt	BC, EP, R=202'
N32	"O" 23+19.61, 25.00' Rt	EC, EP
N33	"O" 22+51.77, 31.07' Rt	Beg SALVAGE FENCE
N34	"O" 23+72.28, 35.42' Rt	END SALVAGE FENCE
N35	"O" 20+97.82, 63.32' Rt	END CHAIN LINK FENCE Beg 10' CHAIN LINK SWING GATE
N36	"O" 21+03.79, 55.30' Rt	END 10' CHAIN LINK SWING GATE Beg CHAIN LINK FENCE
N37	"O" 24+70.66, 31.17' Rt	Beg HMA DIKE (TYPE A)
N38	"O" 25+03.10, 24.96' Rt	HMA DIKE (TYPE A) AP
N39	"O" 25+10.05, 45.23' Rt	CONNECT TO (E) FENCE
N40	"O" 25+30.04, 23.64' Rt	END HMA DIKE (TYPE A)
N41	"O" 25+82.71, 21.64' Rt	Beg HMA DIKE (TYPE A)
N42	"O" 27+21.20, 17.30' Rt	END HMA DIKE (TYPE A)
N43	"O" 28+55.00, 16.16' Lt	CONFORM TO Exist, EP
N44	"O" 28+55.00, 16.16' Rt	CONFORM TO Exist, EP



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'

ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L6	2311.66'	N1°05'09"E



ORTIGALITA ROAD PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 2'

2 ADDENDUM #2 - 2024-12-06

PLAN AND PROFILE
SCALE: 1" = 40' **PP-4**

CALL BEFORE YOU DIG

100% SUBMITTAL

PROJECT NUMBER:	23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE:	12/04/2024	RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 91455
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
10
OF 50 SHEETS

NOTES:

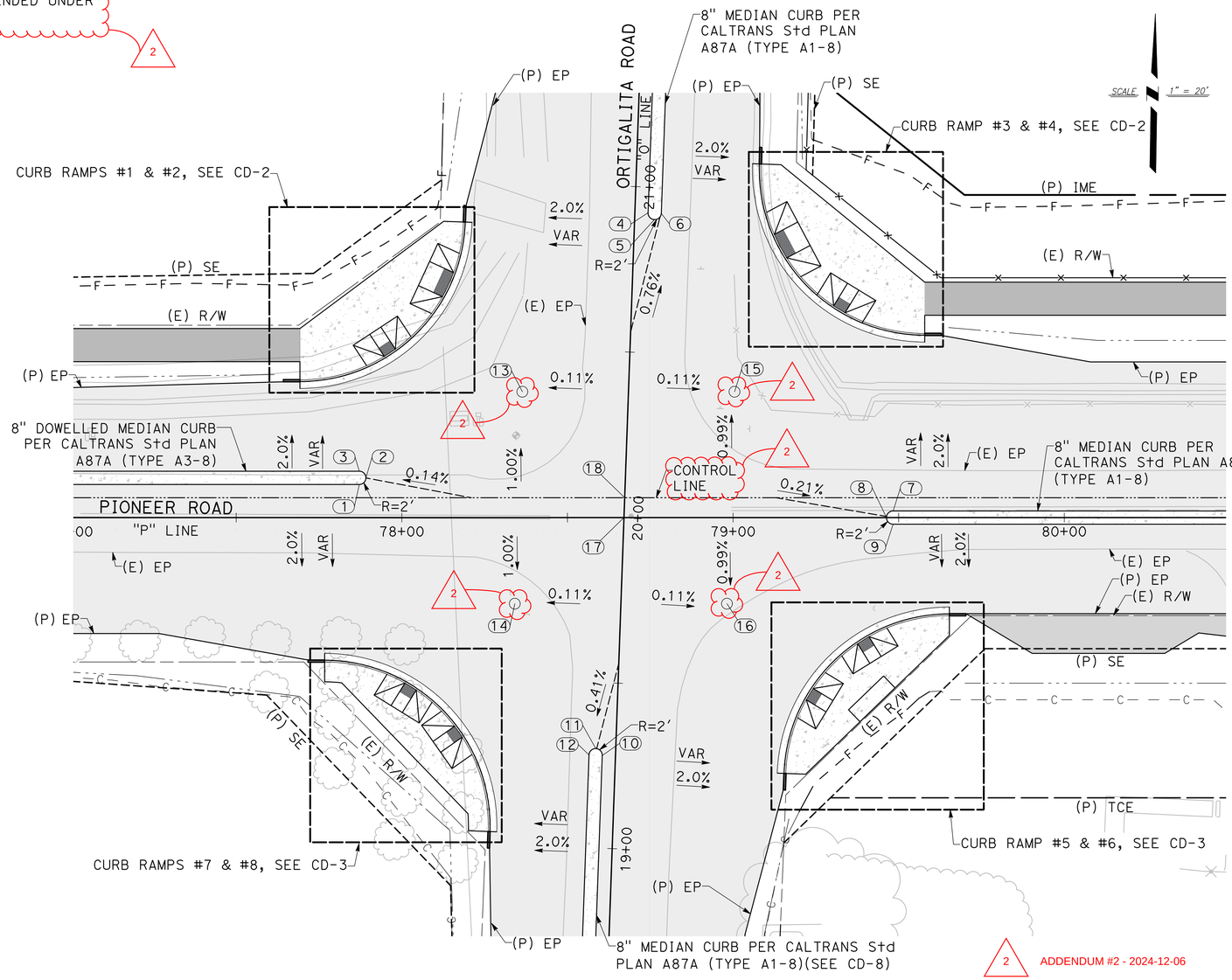
1. CURB RAMPS SHALL BE CONSTRUCTED PER CITY OF LOS BANOS Std ST-14.
2. RURAL ASPHALT DRIVEWAY SHALL BE CONSTRUCTED PER MERCED COUNTY Std DW-04. AGGREGATE BASE QUANTIFIED WITH AGGREGATE BASE (CLASS 2).
3. RURAL CONCRETE DRIVEWAY SHALL BE CONSTRUCTED PER MERCED COUNTY Std DW-04A. AGGREGATE BASE QUANTIFIED WITH AGGREGATE BASE (CLASS 2).
4. RAMP SLOPE SHALL NOT EXCEED 8.0% SLOPE. THE FLARED SIDES SHALL NOT EXCEED 10% SLOPE.
5. RADII FOR CURB & GUTTER IS BASED OFF THE FLOWLINE RADIUS.
6. RADII FOR MEDIAN CURB IS BASED OFF THE EDGE OF PAVEMENT.
7. PER CALTRANS Std PLAN A78B, THE TOP LAYER OF HMA SHALL BE EXTENDED UNDER DIKE

2

LEGEND:

- 0.50' HMA (TYPE A) / 1.55' AB (CLASS 2)
- DETECTABLE WARNING SURFACE PER CALTRANS Std PLAN A88A
- CONCRETE (SW, C&G, MEDIAN, Dwy)
- HMA (TYPE A) Dwy
- HMA (TYPE A) TRAIL
- REMOVE CONCRETE
- (P) CONTROL LINE
- (E) R/W
- FILL
- CUT
- (P) R/W
- (P) TCE
- (P) IME
- (P) GRADE BREAK
- (P) SWALE FLOWLINE
- (P) SE
- (P) FENCE
- (P) INTERSECTION GRADING POINT

2



LAYOUT NOTES

No. (X)	LOCATION	NOTES
1	"P" 77+87.15, 10.00' Lt	EC, MEDIAN EP, ELEV=136.97
2	"P" 77+89.15, 12.00' Lt	MEDIAN EP, ELEV=137.00
3	"P" 77+87.15, 14.00' Lt	BC, MEDIAN EP, ELEV=136.97
4	"O" 20+92.24, 4.00' Rt	EC, MEDIAN EP, ELEV=136.32
5	"O" 20+90.24, 6.00' Rt	MEDIAN EP, ELEV=136.35
6	"O" 20+92.24, 8.00' Rt	BC, MEDIAN EP, ELEV=136.32
7	"P" 79+48.32, 2.00' Lt	EC, MEDIAN EP, ELEV=136.94
8	"P" 79+46.32, 0.00'	MEDIAN EP, ELEV=136.97
9	"P" 79+48.32, 2.00' Rt	BC, MEDIAN EP, ELEV=136.94
10	"O" 19+28.00, 4.00' Lt	BC, MEDIAN EP, ELEV=136.55
11	"O" 19+30.00, 6.00' Lt	MEDIAN EP, ELEV=135.58
12	"O" 19+28.00, 8.00' Lt	EC, MEDIAN EP, ELEV=136.55
13	"P" 78+36.40, 38.00' Lt	GB, ELEV=136.65
14	"P" 78+34.12, 26.00' Rt	GB, ELEV=136.75
15	"P" 79+00.44, 38.00' Lt	GB, ELEV=136.60
16	"P" 78+98.16, 26.00' Rt	GB, ELEV=136.80
17	"O" 20+00.00 POT= "P" 78+67.07	ELEV=137.05
18	"O" 20+06.00, 0.00'= "P" 78+67.28, 6.00' Lt = PIONEER CONTROL LINE	GB, ELEV=137.11

2

PIONEER ROAD & ORTIGALITA ROAD INTERSECTION GRADING

SCALE: 1" = 20'

2 ADDENDUM #2 - 2024-12-06

CONSTRUCTION DETAILS CD-1

SCALE: 1" = 20'

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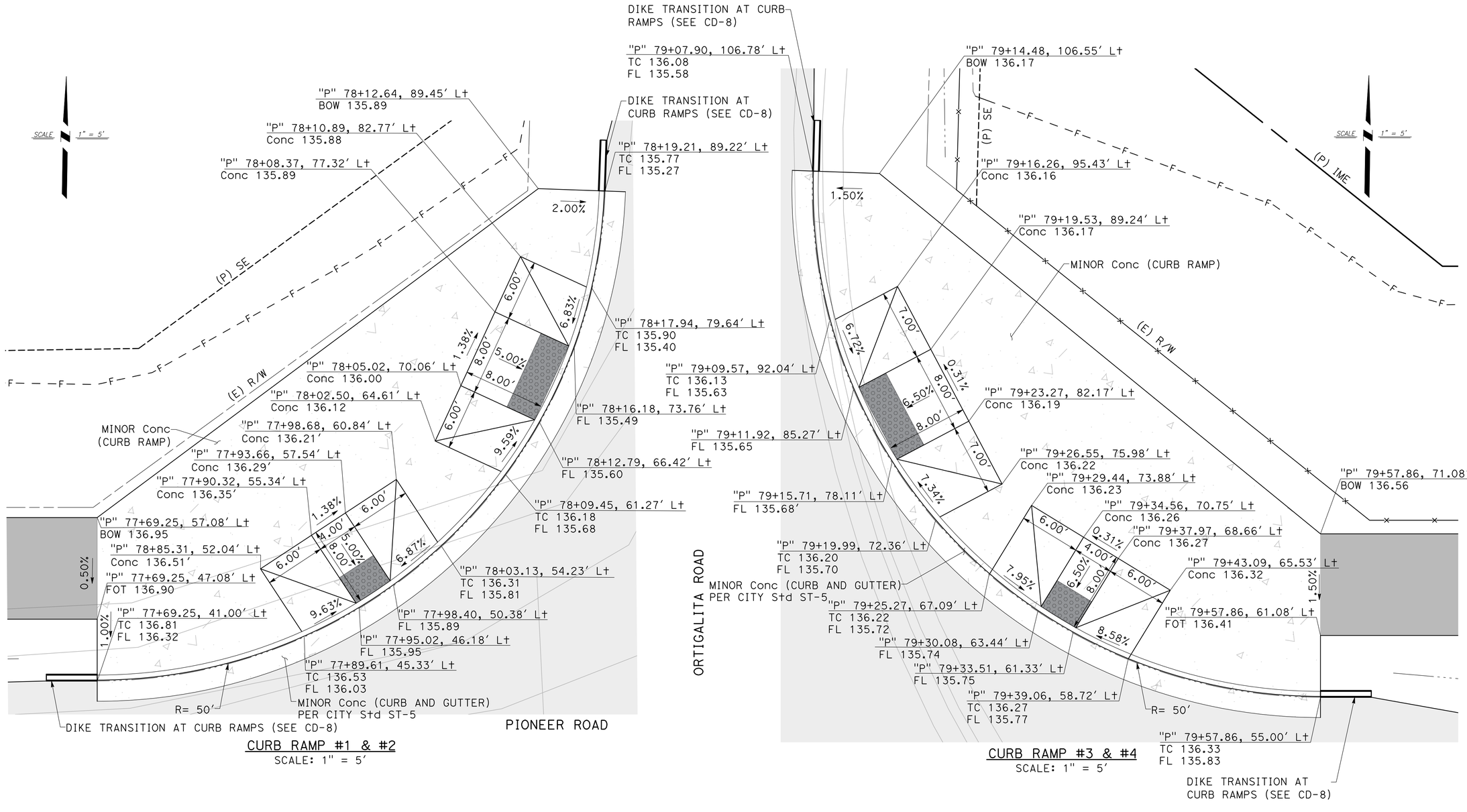
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER **11** OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013 | FEDERAL PROJECT NUMBER CML-5160(031) | DATE: 12/04/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



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CONSTRUCTION DETAILS

SCALE: 1" = 5' **CD-2**

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

REVISED BY | DATE REVISED

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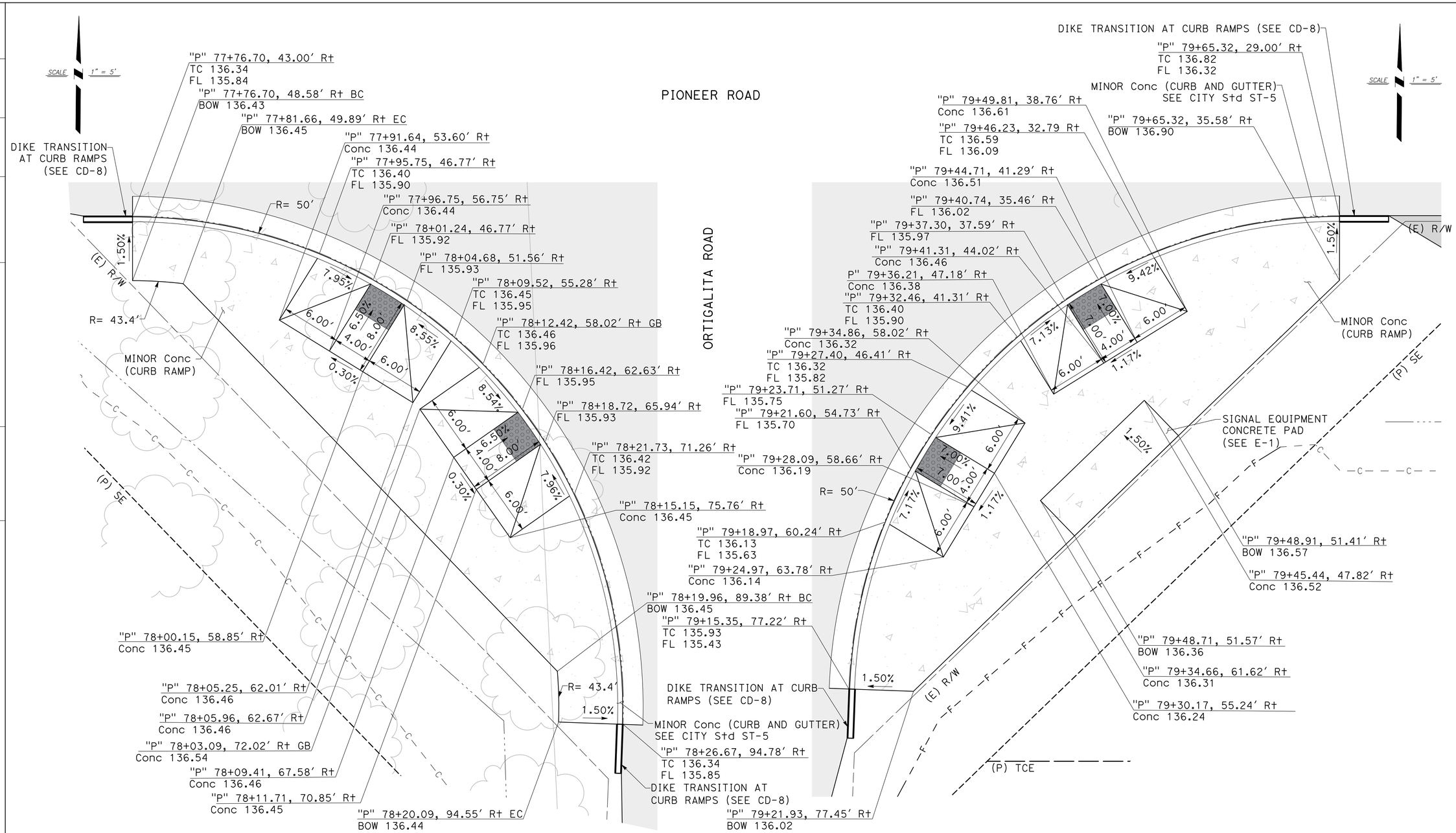
REGISTERED PROFESSIONAL ENGINEER
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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
12
OF 50 SHEETS



CURB RAMP #7 & #8
SCALE: 1" = 5'

CURB RAMP #5 & #6
SCALE: 1" = 5'

CONSTRUCTION DETAILS
SCALE: 1" = 5' **CD-3**

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REGISTERED PROFESSIONAL ENGINEER
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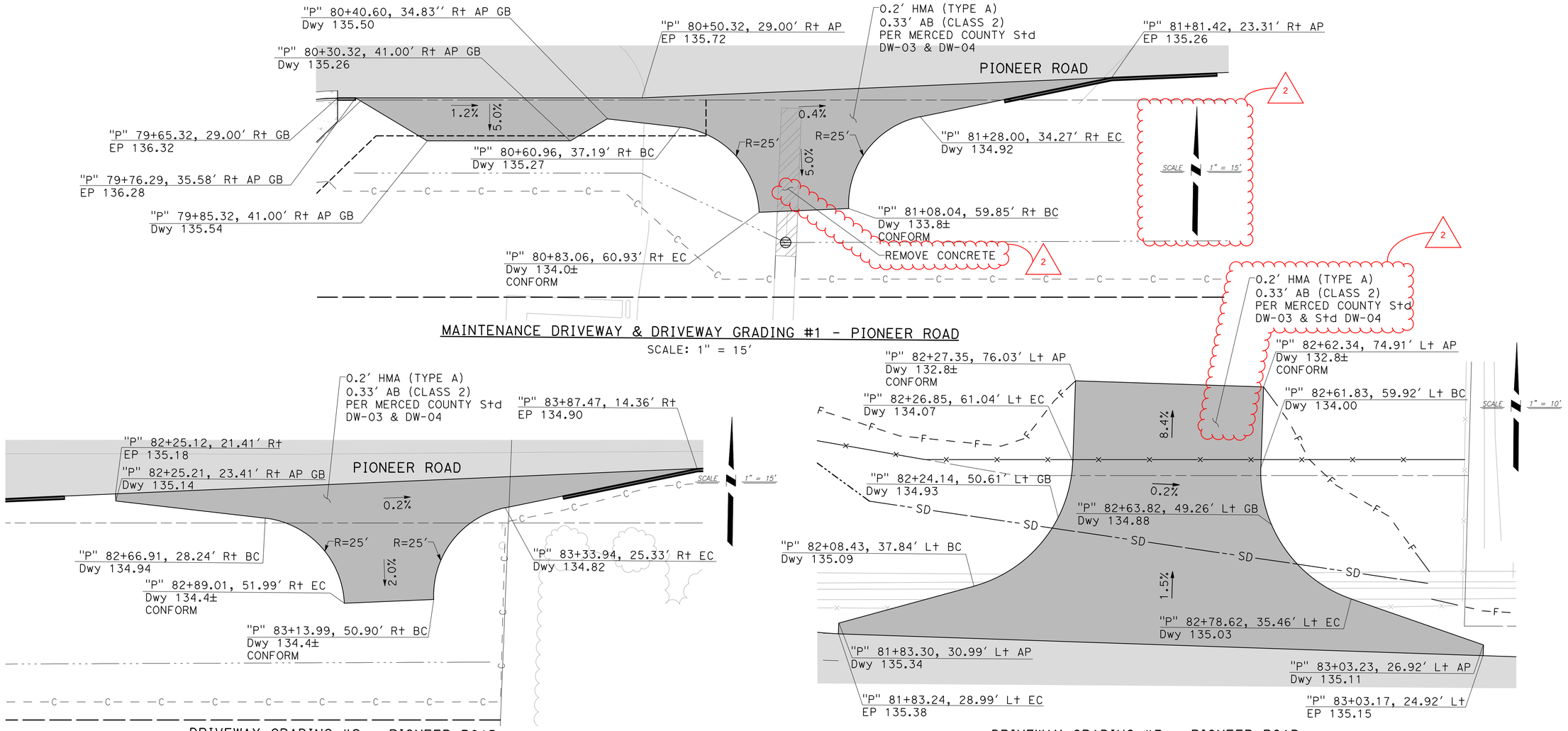
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LOS BANOS, CALIFORNIA

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SHEET NUMBER
13
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



MAINTENANCE DRIVEWAY & DRIVEWAY GRADING #1 - PIONEER ROAD

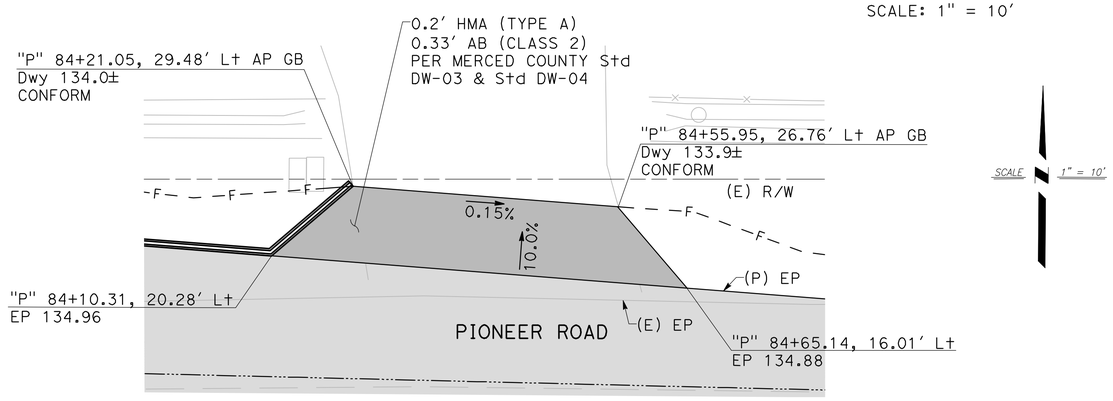
SCALE: 1" = 15'

DRIVEWAY GRADING #2 - PIONEER ROAD

SCALE: 1" = 15'

DRIVEWAY GRADING #3 - PIONEER ROAD

SCALE: 1" = 10'



DRIVEWAY GRADING #4 - PIONEER ROAD

SCALE: 1" = 10'

2 ADDENDUM #2 - 2024-12-06

CONSTRUCTION DETAILS

SCALE: 1" = 10' **CD-4**

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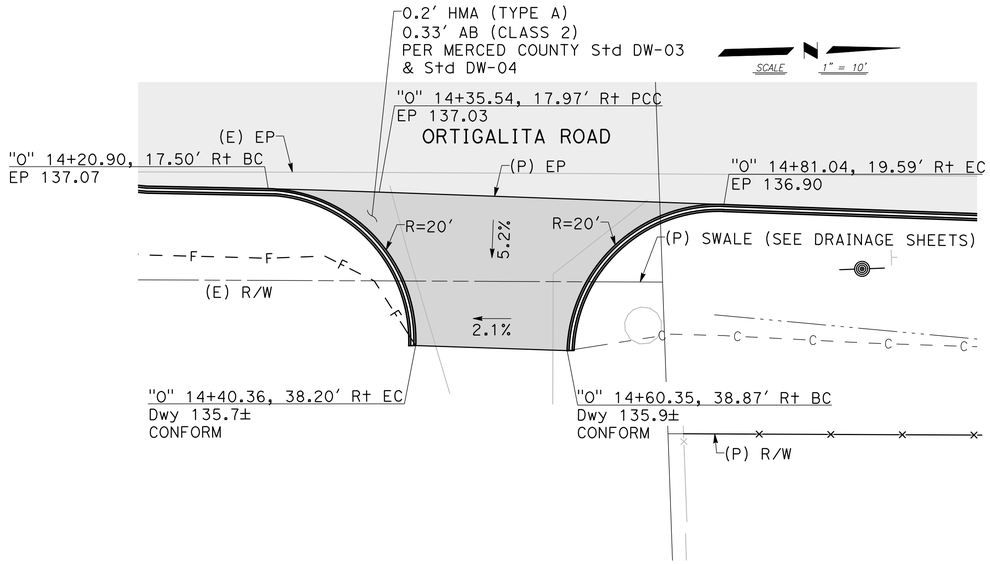
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ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
14
OF 50 SHEETS

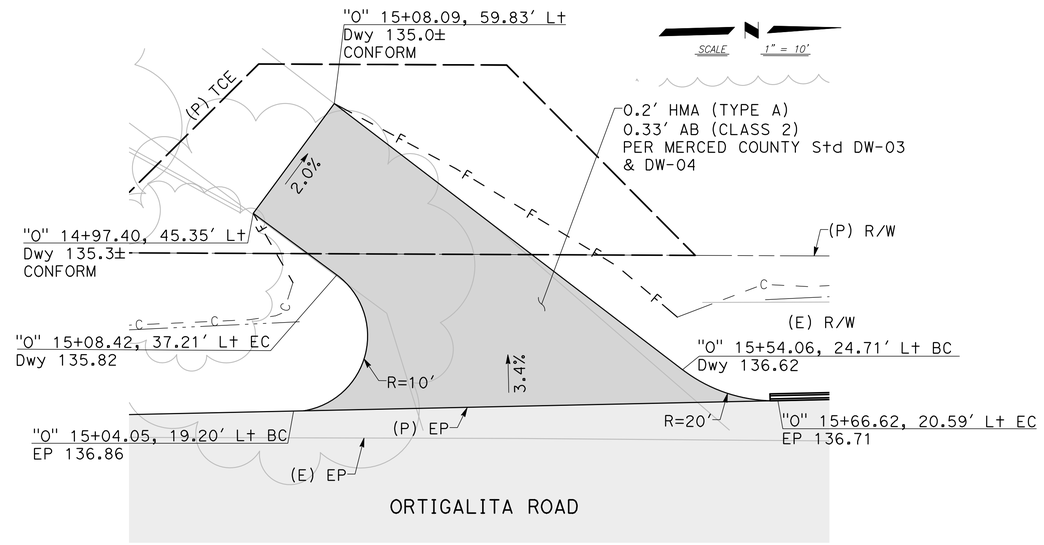
100% SUBMITTAL

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FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/05/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



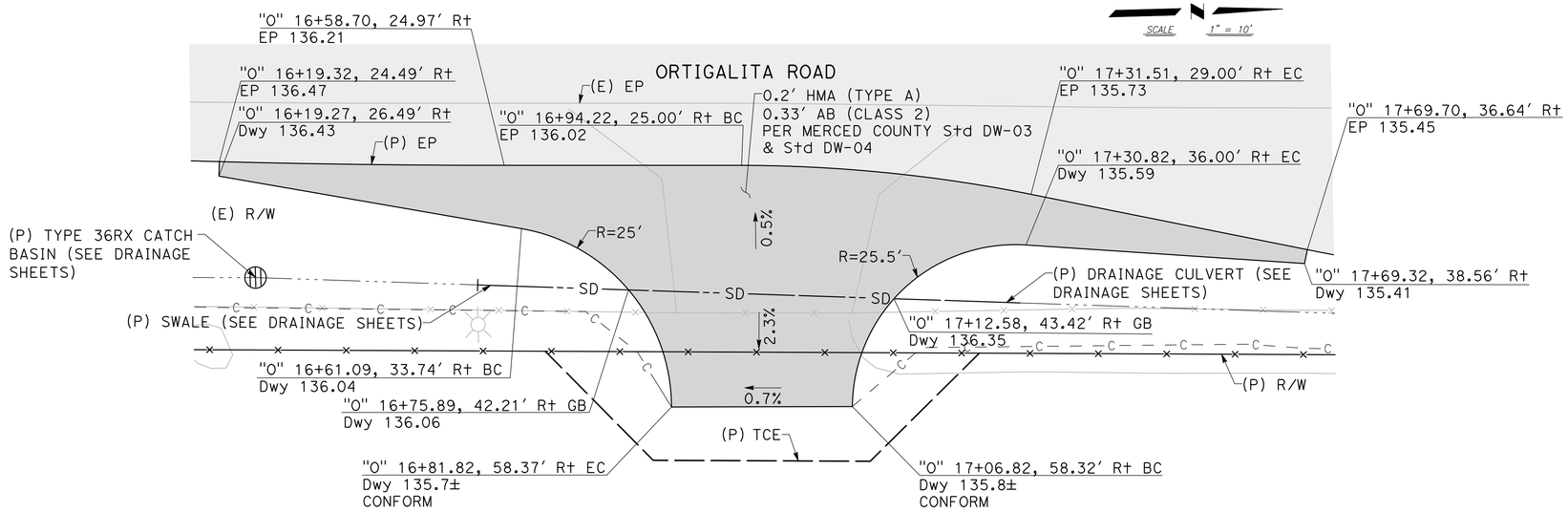
DRIVEWAY GRADING #5 - ORTIGALITA ROAD

SCALE: 1" = 10'



DRIVEWAY GRADING #6 - ORTIGALITA ROAD

SCALE: 1" = 10'



DRIVEWAY GRADING #7 - ORTIGALITA ROAD

SCALE: 1" = 10'

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IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

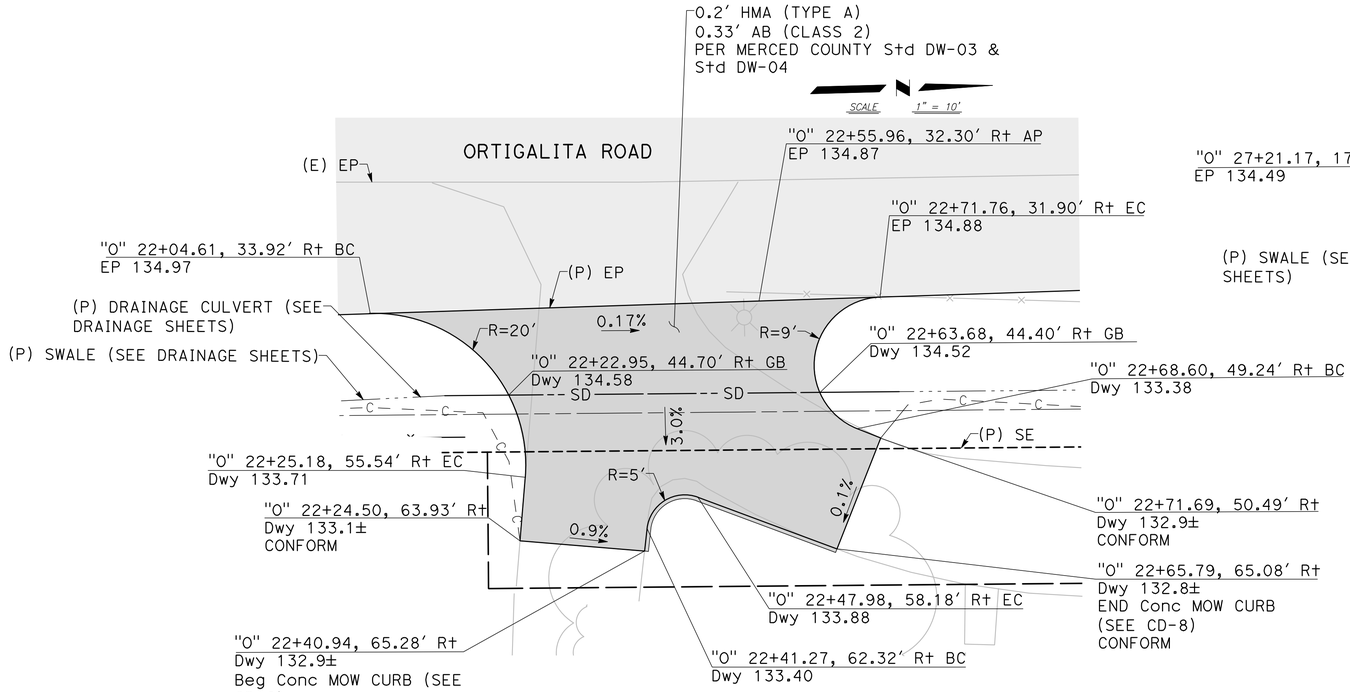
CONSTRUCTION DETAILS

SCALE: 1" = 10' **CD-5**

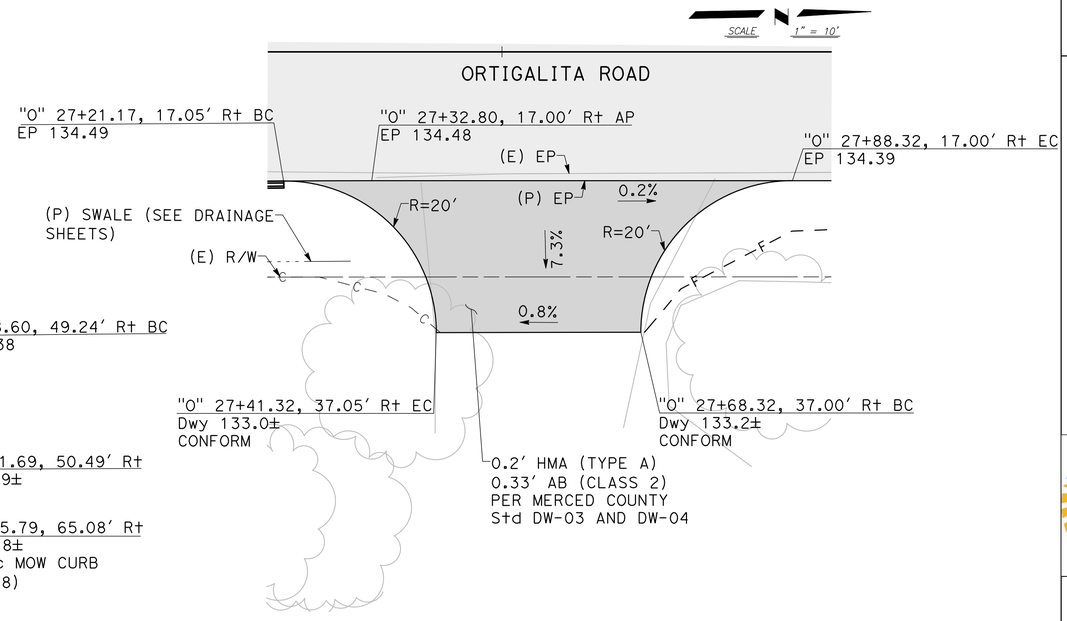
SHEET NUMBER
15
OF 50 SHEETS

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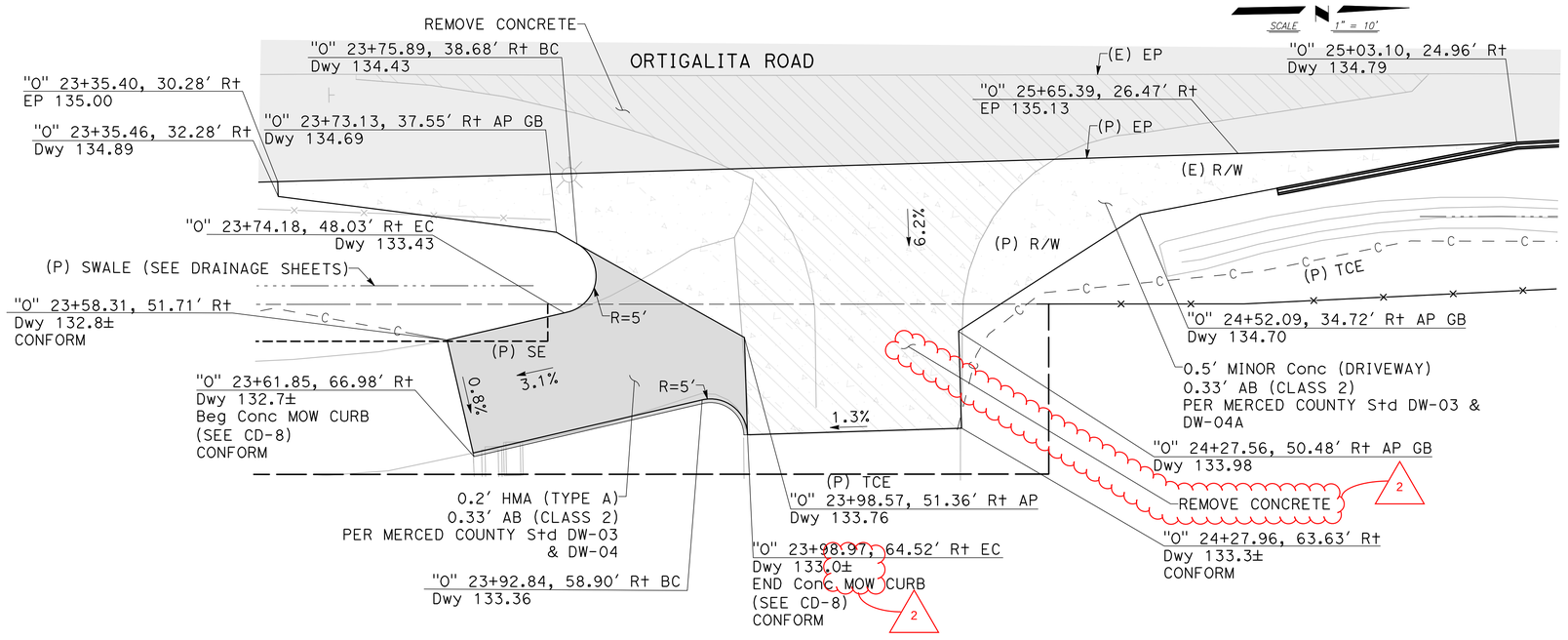
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



DRIVEWAY GRADING #8 - ORTIGALITA ROAD
SCALE: 1" = 10'



DRIVEWAY GRADING #10 - ORTIGALITA ROAD
SCALE: 1" = 10'



DRIVEWAY GRADING #9 - ORTIGALITA ROAD
SCALE: 1" = 10'

2 ADDENDUM #2 - 2024-12-06

CONSTRUCTION DETAILS
SCALE: 1" = 10' **CD-6**

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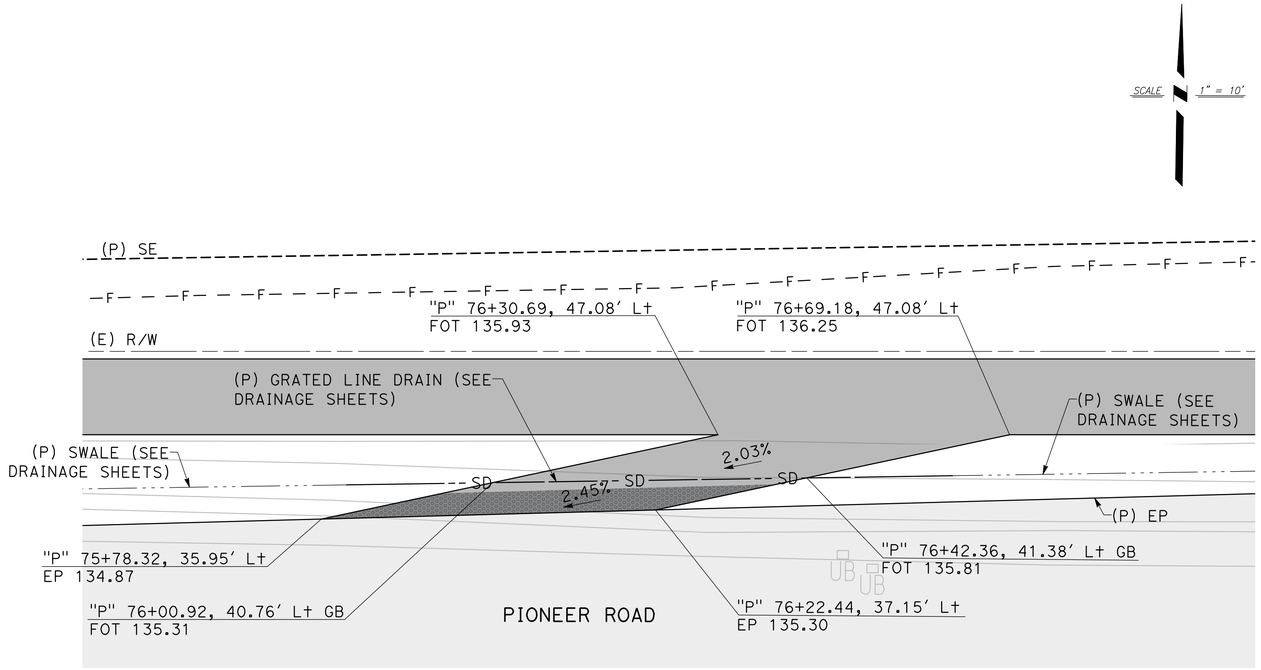
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
16
OF 50 SHEETS

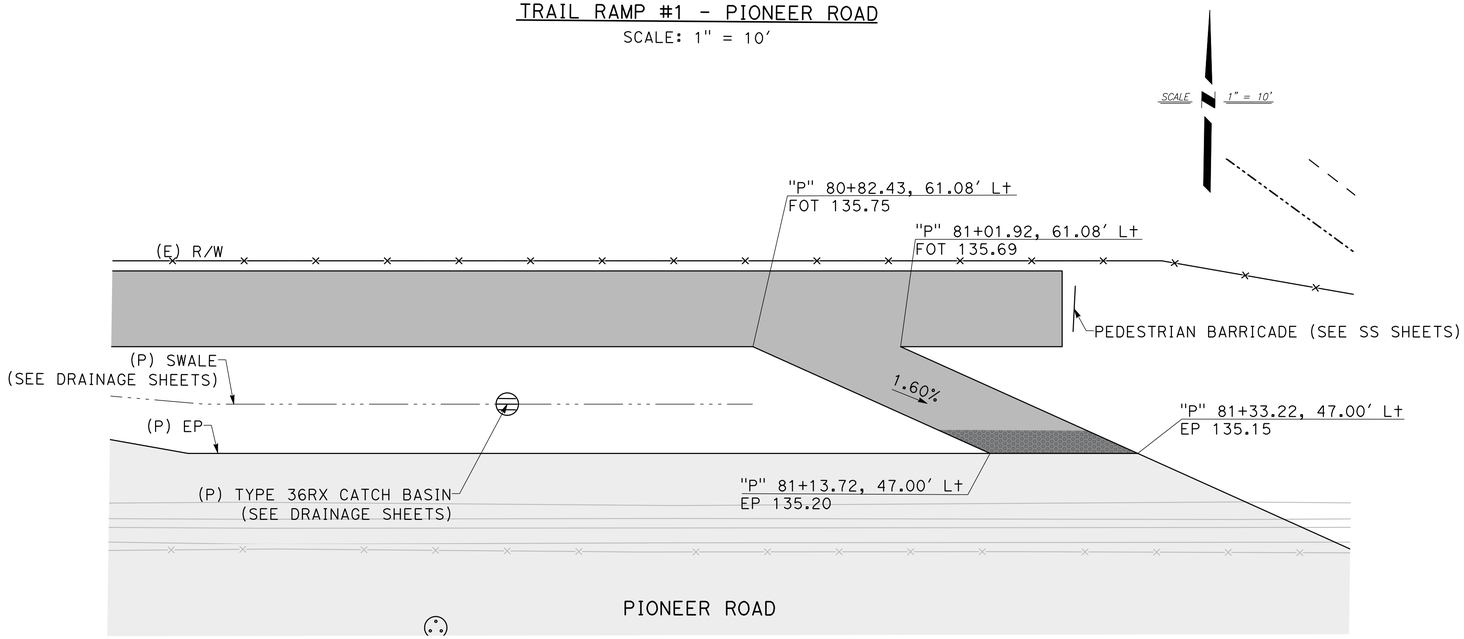
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PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



TRAIL RAMP #1 - PIONEER ROAD

SCALE: 1" = 10'



TRAIL RAMP #2 - PIONEER ROAD

SCALE: 1" = 10'

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CONSTRUCTION DETAILS

SCALE: 1" = 10' **CD-7**

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IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT

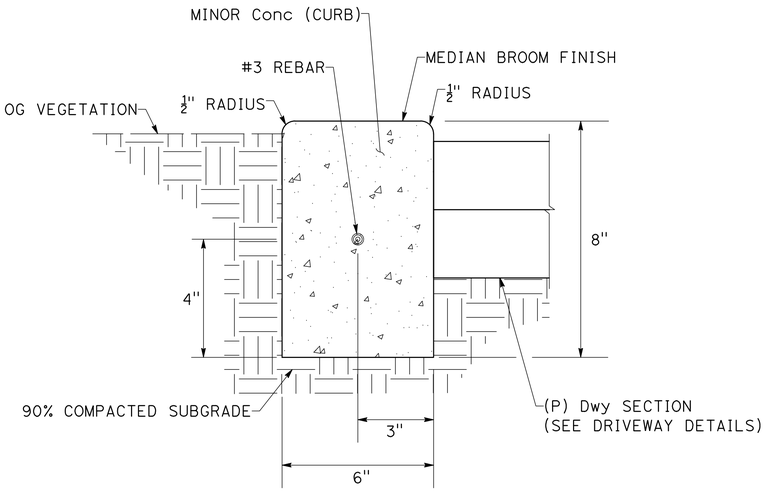
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
17
OF 50 SHEETS

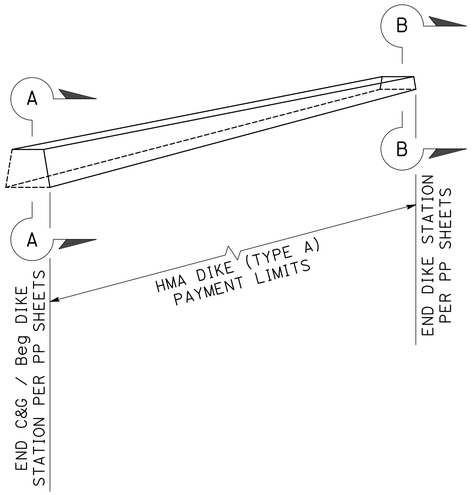
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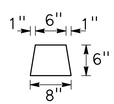
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



CONCRETE MOW CURB DETAIL

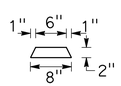
NTS





SECTION A-A

NTS

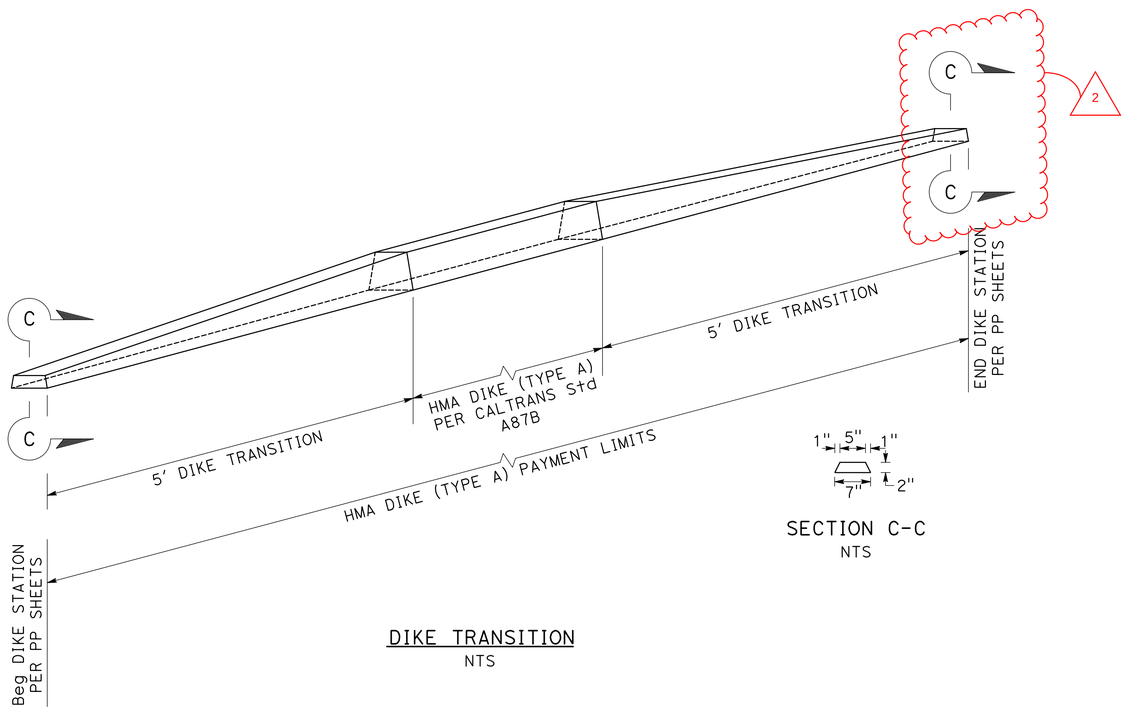


SECTION B-B

NTS

DIKE TRANSITION AT CURB RAMPS

NTS



SECTION C-C

NTS

DIKE TRANSITION

NTS

2 ADDENDUM #2 - 2024-12-06

CONSTRUCTION DETAILS

SCALE: 1" = 10'

CD-8

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IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
18
OF 50 SHEETS

100% SUBMITTAL

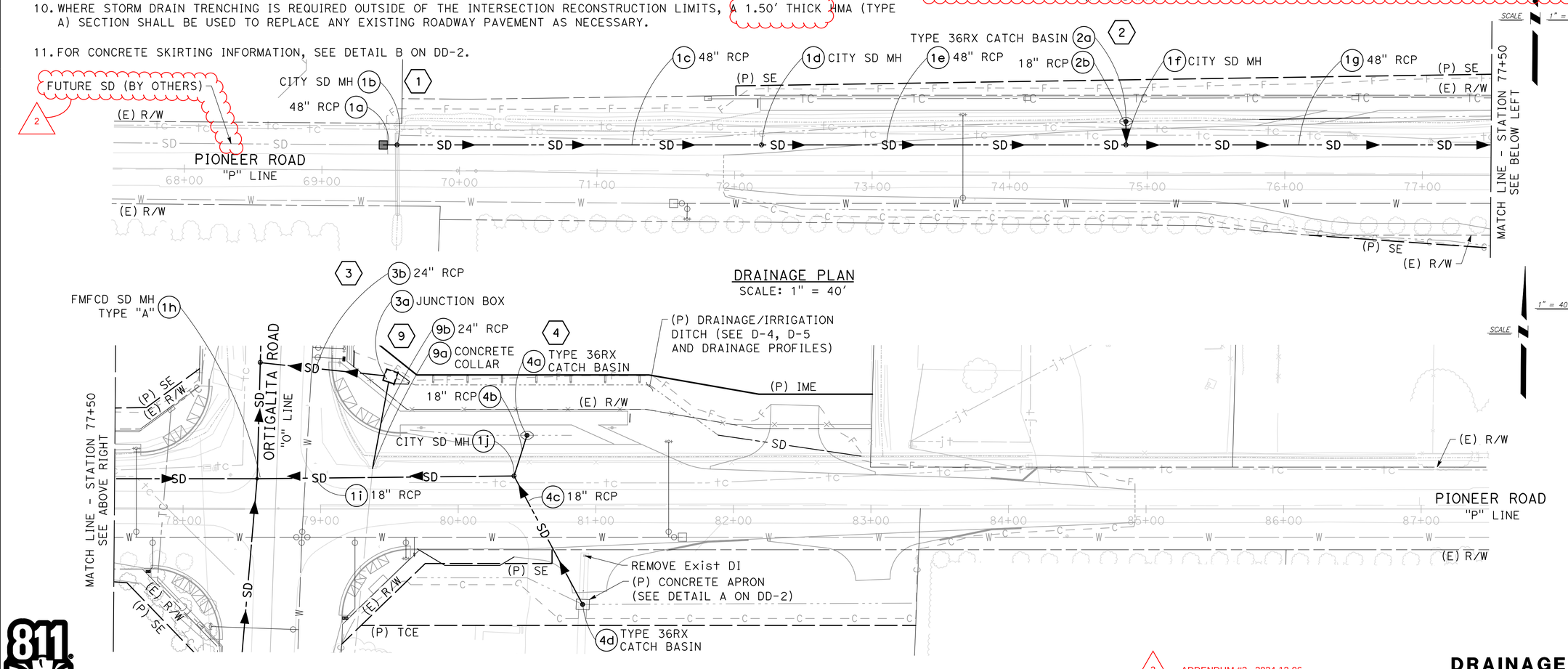
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES 48 HOURS PRIOR TO WORKING AROUND ANY OF THEIR UNDERGROUND UTILITIES FOR VERIFICATION AT THE SITE OF ANY POSSIBLE CONFLICTS WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
2. THE TYPES, LOCATIONS, SIZES AND DEPTHS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. THE CITY OF LOS BANOS AND ITS CONSULTANT, MARK THOMAS & COMPANY INC., CAN NOT ASSUME THE RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UTILITIES NOR THE EXISTENCE OF OTHER BURIED OBJECTS OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS.
3. THE CONTRACTOR SHALL VERIFY ALL FIELD MEASUREMENTS PRIOR TO INSTALLATION.
4. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.
5. FOR WATER SYSTEM INFORMATION, SEE WATER SHEETS.
6. FOR SWALE INFORMATION, SEE D-4 AND D-5.
7. OVERHEAD UTILITIES NOT SHOWN FOR CLARITY PURPOSES.
8. TRENCHING AND BACKFILL SHALL CONFORM TO THE TRENCH DETAIL ON DD-2 AND TO CITY Std BF-1, BF-2, BF-3, AND SD-6
9. PER MERCED COUNTY Std SD-06, THE GRATE ELEVATION OF THE TYPE 36RX CATCH BASIN SHALL BE DEPRESSED 3" FROM THE SWALE FLOWLINE.
10. WHERE STORM DRAIN TRENCHING IS REQUIRED OUTSIDE OF THE INTERSECTION RECONSTRUCTION LIMITS, A 1.50' THICK HMA (TYPE A) SECTION SHALL BE USED TO REPLACE ANY EXISTING ROADWAY PAVEMENT AS NECESSARY.
11. FOR CONCRETE SKIRTING INFORMATION, SEE DETAIL B ON DD-2.

LEGEND:

- (E) R/W
- (P) SE
- (P) TCE
- (P) IME
- PROPERTY LINE
- SAWCUT
- GRADE BREAK
- (E) AT&T UG FIBER
- (E) AT&T UG COMM
- (P) AT&T UG COMM (BY OTHERS)
- (E) PG&E GAS
- (E) CITY OF LOS BANOS WATER
- (E) CITY OF LOS BANOS STORM DRAIN
- (E) CCID UG Irr
- (E) CCID IRR DITCH FLOWLINE
- (P) CCID IRR DITCH
- FUTURE CITY OF LOS BANOS MASTER PLAN WATER (BY OTHERS)
- FUTURE CITY OF LOS BANOS MASTER PLAN DRAINAGE (BY OTHERS)
- (P) CITY OF LOS BANOS WATER
- (P) CITY OF LOS BANOS DRAINAGE
- (P) STORM DRAIN CAP FOR FUTURE EXTENSION (SEE DD-2)
- (P) DRAINAGE INLET WITH CONCRETE SKIRTING
- (P) 1.50' HMA (TYPE A) - EXISTING PAVEMENT REPLACEMENT FOR SD TRENCH
- (P) JOINT COMM/ELEC UG
- (E) JOINT COMM/ELEC UG
- (P) MANHOLE
- (P) HYDRANT
- (P) WATER VALVE
- DRAINAGE SYSTEM NUMBER
- DRAINAGE SYSTEM UNIT
- (P) SWALE
- (P) DRAINAGE FLOW DIRECTION



2 ADDENDUM #2 - 2024-12-06

DRAINAGE PLAN
SCALE: 1" = 40' **D-1**

CALL BEFORE YOU DIG

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY

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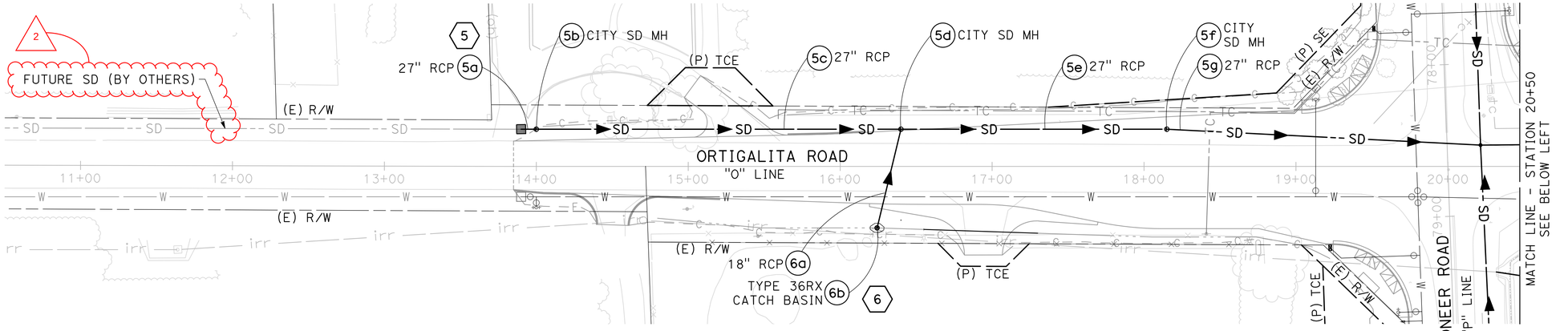
REGISTERED PROFESSIONAL ENGINEER EDGAR A. NORIEGA No. 91454 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

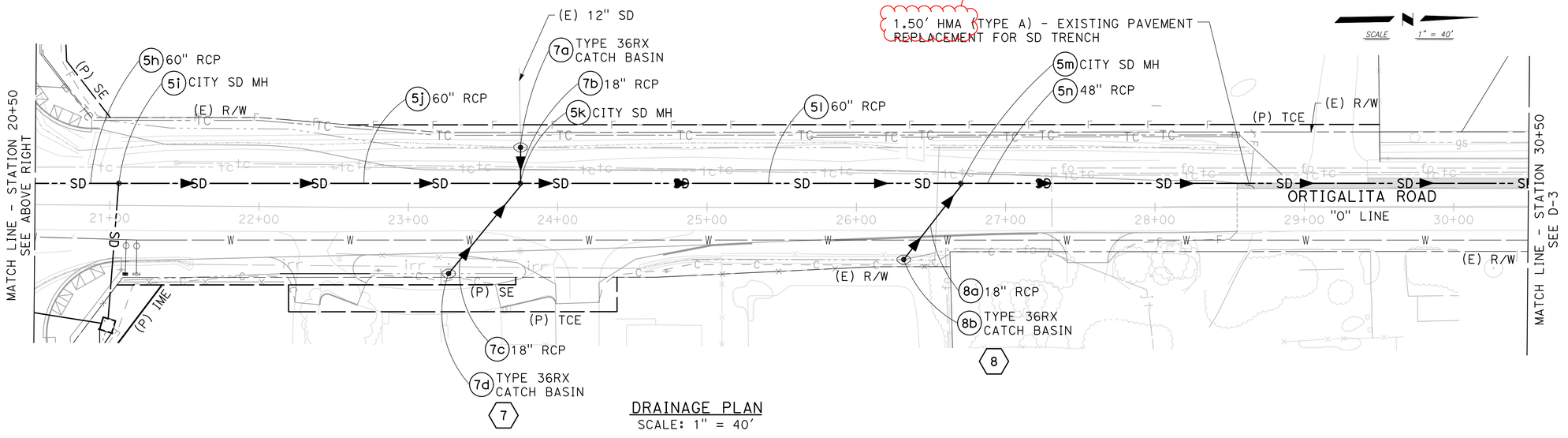
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
19
OF 50 SHEETS



DRAINAGE PLAN
SCALE: 1" = 40'



DRAINAGE PLAN
SCALE: 1" = 40'

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PLAN
SCALE: 1" = 40' **D-2**

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EDGAR A. MORIEGA
No. 81453
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
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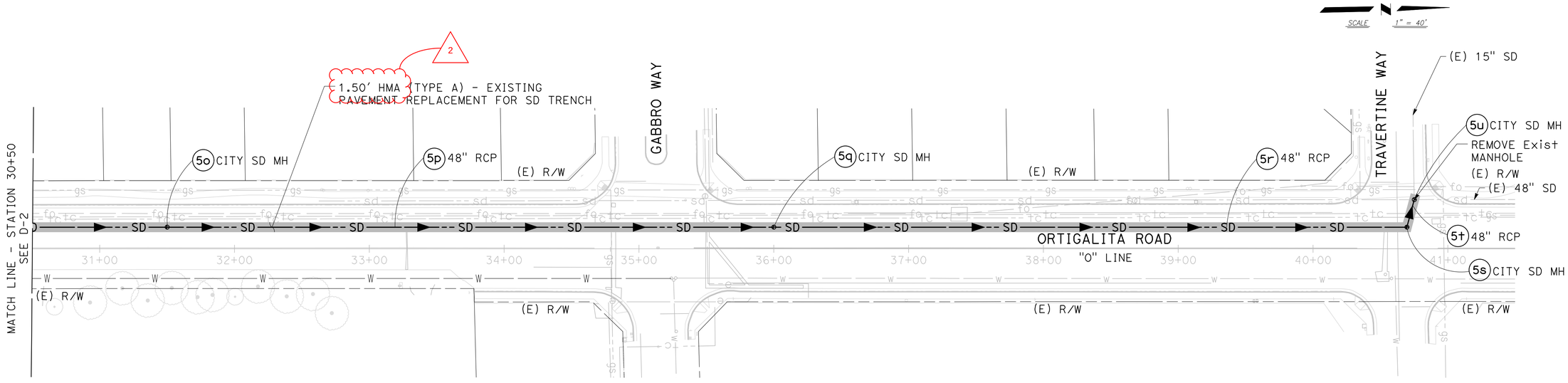
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LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
20
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



DRAINAGE PLAN
SCALE: 1" = 40'

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PLAN D-3
SCALE: 1" = 40'

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(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
21
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER:	23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE:	12/05/2024	RELATIVE BORDER SCALE IS IN INCHES	0 1 2 3

LEGEND:

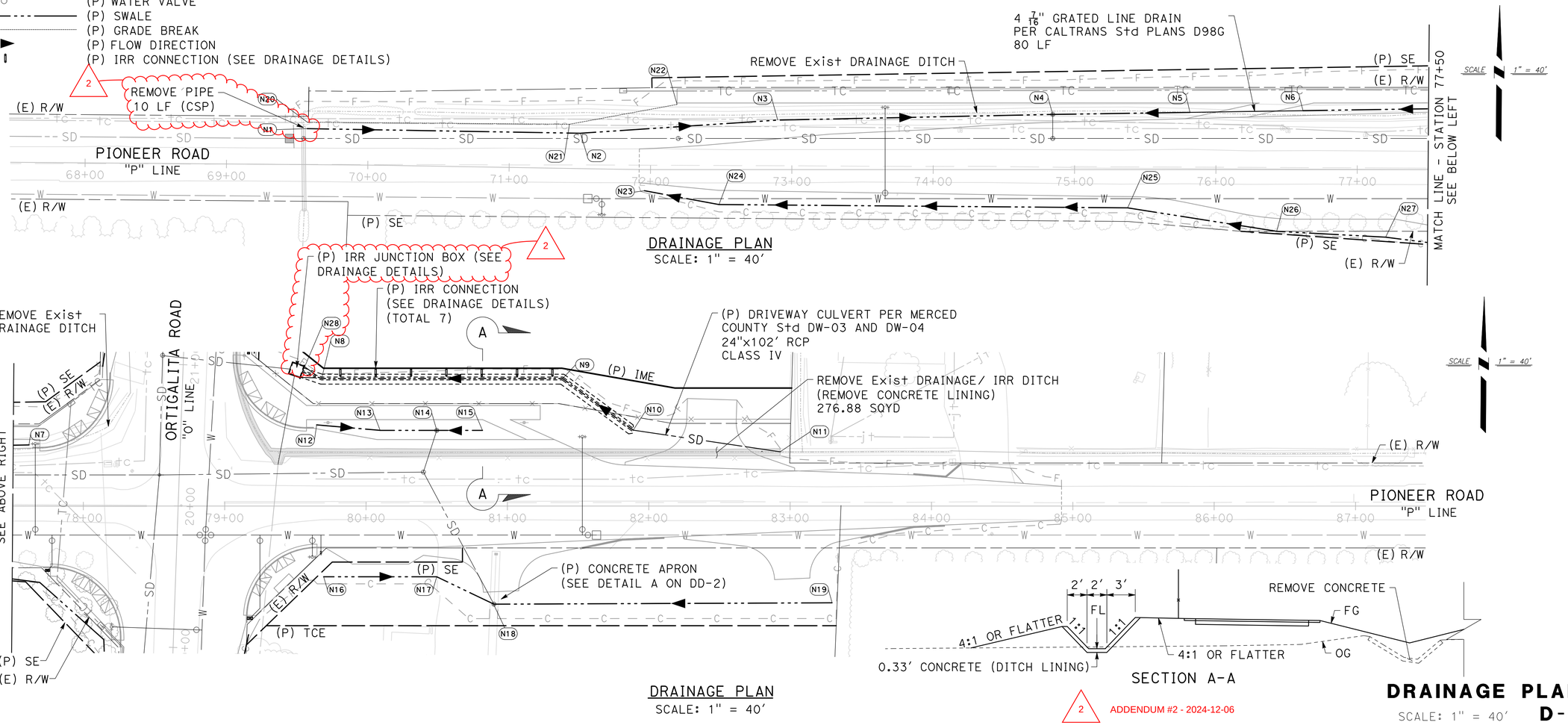
- EXISTING RIGHT OF WAY
- (P) SE
- (P) TCE
- (P) IME
- PROPERTY LINE
- SAWCUT
- (P) JOINT COMM/ELEC UG
- (E) JOINT COMM/ELEC UG
- (E) AT&T UG TELECOMMUNICATION
- (E) AT&T UG FIBER OPTIC
- (P) AT&T UG TELECOMMUNICATION
- (E) PG&E GAS
- (E) CITY OF LOS BANOS WATER
- (E) CITY OF LOS BANOS STORM DRAIN
- (E) CCID UG IRRIGATION
- (E) CCID IRRIGATION DITCH DITCH FLOWLINE
- (P) REMOVE CONCRETE (IRR DITCH LINING)
- (P) CCID IRRIGATION DITCH FLOWLINE
- FUTURE CITY OF LOS BANOS MASTER PLAN WATER
- FUTURE CITY OF LOS BANOS MASTER PLAN DRAINAGE
- (P) CITY OF LOS BANOS WATER
- (P) CITY OF LOS BANOS DRAINAGE
- (E) STORM DRAIN CAP FOR FUTURE EXTENSION (SEE DD-2)
- (P) DRAINAGE INLET WITH CONCRETE SKIRTING
- (P) MANHOLE
- (P) HYDRANT
- (P) WATER VALVE
- (P) SWALE
- (P) GRADE BREAK
- (P) FLOW DIRECTION
- (P) IRR CONNECTION (SEE DRAINAGE DETAILS)

LAYOUT NOTES

No. ⓧ	LOCATION	FL ELEV	NOTE
N1	"P" 69+56.96, 25.43' Lt	136.63	Beg SWALE
N2	"P" 71+49.99, 25.00' Lt	135.19	FL AP
N3	"P" 72+90.00, 35.00' Lt	134.23	FL AP
N4	"P" 74+84.56, 39.00' Lt	133.76	FL AP, DI
N5	"P" 75+81.64, 40.47' Lt	134.68	Beg GRATED LINE DRAIN
N6	"P" 76+61.64, 41.67' Lt	135.53	END GRATED LINE DRAIN
N7	"P" 77+61.52, 43.18' Lt	136.23	END SWALE
N8	"P" 79+68.60, 90.18' Lt	130.71	AP, DITCH FL
N9	"P" 81+39.02, 90.18' Lt	131.33	AP, DITCH FL
N10	"P" 81+88.99, 53.66' Lt	131.56	FL AP, Beg RCP CULVERT & END CONCRETE LINED DITCH
N11	"P" 82+92.87, 38.37' Lt	131.87	END RCP CULVERT, CONFORM TO EXISTING DITCH
N12	"P" 79+65.04, 57.38' Lt	136.00	Beg SWALE
N13	"P" 80+10.00, 53.50' Lt	134.95	FL AP

LAYOUT NOTES

No. ⓧ	LOCATION	FL ELEV	NOTE
N14	"P" 80+50.00, 53.50' Lt	134.31	FL DI
N15	"P" 80+82.36, 53.50' Lt	134.41	END SWALE
N16	"P" 79+70.00, 50.00' Rt	135.12	Beg SWALE
N17	"P" 80+50.00, 50.00' Rt	134.32	FL AP
N18	"P" 80+90.45, 69.37' Rt	133.56	FL AP, DI
N19	"P" 83+29.68, 68.40' Rt	134.05	END SWALE
N20	"P" 69+56.94, 30.00' Lt	137.14	Beg GB
N21	"P" 71+42.13, 31.21' Lt	136.45	GB AP
N22	"P" 72+18.81, 46.08' Lt	136.05	END GB
N23	"P" 71+95.91, 14.93' Rt	134.43	Beg SWALE
N24	"P" 72+48.48, 24.68' Rt	133.63	FL AP
N25	"P" 75+37.54, 27.02' Rt	133.24	FL AP
N26	"P" 76+43.03, 43.60' Rt	132.27	FL AP
N27	"P" 77+20.05, 47.74' Rt	132.89	FL AP
N28	"P" 79+54.97, 94.80' Lt	130.66	FL AP Beg CONCRETE LINED DITCH



2 ADDENDUM #2 - 2024-12-06

DRAINAGE PLAN SCALE: 1" = 40' **D-4**

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REGISTERED PROFESSIONAL ENGINEER EDGAR A. NORIEGA No. 84554 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
22
OF 50 SHEETS

100% SUBMITTAL

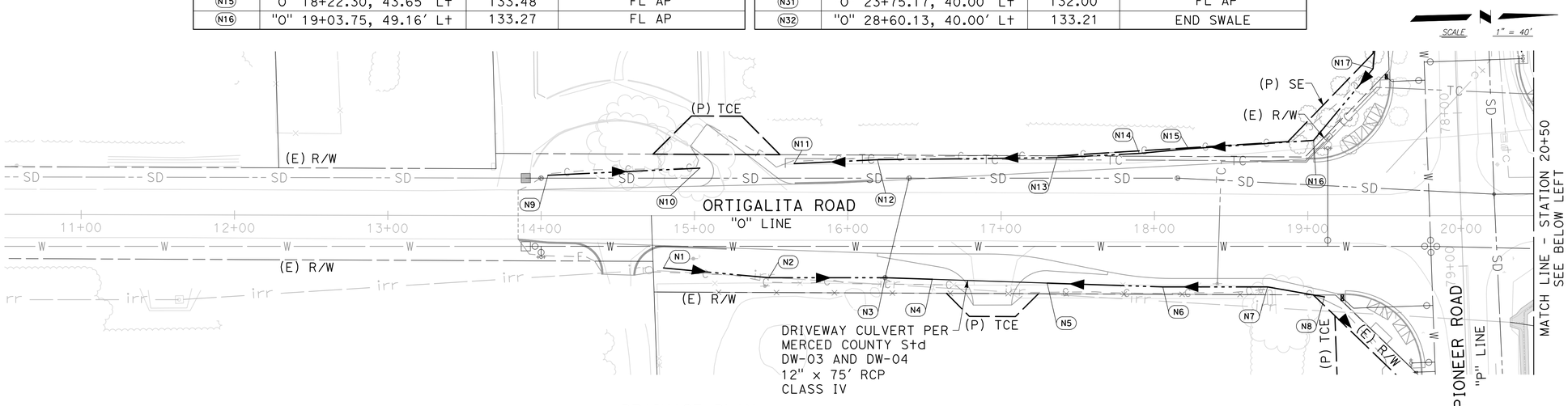
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

LAYOUT NOTES

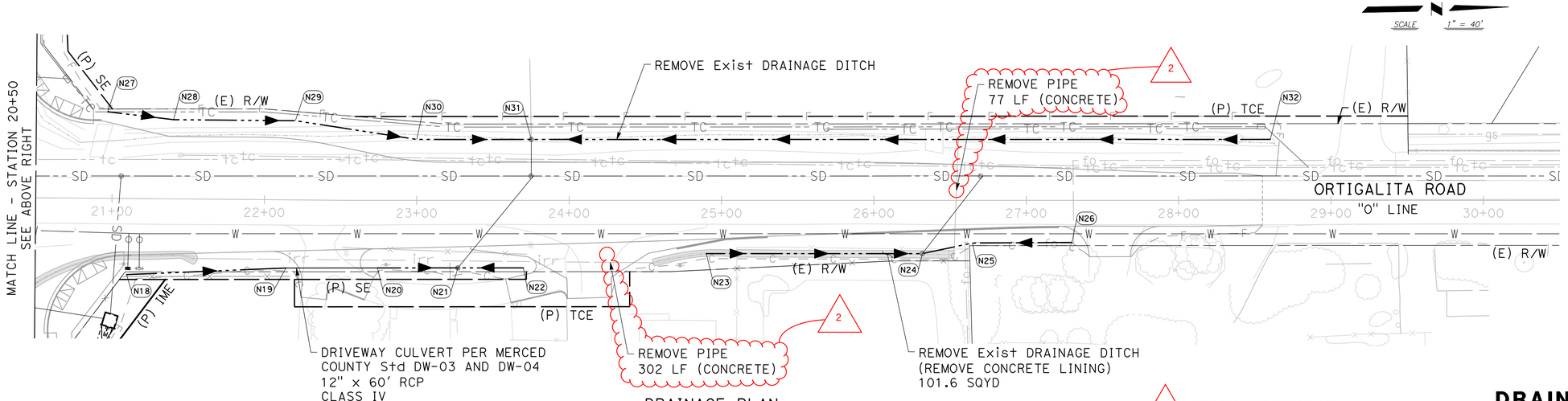
No. ⓧ	LOCATION	FL ELEV	NOTE
N1	"O" 14+79.79, 34.14' Rt	134.65	Beg SWALE
N2	"O" 15+48.57, 40.50' Rt	134.42	FL AP
N3	"O" 16+24.32, 40.50' Rt	134.07	FL AP, DI
N4	"O" 16+55.04, 41.52' Rt	134.14	FL AP, Beg RCP CULVERT
N5	"O" 17+30.00, 44.00' Rt	134.29	FL AP, END RCP CULVERT
N6	"O" 18+05.48, 46.50' Rt	134.44	FL AP
N7	"O" 18+73.74, 46.50' Rt	134.61	FL AP
N8	"O" 19+10.90, 53.00' Rt	134.76	END SWALE
N9	"O" 14+04.43, 26.35' Lt	133.42	Beg SWALE
N10	"O" 15+03.49, 31.04' Lt	133.45	END SWALE
N11	"O" 15+64.99, 33.95' Lt	133.47	Beg SWALE
N12	"O" 16+19.32, 36.52' Lt	133.48	FL AP
N13	"O" 17+36.35, 37.85' Lt	133.85	FL AP
N14	"O" 17+90.10, 40.64' Lt	133.87	FL AP
N15	"O" 18+22.30, 43.65' Lt	133.48	FL AP
N16	"O" 19+03.75, 49.16' Lt	133.27	FL AP

LAYOUT NOTES

No. ⓧ	LOCATION	FL ELEV	NOTE
N17	"O" 19+42.56, 95.92' Lt	133.24	END SWALE
N18	"O" 21+10.00, 50.00' Rt	132.80	Beg SWALE
N19	"O" 22+14.56, 44.77' Rt	132.59	FL AP, Beg RCP CULVERT
N20	"O" 22+74.18, 44.40' Rt	132.47	FL, END RCP CULVERT
N21	"O" 23+27.00, 44.38' Rt	132.36	FL AP, DI
N22	"O" 23+70.00, 44.36' Rt	132.52	END SWALE
N23	"O" 24+90.00, 35.00' Rt	132.95	Beg SWALE
N24	"O" 26+31.77, 35.00' Rt	132.15	FL AP, DI
N25	"O" 26+64.60, 28.04' Rt	132.80	FL AP
N26	"O" 27+30.01, 27.63' Rt	133.20	END SWALE
N27	"O" 20+96.80, 56.84' Lt	133.46	Beg SWALE
N28	"O" 21+40.00, 52.00' Lt	133.33	FL AP
N29	"O" 22+19.95, 52.00' Lt	133.09	FL AP
N30	"O" 23+00.00, 40.00' Lt	132.53	FL AP
N31	"O" 23+75.17, 40.00' Lt	132.00	FL AP
N32	"O" 28+60.13, 40.00' Lt	133.21	END SWALE



DRAINAGE PLAN
SCALE: 1" = 40'



DRAINAGE PLAN
SCALE: 1" = 40'

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PLAN
SCALE: 1" = 40' **D-5**

CALL BEFORE YOU DIG

100% SUBMITTAL

PROJECT NUMBER: 23ST0013 | FEDERAL PROJECT NUMBER CML-5160(031) | DATE: 12/05/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 91554
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

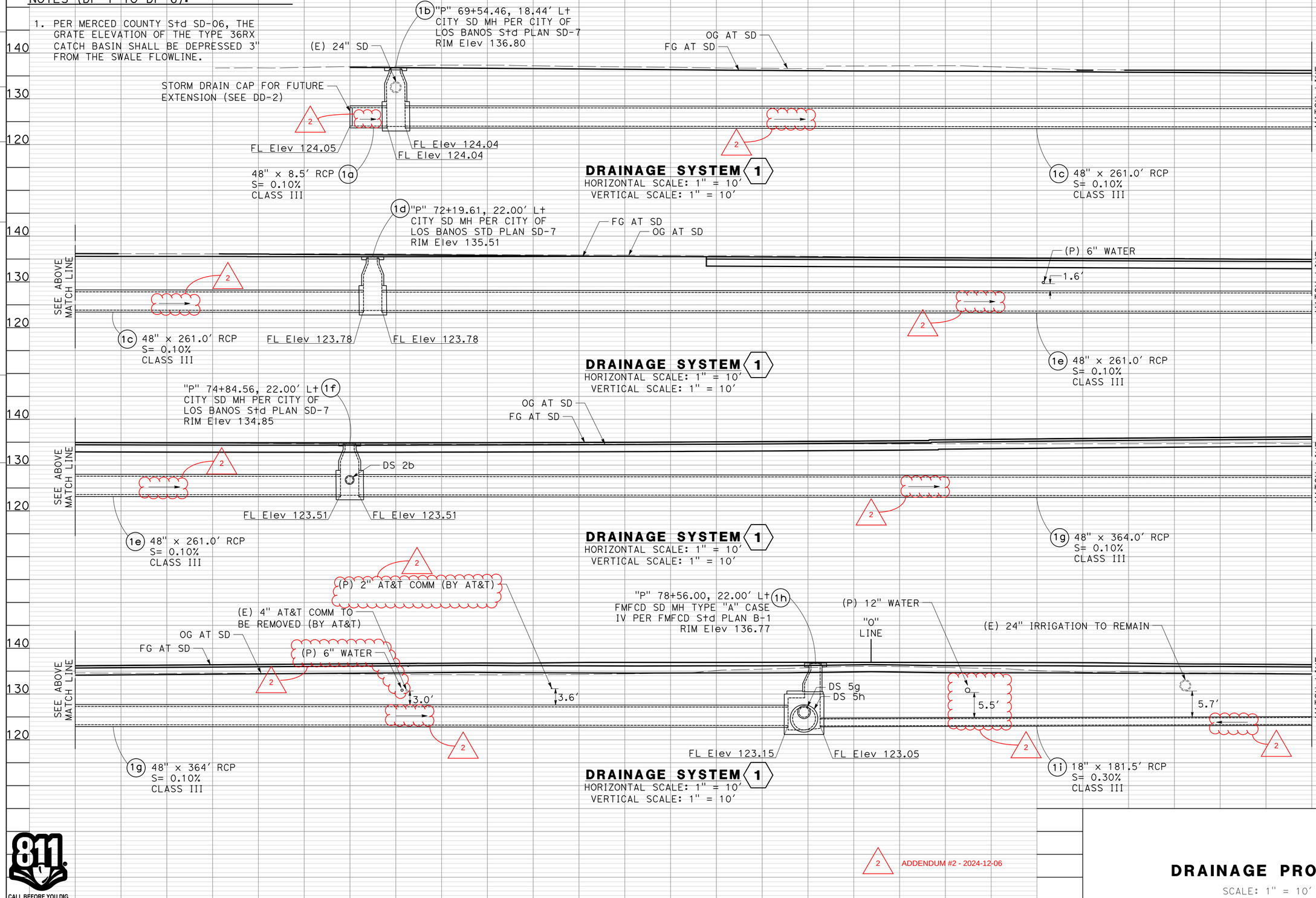
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
23
OF 50 SHEETS

NOTES (DP-1 TO DP-6):

1. PER MERCED COUNTY Std SD-06, THE GRATE ELEVATION OF THE TYPE 36RX CATCH BASIN SHALL BE DEPRESSED 3" FROM THE SWALE FLOWLINE.



2 ADDENDUM #2 - 2024-12-06

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No. 81455
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
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(209) 827-7056

IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

DRAINAGE PROFILES

SCALE: 1" = 10' **DP-1**

SHEET NUMBER **24** OF 50 SHEETS

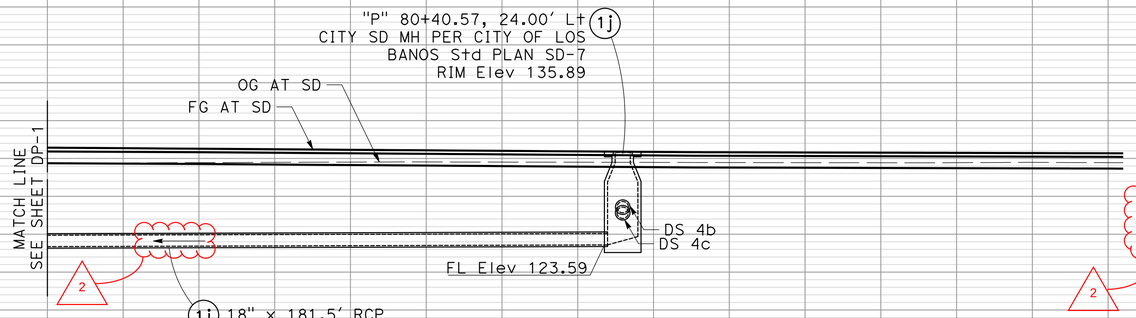
100% SUBMITTAL

PROJECT NUMBER: 23ST0013

FEDERAL PROJECT NUMBER CML-5160(031)

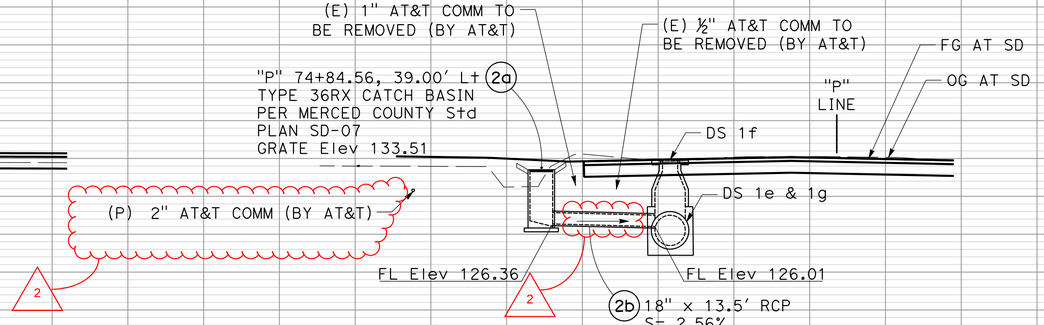
DATE: 12/05/2024

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



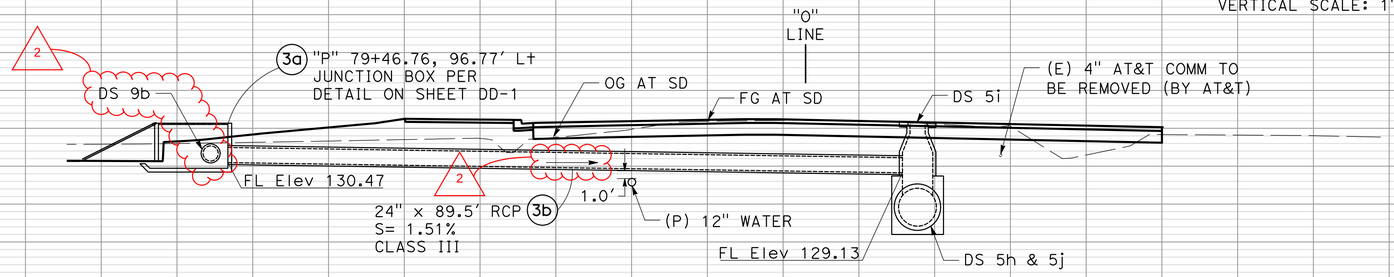
DRAINAGE SYSTEM 1

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



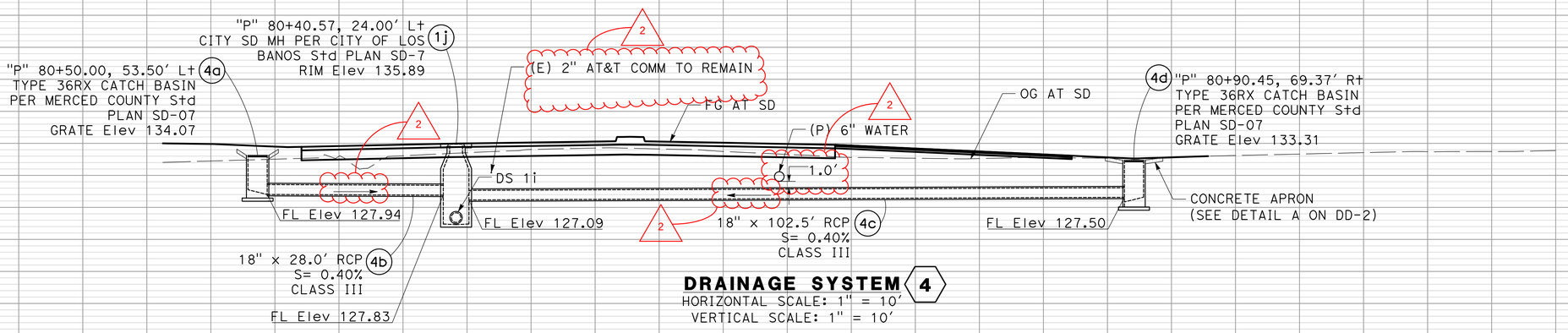
DRAINAGE SYSTEM 2

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



DRAINAGE SYSTEM 3

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



DRAINAGE SYSTEM 4

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PROFILES

SCALE: 1" = 10' **DP-2**

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CALL BEFORE YOU DIG

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

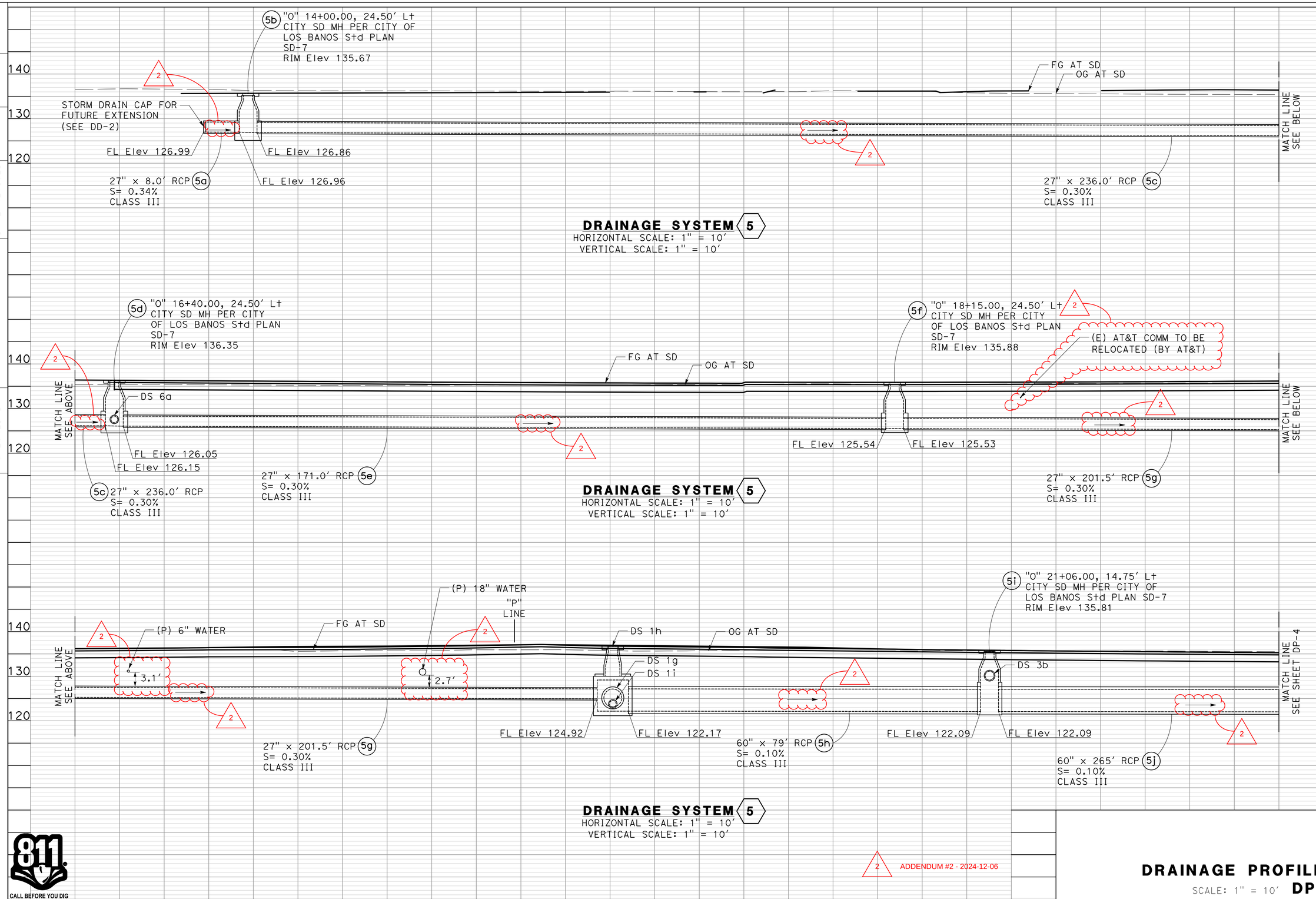
REGISTERED PROFESSIONAL ENGINEER — EDGAR A. NORIEGA — No. 91554 — Exp. 6/30/25 — CIVIL — STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
25
OF 50 SHEETS



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EDGAR A. NORIEGA
No. 81454
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
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IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

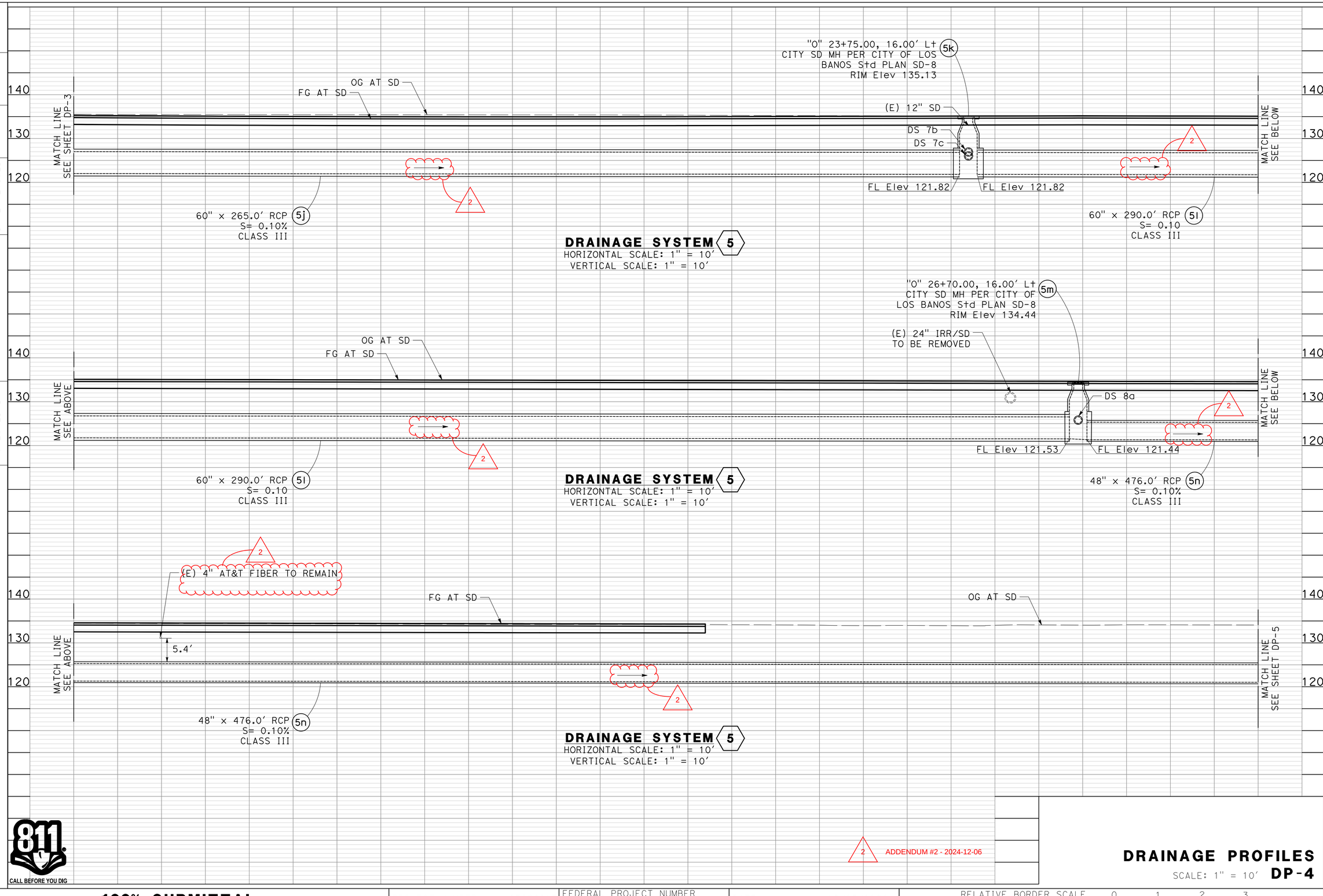
MARK THOMAS

DRAINAGE PROFILES
SCALE: 1" = 10' **DP-3**

SHEET NUMBER
26
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013
FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/05/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



CALL BEFORE YOU DIG

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PROFILES

SCALE: 1" = 10' **DP-4**

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 81553
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
27
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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140
130
120

MATCH LINE
SEE SHEET DP-4

OG AT SD

(5o) "O" 31+50.00 16.00' Lt
CITY SD MH PER CITY OF
LOS BANOS Std PLAN SD-7
RIM Elev 133.89

2

FL Elev 121.00

FL Elev 121.00

MATCH LINE
SEE BELOW

48" x 476.0' RCP (5n)
S= 0.10%
CLASS III

DRAINAGE SYSTEM (5)
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

48" x 446.0' RCP (5p)
S= 0.10%
CLASS III

MATCH LINE
SEE ABOVE

OG AT SD

(E) PG&E GAS TO REMAIN

1.7'

MATCH LINE
SEE BELOW

48" x 446.0' RCP (5p)
S= 0.10%
CLASS III

DRAINAGE SYSTEM (5)
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

(5q) "O" 36+00.00, 16.00' Lt
CITY SD MH PER CITY OF LOS
BANOS Std PLAN SD-7
RIM Elev 132.76

(E) PG&E ELECTRICAL
TO REMAIN

4.3'

MATCH LINE
SEE ABOVE

OG AT SD

MATCH LINE
SEE BELOW

FL Elev 120.39

FL Elev 120.39

48" x 446.0' RCP (5p)
S= 0.10%
CLASS III

DRAINAGE SYSTEM (5)
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

48" x 465.5' RCP (5r)
S= 0.10%
CLASS III

MATCH LINE
SEE ABOVE

OG AT SD

MATCH LINE
SEE SHEET DP-6

48" x 465.5' RCP (5r)
S= 0.10%
CLASS III

DRAINAGE SYSTEM (5)
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

2 ADDENDUM #2 - 2024-12-06

CALL BEFORE YOU DIG

Dec 05, 2024 - 10:16am
J:\Los Banos - FN-20102 Pioneer Rd Widening - Phase 2\CADD_2018\Sheets\ORTIGALITA\PR OR_DP-1-6.dwg

PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 91554
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

DRAINAGE PROFILES

SCALE: 1" = 10' **DP-5**

SHEET NUMBER
28
OF 50 SHEETS

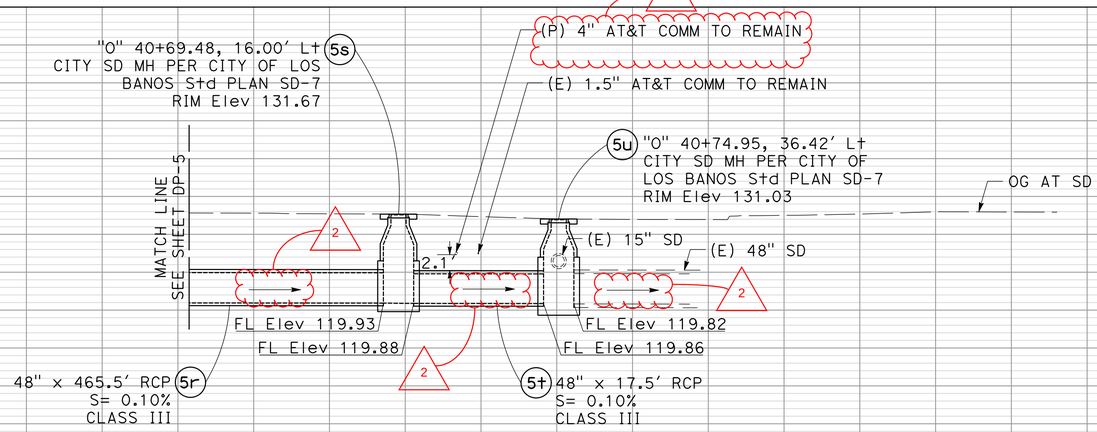
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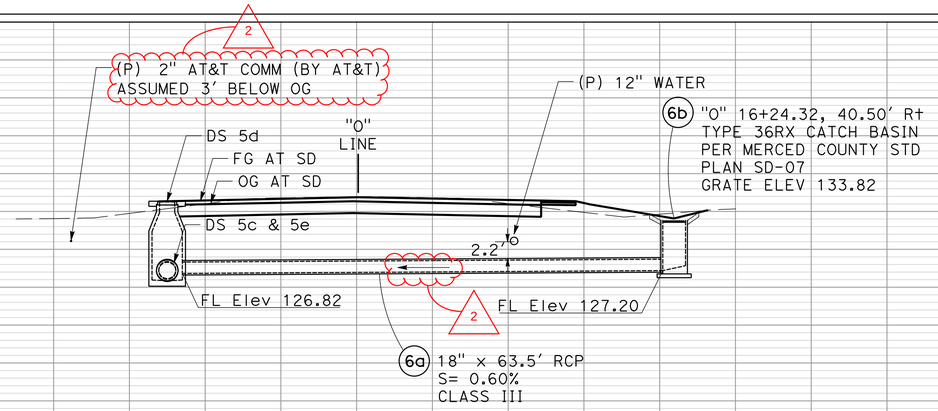
PROJECT NUMBER: 23ST0013

FEDERAL PROJECT NUMBER
CML-5160(031)

DATE: 12/05/2024

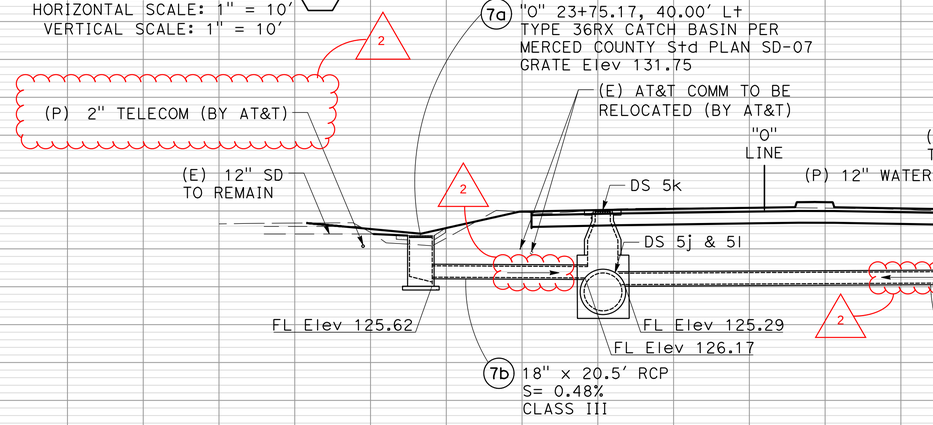
RELATIVE BORDER SCALE
IS IN INCHES 0 1 2 3





DRAINAGE SYSTEM 5

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

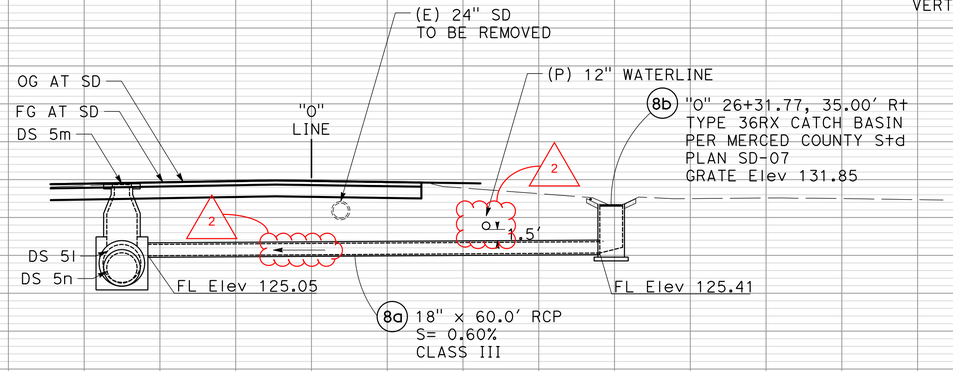


DRAINAGE SYSTEM 6

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

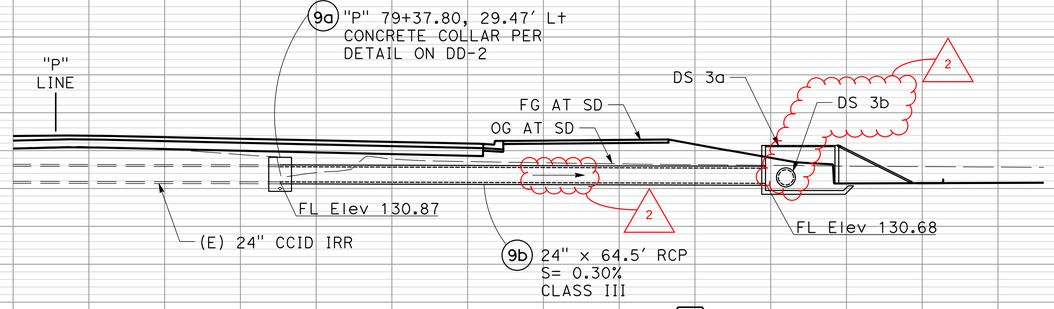
DRAINAGE SYSTEM 7

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



DRAINAGE SYSTEM 8

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



DRAINAGE SYSTEM 9

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'

2 ADDENDUM #2 - 2024-12-06

DRAINAGE PROFILES

SCALE: 1" = 10' **DP-6**

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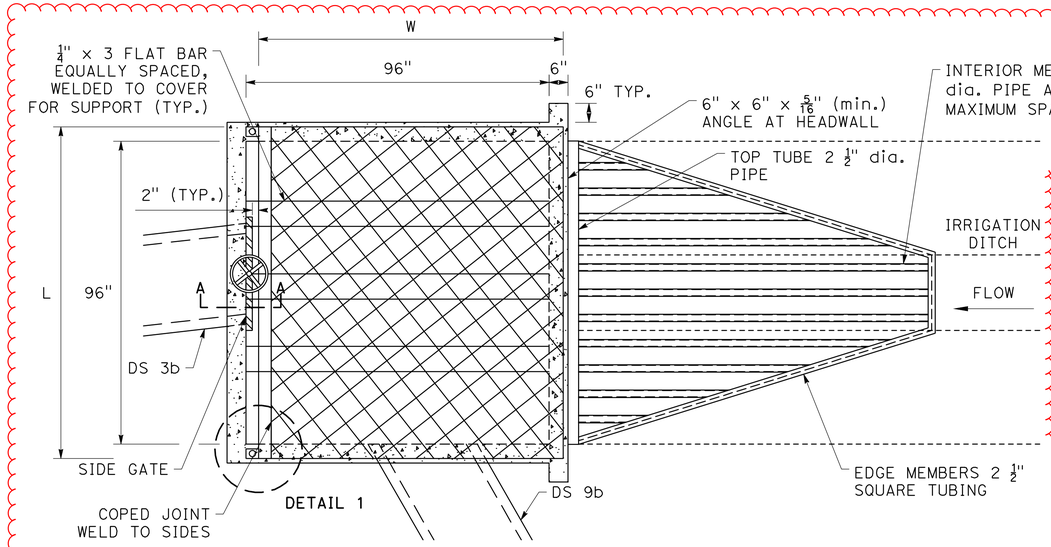
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
29
OF 50 SHEETS

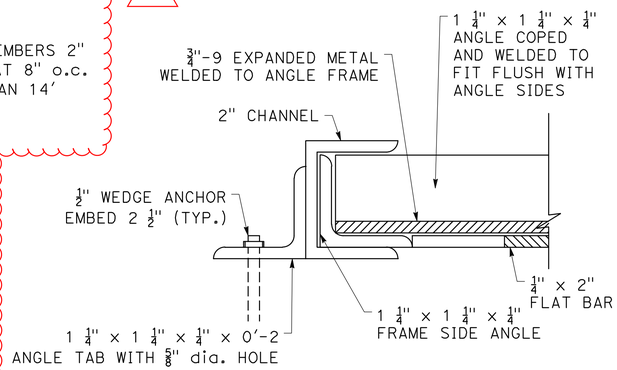
100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

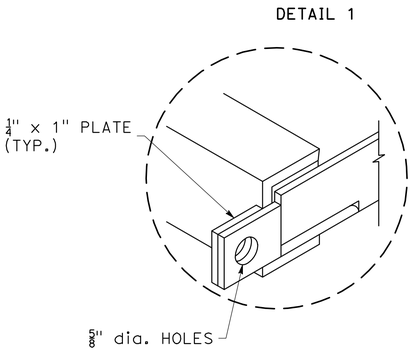


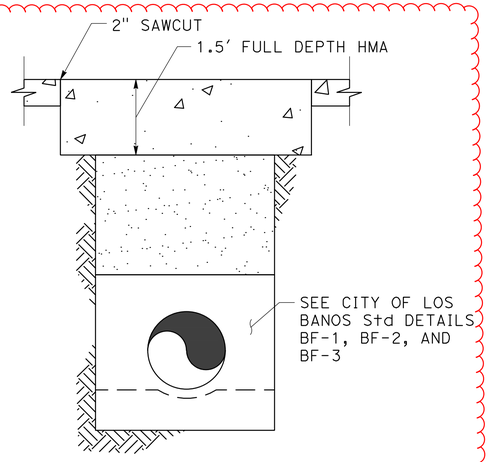
IRRIGATION JUNCTION BOX PLAN VIEW DETAIL

NTS



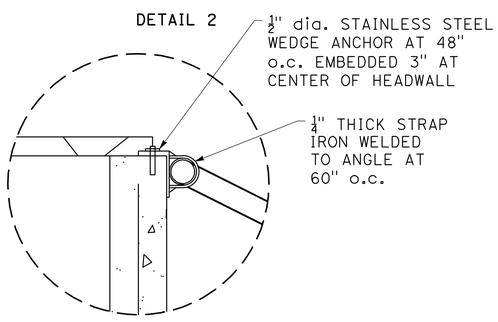
SECTION A-A

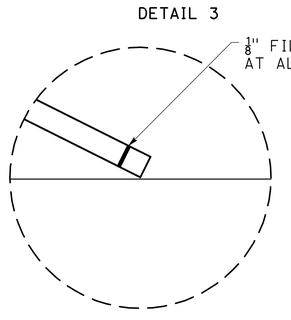


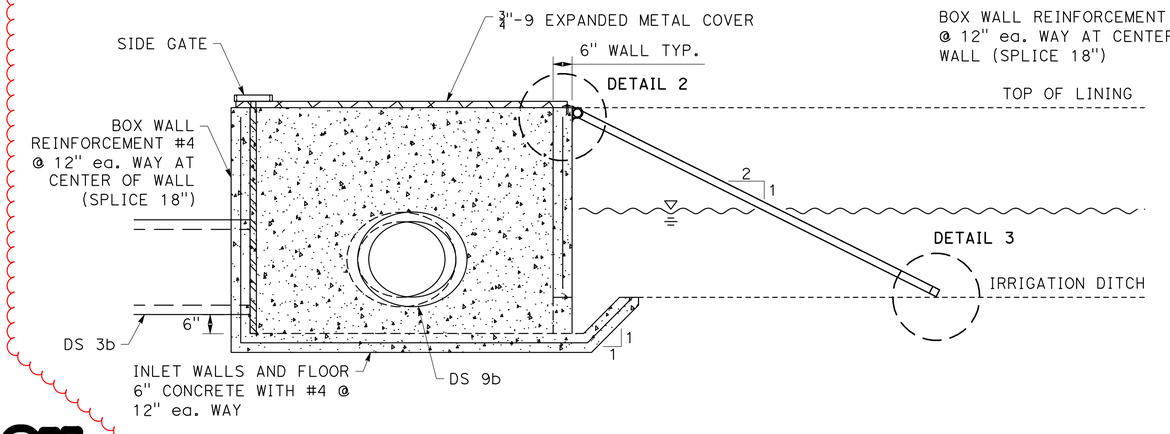


TRENCH AND BACKFILL

NTS

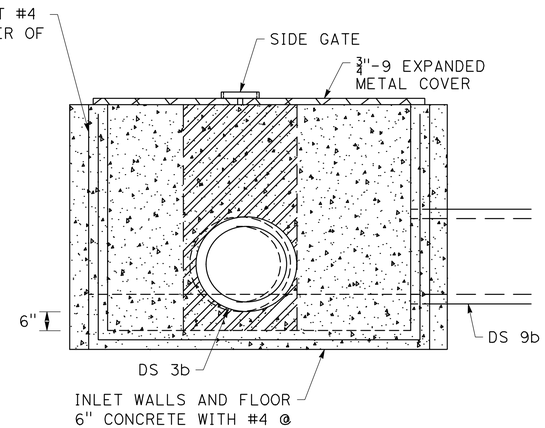






IRRIGATION JUNCTION BOX SIDE ELEVATION VIEW DETAIL

NTS



IRRIGATION JUNCTION BOX REAR ELEVATION VIEW DETAIL

NTS

NOTES:
1. DIMENSIONS L & W TO COVER OPENING WILL BE DETERMINED BY SIZE OF BOX AND NUMBER OF GATES.
2. WELD ANGLE TO ALL SIDES OF EXPANDED METAL.
3. WELD 1 ¼" x 1 ¼" x ¼" x 0'-2 ANGEL TO ENDS OF CHANNEL TO SECURE GUIDES TO CONTROL BOX.
4. ALL HARDWARE TO BE PAINTED WITH RED OXIDE PRIMER.
5. GRATE TO BE MADE OF UNTREATED STEEL
6. STEEL PIPE TO BE ASTM A500 GRADE B
7. SAFETY GRATE SHALL BE INSTALLED IN NON-RURAL AREAS

2 ADDENDUM #2 - 2024-12-06

DRAINAGE DETAIL DD-1

NTS

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Dec 05, 2024 - 9:20am J:\Los Banos - FN-20102 Pioneer Rd Widening - Phase 2\CADD_2018\Sheets\ORTIGALITA\PR OR_DD-1-2.dwg

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

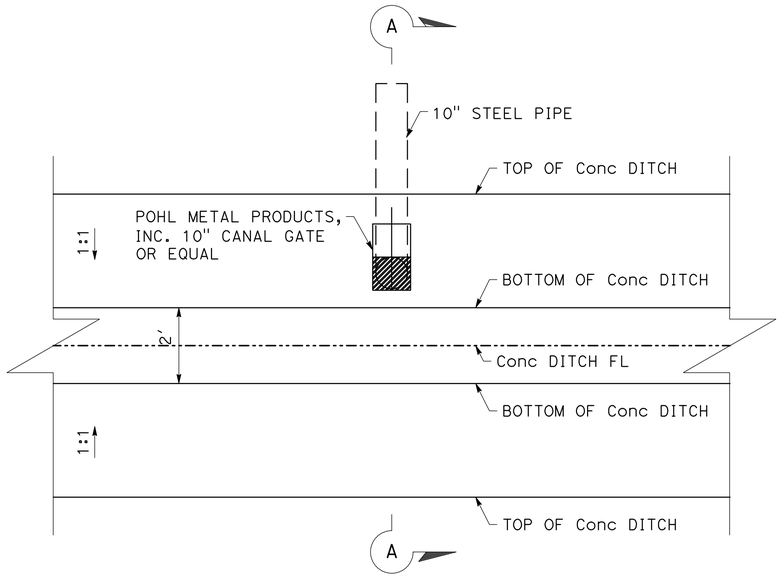
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

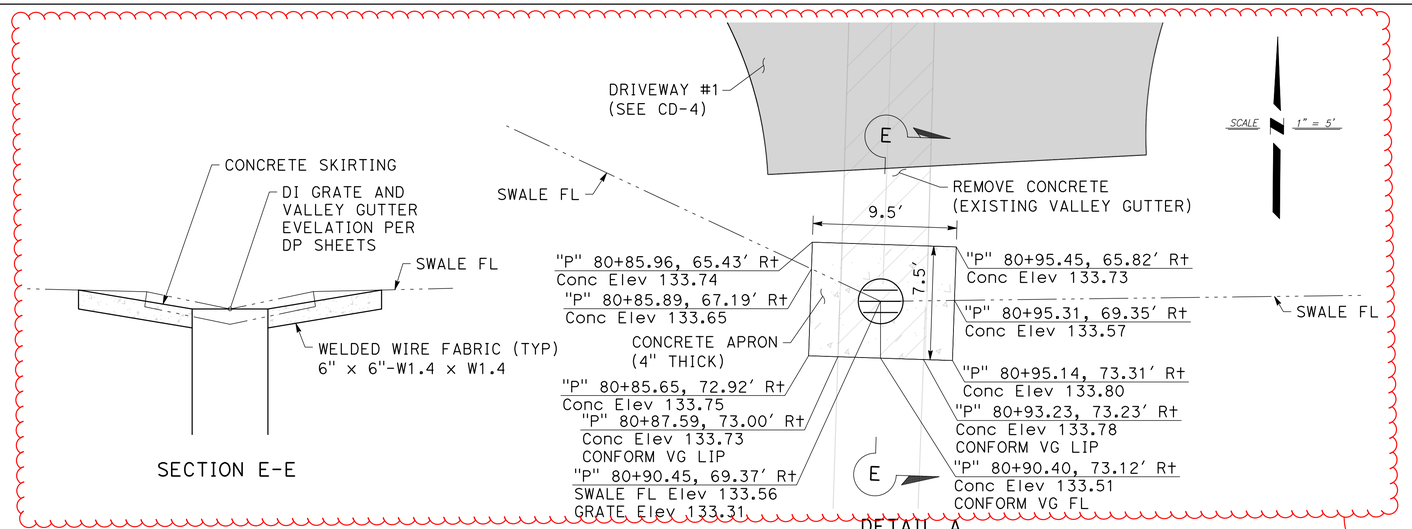
SHEET NUMBER 30 OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013 | FEDERAL PROJECT NUMBER CML-5160(031) | DATE: 12/05/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



PLAN



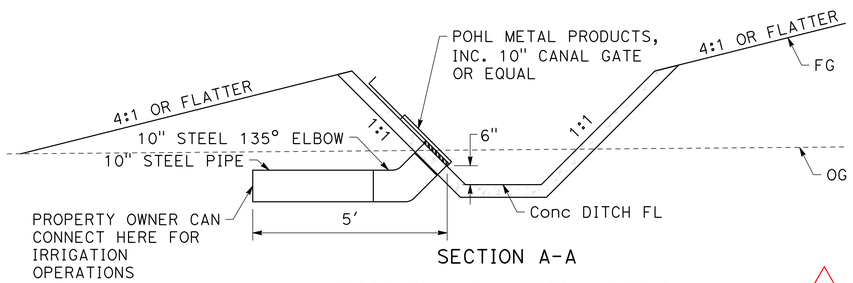
DETAIL A

DRAINAGE SYSTEM 4d CONCRETE APRON

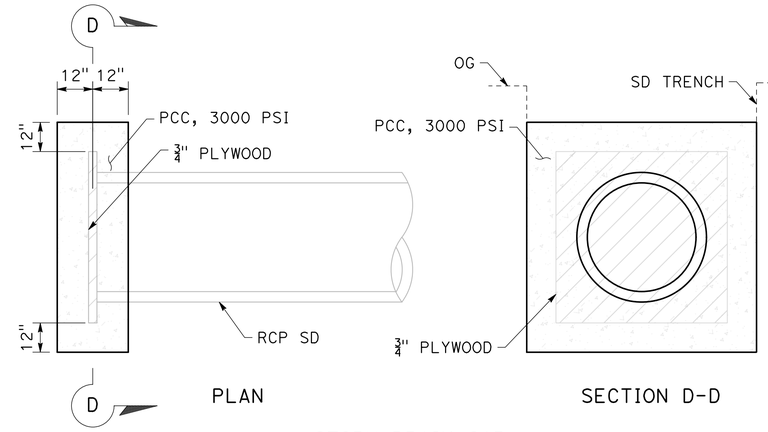
SCALE: 1" = 5'

IRRIGATION EQUIPMENT

DESCRIPTION	LOCATION
IRR CONNECTION	"P" 79+81.83, 92.12' Lt
IRR CONNECTION	"P" 80+06.83, 92.12' Lt
IRR CONNECTION	"P" 80+31.83, 92.12' Lt
IRR CONNECTION	"P" 80+56.83, 92.12' Lt
IRR CONNECTION	"P" 80+81.83, 92.12' Lt
IRR CONNECTION	"P" 81+06.83, 92.12' Lt
IRR CONNECTION	"P" 81+31.83, 92.12' Lt

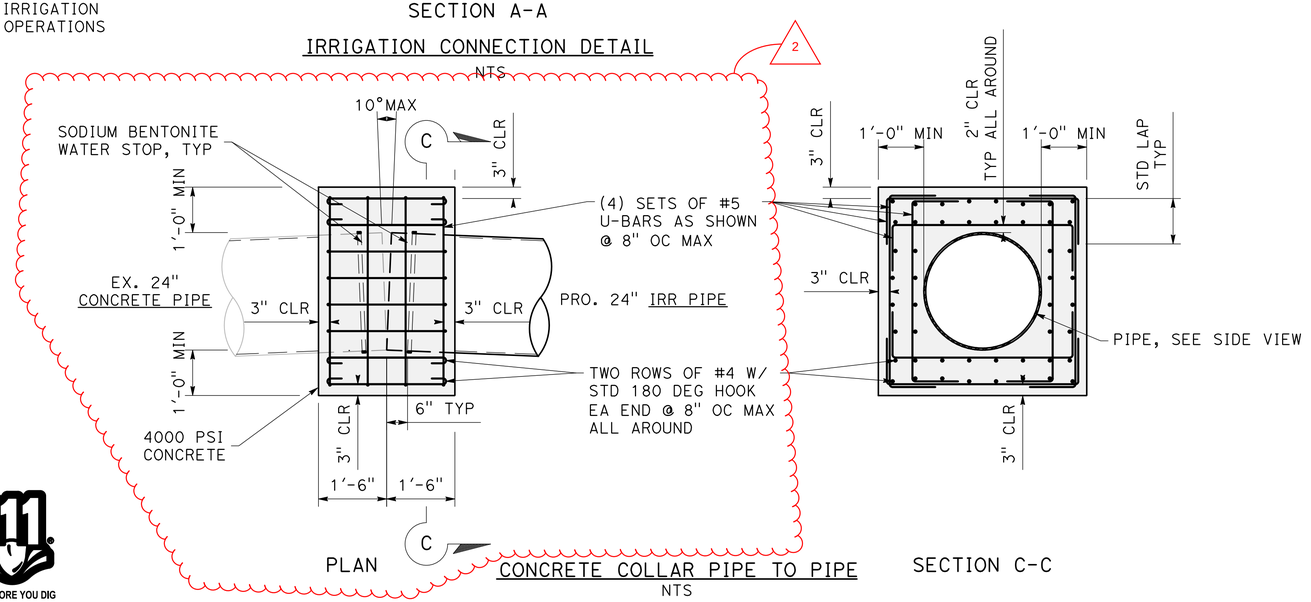


SECTION A-A



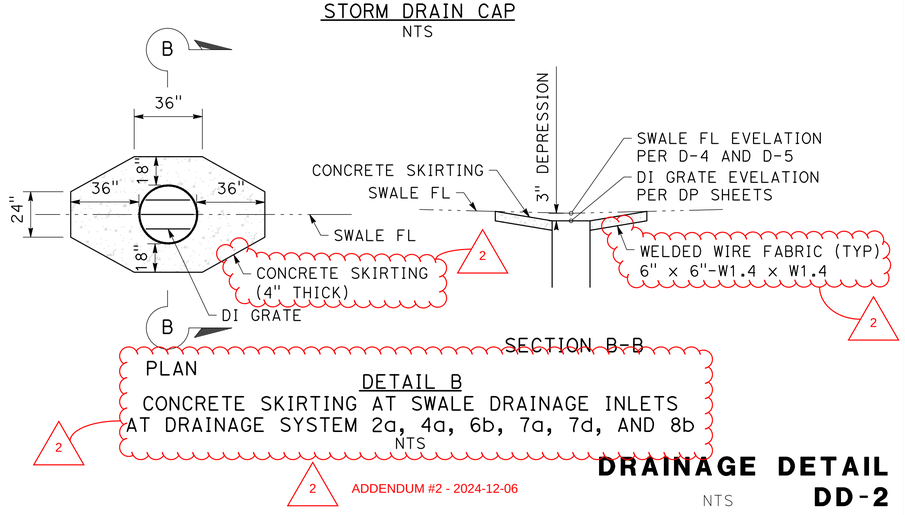
STORM DRAIN CAP

NTS



CONCRETE COLLAR PIPE TO PIPE

NTS



DETAIL B

CONCRETE SKIRTING AT SWALE DRAINAGE INLETS AT DRAINAGE SYSTEM 2a, 4a, 6b, 7a, 7d, AND 8b

NTS

2 ADDENDUM #2 - 2024-12-06

DRAINAGE DETAIL DD-2

NTS

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REGISTERED PROFESSIONAL ENGINEER EDGAR A. MORIEGA No. 81458 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
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(209) 827-7056

IMPROVEMENT PLANS FOR:

ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT

LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
31
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013

FEDERAL PROJECT NUMBER CML-5160(031)

DATE: 12/04/2024

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES:

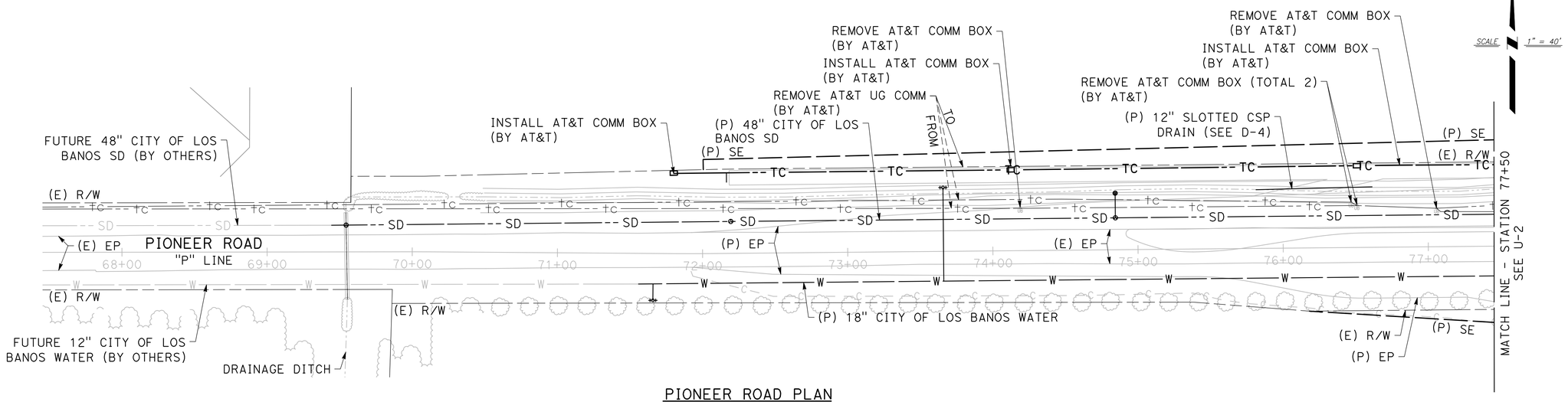
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES FOR VERIFICATION AT THE SITE OF ANY POSSIBLE CONFLICTS WITH THEIR UNDERGROUND UTILITIES AND THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES 48 HOURS PRIOR TO WORKING AROUND ANY POSSIBLE CONFLICTS WITH THEIR UNDERGROUND UTILITIES AND THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
3. THE TYPES, LOCATIONS, SIZES AND DEPTHS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. THE CITY OF LOS BANOS AND ITS CONSULTANTS, MARK THOMAS & COMPANY INC., CAN NOT ASSUME THE RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UTILITIES NOR THE EXISTENCE OF OTHER BURIED OBJECTS OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS.
4. FOR UTILITY CONTACT INFORMATION, SEE GENERAL NOTES SHEET.
5. CONTRACTOR SHALL ADJUST THE GRADE OF THE PIPELINES AS NECESSARY TO MEET MINIMUM COVER AND AVOID UTILITY CONFLICTS. IF THE CONTRACTOR CANNOT MAINTAIN THE MINIMUM COVER, THEN THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
6. FOR IRRIGATION, SWALE, AND DRAINAGE INFORMATION, SEE DRAINAGE PLAN SHEETS.
7. FOR WATER SYSTEM INFORMATION, SEE WATER SHEETS.

LEGEND:

- (E) R/W
- (P) R/W
- (P) SE
- (P) TCE
- (P) IME
- (E) PROPERTY LINE
- (E) AT&T OH COMM
- (E) AT&T UG COMM
- (E) AT&T UG FIBER
- (E) PG&E OH ELEC
- (E) PG&E GAS
- (E) CCID UG Irr
- (E) CCID IRR DITCH
- (E) JOINT COMM/ELEC OH
- (E) CITY OF LOS BANOS SD
- (E) JOINT COMM/ELEC UG
- (E) CITY OF LOS BANOS WATER
- (P) CCID Irr DITCH
- (P) CITY OF LOS BANOS SD
- (P) CITY OF LOS BANOS WATER
- (P) OH ELEC
- (P) OH COMM
- (P) JOINT COMM/ELEC OH

2

- FUTURE CITY OF LOS BANOS SD
- FUTURE CITY OF LOS BANOS WATER
- (P) DRAINAGE INLET (SEE DRAINAGE SHEETS)
- (P) MANHOLE (SEE DRAINAGE SHEETS)
- (P) HYDRANT (SEE WATER SHEETS)



PIONEER ROAD PLAN
SCALE: 1" = 40'

2 ADDENDUM #2 - 2024-12-06

UTILITY PLAN U-1
SCALE: 1" = 40'

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EDGAR A. MORIEGA
No. 84554
Exp. 6/30/25
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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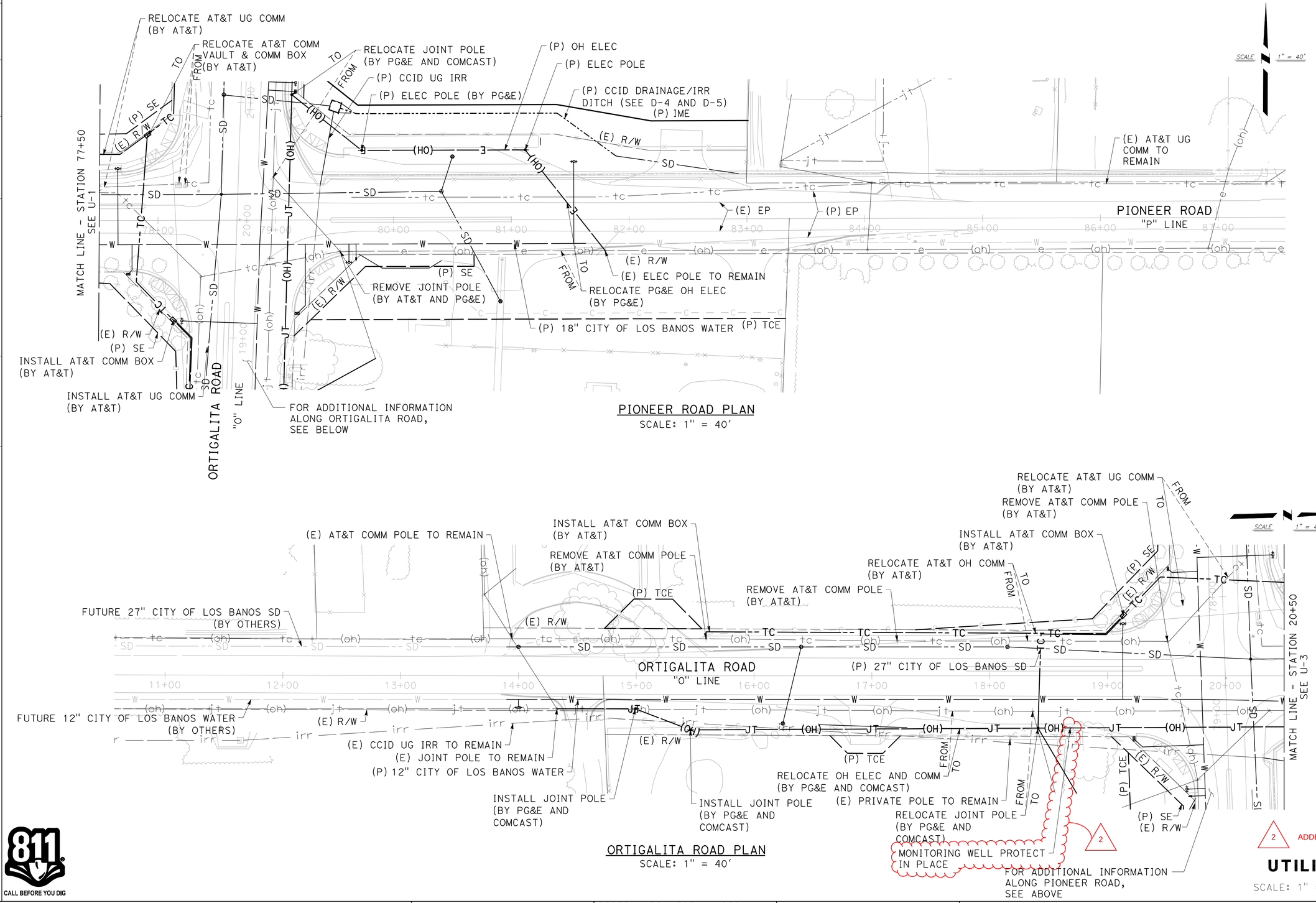
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
32
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



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DEPARTMENT OF PUBLIC WORKS
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LOS BANOS, CALIFORNIA 93635
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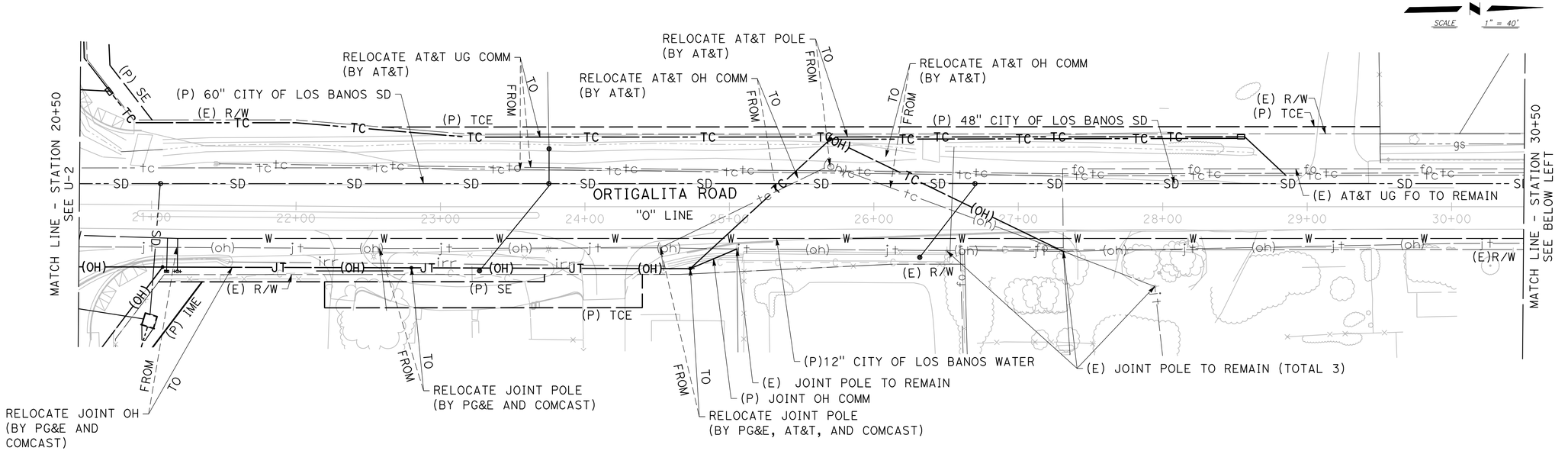
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER 33 OF 50 SHEETS

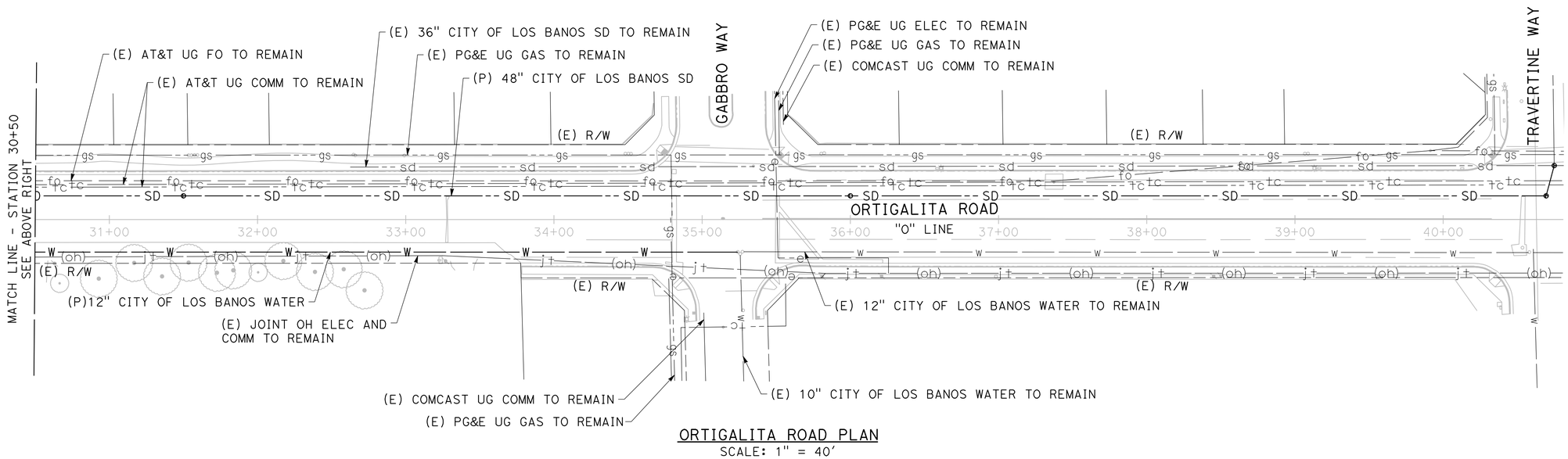
100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/06/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'





ORTIGALITA ROAD PLAN
SCALE: 1" = 40'

UTILITY PLAN
SCALE: 1" = 40' **U-3**

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PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. MORIEGA
No. 81455
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
34
OF 50 SHEETS

NOTES (W-1 TO W-5):

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES 48 HOURS PRIOR TO WORKING AROUND ANY OF THEIR UNDERGROUND UTILITIES FOR VERIFICATION AT THE SITE OF ANY POSSIBLE CONFLICTS WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
2. THE TYPES, LOCATIONS, SIZES AND DEPTHS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. THE CITY OF LOS BANOS AND ITS CONSULTANT, MARK THOMAS & COMPANY INC., CAN NOT ASSUME THE RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE DELINEATION OF SUCH UTILITIES NOR THE EXISTENCE OF OTHER BURIED OBJECTS OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS.
3. THE CONTRACTOR SHALL VERIFY ALL FIELD MEASUREMENTS PRIOR TO INSTALLATION.
4. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.
5. FOR IRRIGATION, SWALE, AND DRAINAGE INFORMATION, SEE DRAINAGE PLAN SHEETS.
6. OVERHEAD UTILITIES NOT SHOWN FOR CLARITY PURPOSES.
7. TRENCHING AND BACKFILL SHALL CONFORM TO THE TRENCH DETAIL ON WD-1 AND TO THE CITY OF LOS BANOS STANDARD DRAWINGS BF-1, BF-2, AND BF-3.

2

LEGEND (W-1 TO W-5):

- (E) R/W
- (P) R/W
- (P) SE
- (P) TCE
- (P) IME
- (E) PROPERTY LINE
- (E) AT&T UG COMM
- (E) AT&T UG FIBER
- (E) PG&E GAS
- (E) CCID UG Irr
- (E) CCID IRR DITCH
- (E) CITY OF LOS BANOS SD
- (E) JOINT COMM/ELEC UG
- (E) CITY OF LOS BANOS WATER
- (P) CCID Irr DITCH
- (P) CITY OF LOS BANOS SD
- (P) CITY OF LOS BANOS WATER
- FUTURE CITY OF LOS BANOS SD
- FUTURE CITY OF LOS BANOS WATER
- (P) DRAINAGE INLET (SEE DRAINAGE SHEETS)
- (P) MANHOLE (SEE DRAINAGE SHEETS)
- (P) HYDRANT (SEE WATER SHEETS)
- (P) WATER VALVE PER CITY OF LOS BANOS Std W-3
- (P) 1.50' HMA (TYPE A) - EXISTING PAVEMENT REPLACEMENT FOR WATER TRENCH
- (P) BLOW-OFF ASSEMBLY

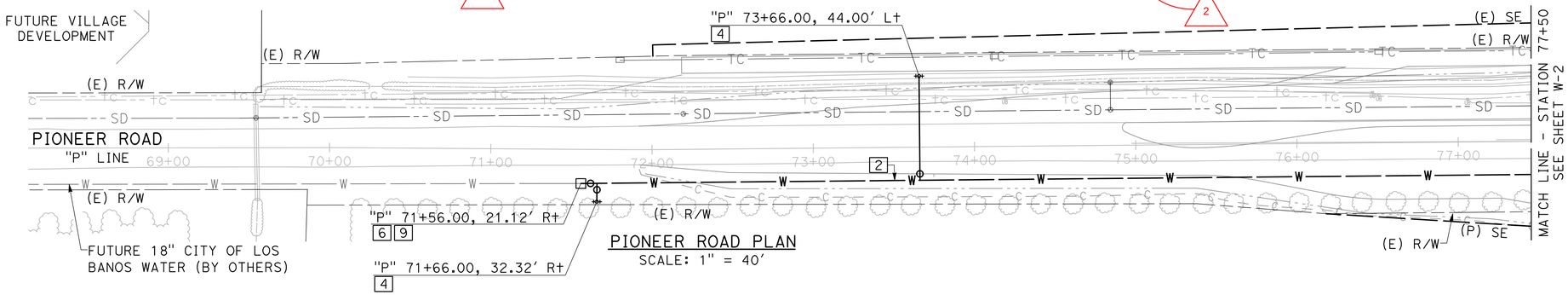
2

CONSTRUCTION NOTES (W-1 TO W-5, WD-1):

1. INSTALL 12" C-900 DR-14 PVC PIPE
2. INSTALL 18" C-900 DR-14 PVC PIPE
3. INSTALL 12" DUCTILE IRON FLANGE COUPLING
4. INSTALL FIRE HYDRANT PER CITY OF LOS BANOS Std W-2
5. INSTALL 2" WATER SERVICE PER CITY OF LOS BANOS Std W-1
6. INSTALL 18" DUCTILE IRON BLIND FLANGE
7. INSTALL 18"X12" DUCTILE IRON MECHANICAL JOINT CROSS
8. INSTALL 12" DUCTILE IRON BLIND FLANGE
9. INSTALL THRUST BLOCK PER MERCED COUNTY Std SU-14 (SEE WD-1 FOR QUANTITY)
10. INSTALL 12" DUCTILE IRON PIPE 45° ELBOW (SEE WD-1 FOR QUANTITY)
11. INSTALL 18" DUCTILE IRON PIPE 45° ELBOW (SEE WD-1 FOR QUANTITY)
12. INSTALL BLOW-OFF ASSEMBLY PER DETAIL ON WD-1
13. INSTALL 6" DUCTILE IRON PIPE 45° ELBOW (SEE WD-1 FOR QUANTITY)

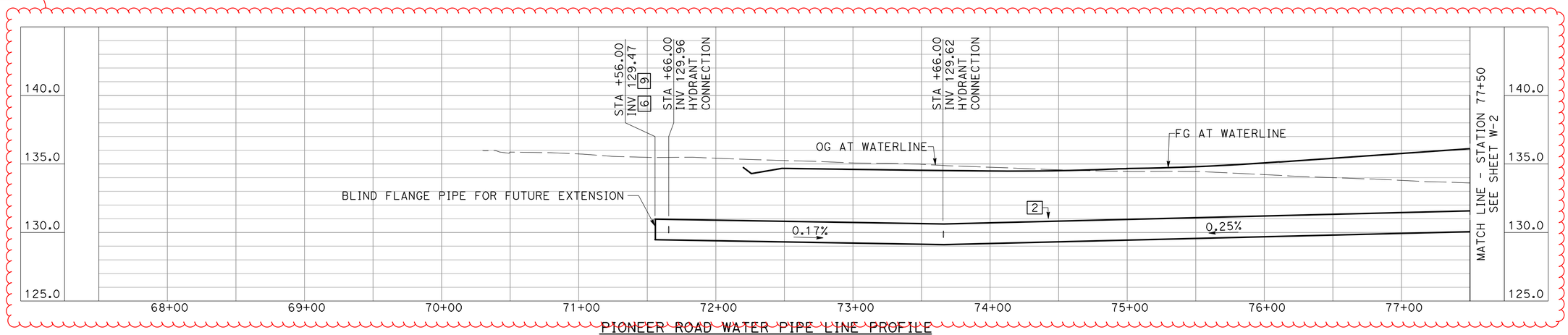
2

SCALE 1" = 40'



PIONEER ROAD PLAN
SCALE: 1" = 40'

2



PIONEER ROAD WATER PIPE LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 ADDENDUM #2 - 2024-12-06

WATER MAIN PLAN AND PROFILE

SCALE: 1" = 40' **W-1**

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100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

CALCULATED- DESIGNED BY
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DATE REVISED

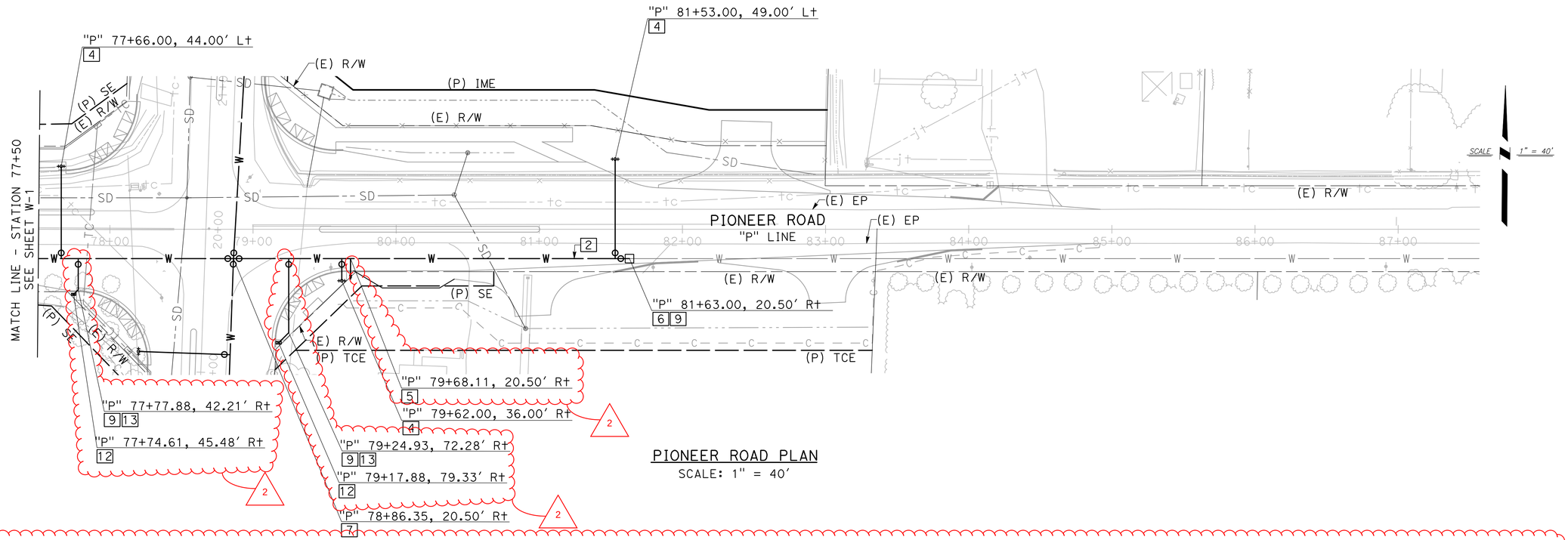
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

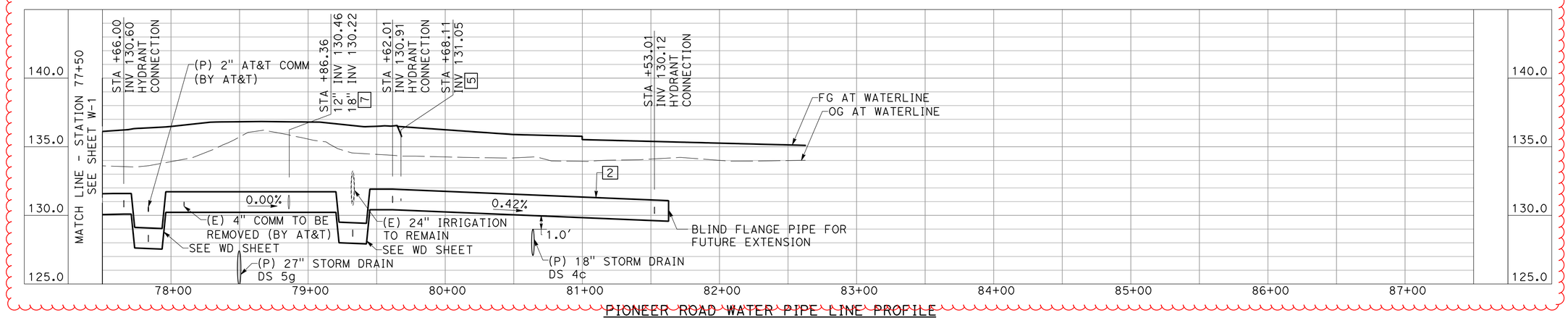
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
35
OF 50 SHEETS



PIONEER ROAD PLAN
SCALE: 1" = 40'



PIONEER ROAD WATER PIPE LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 ADDENDUM #2 - 2024-12-06

WATER MAIN PLAN AND PROFILE

SCALE: 1" = 40' **W-2**

CALL BEFORE YOU DIG

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY

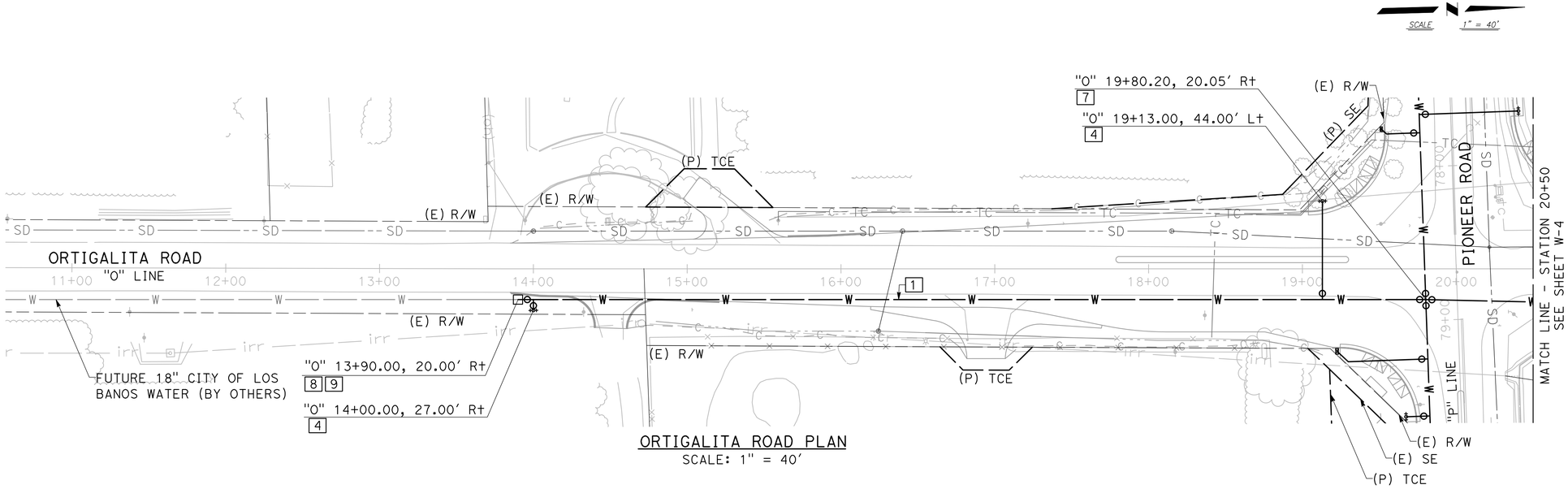
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

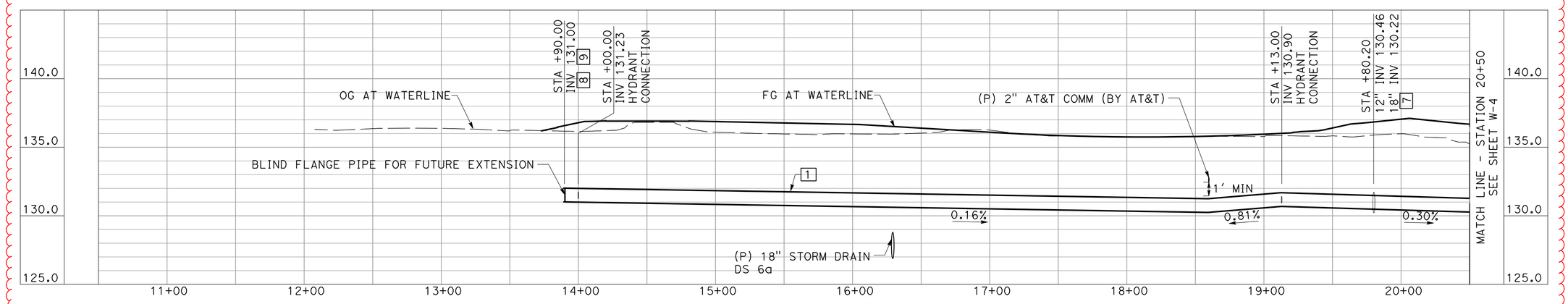
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
36
OF 50 SHEETS



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'



ORTIGALITA ROAD WATER PIPE LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 ADDENDUM #2 - 2024-12-06

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PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 81458
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

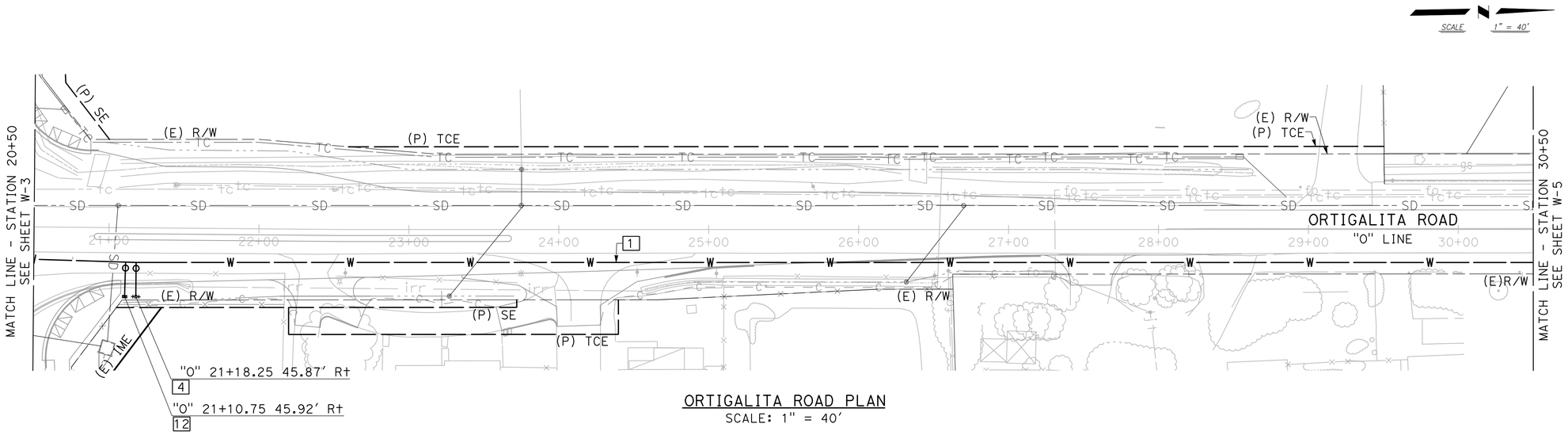
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(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

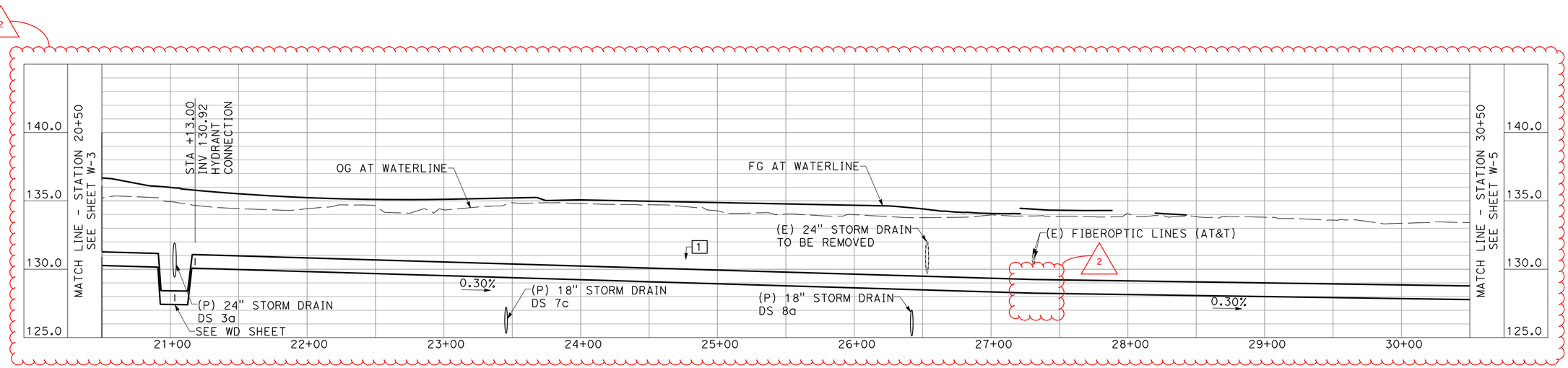
MARK THOMAS

WATER MAIN PLAN AND PROFILE
SCALE: 1" = 40' **W-3**

SHEET NUMBER
37
OF 50 SHEETS



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'



ORTIGALITA ROAD WATER PIPE LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 ADDENDUM #2 - 2024-12-06

WATER MAIN PLAN AND PROFILE
SCALE: 1" = 40' **W-4**

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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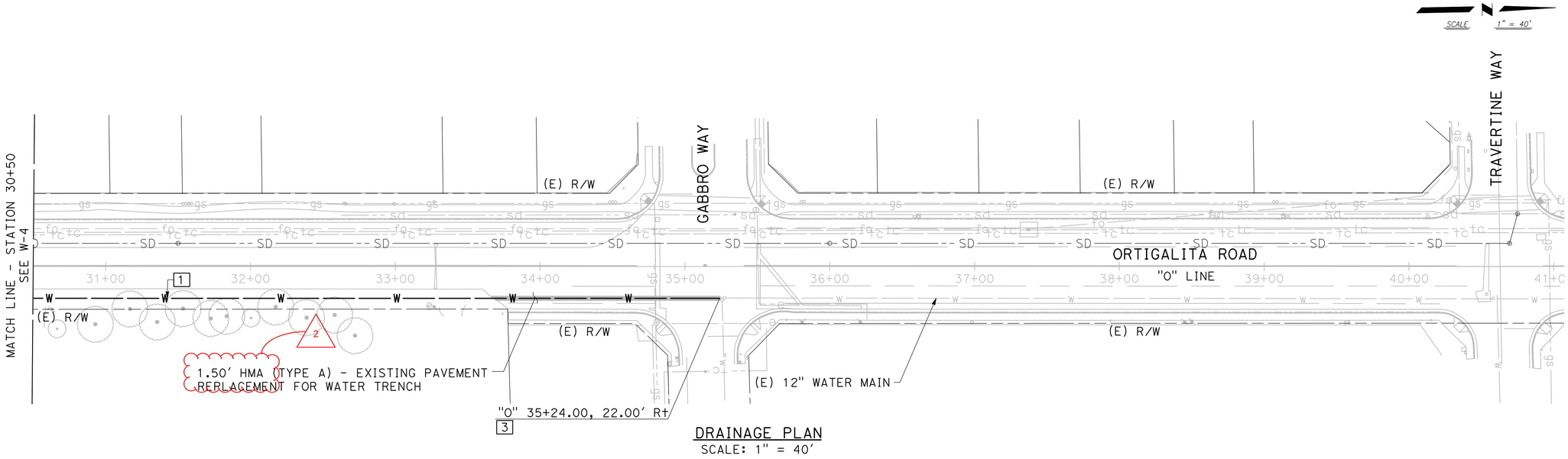
REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 91458
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

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DEPARTMENT OF PUBLIC WORKS
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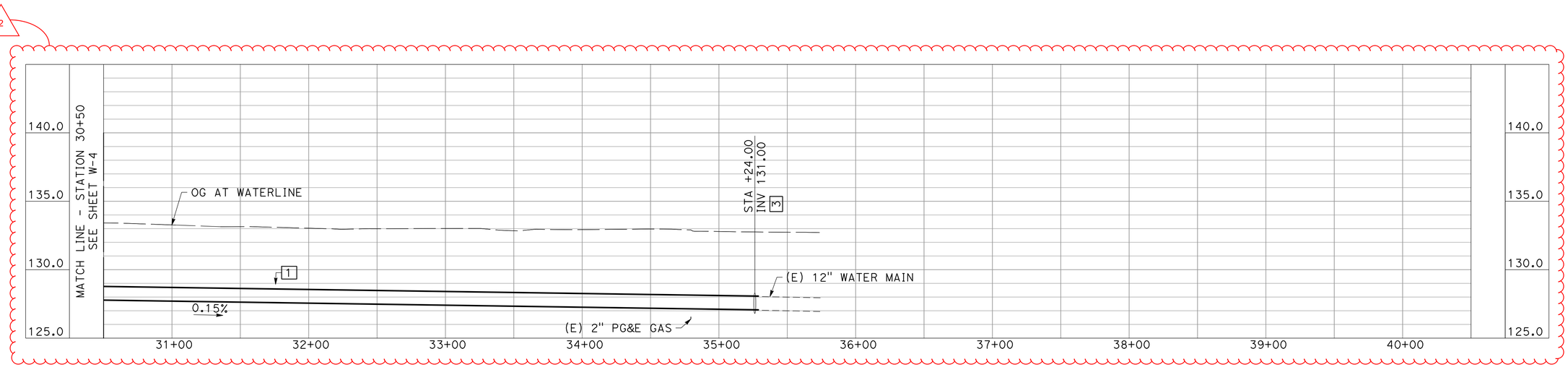
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
38
OF 50 SHEETS



DRAINAGE PLAN
SCALE: 1" = 40'



ORTIGALITA ROAD WATER PIPE LINE PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

2 ADDENDUM #2 - 2024-12-06

WATER MAIN PLAN AND PROFILE

SCALE: 1" = 40' **W-5**

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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

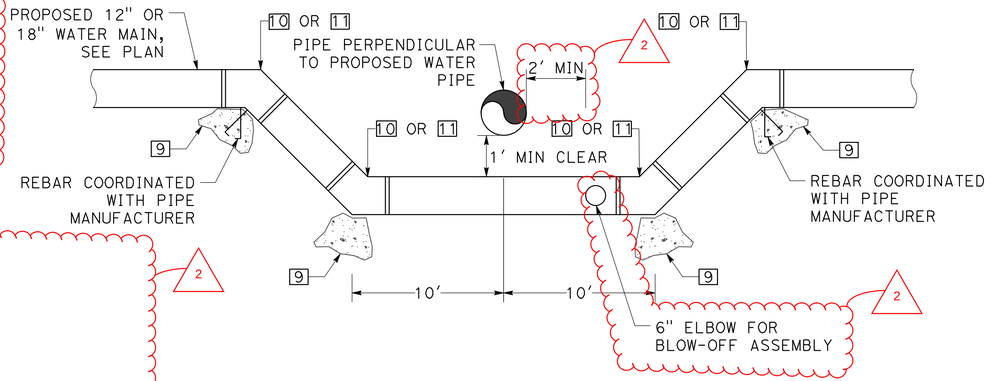
MARK THOMAS

SHEET NUMBER
39
OF 50 SHEETS

100% SUBMITTAL

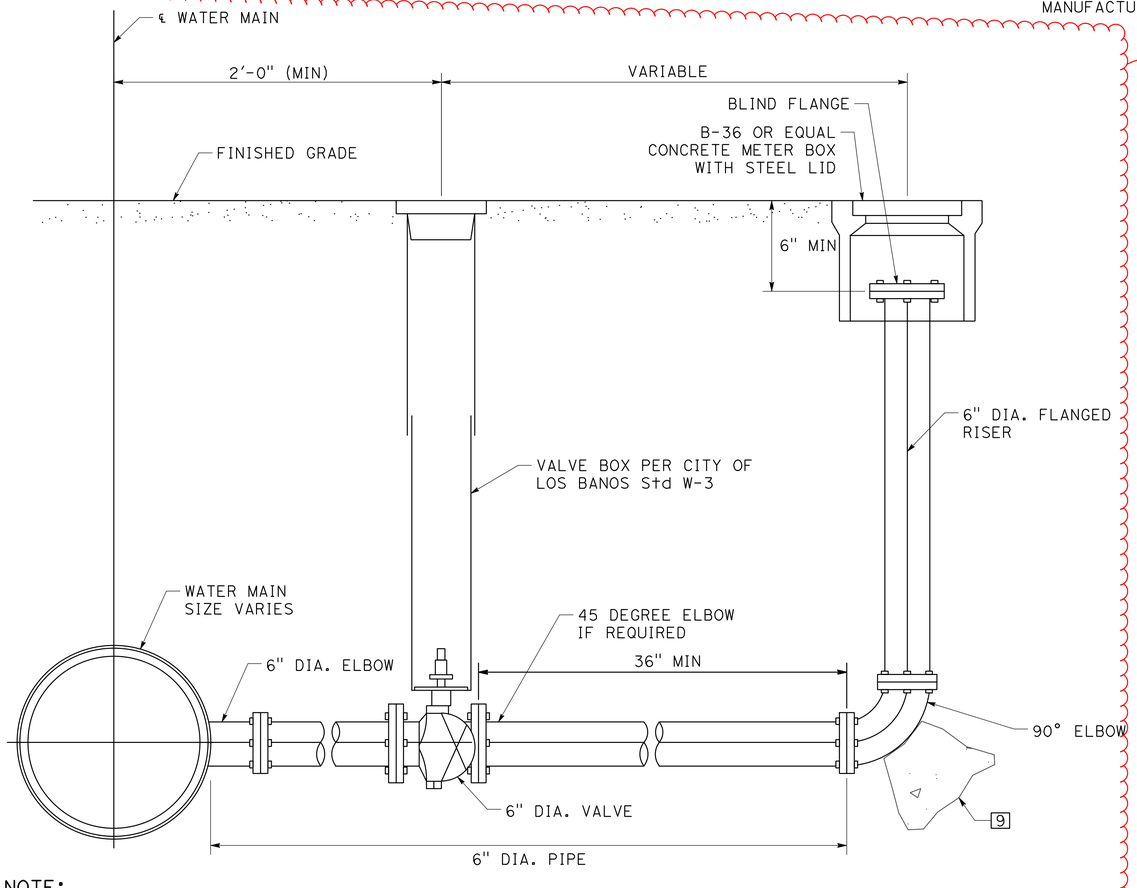
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/05/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

LOCATION	DESCRIPTION	9 THRUST BLOCKS	10 12" DIP 45° ELBOW	11 18" DIP 45° ELBOW	13 6" DIP 45° ELBOW
		EA	EA	EA	EA
"P" 71+56.00, 21.12' Rt	PIPE END	1			
"P" 77+77.88, 20.50' Rt	BLOW OFF	2			1
"P" 77+83.93, 20.50' Rt	PIPE CROSSING	4		4	
"P" 79+24.93, 20.50' Rt	BLOW OFF	2			1
"P" 79+32.93, 20.50' Rt	PIPE CROSSING	4		4	
"P" 81+63.00, 20.50' Rt	PIPE END	1			
"O" 13+90.00, 20.00' Rt	PIPE END	1			
"O" 21+03.27, 22.75' Rt	PIPE CROSSING	4	4		
"O" 21+11.26, 22.93' Rt	BLOW OFF	1			
	TOTAL	20	4	8	2



NEW WATER PIPE CROSSING UNDER PIPE DETAIL

NTS

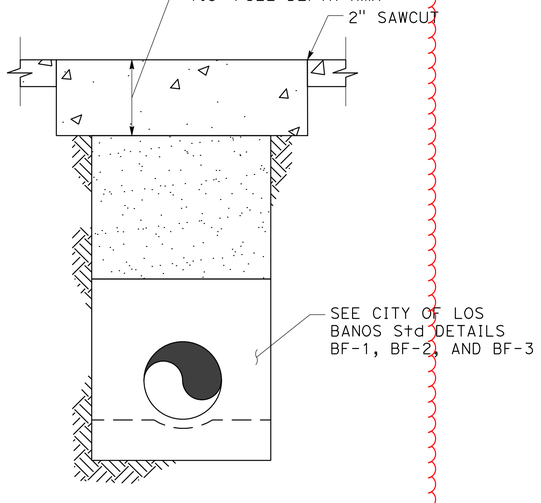


NOTE:

1. ALL FITTINGS SHALL BE SECURED WITH RETAINING GLANDS, HARNESSES OR TIE-RODS AS APPLICABLE.
2. PLACE BLOW-OFFS OUTSIDE SIDEWALK AND DRIVEWAY AREAS.
3. ALL PUMP DISCHARGES SHALL BE FLANGED STEEL
4. ALL RISERS SHALL BE FLANGED. 6" DIAMETER.

BLOW-OFF ASSEMBLY

NTS



TRENCH AND BACKFILL

NTS

2 ADDENDUM #2 - 2024-12-06

WATER DETAIL WD-1

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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER 40 OF SHEETS

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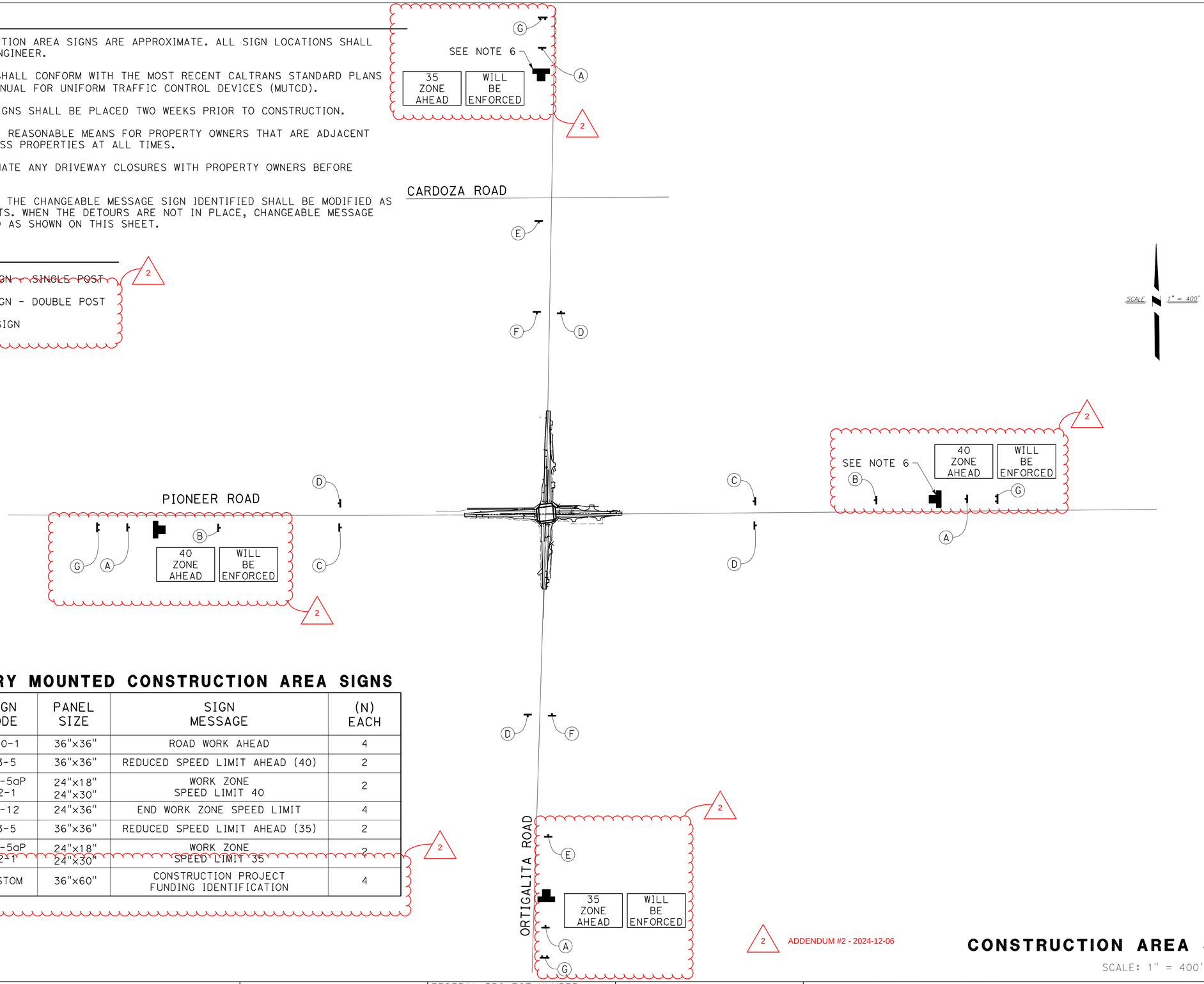
PROJECT NUMBER: | PROJECT EA: 10-1M320_ | DATE: 12/05/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. ALL TRAFFIC CONTROL SHALL CONFORM WITH THE MOST RECENT CALTRANS STANDARD PLANS AND THE CALIFORNIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. CHANGEABLE MESSAGE SIGNS SHALL BE PLACED TWO WEEKS PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO PROVIDE REASONABLE MEANS FOR PROPERTY OWNERS THAT ARE ADJACENT CONSTRUCTION, TO ACCESS PROPERTIES AT ALL TIMES.
5. CONTRACTOR TO COORDINATE ANY DRIVEWAY CLOSURES WITH PROPERTY OWNERS BEFORE REMOVING ACCESS.
6. DURING DETOUR PHASES, THE CHANGEABLE MESSAGE SIGN IDENTIFIED SHALL BE MODIFIED AS SHOWN ON THE DE SHEETS. WHEN THE DETOURS ARE NOT IN PLACE, CHANGEABLE MESSAGE SIGNS SHALL BE PLACED AS SHOWN ON THIS SHEET.

LEGEND:

- CONSTRUCTION AREA SIGN - SINGLE POST
- CONSTRUCTION AREA SIGN - DOUBLE POST
- CHANGEABLE MESSAGE SIGN



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	PANEL SIZE	SIGN MESSAGE	(N) EACH
A	W20-1	36"x36"	ROAD WORK AHEAD	4
B	W3-5	36"x36"	REDUCED SPEED LIMIT AHEAD (40)	2
C	G20-5aP R2-1	24"x18" 24"x30"	WORK ZONE SPEED LIMIT 40	2
D	R2-12	24"x36"	END WORK ZONE SPEED LIMIT	4
E	W3-5	36"x36"	REDUCED SPEED LIMIT AHEAD (35)	2
F	G20-5aP R2-1	24"x18" 24"x30"	WORK ZONE SPEED LIMIT 35	2
G	CUSTOM	36"x60"	CONSTRUCTION PROJECT FUNDING IDENTIFICATION	4

2 ADDENDUM #2 - 2024-12-06

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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

CONSTRUCTION AREA SIGNS

SCALE: 1" = 400' CS-1

SHEET NUMBER 41 OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013
FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/05/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES (SC-1 AND SC-2):

1. TRAFFIC CONTROL SHOWN ON PLANS, INCLUDING LOCATIONS OF CONSTRUCTION AREA SIGNS, ARE APPROXIMATE AND INTENDED TO BE UTILIZED FOR STAGING PURPOSES ONLY. ALL TRAFFIC CONTROL SHALL BE APPROVED BY THE CITY OF LOS BANOS DEPARTMENT OF PUBLIC WORKS PRIOR TO CONSTRUCTION. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. ALL TRAFFIC CONTROL SHALL CONFORM WITH THE MOST RECENT CALTRANS STANDARD PLANS AND THE CALIFORNIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. DURING STAGE 1, THE EAST LEG OF THE INTERSECTION WILL BE FULLY CLOSED TO TRAFFIC. DURING STAGE 2, THE NORTH LEG OF THE INTERSECTION WILL BE FULLY CLOSED TO TRAFFIC.
4. BESIDES THE CLOSURES LISTED IN NOTE 3, THE CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE-11′ LANE ACCESS ALONG PIONEER ROAD AND ORTIGALITA ROAD, DURING CONSTRUCTION, WITH FLAGGER CONTROL.
5. BESIDES THE CLOSURES LISTED IN NOTE 3, THE CONTRACTOR SHALL PROVIDE TWO-11′ LANES ACCESS ALONG PIONEER ROAD AND ORTIGALITA ROAD WHEN FLAGGERS ARE NOT PRESENT.
6. CONTRACTOR TO PROVIDE REASONABLE MEANS FOR PROPERTY OWNERS THAT ARE ADJACENT TO CONSTRUCTION, TO ACCESS PROPERTIES AT ALL TIMES UNLESS COORDINATED WITH OTHERWISE.
7. CONTRACTOR TO COORDINATE 24 HOURS IN ADVANCE OF ANY DRIVEWAY CLOSURES WITH PROPERTY OWNERS BEFORE IMPACTING ACCESS.
8. RIGHT OF WAY NOT SHOWN. FOR RIGHT OF WAY INFORMATION, SEE PLAN AND PROFILE SHEETS.
9. AT THE END OF THE TEMPORARY RAILING (TYPE K), THE CONTRACTOR CAN EITHER INSTALL CRASH CUSHIONS TO SHIELD THE BLUNT END OF THE RAILING, OR USE A 10 TO 1 TAPER TO FLARE THE RAILING AWAY FROM THE ROADWAY UNTIL IT IS AT LEAST 15′ OFFSET FROM THE APPROACHING TRAFFIC'S EDGE OF TRAVELED WAY (AS SHOWN ON THESE SHEETS). RAILING PLACEMENT MUST COMPLY WITH THE 2023 CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS.
10. INSTALL PROPOSED FENCES PRIOR TO REMOVING EXISTING FENCES.

CONSTRUCTION STAGE 1 DESCRIPTION:

DURING STAGE 1, THE EAST LEG OF THE INTERSECTION WILL BE CLOSED TO TRAFFIC. THE WEST, NORTH, AND SOUTH LEGS WILL REMAIN OPEN TO TRAFFIC. DURING CONSTRUCTION, ALL INTERSECTION APPROACHES WILL BE STOP CONTROLLED.

PRIOR TO TRAFFIC BEING SHIFTED DURING THIS STAGE, THE CONTRACTOR SHALL CONSTRUCT THE TEMPORARY PAVEMENT AREAS AND INSTALL TEMPORARY PAVEMENT DELINEATION AS SHOWN IN THE PLAN VIEW. THE CROSS SLOPE OF THE TEMPORARY PAVEMENT SHALL MATCH THE CROSS SLOPE OF THE EXISTING ROADWAY.

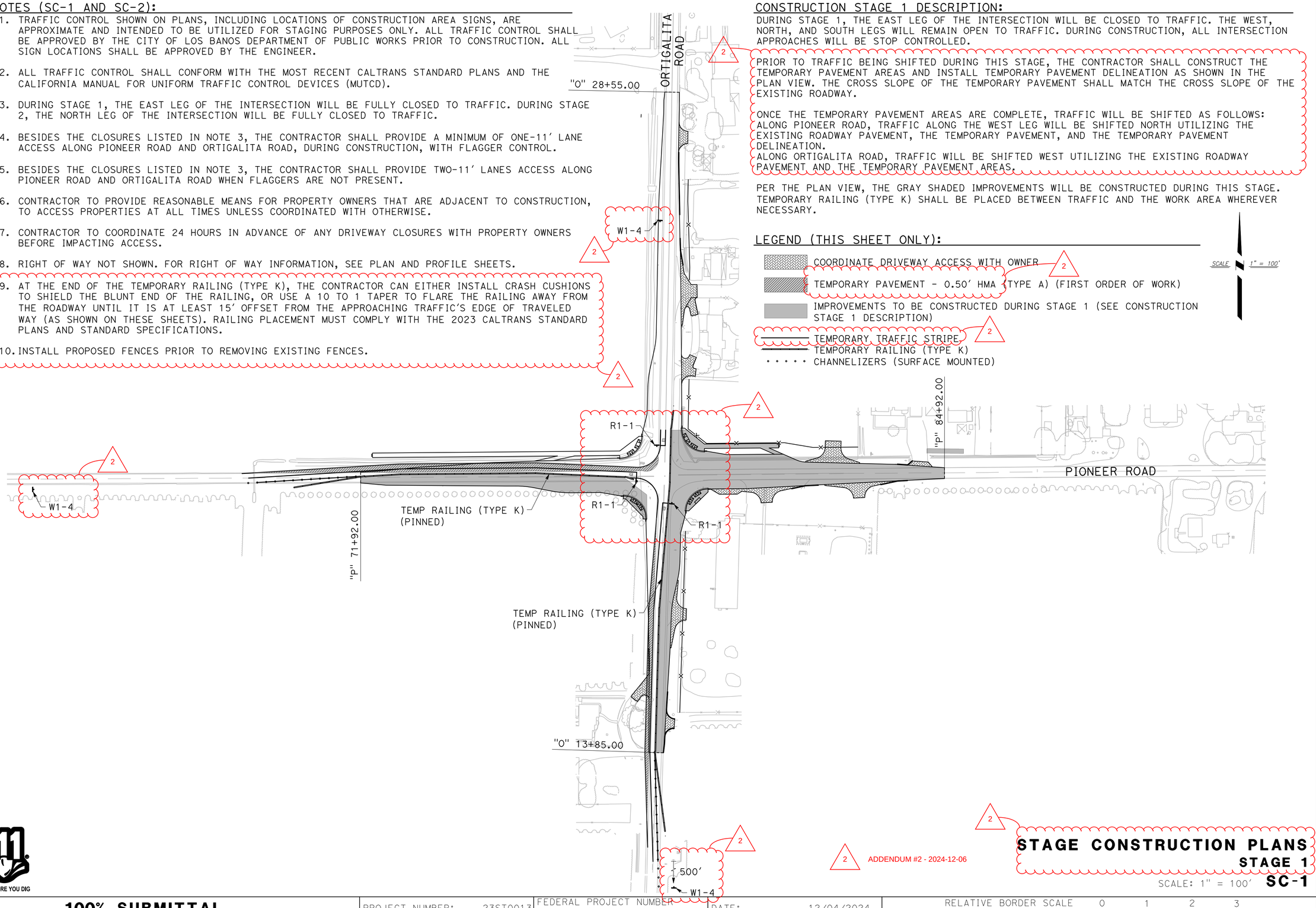
ONCE THE TEMPORARY PAVEMENT AREAS ARE COMPLETE, TRAFFIC WILL BE SHIFTED AS FOLLOWS:
ALONG PIONEER ROAD, TRAFFIC ALONG THE WEST LEG WILL BE SHIFTED NORTH UTILIZING THE EXISTING ROADWAY PAVEMENT, THE TEMPORARY PAVEMENT, AND THE TEMPORARY PAVEMENT DELINEATION.
ALONG ORTIGALITA ROAD, TRAFFIC WILL BE SHIFTED WEST UTILIZING THE EXISTING ROADWAY PAVEMENT AND THE TEMPORARY PAVEMENT AREAS.

PER THE PLAN VIEW, THE GRAY SHADED IMPROVEMENTS WILL BE CONSTRUCTED DURING THIS STAGE. TEMPORARY RAILING (TYPE K) SHALL BE PLACED BETWEEN TRAFFIC AND THE WORK AREA WHEREVER NECESSARY.

LEGEND (THIS SHEET ONLY):

- COORDINATE DRIVEWAY ACCESS WITH OWNER
- TEMPORARY PAVEMENT - 0.50′ HMA (TYPE A) (FIRST ORDER OF WORK)
- IMPROVEMENTS TO BE CONSTRUCTED DURING STAGE 1 (SEE CONSTRUCTION STAGE 1 DESCRIPTION)
- TEMPORARY TRAFFIC STRIPE
- TEMPORARY RAILING (TYPE K)
- CHANNELIZERS (SURFACE MOUNTED)

SCALE 1" = 100′



2 ADDENDUM #2 - 2024-12-06

STAGE CONSTRUCTION PLANS
STAGE 1
SCALE: 1" = 100′ **SC-1**

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REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 84554
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
42
OF 50 SHEETS

100% SUBMITTAL

PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

LEGEND (THIS SHEET ONLY):

- COORDINATE DRIVEWAY ACCESS WITH OWNER
- IMPROVEMENTS COMPLETED DURING STAGE 1
- IMPROVEMENTS TO BE CONSTRUCTED DURING STAGE 2 (SEE CONSTRUCTION STAGE 2 DESCRIPTION)
- FULL DEPTH HMA - 1.50' HMA (TYPE A)
- TEMPORARY TRAFFIC STRIPE
- TEMPORARY RAILING (TYPE K)
- CHANNELIZERS (SURFACE MOUNTED)

CONSTRUCTION STAGE 2 DESCRIPTION:

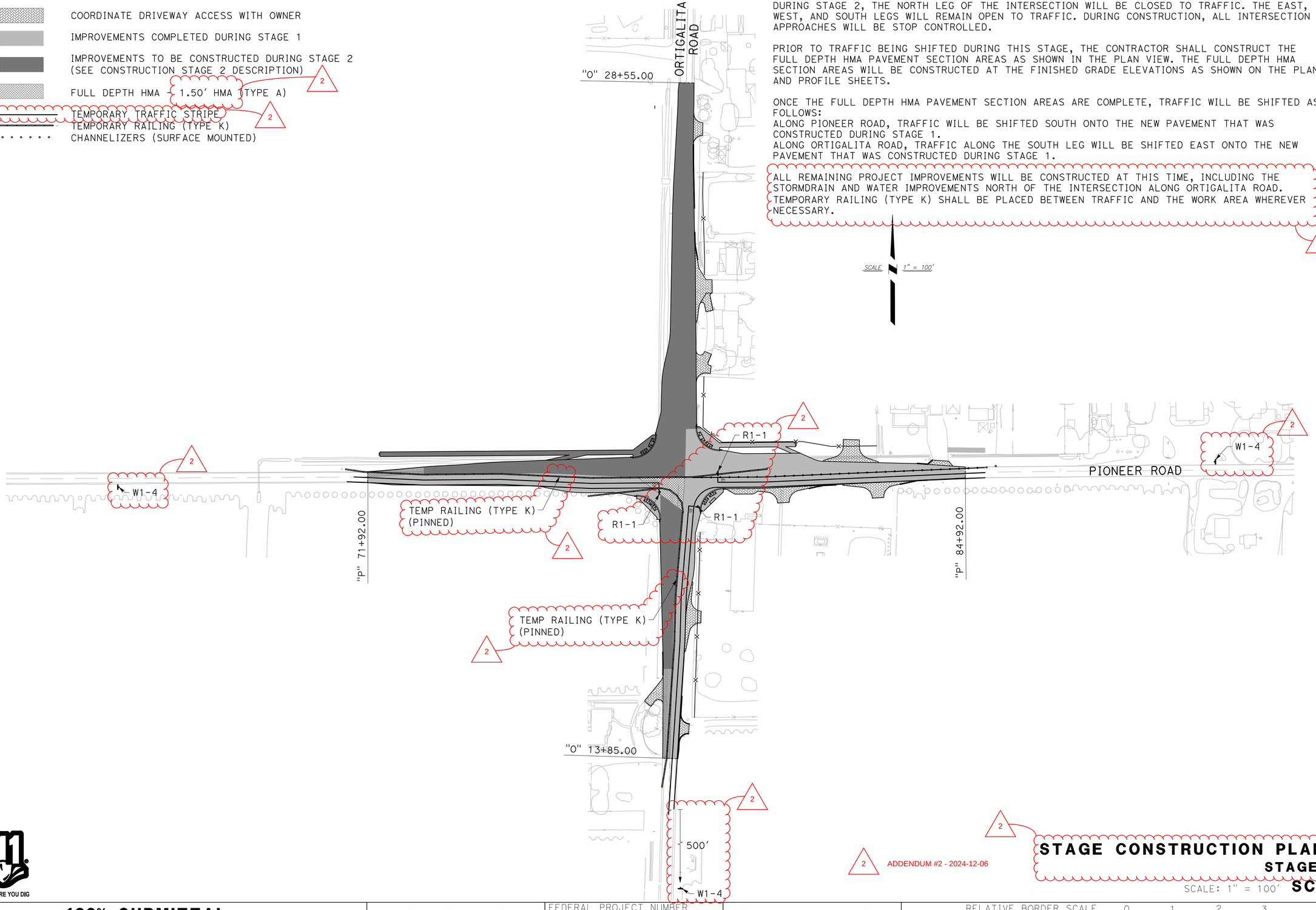
DURING STAGE 2, THE NORTH LEG OF THE INTERSECTION WILL BE CLOSED TO TRAFFIC. THE EAST, WEST, AND SOUTH LEGS WILL REMAIN OPEN TO TRAFFIC. DURING CONSTRUCTION, ALL INTERSECTION APPROACHES WILL BE STOP CONTROLLED.

PRIOR TO TRAFFIC BEING SHIFTED DURING THIS STAGE, THE CONTRACTOR SHALL CONSTRUCT THE FULL DEPTH HMA PAVEMENT SECTION AREAS AS SHOWN IN THE PLAN VIEW. THE FULL DEPTH HMA SECTION AREAS WILL BE CONSTRUCTED AT THE FINISHED GRADE ELEVATIONS AS SHOWN ON THE PLAN AND PROFILE SHEETS.

ONCE THE FULL DEPTH HMA PAVEMENT SECTION AREAS ARE COMPLETE, TRAFFIC WILL BE SHIFTED AS FOLLOWS:
ALONG PIONEER ROAD, TRAFFIC WILL BE SHIFTED SOUTH ONTO THE NEW PAVEMENT THAT WAS CONSTRUCTED DURING STAGE 1.
ALONG ORTIGALITA ROAD, TRAFFIC ALONG THE SOUTH LEG WILL BE SHIFTED EAST ONTO THE NEW PAVEMENT THAT WAS CONSTRUCTED DURING STAGE 1.

ALL REMAINING PROJECT IMPROVEMENTS WILL BE CONSTRUCTED AT THIS TIME, INCLUDING THE STORMDRAIN AND WATER IMPROVEMENTS NORTH OF THE INTERSECTION ALONG ORTIGALITA ROAD. TEMPORARY RAILING (TYPE K) SHALL BE PLACED BETWEEN TRAFFIC AND THE WORK AREA WHEREVER NECESSARY.

SCALE 1" = 100'



2 ADDENDUM #2 - 2024-12-06

2 STAGE CONSTRUCTION PLANS
STAGE 2
SCALE: 1" = 100'
SC-2

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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
43
OF 50 SHEETS

100% SUBMITTAL

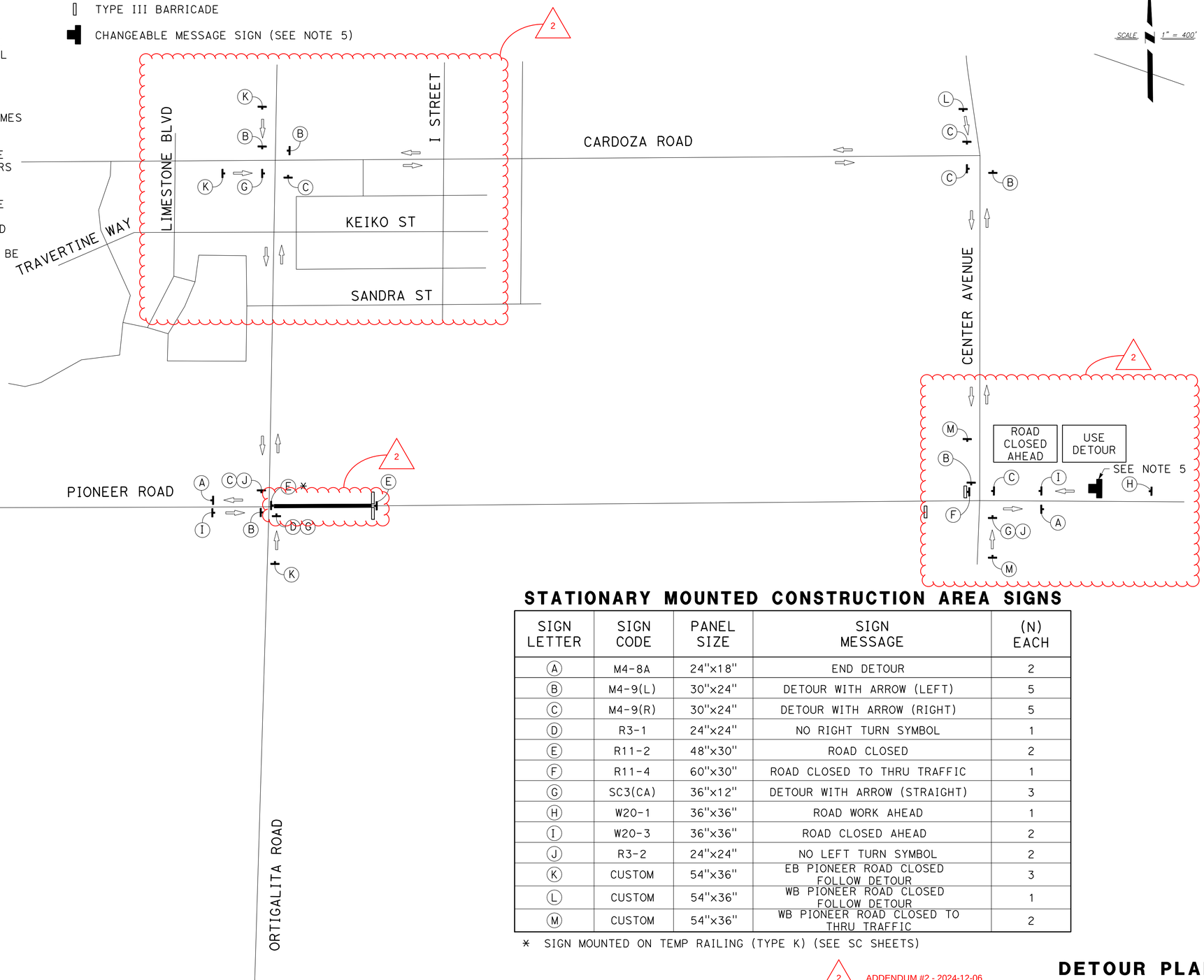
PROJECT NUMBER: 23ST0013
FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/05/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

NOTES (DE-1 AND DE-2):

1. LOCATIONS OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. ALL TRAFFIC CONTROL SHALL CONFORM WITH THE MOST RECENT CALTRANS STANDARD PLANS AND THE CALIFORNIA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. CONTRACTOR TO PROVIDE REASONABLE MEANS FOR PROPERTY OWNERS THAT ARE ADJACENT TO CONSTRUCTION, TO ACCESS PROPERTIES AT ALL TIMES UNLESS COORDINATED WITH OTHERWISE.
4. CONTRACTOR TO COORDINATE 24 HOURS IN ADVANCE OF ANY DRIVEWAY CLOSURES WITH PROPERTY OWNERS BEFORE REMOVING ACCESS.
5. DURING DETOUR PHASES, THE CHANGEABLE MESSAGE SIGNS SHOWN ON THE CS SHEET SHALL BE RELOCATED/ THE SIGN MESSAGE SHALL BE UPDATED AS SHOWN ON THIS SHEET. WHEN THE DETOUR IS REMOVED, THE CHANGEABLE MESSAGE SIGNS SHALL BE RETURNED TO THEIR ORIGINAL LOCATION/ SIGN MESSAGES AS SHOWN ON THE CS SHEET.

LEGEND (DE-1 AND DE-2):

- CONSTRUCTION AREA SIGN
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN (SEE NOTE 5)



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	PANEL SIZE	SIGN MESSAGE	(N) EACH
(A)	M4-8A	24"x18"	END DETOUR	2
(B)	M4-9(L)	30"x24"	DETOUR WITH ARROW (LEFT)	5
(C)	M4-9(R)	30"x24"	DETOUR WITH ARROW (RIGHT)	5
(D)	R3-1	24"x24"	NO RIGHT TURN SYMBOL	1
(E)	R11-2	48"x30"	ROAD CLOSED	2
(F)	R11-4	60"x30"	ROAD CLOSED TO THRU TRAFFIC	1
(G)	SC3(CA)	36"x12"	DETOUR WITH ARROW (STRAIGHT)	3
(H)	W20-1	36"x36"	ROAD WORK AHEAD	1
(I)	W20-3	36"x36"	ROAD CLOSED AHEAD	2
(J)	R3-2	24"x24"	NO LEFT TURN SYMBOL	2
(K)	CUSTOM	54"x36"	EB PIONEER ROAD CLOSED FOLLOW DETOUR	3
(L)	CUSTOM	54"x36"	WB PIONEER ROAD CLOSED FOLLOW DETOUR	1
(M)	CUSTOM	54"x36"	WB PIONEER ROAD CLOSED TO THRU TRAFFIC	2

* SIGN MOUNTED ON TEMP RAILING (TYPE K) (SEE SC SHEETS)

2 ADDENDUM #2 - 2024-12-06

DETOUR PLAN DE-1

SCALE: 1" = 400'

REVISED BY | DATE REVISED

CALCULATED- | DESIGNED BY | CHECKED BY

Dec 04, 2024 - 4:18pm
J:\Los Banos - FN-20102 Pioneer Rd Widening - Phase 2\CAD0_2018\Sheets\ORTIGALITA\PR_DR_DE-1-2.dwg

CALL BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER
EDGAR A. NORIEGA
No. 91458
Exp. 6/30/25
CIVIL
STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

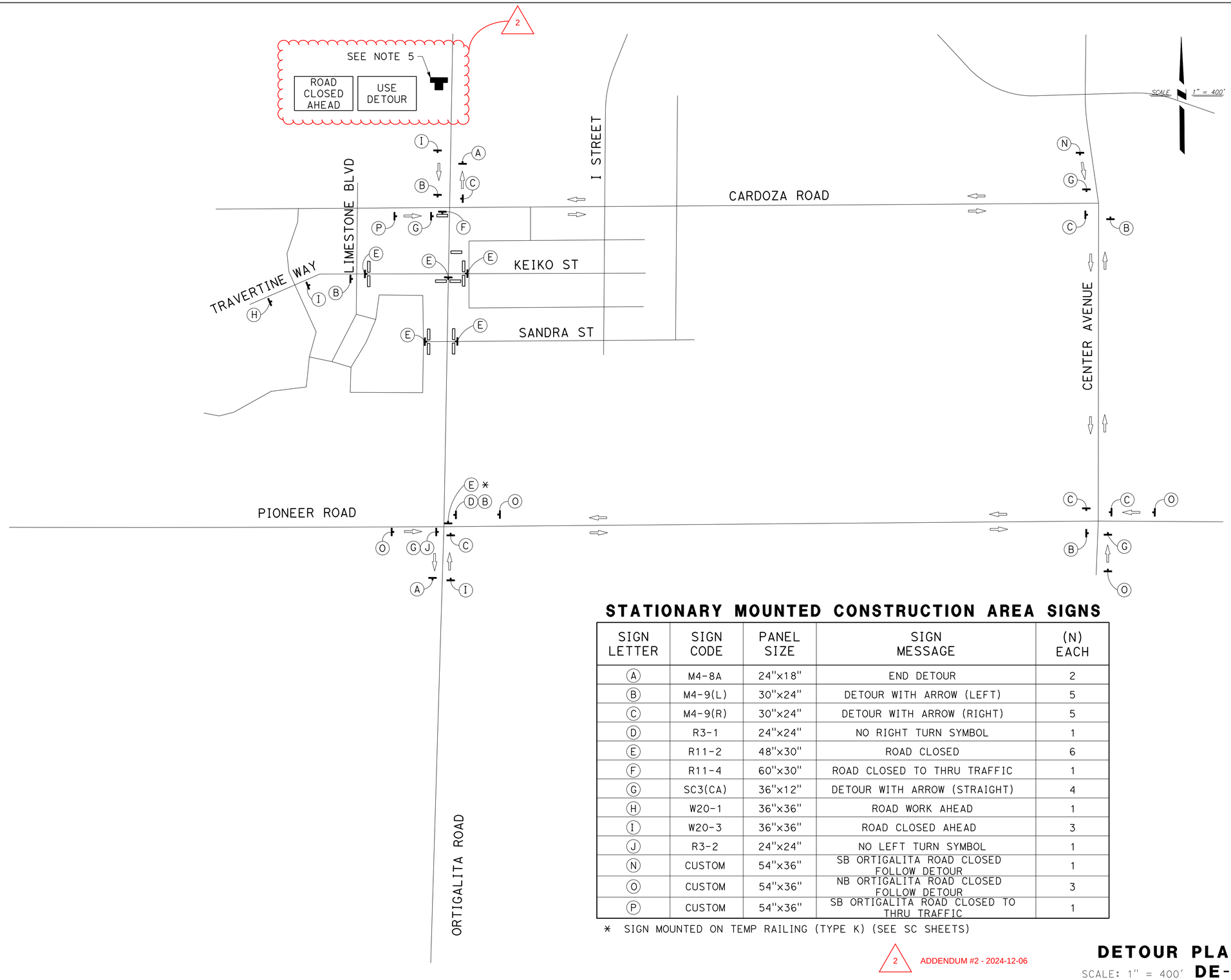
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER 44 OF 50 SHEETS

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PROJECT NUMBER: 23ST0013 | FEDERAL PROJECT NUMBER CML-5160(031) | DATE: 12/04/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	PANEL SIZE	SIGN MESSAGE	(N) EACH
(A)	M4-8A	24"x18"	END DETOUR	2
(B)	M4-9(L)	30"x24"	DETOUR WITH ARROW (LEFT)	5
(C)	M4-9(R)	30"x24"	DETOUR WITH ARROW (RIGHT)	5
(D)	R3-1	24"x24"	NO RIGHT TURN SYMBOL	1
(E)	R11-2	48"x30"	ROAD CLOSED	6
(F)	R11-4	60"x30"	ROAD CLOSED TO THRU TRAFFIC	1
(G)	SC3(CA)	36"x12"	DETOUR WITH ARROW (STRAIGHT)	4
(H)	W20-1	36"x36"	ROAD WORK AHEAD	1
(I)	W20-3	36"x36"	ROAD CLOSED AHEAD	3
(J)	R3-2	24"x24"	NO LEFT TURN SYMBOL	1
(N)	CUSTOM	54"x36"	SB ORTIGALITA ROAD CLOSED FOLLOW DETOUR	1
(O)	CUSTOM	54"x36"	NB ORTIGALITA ROAD CLOSED FOLLOW DETOUR	3
(P)	CUSTOM	54"x36"	SB ORTIGALITA ROAD CLOSED TO THRU TRAFFIC	1

* SIGN MOUNTED ON TEMP RAILING (TYPE K) (SEE SC SHEETS)

2 ADDENDUM #2 - 2024-12-06

DETOUR PLAN

SCALE: 1" = 400' **DE-2**

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IMPROVEMENT PLANS FOR:
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LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
45
OF 50 SHEETS

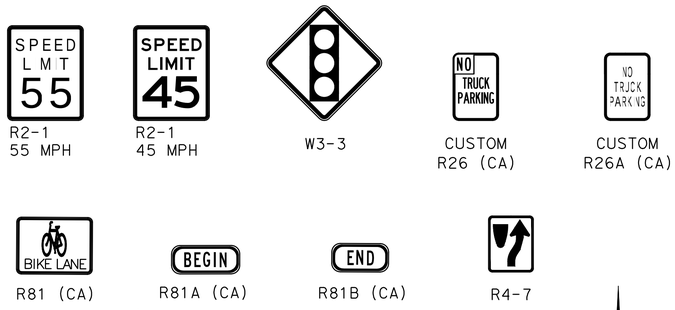
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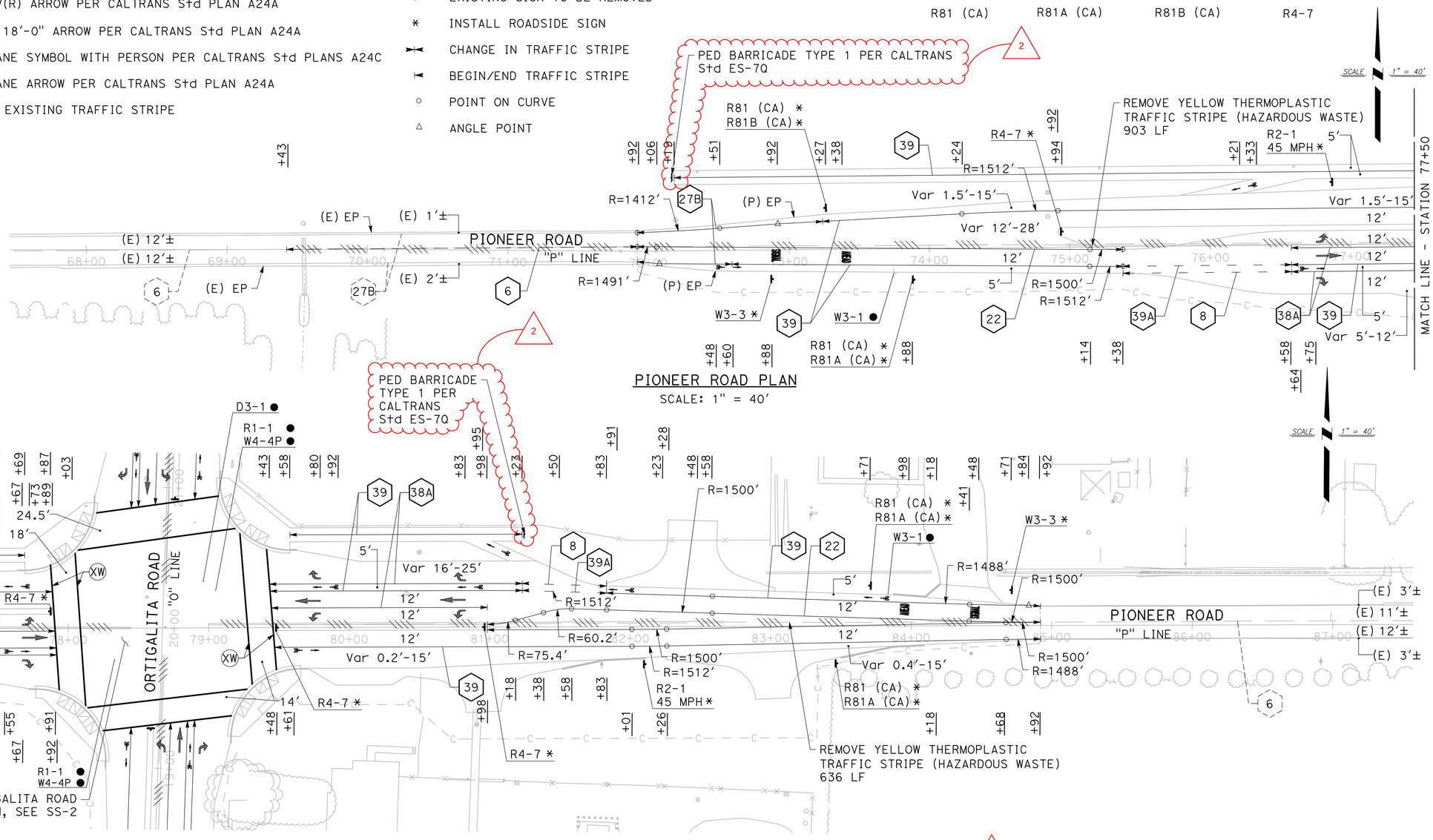
PROJECT NUMBER: 23ST0013
FEDERAL PROJECT NUMBER CML-5160(031)
DATE: 12/04/2024
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

LEGEND:

- (#) EXISTING DETAIL NUMBER PER CALTRANS Std PLANS
- (#) PROPOSED DETAIL NUMBER PER CALTRANS Std PLANS
- AHEAD "AHEAD" MARKING PER CALTANS Std PLAN A24D
- SIGNAL "SIGNAL" MARKING PER CALTRANS Std PLAN A24D
- TYPE VII(R) ARROW PER CALTRANS Std PLAN A24A
- TYPE IV(L) ARROW PER CALTRANS Std PLAN A24A
- TYPE IV(R) ARROW PER CALTRANS Std PLAN A24A
- TYPE I 18'-0" ARROW PER CALTRANS Std PLAN A24A
- BIKE LANE SYMBOL WITH PERSON PER CALTRANS Std PLANS A24C
- BIKE LANE ARROW PER CALTRANS Std PLAN A24A
- REMOVE EXISTING TRAFFIC STRIPE
- (XW) CROSSWALK-MARKINGS PER CALTRANS Std PLAN A24F
- (LL) LIMIT LINES PER CALTRANS Std PLAN A24G
- PEDESTRIAN BARRICADE TYPE 1 PER CALTRANS Std ES-7Q
- EXISTING SINGLE POST ROADSIDE SIGN
- PROPOSED SINGLE POST ROADSIDE SIGN
- EXISTING SIGN TO BE RELOCATED
- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- INSTALL ROADSIDE SIGN
- CHANGE IN TRAFFIC STRIPE
- BEGIN/END TRAFFIC STRIPE
- POINT ON CURVE
- ANGLE POINT

SIGN LEGEND:





PIONEER ROAD PLAN
SCALE: 1" = 40'

PIONEER ROAD PLAN
SCALE: 1" = 40'

2 ADDENDUM #2 - 2024-12-06

SIGNAGE AND STRIPING

SCALE: 1" = 40' **SS-1**

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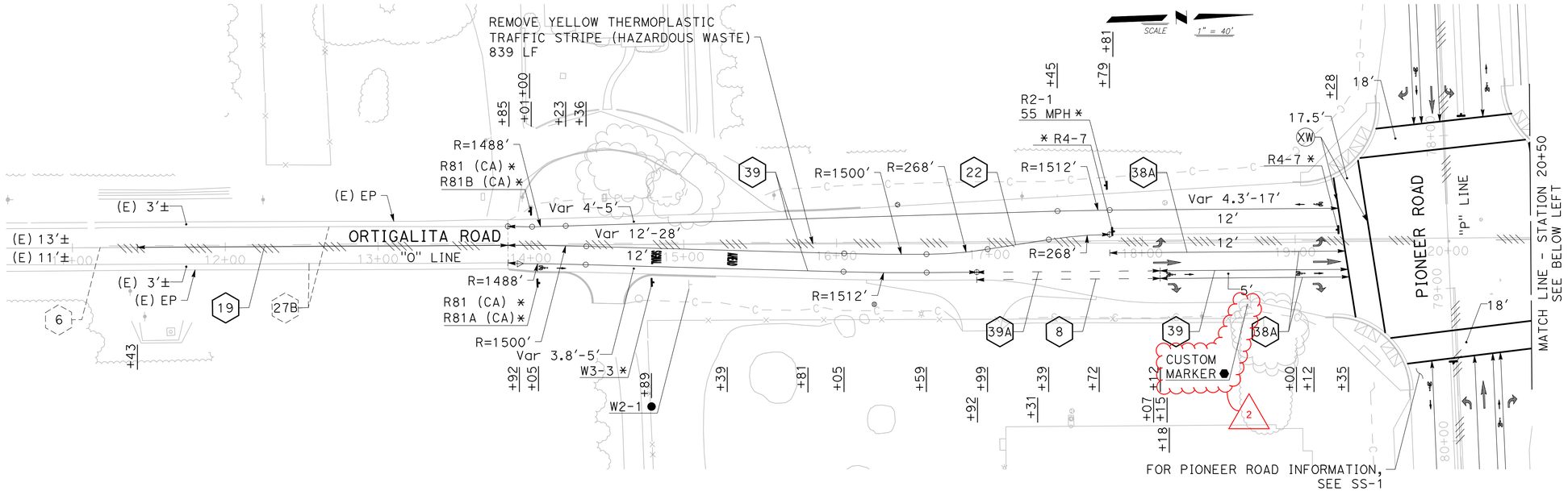
IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

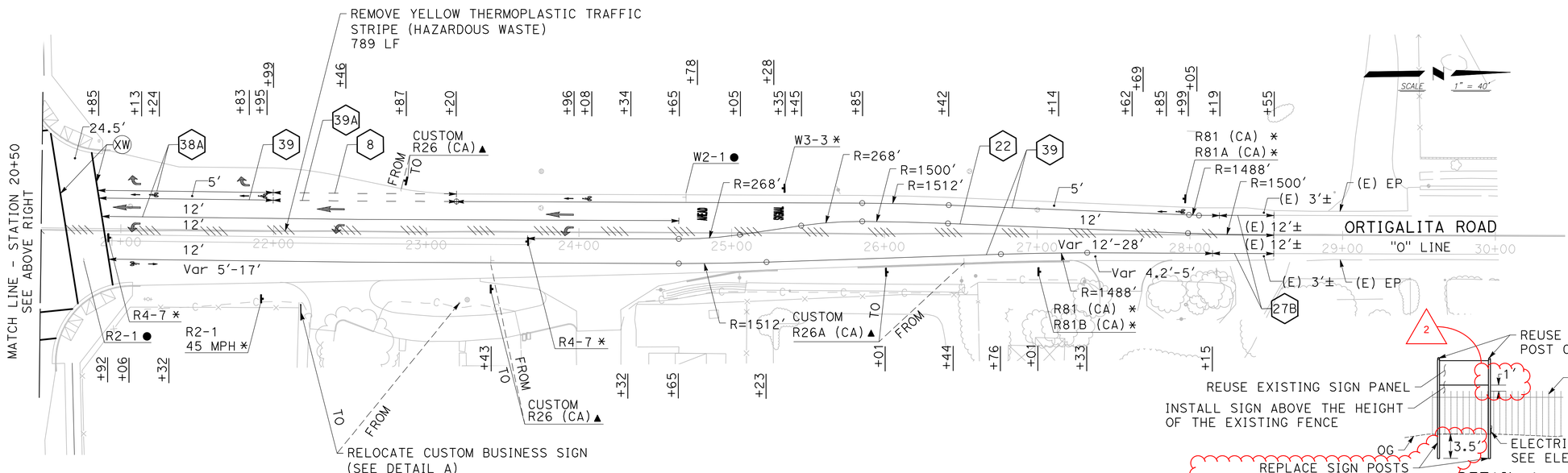
SHEET NUMBER
46
OF 50 SHEETS

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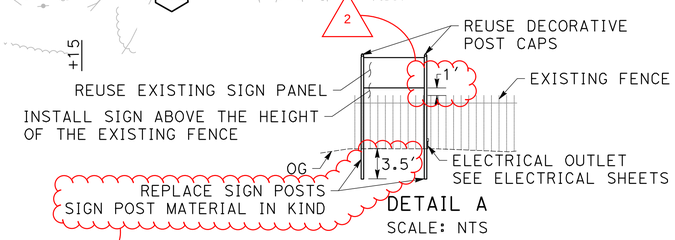
PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/04/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'



ORTIGALITA ROAD PLAN
SCALE: 1" = 40'



2 ADDENDUM #2 - 2024-12-06

SIGNAGE AND STRIPING
SCALE: 1" = 40' **SS-2**

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PROJECT NUMBER: 23ST0013	FEDERAL PROJECT NUMBER CML-5160(031)	DATE: 12/06/2024	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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Dec 06, 2024 - 10:32am
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LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
47
OF 50 SHEETS

PROJECT NOTES (THIS SHEET ONLY):

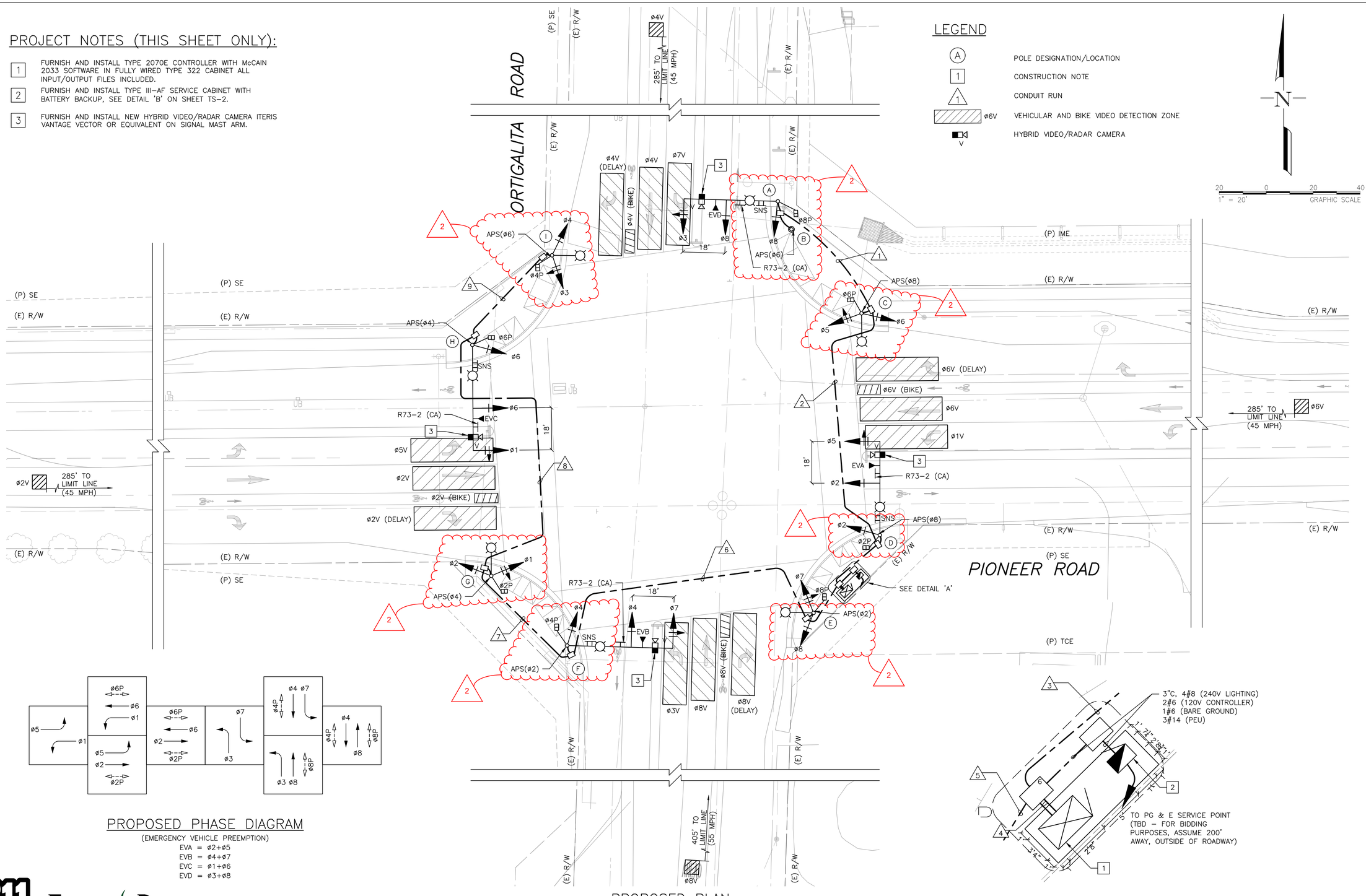
1. FURNISH AND INSTALL TYPE 2070E CONTROLLER WITH McCAIN 2033 SOFTWARE IN FULLY WIRED TYPE 322 CABINET ALL INPUT/OUTPUT FILES INCLUDED.
2. FURNISH AND INSTALL TYPE III–AF SERVICE CABINET WITH BATTERY BACKUP, SEE DETAIL 'B' ON SHEET TS–2.
3. FURNISH AND INSTALL NEW HYBRID VIDEO/RADAR CAMERA ITERIS VANTAGE VECTOR OR EQUIVALENT ON SIGNAL MAST ARM.

LEGEND

- (A) POLE DESIGNATION/LOCATION
- [1] CONSTRUCTION NOTE
- 1 CONDUIT RUN
- ø6V VEHICULAR AND BIKE VIDEO DETECTION ZONE
- V HYBRID VIDEO/RADAR CAMERA

N

20 0 20 40
1" = 20' GRAPHIC SCALE



PROPOSED PHASE DIAGRAM

(EMERGENCY VEHICLE PREEMPTION)
EVA = ø2+ø5
EVB = ø4+ø7
EVC = ø1+ø6
EVD = ø3+ø8

PROPOSED PLAN

1"=20'

DETAIL 'A'

N.T.S.

2 ADDENDUM #2 - 2024-12-06

TRAFFIC SIGNAL PLAN
TS-1

SHEET NUMBER 48 OF 50 SHEETS

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IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

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100% SUBMITTAL | PROJECT NUMBER: FN–20102 | PROJECT EA: 10–1M320_ | DATE: 12/02/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Dec 02, 2024 – 1:55pm
C:\Ydocs\Box\~Projects\WC-Projects_WC20\WC20-3693.01_Los_Banos_Pioneer_Road_Ortigalita_Signal\CAD\100.02_Light Submittal\3693-TS_SL.dwg

CONDUCTOR SCHEDULE

AWG OR CABLE	CONDUCTOR DESIGNATION	NUMBER OF CONDUCTORS RUN NUMBERS 1	2	3	4	5	6	7	8	9
NO. 14	ø1				3	3	3	3	3	
	ø2			3	6	3	3	3		
	ø3	3	3	3	6	3	3	3	3	3
	ø4				3	3	3	3	3	3
	ø5		3	3	3					
	ø6		3	3	6	3	3	3	3	
	ø7				3	3	3			
	ø8	3	3	3	6	3				
	ø2P			2	4	2	2	2		
	ø4P				2	2	2	2	2	2
	ø6P		2	2	4	2	2	2	2	
	ø8P	2	2	2	4	2				
	APS (ø2P)				2	2	2			
	APS (ø4P)				2	2	2	2	2	
	APS (ø6P)	2	2	2	4	2	2	2	2	2
	APS (ø8P)		2	2	2					
	APS COMMON	1	1	1	2	1	1	1	1	1
	PHOTOELECTRIC UNIT (120 V)					3				
	SPARES									
	TOTAL NO. 14	11	21	26	62	39	31	26	21	11
NO. 8	LUMINAIRES (240 V)	2	2	2		2	2	2	2	2
	SIGNAL COMMON	1	1	1	2	1	1	1	1	1
	TOTAL NO. 8	3	3	3	2	3	3	3	3	3
NO. 6	SIGNAL (120V)				2					
VIDEO DETECTION COAX CABLE	ø3+ø8 (NB)	1	1	1	1					
	ø2+ø5 (EB)			1	1					
	ø4+ø7 (SB)				1	1	1			
	ø1+ø6 (WB)				1	1	1	1	1	
	TOTAL DETECTOR CABLES	1	1	2	4	2	2	1	1	
EMERGENCY VEHICLE PREEMPTION CABLE (EVP)	EVA			1	1					
	EVB				1	1	1			
	EVC				1	1	1	1	1	
	EVD	1	1	1	1					
	TOTAL EVP CABLES	1	1	2	4	2	2	1	1	
	CONDUIT SIZE	3	3	3	2–3	3	3	3	3	3
	PERCENT FILL	8%	10%	14%	16%	18%	15%	12%	10%	6%

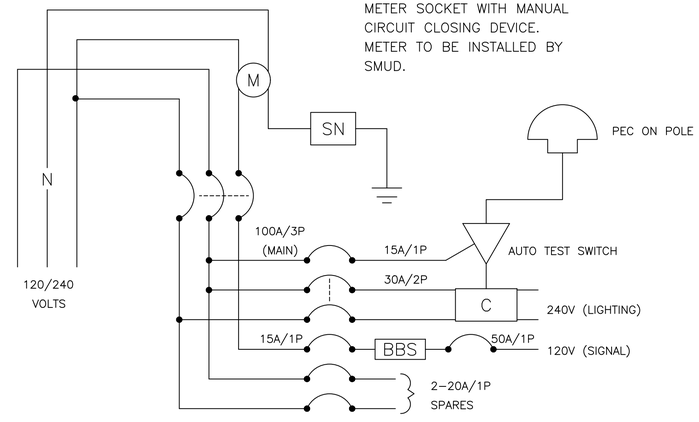
2

POLE AND EQUIPMENT SCHEDULE

	STANDARD TYPE	SIG MA	LUM ARM	VEH SIG MTG MAST	POLE	PED SIGNAL MTG	PPB ø	PPB ARROW	LED LUM WATTAGE	SPECIAL REQUIREMENTS
(A)	26–4–100	40'	12'	MAS MAS	SV–1–T	SP–1–T	–	–	180	INSTALL R73–2 (CA) ON MAST ARM PER CITY STANDARDS.
(B)	TYPE 2 POST	–	–	–	–	–	6	←	180	–
(C)	15TS	–	15'	–	SV–2–TA	SP–1–T	8	→	180	–
(D)	26–4–100	40'	12'	MAS MAS	SV–1–T	SP–1–T	8	←	180	INSTALL R73–2 (CA) ON MAST ARM PER CITY STANDARDS.
(E)	15TS	–	15'	–	SV–2–TA	SP–1–T	2	→	180	–
(F)	26–4–100	45'	12'	MAS MAS	SV–1–T	SP–1–T	2	←	180	INSTALL R73–2 (CA) ON MAST ARM PER CITY STANDARDS.
(G)	15TS	–	15'	–	SV–2–TA	SP–1–T	4	→	180	–
(H)	26–4–100	45'	12'	MAS MAS	SV–1–T	SP–1–T	4	←	180	INSTALL R73–2 (CA) ON MAST ARM PER CITY STANDARDS.
(I)	15TS	–	15'	–	SV–2–TA	SP–1–T	6	→	180	–

NOTES:

ALL EQUIPMENT IS NEW, UNLESS OTHERWISE NOTED.



SERVICE WIRING DIAGRAM

DETAIL B

REVISED BY | DATE REVISED

CALCULATED–
DESIGNED BY
CHECKED BY

Dec 02, 2024 - 1:55pm
C:\Ypbox\Box_Projects\WC-Projects_WC20\WC20-3693.01_Los_Banos_Pioneer_Road_Ortigalita_Signal\CAD\100.02_Light Submittal\3693-TS_SL.dwg

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2 ADDENDUM #2 - 2024-12-06

CONDUCTOR AND POLE SCHEDULE
TS-2

REGISTERED PROFESSIONAL ENGINEER JOSHUA J. ROMANO 83 CIVIL STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827–7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD
INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER
49
OF **50** SHEETS

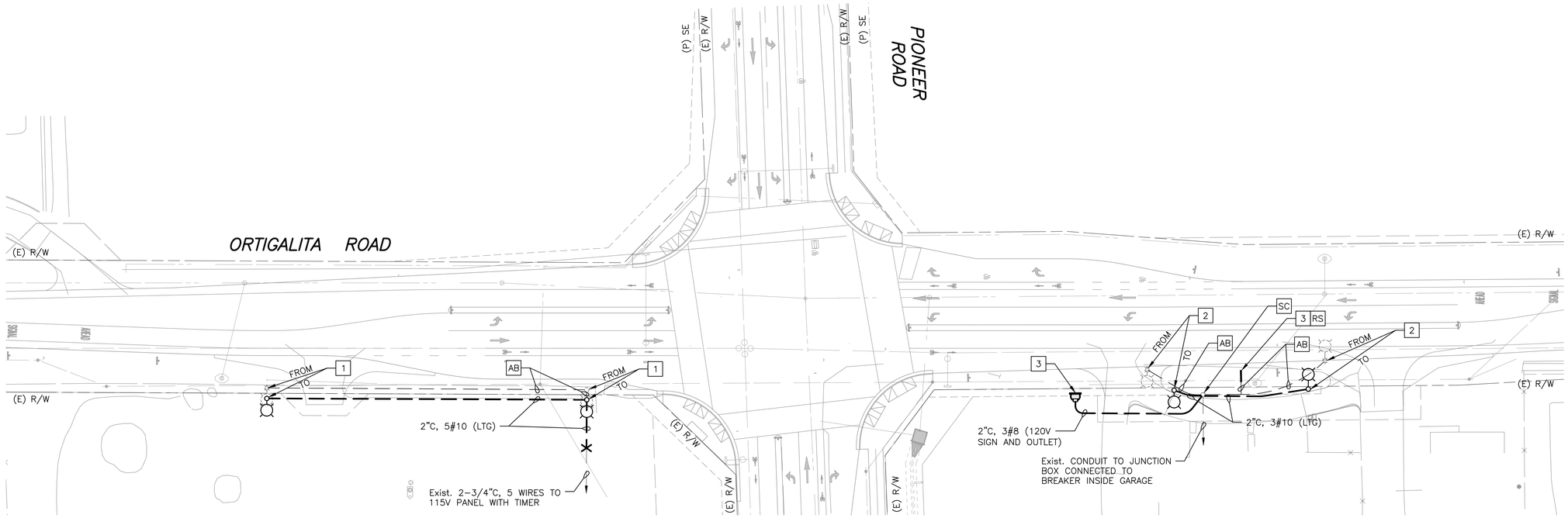
100% SUBMITTAL | PROJECT NUMBER: FN–20102 | PROJECT EA: 10–1M320_ | DATE: 12/02/2024 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

PROJECT NOTES (THIS SHEET ONLY):

1. RELOCATE EXISTING LIGHT POLES SUCH THAT NEW FOUNDATION IS MINIMUM 2' BEHIND NEW PROPOSED FENCE LINE AS INDICATED. FOR BIDDING PURPOSES, ASSUME TYPE 15 STANDARD POLE FOUNDATION. COORDINATE WITH MERCED COUNTY'S DAVID ENGBRECHT (SOUTHEAST PARCEL OWNER) AT (209) 628-5876 OR DAVID.ENGBRECHT2@COUNTYOFMERCED.COM. REMOVE EXISTING FOUNDATION IN ITS ENTIRETY.

2. RELOCATE EXISTING LIGHT POLES BEHIND NEW PROPOSED RIGHT OF WAY AS INDICATED. FOR BIDDING PURPOSES, ASSUME TYPE 15 STANDARD POLE FOUNDATION. COORDINATE WITH GF TRUST'S GIL (NORTHEAST PARCEL OWNER) AT (209) 587-3200 OR THEGFTRUST@GMAIL.COM. REMOVE EXISTING FOUNDATION IN ITS ENTIRETY.

3. TITAN TOWING BUSINESS SIGN SHALL BE RELOCATED AS SHOWN ON THE SIGNAGE AND STRIPING SHEETS. INSTALL NEW 120V SINGLE OUTDOOR-RATED ELECTRICAL OUTLET ON THE RELOCATED TITAN TOWING BUSINESS SIGN. COORDINATE WITH GF TRUST'S GIL (NORTHEAST PARCEL OWNER) AT (209) 587-3200 OR THEGFTRUST@GMAIL.COM FOR EXACT LOCATION.



PROPOSED PLAN
1"=40'

40 0 40 80
1" = 40'
GRAPHIC SCALE

REGISTERED PROFESSIONAL ENGINEER JOSHUA J. ROMANO 93 CIVIL STATE OF CALIFORNIA

CITY OF LOS BANOS
DEPARTMENT OF PUBLIC WORKS
411 MADISON AVENUE
LOS BANOS, CALIFORNIA 93635
(209) 827-7056

IMPROVEMENT PLANS FOR:
ORTIGALITA ROAD AND PIONEER ROAD INTERSECTION PROJECT
LOS BANOS, CALIFORNIA

MARK THOMAS

SHEET NUMBER 50 OF 50 SHEETS

REVISED BY | DATE REVISED

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DESIGNED BY

CHECKED BY

Dec 02, 2024 - 1:55pm
C:\Fpbox\Box\~Projects\WC-~Projects_WC20\WC20-3693.01_Los_Banos_Pioneer_Road_Ortigalita_Signal\CAD\100.02_Light Submittal\3693-TS_SL.dwg

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LIGHTING MODIFICATION PLAN
SL-1

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THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Sacramento
Eureka
Modesto
Pleasanton
Santa Rosa
Seattle
Ukiah

December 5, 2024
Crawford File No. 22-852.1

Brooke Poore
Mark Thomas
7571 North Remington Avenue, Suite 102
Fresno, CA 93711

Subject: **Geotechnical Data and Pavement Recommendations Memorandum**
Pioneer Road at Ortigalita Road Intersection
Pioneer Complete Streets Project
Los Banos, California

Dear Ms. Poore,

Crawford & Associates, Inc (Crawford) presents this Geotechnical Data and Pavement Recommendations Memorandum (Memo) for the Pioneer Road and Ortigalita Road intersection located in Los Banos, California. Crawford performed geotechnical engineering services in accordance with our September 14, 2022 agreement with GPA Consulting for the Pioneer Complete Streets Project.

We understand that the Pioneer Road and Ortigalita Road Intersection improvements will be completed prior to the overall Pioneer Complete Streets Project. That project is in-process and is the subject of our Draft Geotechnical Design and Materials Report dated October 2, 2023. Refer to that report for information not related herein.

Based on conversations with you, we prepared this memo to provide a brief summary of our fieldwork and laboratory testing that was performed near the Pioneer Road and Ortigalita Road intersection and pavement recommendations.

PROJECT LOCATION AND DESCRIPTION

The overall Pioneer Complete Streets alignment is located in the City of Los Banos, California, comprising about 5.8 miles of new and existing roadway. The vicinity map and alignment of the overall Pioneer Complete Streets project is shown on Figure 1.

We understand the Pioneer Road at Ortigalita Intersection is located within the overall Pioneer Complete Streets alignment and the general improvements include reconstructing the intersection with new pavement sections, minor earthwork grading of less than 3 feet, and installing new curb and gutter.

SUBSURFACE CONDITIONS

SUBSURFACE EXPLORATION

Crawford retained Geo-Ex Subsurface Exploration (Geo-Ex) to drill and sample test borings along the overall Pioneer Complete Streets alignment. Test borings A-22-003 and A-22-004 were drilled near the Pioneer Road and Ortigalita Intersection. Two additional test borings, A-22-002 and A-22-005, were drilled about 2,000 feet west and 3,700 feet east of the intersection, respectively. These four borings were drilled on November 7 and 8, 2024.

Refer to the Draft Geotechnical Design and Materials Report (October 2023) for additional information related to the remaining borings and the sampling and drilling procedures.

SUBGRADE SOILS

In general, the materials encountered in the borings A-22-002 through A-22-005 are comprised predominately of interbedded layers of clayey sand, lean clay, sandy lean clay, poorly graded sand with silt. The boring logs are presented in Appendix A.

LABORATORY TESTS

The following laboratory tests were completed on representative soil samples obtained from the exploratory borings A-22-002, A-22-003, A-22-004, and A-22-005:

- Atterberg Limits (ASTM D4318)
- Moisture Content/Unit Weight (ASTM D2216/D7263)
- Particle Size Analysis (ASTM D6913)
- R-Value (CTM 301)
- Unconfined Compression-Soil (ASTM D2166)

We present the laboratory test results in Appendix B.

PAVEMENT RECOMMENDATIONS

We completed one R-value test (CTM 301) on a bulk sample from boring A-22-004 that resulted in an R-value of 36. Based on the result and soil conditions on site, we used a design R-Value of 20 in our Draft Geotechnical Design and Materials Report (October 2023).

Using a design R-value of 20 and Chapter 600 of the Caltrans Highway Design Manual, 6th Edition, we calculated the HMA pavement sections presented in Table 1 for Traffic Index (TI) values ranging between 8 and 12.

Table 1: New Pavement Sections – Pioneer and Ortigalita Intersection

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.15
9	0.45	1.35
10	0.50	1.55
11	0.55	1.70
12	0.60	1.90

CONSIDERATIONS

The upper 0.15 to 0.2 ft of HMA may be replaced with rubberized hot mix asphalt (RHMA-G). The asphalt pavement thicknesses shown above are minimum depths and incorporate a 0.2-ft Gravel Equivalent factor of safety in accordance with Caltrans flexible pavement design methods. Other flexible pavement structural sections -- typically involving variations in AB thicknesses -- which satisfy basement soil requirements are available and can be provided, if desired.

If/where import material is required beneath roadway segments, the R-value of the import material should be equal to or greater to what is presented in Tables 1 above or additional R-value testing and pavement section calculations will need to be performed after a new R-value is determined.

Process subgrade soils and place pavement sections in accordance with Caltrans Standard Specifications. Design by the Caltrans method presumes materials and construction in accordance with Caltrans “Standard Specifications”, including 95% relative compaction on all materials within 30-inches of finished grade. Inability to achieve the required compaction on the scarified materials may be used as a field criterion to identify areas requiring additional removal and/or re-compaction.

The subgrade soils should be field reviewed with respect to uniformity and suitability by the soils engineer. Any loose, disturbed or otherwise unsuitable materials should be removed to full depth and replaced and compacted with engineered fill.

The above pavement design assumes that free water will be absent from the structural section. Suitable surface drainage is of particular importance to limit subgrade saturation and excess free water. Surface flow should be directed away from the roadbed to help avoid ponding with 30-inches of finished grade.

RISK MANAGEMENT

Our experience, and that of our profession, clearly indicates the risks of costly design, construction, and maintenance problems can be significantly lowered by retaining the Geotechnical Engineer of Record to provide additional services during design and construction. For this project, Crawford should be retained as the Geotechnical Engineer of Record to:

- Review and provide comments on the civil plans and specifications prior to 95% plan set submittal.
- Monitor construction to check and document our report assumptions. At a minimum, Crawford should observe subgrade preparation prior to placing fill.
- Update this report if design changes occur, 2 years or more lapse between this report and construction, and/or site conditions have changed.

If we are not retained to perform the above applicable services, we are not responsible for any other party's interpretation of our report, and subsequent addendums, letters, and discussions.

LIMITATIONS

Crawford performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. Do not use this memo for different locations and/or projects without the written consent of Crawford. We do not warranty our services.

Crawford based this memo on the current site conditions. We assume the soil and groundwater conditions interpreted/encountered in our borings are representative of the subsurface conditions on the site. Actual conditions between explorations can be different.

Modern design and construction are complex, with many regulatory sources/restrictions, involved parties, and construction alternatives. It is common to experience changes and delays. The owner should set aside a reasonable contingency fund based on complexities and cost estimates to cover changes and delays.

The interface shown between soil materials on the interpreted boring logs is approximate. The transition between materials may be abrupt or gradual. We base our recommendations on the final logs, which represent our interpretation of the field logs and general knowledge of the site and geological conditions.

CLOSING

Thank you for the opportunity to be part of your design team. Please contact us if you have questions or require additional information.

Sincerely,

Crawford & Associates, Inc.

Johnathan Wright, PE, GE
Project Manager



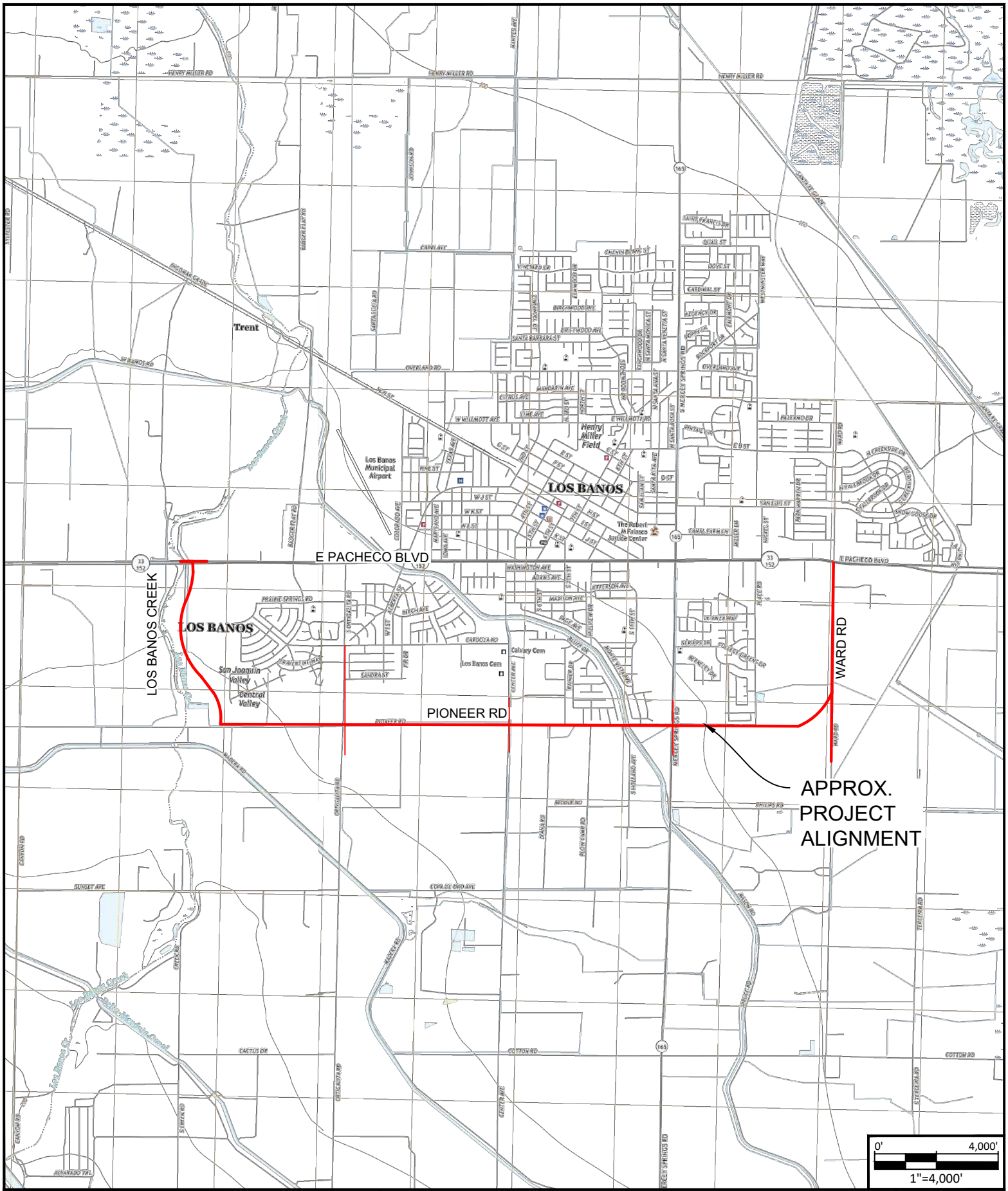
Reviewed by,

W. Eric Nichols, PE, CEG
Principal

Attachments:
Figure 1 – Vicinity Map
Figure 2 – Exploration Map
Figure 3 – Exploration Map
Appendix A – Boring Logs
Appendix B – Laboratory Testing

FIGURES

Figure 1: Vicinity Map
Figure 2: Exploration Map
Figure 3: Exploration Map



NORTH

Source:
USGS 7.5' Topographic Maps, Volta, Merced County, California, 2021, Scale: 1:24,000

USGS 7.5' Topographic Maps, Los Banos, Merced County, California, 2021, Scale: 1:24,000

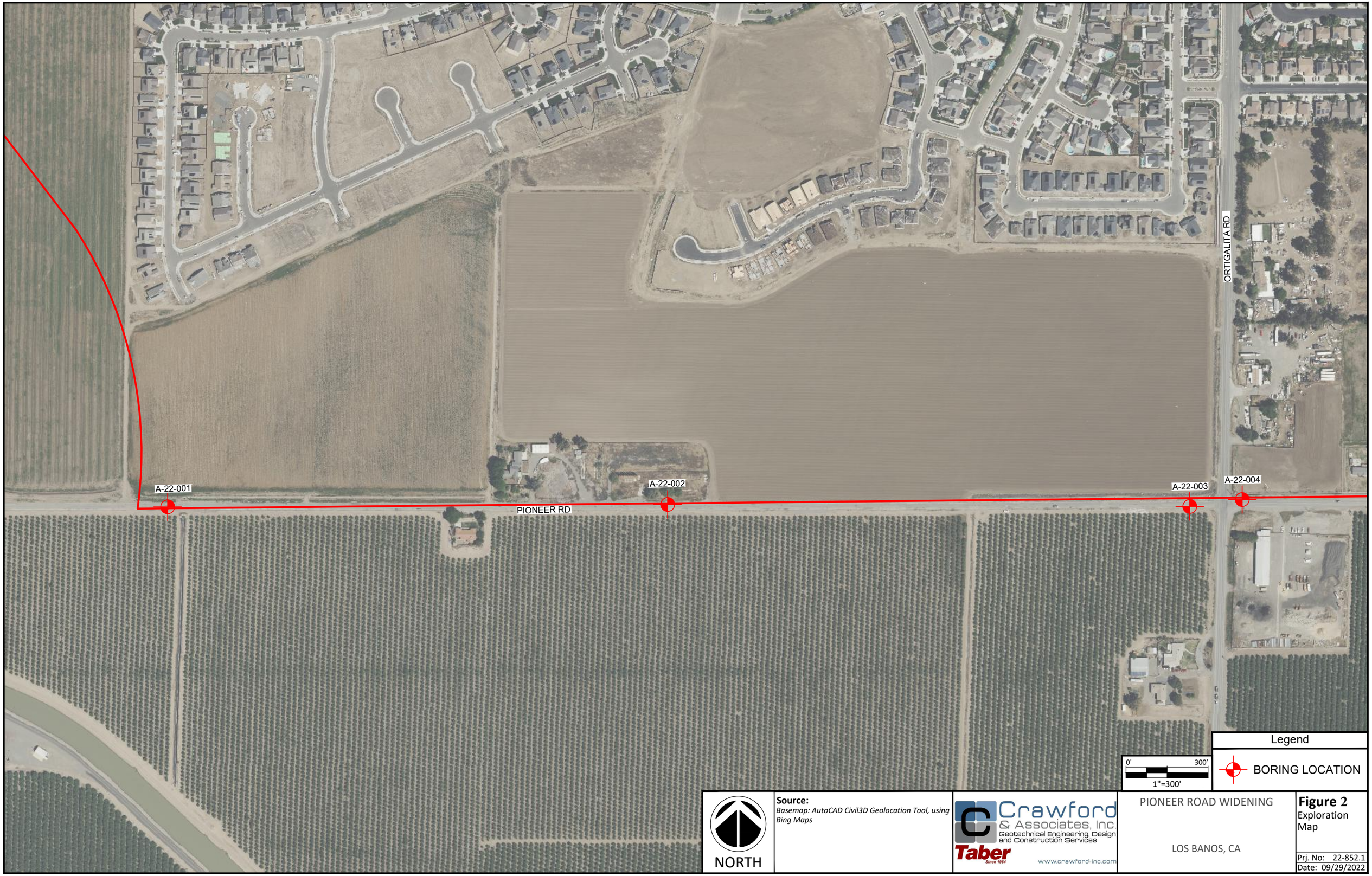
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PIONEER COMPLETE STREETS PROJECT

LOS BANOS, CA

Figure 1
Vicinity Map

Prj. No: 22-852.1
Date: 09/29/2022



Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

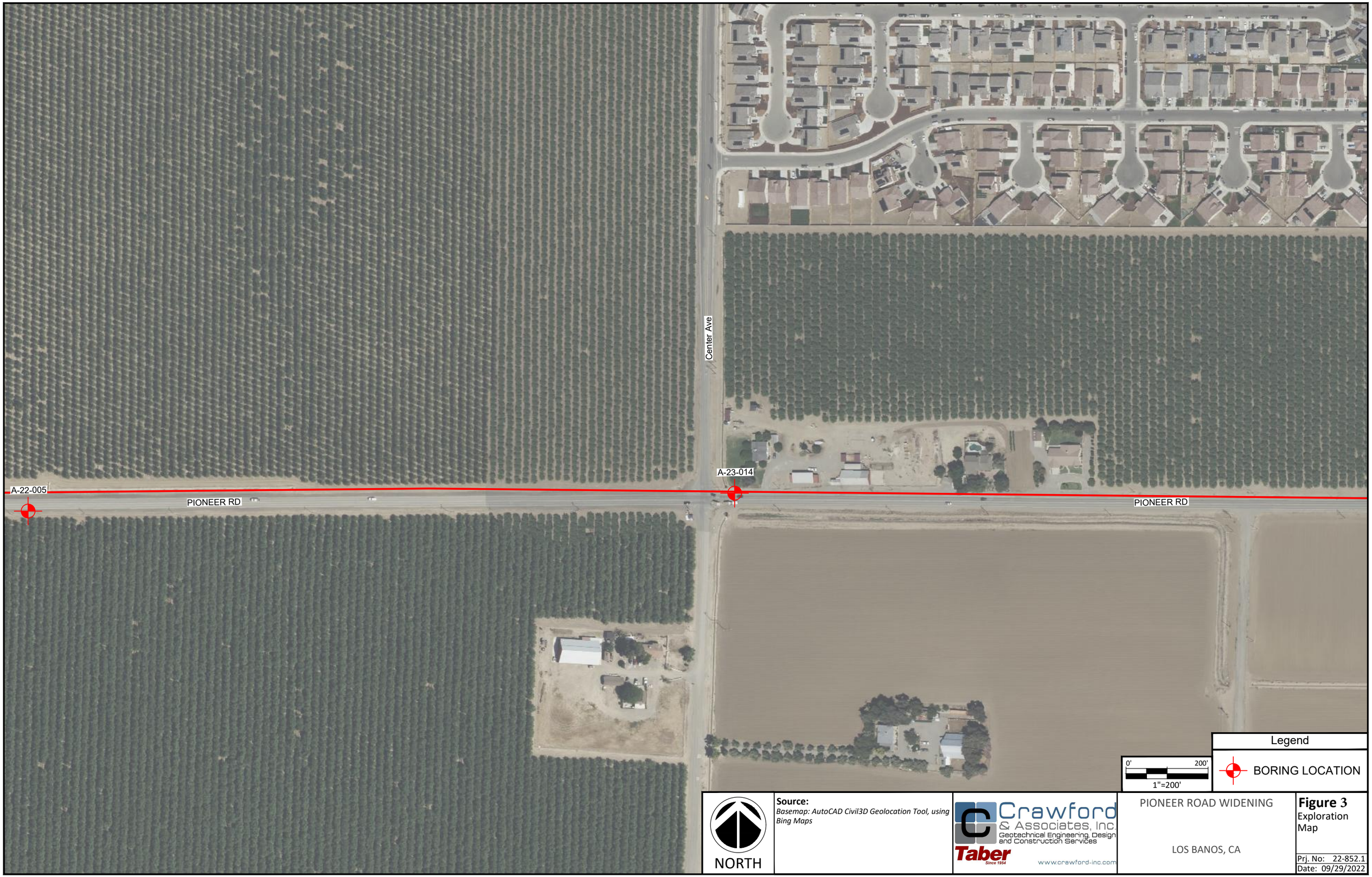
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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 2
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 3
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022

APPENDIX A

Subsurface Exploration Summary
Boring Log Legend
Boring Logs

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTS

C	Consolidation
CL	Collapse Potential
CP	Compaction Curve
CR	Corrosion, Sulfates, Chlorides
CU	Consolidated Undrained Triaxial
DR	Drained Residual Shear Strength
DS	Direct Shear
EI	Expansion Index
M	Moisture Content
OC	Organic Content
P	Permeability
PA	Particle Size Analysis
PI	Liquid Limit, Plastic Limit, Plasticity Index
PL	Point Load Index
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value
SE	Sand Equivalent
SG	Specific Gravity
SW	Swell Potential
TV	Pocket Torvane
UC	Unconfined Compression - Soil
	Unconfined Compression - Rock
UU	Unconsolidated Undrained Triaxial
UW	Unit Weight

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler (ID 2.0 in.)
- Modified California Sampler (ID 2.5 in.)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010) with Errata Sheet (2015).

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Boring Record Legend

Soil Legend

CONSISTENCY OF COHESIVE SOILS				
Descriptor	**Unconfined Compressive Strength (tsf)**	**Pocket Penetrometer (tsf)**	**Torvane (tsf)**	**Field Approximation**
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	0.50 - 1.0	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	1.0 - 2.0	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS	
Descriptor	**SPT N_{60} (blows / 12 inches)**
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

MOISTURE	
Descriptor	**Criteria**
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Descriptor	**Criteria**
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE		
Descriptor		**Size**
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS	
Descriptor	**Criteria**
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION	
Descriptor	**Criteria**
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

LOG OF BORING A-22-002

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 7.0 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 137.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), Bulk, MCAL (2.4" ID)
BOREHOLE DIAMETER: 4.0 in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
136	1		Bulk						SANDY lean CLAY (CL); brown; dry to moist; 61% medium plasticity fines; 28% fine to coarse SAND; 11% fine to coarse GRAVEL.	100								Driller notes easy drilling from 0-5'
135	2																	
134	3		1	7 6 6	12	4.00				67				14.2	95.9	61		
133	4		2	3 3 3	6				loose	56								
132	5																	
131	6		3	3 3 3	6					39								
130	7								Bottom of borehole at 7.0 ft bgs									
129	8																	
128	9																	
127	10																	
126	11																	
125	12																	
124	13																	
123	14																	
122	15																	
121	16																	
120	17																	
119	18																	
118	19																	
117	20																	

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4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-002
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-003

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 131.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: MCAL (2.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
130	1		Bulk						CLAYEY SAND (SC); medium dense; brown; dry to moist; mostly fine to medium SAND; little medium plasticity fines; trace fine to coarse GRAVEL.	100								Driller notes hard drilling from 0-2.5'
129	2																	
128	3		1	7 10 11	21				some medium plasticity fines	72								Driller notes soft drilling from 2.5-5.0'
127	4																	
126	5		2	3 7 8	15	4.00				72								
125	6								Lean CLAY with SAND (CL); hard; brown; moist; mostly medium plasticity fines; little fine SAND.									
124	7								Bottom of borehole at 6.5 ft bgs									
123	8																	
122	9																	
121	10																	
120	11																	
119	12																	
118	13																	
117	14																	
116	15																	
115	16																	
114	17																	
113	18																	
112	19																	
111	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-003
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-004

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 11.5 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 131.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: Bulk, MCAL (2.4" ID), SPT (1.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
130	1		Bulk						CLAYEY SAND with GRAVEL (SC); medium dense; brown; dry to moist; mostly fine to medium SAND; little fine to coarse GRAVEL; little medium plasticity fines.	100								R-Value = 36
129	2																	
128	3		1	4 4 4	8					67		14	28					
127	4								Lean CLAY (CL); dark brown; moist; mostly medium plasticity fines; few fine SAND; trace coarse GRAVEL.									
126	5		2	5 6 8	14	3.00			CLAYEY SAND (SC); loose; brown; dry to moist; mostly medium to fine SAND; some medium plasticity fines.	78				10.7	109.2			Driller notes soft drilling at 6'
125	6								Lean CLAY (CL); very stiff; dark brown; moist; mostly medium plasticity fines; few fine SAND.									
124	7																	
123	8		3	4 5 7	12	1.00			stiff; light brown; trace fine SAND	94				18.7	110.9			UC Comp. Strength:1555 psf Strain at Failure: 5.4% CR Soil pH: 7.76 Min. Resistivity: 1020 ohm-cm Chloride: 26.6 ppm Sulfate: 63.8 ppm
122	9																	
121	10																	
120	11		4	4 6 11	17	2.00			very stiff	83								
119	12								Poorly-graded SAND with SILT (SP-SM); medium dense; brown; dry to moist; mostly fine to medium dense; few fines; trace fine GRAVEL.									
118	13								Bottom of borehole at 11.5 ft bgs									
117	14																	
116	15																	
115	16																	
114	17																	
113	18																	
112	19																	
111	20																	

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Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-004
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-005

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 16.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 130.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stme Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: MCAL (2.4" ID), Bulk, SPT (1.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
129	1	Bulk							CLAYEY SAND with GRAVEL (SC); brown; dry; 46% fine to medium SAND; 36% fines; 18% fine to coarse GRAVEL.	100		12	27			36		
128	2																	
127	3	1	2 3 2	5					CLAYEY SAND (SC); loose; dark brown; moist; mostly fine SAND; some medium plasticity fines.	83								
126	4																	
125	5	2	3 3 4	7	2.50					72				20.8	100.3			
124	6								Lean CLAY (CL); soft; dark brown; moist; mostly medium plasticity fines; trace fine to coarse SAND.									
123	7																	
122	8	3	3 4 5	9	3.50					72								
121	9								Lean CLAY with SAND (CL); very stiff; brown; moist; mostly medium plasticity fines; little fine SAND.									
120	10	4	4 9 9	18					CLAYEY SAND (SC); medium dense; brown; dry to moist; mostly fine SAND; little medium plasticity fines. some fines	83				9.8	108.8			
119	11																	
118	12								little fines									
117	13																	
116	14								Lean CLAY (CL); very stiff; brown; moist; mostly medium plasticity fines; few fine SAND.									
115	15	5	5 10 10	20	2.50					94								
114	16																	
113	17								Bottom of borehole at 16.5 ft bgs									
112	18																	
111	19																	
110	20																	

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-005
ENTRY BY: MNA
CHECKED BY: JJW

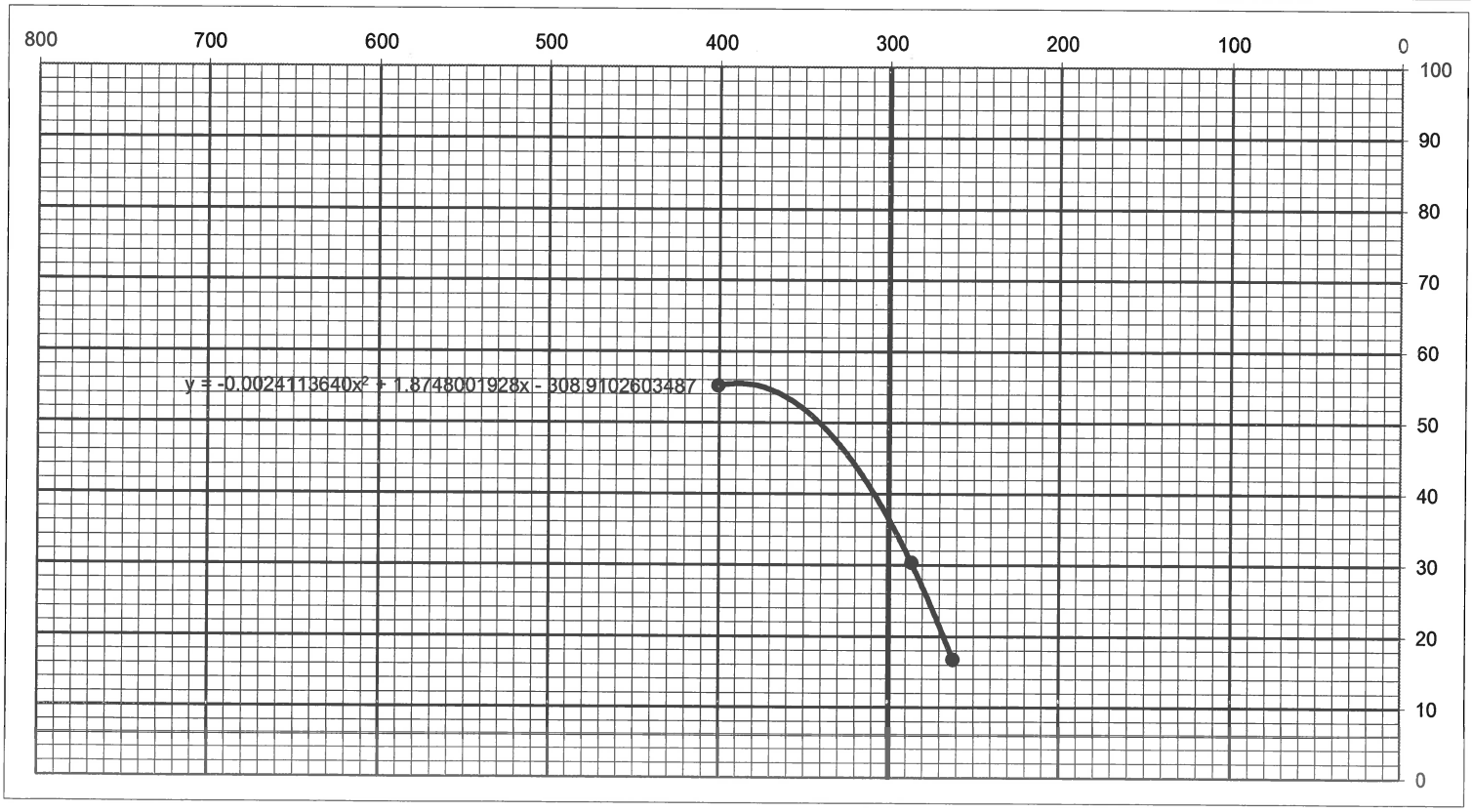
APPENDIX B

Laboratory Testing

RESISTANCE VALUE

California Test Method No. 301

Job Number:	**4151-001.00**	**Date Tested:** 1/11/2023		**R-value:**	**36**
Project:	Crawford (22-852.1 Pioneer Road Widening Project)			**Sample :**	**A-22-004**
Classification of Material:	SC, Clayey Sand w/ Gravel, Brown			**Technician:** DS	
Initial Sample Weight	1180	1160	1140		
Mold Number	D	E	F		
Air Pressure-PSI	350	350	250		
Initial Moisture %	6.2	6.2	6.2		
Water Added ml/g	25	30	35		
Water Added %	2.2	2.7	3.3		
Final Moist %	8.4	8.9	9.4		
Soil + Mold Weight-Grams	3272.1	3210.4	3235.1		
Mold Weight-Grams	2073	2029	2067		
Soil Weight-Grams	1199.1	1181.4	1168.1		
Height of Sample-Inches	2.50	2.48	2.46		
Density-PCF	134.1	132.5	131.5		
Dial Reading (x.0001 inches)	18	16	4		
Expansion Pressure (psf)	78	69	17		
Stabilometer at 1000 lbs.	23	38	49		
2000 lbs.	52	91	118		
Displacement	4.22	4.35	4.43		
Exudation Pressure-Lbs	5030	3600	3290		
Exudation-PSI	400	287	262		
R-Value Calculated	55	30	17		
Corrected R-Value	55	30	17		



Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-2/23/23
Technician: ZZZ/BR

MOISTURE-DENSITY TESTS - D2216/D7263

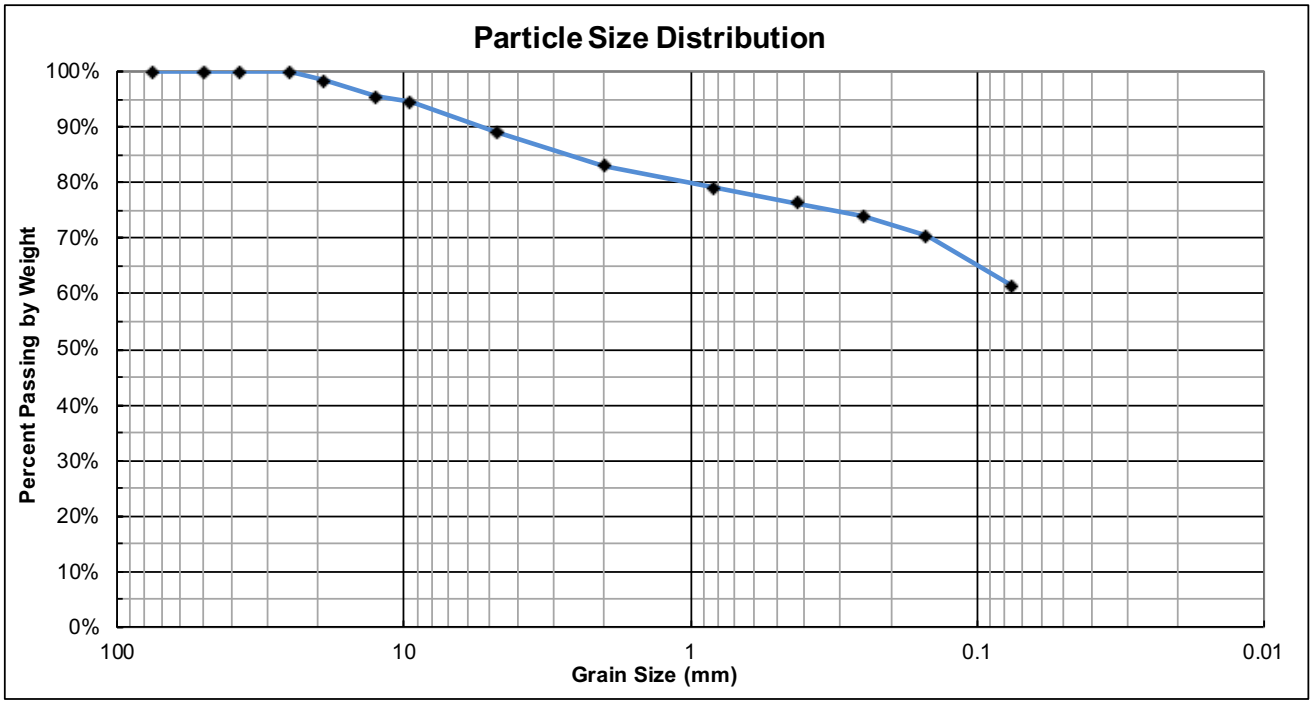
	1	2	3	4	5
Sample No.	A-22-002-1A	A-22-004-2A	A-22-004-3B	A-22-005-2A	A-22-005-4A
USCS Symbol	CL	CL	CL	CL	SC
Depth (ft.)	3.5	6	8	6	11
Sample Length (in.)	3.092	5.392	5.800	5.380	5.948
Diameter (in.)	2.376	2.390	2.386	2.386	2.389
Sample Volume (ft^3)	0.00793	0.01400	0.01500	0.01392	0.01543
Total Mass Soil+Tube (g)	631.4	993.1	1122.8	1036.3	1109.6
Mass of Tube (g)	237.4	225.1	226.9	271.5	273.4
Tare No.	129	110	108.0	X3	X3
Tare (g)	14.1	14.0	14.3	150.9	150.9
Wet Soil + Tare (g)	71.6	89.3	61.4	365.0	514.4
Dry Soil + Tare (g)	64.5	82.0	54.0	328.2	482.0
Dry Soil (g)	50.4	68.1	39.7	177.3	331.1
Water (g)	7.1	7.3	7.4	36.8	32.4
Moisture (%)	**14.2**	**10.7**	**18.7**	**20.8**	**9.8**
Dry Density (pcf)	**95.9**	**109.2**	**110.9**	**100.3**	**108.8**

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-002-Bulk
Depth (ft): 0 - 5
USCS Classification: Sandy Lean Clay (CL)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	2	9	6	7	15	
0	**11**		**28**			**61**

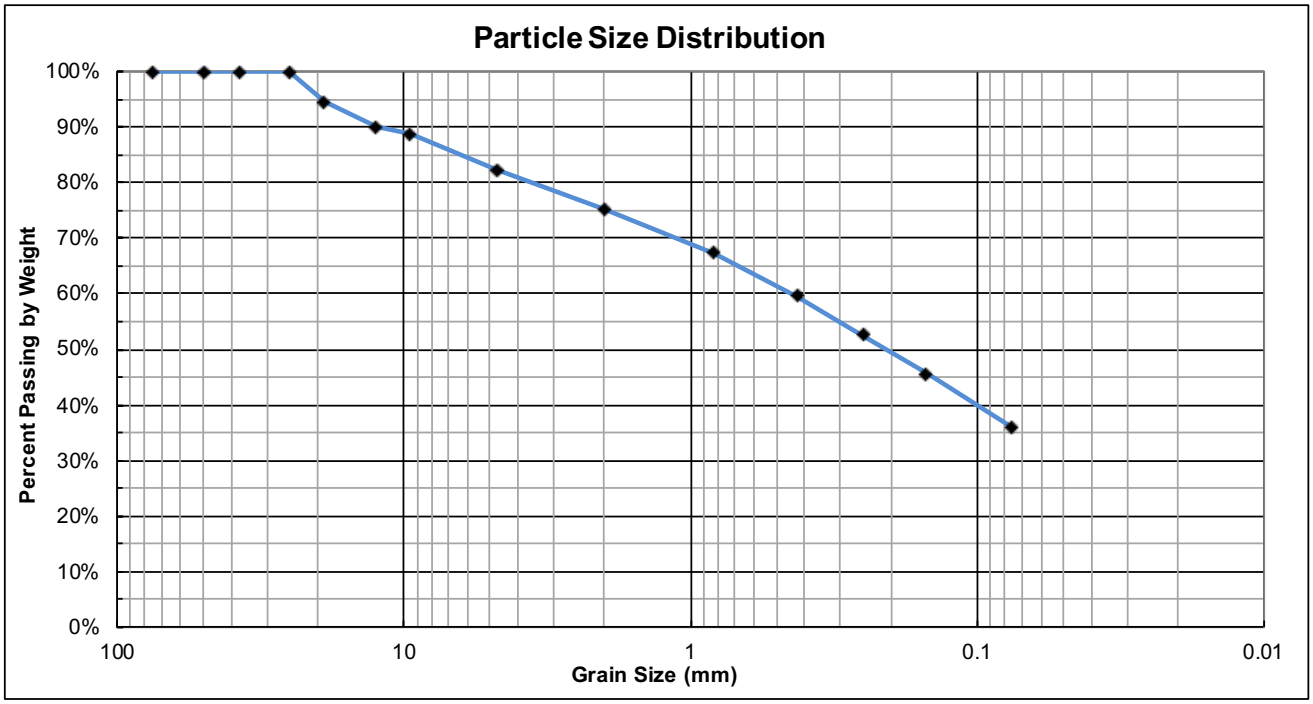
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	10.3	98%
	Fine	**1/2"**	12.5	27.4	95%
		3/8"	9.50	32.7	95%
		#4	4.75	65.5	89%
Sand	Coarse	**#10**	2.00	100.8	83%
	Medium	**#20**	0.825	124.7	79%
		#40	0.425	140.9	76%
	Fine	**#60**	0.250	155.3	74%
		#100	0.150	176.5	70%
Silt/Clay		**#200**	0.075	230.5	61%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-005-Bulk
Depth (ft): 0 -2.5
USCS Classification: Clayey Sand with Gravel (SC)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	5	13	7	15	24	
0	**18**		**46**			**36**

		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	32.7	95%
	Fine	**1/2"**	12.5	59.8	90%
		3/8"	9.50	68.0	89%
		#4	4.75	106.5	82%
Sand	Coarse	**#10**	2.00	148.9	75%
	Medium	**#20**	0.825	195.8	67%
		#40	0.425	242.9	60%
	Fine	**#60**	0.250	285.0	53%
		#100	0.150	326.8	46%
Silt/Clay		**#200**	0.075	385.0	36%

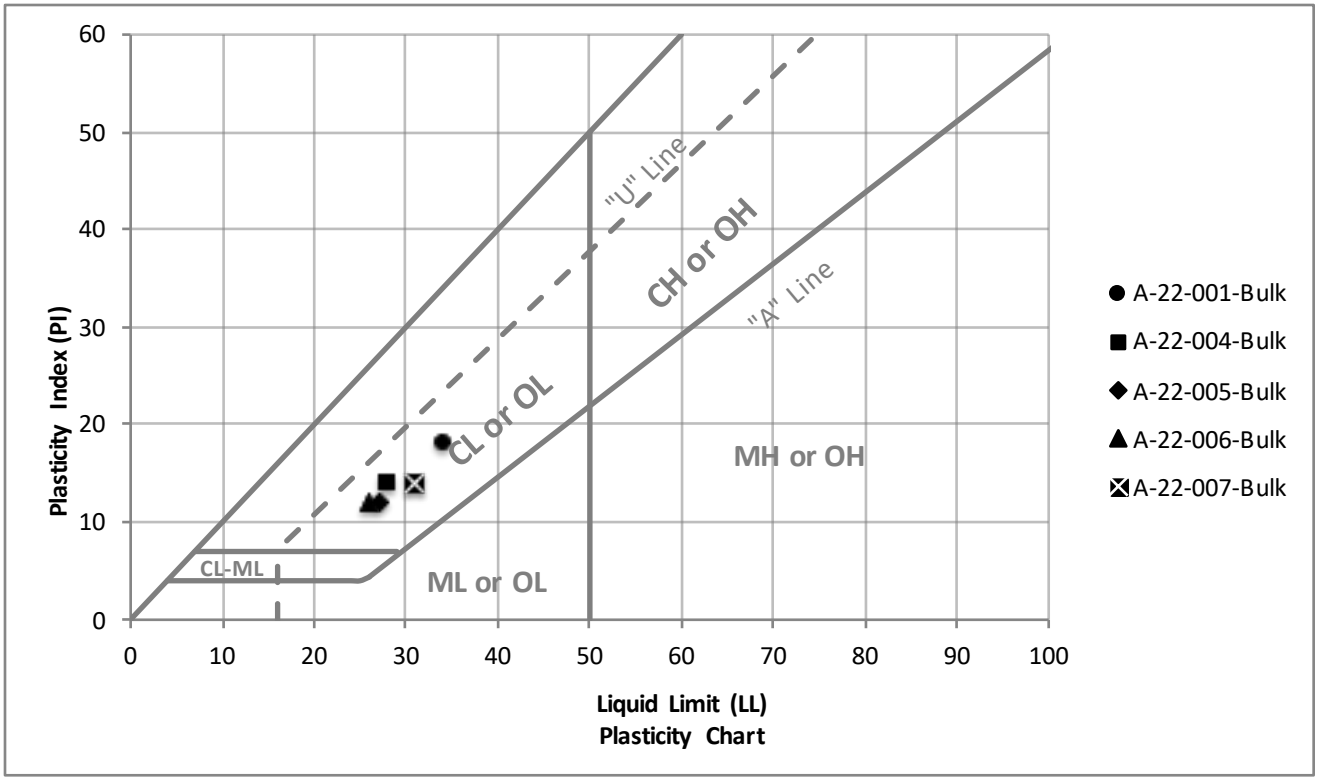
Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/20233/7/2023
Technician: BR/ZZZ

Plasticity Index - ASTM D4318

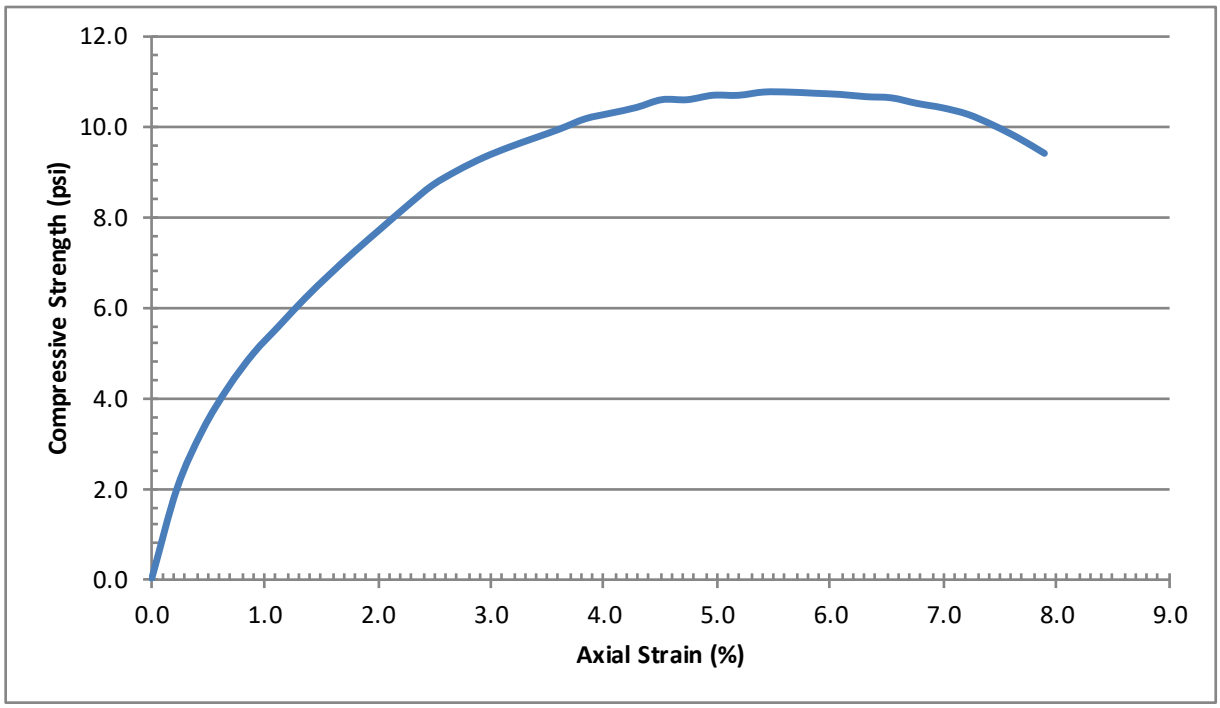
Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
A-22-001-Bulk	0	34	16	18
A-22-004-Bulk	0	28	14	14
A-22-005-Bulk	0	27	15	12
A-22-006-Bulk	0	26	14	12
A-22-007-Bulk	0	31	17	14



Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22.852.1
Date: 2/21/23
Technician: ZZZ
Sample ID: A-22-004-3B Depth (ft): 8.0
USCS Classification: Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**110.9**
Water Content (%)	**18.7**
Unconfined Compressive Strength (psi)	**10.8**
Unconfined Compressive Strength (psf)	**1555**
Average Height (in)	5.800
Average Diameter (in)	2.386
Rate of strain (%)	1.3
Strain at Failure (%)	5.4

Notes:



DRAFT GEOTECHNICAL DESIGN AND MATERIALS REPORT

Pioneer Complete Streets Project
Los Banos, California
Crawford File No. 22-852.1
EA No.
Federal Project No.

Prepared by:

Crawford & Associates, Inc.
4701 Freeport Boulevard
Sacramento, CA 95822

October 2, 2023

Prepared for:

GPA Consulting
840 Apollo Street, Suite 312
El Segundo, CA 90245

DRAFT

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Sacramento | Modesto | Pleasanton | Rocklin | Ukiah

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Seattle: 1448 NW Market Street, Suite 500 | Seattle, WA 98107
Ukiah: 100 North Pine Street | Ukiah, CA 95482

Project No. 22-852.1
October 2, 2023

Mr. Richard Gavin
Vice President
GPA Consulting
840 Apollo Street, Suite 312
El Segundo, CA 90245

Subject: **DRAFT GEOTECHNICAL DESIGN AND MATERIALS REPORT**
Pioneer Complete Streets Project
Los Banos, California

Dear Mr. Gavin,

Crawford & Associates, Inc (Crawford) presents this Geotechnical Design and Materials Report for the Pioneer Compete Streets Project located in Merced County, California. Crawford prepared this report in accordance with our September 14, 2022 agreement.

This report defines the geotechnical conditions as evaluated from field and laboratory test data and used in the development of the geotechnical design. The purpose of this report provides recommendations for use in project design, specifications, and construction. We will issue a final report based on your comments.

Crawford will submit a separate Foundation Report for the proposed vehicle and pedestrian bridges over Central California Irrigation District (CCID) Main Canal as part of the Pioneer Complete Streets Project.

Thank you for the opportunity to be part of your design team. Please contact us if you have questions or require additional information.

Sincerely,

Crawford & Associates, Inc.,

Johnathan J. Wright, PE, GE
Project Manager

Benjamin D. Crawford, PE, GE
Principal Geotechnical Engineer

Maria Ayala, EIT
Project Engineer I

Taber
Since 1954

DRAFT

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APPENDIX I

Figure 1: Vicinity Map
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APPENDIX II

Boring Log Legend
Boring Logs

APPENDIX III

Laboratory Result Summary
Laboratory Test Reports

APPENDIX IV

Ground Motion Data Sheet

DRAFT

1 INTRODUCTION

Crawford & Associates, Inc (Crawford) prepared this Geotechnical Design and Materials Report for the Pioneer Complete Streets Project in Los Banos, California. The purpose of this report is to identify subsurface geotechnical and material conditions, provide analyses of anticipated site conditions as they pertain to the projects described herein, and to recommend design and construction criteria for the roadway portions of the project, including pavement structural sections, soil corrosivity, and site drainage.

This report is intended to assist in planning, design, and during construction for GPA Consulting the design team, and the City of Los Banos. This report contains our findings and geotechnical recommendations exclusively developed for this project. However, we understand that the design team plans to use this report to assist with the design of the Ortigalita Road and Pioneer Road Intersection Improvements Project. We will issue a final report based on comments received on this draft report.

Crawford submitted a signed Initial Site Assessment (ISA) on June 9, 2023 to identify and provide an assessment of the potential impacts of know or potential Recognized Environmental Conditions within the study area that may influence design and construction of the project. Crawford will submit a separate Foundation Report for the proposed vehicle and pedestrian bridges over Central California Irrigation District (CCID) Main Canal as part of the Pioneer Complete Streets Project.

To prepare this report, Crawford performed the following:

- discussed the project with GPA consulting and Mark Thomas and reviewed KMZ files showing the preliminary alignment;
- reviewed available published geologic and seismic mapping of the site;
- completed a site review of the proposed improvement areas;
- obtained a City of Los Banos encroachment and boring permit, and coordinated with City inspector staff;
- coordinated with Caltrans using the Caltrans encroachment permits obtained by Mark Thomas;
- completed 17 exploratory borings (A-22-001 through A-23-017) to a maximum depth of 76.5 ft below ground surface (bgs) along the proposed alignment in November 2022 and June 2023;
- completed laboratory testing on soil samples obtained during subsurface exploration; and
- performed engineering calculations and analysis to develop our conclusions and recommendations contained in this report.

Limitations of this study are discussed in the final section of this report.

1.1 PROJECT LOCATION

The project alignment is located in the City of Los Banos, California, comprising about 5.8 miles of new and existing roadway. A Vicinity Map (Figure 1) depicting the project alignment is provided in Appendix I.

1.2 PROJECT DESCRIPTION

The project is part of the city-wide improvement Pioneer Road Complete Streets Plan, dated December 23, 2020. We understand that the purpose of this project is to provide relief to traffic congestion along Pacheco Boulevard, offer alternate routes for visitors and residents, and provide a safe, attractive, and accommodating routes for travelers. According to aerial imagery and the Pioneer Road Complete Streets Plan, page 2-22, the existing Pioneer and Ward roadways consist of dirt and gravel shoulders and two 11 foot travel lanes, one in each direction. A few areas along Pioneer Road near Main Canal have been recently widened to include 12 foot travel lanes, a 15 foot merge lane, 6 foot median, and 8 foot shared use path (sidewalk).

The project will result in about 5.8 miles of new and improved roadway. While the final project design has not been finalized at this time, these improvements are expected to consist of the following elements:

- Constructing a new road ("West Connector") connecting Pioneer Road to State Route (SR) 33/152 (W. Pacheco Boulevard);
- Replacing the existing segment of SR 33/152 and constructing a new intersection for "West Connector" and SR 33/152;
- Replacing the existing segment of Pioneer Road from about Los Banos Creek eastward to Mercey Springs Road/SR 165;
- Constructing a new segment of Pioneer Road eastward from Mercy Springs Road/SR 165 to Ward Road;
- Replacing the existing segment of Ward Road from where the new Pioneer Road will connect to Ward Road northward to SR 33/152 (E. Pacheco Boulevard);
- Removing about 2,200 feet of Ward Road south of where the new Pioneer Road will connect to Ward Road;
- Constructing a new roadway segment connecting Pioneer Road to Ward Road;
- Replacing between about 1,200 to 1,800 feet of Ortigalita Road, Center Avenue, and S. Mercey Springs Road (SR 165) where they intersect Pioneer Road;
- Constructing a new parallel eastbound vehicular bridge just south of the existing Pioneer Road bridge over CCID Main Canal;
- Constructing a new pedestrian crossing just north of the existing Pioneer Road bridge over CCID Main Canal;
- Installing traffic signals at various new intersections as part of this project;
- Constructing up to four new drainage basins; and
- Installing bike and pedestrian lanes throughout the project alignment.

This report addresses the project overhead signs, drainage infrastructure (culverts and basins), infiltration, grading, and roadway improvements. The overhead sign locations are still being developed, but are expected to be located near the proposed intersections. We expect minor culvert extensions will likely be needed at select locations along the alignment to connect drainage elements. The locations and types of culverts are still being developed, but are expected to be about 1,900 ft east of the Pioneer Road and Ortigalita intersection, near the Pioneer Road and Center Avenue intersection, near the Pioneer Road and Mercey Springs Road intersection, and possibly within the proposed Pioneer Road segment between Mercey Springs Road and Ward Road.

The drainage basins are currently planned to be along Center Avenue just north of Pioneer Road, near the proposed intersection of Ward Road and Pioneer Road, and along Ward Road just south of Gilbert Gonzalez Jr Drive. We understand the drainage basin locations and depths have not yet been finalized and may change. The basins are expected to be about 5 to 10 ft below existing ground surface with 2H:1V or flatter side slopes.

The ground surface along the proposed alignment is essentially flat and except for the storm damage basins no permanent cut-slopes are planned for this project. We expect the fill placement to be about 3 feet or less for general grading throughout the project alignment, and between about 3 to 7 feet at the areas where existing ditches will be filled in to accommodate the proposed roadway.

1.3 EXCEPTION TO POLICY

No exceptions to Caltrans policies and procedures were taken in the preparation of this report.

2 GEOTECHNICAL INVESTIGATION

2.1 SUBSURFACE EXPLORATION

Crawford retained Geo-Ex Subsurface Exploration (Geo-Ex) to drill and sample test borings along the alignment. The test borings were drilled on November 7, 2022 through November 10, 2022 and June 29, 2023. Geo-Ex used a CME 75 truck-mounted drill rig to complete the borings with 4-inch diameter solid-stem auger and 4-inch diameter mud-rotary drilling equipment. The maximum depth explored was 76.5 ft below the ground surface (bgs) (R-22-012 and R-22-013). Crawford plans to complete hand auger borings and dynamic cone penetrometer tests (DCPs) once private property owners provide access. We also plan to complete infiltration tests once the drainage basin locations and depths have been established.

A summary of the subsurface exploration completed for this project study is shown in Table 1.

Table 1: Borehole Summary

Project Element	Boring No.	Completion Date	Drill Rig Type	Hammer Type	Hammer Efficiency (%)	Ground Surface Elevation (ft)	Boring Depth (ft)
Pioneer Roadway Boring	A-22-001	11/7/22	CME 75 Truck	Auto	82.2	141	11.5
Pioneer Roadway Boring	A-22-002	11/7/22	CME 75 Truck	Auto	82.2	137	7.0
Pioneer Roadway Boring	A-22-003	11/7/22	CME 75 Truck	Auto	82.2	131	6.5
Pioneer Roadway Boring	A-22-004	11/7/22	CME 75 Truck	Auto	82.2	131	11.5

Project Element	Boring No.	Completion Date	Drill Rig Type	Hammer Type	Hammer Efficiency (%)	Ground Surface Elevation (ft)	Boring Depth (ft)
Pioneer Roadway Boring	A-22-005	11/8/22	CME 75 Truck	Auto	82.2	130	16.5
Placer Roadway Boring	A-22-006	11/8/22	CME 75 Truck	Auto	82.2	113	6.5
Ward Roadway Boring	A-22-007	11/8/22	CME 75 Truck	Auto	82.2	105	6.5
Ward Roadway Boring	A-22-008	11/8/22	CME 75 Truck	Auto	82.2	108	11.5
Ward Roadway Boring	A-22-009	11/8/22	CME 75 Truck	Auto	82.2	112	6.5
Ward Roadway boring	A-22-010	11/08/22	CME 75 Truck	Auto	82.2	107	6.5
Claus Shoulder Boring	A-22-011	11/08/22	CME 75 Truck	Auto	82.2	119	16.5
Claus Shoulder Boring	R-22-012	11/09/22	CME 75 Truck	Auto	82.2	124	76.5
Claus Shoulder Boring	R-22-013	11/10/22	CME 75 Truck	Auto	82.2	122	76.5
Pioneer Shoulder Boring	A-23-014	6/29/2023	CME 75 Truck	Auto	79.7	125	16.5
SR 132	A-23-015	6/29/2023	CME 75 Truck	Auto	79.7	134	21.5
SR 132	A-23-016	6/29/2023	CME 75 Truck	Auto	79.7	128	26.5
SR 132	A-23-017	6/29/2023	CME 75 Truck	Auto	79.7	102	26.5

The borings were sampled at approximately 2.5 and 5 ft intervals. Soil samples were recovered by means of 2.0-inch O.D. Standard Penetration Test (SPT) split-spoon sampler (ASTM D1586) with 1.4-inch I.D. stainless steel liners and a 3.0-inch O.D. “Modified California” split-spoon sampler (ASTM D3550) with 2.4-inch I.D. stainless steel liners. The samplers were advanced with standard 350 ft-lb striking force using a 140-lb automatic hammer and a drop height of 30 inches. A hammer energy calibration test was not performed specifically for this project/site;

however, previous hammer energy test results provided by Geo-Ex show the hammer to have an energy efficiency of 82.2% and 79.7%, respectively.

At each test interval, the sampler was driven 18-inches (or until sampler refusal criterion was met), and the blows required to advance the sampler each 6-inches of penetration were recorded. The sampler refusal criterion is defined as 50 or more blows with less than 6-inches of sampler advancement. The field blow counts were recorded as the number of hammer blows required to drive the sampler the final 12-inches of the 18-inch sample interval, unless refusal was met.

The in-situ sampler penetration resistance (N-value) in blows per foot was recorded in the field to obtain an approximate measure of the dynamic resistance of the soil. The N-value was recorded as the number of hammer blows required to drive the sampler the final 12-inches of the 18-inch sample interval, unless refusal was met.

The Standard Penetration Test resistance (SPT N-value) adjusted to 60% hammer energy (N_{60}) is routinely used to provide an index of the apparent density of cohesionless soils and sometimes (albeit less reliably) to estimate the consistency of cohesive soils. The energy-corrected N_{60} value normalized for effective overburden stress referred to as $(N1)_{60}$ is typically used to correlate soil strength parameters and bearing characteristics.

For a non-standard sampler (i.e., non-SPT sampler), the in-situ N-value was corrected to an Equivalent SPT N-Value using values published in Caltrans Geotechnical Manual (March 2021), then adjusted to provide an *Equivalent* N_{60} and/or *Equivalent* $(N1)_{60}$ value that can be correlated to soil strength and bearing characteristics for use in geotechnical analysis.

Pocket penetrometer tests were performed on soil samples in the field. The in-situ (uncorrected) N-values and pocket penetrometer test recordings are shown on the boring logs provided in Appendix II.

Crawford field personnel logged the test borings consistent with the Unified Soil Classification System (USCS) and the Caltrans Logging Manual[1]. Selected portions of recovered soil samples from the driven samplers were retained in sealed containers for laboratory testing and reference. The bulk soil samples were placed in plastic bags for laboratory testing and reference. Groundwater observations were recorded during and/or after drilling operations. At completion, the test borings were backfilled with native cuttings or neat cement grout in compliance with the City of Los Banos boring permit requirements.

The borings were located/measured in the field with respect to existing site features and then referenced to project stationing, if available. The surface elevations for borings A-22-003 and A-22-004 are referenced to the Ortigalita Road and Pioneer Road Intersection Improvement project datum provided by Mark Thomas. The surface elevations for the remaining borings are referenced to Google Earth. The Google Earth elevations will be updated to reference the project datum once the datum for the remaining Pioneer Complete Streets project is available. Test boring locations are shown on Figure 4A thru 4F in Appendix I. Test boring locations for Figure 4B have not been completed yet, therefore Figure 4B is not included in this draft report

[1] Caltrans, Soil and Rock Logging, Classification, and Presentation Manual (2010 Edition) with Errata Sheet (August 2018).

and will be included in our final report following completion of our test borings in private properties.

Our field exploration for this study did not include geophysical studies and did not include the installation of geotechnical instrumentation. Many rights of access where not available at the time of our fieldwork.

2.2 LABORATORY TESTS

The following laboratory tests were completed on representative soil samples obtained from the exploratory borings:

- Atterberg Limits (ASTM D4318)
- Corrosivity Testing (CTM 643, CTM 417, and CTM 422)
- Moisture Content/Unit Weight (ASTM D2216/D7263)
- No. 200 Sieve (ASTM D1140)
- Particle Size Analysis (ASTM D6913)
- R-Value (CTM 301)
- Unconfined Compression-Soil (ASTM D2166)

We present a laboratory result summary and test reports in Appendix III.

2.3 GEOLOGIC MAPPING

No geologic field mapping was performed for this study.

3 GEOTECHNICAL CONDITIONS

3.1 SITE GEOLOGY

The project site is located within the San Joaquin Valley, within the Great Valley Geomorphic Province[2] of California. The valley sediments are predominately alluvial with source material from the Coastal Ranges located to the east. This geomorphic province is an alluvial plain about 50 miles wide and 400 miles long, bounded by the Sierra Nevada mountains to the east and the Coast Ranges mountains to the west. The relatively flat topography of the Great Valley is underlain by alluvial, lacustrine, and marine sedimentary deposits that have accumulated since the Jurassic Age within a structural trough formed as the adjacent mountain ranges were elevated. The thickness of the sediments varies from a thin veneer along the valley margins to thousands of feet along the valley axis.

Published regional geologic mapping[3] shows the project alignment underlain by alluvial fan deposits derived from the Coast Range. These deposits include the following geologic formations:

[2] California Geologic Survey (2002), *California Geomorphic Province*, Note 36
[3] Wagner, D.L., Bortugno, E.J., and McJunkin, R.D., (1991) Geologic Map of the San Francisco-San Jose Quadrangle, California, 1:250,000: California Division of Mines and Geology, Regional Geologic Map 5A, scale 1:250,000.

- Holocene-age *Patterson Alluvium* (Qp), described as fine- to coarse-grained stream, fan, and mudflow deposits; and
- Pleistocene-age *San Luis Ranch Alluvium* (Qsl), described as fine- to coarse-grained fan, mudflow, terrace, and floodplain deposits.

A geologic map of the site is included as Figure 2 in Appendix I.

3.2 SURFACE CONDITIONS

The site topography is relatively level throughout the project vicinity with elevations increasing slightly from east to west along the project limits. In general, existing ground elevations along the proposed alignment range from about 102 ft on the east end to about 146 ft on the west end. The project vicinity is generally surrounded by agriculture fields and rural residential properties, and few businesses in select locations.

The ground surface is generally flat and no slopes of significance are present along the project alignment. No signs of slope instability were observed. Site vegetation is mostly comprised of farm and agricultural crops, and native grasses and weeds. No evidence of springs, phreatophytes, or other vegetation indicative of excessive moisture was observed.

Surface waters are generally limited to irrigation canals through the project alignment. Stormwater runoff generally sheet flows into drainage ditches or roadway shoulders. We did observe ponding in shoulder areas along Pioneer Road during our subsurface exploration program.

The notable utilities and facilities near and within the proposed alignment generally consist of: overhead electrical lines, the Central California Irrigation District Main Canal, and various underground utilities such as PG&E gas lines, fiber optic lines, water main pipelines, sewer lines and electrical lines along SR 152. We also expect private irrigation lines to be located within the private properties. Between these facilities are mostly agriculture fields, and some rural residential and commercial properties.

3.3 SUBSURFACE CONDITIONS

In general, the materials encountered in the test borings completed for this study are consistent with Modesto formation and comprised predominately of interbedded layers of clayey sand, lean clay, sandy lean clay, poorly graded sand and silty sand.

The encountered materials are considered consistent with Holocene-age sediments of the Patterson Formation and Pleistocene-age of the San Luis Ranch Alluvium as identified in the published geologic mapping. A geologic map of the site is included as Figure 2 in Appendix I.

3.4 GROUNDWATER

In general, groundwater was encountered at a depth of 25 ft or greater below existing grade. Perched groundwater was not observed within the auger portions of the rotary drilled borings. Groundwater was measured in the augered portion of the borings and prior to the placement of drilling fluid (i.e. “drilling mud”) used for the mud-rotary drilling method. The borings were

backfilled before reliable "static" groundwater level measurements could be taken (24 hours or more is commonly needed to define "static" level).

Groundwater data from the borings completed for this study are summarized in Table 2.

Table 2: Groundwater

Boring Number	Coordinates	Surface Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Date Measured
R-22-012	37.042417°, -120.840965°	124	34	90	11-09-22
R-22-013	37.042307°, -120.840374°	122	34	88	11-10-22
A-23-016	37.056779° -120.888182°	128	25	103	06-29-23

In general, seasonally perched groundwater may be present within the soil units likely as a result of rainfall infiltration and/or existing agriculture irrigation practices along/near the project alignment. Groundwater levels can fluctuate due to changes in precipitation, drainage feature levels, irrigation and other factors.

4 SEISMICITY

4.1 GROUND MOTION PARAMETERS

For this project, a correlated shear wave velocity (V_{S30}) in the upper 100 ft of the soil profile equal to 192 meters per second (about 630 ft/sec) is considered appropriately conservative for use in project design. This value corresponds to a "stiff soil" with 180 m/s < Vs < 360 m/s (Soil Profile Type D) for the upper 100 ft of the soil profile. The V_{S30} value was determined for this site based on the subsurface data obtained from the 2022 test borings and correlations with SPT blow count N-values corrected for hammer efficiency using the equations outlined by Caltrans[4]. For our evaluation, we used latitude 37.0423° N and longitude 120.8539° W for the site coordinates, which is generally located within the center of the project at the intersection of Pioneer Road and Center Avenue.

The correlated V_{S30} values estimated from the 2022 borings are shown in Table 3.

[4] California Department of Transportation, Methodology for Developing Design Response Spectrum for Use in Seismic Design Recommendations, Appendix A, November 2012.

Table 3: Correlated Shear-Wave Velocity

Boring Designation	Location		Boring Depth (ft)	Shear-Wave Velocity, V_{s30} (m/sec)
	Latitude (deg)	Longitude (deg)		
R-22-012	37.042433° N	120.840812° W	76.6	202
R-22-013	37.042320° N	120.840340° W	76.6	181
Average Shear-Wave Velocity, V_{s30} (m/sec) =				192

For seismic design, Caltrans classifies soil as either Class S1 or Class S2. The Class S1 soil classification represents competent soil. The Class S2 soil classification represents non-competent soils, including marginal soil, poor soil and soil susceptible to lateral spreading.

According to Caltrans' SDC V2.0, Class S1 soil must meet all of the following criteria:

- Standard Penetration Test, (N1) 60 ≥ 30 (Granular Soils)
- Undrained Shear Strength, Su > 2,000 psf (Cohesive Soils)
- Shear Wave Velocity, Vs > 886 ft/sec (270 m/sec)
- Not susceptible to liquefaction, lateral spreading, or scour

Soil that does not satisfy the requirements for S1 listed above is to be classified as Class S2 soil.

4.2 GROUND MOTION PARAMETERS

The Caltrans ARS Online (V3.1.0)[5] web-based tool was used to calculate the probabilistic acceleration response spectra for the site based on criteria outlined in Appendix B of Caltrans SDC.

For Ordinary structures, the design spectrum is based on the Safety Evaluation Earthquake (SEE) spectrum only. A probabilistic evaluation approach is used to determine the SEE design spectrum taken as the spectrum based on the 2014 USGS Seismic Hazard Map for the 5% in 50 years probability of exceedance (or 975-year return period).

Caltrans structure design practice requires an increase to spectra due to fault proximity (near-fault factor) and when the site is located over a deep sedimentary basin (basin factor). The near-fault adjustment factor is applied for locations with a site to rupture plane distance (Rrup) of 25 km (15.6 miles) or less to the causative fault and is based on the deaggregated mean distance for spectral acceleration at a period of 1.0 second. The basin factor and near-fault adjustment factor do not apply to this site.

[5] https://arsonline.dot.ca.gov/, accessed August 9, 2023.

The mean magnitude value reported by Caltrans ARS Online V3.1.0 is not used in the ground motion calculation. It is included to support simplified liquefaction analysis and is obtained from a hazard deaggregation performed at the Peak Ground Acceleration (PGA).

Based on the above information, we recommend structures be designed using the SEE Design Spectrum and in accordance with following Caltrans SDC parameters:

- Soil Classification: Class S2;
- Shear Wave Velocity, VS30: 192 m/s (630 ft/sec);
- PGA: 0.47g;
- Magnitude (M) at PGA: 6.44;
- Mean Site-to-Fault Distance at 1.0 Second: 16.5 mi / 26.6 km; and
- Controlling Spectra: Caltrans ARS Online Probabilistic Spectrum, USGS 2014 seismic hazard map with 975-year return period.

We include the Design SEE ARS Curve in Appendix IV.

4.3 FAULT RUPTURE

The project site does not lie within the prescribed limits of an Alquist-Priolo Earthquake Fault Zone[6], and no known active faults (i.e., Holocene-age faults) are mapped (see Appendix I, Figure 3) either by the California Geologic Survey (CGS) or United States Geologic Survey (USGS) within or through the project alignment. The nearest fault is the Great Valley thrust fault system (undifferentiated Quaternary age), located about 1.7 miles southwest of the project alignment. However, this fault is not considered active per CGS criteria (i.e., activity within the last 11,000 years). The nearest active fault is the Cottonwood Arm section of the Ortigalita fault zone (latest Quaternary age), located about 10.4 miles west-southwest of the project alignment.

4.4 LIQUEFACTION POTENTIAL

Liquefaction is a secondary effect associated with seismic loading. It can occur when saturated, relatively loose granular soils, or specifically defined soft, fine-grained soils, are subjected to ground shaking strong enough to create soil particle separation that results from increased pore pressure. This separation and subsequent pore pressure dissipation can lead to decreased soil shear strength and settlement. Liquefaction is known to occur in soils ranging from low plasticity silts to gravels. However, soils most susceptible to liquefaction are clean sands to silty sands and non-plastic silts. Granular soils with SPT blow counts [$(N_1)_{60}$] greater than or equal to 30 blows per foot, most clay soil, and rock are not liquefiable. In general, liquefaction hazard is most severe within the upper 50 feet of the subsurface.

Based on the soil conditions encountered in our borings, our analysis indicates that a sandy silt layer from about 34 to 39 ft bgs and a silt layer from about 46 to 48 ft bgs in boring R-22-013 are considered liquefiable. Our analysis indicates a liquefaction potential index of 0.8 categorizing the site as low risk for liquefaction and a liquefaction induced settlement estimated to be less than 1 inch.

[6] California Geological Survey, https://maps.conservation.ca.gov/cgs/lsi/app/ (accessed September 20, 2022).

4.5 SEISMICALLY INDUCED SETTLEMENT

During a seismic event, ground shaking can cause densification of dry loose to medium dense cohesionless soils above the water table that can result in settlement of the ground surface. Additionally, below groundwater, liquefaction effects from seismic loading, as discussed above, can cause ground surface settlement as well.

Based on the soil conditions encountered in our borings, the near surface soils above groundwater are generally composed of clayey soils not susceptible to seismically induced settlement above the water table. However, we did encounter localized non-cohesive granular layers above the groundwater throughout our test borings. Our analysis indicates a seismic settlement of less than 0.25 inches within these localized non-cohesive granular layers above the groundwater.

4.6 LIQUEFACTION-INDUCED LATERAL SPREADING

The project site is generally flat and the proposed roadway improvements are expected to have a grade change adjacent to nearby topography of three feet or less. Based on these conditions and the relatively deep depth and thin nature of the liquefiable layers encountered, the potential for lateral spreading is not a geotechnical consideration for project design.

5 GEOTECHNICAL ANALYSIS AND DESIGN

5.1 PROJECT DESIGN INFORMATION

Project design information will be provided by the design team and summarized here as the project develops. In general, design and construction of the various project elements is in accordance with 2022 Caltrans Standard Plans and Specifications.

5.2 SOIL ENGINEERING PROPERTIES

Soil profiles with geotechnical engineering parameters were developed for this project based on the soil profiles logged in the various explorations at the proposed improvements. The geotechnical engineering properties and strength/bearing characteristics of subsurface materials selected for use in our analysis have been derived/established from a combination of:

- 2022 and 2023 test boring data and laboratory test results;
- visual logging of earth materials and drilling procedures;
- published correlations with soil index properties (e.g., soil unit weight, natural water content, Plasticity Index, Liquid Limit, etc.);
- average friction angles based on published blow count correlations;
- average undrained shear strength (cohesion) values of soil based on pocket penetrometer data and/or published blow count correlations;
- average N-SPT values recorded in the test borings and corrected for hammer efficiency (N_{60}) and overburden effects $(N1)_{60}$;
- published correlations with Standard Penetration Test (SPT) blow count data (Bowles 5th edition and FHWA NHI-06-088 2006);
- design groundwater at 30 feet bgs; and

- engineering experience and judgment based on past projects with similar geologic environment/profile.

The generalized soil parameters used in our analysis are shown in Tables 4 to 8. We delineate these locations (Area 1 to Area 5) in Figure 1 in Appendix I.

Table 4: Generalized Soil Parameters – SR 33/152 & West Connector, Area 1 (A-23-015 to A-23-016)

Depth (ft)	Soil Description	Unit Weight (lb/ft^3)	Es (lb/ft^2)	Cohesion (psf)	phi	Poisson Ratio
0 to 9	Lean Clay to Sandy Lean Clay	123	550	1500	--	0.45
9 to 13	Silty Sand	127	250	--	30	0.25
13 to 26	Lean Clay to Clayey Sand	125	1000	3500	--	0.50

Notes: Parameters based testing borings A-22-015 and A-22-016
Unit weights are above design groundwater (depth 30 ft)

Table 5: Generalized Soil Parameters – Western Pioneer Road Section, Area 2 (A-22-001 to A-22-005)

Depth (ft)	Soil Description	Unit Weight (lb/ft^3)	Es (lb/ft^2)	Cohesion (psf)	phi	Poisson Ratio
0 to 7	Clayey Sand to Sandy Lean Clay	115	280	--	30	0.25
7 to 11	Lean Clay	120	1000	2000	--	0.45
11 to 13	Poorly Graded Sand with Silt to Clayey Sand	123	300	--	32	0.30

Notes: Parameters based testing borings A-22-001 and A-22-005
Unit weights are above design groundwater (depth 30 ft)

Table 6: Generalized Soil Parameters – Center to Eastern Pioneer Road Section, Area 3 (A-22-006, A-22-009, A-22-011 to R-22-013, and A-23-014)

Depth (ft)	Soil Description	Unit Weight (lb/ft^3)	Es (lb/ft^2)	Cohesion (psf)	phi	Poisson Ratio
0 to 13	Clayey Sand to Lean Clay	120	900	2500	--	0.45
13 to 19	Poorly Graded Sand to Silty Sand	118	215	--	30	0.25

Notes: Parameters based testing borings A-22-006, A-22-009, A-22-011 to R-22-013, and A-23-014
Unit weights are above design groundwater (depth 30 ft)

Table 7: Generalized Soil Parameters – Ward Avenue, Area 4 (A-22-007, A-22-008, and A-22-010)

Depth (ft)	Soil Description	Unit Weight (lb/ft^3)	Es (lb/ft^2)	Cohesion (psf)	phi	Poisson Ratio
0 to 9	Clayey Sand	115	150	--	31	0.25

Notes: Parameters based testing borings A-22-007, A-22-008, and A-22-010
Unit weights are above design groundwater (depth 30 ft)

Table 8: Generalized Soil Parameters – SR 152 & Ward Avenue Intersection, Area 5 (A-23-017)

Depth (ft)	Soil Description	Unit Weight (lb/ft^3)	Es (lb/ft^2)	Cohesion (psf)	phi	Poisson Ratio
0 to 8	Lean Clay	124	500	1000	--	0.45
8 to 18	Silty Sand	123	200	--	31	0.25
18 to 26	Poorly Graded Sand to Silty Sand	125	375	--	34	0.35

Notes: Parameters based testing borings A-22-017
Unit weights are above design groundwater (depth 30 ft)

5.3 GEOTECHNICAL MODEL AND ANALYSIS

5.3.1 EMBANKMENT SETTLEMENT

We selected soil engineering properties for the soil model based on our approach as discussed in Section 5.2. We used a maximum fill height of 3 feet within each project element with 2H:1V side slopes and a total unit weight of 125 pounds per cubic foot. We estimate a total settlement of about 0.50 inches that will occur beneath the roadway fill that consists of about 0.25 inches of immediate ground settlement (occurring mostly during construction) and about 0.25 inches of long-term consolidation settlement in the relatively deeper clay layers.

5.3.2 CORROSION EVALUATION

We anticipate that new project culverts and/or culvert extensions will be constructed within medium dense sands or soft to hard clays.

Based on our preliminary pH, sulfate and chloride testing, and Table 855.4A of the Caltrans Highway Design Manual (CHDM), cementitious materials shall conform to Standard Specification Section 90 with no restrictions to the water-to-cementitious material ratio. Table 9 presents the Caltrans recommended metal material and minimum unprotected thicknesses for a 50-year maintenance free service life, based on our preliminary testing and Figure 855.3A of the CHDM.

Table 9: Recommended Metal Corrugated Pipe Culvert Material

Recommended Metal Material	Minimum 50-year Design Thickness
Galvanized Steel-Metal with Protective Coating	8 gauge

The above minimum thickness does not take pipe abrasion resistance or overfill height into consideration. Alternatively, plastic pipe may be used for culverts with no restrictions with respect to corrosion. Project design may include further corrosivity testing to confirm these preliminary recommendations. Pipe design will also require consideration of loads imposed by the height of new fills.

6 RECOMMENDATIONS

We consider the geotechnical conditions throughout the project alignment to be suitable for construction of typical roadway, basin, and culvert elements provided the recommendations presented below are incorporated into design and construction. Support is generally available within shallow undisturbed, loose to medium dense granular soils and stiff to hard cohesive soils for new embankments, roadways, culvert foundations and minor structure foundations (such as soundwalls). Support for overhead signs is available with CIDH foundations. We did not find evidence for major geologic hazards, such as landslides, subsidence, severe erosion, compressible or expansive soils, or naturally occurring asbestos.

We do not anticipate difficulty completing the necessary excavations with standard grading equipment such as dozers, scrapers, backhoes and excavators.

6.1 EMBANKMENT

6.1.1 EARTHWORK

Site grading and earthwork should be performed in accordance with Section 17 and Section 19 of Caltrans 2022 Standard Specifications, respectively.

6.1.2 FILL MATERIAL

The source of borrow material for construction of roadway fills has not been identified. All imported borrow should be tested and approved by the resident engineer prior to transporting to the site and used as compacted fill. In general, all fill material should be free of debris and organic material. Any imported fill used at and to at least 3 ft below subgrade level should also be required to meet or exceed the design R-value presented in Tables 11 and 15 in Section 6.14.

On-site native soil observed during our field studies can be considered suitable for use as general roadway fill for the project provided it is free from concentrations of organics, debris, and oversize material (3-inch maximum dimension). Testing during construction should be completed prior to backfill placement to confirm native soils meet Caltrans general embankment fill requirements.

Import soil for new general embankment fill should meet the following criteria: contain no visual concentration of organics, debris or deleterious materials; have a maximum particle size of 3-inches with at least 50% passing the No. 4 Sieve and at least 15% passing the No. 200 sieve; and have low expansion potential (i.e., Expansion Index (EI) ≤ 50 and Sand Equivalent (SE) ≥ 20).

Fill materials to be placed as Structure Backfill must have a Sand Equivalent (SE) ≥ 20 and meet the following gradation requirements:

- 100% passing 3-inch sieve;
- 35-100% passing No. 4 sieve; and
- 20-100% passing No. 30 sieve.

6.1.3 EXPANSIVE MATERIAL

Expansive materials should not be used as fill. Expansive soil is defined as having either an Expansion Index (EI) (ASTM D 4829) greater than 50.

6.1.4 FILL PLACEMENT AND COMPACTION

Construct embankment and place new fill in accordance with Caltrans “Standard Specifications”, including at least 95% relative compaction per CTM 216 on all fill within 150 ft of bridge abutments. Soil should be placed in thin lifts (6 to 8-inches) prior to compaction.

Where new fill is placed against an existing slope or when constructing half the embankment width at a time, prepare the slope by cutting into it at least 6 ft horizontally and below any loose/soft or otherwise unsuitable materials as the new embankment is placed in layers (consistent with Section 19 of Caltrans “Standard Specifications”).

6.1.5 SLOPE GEOMETRY AND STABILITY

The maximum new fill height for the roadway embankments is expected to be 3 ft tall or less throughout the project alignment. Based on boring data generated for this study, the subsurface soils along the alignment are considered capable of providing appropriate support for proposed fill heights and sustaining anticipated fill loads without significant distress. A detailed stability analysis is not considered warranted. We expect that new embankment constructed as above, and with exterior side slopes at 2H:1V will be stable and have adequate factory of safety against slope instability.

6.1.6 WAITING PERIOD

The settlement of newly constructed embankments is expected to occur due to compression of the underlying soils and compression of the fill itself. Based on our settlement analysis summarized in Section 5.3, settlements on the order of 0.5 inches are indicated for the new fill heights of up to 3 ft along the project alignment.

The foundation soils consist predominantly of loose to medium dense granular soils and stiff to hard cohesive soils layers, and the depth groundwater is about 30 ft bgs. Therefore, we expect settlements will occur relatively quickly as the load is applied during construction. The potential for significant long-term (consolidation) settlement due to compression of native cohesive soils is considered low. Therefore a settlement waiting period is not required.

6.2 MINOR CULVERTS

Minor Caltrans Standard Plan culverts will likely be needed at select locations along the alignment within the planned roadway improvements and/or embankments to connect drainage elements. Currently the locations and types of minor culverts are still being developed, however, support is expected to be available for both reinforced concrete culverts and metal culverts. Locate new culvert foundations clear of existing (remnant) foundations. The type and general dimensions of the existing foundations should be shown on the plans or described in the special provisions.

6.3 EROSION CONTROL AND SCOUR MITIGATION

Soils used for embankment construction are anticipated to be susceptible to erosion and provisions for erosion control (such as planting, erosion control mats, etc.) are recommended. Over-side runoff from pavement should be controlled by use of curbs, dikes, down-drains, gutters, etc. Local surficial sloughing is expected to be controllable by typical maintenance procedures.

The proposed alignment does not cross a significant watercourse and scour is not expected within the CCID Main Canal, which is lined. Therefore, scour mitigation is not a consideration for this project.

6.4 ROCKFALL HAZARD

Rockfall hazard is not a consideration along the project alignment.

6.5 EXCAVATED SLOPE

Excavated slopes within planned basins at 2H:1V or flatter side-slopes will be stable based on the relatively stable condition of the existing slopes in the vicinity, provided the new slopes are constructed in accordance with current Caltrans Standard Specifications. Temporary excavations should be sloped and/or shored in accordance with current Cal OSHA requirements.

6.6 REINFORCED SLOPE

No reinforced slopes are planned for this project. New embankment slopes with 2H:1V side slopes are expected to be appropriately stable.

6.7 STANDARD PLAN EARTH RETAINING SYSTEM

Retaining walls are currently not included as part of proposed project improvements.

6.8 GROUND IMPROVEMENT - DITCHES

Based on the boring data generated for this study, the subsurface soil conditions along the alignment are predominately comprised of loose to medium dense granular soils and stiff to hard cohesive soils. However, we expect select ditches will be filled in to reach appropriate grade for the proposed roadway improvements. The ditch bottoms are expected to have saturated, soft/loose and possibly organic soils that should be removed.

Crawford plans to complete DCPs within select ditches once private property owners provide access. The depth of soft/loose soils at the ditch bottoms will be determined following completion of our DCPs.

6.9 STORMWATER INFILTRATION RATES

We will perform infiltration rate testing and provide infiltration rates once the drainage basin locations and depths have been confirmed by the design team.

6.10 BEST MANAGEMENT PRACTICES FOR STORMWATER

Caltrans Construction Best Management Practices (BMP) Field Manual Guide provides guidance for installing and maintaining water pollution control BMP. The guide discusses each BMP regarding appropriate applications for installation and applications. Caltrans requires contractors to utilize BMP in the preparation of their stormwater management plans.

6.11 SIGN AND LIGHT POST FOUNDATIONS

Overhead sign structure foundations have yet to be identified for this project, however for preliminary design, cast-in-drilled-hole (CIDH) pile foundations are likely appropriate for overhead sign structures planned for this project. The overhead sign structures are expected to be designed consistent with 2022 Caltrans Standard Plans. Use the following Standard Plans that show CIDH pile foundation depths and dimensions for various overhead signs.

- Standard Pan S8 for Truss Single Post Types II through IX.
- Standard Plan S15 for Truss Two Post Types I-S Through VII-S.
- Standard Plan S36 and S37 for Tubular Overhead Signs.
- Standard Plan S49 for Lightweight Extinguishable Message Sign and Flashing Beacons.
- Standard Plan S116 for Model 500 Changeable Message Sign (CMS).

Caltrans Standard Plan CIDH pile foundation design for overhead signs requires a minimum soil angle of internal friction (phi) equal to 30 degrees and a soil unit weight of 120 pcf, or a shear strength of 1.5 ksf for cohesive soils. Based on earth materials parameters extrapolated from boring data obtained for this project, the in-place native soils meet the minimum soil requirements for Caltrans Standard Plan design. Engineered fills constructed from materials meeting Caltrans Standards and compacted to a minimum of 90% relative compaction should be assumed to satisfy the requirements for phi equal to 30 degrees.

In no case should the CIDH pile length be less than that shown on the 2022 Caltrans Standard Plans. For sloping ground condition, the effective ground surface should be based on a 3H:1V line projected from the toe of embankment/slope to the top of pile. Based on earth materials encountered in the referenced borings, no general caving, groundwater or obstruction problems are anticipated for typical CIDH foundations.

The extrapolated soils profiles and estimated soil parameters are intended to be conservative, but soils conditions may be different at individual sign foundations. Excavations made for overhead sign foundations should be reviewed by a competent person to verify anticipated earth materials.

6.12 SOURCE MATERIAL SITE EVALUATION

This study did not include the evaluation of potential sources of import materials. The Geotechnical Engineer of Record should approve all fill borrow sources prior to transportation and placement. Below we include a list of nearby commercial suppliers.

Table 10: Import Source List

Source	Location	Estimated Distance (Mile)
Vulcan Materials Company-Los Banos	22101 Sunset Avenue, Los Banos, CA 93635	4
Granite – Vernalis Plant	37400 S Bird Road, Tracy, CA 95304	56

6.13 INSTRUMENTATION AND MONITORING

Areas requiring specific geotechnical review during construction should include basin cut-slopes, compaction of embankment fill, and bottom of ditch excavation. At a minimum, the Geotechnical Engineer of Record should monitor site grading, structure foundation excavations, subgrade, removal of any/all unsuitable soil (including oversize material and organic soils), and replacement/compaction of backfill and subgrade. An appropriate field testing program should be administered during construction to provide quality control and quality assurance for embankment/structural fills and related earthwork elements.

Geotechnical instrumentation is not anticipated to be necessary/required for this project.

6.14 PAVEMENT SECTIONS

We understand new pavements will be mostly constructed on either engineered fill or native subgrade throughout the project alignment. We completed four R-value tests (CTM 301) on bulk samples of native soils consisting of mostly clayey sand to lean clay (ranging from <5 to 36).

Using the design R-values presented in below for each general area and Chapter 600 of the Caltrans Highway Design Manual, 6th Edition, we calculated the HMA pavement sections presented in Tables 11 to 15.

Table 11: New Pavement Sections - SR 33/152 & West Connector, Area 1 (R-value = 5)

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.50
9	0.45	1.75
10	0.50	2.00
11	0.55	2.20
12	0.60	2.40

Table 12: New Pavement Sections – Western Pioneer Road Section, Area 2 (R-value = 20)

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.15
9	0.45	1.35
10	0.50	1.55
11	0.55	1.70
12	0.60	1.90

Table 13: New Pavement Sections – Center to Eastern Pioneer Road Section, Area 3 (R-value = 5)

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.50
9	0.45	1.75
10	0.50	2.00
11	0.55	2.20
12	0.60	2.40

Table 14: New Pavement Sections – Ward Avenue, Area 4 (R-value = 20)

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.15
9	0.45	1.35
10	0.50	1.55
11	0.55	1.70
12	0.60	1.90

Table 15: New Pavement Sections – SR 152 & Ward Avenue Intersection, Area 5 (R-value = 5)

Traffic Index	Material Type/Depth Required	
	Hot Mix Asphalt (HMA) (ft)	Aggregate Base (ft)
8	0.40	1.50
9	0.45	1.75
10	0.50	2.00
11	0.55	2.20
12	0.60	2.40

6.14.1 CONSIDERATIONS

The upper 0.15 to 0.2 ft of HMA may be replaced with rubberized hot mix asphalt (RHMA-G). The asphalt pavement thicknesses shown above are minimum depths and incorporate a 0.2-ft Gravel Equivalent factor of safety in accordance with Caltrans flexible pavement design methods. Other flexible pavement structural sections -- typically involving variations in AB thicknesses -- which satisfy basement soil requirements are available and can be provided, if desired.

If/where import material is required beneath roadway segments, the R-value of the import material should be equal to or greater to what is presented in Tables 11 to 15 above or additional R-value testing and pavement section calculations will need to be performed after a new R-value is determined.

Process subgrade soils and place pavement sections in accordance with Caltrans Standard Specifications. Design by the Caltrans method presumes materials and construction in

accordance with Caltrans "Standard Specifications", including 95% relative compaction on all materials within 30-inches of finished grade. Inability to achieve the required compaction on the scarified materials may be used as a field criterion to identify areas requiring additional removal and/or re-compaction.

The subgrade soils should be field reviewed with respect to uniformity and suitability by the soils engineer. Any loose, disturbed or otherwise unsuitable materials should be removed to full depth and replaced and compacted with imported fill meeting the requirements of Section 6.1.2.

The above pavement design assumes that free water will be absent from the structural section. Suitable surface drainage is of particular importance to limit subgrade saturation and excess free water.

7 NOTES FOR SPECIFICATIONS

7.1 GENERAL CONSIDERATIONS

Caltrans "Standard Specifications", unless otherwise stated in the "Special Provisions." Sound wall and overhead sign foundations shall be as shown on the 2018 edition of Caltrans "Standard Plans."

For the project described herein, we also recommend that the geotechnical report, boring logs and legend, and any subsequent addenda be included with project documents during the bidding process for reference purposes.

7.2 HAZARDOUS WASTE CONSIDERATIONS

Crawford prepared a Phase 1 Initial Site Assessment, and is currently preparing a Preliminary Site Assessment as part of the project documents.

7.3 EXISTING FACILITIES

Significant existing utilities are located within the planned improvement area including the CCID Main Canal large, various irrigation canals, and overhead/underground utility lines. Some existing utilities including gas lines, sewer lines, irrigation systems, and underground power and communication lines. The expected fill placement is considered relatively minor with fills up to 3 feet. The lines should be assessed to determine if they should be rerouted or protected in place (structures, lightweight fill, etc.) to avoid potentially damaging these utilities.

The existing ditches are expected to have saturated, soft/loose and possibly organic soils present at the bottom of the ditches. These soft/loose and possibly organic soils should be removed prior to placement of fill. The depth of soft/loose soils at the ditch bottoms will be determined following completion of our DCPs.

Consistent with Section 60-2.01C of the Caltrans 2018 Standard Specifications, remove existing piling, abutments, and pedestals to at least one foot below ground line or 3 feet below finished grade, whichever is lower, that may conflict with any planned improvements associated with the new culvert structure.

8 RISK MANAGEMENT

Our experience, and that of our profession, clearly indicates the risks of costly design, construction, and maintenance problems can be significantly lowered by retaining the Geotechnical Engineer of Record to provide additional services during design and construction. For this project, Crawford should be retained as the Geotechnical Engineer of Record to:

- Review and provide comments on the civil plans and specifications prior to 95% plan set submittal.
- Monitor construction to check and document our report assumptions. At a minimum, Crawford should observe subgrade preparation prior to placing fill.
- Update this report if design changes occur, 2 years or more lapse between this report and construction, and/or site conditions have changed.

If we are not retained to perform the above applicable services, we are not responsible for any other party's interpretation of our report, and subsequent addendums, letters, and discussions.

9 LIMITATIONS

Crawford performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. Do not use this report for different locations and/or projects without the written consent of Crawford. Where referenced, we used ASTM or Caltrans standards as a general (not strict) guideline only. We do not warranty our services.

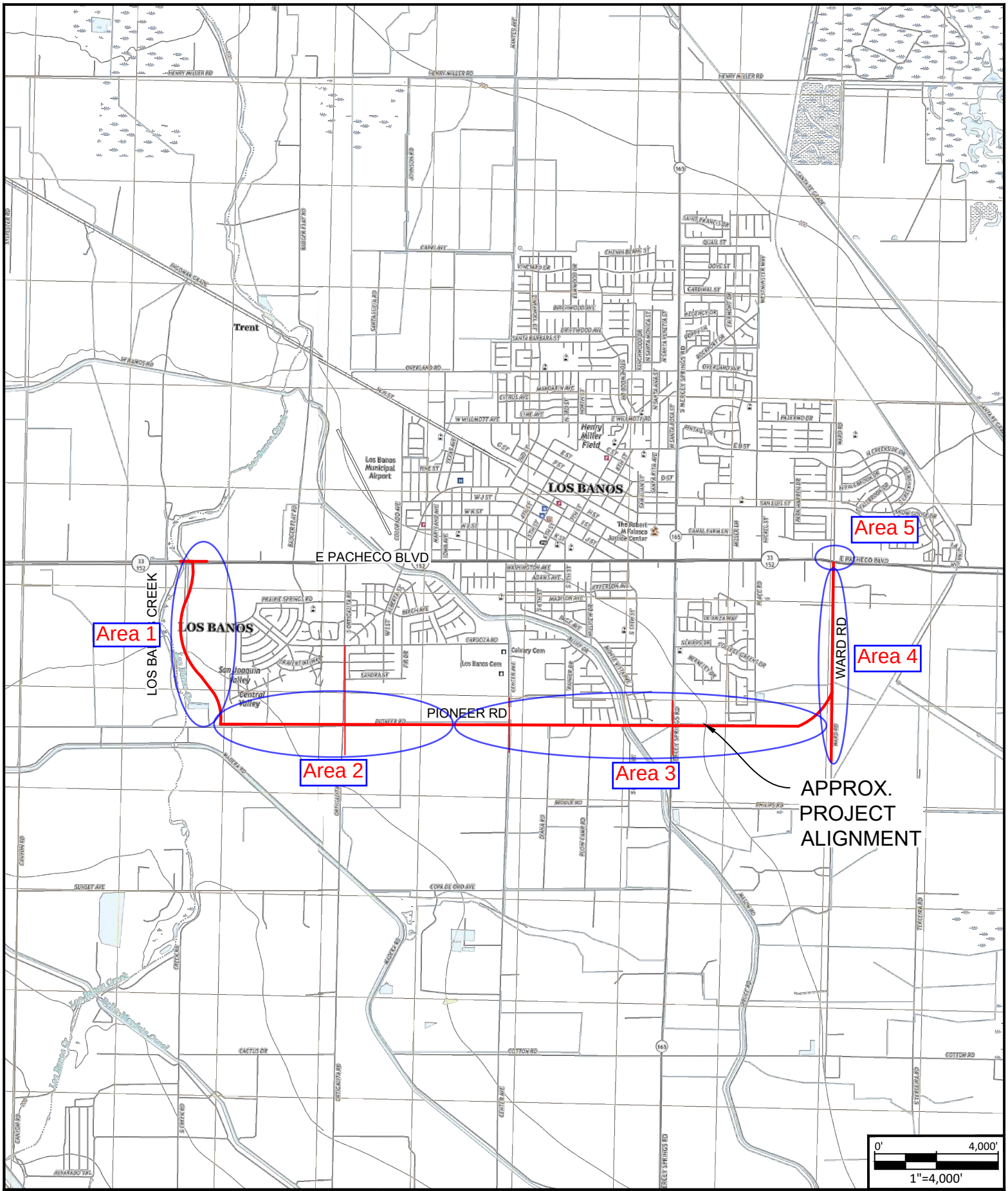
Crawford based this report on the current site conditions. We assumed the soil and groundwater conditions are representative of the subsurface conditions on the site. Actual conditions between explorations will vary along the project alignment. Our scope did not include evaluation of flooding potential and aerial photograph review. Please contact Crawford if you would like an evaluation of one or more of these potentially damaging issues.

Logs of our explorations are presented in Appendix III. The lines designating the interface between soil types are approximate. The transition between soil types may be abrupt or gradual. Our recommendations are based on the final logs, which represent our interpretation of the field logs and general knowledge of the site and geological conditions. Modern design and construction are complex, with many regulatory sources/restrictions, involved parties, and construction alternatives. It is common to experience changes and delays. The owner should set aside a reasonable contingency fund based on complexities and cost estimates to cover changes and delays.

APPENDIX I

Figure 1: Vicinity Map
Figure 2: Geologic Map
Figure 3: Fault Map
Figure 4A: Exploration Map
Figure 4B: Exploration Map *(In-Progress)*
Figure 4C: Exploration Map
Figure 4D: Exploration Map
Figure 4E: Exploration Map
Figure 4F: Exploration Map

DRAFT



NORTH

Source:
USGS 7.5' Topographic Maps, Volta, Merced County, California, 2021, Scale: 1:24,000

USGS 7.5' Topographic Maps, Los Banos, Merced County, California, 2021, Scale: 1:24,000

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PIONEER COMPLETE STREETS PROJECT

LOS BANOS, CA

Figure 1
Vicinity Map

Prj. No: 22-852.1
Date: 09/29/2022



Q	Alluvium
Qm	Modesto Formation
Qp	Patterson Alluvium
Qdp	Dos Palos Alluvium
Qlb	Los Banos Alluvium
Qsl	San Luis Ranch Alluvium
Kp	Panoche Formation
Km	Moreno Formation

NORTH

Source:
Wagner, D.L., Bortugno, E.J., and McJunkin, R.D.; Title; Geologic map of the San Francisco-San Jose quadrangle, California, 1:250,000; Scale: 1:250,000; California Division of Mines and Geology, 1991.

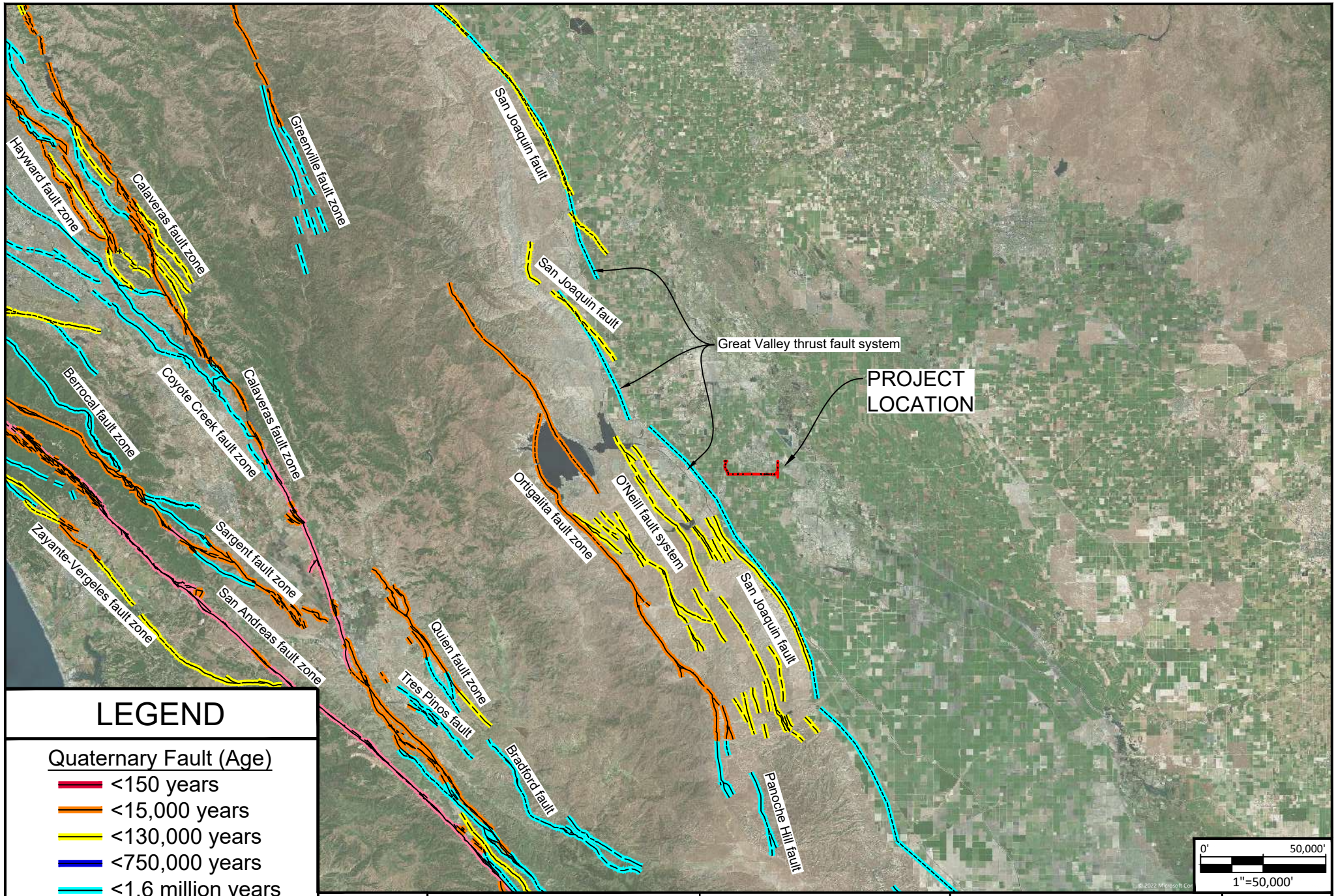
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PIONEER COMPLETE STREETS PROJECT

LOS BANOS, CA

Figure 2
Geologic Map

Prj. No: 22-852.1
Date: 09/29/2022



LEGEND

Quaternary Fault (Age)

- <150 years
- <15,000 years
- <130,000 years
- <750,000 years
- <1.6 million years

Location

- Well Constrained
- Moderately Constrained
- Inferred

NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

Fault Data: USGS GIS Data

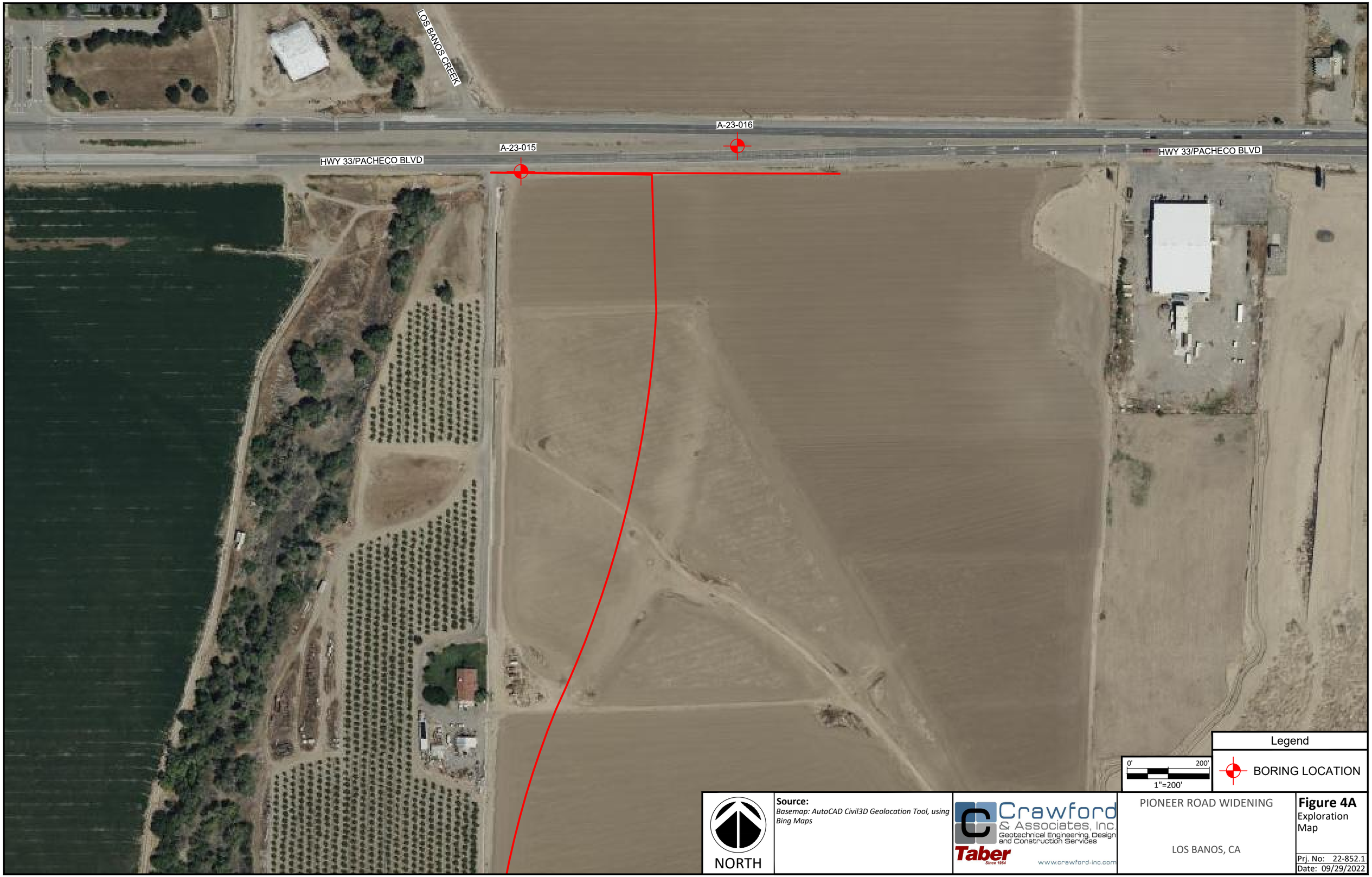
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PIONEER COMPLETE STREETS PROJECT

LOS BANOS, CA

Figure 3
Fault Map

Prj. No: 22-852.1
Date: 09/29/2022



Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

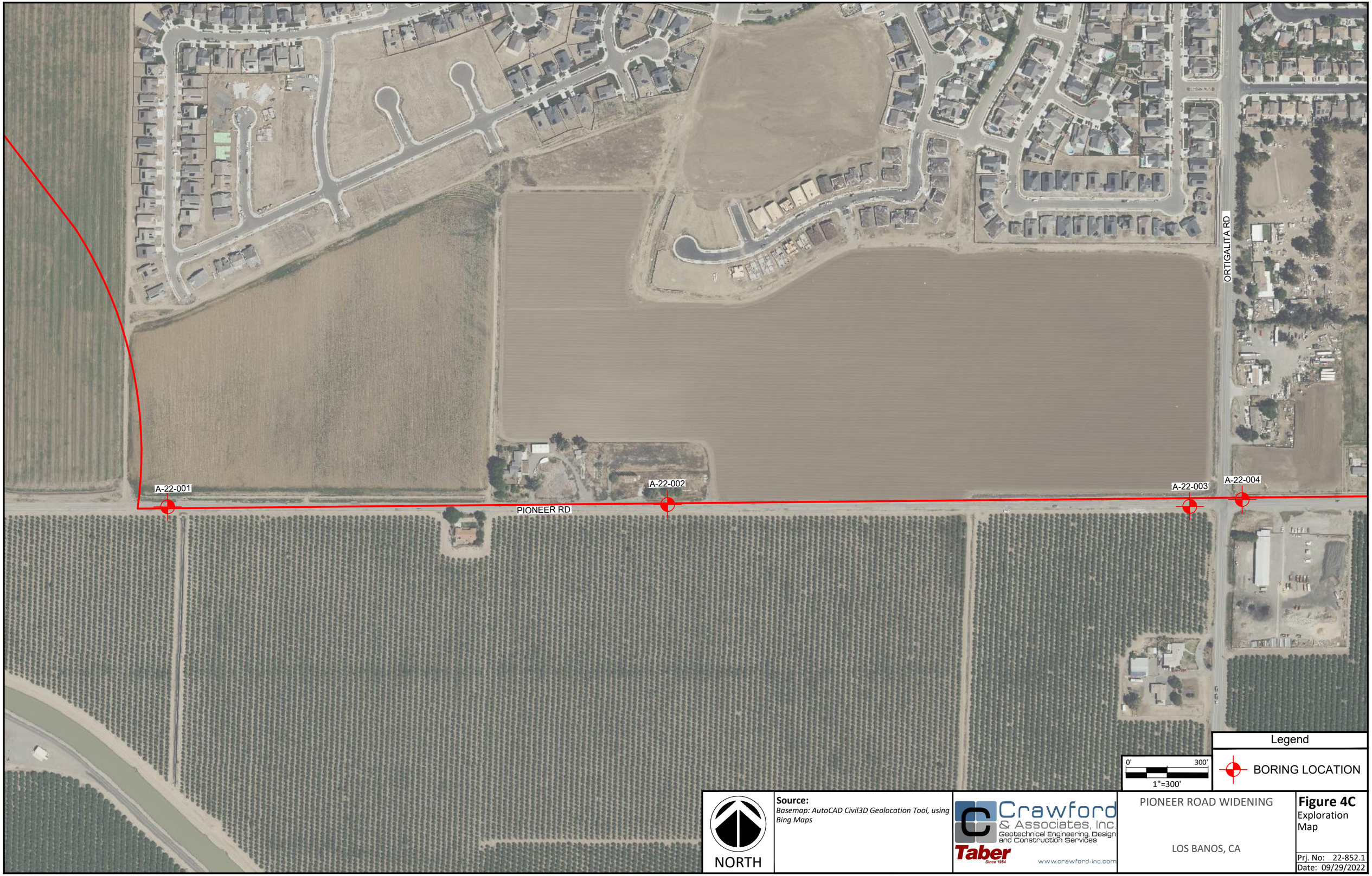
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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 4A
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

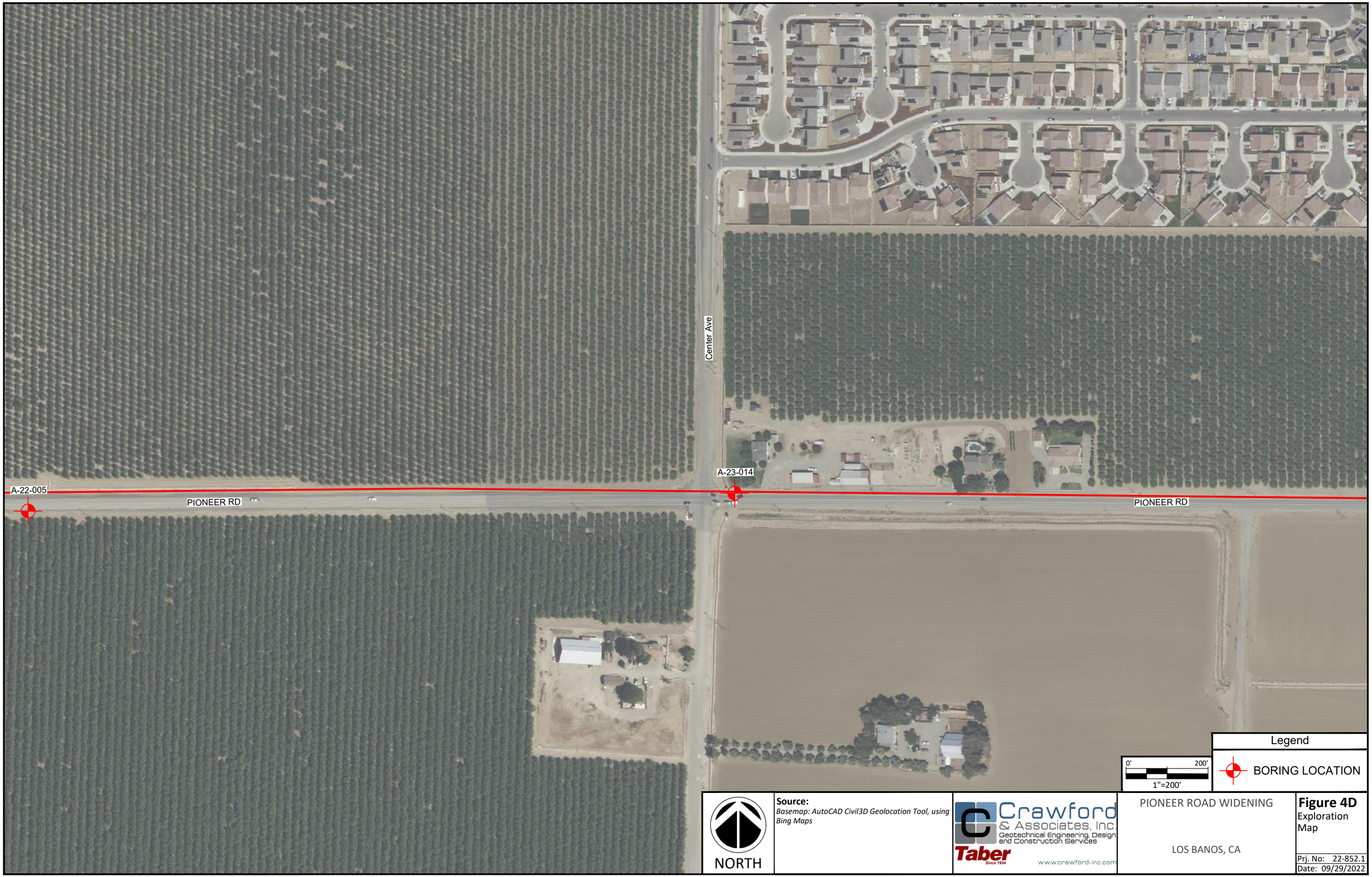
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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 4C
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 4D
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022



Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 4E
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022



NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps

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PIONEER ROAD WIDENING

LOS BANOS, CA

Figure 4F
Exploration Map

Prj. No: 22-852.1
Date: 09/29/2022

APPENDIX II

Boring Log Legend

Boring Logs

DRAFT

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTS

C	Consolidation
CL	Collapse Potential
CP	Compaction Curve
CR	Corrosion, Sulfates, Chlorides
CU	Consolidated Undrained Triaxial
DR	Drained Residual Shear Strength
DS	Direct Shear
EI	Expansion Index
M	Moisture Content
OC	Organic Content
P	Permeability
PA	Particle Size Analysis
PI	Liquid Limit, Plastic Limit, Plasticity Index
PL	Point Load Index
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value
SE	Sand Equivalent
SG	Specific Gravity
SW	Swell Potential
TV	Pocket Torvane
UC	Unconfined Compression - Soil
	Unconfined Compression - Rock
UU	Unconsolidated Undrained Triaxial
UW	Unit Weight

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler (ID 2.0 in.)
- Modified California Sampler (ID 2.5 in.)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010) with Errata Sheet (2015).

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Boring Record Legend

Soil Legend

CONSISTENCY OF COHESIVE SOILS				
Descriptor	**Unconfined Compressive Strength (tsf)**	**Pocket Penetrometer (tsf)**	**Torvane (tsf)**	**Field Approximation**
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	0.50 - 1.0	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	1.0 - 2.0	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS	
Descriptor	**SPT N_{60} (blows / 12 inches)**
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

MOISTURE	
Descriptor	**Criteria**
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Descriptor	**Criteria**
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE		
Descriptor		**Size**
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS	
Descriptor	**Criteria**
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION	
Descriptor	**Criteria**
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

LOG OF BORING A-22-001

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 11.5 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 141.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), MCAL (2.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
140	1		Bulk						CLAYEY SAND (SC); very loose; brown; dry to moist; mostly fine to medium SAND; some medium plasticity fines.	100								
139	2																	
138	3		1	1 2 1	3					78		18	34					
137	4																	
136	5		2	3 3 3	6				little medium plasticity fines	61								Driller notes easy drilling from 5-10'
135	6																	
134	7																	
133	8		3	2 2 2	4				loose	78								
132	9																	
131	10		4	2 4 10	14				Poorly-graded SAND with SILT (SP-SM); medium dense; brown; dry; mostly fine to coarse SAND; few fines; trace fine GRAVEL.	78								
130	11																	
129	12								Bottom of borehole at 11.5 ft bgs									
128	13																	
127	14																	
126	15																	
125	16																	
124	17																	
123	18																	
122	19																	
121	20																	

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-001
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-002

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 7.0 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 137.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), Bulk, MCAL (2.4" ID)
BOREHOLE DIAMETER: 4.0 in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
136	1		Bulk						SANDY lean CLAY (CL); brown; dry to moist; 61% medium plasticity fines; 28% fine to coarse SAND; 11% fine to coarse GRAVEL.	100								Driller notes easy drilling from 0-5'
135	2																	
134	3		1	7 6 6	12	4.00				67				14.2	95.9	61		
133	4		2	3 3 3	6				loose	56								
132	5																	
131	6		3	3 3 3	6					39								
130	7								Bottom of borehole at 7.0 ft bgs									
129	8																	
128	9																	
127	10																	
126	11																	
125	12																	
124	13																	
123	14																	
122	15																	
121	16																	
120	17																	
119	18																	
118	19																	
117	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-002
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-003

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 131.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: MCAL (2.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
130	1		Bulk						CLAYEY SAND (SC); medium dense; brown; dry to moist; mostly fine to medium SAND; little medium plasticity fines; trace fine to coarse GRAVEL.	100								Driller notes hard drilling from 0-2.5'
129	2																	
128	3		1	7 10 11	21				some medium plasticity fines	72								Driller notes soft drilling from 2.5-5.0'
127	4																	
126	5		2	3 7 8	15	4.00				72								
125	6								Lean CLAY with SAND (CL); hard; brown; moist; mostly medium plasticity fines; little fine SAND.									
124	7								Bottom of borehole at 6.5 ft bgs									
123	8																	
122	9																	
121	10																	
120	11																	
119	12																	
118	13																	
117	14																	
116	15																	
115	16																	
114	17																	
113	18																	
112	19																	
111	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-003
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-004

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 11.5 (ft)

BEGIN DATE: 11/07/2022
COMPLETION DATE: 11/07/2022
SURFACE ELEVATION: 131.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: Bulk, MCAL (2.4" ID), SPT (1.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
130	1		Bulk						CLAYEY SAND with GRAVEL (SC); medium dense; brown; dry to moist; mostly fine to medium SAND; little fine to coarse GRAVEL; little medium plasticity fines.	100								R-Value = 36
129	2																	
128	3		1	4 4 4	8					67		14	28					
127	4								Lean CLAY (CL); dark brown; moist; mostly medium plasticity fines; few fine SAND; trace coarse GRAVEL.									
126	5		2	5 6 8	14	3.00			CLAYEY SAND (SC); loose; brown; dry to moist; mostly medium to fine SAND; some medium plasticity fines.	78				10.7	109.2			Driller notes soft drilling at 6'
125	6								Lean CLAY (CL); very stiff; dark brown; moist; mostly medium plasticity fines; few fine SAND.									
124	7																	
123	8		3	4 5 7	12	1.00			stiff; light brown; trace fine SAND	94				18.7	110.9			UC Comp. Strength:1555 psf Strain at Failure: 5.4% CR Soil pH: 7.76 Min. Resistivity: 1020 ohm-cm Chloride: 26.6 ppm Sulfate: 63.8 ppm
122	9																	
121	10																	
120	11		4	4 6 11	17	2.00			very stiff	83								
119	12								Poorly-graded SAND with SILT (SP-SM); medium dense; brown; dry to moist; mostly fine to medium dense; few fines; trace fine GRAVEL.									
118	13								Bottom of borehole at 11.5 ft bgs									
117	14																	
116	15																	
115	16																	
114	17																	
113	18																	
112	19																	
111	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-004
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-005

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 16.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 130.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stme Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: MCAL (2.4" ID), Bulk, SPT (1.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
129	1	Bulk							CLAYEY SAND with GRAVEL (SC); brown; dry; 46% fine to medium SAND; 36% fines; 18% fine to coarse GRAVEL.	100		12	27			36		
128	2																	
127	3	1	2 3 2	5					CLAYEY SAND (SC); loose; dark brown; moist; mostly fine SAND; some medium plasticity fines.	83								
126	4																	
125	5	2	3 3 4	7	2.50					72				20.8	100.3			
124	6								Lean CLAY (CL); soft; dark brown; moist; mostly medium plasticity fines; trace fine to coarse SAND.									
123	7																	
122	8	3	3 4 5	9	3.50					72								
121	9								Lean CLAY with SAND (CL); very stiff; brown; moist; mostly medium plasticity fines; little fine SAND.									
120	10	4	4 9 9	18					CLAYEY SAND (SC); medium dense; brown; dry to moist; mostly fine SAND; little medium plasticity fines. some fines	83				9.8	108.8			
119	11																	
118	12								little fines									
117	13																	
116	14								Lean CLAY (CL); very stiff; brown; moist; mostly medium plasticity fines; few fine SAND.									
115	15	5	5 10 10	20	2.50					94								
114	16																	
113	17								Bottom of borehole at 16.5 ft bgs									
112	18																	
111	19																	
110	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-005
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-006

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 113.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
112	1	Bulk							CLAYEY SAND with GRAVEL (SC); brown; dry to moist; 50% fine to medium SAND; 23% fine GRAVEL; 27% medium plasticity fines.	100		12	26			27		Driller notes stiff drilling from 0-2'
111	2																	Driller notes easy drilling from 2-5'
110	3		1	3 3 4	7	3.00			Lean CLAY (CL); very stiff; brown; dry to moist; mostly medium plasticity fines; few fine SAND.	72								
109	4																	
108	5		2	6 10 16	26				CLAYEY SAND (SC); dense; brown; dry to moist; mostly fine SAND; some medium plasticity fines.	94								
107	6								Bottom of borehole at 6.5 ft bgs									
106	7																	
105	8																	
104	9																	
103	10																	
102	11																	
101	12																	
100	13																	
99	14																	
98	15																	
97	16																	
96	17																	
95	18																	
94	19																	
93	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-006
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-007

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 105.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
104	1		Bulk						CLAYEY SAND with GRAVEL (SC); brown; dry to moist; mostly fine to coarse SAND; little fine to coarse GRAVEL; little low to medium plasticity fines.	100								R-Value = 20
103	2																	
102	3		1	3 4 5	9					72		14	31					
101	4								CLAYEY SAND (SC); medium dense; brown; dry to mois; mostly fine SAND; little medium plasticity fines.									
100	5		2	3 4 4	8				some medium plasticity fines	56								
99	6																	
98	7								Bottom of borehole at 6.5 ft bgs									
97	8																	
96	9																	
95	10																	
94	11																	
93	12																	
92	13																	
91	14																	
90	15																	
89	16																	
88	17																	
87	18																	
86	19																	
85	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-007
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-008

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 11.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 108.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: Bulk, SPT (1.4" ID), MCAL (2.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
107	1	Bulk							CLAYEY SAND with GRAVEL (SC); loose; brown; moist; 38% fine to coarse SAND; 43% medium plasticity fines; 19% coarse to fine GRAVEL.	100								Driller notes soft drilling from 0-5'
106	2																	
105	3		1	3 2 3	5					17						43		
104	4																	
103	5		2	2 1 2	3				very loose; fine SAND; some medium plasticity fines	83								Driller notes stiffer drilling from 5-10'
102	6																	
101	7																	
100	8		3	5 12 17	29				medium dense	94								Small lense of Lean CLAY (CL) at 8'
99	9																	
98	10		4	7 12 17	29	+4.5			Lean CLAY (CL); hard; brown; moist; mostly medium plasticity fines; trace fine SAND.	94								
97	11																	
96	12								Bottom of borehole at 11.5 ft bgs									
95	13																	
94	14																	
93	15																	
92	16																	
91	17																	
90	18																	
89	19																	
88	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-008
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-009

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 112.0 (ft)
SURFACE CONDITION: Asphalt
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
112	0	Bulk							ASPHALT CONCRETE(2")	100								R-Value = <5
									AGGREGATE BASE(1")									
111	1								CLAYEY SAND with GRAVEL (SC); brown; dry to moist; mostly fine to medium SAND; some medium plasticity fines; little fine to coarse GRAVEL.			30	43					
110	2																	
109	3		1	3 4 5	9				Lean CLAY (CL); dark brown; moist; mostly medium plasticity fines; few fine SAND.	94								
108	4																	
107	5		2	4 7 14	21				trace fine SAND	100								
106	6																	
									Bottom of borehole at 6.5 ft bgs									
105	7																	
104	8																	
103	9																	
102	10																	
101	11																	
100	12																	
99	13																	
98	14																	
97	15																	
96	16																	
95	17																	
94	18																	
93	19																	
92	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-009
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-010

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 6.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 107.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: Bulk, MCAL (2.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
106	1		Bulk						CLAYEY SAND (SC); brown; dry to moist; mostly fine to medium SAND; little medium plasticity fines; few fine to coarse GRAVEL.	100									Driller notes soft drilling from 0-2'
105	2																		Driller notes stiffer drilling from 2-5'
104	3		1	3 5 4	9	1.50			loose	83									
103	4								Lean CLAY (CL); stiff; brown; moist; mostly medium plasticity fines; few fine SAND.										
102	5																		
101	6		2	10 11 17	28	4.50			hard	89									
100	7								Bottom of borehole at 6.5 ft bgs										
99	8																		
98	9																		
97	10																		
96	11																		
95	12																		
94	13																		
93	14																		
92	15																		
91	16																		
90	17																		
89	18																		
88	19																		
87	20																		

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-010
ENTRY BY: MNA
CHECKED BY: JJW

LOG OF BORING A-22-011

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 16.5 (ft)

BEGIN DATE: 11/08/2022
COMPLETION DATE: 11/08/2022
SURFACE ELEVATION: 119.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 82.2 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: CME 75 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), MCAL (2.4" ID), Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
118	1		Bulk						CLAYEY SAND with GRAVEL (SC); medium dense; brown; moist; mostly fine to medium SAND; little fine to coarse GRAVEL; little medium plasticity fines.	100								Driller notes stiffer drilling from 0-5'
117	2																	
116	3		1	8 5 6	11					11								
115	4																	
114	5		2	3 2 3	5					67								Driller notes softer drilling from 5-15'
113	6								SANDY lean CLAY (CL); brown; moist; mostly medium plasticity fines; some fine SAND.							71		
112	7																	
111	8		3	7 8 12	20	3.00				72								
110	9								Lean CLAY (CL); very stiff; brown; moist; mostly medium plasticity fines; few fine SAND; trace fine to coarse GRAVEL.									
109	10																	
108	11		4	9 14 20	34	+4.5			hard; high plasticity fines; trace fine SAND	100		24	42	16.3	110.6			UC Comp. Strength: 7848 psf Strain at Failure: 3.4%
107	12																	
106	13																	
105	14																	
104	15																	
103	16		5	7 7 9	16	1.50			stiff; medium plasticity fines	100								
102	17								Bottom of borehole at 16.5 ft bgs									
101	18																	
100	19																	
99	20																	

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Geotechnical Engineering, Design and Construction Services

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4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-22-011
ENTRY BY: MNA
CHECKED BY: JJW

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
MNA	**11-09-22**	**11-09-22**	**-120.840812E 37.042433N World Geodetic System Longitude / Latitude (WGS 84)**	**R-22-012**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Geo-Ex Subsurface Exploration				**124.0 ft**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 75 (Truck)**	**4.0 in.**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
MCAL (2.4" ID), SPT (1.4" ID), Bulk			**Automatic; 140 lbs; 30 in drop**	**82.2%**
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING **34.0 ft** AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Tremie Grout				**76.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT CONCRETE(3")												
			AGGREGATE BASE(4")		Bulk			100							R-Value = <5 AC = 3.0" AB = 4.0"
123.00	1		Lean CLAY with SAND (CL); very stiff; dark brown; moist; mostly medium plasticity fines; little fine SAND.												
122.00	2														
121.00	3				1	3 5 5	10	83							
120.00	4											PP=3.00			
119.00	5		Lean CLAY (CL); stiff; dark brown; moist; mostly medium plasticity fines; few fine SAND.		2	2 3 4	7	83		20	106	PP=1.00			
118.00	6														
117.00	7														
116.00	8				3	3 3 8	11	89				PP=2.00			8' of 5" diameter casing
115.00	9														
114.00	10														
113.00	11		very stiff; light brown; trace fine SAND		4	3 5 8	13	83		22	100	PP=2.00			Liquid Limit = 41 Plastic Index = 16 UC Comp. Strength: 2275 psf Strain at Failure: 3.7%
112.00	12														
111.00	13														
110.00	14														
109.00	15				5	3 5 9	14	83				PP=3.50			CR Soil pH: 7.86 Min. Resistivity: 1550 ohm-cm Chloride: 14.8 ppm Sulfate: 32.0 ppm
108.00	16														
107.00	17														
106.00	18		SILTY SAND (SM); medium dense; brown; dry to moist; mostly fine SAND; little low plasticity fines; mica present.												
105.00	19														
104.00	20				6	6 9 11	20	100							Driller notes soft drilling from 20-40
103.00	21									23	98				
102.00	22														
101.00	23		Poorly-graded SAND (SP); medium dense; brown; moist; mostly fine to medium SAND; trace fines; mica present.												
100.00	24														
99.00	25				7	5 6 9	15	100							
98.00	26		CLAYEY SAND (SC); medium dense; brown; moist; mostly fine SAND; some medium plasticity fines.							24	103				
97.00	27														
96.00	28														
95.00	29		Lean CLAY (CL); (stiff); light brown; moist; mostly medium plasticity fines; few fine to medium SAND.												

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-012**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	MNA	**11/14/2022**	**1 of 3**	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
94.00	30		Lean CLAY (CL); (stiff); light brown; moist; mostly medium plasticity fines; few fine to medium SAND.												
					8	4 6 8	14	100							
93.00	31											PP=1.00			
92.00	32														
91.00	33														
90.00	34		SANDY SILT (ML); medium dense; brown; moist to wet; mostly fines; some fine SAND; mica present.												
89.00	35														
					9	5 6 8	14	72							
88.00	36														Percent Fines = 58% Liquid Limit = 22 Plastic Index = 3 Switched to mud rotary
87.00	37														
86.00	38														
85.00	39		SILTY SAND (SM); dense; brown; moist to wet; mostly fine SAND; little fines; mica present.												
84.00	40														Loosing water at 40' ; added bentonite
					10	9 11 18	29	61							
83.00	41														
82.00	42														
81.00	43														
80.00	44		Poorly-graded SAND with SILT (SP-SM); dense; brown; moist; mostly fine to medium SAND; 8% fines; trace fine GRAVEL.												
79.00	45														
					11	10 11 12	23	28							
78.00	46														Percent Fines = 8%
77.00	47														
76.00	48														
75.00	49		Lean CLAY (CL); very stiff; light brown; moist; mostly medium plasticity fines; few fine SAND.												
74.00	50														
					12	5 4 6	10	78							
73.00	51		Lean CLAY with SAND (CL); very stiff; light brown; moist; mostly medium plasticity fines; little fine SAND.									PP=2.00			
72.00	52														
71.00	53														Driller notes stiffer drilling at 53'
70.00	54		Poorly-graded SAND with SILT (SP-SM); dense; brown; moist; mostly fine SAND; few fines; mica present.												
69.00	55														
					13	15 18 25	43	67							
68.00	56														Percent Fines = 10%
67.00	57														
66.00	58														
65.00	59		Lean CLAY (CL); stiff; light brown; moist; mostly medium plasticity fines; trace fine SAND.												
64.00	60														
					14	6 7 8	15	94							
63.00	61											PP=1.00			
62.00	62														
61.00	63														
60.00	64		SILTY SAND (SM); medium dense; brown; moist; mostly fine SAND; little fines; mica present.												

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-012**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	MNA		**11/14/2022**	**2 of 3**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
59.00	65		SILTY SAND (SM); medium dense; brown; moist; mostly fine SAND; little fines; mica present.												Driller notes soft drilling from 65-70'
					15	5 15 14	29	78							
58.00	66											PP=0.50			
57.00	67		Lean CLAY (CL); soft; light brown; moist; mostly medium plasticity fines; trace fine SAND; hard cementation pieces.												
56.00	68														
55.00	69														
54.00	70														
					16	16 16 15	31	39							
53.00	71		very stiff									PP=3.00			
52.00	72														
51.00	73														
50.00	74														
49.00	75														
					17	9 14 25	39	50							
48.00	76											PP=2.50			
47.00	77		Bottom of borehole at 76.5 ft bgs												
46.00	78														
45.00	79														
44.00	80														
43.00	81														
42.00	82														
41.00	83														
40.00	84														
39.00	85														
38.00	86														
37.00	87														
36.00	88														
35.00	89														
34.00	90														
33.00	91														
32.00	92														
31.00	93														
30.00	94														
29.00	95														
28.00	96														
27.00	97														
26.00	98														
25.00	99														

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-012**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	MNA		**11/14/2022**	**3 of 3**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
MNA	**11-10-22**	**11-10-22**	**-120.84034E 37.04232N World Geodetic System Longitude / Latitude (WGS 84)**	**R-22-013**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Geo-Ex Subsurface Exploration				**122.0 ft**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**CME 75 (Truck)**	**4.0 in.**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
SPT (1.4" ID), Bulk, MCAL (2.4" ID)			**Automatic; 140 lbs; 30 in drop**	**82.2%**
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Tremie Grout			**Not Encountered** / **34.2 ft on 11-10-22**	**76.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														
121.00	1		CLAYEY SAND (SC); medium dense; brown; moist; mostly coarse to fine SAND; some medium plasticity fines; few fine GRAVEL.		Bulk			50							Percent Fines = 41% Driller notes loose gravels
120.00	2														
119.00	3		fine SAND		1	11 15 17	32	78							
118.00	4														
117.00	5				2	10 16 13	29	61							Driller notes harder drilling at 5
116.00	6		few fine to coarse GRAVEL							8	108				
115.00	7														
114.00	8														8' of 5" diameter casing
113.00	9														
112.00	10				3	8 11 14	25	78							
111.00	11		dense; fine SAND; some medium plasticity fines												
110.00	12														
109.00	13														
108.00	14		Lean CLAY (CL); very stiff; dark brown; moist; mostly medium plasticity fines; few fine SAND.												
107.00	15				4	6 6 10	16	89				PP=3.00			Driller notes hard drilling from 15-20'
106.00	16		Poorly-graded SAND with SILT (SP-SM); medium dense; brown; dry to moist; mostly fine SAND; few fines; mica present.							10	93				
105.00	17				5	3 4 4	8	83							
104.00	18														
103.00	19		Poorly-graded SAND (SP); dense; brown; dry; mostly fine to medium SAND; few coarse to fine GRAVEL; trace fines; mica present.												
102.00	20				6	8 11 13	24	56							
101.00	21														
100.00	22														
99.00	23														
98.00	24		Lean CLAY with SAND (CL); brown mottled with white; moist; mostly medium plasticity fines; little fine SAND.												
97.00	25				7	6 10 13	23	100							
96.00	26														Percent Fines = 73%
95.00	27														
94.00	28														
93.00	29		Lean CLAY (CL); soft; light brown; moist; mostly medium plasticity fines; few fine SAND.												

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-013**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	MNA	**11/14/2022**	**1 of 3**	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
92.00	30		Lean CLAY (CL); soft; light brown; moist; mostly medium plasticity fines; few fine SAND.												
91.00	31				8	8 8 10	18	0							
90.00	32				9	2 3 4	7	100							Driller notes very soft drilling at 32
89.00	33											PP=0.50			CR Soil pH: 7.99 Min. Resistivity: 1630 ohm-cm Chloride: 12.3 ppm Sulfate: 24.2 ppm Groundwater encountered at 34.2'
88.00	34		SANDY SILT (ML); loose; brown; moist; mostly non-plastic fines; some fine SAND.												
87.00	35				10	2 3 8	11	100							
86.00	36									22	108				Percent Fines = 63% Liquid Limit = 21 Plastic Index = 2
85.00	37		medium dense		11	2 3 8	11	100							
84.00	38														Percent Fines = 58% Liquid Limit = NP Plastic Index = NP
83.00	39														
82.00	40				12	10 11 9	20	72							
81.00	41														Percent Fines = 32%
80.00	42														
79.00	43		fine SAND; low plasticity fines												Driller notes harder drilling at 43'
78.00	44		SILTY SAND (SM); medium dense; brown; moist; mostly fine SAND; some low plasticity fines.												
77.00	45				13	4 4 5	9	78							
76.00	46		SILT (ML); medium dense; brown; moist; mostly non-plastic fines; few fine SAND.									PP=0.50			Liquid Limit = NP Plastic Index = NP
75.00	47														
74.00	48														
73.00	49		CLAYEY SAND (SC); medium dense; dark brown; moist; mostly fine to medium SAND; some medium plasticity fines.												
72.00	50				14	12 12 12	24	89							
71.00	51									23	109	PP=2.50			
70.00	52														
69.00	53														
68.00	54		SILTY SAND (SM); medium dense; brown; moist; mostly fine SAND; some low plasticity fines.												
67.00	55				15	3 7 10	17	83							
66.00	56														
65.00	57														
64.00	58														
63.00	59														
62.00	60				16	9 10 12	22	28							
61.00	61														
60.00	62														
59.00	63														Driller notes really soft drilling at 63
58.00	64		Lean CLAY (CL); stiff; light brown; moist; mostly medium plasticity fines; trace fine SAND.												

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-013**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	MNA		**11/14/2022**	**2 of 3**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
57.00	65		Lean CLAY (CL); stiff; light brown; moist; mostly medium plasticity fines; trace fine SAND.												
					17	9 8 9	17	0							
56.00	66														
55.00	67				18	5 7 8	15	100							
54.00	68											PP=1.00			
53.00	69														
52.00	70														
					19	15 24 21	45	83							
51.00	71		hard; brown mottled with white									PP=+4.50			
50.00	72														
49.00	73														
48.00	74														
47.00	75														
					20	5 8 11	19	83							
46.00	76		soft; brown									PP=0.50			
45.00	77		Bottom of borehole at 76.5 ft bgs												
44.00	78														
43.00	79														
42.00	80														
41.00	81														
40.00	82														
39.00	83														
38.00	84														
37.00	85														
36.00	86														
35.00	87														
34.00	88														
33.00	89														
32.00	90														
31.00	91														
30.00	92														
29.00	93														
28.00	94														
27.00	95														
26.00	96														
25.00	97														
24.00	98														
23.00	99														

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REPORT TITLE				HOLE ID
BORING RECORD				**R-22-013**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	MNA		**11/14/2022**	**3 of 3**

LOG OF BORING A-23-014

PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
LOCATION: City of Los Banos
COUNTY: Merced County
CLIENT: GPA Consulting
LOGGED BY: MNA
DEPTH OF BORING: 16.5 (ft)

BEGIN DATE: 06/29/2023
COMPLETION DATE: 06/29/2023
SURFACE ELEVATION: 125.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 79.7 (%)

DRILLING CONTRACTOR: Geo-Ex Subsurface Exploration
DRILLING METHOD: Solid-Stem Auger
DRILL RIG: Diedrich D70 (Truck)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: MCAL (2.4" ID), SPT (1.4" ID)
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
124	1								Lean CLAY (CL); hard; brown; dry to moist; mostly medium plasticity fines; few fine SAND; trace fine to coarse GRAVEL.									Driller notes easy drilling from 0-10'
123	2																	
122	3		1	5 8 10	18	+4.5				72								
121	4								dark brown; high plasticity fines; trace fine SAND					16.0	109.6			
120	5																	
119	6		2	4 10 7	17				brown, few fine SAND	83						78		CR Soil pH: 7.44 Min. Resistivity: 270 ohm-cm Chloride: 693.5 ppm Sulfate: 144.2 ppm
118	7								Lean CLAY with SAND (CL); brown; dry; 78% medium plasticity fines; 22% fine SAND.									
117	8																	
116	9								Lean CLAY (CL); hard; brown; dry; mostly medium plasticity fines; few fine SAND.									
115	10																	
114	11		3	2 8 13	21	+4.5				72								Driller notes easy drilling from 10-15'
113	12								Silty SAND (SM); medium dense; brown; dry to moist; mostly fine SAND; little fines; mica present.					12.7				
112	13																	
111	14								Lean CLAY (CL); very stiff; brown; dry to moist; mostly medium plasticity fines; few fine SAND.									
110	15																	
109	16		4	10 18 20	38	3.00				100								
108	17								Bottom of borehole at 16.5 ft bgs									
107	18																	
106	19																	
105	20																	

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PROJECT NO: 22-852.1a
PROJECT: Pioneer Road Widening
BORING: A-23-014
ENTRY BY: LEK
CHECKED BY: JJW

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
MNA	**06-29-23**	**06-29-23**	**-120.890049E 37.056586N World Geodetic System Longitude / Latitude (WGS 84)**	**A-23-015**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Geo-Ex Subsurface Exploration				**134.0 ft**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**Diedrich D70 (Truck)**	**4.0 in.**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
MCAL (2.4" ID)			**Automatic; 140 lbs; 30 in drop**	**79.7%**
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat Cement Grout			**Not Encountered**	**21.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
134.00	0		Lean CLAY (CL); stiff; dark brown; moist; mostly high plasticity fines; few fine SAND.												
133.00	1														
132.00	2														
131.00	3				1	7 10 12	22	83							
130.00	4		SANDY lean CLAY (CL); hard; dark brown; moist; mostly medium plasticity fines; little fine to medium SAND.									PP=1.50			
129.00	5		Lean CLAY (CL); very stiff; dark brown; moist; mostly medium plasticity fines; few fine SAND.												
128.00	6				2	7 10 14	24	94				PP=3.00			
127.00	7		CLAYEY SAND (SC); medium dense; dark brown; dry to moist; mostly medium to fine SAND; some fines.												
126.00	8		Lean CLAY (CL); hard; dark brown; moist; mostly low plasticity fines; few fine SAND.												
125.00	9														
124.00	10				3	4 4 4	8	56				PP=2.00			
123.00	11		stiff; trace fine SAND							19	105				Liquid Limit = 28 Plastic Limit = 9 Percent Fines = 79%
122.00	12		Lean CLAY with SAND (CL); very stiff; brown; moist; 79% low plasticity fines; 21% fine sand.												
121.00	13		Lean CLAY (CL); hard; brown; moist; mostly medium plasticity fines; few fine SAND.												
120.00	14														
119.00	15				4	7 15 18	33	94				PP=3.00			
118.00	16														
117.00	17		very stiff												
116.00	18														
115.00	19														
114.00	20		light brown; trace fine SAND		5	6 10 12	22	100				PP=2.00			
113.00	21														
112.00	22		Bottom of borehole at 21.5 ft bgs												
111.00	23														
110.00	24														
	25														

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REPORT TITLE				HOLE ID
BORING RECORD				**A-23-015**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	LEK	**07/17/2023**	**1 of 1**	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
MNA	**06-29-23**	**06-29-23**	**-120.888348E 37.056778N World Geodetic System Longitude / Latitude (WGS 84)**	**A-23-016**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Geo-Ex Subsurface Exploration				**128.0 ft**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid-Stem Auger			**Diedrich D70 (Truck)**	**4.0 in.**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
MCAL (2.4" ID), SPT (1.4" ID)			**Automatic; 140 lbs; 30 in drop**	**79.7%**
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING **25.0 ft** AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat Cement Grout				**26.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														
127.00	1		SILTY SAND with GRAVEL (SM); very loose; brown; dry; mostly course to fine SAND; little course to fine GRAVEL; little fines.												
126.00	2														
125.00	3		Lean CLAY (CL); soft; dark brown; moist; mostly low plasticity fines; trace fine SAND.		1	1 2 3	5	72				PP=1.00			
124.00	4														
123.00	5				2	3 4 5	9	83							Driller notes easy drilling 0-5'
122.00	6									22	104	PP=0.50			Liquid Limit = 31 Plasticity Index = 13 UC Comp. Strength: 2275 psf Strain at Failure: 3.7%
121.00	7														
120.00	8		SILTY SAND (SM); medium dense; brown; moist; 58% fine SAND; 42% low plasticity fines; mica present.												
119.00	9														
118.00	10				3	6 9 10	19	94							
117.00	11									13	116				Percent Fines: 42%
116.00	12														
115.00	13		Lean CLAY (CL); hard; brown; moist; mostly medium plasticity fines; trace fine SAND.												
114.00	14														
113.00	15				4	8 12 17	29	100							
112.00	16											PP=4.50			
111.00	17														
110.00	18		CLAYEY SAND (SC); dense; brown; dry to moist; mostly medium fine SAND; some low plasticity fines.												
109.00	19														
108.00	20				5	17 23 26	49	94							
107.00	21											PP=+4.50			
106.00	22		Lean CLAY (CL); hard; brown; moist; mostly medium plasticity fines; trace fine SAND.												
105.00	23														
104.00	24														
103.00	25				6	6 7 9	16	100							
102.00	26		CLAYEY SAND (SC); medium dense; brown; wet; mostly medium to fine SAND; some medium plasticity fines; mica present.												
101.00	27		Bottom of borehole at 26.5 ft bgs												
100.00	28														
99.00	29														

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REPORT TITLE				HOLE ID
BORING RECORD				**A-23-016**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	LEK	**07/18/2023**	**1 of 1**	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
MNA	**06-29-23**	**06-29-23**	**-120.818186E 37.056841N World Geodetic System Longitude / Latitude (WGS 84)**	**A-23-017**
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Geo-Ex Subsurface Exploration				**102.0 ft**
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Solid Stem Auger			**Diedrich D70 (Truck)**	**4.0 in.**
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
MCAL (2.4" ID), SPT (1.4" ID)			**Automatic; 140 lbs; 30 in drop**	**79.7%**
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING **Not Encountered** AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Neat Cement Grout				**26.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		ASPHALT CONCRETE(12")												AC (12")
101.00	1		AGGREGATE BASE(2")												AB (2")
100.00	2		CLAYEY SAND with GRAVEL (SC); brown; dry; mostly coarse to fine SAND; little coarse to fine GRAVEL; little fines.												
99.00	3		Lean CLAY (CL); stiff; dark brown; moist; mostly medium to high plasticity fines; trace fine SAND.		1	4 4 4	8	61				PP=1.50			Driller notes easy drilling 2.5-10'
98.00	4		few fine SAND; medium to low plasticity fines												
97.00	5				2	2 2 4	6	83		27	98	PP=0.50			Liquid Limit = 32 Plasticity Index = 15
96.00	6		brown, soft												UC Comp. Strength = 763 pcf Strain at Failure: 6.7%
95.00	7														
94.00	8		SILTY SAND (SM); medium dense; brown; moist; 67% medium to fine SAND; 33% no to low plasticity fines; mica present.												
93.00	9														
92.00	10				3	7 11 12	23	100		13	109				Percent Fines: 33%
91.00	11														
90.00	12														
89.00	13														
88.00	14														
87.00	15				4	3 3 4	7	94							Driller notes easy drilling 15-25'
86.00	16		little fines, fine SAND												
85.00	17														
84.00	18														
83.00	19														
82.00	20				5	15 21 27	48	89							
81.00	21		fine SAND; some fines												
80.00	22														
79.00	23		Poorly-graded SAND (SP); medium dense; brown; moist; mostly medium to fine SAND; trace fines; mica present.												
78.00	24														
77.00	25				6	7 9 10	19	94							
76.00	26														
75.00	27		Bottom of borehole at 26.5 ft bgs												
74.00	28														
73.00	29														

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REPORT TITLE				HOLE ID
BORING RECORD				**A-23-017**
DIST.	COUNTY	ROUTE	POSTMILE	EA
10	**Merced County**			
PROJECT OR BRIDGE NAME	**Pioneer Road Widening**			
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	LEK	**07/18/2023**	**1 of 1**	

APPENDIX III

Laboratory Result Summary

Laboratory Test Reports

DRAFT

Project Name: **Pioneer Complete Streets Project**
Project No: **22-852.1**
Date: **9/27/23**

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Laboratory and Field Test Summary

Boring I.D.	Sample I.D.	Sample Type (inch)	Sampled Depth (ft)	USCS	Moisture/Density		Classification						Strength		Chemical Analysis			
					Dry Density (pcf)	Moist. Content (%)	Atterberg Limits			Gravel (%)	Sand (%)	Fines (%)	R-Value	Uncon. Comp. (psf)	pH	Minimum Resistivity (ohm-cm)	Chloride Content (ppm)	Sulfate Content (ppm)
							Liquid Limit	Plastic Limit	Plasticity Index									
A-22-001	BULK	BULK	0.0 - 5.0	SC			34	16	18									
A-22-002	BULK	BULK	0.0 - 5.0	CL						11	28	61						
A-22-002	1A	CAL (2.5)	3.5 - 4.0	CL	95.9	14.2												
A-22-004	BULK	BULK	0.0 - 5.0	SC/CL			28	14	14				36					
A-22-004	2A	CAL (2.5)	6.0 - 6.5	CL	109.2	10.7												
A-22-004	3B	CAL (2.5)	8.0 - 8.5	CL	110.9	18.7								1,555				
A-22-004	3A	CAL (2.5)	8.5 - 9.0	CL											7.76	1,020	26.6	63.8
A-22-005	BULK	BULK	0.0 - 2.5	SC			27	15	12	18	46	36						
A-22-005	2A	CAL (2.5)	6.0 - 6.5	CL	100.3	20.8												
A-22-005	4A	CAL (2.5)	11.0 - 11.5	SC	108.8	9.8												
A-22-006	BULK	BULK	0.0 - 2.5	SC			26	14	12	23	50	27						
A-22-007	BULK	BULK	0.0 - 5.0	SC			31	17	14				20					
A-22-008	BULK	BULK	0.0 - 5.0	SC						19	38	43						
A-22-009	BULK	BULK	0.0 - 2.5	SC/CL			43	13	30				<5					
A-22-011	2A	SPT (1.4)	5.5 - 6.5	CL								71						
A-22-011	4B	CAL (2.5)	10.5 - 11.0	CL	110.6	16.3								7,848				
A-22-011	4A	CAL (2.5)	11.0 - 11.5	CL			42	18	24									
R-22-012	BULK	BULK	0.0 - 5.0	CL									<5					
R-22-012	2A	CAL (2.5)	6.0 - 6.5	CL	105.8	19.5												
R-22-012	4A	CAL (2.5)	11.0 - 11.5	CL	100.5	22.0	41	25	16					2,275				
R-22-012	5A	CAL (2.5)	16.0 - 16.5	CL											7.86	1,550	14.8	32.0
R-22-012	6A	CAL (2.5)	21.0 - 21.5	SM	98.4	22.9												
R-22-012	7A	CAL (2.5)	26.0 - 26.5	SC	103.0	24.4												
R-22-012	9A	SPT (1.4)	35.0 - 36.5	ML			22	19	3			58						
R-22-012	11A	SPT (1.4)	45.0 - 46.5	SP-SM								8						
R-22-012	13A	CAL (2.5)	56.0 - 56.5	SP-SM								10						
R-22-013	BULK	BULK	0.0 - 5.0	SC						14	45	41						
R-22-013	2A	CAL (2.5)	6.0 - 6.5	SC	107.6	8.5												
R-22-013	4A	CAL (2.5)	16.0 - 16.5	SP-SM	93.2	10.5												
R-22-013	7A	SPT (1.4)	25.0 - 26.5	CL								73						
R-22-013	9A	SPT (1.4)	31.5 - 33.0	CL											7.99	1,630	12.3	24.2
R-22-013	10A	CAL (2.5)	36.0 - 36.5	ML	108.0	22.0	21	19	2			63						
R-22-013	11B	SPT (1.4)	37.5 - 38.0	ML								58						
R-22-013	11A	SPT (1.4)	38.0 - 38.5	ML			NP	NP	NP									
R-22-013	12A	SPT (1.4)	40.0 - 41.5	SM								32						
R-22-013	13A	SPT (1.4)	46.0 - 46.5	ML			NP	NP	NP									
R-22-013	14A	CAL (2.5)	51.0 - 51.5	SC	108.7	23.0												
A-23-014	1A	CAL (2.5)	3.5 - 4.0	CL	109.6	16.0												
A-23-014	2A	CAL (2.5)	6.0 - 6.5	CL								78						
A-23-014	2B	CAL (2.5)	5.5 - 6.0	CL											7.44	270	693.5	144.2
A-23-014	3B	CAL (2.5)	10.5 - 11.0	CL		12.7												
A-23-015	3A	CAL (2.5)	11.0 - 11.5	CL	104.8	19.3	28	19	9			79						
A-23-016	2A	CAL (2.5)	6.0 - 6.5	CL	104.0	21.6	31	18	13					1,109				
A-23-016	3A	CAL (2.5)	11.0 - 11.5	SM	115.8	12.8						42						
A-23-017	2A	CAL (2.5)	6.0 - 6.5	CL	97.5	27.3	32	17	15					763				
A-23-017	3A	CAL (2.5)	11.0 - 11.5	SM	108.8	12.7						33						

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Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-2/23/23
Technician: ZZZ/BR

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	A-22-002-1A	A-22-004-2A	A-22-004-3B	A-22-005-2A	A-22-005-4A
USCS Symbol	CL	CL	CL	CL	SC
Depth (ft.)	3.5	6	8	6	11
Sample Length (in.)	3.092	5.392	5.800	5.380	5.948
Diameter (in.)	2.376	2.390	2.386	2.386	2.389
Sample Volume (ft^3)	0.00793	0.01400	0.01500	0.01392	0.01543
Total Mass Soil+Tube (g)	631.4	993.1	1122.8	1036.3	1109.6
Mass of Tube (g)	237.4	225.1	226.9	271.5	273.4
Tare No.	129	110	108.0	X3	X3
Tare (g)	14.1	14.0	14.3	150.9	150.9
Wet Soil + Tare (g)	71.6	89.3	61.4	365.0	514.4
Dry Soil + Tare (g)	64.5	82.0	54.0	328.2	482.0
Dry Soil (g)	50.4	68.1	39.7	177.3	331.1
Water (g)	7.1	7.3	7.4	36.8	32.4
Moisture (%)	**14.2**	**10.7**	**18.7**	**20.8**	**9.8**
Dry Density (pcf)	**95.9**	**109.2**	**110.9**	**100.3**	**108.8**

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-2/23/23
Technician: BR/ZZZ

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	A-22-011-4B	R-22-012-2A	R-22-012-4A	R-22-012-6A	R-22-012-7A
USCS Symbol	CL	CL	CL	SM	SC
Depth (ft.)	10.5	6	11	21	26
Sample Length (in.)	4.739	5.365	5.164	5.739	5.568
Diameter (in.)	2.378	2.398	2.392	2.391	2.394
Sample Volume (ft^3)	0.01218	0.01402	0.01343	0.01491	0.01450
Total Mass Soil+Tube (g)	710.1	1083.4	1022.7	1092.0	1115.9
Mass of Tube (g)	0.0	279.0	275.9	274.0	273.1
Tare No.	A12	R24	A17	Q7	R22
Tare (g)	13.8	126.0	13.7	125.0	125.1
Wet Soil + Tare (g)	79.0	294.5	71.7	328.3	333.0
Dry Soil + Tare (g)	69.9	267.0	61.2	290.4	292.2
Dry Soil (g)	56.1	141.0	47.5	165.4	167.1
Water (g)	9.1	27.5	10.5	37.9	40.8
Moisture (%)	**16.3**	**19.5**	**22.0**	**22.9**	**24.4**
Dry Density (pcf)	**110.6**	**105.8**	**100.5**	**98.4**	**103.0**

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-2/23/23
Technician: BR/ZZZ

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	R-22-013-2A	R-22-013-4A	R-22-013-10A	R-22-013-14A	
USCS Symbol	SC	SP-SM	ML	SC	
Depth (ft.)	6	16	36	51	
Sample Length (in.)	5.437	5.948	5.672	5.265	
Diameter (in.)	2.410	2.400	2.401	2.399	
Sample Volume (ft^3)	0.01435	0.01557	0.01486	0.01377	
Total Mass Soil+Tube (g)	1030.9	1003.3	1162.4	1106.4	
Mass of Tube (g)	270.7	275.8	273.8	271.5	
Tare No.	R25	R23	P8	X5	
Tare (g)	126.0	125.3	127.4	148.8	
Wet Soil + Tare (g)	417.3	339.5	352.8	434.2	
Dry Soil + Tare (g)	394.4	319.2	312.1	380.9	
Dry Soil (g)	268.4	193.9	184.7	232.1	
Water (g)	22.9	20.3	40.7	53.3	
Moisture (%)	**8.5**	**10.5**	**22.0**	**23.0**	
Dry Density (pcf)	**107.6**	**93.2**	**108.0**	**108.7**	

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 7/13-7/18/23
Technician: SPV/CAP

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	A-23-014-1A	A-23-014-3B	A-23-015-3A	A-23-016-2A	A-23-016-3A
USCS Symbol	CL	CL	CL	CL	SM
Depth (ft.)	3.5	10.5	11	6	11
Sample Length (in.)	3.735	-	3.949	5.571	5.700
Diameter (in.)	2.375	-	2.398	2.384	2.378
Sample Volume (ft^3)	0.00958	-	0.01032	0.01439	0.01465
Total Mass Soil+Tube (g)	831.5	-	585.0	825.1	1147.2
Mass of Tube (g)	279.7	-	0.0	0.0	278.9
Tare No.	A18	B5	2020	127.0	2005
Tare (g)	13.6	13.7	125.0	14.2	121.8
Wet Soil + Tare (g)	79.9	78.0	416.9	106.9	496.5
Dry Soil + Tare (g)	70.8	70.7	369.8	90.5	453.9
Dry Soil (g)	57.2	57.1	244.8	76.3	332.1
Water (g)	9.1	7.3	47.1	16.5	42.6
Moisture (%)	**16.0**	**12.7**	**19.3**	**21.6**	**12.8**
Dry Density (pcf)	**109.6**	**-**	**104.8**	**104.0**	**115.8**

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 7/13-7/18/23
Technician: SPV/CAP

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	A-23-017-2A	A-23-017-3A			
USCS Symbol	CL	SM			
Depth (ft.)	6	11			
Sample Length (in.)	5.830	5.521			
Diameter (in.)	2.375	2.378			
Sample Volume (ft^3)	0.01495	0.01419			
Total Mass Soil+Tube (g)	841.5	1067.6			
Mass of Tube (g)	0.0	278.2			
Tare No.	126.0	2525			
Tare (g)	14.3	129.2			
Wet Soil + Tare (g)	109.4	454.2			
Dry Soil + Tare (g)	89.0	417.6			
Dry Soil (g)	74.7	288.4			
Water (g)	20.4	36.6			
Moisture (%)	**27.3**	**12.7**			
Dry Density (pcf)	**97.5**	**108.8**			

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-1/13/23
Technician: BR/ZZZ

200 Wash - ASTM D1140
Method A

Max Particle Size (100% Passing)	Standard Sieve Size	Recommended Min Mass of Test Specimens
2 mm or less	No. 10	20 g
4.75 mm	No. 4	100 g
9.5 mm	3/8 "	500 g
19.0 mm	3/4 "	2.5 kg
37.5 mm	1 1/2 "	10 kg
75.0 mm	3 "	50 kg

Table from 6.2 of ASTM D1140

Sample No.	A-22-011-2A	A-22-012-9A	A-22-012-11A	A-22-012-13A	A-22-013-7A
USCS Symbol	CL	ML	SP-SM	SP-SM	CL
Depth (ft.)	6	36	46	56	26
Tare No.	3020	Q6	X2	X9	X1
Tare (g)	122.4	125.6	151.8	150.5	152.1
Dry Soil + Tare (g)	344	279.8	283.1	366.5	304.5
Dry Mass before (g)	221.6	154.2	131.3	216.0	152.4
Dry Mass after (g)	63.3	64.9	120.2	193.8	41.4
Percent Fines (%)	71	58	8	10	73

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/23-3/6/23
Technician: ZZZ/BR

200 Wash - ASTM D1140
Method A

Max Particle Size (100% Passing)	Standard Sieve Size	Recommended Min Mass of Test Specimens
2 mm or less	No. 10	20 g
4.75 mm	No. 4	100 g
9.5 mm	3/8 "	500 g
19.0 mm	3/4 "	2.5 kg
37.5 mm	1 1/2 "	10 kg
75.0 mm	3 "	50 kg

Table from 6.2 of ASTM D1140

Sample No.	A-22-013-10A	R-22-013-11B	A-22-013-12A		
USCS Symbol	ML	ML	SM		
Depth (ft.)	36	37	41		
Tare No.	P8	2424	Q1		
Tare (g)	127.4	127.1	125.1		
Dry Soil + Tare (g)	312.1	408.3	410.4		
Dry Mass before (g)	184.7	281.2	285.3		
Dry Mass after (g)	67.9	118.4	195.1		
Percent Fines (%)	63	58	32		

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: SPV/CAP
Technician: 7/13/23

200 Wash - ASTM D1140
Method A

Max Particle Size (100% Passing)	Standard Sieve Size	Recommended Min Mass of Test Specimens
2 mm or less	No. 10	20 g
4.75 mm	No. 4	100 g
9.5 mm	3/8 "	500 g
19.0 mm	3/4 "	2.5 kg
37.5 mm	1 1/2 "	10 kg
75.0 mm	3 "	50 kg

Table from 6.2 of ASTM D1140

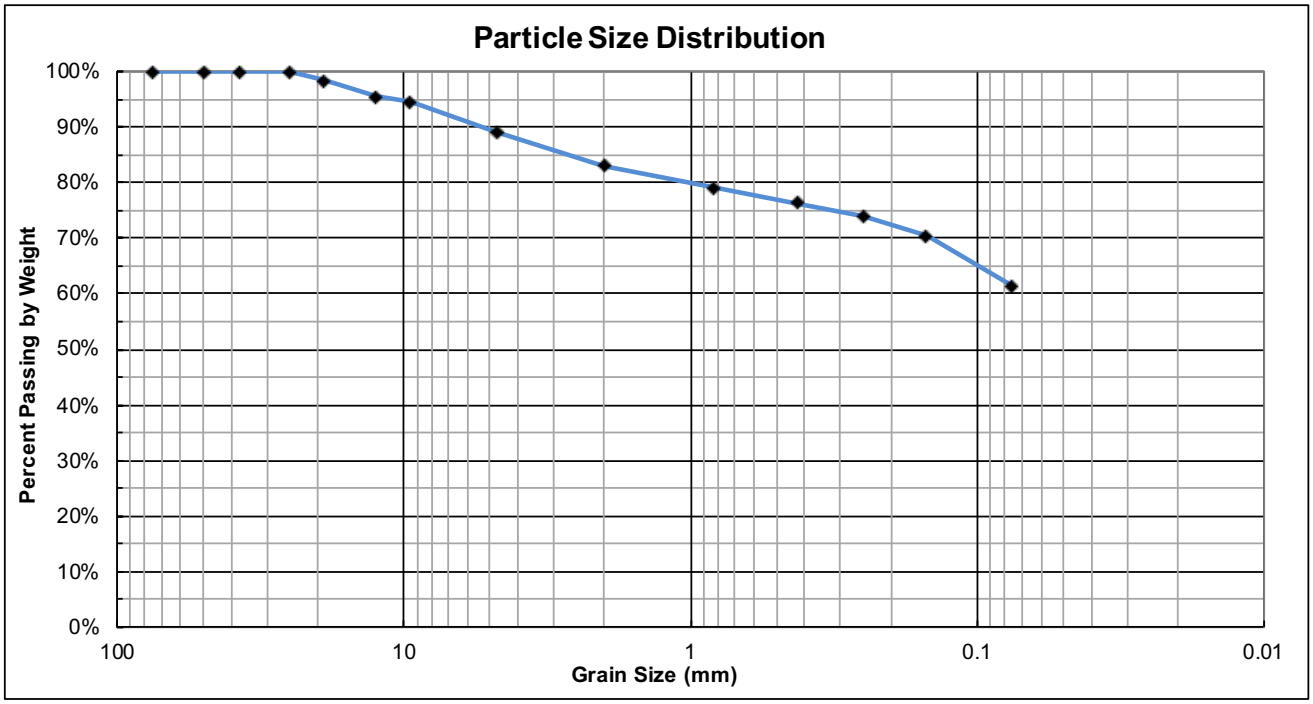
Sample No.	A-23-014-2A	A-23-015-3A	A-23-016-3A	A-23-017-3A	
USCS Symbol	CL	CL	SM	SM	
Depth (ft.)	6	11	11	11	
Tare No.	2015	2020	2005	2525	
Tare (g)	122.4	125.04	121.87	129.2	
Dry Soil + Tare (g)	423.45	369.8	453.9	417.6	
Dry Mass before (g)	301.1	244.8	332.0	288.4	
Dry Mass after (g)	66.0	51.2	193.8	193.0	
Percent Fines (%)	78	79	42	33	

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-002-Bulk
Depth (ft): 0 - 5
USCS Classification: Sandy Lean Clay (CL)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	2	9	6	7	15	
0	**11**		**28**			**61**

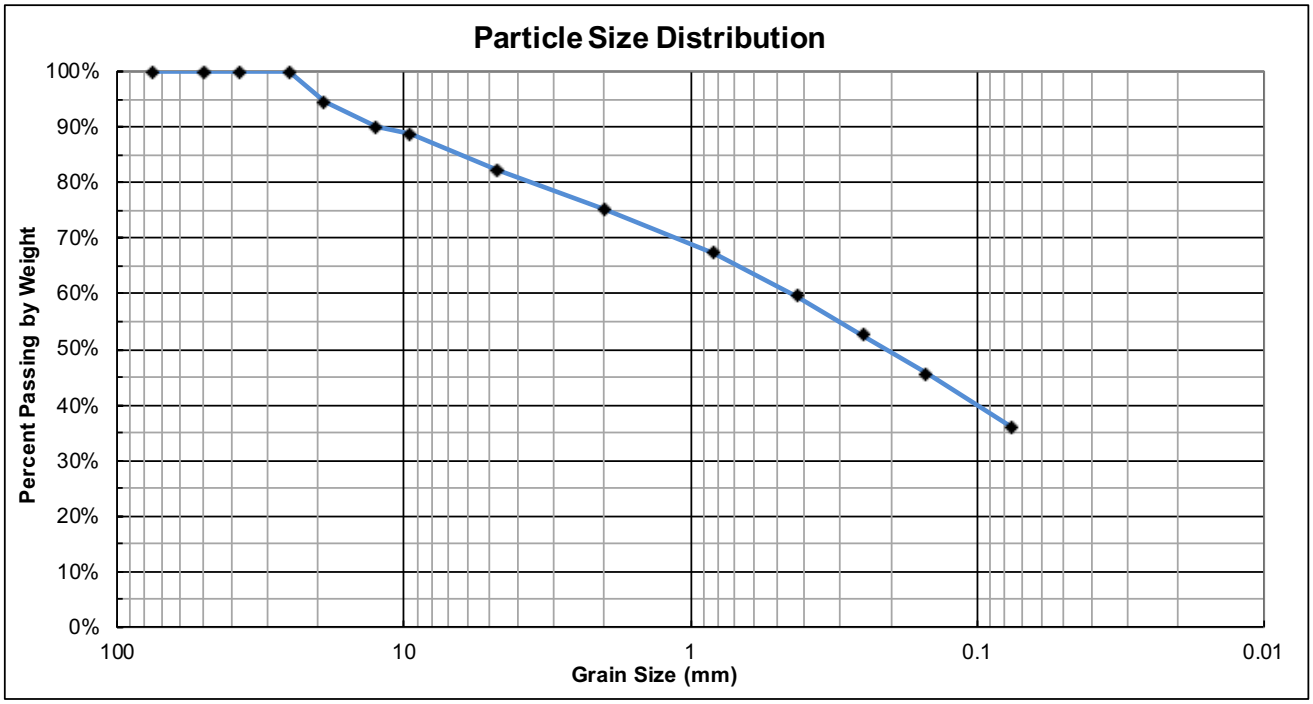
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	10.3	98%
	Fine	**1/2"**	12.5	27.4	95%
		3/8"	9.50	32.7	95%
		#4	4.75	65.5	89%
Sand	Coarse	**#10**	2.00	100.8	83%
	Medium	**#20**	0.825	124.7	79%
		#40	0.425	140.9	76%
	Fine	**#60**	0.250	155.3	74%
		#100	0.150	176.5	70%
Silt/Clay		**#200**	0.075	230.5	61%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-005-Bulk
Depth (ft): 0 -2.5
USCS Classification: Clayey Sand with Gravel (SC)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	5	13	7	15	24	
0	**18**		**46**			**36**

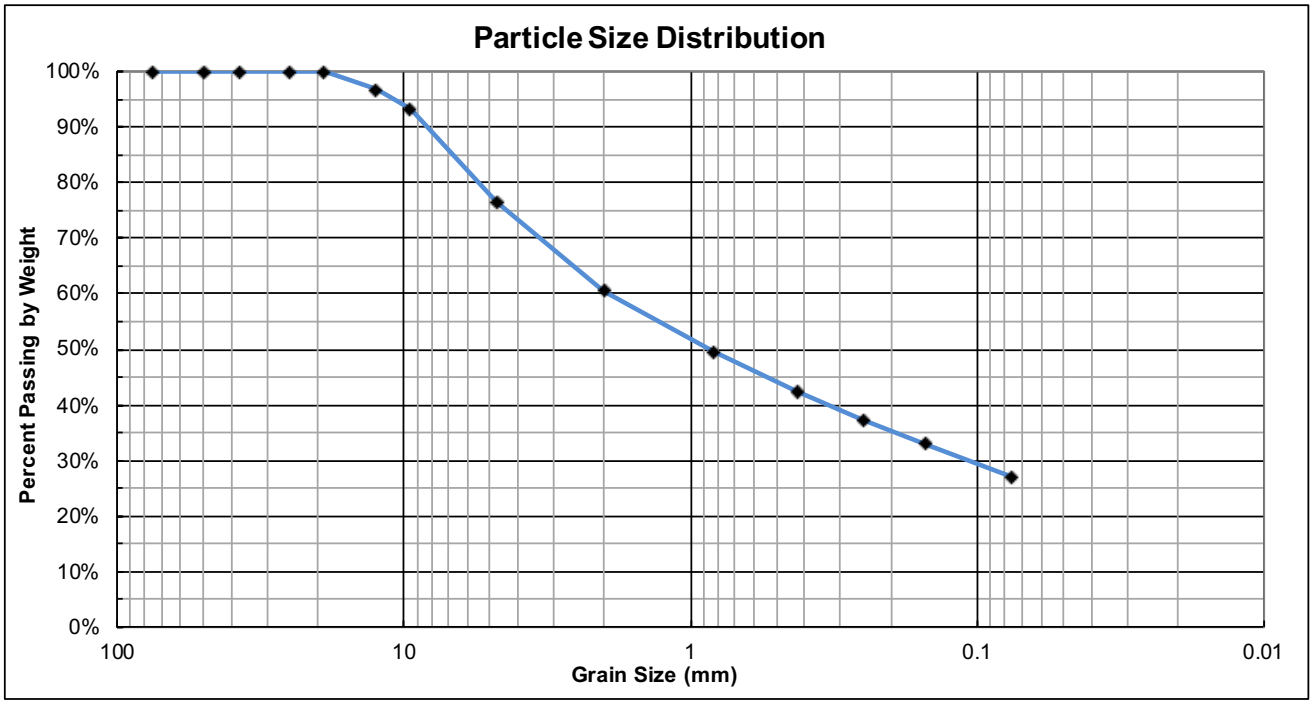
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	32.7	95%
	Fine	**1/2"**	12.5	59.8	90%
		3/8"	9.50	68.0	89%
		#4	4.75	106.5	82%
Sand	Coarse	**#10**	2.00	148.9	75%
	Medium	**#20**	0.825	195.8	67%
		#40	0.425	242.9	60%
	Fine	**#60**	0.250	285.0	53%
		#100	0.150	326.8	46%
Silt/Clay		**#200**	0.075	385.0	36%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-006-Bulk
Depth (ft): 0-2.5
USCS Classification: Clayey Sand with Gravel (SC)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	23	17	18	15	
0	**23**		**50**			**27**

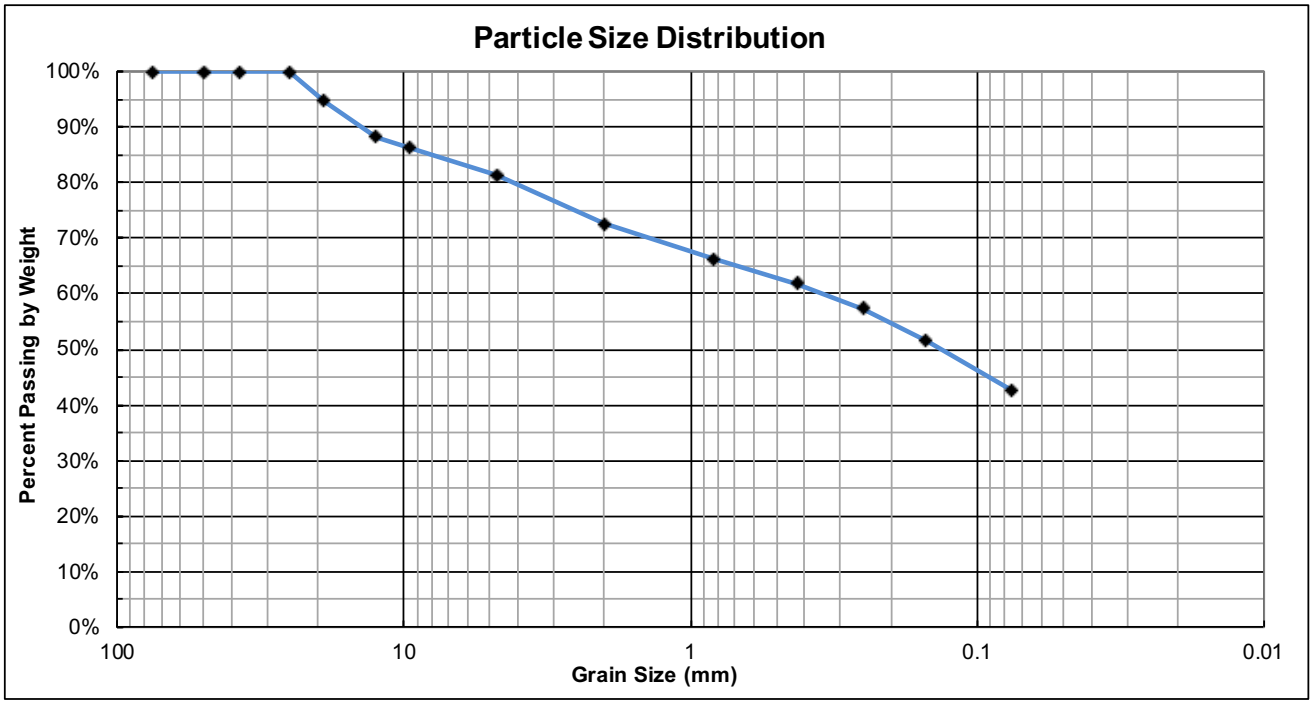
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	23.8	97%
		3/8"	9.50	50.6	93%
		#4	4.75	174.3	77%
Sand	Coarse	**#10**	2.00	293.5	60%
	Medium	**#20**	0.825	375.8	49%
		#40	0.425	427.6	42%
	Fine	**#60**	0.250	466.0	37%
		#100	0.150	498.7	33%
Silt/Clay		**#200**	0.075	542.2	27%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-008-Bulk
Depth (ft): 0-5
USCS Classification: Clayey Sand with Gravel (SC)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	5	14	8	11	19	
0	**19**		**38**			**43**

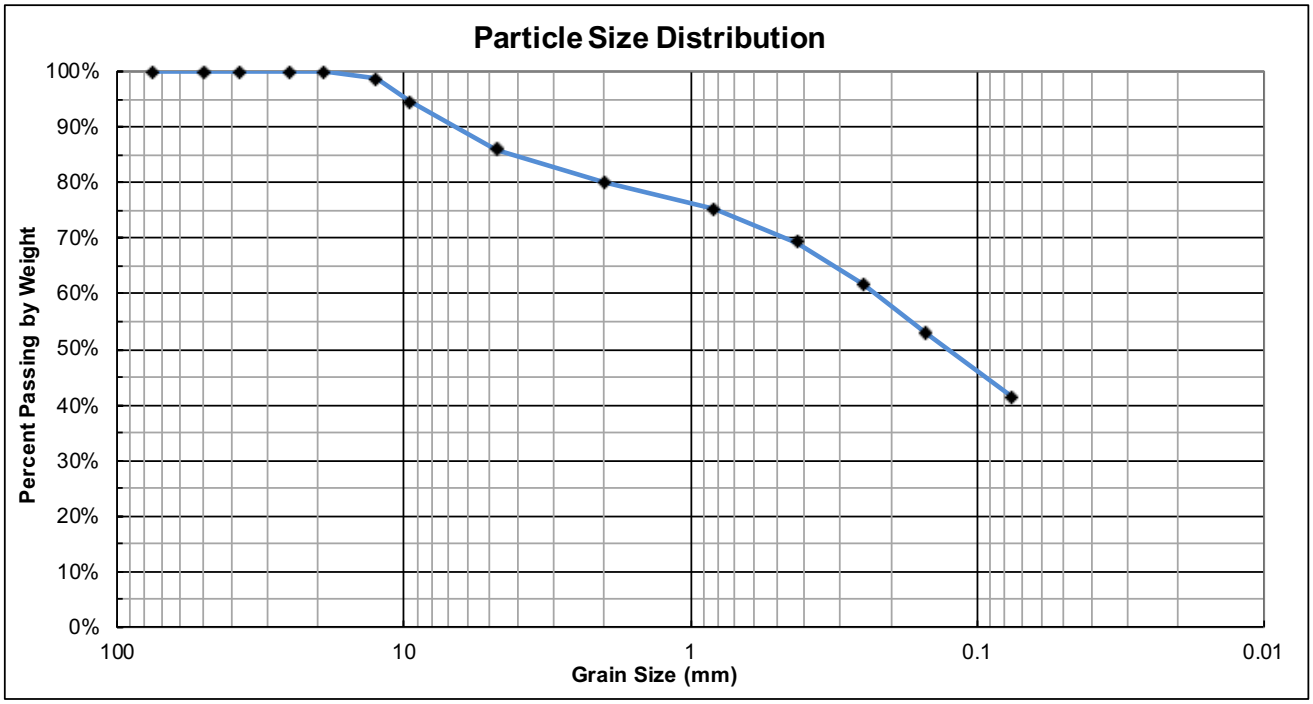
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	33.1	95%
	Fine	**1/2"**	12.5	72.6	88%
		3/8"	9.50	85.1	86%
		#4	4.75	115.4	81%
Sand	Coarse	**#10**	2.00	169.4	73%
	Medium	**#20**	0.825	209.4	66%
		#40	0.425	236.2	62%
	Fine	**#60**	0.250	263.7	57%
		#100	0.150	300.1	51%
Silt/Clay		**#200**	0.075	355.6	43%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/13/23
Technician: ZZZ
Sample ID: A-22-013-Bulk
Depth (ft): 0-5
USCS Classification: Clayey Sand (SC)

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	14	6	11	28	
0	**14**		**45**			**41**

		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	8.1	99%
		3/8"	9.50	32.4	94%
		#4	4.75	81.4	86%
Sand	Coarse	**#10**	2.00	115.7	80%
	Medium	**#20**	0.825	143.6	75%
		#40	0.425	178.5	69%
	Fine	**#60**	0.250	222.4	62%
		#100	0.150	273.4	53%
Silt/Clay		**#200**	0.075	340.1	41%

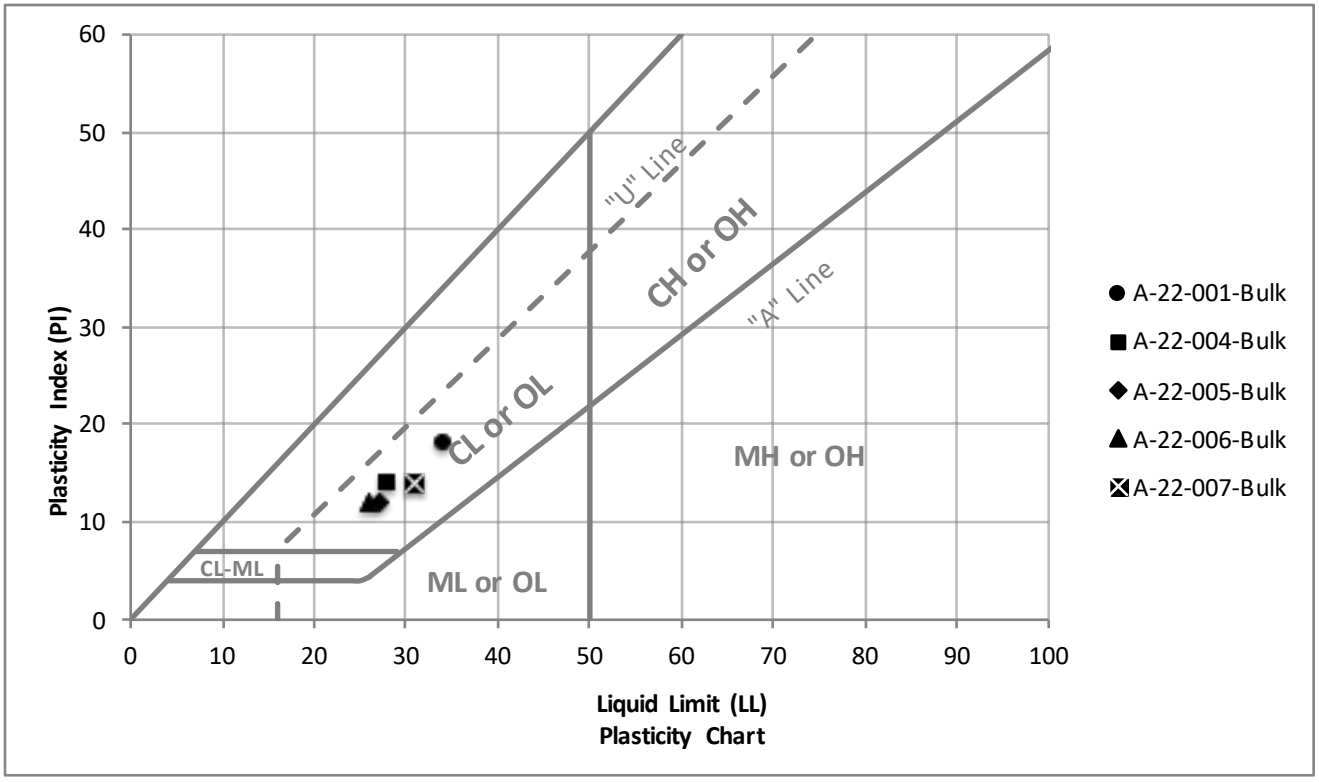
Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/20233/7/2023
Technician: BR/ZZZ

Plasticity Index - ASTM D4318

Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
A-22-001-Bulk	0	34	16	18
A-22-004-Bulk	0	28	14	14
A-22-005-Bulk	0	27	15	12
A-22-006-Bulk	0	26	14	12
A-22-007-Bulk	0	31	17	14

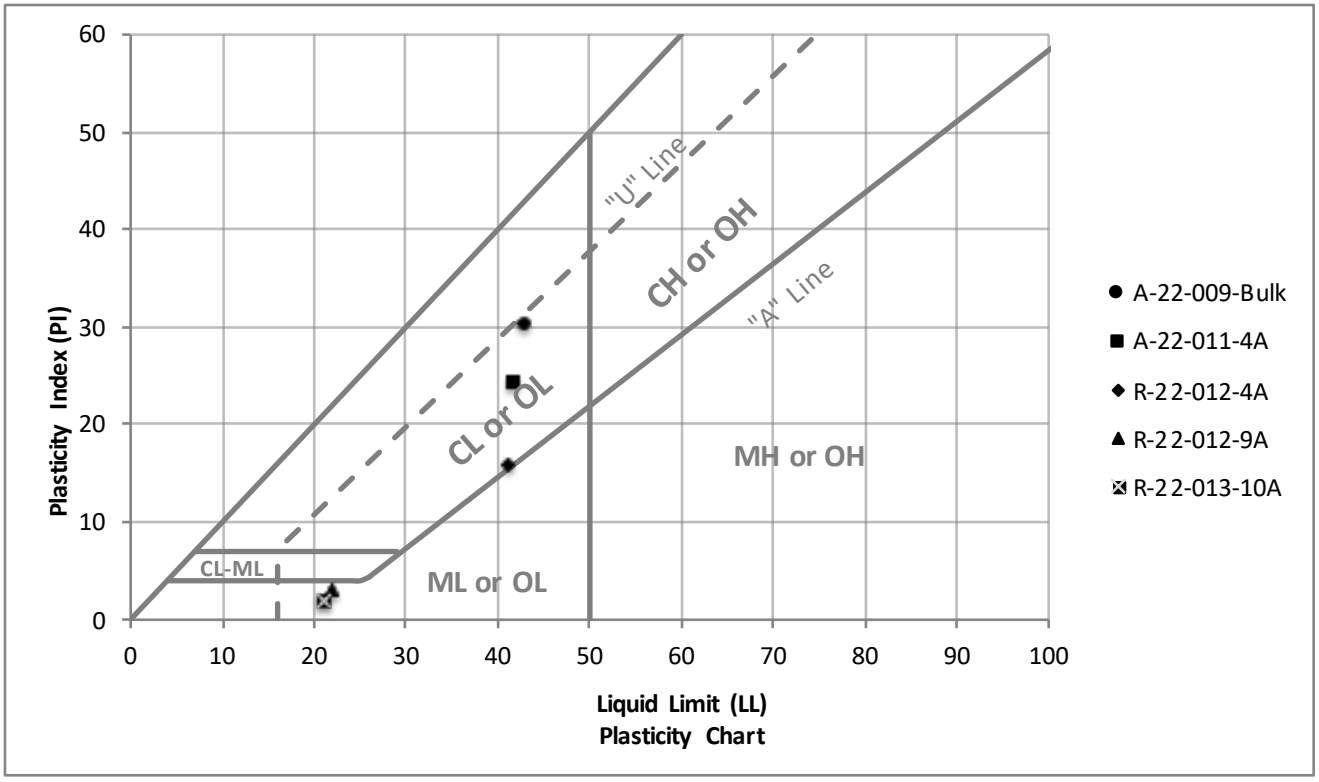


Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/2023-3/7/2023
Technician: BR/ZZZ

Plasticity Index - ASTM D4318

Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
A-22-009-Bulk	0	43	13	30
A-22-011-4A	11	42	18	24
R-22-012-4A	11	41	25	16
R-22-012-9A	36	22	19	3
R-22-013-10A	36	21	19	2

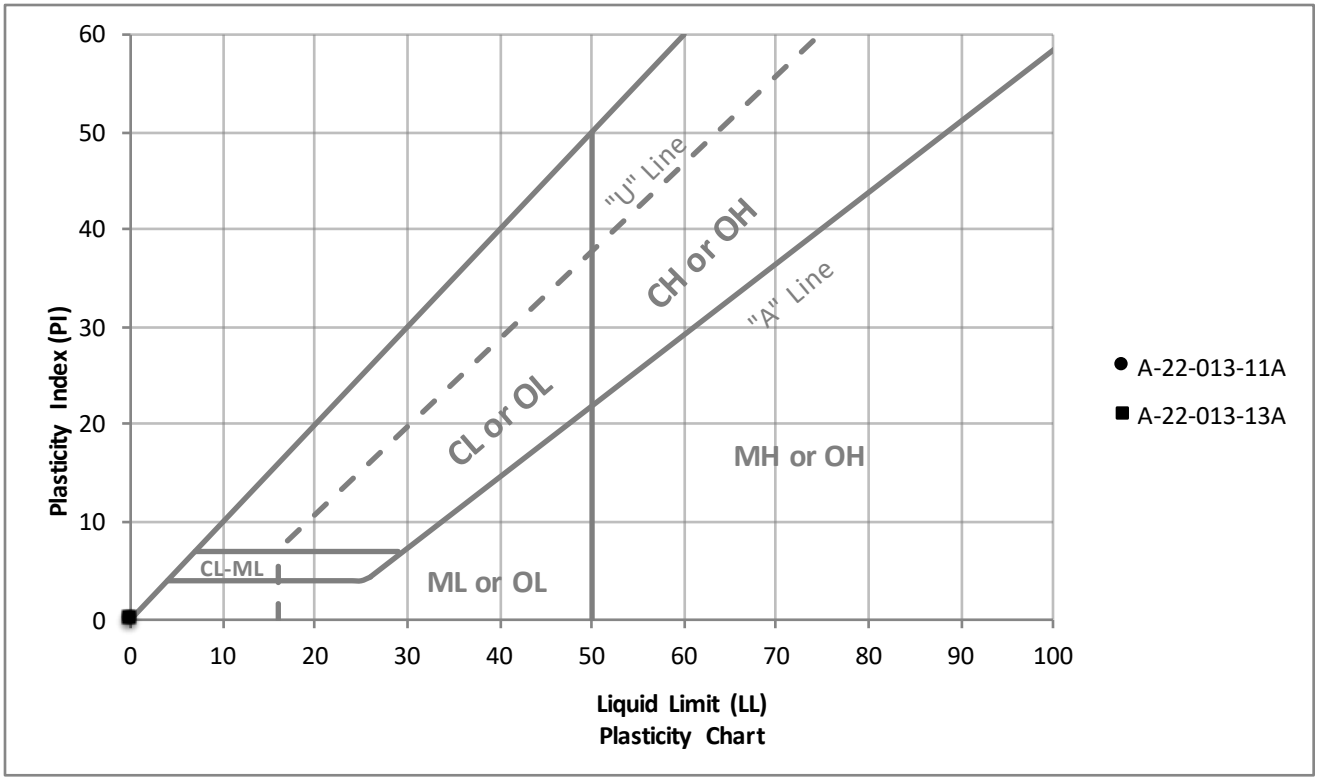


Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 1/10/2023-3/7/2023
Technician: BR/ZZZ

Plasticity Index - ASTM D4318

Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
A-22-013-11A	37.5	NP	NP	NP
A-22-013-13A	46	NP	NP	NP

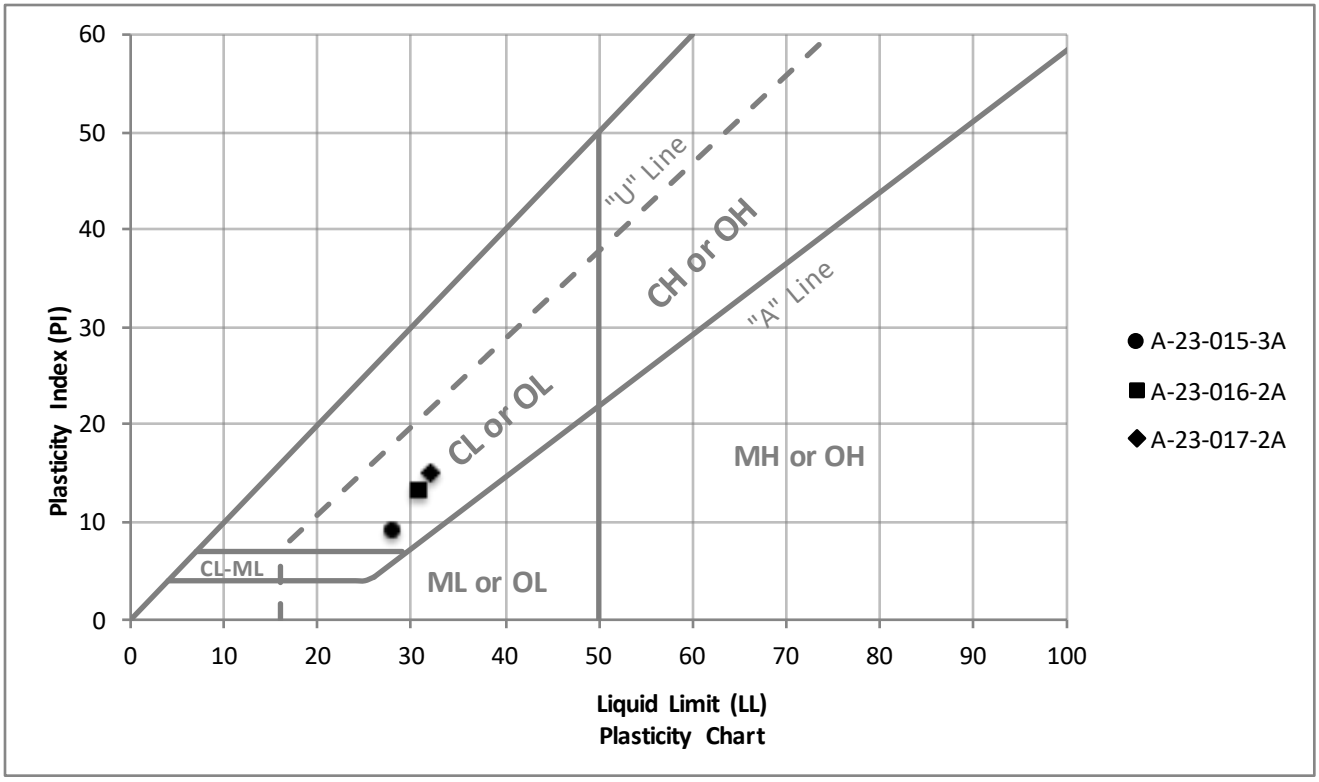


Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 7/19-7/20/23
Technician: CAP

Plasticity Index - ASTM D4318

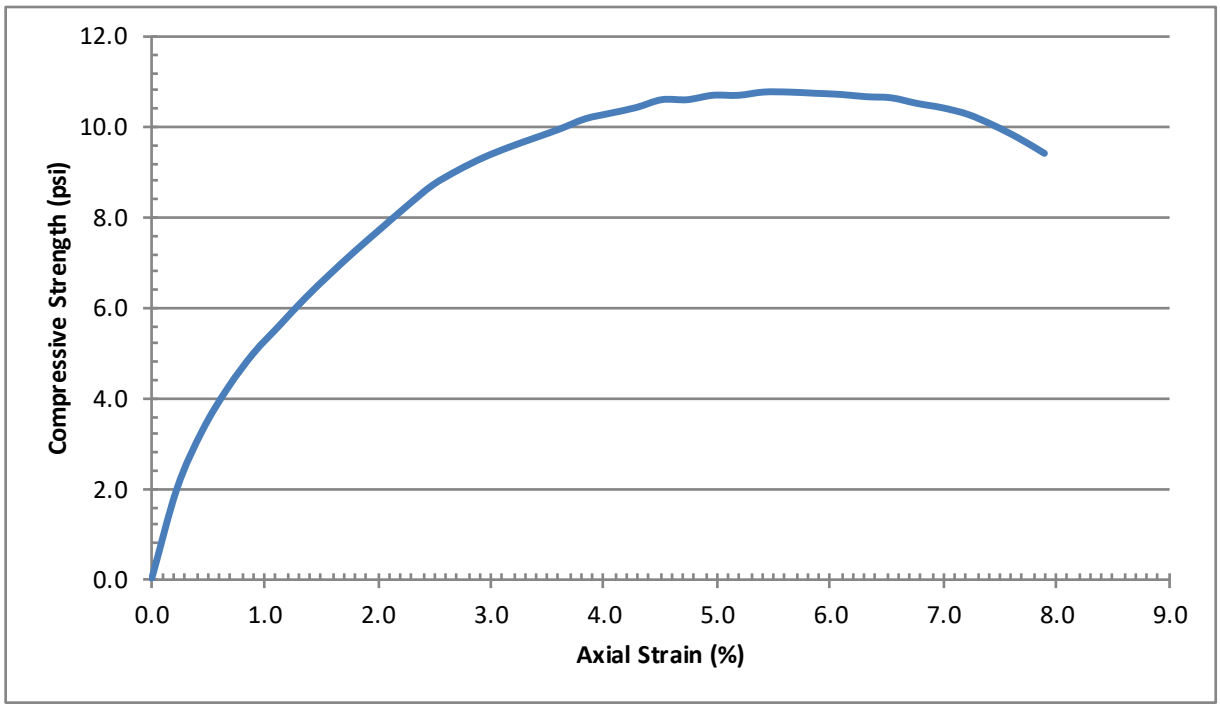
Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
A-23-015-3A	11	28	19	9
A-23-016-2A	6	31	18	13
A-23-017-2A	6	32	17	15



Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22.852.1
Date: 2/21/23
Technician: ZZZ
Sample ID: A-22-004-3B Depth (ft): 8.0
USCS Classification: Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**110.9**
Water Content (%)	**18.7**
Unconfined Compressive Strength (psi)	**10.8**
Unconfined Compressive Strength (psf)	**1555**
Average Height (in)	5.800
Average Diameter (in)	2.386
Rate of strain (%)	1.3
Strain at Failure (%)	5.4

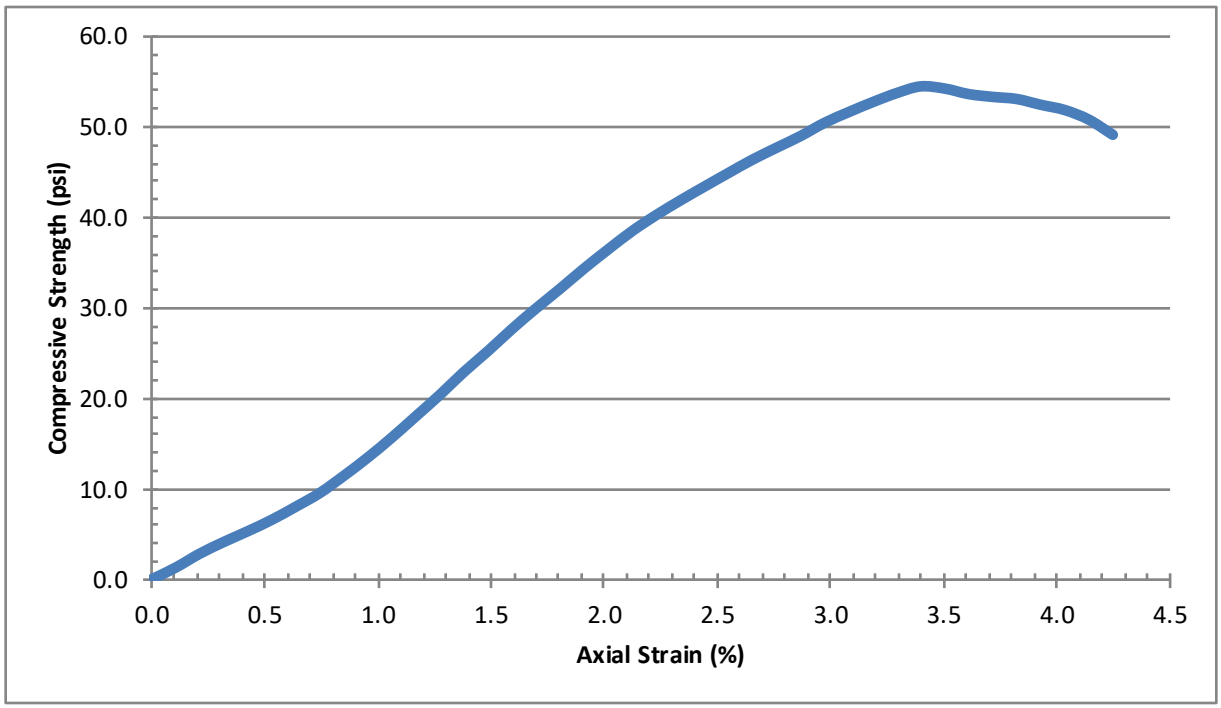
Notes:



Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 2/28/23
Technician: ZZZ
Sample ID: A-22-011-4B Depth (ft): 10.5
USCS Classification: Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**110.6**
Water Content (%)	**16.3**
Unconfined Compressive Strength (psi)	**54.5**
Unconfined Compressive Strength (psf)	**7848**
Average Height (in)	4.739
Average Diameter (in)	2.378
Rate of strain (%)	0.5
Strain at Failure (%)	3.4

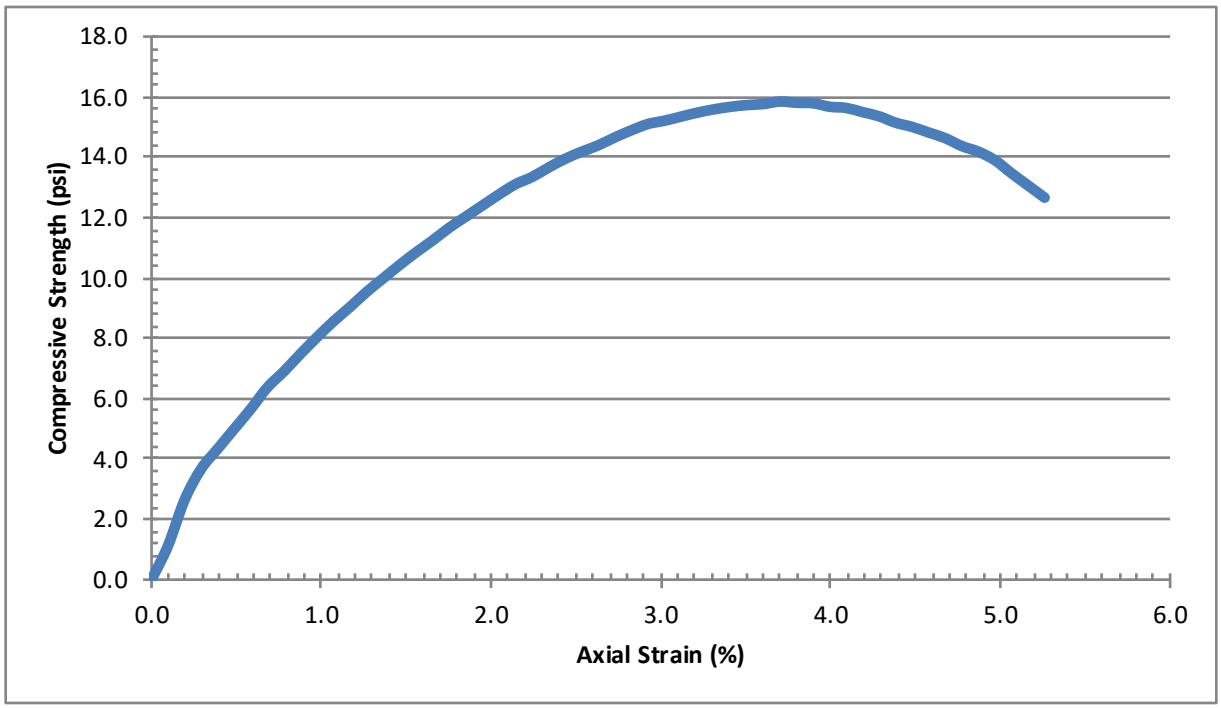


Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

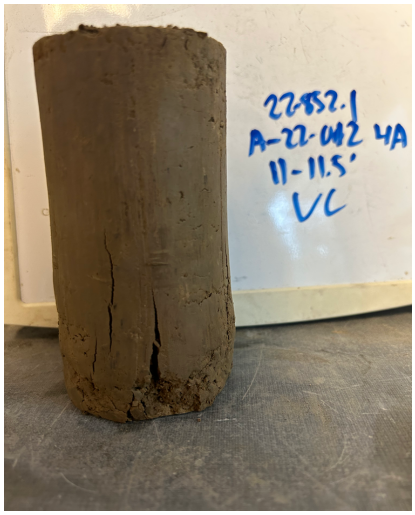
Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 2/23/23
Technician: ZZZ
Sample ID: A-22-012-4A Depth (ft): 11.0
USCS Classification: Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**100.5**
Water Content (%)	**22.0**
Unconfined Compressive Strength (psi)	**15.8**
Unconfined Compressive Strength (psf)	**2275**
Average Height (in)	5.164
Average Diameter (in)	2.392
Rate of strain (%)	0.5
Strain at Failure (%)	3.7

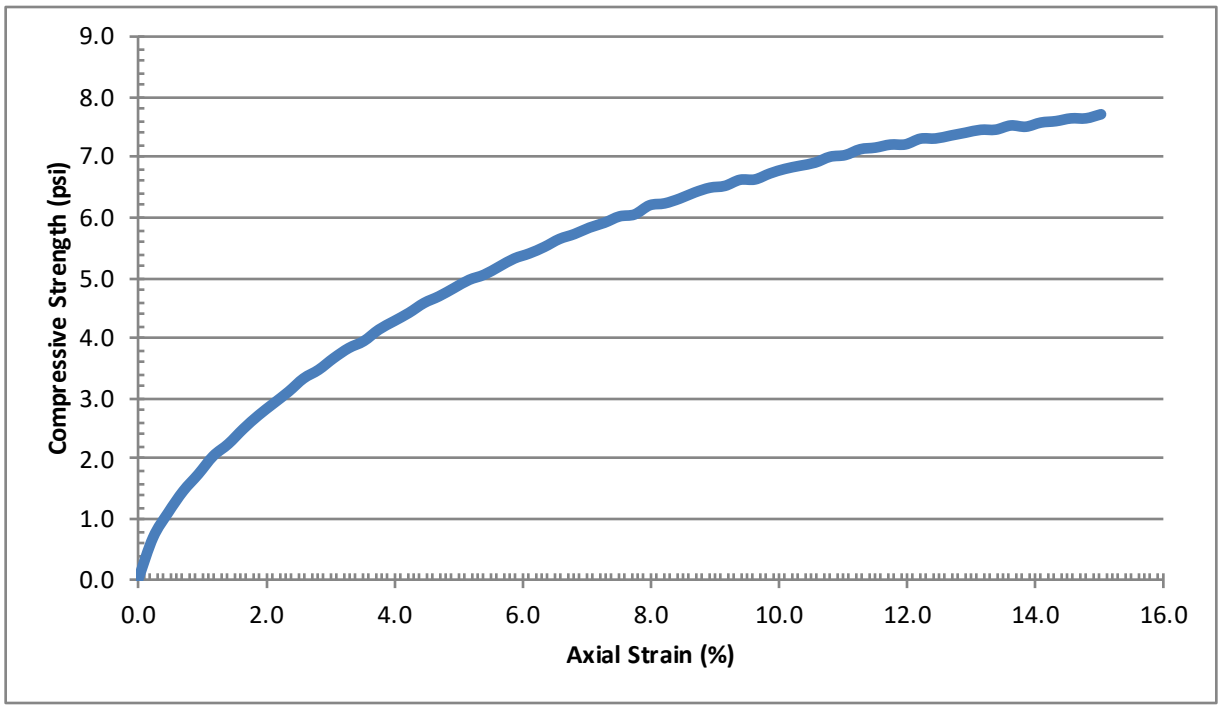
Notes:



Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 7/18/23
Technician: CAP
Sample ID: A-23-016-2A Depth (ft): 6.0
USCS Classification: Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**104.0**
Water Content (%)	**21.6**
Unconfined Compressive Strength (psi)	**7.7**
Unconfined Compressive Strength (psf)	**1109**
Average Height (in)	5.571
Average Diameter (in)	2.384
Rate of strain (%)	1.3
Strain at 15%	

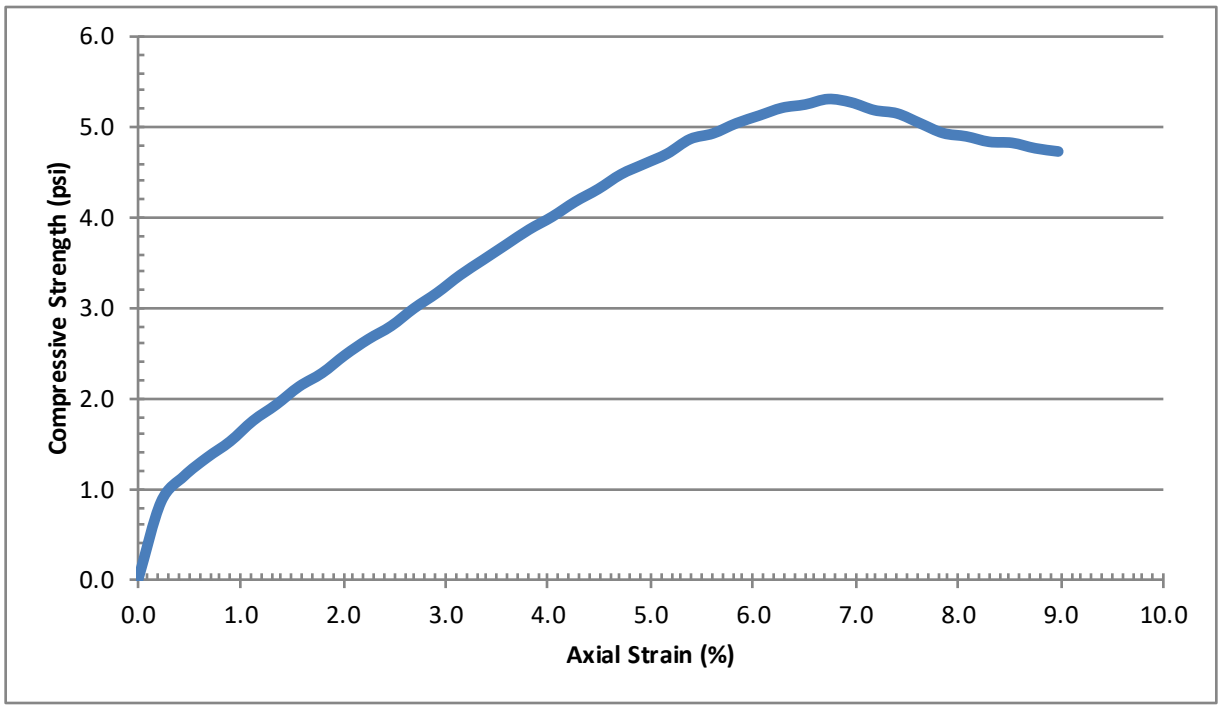


Notes:

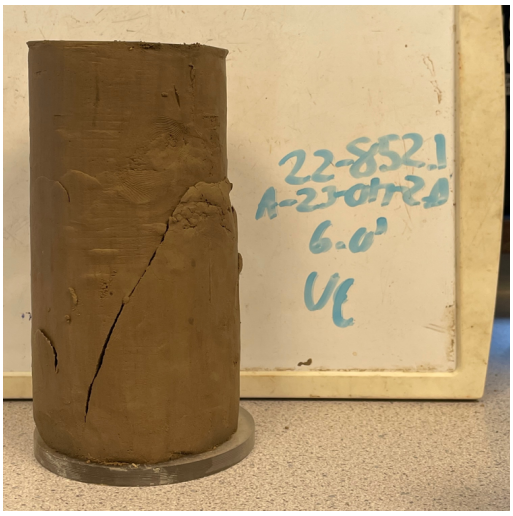
Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: Pioneer Road Widening Project
CAInc File No: 22-852.1
Date: 7/17/23
Technician: CAP
Sample ID: A-23-017-2A Depth (ft): 6.0
USCS Classification: Sandy Lean Clay (CL)

UNCONFINED COMPRESSION TEST - D2166



Dry Density (pcf)	**97.5**
Water Content (%)	**27.3**
Unconfined Compressive Strength (psi)	**5.3**
Unconfined Compressive Strength (psf)	**763**
Average Height (in)	5.830
Average Diameter (in)	2.375
Rate of strain (%)	1.3
Strain at Failure (%)	6.7

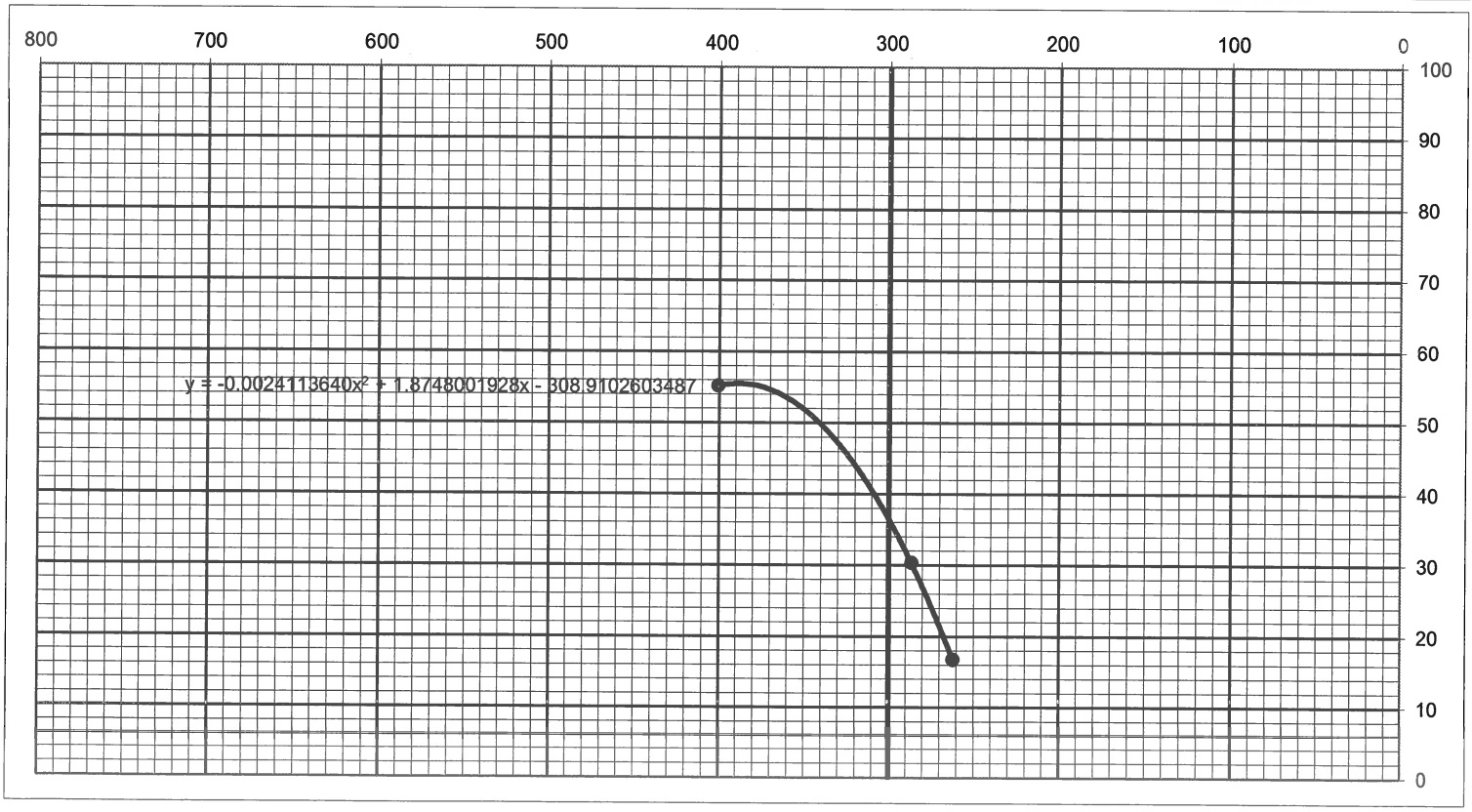


Notes:

RESISTANCE VALUE

California Test Method No. 301

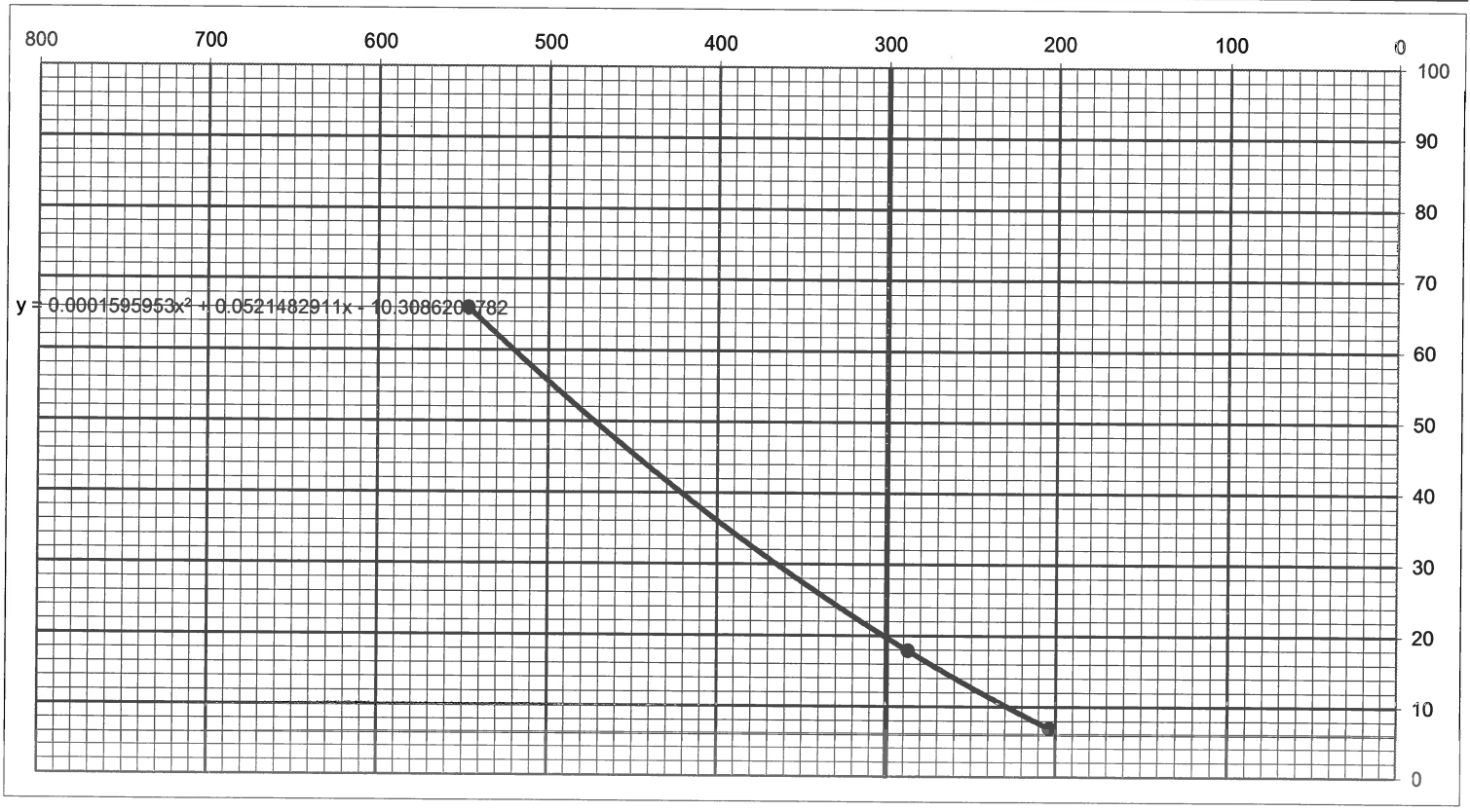
Job Number:	**4151-001.00**	**Date Tested:** 1/11/2023		**R-value:**	**36**
Project:	Crawford (22-852.1 Pioneer Road Widening Project)			**Sample :**	**A-22-004**
Classification of Material:	SC, Clayey Sand w/ Gravel, Brown			**Technician:** DS	
Initial Sample Weight	1180	1160	1140		
Mold Number	D	E	F		
Air Pressure-PSI	350	350	250		
Initial Moisture %	6.2	6.2	6.2		
Water Added ml/g	25	30	35		
Water Added %	2.2	2.7	3.3		
Final Moist %	8.4	8.9	9.4		
Soil + Mold Weight-Grams	3272.1	3210.4	3235.1		
Mold Weight-Grams	2073	2029	2067		
Soil Weight-Grams	1199.1	1181.4	1168.1		
Height of Sample-Inches	2.50	2.48	2.46		
Density-PCF	134.1	132.5	131.5		
Dial Reading (x.0001 inches)	18	16	4		
Expansion Pressure (psf)	78	69	17		
Stabilometer at 1000 lbs.	23	38	49		
2000 lbs.	52	91	118		
Displacement	4.22	4.35	4.43		
Exudation Pressure-Lbs	5030	3600	3290		
Exudation-PSI	400	287	262		
R-Value Calculated	55	30	17		
Corrected R-Value	55	30	17		



RESISTANCE VALUE

California Test Method No. 301

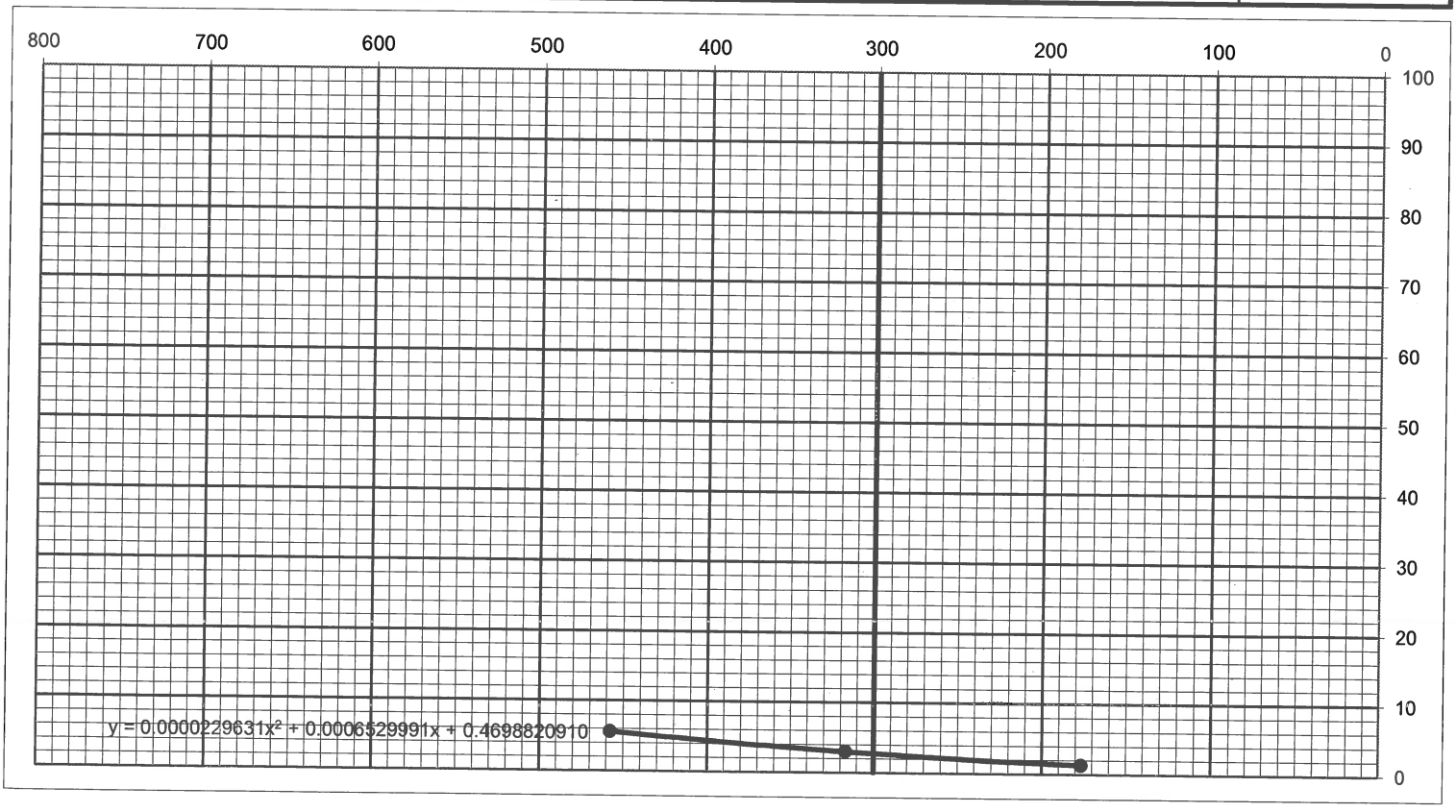
Job Number:	**4151-001.00**	**Date Tested:** 1/11/2023		**R-value:**	**20**
Project:	Crawford (22-852.1 Pioneer Road Widening Project)			**Sample :**	**A-22-007**
Classification of Material:	SC, Clayey Sand w/ Gravel, Brown			**Technician:** DS	
Initial Sample Weight	1190	1170	1150		
Mold Number	C	A	B		
Air Pressure-PSI	350	250	150		
Initial Moisture %	7.9	7.9	7.9		
Water Added ml/g	10	20	30		
Water Added %	0.9	1.8	2.8		
Final Moist %	8.8	9.8	10.7		
Soil + Mold Weight-Grams	3275.1	3272.7	3255.4		
Mold Weight-Grams	2084	2088	2086		
Soil Weight-Grams	1191.1	1184.7	1169.4		
Height of Sample-Inches	2.50	2.51	2.49		
Density-PCF	132.7	130.3	128.5		
Dial Reading (x.0001 inches)	23	5	0		
Expansion Pressure (psf)	100	22	0		
Stabilometer at 1000 lbs.	19	47	59		
2000 lbs.	40	116	141		
Displacement	3.87	4.36	4.51		
Exudation Pressure-Lbs	6870	3610	2560		
Exudation-PSI	547	287	204		
R-Value Calculated	66	18	7		
Corrected R-Value	66	18	7		



RESISTANCE VALUE

California Test Method No. 301

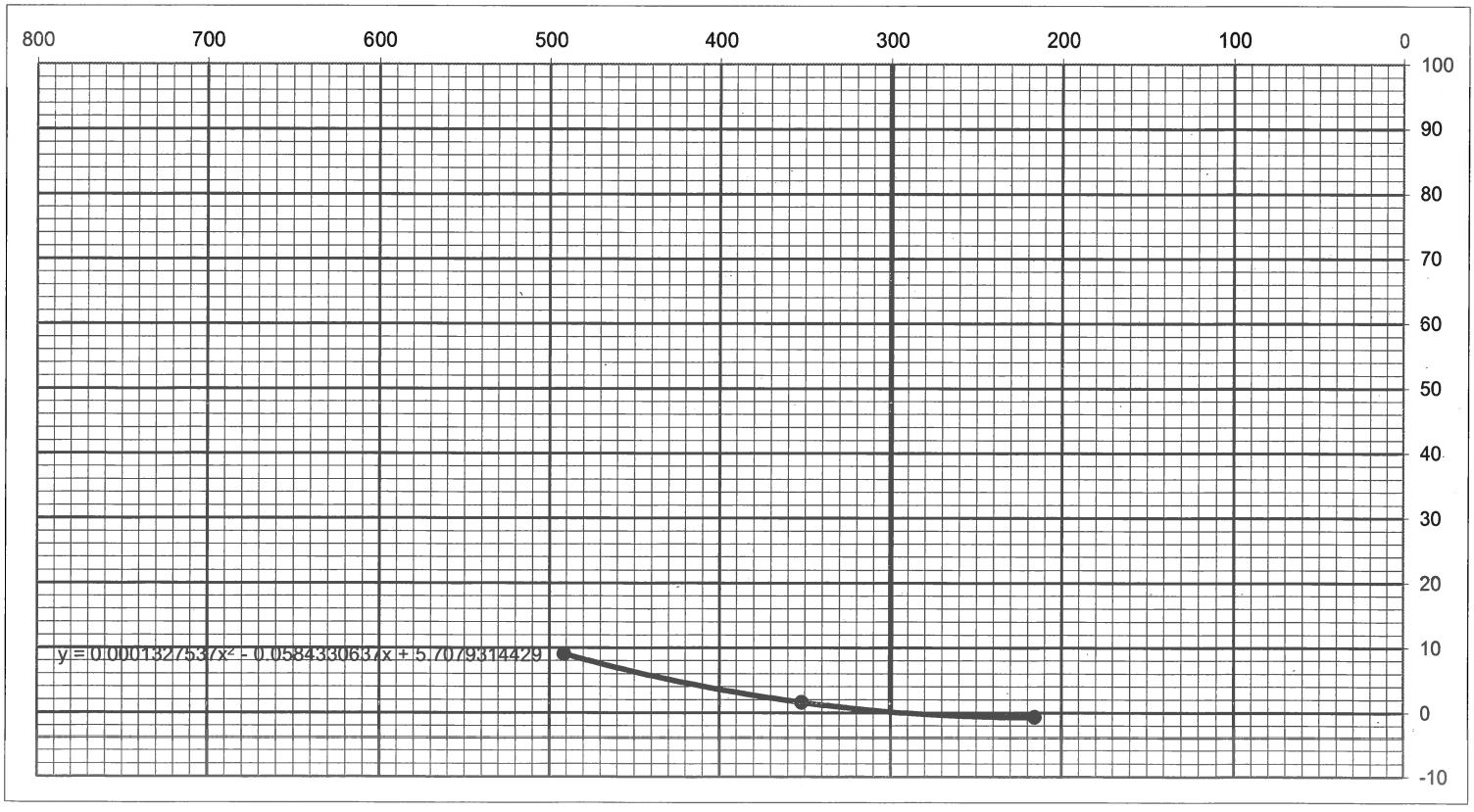
Job Number:	**4151-001.00**	**Date Tested:** 1/13/2023		**R-value:**	**<5**
Project:	Crawford (22-852.1 Pioneer Road Widening Project)			**Sample :**	**A-22-009**
Classification of Material:	CH, Fat Clay w/ Gravel, Brown			**Technician:** DS	
Initial Sample Weight	1130	1080	1040		
Mold Number	C	A	B		
Air Pressure-PSI	150	125	100		
Initial Moisture %	8.6	8.6	8.6		
Water Added ml/g	30	40	50		
Water Added %	2.9	4.0	5.2		
Final Moist %	11.5	12.6	13.8		
Soil + Mold Weight-Grams	3238.2	3194.8	3154.3		
Mold Weight-Grams	2084	2088	2086		
Soil Weight-Grams	1154.2	1106.8	1068.3		
Height of Sample-Inches	2.51	2.49	2.49		
Density-PCF	125.0	119.6	114.2		
Dial Reading (x.0001 inches)	16	1	0		
Expansion Pressure (psf)	69	4	0		
Stabilometer at 1000 lbs.	58	65	69		
2000 lbs.	147	152	155		
Displacement	3.74	4.28	6.11		
Exudation Pressure-Lbs	5750	3980	2220		
Exudation-PSI	458	317	177		
R-Value Calculated	6	3	1		
Corrected R-Value	6	3	1		



RESISTANCE VALUE

California Test Method No. 301

Job Number:	**4151-001.00**	**Date Tested:** 1/13/2023		**R-value:**	**<5**
Project:	Crawford (22-852.1 Pioneer Road Widening Project)			**Sample :**	**A-22-012**
Classification of Material:	CL, Silty Clay w/ Minor Gravel, Brown			**Technician:** DS	
Initial Sample Weight	1160	1110	1050		
Mold Number	D	E	F		
Air Pressure-PSI	250	200	150		
Initial Moisture %	12.0	12.0	12.0		
Water Added ml/g	30	40	50		
Water Added %	2.9	4.0	5.3		
Final Moist %	14.9	16.0	17.3		
Soil + Mold Weight-Grams	3255.4	3163.4	3152.5		
Mold Weight-Grams	2073	2029	2067		
Soil Weight-Grams	1182.4	1134.4	1085.5		
Height of Sample-Inches	2.64	2.55	2.49		
Density-PCF	118.2	116.2	112.6		
Dial Reading (x.0001 inches)	18	9	4		
Expansion Pressure (psf)	78	39	17		
Stabilometer at 1000 lbs.	60	65	71		
2000 lbs.	141	156	162		
Displacement	3.8	3.98	4.32		
Exudation Pressure-Lbs	6170	4420	2710		
Exudation-PSI	491	352	216		
R-Value Calculated	8	2	-1		
Corrected R-Value	9	2	-1		



Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 01/18/2023
Date Submitted 01/11/2023

To: Kennedy Hauder
Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 22-852.1 Site ID : 3A.
Thank you for your business.

* For future reference to this analysis please use SUN # 88849-184611.

EVALUATION FOR SOIL CORROSION

Soil pH	7.76	
Minimum Resistivity	1.02 ohm-cm (x1000)	
Chloride	26.6 ppm	00.00266 %
Sulfate	63.8 ppm	00.00638 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 01/18/2023
Date Submitted 01/11/2023

To: Kennedy Hauder
Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 22-852.1 Site ID : 5A.
Thank you for your business.

* For future reference to this analysis please use SUN # 88850-184612.

EVALUATION FOR SOIL CORROSION

Soil pH	7.86		
Minimum Resistivity	1.55 ohm-cm (x1000)		
Chloride	14.8 ppm	00.00148	%
Sulfate	32.0 ppm	00.00320	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 01/18/2023
Date Submitted 01/11/2023

To: Kennedy Hauder
Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822

From: Gene Oliphant, Ph.D. \ Randy Horney RA
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 22-852.1 Site ID : 9A.
Thank you for your business.

* For future reference to this analysis please use SUN # 88851-184613.

EVALUATION FOR SOIL CORROSION

Soil pH	7.99		
Minimum Resistivity	1.63 ohm-cm (x1000)		
Chloride	12.3 ppm	00.00123	%
Sulfate	24.2 ppm	00.00242	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/25/2023
Date Submitted 08/22/2023

To: Kennedy Hauder
Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 22-852.1 Site ID : A23-014 2B.
Thank you for your business.

* For future reference to this analysis please use SUN # 90411-187639.

EVALUATION FOR SOIL CORROSION

Soil pH	7.44	
Minimum Resistivity	0.27 ohm-cm (x1000)	
Chloride	693.5 ppm	00.06935 %
Sulfate	144.2 ppm	00.01442 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

APPENDIX IV

Ground Motion Data Sheet

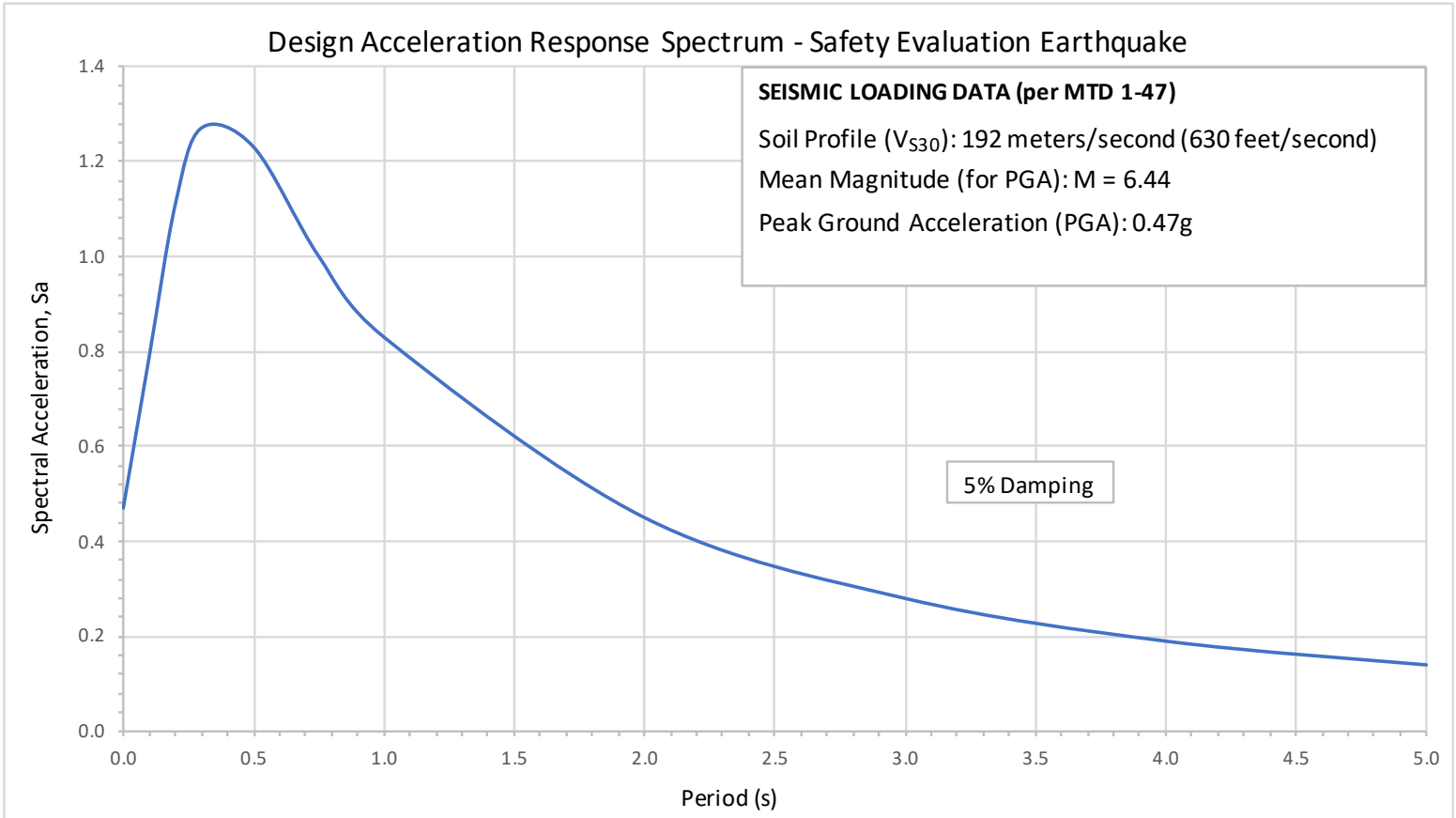
DRAFT

GROUND MOTION DATA SHEET - SAFETY EVALUATION EARTHQUAKE (SEE)

Caltrans Seismic Design Criteria: V2.0
Caltrans ARS Online Version: V3.1.0
Date Accessed: 8/9/2023

Pioneer Complete Streets Project
Merced County, California

Period (s)	Spectral Acceleration, Sa (g)
0.00	0.47
0.10	0.79
0.20	1.11
0.30	1.27
0.50	1.23
0.75	1.00
1.00	0.83
2.00	0.45
3.00	0.28
4.00	0.19
5.00	0.14



The Accleration Response Spectrum (ARS) for the Safety Evaluation Earthquake (SEE) is based on the USGS 2014 National Seismic Hazard Map for 975-year return period, (Hazard Model/Edition "Dynamic Conterminous U.S. 2014 (Update)(V4.20)") hazard data obtained by using ARS Online. Modifications for basin-effects and/or near-fault effects were applied, where

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Taber
Since 1954

Site Latitude: 37.0423
Site Longitude: -120.8539

Crawford No.: 22-852.1

Figure 4