CITY OF NORWALK
A Connected Community

12700 Norwalk Boulevard - Norwalk, CA 90650 - (562) 929-5723

SPECIFICATIONS

FOR THE

Traffic Signal and Fiber Optic Communication Improvements along Pioneer Boulevard from 166th Street to Lakeland Road

PROJECT NO: 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

IFB NO: 26-869

BID OPENING DATE: July 20, 2026 AT 11:00 AM

Bids shall be submitted on PlanetBids.

PREPARED AND APPROVED BY:

John Dorado, PE — RCE No 74405 — 05/14/2026 Date

Albert Mendoza, P.E., City Engineer — RCE No. 90882 — 05/15/2026 Date

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CITY OF NORWALK

INVITATION FOR BID

FOR

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD

City Project No.: 7239/7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)
IFB No.: 26-869

NOTICE IS HEREBY GIVEN that the City of Norwalk, California ("City") invites electronic Bids for the for the above stated project up to 11:00 AM on July 20, 2026. The City will be receiving bids electronically via City of Norwalk's Planetbids portal at:

https://pbsystem.planetbids.com/portal/54783/portal-home

SCOPE OF WORK. The Project includes, without limitation, furnishing all necessary labor, materials, equipment and other incidental and appurtenant work necessary to satisfactorily complete the Project, as more specifically described in the Contract Documents. Works consists of traffic signal, fiber optic communication, ITS, and ADA ramp improvements along Pioneer Boulevard from 166th Street to Lakeland Road, and includes, but not limited to furnishing and installing conduit, pull boxes, countdown pedestrian signal heads, accessible pedestrian signals and push buttons, push button posts, traffic signal poles, traffic signal cabinets, advanced transportation controllers, malfunctioning monitoring units (MMU), battery backup systems (BBS), service cabinets, video detection systems, detector loops, safety lighting, luminaires, internally illuminated street name signs, traffic signal cabinets, communication hub cabinets, fiber optic cable, advanced transportation controllers, fiber distribution units, fiber optic splicing, wireless radios, and Ethernet switches. Contractor shall be fully installed, configured, integrated, tested and commissioned to the manufacturer's specifications, these Special Provisions, and the project plans.

ESTIMATED COST OF WORK. The Project is estimated to cost approximately $3,200,000 and includes, without limitation, furnishing all necessary labor, materials, equipment and other incidental and appurtenant Work necessary to satisfactorily complete the Project, as more specifically described in the Contract Documents. This Work will be performed in strict conformance with the Contract Documents, permits from regulatory agencies with jurisdiction, and applicable regulations. The quantity of Work to be performed and materials to be furnished are approximations only, being given as a basis for the comparison of Bids. Actual quantities of Work to be performed may vary at the discretion of the City Engineer.

OBTAINING BID DOCUMENTS. Respondents to this NIB must be registered as a Vendor with the City of Norwalk on the City of Norwalk PlanetBids online bid portal to access all solicitation documents related to this project. The Vendor Portal provides entry to the NEW VENDOR REGISTRATION and BID OPPORTUNITIES modules. Registration is free and immediate. Instructions to register are provided on the City's website at: https://www.norwalk.org/planetbids.

A copy of the solicitation can be downloaded from the City of Norwalk PlanetBids online bid portal site at https://pbsystem.planetbids.com/portal/54783/portal-home.

All questions or requests for interpretation regarding this solicitation must be submitted through the Q&A section of the City of Norwalk PlanetBids online bid portal. Bidders are not to contact City personnel with questions or clarifications concerning this solicitation. Any City response relevant to this solicitation provided through any means other than the City of Norwalk PlanetBids online bid portal is unauthorized and will be considered invalid.

FEDERAL FUNDING. This project is partially funded by the Federal Highway Administration (FHWA). The successful Proposer will be required to comply with Equal Employment Opportunity and all applicable federal, state and local laws, and requirements. The City of Norwalk hereby notifies all Proposers that the City will affirmatively assure that Disadvantaged Business Enterprises are afforded full opportunity to participate in the performance of contracts and sub-contracts financed in part or in whole with funds provided under this Invitation to Bid, and will not be discriminated against on the grounds of race, color, gender, age, or national origin in consideration for an award.

BUILD AMERICA, BUY AMERICA (BABA). This project is subject to Build America, Buy America requirements. Contractors and their subcontractors who apply or bid for an award for an infrastructure project subject to the domestic preference requirement in the Build America, Buy America Act (BABAA) shall file the required certification to the non-federal entity **with each bid** or offer for an infrastructure project. The Build America, Buy America Act (BABA) requires that all of the iron, steel, manufactured products, and construction materials used in infrastructure projects are produced in the United States. Under Sections 70912 and 70914, the BAP applies to the purchase of iron, steel, manufactured products, and construction materials for Covered Community Planning and Development (CPD) Programs when funds are used for the construction, alteration, maintenance, or repair of infrastructure, as defined by BABA.

REGISTRATION WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS. In accordance with Labor Code Sections 1725.5 and 1771.1, no contractor or subcontractor shall 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, unless currently registered and qualified to perform public work pursuant to Section 1725.5 [with limited exceptions for bid purposes only under Labor Code Section 1771.1(a)].

PREVAILING WAGES This is a federally assisted construction contract. Federal Labor Standards Provisions, including prevailing wage requirements of the Davis-Bacon and Related Acts (DBRA) will be enforced. Applicable prevailing wage determinations are on file at the City of Norwalk, 12700 Norwalk Blvd., Norwalk, CA 90650 and is available to any interested party on request.

In accordance with Labor Code Section 1770 *et seq*., the Project is a “public work.” The selected Bidder (Contractor) and any Subcontractors shall pay wages in accordance with the determination of the Director of the Department of Industrial Relations (“DIR”) regarding the prevailing rate of per diem wages. Copies of those rates are on file with the Director of Public Works, and are available to any interested party upon request. The Contractor shall post a copy of the DIR’s determination of the prevailing rate of per diem wages at each job site. This Project is subject to compliance monitoring and enforcement by the DIR.

BONDS. Bidders must submit to the City Clerk a cash deposit, cashier’s check, certified check, or Bidder’s Bond issued by a Surety insurer, made payable to the City of Norwalk and in an amount not less than ten percent (10%) of the total Bid submitted by no later than 11:00 AM on

July 20, 2026. Personal or company checks are not acceptable. Bidder must indicate on the outside of the envelope the solicitation name and solicitation number. Failure to provide cashier's check, certified check, or Bidder's Bond will deem the bid as Non-Responsive.

City of Norwalk
Attn: City Clerk
12700 Norwalk Blvd., Room 10
Norwalk, CA 90650
Phone: (562) 929-5720

A scanned copy of the cash deposit, cashier's check, certified check, or Bid Bond shall be submitted along with the electronic bid through the City of Norwalk PlanetBids online bid portal. Upon Contract award, the Contractor shall provide faithful performance and payment Bonds, each in a sum equal to the Contract Price. All Bonds must be issued by a California admitted Surety insurer using the forms set forth in the Contract Documents, or in any other form approved by the City Attorney. Failure to enter into the Contract with the City, including the submission of all required Bonds and insurance coverages, within fifteen (15) Days after the date of the mailing of written notice of contract award to the Bidder, shall subject the Bid security to forfeiture to the extent provided by law.

LICENSES. Each Bidder shall possess a valid Class **A or C-10** Contractor's license issued by the California State Contractors License Board at the time of the Bid submission, unless this Project has any federal funding, in which case the successful Bidder must possess such a license at the time of Contract award. The successful Contractor must also possess a current City business license.

LIQUIDATED DAMAGES. Liquidated damaged daily cost shall be **$2,500** (dollar amount) per Calendar Day.

RETENTION SUBSTITUTION. Five percent (5%) of any progress payment will be withheld as retention. In accordance with Public Contract Code Section 22300, and at the request and expense of the Contractor, securities equivalent to the amount withheld may be deposited with the City or with a State or federally chartered bank as escrow agent, which shall then pay such moneys to the Contractor. Upon satisfactory completion of the Project, the securities shall be returned to the Contractor. Alternatively, the Contractor may request that the City make payments of earned retentions directly to an escrow agent at the Contractor's expense. No such substitutions shall be accepted until all related documents are approved by the City Attorney.

BIDDING PROCESS. The City reserves the right to reject any Bid or all Bids, and to waive any irregularities or informalities in any Bid or in the bidding, as deemed to be in its best interest.

By: _____ 05/15/2026
City Engineer Date

INSTRUCTIONS TO BIDDERS

FORM OF BID. Bids shall be made on the Bid forms found herein. Bidders shall include all forms and fill in all blank spaces, including inserting "N/A" (for not applicable) where necessary.

DELIVERY OF BIDS. Bids must be submitted through the City of Norwalk PlanetBids online bid portal to be eligible for this solicitation. Mailed, faxed, or hand delivered bids will NOT be accepted.

AMENDED BIDS. Unauthorized conditions, limitations or provisos attached to a Bid may cause the Bid to be deemed incomplete and non-responsive.

WITHDRAWAL OF BID. A Bid may be withdrawn without prejudice upon written request by the Bidder filed with the City Clerk before the Bid submission deadline. Bids must remain valid and shall not be subject to withdrawal for sixty (60) Days after the Bid opening date.

BID PROTEST. The filing of bid protest to all project specifications:

Bidders may file a "protest" of a Bid with the City Clerk. For a Bidder's protest to be considered valid, the protest must:

1) Be filed in writing seven (7) calendar days after the bid opening date; and,
2) Clearly identify the specific irregularity of accusation; and,
3) Specify, in detail, the grounds of protest and the facts supporting such protest; and,
4) Include all relevant and supporting documentation with the protest at the time of filing.

If the protest does not comply with each of these requirements, it will be rejected as invalid. Should the protest be deemed valid, staff from the Engineering Division consultation with the legal counsel shall review the basis of the protest and all relevant information. The Director of Public Services/City Engineer or designee will provide a written response to the protestor, and the decision will be final.

BIDDER'S SECURITY. Each Bid shall be accompanied by a certified or cashier's check payable to the City, or a satisfactory Bid Bond in favor of the City executed by the Bidder as principal and an admitted surety insurer as Surety, in an amount not less than ten percent (10%) of the amount set forth in the Bid. The cashiers check or Bid Bond shall be given as a guarantee that, if selected, the Bidder will execute the Contract in conformity with the Contract Documents, and will provide the evidence of insurance and furnish the specified Bonds, within fifteen (15) Days after the date of delivery of the Contract Documents to the Bidder. In case of the Bidder's refusal or failure to do so, the City may award the Contract to the next lowest responsible bidder, and the cashiers check or Bond (as applicable) of the lowest Bidder shall be forfeited to the City to the extent permitted by law. No Bid Bond will be accepted unless it conforms substantially to the form provided in these Contract Documents.

QUANTITIES APPROXIMATE. Any quantities shown in the Bid form or elsewhere herein shall be considered as approximations listed to serve as a general indication of the amount of Work or materials to be performed or furnished, and as basis for the Bid comparison. The City does not guarantee that the actual amounts required will correspond with those shown. As deemed necessary or convenient, the City may increase or decrease the amount of any item or portion of

Work or material to be performed or furnished or omit any such item or portion, in accordance with the Contract Documents.

ADDENDA. The City Engineer or his/her designee may, from time to time, issue Addenda to the Contract Documents. Bidders are responsible for ensuring that they have received any and all Addenda. Each Bidder is responsible for verifying that it has received all Addenda issued, if any. Bidders must acknowledge receipt of all Addenda, if any, in their bids. Failure to acknowledge receipt of all Addenda may cause a Bid to be deemed incomplete and non-responsive.

DISCREPANCIES IN BIDS. Each bidder shall set forth as to each item of Work, in clearly legible words and figures, a unit or line item Bid amount for the item in the respective spaces provided for this purpose.

In case of discrepancy between the unit price and the extended amount set forth for the item, the unit price shall prevail. In case of discrepancy between words and figures, the words shall prevail.

COMPETENCY OF BIDDERS. In evaluating Bidder responsibility, consideration will be given not only to the financial standing, but also to the general competency of the Bidder for the performance of the Project. Each Bidder shall set forth in the designated area of the Bid form a statement of its experience. No Contract will be executed with a Bidder that is not licensed and registered with the DIR in accordance with State law, and with any applicable specific licensing requirements specified in these Contract Documents. These licensing and registration requirements for Contractors shall also apply to all Subcontractors.

BIDDER'S EXAMINATION OF SITE AND CONTRACT DOCUMENTS. Each Bidder must carefully examine the Project site and the entirety of the Contract Documents. Upon submission of a Bid, it will be conclusively presumed that the Bidder has thoroughly investigated the Work and is satisfied as to the conditions to be encountered, existing conditions (Refer to the Greenbook Section) and the character, quality, and quantities of Work to be performed and materials to be furnished. Upon Bid submission, it also shall be conclusively presumed that the Bidder is familiar with and agrees to the requirements of the Contract Documents, including all Addenda. No information derived from an inspection of records or investigation will in any way relieve the Contractor from its obligations under the Contract Documents nor entitle the Contractor to any additional compensation. The Contractor shall not make any claim against the City based upon ignorance or misunderstanding of any condition of the Project site or of the requirements set forth in the Contract Documents. No claim for additional compensation will be allowed which is based on a lack of knowledge of the above items. Bidders assume all risks in connection with performance of the Work in accordance with the Contract Documents, regardless of actual conditions encountered, and waive and release the City with respect to any and all claims and liabilities in connection therewith, to the extent permitted by law.

CONSTRUCTION SCHEDULE, PROGRESS OF WORK, LIQUIDATED DAMAGES: In accordance with the provisions of Section 6-1.1 of the Standard Specifications for Public Works Construction ("Greenbook"), latest edition, and/or as may be provided for within the herein Special Provisions, after notification of award and prior to start of any work, the Contractor's shall submit to the Engineer for approval its proposed Construction Schedule. The selected Contractor shall complete the project within the duration identified on Section NIB. "Time of Completion" of City's issuance of a Notice to Proceed.

The following is the project milestone schedule showing important milestones the contractor shall adhere to:

PROJECT MILESTONE SCHEDULE

Task No	Description	Date
1.City Task	Contract award by the City Council.	Date 1
2.Contractor Task + City Task	Contractor shall provide required bonds and insurances to City for review. After approval, City will send out the Contract to Contractor for signatures.	Date 2 = Date 1 + 5 working days
3.Contractor Task	Contractor shall return signed Contract to City.	Date 3 = Date 2 + 5 working days
4. City Task	City will counter sign the Contract and provide a fully executed Contract to Contractor.	Date 4 = Date 3 + 5 working days
5. Milestone 1	City will issue to the Contractor NTP 1 (Notice to Proceed) to commence with submitting **project baseline schedule with master list of submittals, traffic control plans, and phasing maps.** **Also provide all material submittals for review and approval.** **Note: If Contractor delays commencing with submitting the submittals mentioned above and does not submit project schedule within the required duration, City will assess $2,500 per calendar day as liquidated damages. Incomplete submittals will be considered non-submittal and liquidated damages will accrue as appropriate.**	Date 5 = Date 4 + 10 working days
6. Milestone 2	An in-person Pre-construction meeting will be held at City Hall. Contractor shall submit its **project baseline schedule with master list of submittals, traffic control plans, and all material submittals** to the City at the Pre-construction meeting, with project start date established based on Date 5 shown in Task 5. **Note: If Contractor delays attending the pre-con meeting within the required duration, City will assess $2,500 per calendar day as liquidated damages.**	Date 6 = Date 5 + 5 working day
7. Milestone 3	City will issue to the Contractor NTP 2 (Notice to Proceed) to commence with field construction.	Date 7 = Date 6 + 5 working days (Effective Date of for the start of construction)

Task No	Description	Date
8.Contractor Task	Contractor shall complete field construction. **Note:** No parking signs shall be posted onsite minimum 72 hours prior to the pavement rehabilitation operations. Resident notifications shall be hand delivered minimum 1 week prior to the rehabilitation operations. If schedule changes, contractor shall re-issue and hand deliver the notifications. Any area of demolished Portland Cement Concrete (PCC) shall be fully reconstructed within two (2) working days of demolition. At no time shall demolished or removed sidewalk, curb ramp, curb, or gutter sections be left open over a weekend (Saturday and Sunday) or during City-recognized holidays. All PCC demolition occurring during a given workweek shall be fully reconstructed no later than 3:00 p.m. on Friday of that same workweek, unless otherwise approved in writing by the City. Any lane closure or temporary traffic signal shutdown shall be coordinated with the City Engineer minimum one (1) week prior. **Liquidated damages daily cost shall be $2,500 (dollar amount) per Calendar Day per this milestone**	Date 8 = Date 7 + **180** working days
All durations above related to Contractor tasks shall remain the same regardless of City's completion of City tasks.		

At a scheduled date prior to commencement of work, the Contractor and all subcontractors shall attend a pre-construction conference at the City Hall. The Contractor agrees that failure to complete work within the time allowed will result in damages being sustained by the City. Contractor and City agree that failure to complete the project will result in inconvenience to the citizens of Norwalk. The parties also agree that failure to complete the project on time will prevent the City from having the use of the affected facilities. Therefore, the parties agree such damages among others are, and will continue to be, impracticable and extremely difficult to determine, but that $2,500 a calendar day is the minimum value of such costs to the City and is a reasonable amount that the Contractor agrees to reimburse the City for each calendar day of delay in finishing the work in excess of the time specified for completion, plus any authorized time extensions. Execution of the contract under these specifications shall constitute agreement by the Contractor and the City that the above indicated liquidated damage amount per calendar day is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

TRADE NAMES OR EQUALS. Requests to substitute an equivalent item for a brand or trade name item must be made by written request submitted no later than the date specified in Section 4-6 of the General Provisions. Requests received after this time shall not be considered.

Requests shall clearly describe the product for which approval is requested, including all data necessary to demonstrate acceptability.

DISQUALIFICATION OF BIDDERS. No Person shall be allowed to make, file or be interested in more than one Bid for the Project, unless alternate Bids are specifically called for. A Person that has submitted a sub-bid to a Bidder, or that has quoted prices of materials to a Bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from making a prime Bid. If there is a reason to believe that collusion exists among the Bidders, all affected Bids will be rejected.

RETURN OF BID SECURITY. The successful Bidder's Bid security shall be held until the Contract is executed. Bid security shall be returned to the unsuccessful Bidders within a reasonable time, which in any case shall not exceed sixty (60) Days after the successful Bidder has signed the Contract.

AWARD OF CONTRACT. The City reserves the right to reject any or all Bids or any parts thereof or to waive any irregularities or informalities in any Bid or in the bidding. The Contract award, if made, will be to the lowest responsible, responsive Bidder and is anticipated to occur within sixty (60) Days after the Bid opening. The Contract award may be made after that period if the selected Bidder has not given the City written notice of the withdrawal of its Bid.

ADDITIVE ITEMS. In accordance with Public Contract Code Section 20103.8, the lowest Bid shall be determined as follows: The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive items.

TRENCHING. If the Project involves the construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, which are five (5) feet deep or more, then each Bidder must submit, as a Bid item, adequate sheeting, shoring, and bracing, or an equivalent method, for the protection of life or limb, which shall conform to applicable safety orders. This final submission must be accepted by the City in advance of excavation and must include a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from caving ground during the excavation Work. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

LISTING SUBCONTRACTORS. Each Bidder shall submit a list of the proposed Subcontractors on the Project, as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100, *et seq*.).

EXECUTION OF CONTRACT. The selected Bidder shall execute the Contract in the form included in these Contract Documents within fifteen (15) Days from the date of delivery of the Contract Documents to the Bidder. Additionally, the selected Bidder shall also secure all insurance and Bonds as herein specified, and provide copies to the City, within fifteen (15) Days from the date of delivery of the Contract Documents to the Bidder. Failure or refusal to execute the Contract or to conform to any of the stipulated requirements shall be just cause for the annulment of the award and forfeiture of the Bidder's security. In such event, the City may declare the Bidder's security forfeited to the extent permitted by law, and the City may award the Contract to the next lowest responsible Bidder or may reject all bids.

SIGNATURES. The Bidder shall execute all documents requiring signatures, and shall cause to be notarized all documents that indicate such a requirement. Bids submitted as joint ventures must so state and be signed by each joint venturer. The Bidder shall provide evidence satisfactory to the City, such as an authenticated resolution of its board of directors, a certified copy of a certificate of partnership acknowledging the signer to be a general partner, or a power of attorney, indicating the capacity of the person(s) signing the Bid to bind the Bidder to the Bid and any Contract arising therefrom. Alternatively, Bids submitted by corporations must be executed as specified in Corporations Code Section 313, and Bids submitted by partnerships must be executed by all partners comprising the partnership.

INSURANCE AND BONDS. The Contractor shall not begin Work until it has given the City evidence of all required insurance coverage (including all additional insured certifications), a Bond guaranteeing the Contractor's faithful performance of the Contract, and a Bond securing the payment of claims for labor and materials, and City has provided its approval to begin Work.

TELEPHONES. Bidders are hereby notified that the City will not provide telephones for their use at the time of Bid submission.

INTERPRETATION OF CONTRACT DOCUMENTS. Any Bidder that is in doubt as to the intended meaning of any part of the Contract Documents, or that finds discrepancies in or omissions from the Contract Documents, may submit a written request for an interpretation or correction not later than ten (10) Days before the Bid submission deadline. All questions or requests for interpretation regarding this solicitation must be submitted through the Q&A section of the City of Norwalk PlanetBids online bid portal. Bidders are not to contact City personnel with questions or clarifications concerning this solicitation. Any City response relevant to this solicitation provided through any means other than the City of Norwalk PlanetBids online bid portal is unauthorized and will be considered invalid. Telephonic and electronic mail requests will not be taken. Any interpretation or correction of the Contract Documents will be made only by a written Addendum. No oral interpretation of any provision in the Contract Documents shall be binding.

TAXES. Except as may be otherwise specifically provided herein, all sales and/or use taxes assessed by federal, State or local authorities on materials used or furnished by the Contractor in performing the Work shall be paid by the Contractor. The Bidder shall calculate payment for all sales, unemployment, pension and other taxes imposed by federal, State, and local law and shall include these payments in computing the Bid.

THESE ARE FEDERAL REQUIREMENTS:

FEDERAL FUNDING. This project is partially funded by the Federal Highway Administration (FHWA). The successful Proposer will be required to comply with Equal Employment Opportunity and all applicable federal, state and local laws, and requirements. The City of Norwalk hereby notifies all Offerors that the City will affirmatively assure that Disadvantaged Business Enterprises are afforded full opportunity to participate in the performance of contracts and sub-contracts financed in part or in whole with funds provided under this Invitation to Bid, and will not be discriminated against on the grounds of race, color, gender, age, or national origin in consideration for an award.

DISADVANTAGED BUSINESS ENTERPRISE. It is the policy of the Department of Transportation and the City of Norwalk that Disadvantaged Business Enterprises ("DBE'") as

defined in 49 CFR part 26, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this Agreement. Consequently, the DBE requirement of 49 CFR applies to this Agreement.

LIQUIDATED DAMAGES. Liquidated damages shall accrue in the amount of **$2,500.00** for each day that Work remains incomplete beyond the Project **180 Working Days** completion deadline as specified in the Contract Documents.

PROMPT PAYMENT FROM THE AGENCY TO THE CONTRACTORS. The Agency shall make any progress payment within 30 days after receipt of an undisputed and properly submitted payment request from a contractor on a construction contract. If the Agency fails to pay promptly, the 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. Upon receipt of a payment request, the Agency shall act in accordance with both of the following:

1. Each payment request shall be reviewed by the Agency as soon as practicable after receipt for the purpose of determining that it is a proper payment request.
2. Any payment request determined not to be a proper payment request suitable for payment shall be returned to the contractor as soon as practicable, but not later than seven (7) days, after receipt. A request returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the payment request is not proper.

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.

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.

CHECKLIST FOR BIDDERS

The following information is required of all Bidders at the time of Bid submission:

_____ Completed and Signed Bid Cover Form

_____ Completed and Signed Bid Sheets

_____ Completed, Signed and Notarized Questionnaire

_____ Completed References Form

_____ Resume of General Construction Superintendent/On-Site Construction Manager

_____ Completed Subcontractor Designation Form

_____ Completed and Signed Industrial Safety Record Form

_____ Completed, Signed and Notarized Bid Bond or Other Security Form

_____ Signed and Notarized Noncollusion Declaration Form

_____ Evidence satisfactory to the City indicating the capacity of the person(s) signing the Bid to bind the Bidder

Federal Required Forms:

_____ Signed and Notarized Noncollusion Affidavit (See “Declaration” form above)

_____ Equal Employment Opportunity Certification

_____ Debarment and Suspension Certification

_____ Non-Lobbying Certification

_____ Federal Exhibit 10-Q Disclosure of Lobbying Activities

_____ Exhibit 12-B Bidder’s List of Subcontractor (DBE and Non-DBE)

_____ Exhibit 12-G Federal-Aid Contract

_____ Exhibit 12-H Public Contract Code Section 10285.1 Statement

Failure of the Bidder to provide all required information in a complete and accurate manner may cause the Bid to be considered non-responsive.

BID

CITY OF NORWALK

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

Bidder's Name: _____

TO THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF NORWALK:

The undersigned, as Bidder, declares that: (1) this Bid is made without collusion with any other person and that the only persons or parties interested as principals are those named herein; (2) the undersigned has carefully examined the Contract Documents (including all Addenda) and the Project site; and (3) the undersigned has investigated and is satisfied as to the conditions to be encountered, the character, quality and quantities of Work to be performed, and the materials to be furnished. Furthermore, the undersigned agrees that submission of this Bid shall be conclusive evidence that such examination and investigation have been made and agrees, in the event the Contract be awarded to it, to execute the Contract with the City of Norwalk to perform the Project in accordance with the Contract Documents in the time and manner therein prescribed, and to furnish or provide all materials, labor, tools, equipment, apparatus and other means necessary so to do, except as may otherwise be furnished or provided under the terms of the Contract Documents, for the following stated unit prices or lump-sum price as submitted on the Bid herein.

Bidder acknowledges receipt of all addenda, as follows:

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

The undersigned submits as part of this Bid a completed copy of its Industrial Safety Record. This Safety Record includes all construction Work undertaken in California by the undersigned and any partnership, joint venture or corporation that any principal of the undersigned participated in as a principal or owner for the last five (5) calendar years and the current calendar year before the date of Bid submittal. Separate information is being submitted for each such partnership, joint venture, or corporate or individual Bidder. The undersigned may attach any additional information or explanation of data that it would like to be taken into consideration in evaluating the Safety Record. An explanation of the circumstances surrounding any and all fatalities is attached.

Accompanying this Bid is a cashier's check, a certified check or a Bid Bond in an amount equal to at least ten percent (10%) of the total aggregate Bid price based on the quantities shown and the unit prices quoted. The undersigned further agrees that, should it be awarded the Contract and thereafter fail or refuse to execute the Contract and provide the required evidence of

insurance and Bonds within fifteen (15) Days after delivery of the Contract to the undersigned, then the cash, check or Bid Bond shall be forfeited to the City to the extent permitted by law.

The undersigned certifies to have a minimum of three (3) consecutive years of current Public Works experience in the type of Work related to the Project and that this experience is in actual operation of the firm with permanent employees performing a part of the Work as distinct from a firm operating entirely by subcontracting all phases of the Work. The undersigned also certifies to be properly licensed by the State as a contractor to perform this type of Work. The undersigned possesses California Contractor's License Number _____, Class _____, which expires on _____.

Bidder's Name: _____

Signature: _____ Title: _____ Date: _____

Signature: _____ Title: _____ Date: _____

CITY OF NORWALK

BID SHEETS FOR

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

Bidder's Name: _____

To the Honorable Mayor and Members of the City Council:

In compliance with the Notice Inviting Bids, the undersigned hereby agrees to execute the Contract to furnish all labor, materials, equipment and supplies for the Project in accordance with the Contract Documents to the satisfaction and under the direction of the City Engineer, at the following prices:

BASE BID SCHEDULE:

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
1	Mobilization (5% maximum of Total Bid Price) Complete at _____Dollars & _____ Cents	LS	1	$	$
2	Traffic Control Complete at _____Dollars & _____ Cents	LS	1	$	$
	SUBTOTAL (ITEMS 1-2) _____Dollars & _____ Cents				$
Fiber Optic Communications Improvements					
3	Furnish & Install #6 pull box, reconstruct existing surface _____Dollars & _____ Cents	EA	43	$	$
4	Remove existing pull box. Furnish & Install #6 pull box, reconstruct existing surface _____Dollars & _____ Cents	EA	1	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
5	Remove existing pull box and conduit sweeps. Connect new conduit end-to-end, reconstruct existing surface _____Dollars & _____ Cents	EA	1	$	$
6	Furnish & Install Splice vault (N40), reconstruct existing surface _____Dollars & _____ Cents	EA	12	$	$
7	Remove existing MMU. Furnish & Install Shelf-Mount 16LEip MMU With Ethernet Port. _____Dollars & _____ Cents	EA	3	$	$
8	Furnish & Install 12 strand single mode fiber optic cable + pull tape _____Dollars & _____ Cents	LF	825	$	$
9	Furnish & Install 72 strand single mode fiber optic cable + pull tape _____Dollars & _____ Cents	LF	23,081	$	$
10	Furnish & Install 12 port fiber optic patch panel _____Dollars & _____ Cents	EA	14	$	$
11	Furnish & Install underground splice enclosure _____Dollars & _____ Cents	EA	12	$	$
12	Modify existing underground splice enclosure _____Dollars & _____ Cents	EA	3	$	$
13	Furnish & Install 288 Port Fiber Distribution Unit complete _____Dollars & _____ Cents	EA	1	$	$
14	Remove and Salvage Existing Copper Signal Interconnect Cable (SIC) _____Dollars & _____ Cents	LF	650	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
15	Furnish & Install 2" Schedule 80 PVC conduit _____Dollars & _____ Cents	LF	250	$	$
16	Furnish & Install 3" Schedule 80 HDPE conduit _____Dollars & _____ Cents	LF	17,143	$	$
17	Furnish & Install 3" Schedule 80 PVC conduit (Stub-out included) _____Dollars & _____ Cents	LF	70	$	$
18	Furnish & Install Industrial Ethernet Edge switch + SFP options _____Dollars & _____ Cents	EA	14	$	$
19	Furnish & Install Industrial Aggregate switch + SFP options _____Dollars & _____ Cents	EA	1	$	$
20	Furnish & Install Industrial SFPs (for existing switch) _____Dollars & _____ Cents	EA	4	$	$
21	Furnish & Install Integrated 5GHz Wireless Broadband Radio _____Dollars & _____ Cents	EA	2	$	$
22	Furnish & Install Astro-Bracket Antenna bracket extension _____Dollars & _____ Cents	EA	2	$	$
23	Remove & Salvage existing Wireless Radio _____Dollars & _____ Cents	EA	11	$	$
24	Furnish & Install Type 334L Hub Cabinet _____Dollars & _____ Cents	EA	1	$	$
25	Furnish and Install New Type III Service Enclosures _____Dollars & _____ Cents	EA	2	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
26	Furnish and Install Battery Back-up System and Batteries on external side-mount cabinet _____Dollars & _____ Cents	EA	1	$	$
27	TMC Equipment Modifications _____Dollars & _____ Cents	LS	1	$	$
28	System Integration _____Dollars & _____ Cents	LS	1	$	$
29	Network Testing, Equipment Testing, and System Documentation _____Dollars & _____ Cents	LS	1	$	$
30	As-Built Plans _____Dollars & _____ Cents	LS	1	$	$
	SUBTOTAL (ITEMS 3-30) _____Dollars & _____ Cents				$
	Traffic Signal Modifications				
31	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and 166th Street _____Dollars & _____ Cents	LS	1	$	$
32	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and Cheshire Street _____Dollars & _____ Cents	LS	1	$	$
33	Traffic Signal Improvements and ADA Ramp Improvements at the Intersection of Pioneer Boulevard and Excelsior Drive _____Dollars & _____ Cents	LS	1	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
34	Traffic Signal Improvements and ADA Ramp Improvements at the Intersection of Pioneer Boulevard and Mapledale Street _____Dollars & _____ Cents	LS	1	$	$
35	Traffic Signal Improvements and ADA Ramp Improvements at the Intersection of Pioneer Boulevard and Lindale Street _____Dollars & _____ Cents	LS	1	$	$
36	Traffic Signal Improvements and ADA Ramp Improvements at the Intersection of Pioneer Boulevard and Valencia Street _____Dollars & _____ Cents	LS	1	$	$
37	Traffic Signal Improvements and ADA Ramp Improvements at the Intersection of Pioneer Boulevard and Orange Street _____Dollars & _____ Cents	LS	1	$	$
38	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and Foster Road _____Dollars & _____ Cents	LS	1	$	$
39	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and Allard Street _____Dollars & _____ Cents	LS	1	$	$
40	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and Lakeland Road _____Dollars & _____ Cents	LS	1	$	$
41	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and 163rd Street _____Dollars & _____ Cents	LS	1	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
42	Traffic Signal Improvements at the Intersection of Pioneer Boulevard and Imperial Highway _____Dollars & _____ Cents	LS	1	$	$
	SUBTOTAL (ITEMS 31-42) _____Dollars & _____ Cents				$
	ADA Ramp Improvements				
43	Pioneer Blvd & Excelsior Dr - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	2	$	$
44	Pioneer Blvd & Mapledale St - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	1	$	$
45	Pioneer Blvd & Lindale St - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	2	$	$
46	Pioneer Blvd & Valencia St - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	2	$	$
47	Pioneer Blvd & Orange St - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	3	$	$
48	Pioneer Blvd & Foster Rd - Construct ADA Ramp Improvements with Truncated Domes _____Dollars & _____ Cents	EA	4	$	$

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
SUBTOTAL (ITEMS 43-48) _____Dollars & _____ Cents $					
TOTAL (ITEMS 1-48) _____Dollars & _____ Cents $					

TOTAL BASE BID AMOUNT IN DIGITS:	$_____
TOTAL BASE BID AMOUNT IN WORDS: _____	

Note: Items may be adjusted or deleted. Therefore, regardless of total actual volume (percentage) compared to estimated quantities, the unit prices provided above by the Bidder shall be applied to the final quantity when payment is calculated for these items. No adjustment in the unit prices will be allowed except as described by Standard Specifications section 7-3.5. The City reserves the right to not use any of the estimated quantities; and if this right is exercised, the Contractor will not be entitled to any additional compensation. Cost of all export of material shall be included in the above unit costs; no additional compensation will be granted for such expenses.

Signature: _____ Title: _____ Date: _____

Signature: _____ Title: _____ Date: _____

<table>
<tr><td colspan="2">The award of Contract shall be based on the TOTAL BASE BID AMOUNT.</td></tr>
<tr><td colspan="2">Schedule of Values (SOV). Within 10 days of execution of this contract, the Contractor shall submit for the City's review and approval an SOV for the lump sum Bid items of the Work. The Schedule of Values will:
a. Subdivide the Work into its respective parts,
b. Include values for all items comprising the Work, and
c. Serve as the basis for monthly progress payments made to the Contractor throughout the Work.

The City shall be the sole judge of acceptable numbers, details, and description of values established. If, in the opinion of the City, a greater number of SOV items than proposed by the Contractor are necessary, the Contractor shall add the additional items so identified by the City. When requested by City, the Contractor shall provide substantiating data in support of scheduled values. Monthly progress payment amounts for Lump Sum items shall be determined from the monthly updates of the Schedule activities.</td></tr>
<tr><td rowspan="3">Full compensation for the items listed to the right as Items A, B, and C are considered as inclusive in each Bid Item listed above in the Base Bid Schedule as applicable, and no additional and/or separate compensation will be allowed.</td><td>A. NPDES, WWECP, and Best Management Practices (BMPs), Public Convenience, Public Notifications and Safety</td></tr>
<tr><td>B. Construction Staking by Licensed Land Surveyor</td></tr>
<tr><td>C. Clearing and Grubbing</td></tr>
<tr><td colspan="2">In the case of discrepancies in the amount of bid, unit prices shall govern over extended amounts, and words shall govern over figures.</td></tr>
<tr><td colspan="2">The bid prices shall include any and all costs, including labor, materials, appurtenant expenses, taxes, royalties and any and all other incidental costs to complete the project, in compliance with the Bid and Contract Documents and all applicable codes and standards.</td></tr>
<tr><td colspan="2">All other work items not specifically listed in the bid schedule, but necessary to complete the work per bid and contract documents and all applicable codes and standards are assumed to be included in the bid prices.</td></tr>
<tr><td colspan="2">The City reserves the right to add, delete, increase or decrease the amount of any quantity shown and to delete any item from the contract and pay the contractor at the bid unit prices so long as the total amount of bid item change does not exceed 25% (plus or minus) of the total bid item amount for the entire project. If the change exceeds 25%, a change order may be negotiated to adjust unit bid prices in accordance with Standard Specifications section 7-3.5.</td></tr>
<tr><td colspan="2">A bid is required for the entire work, so that the quantities set forth in the Bid Schedule are to calculate total bid amount, and that final compensation under the contract will be based upon the actual quantities of work satisfactorily completed.</td></tr>
</table>

QUESTIONNAIRE FORM

Fill out all of the following information. Attach additional sheets if necessary.

(1) Bidder's Name: _____

(2) If the Bidder's name is a fictitious name, who or what is the full name of the registered owner? If the Bidder's name is not a fictitious name, write "N/A" in the response to this question. If you are doing business under a fictitious name, provide a copy of the filed valid Fictitious Business Name Statement.

_____

(3) Business Address: _____

(4) Telephone: _____ Facsimile: _____

(5) Email Address: _____

(6) Type of Firm – Individual, Partnership, LLC or Corporation: _____

(7) Corporation organized under the laws of the State of: _____

(8) California State Contractor's License Number and Class: _____

Original Date Issued: _____ Expiration Date: _____

(9) DIR Contractor Registration Number: _____

(10) List the name and title of the person(s) who inspected the Project site for your firm:

_____

(11) List the name and title of the person(s) who visited the site for your firm: _____

(12) Number of years' experience the company has as a contractor in construction work: ____

(13) List the names, titles, addresses and telephone numbers of all individuals, firm members, partners, joint venturers, and company or corporate officers having a principal interest in this Bid:

_____

_____

_____

(14) List all current and prior D.B.A.'s, aliases, and fictitious business names for any principal having interest in this Bid:

_____

_____

(15) List the dates of any voluntary or involuntary bankruptcy judgments against any principal having an interest in this Bid:

_____

_____

_____

(16) For all arbitrations, lawsuits, settlements and the like (in or out of court) that the company or any principal having an interest in this Bid has been involved with in the past five (5) years:

a. List the names, addresses and telephone numbers of contact persons for the parties:

_____

_____

_____

b. Briefly summarize the parties' claims and defenses:

_____

_____

_____

c. State the tribunal (e.g., Superior Court, American Arbitration Association, etc.), the matter number, and the outcome:

_____

_____

_____

(17) Has the company or any principal having an interest in this Bid ever had a contract terminated by the owner or agency? If yes, explain.

_____

_____

_____

(18) Has the company or any principal having an interest in this Bid ever failed to complete a project? If yes, explain.

_____

_____

_____

(19) Has the company or any principal having an interest in this Bid ever been terminated for cause, even if it was converted to a "termination of convenience"? If yes, explain.

_____

_____

_____

(20) For projects that the company or any principal having an interest in this Bid has been involved with in the last five (5) years, did you have any claims or actions:

a. By you against the owner? Circle one: Yes No

b. By the owner against you? Circle one: Yes No

c. By any outside agency or individual for labor compliance?
Circle one: Yes No

d. By Subcontractors? Circle one: Yes No

e. Are any of these claims or actions unresolved or outstanding?
Circle one: Yes No

If your answer is "yes" to any part or parts of this question, explain.

_____

_____

_____

(21) List the last three (3) projects you have worked on or are currently working on for the City of Norwalk:

_____

_____

_____

Upon request of the City, the Bidder shall furnish evidence showing a notarized financial statement, financial data, construction experience, or other additional information.

Failure to provide truthful answers to the questions above or in the following References Form may result in the Bid being deemed non-responsive.

The Bidder certifies under penalty of perjury under the laws of the State of California that the information provided above is true and correct.

Notary Public	Company
Subscribed and sworn to me: _____ _____ Signature:_____ This ____ day of _____, 20_____ Title: _____ Signature: _____ (SEAL)	Signature: _____ Title: _____ Date: _____ Signature: _____ Title: _____ Date: _____

REFERENCES FORM

For all public agency projects in excess of $15,000 that you are currently working on or have worked on in the past three (3) years, provide the following information:
(Attach additional sheets if necessary)

Project 1 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

Project 2 Name/Number _____

Project Description _____

Approximate Construction Date From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

Project 3 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

Project 4 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

Project 5 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

Project 6 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: $_____ Final Contract Amount: $_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

_____

_____

Did you or any Subcontractor, file any claims against the Agency?
Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

_____

_____

RESUME

Attach to this Bid the experience resume of the person who will be designated as General Construction Superintendent or on-site Construction Manager for the Project.

Note: The City reserves the right, at its sole discretion, to require the Contractor to replace project management or field supervisory staff due to unsatisfactory performance, failure to comply with contract requirements, lack of cooperation with City staff, safety concerns, or any other conduct determined by the City to be detrimental to the successful completion of the Project. Removal of management and supervisory staff shall require City approval.

DESIGNATION OF SUBCONTRACTORS

[Public Contract Code Section 4104]

List all Subcontractors who will perform Work or labor or render service to the Contractor in or about the construction of the Work or improvement, or a Subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the Work or improvement according to detailed drawings contained in the Plans and Specifications, in an amount in excess of one-half percent (0.5%) of the Contractor's total Bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half percent (0.5%) of the Contractor's total Bid or $10,000, whichever is greater. If all Subcontractors do not fit on this page, attach another page listing all information for all other Subcontractors.

Section 3-2 of Standard Specifications for Public Works Construction:
The Contractor shall perform, with its own organization, Contract work amounting to at least 50 percent of the Contract Price except that any designated "Specialty Items" may be performed by subcontractor and the amount of any such "Specialty Items" so performed will be deducted from the Contract Price before computing the amount required to be performed by the Contractor with its own organization. "Specialty Items" will be identified by the Agency in the Bid or in the Special Provisions.

Name under which Subcontractor is Licensed and Registered	CSLB License Number(s) and Class(es)	DIR Contractor Registration Number	Address and Phone Number	Type of Work (e.g., Electrical)	Percentage of Total Bid (e.g., 10%)*

* The percentage of the total Bid shall represent the "portion of the work" for the purposes of Public Contract Code Section 4104(b).

INDUSTRIAL SAFETY RECORD FORM

Bidder's Name _____

	Current Year of Record	2025	2024	2023	2022	2021	Total
Number of contracts							
Total dollar amount of contracts (in thousands of dollars)							
Number of fatalities							
Number of lost workday cases							
Number of lost workday cases involving permanent transfer to another job or termination of employment							

The above information was compiled from the records that are available to me at this time and I declare under penalty of perjury under the laws of the State of California that the information is true and accurate within the limitations of those records.

Signature:	Signature:
Title:	Title:
Date:	Date:

Bond No. _____

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Norwalk ("City"), has issued an invitation for Bids for the Work described as follows:

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

WHEREAS _____
(Name and address of Bidder)

("Principal"), desires to submit a Bid to City for the Work.

WHEREAS, Bidders are required to furnish a form of Bidder's security with their Bids.

NOW, THEREFORE, we, the undersigned Principal, and _____

_____
(Name and address of Surety)

("Surety"), a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City in the penal sum of _____

_____
Dollars ($_____), being not less than ten percent (10%) of the total Bid price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal is awarded the Contract for the Work by the City and, within the time and in the manner required by the bidding specifications, enters into the written form of Contract included with the bidding specifications, furnishes the required Bonds (one to guarantee faithful performance and the other to guarantee payment for labor and materials), and furnishes the required insurance coverage, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

In case suit is brought upon this instrument, Surety further agrees to pay all court costs incurred by the City in the suit and reasonable attorneys' fees in an amount fixed by the court. Surety hereby waives the provisions of Civil Code Section 2845.

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

"Principal"	"Surety"
_____	_____
_____	_____
By: _____	By: _____
Its: _____	Its: _____
By: _____	By: _____
Its: _____	Its: _____

Note: This Bond must be dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.

NONCOLLUSION DECLARATION FORM
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
[Public Contract Code Section 7106]

The undersigned declares:

I am the _____ of _____, the party making the foregoing Bid.

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham Bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder. All statements contained in the Bid are true. 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, to any corporation, partnership, company, association, organization, Bid depository, or to any member or agent thereof, to effectuate a collusive or sham Bid, and has not paid, and will not pay, any Person or entity for such purpose.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

Signature:	_____	Signature:	_____
Printed Name:	_____	Printed Name:	_____
Date:	_____	Date:	_____

This form must be notarized.

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

DISADVANTAGED BUSINESS ENTERPRISES (DBE) **2**
Nondiscrimination Statement 2
Contract Assurance 2
C. Prompt Payment of Withheld Funds to Subcontractors 2
BID OPENING **3**
BID RIGGING **3**
CONTRACT AWARD **3**
CONTRACTOR LICENSE **3**
CHANGED CONDITIONS **3**
Differing Site Conditions 3
Suspensions of Work Ordered by the Engineer 4
Significant Changes in the Character of Work 4
BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES **5**
BUY AMERICA **5**
QUALITY ASSURANCE **8**
PROMPT PAYMENT **8**
From the Agency to the Contractors **8**
Submittal of Exhibit 9-P **9**
FORM FHWA-1273 REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONTRACTS **10**
FEMALE AND MINORITY GOALS **10**
TITLE VI ASSURANCES **12**
FEDERAL TRAINEE PROGRAM **17**
PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE EQUIPMENT AND SERVICES **19**

DISADVANTAGED BUSINESS ENTERPRISES (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.

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 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.

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.

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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

[Include the Buy America provisions below when required by LAPM Chapter 12]

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

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

An article, materials, or supply to be permanently incorporated in the project should only be classified into one of the following categories:

1. Iron or steel products
2. Manufactured products
3. Construction materials
4. Excluded materials

Excluded materials means cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives.

Iron or Steel Products

All iron or steel products permanently incorporated into the project 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.

Iron or steel products are defined as articles, materials, or supplies that consist wholly or predominantly of iron or steel or a combination of both.

For a product to be considered to consist predominantly of iron or steel, or a combination of both means the cost of the iron or steel content of the product exceeds 50 percent of the total cost of all its components. The cost of iron or steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components.

Furnish iron or steel products to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the iron or steel 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.

[Delete the paragraph below if not applicable]

The following iron or steel products have received an approved Buy America waiver for this project and are therefore not subject to Buy America requirements:

1._____

2._____

Manufactured Products

All manufactured products permanently incorporated into the project must be manufactured in the United States.

Manufactured products are defined as articles, materials, or supplies that have been:

1. Processed into a specific form and shape; or
2. Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.

Manufacturer, in the case of manufactured products, means the entity that performs the final manufacturing process by bringing individual elements together that produces a manufactured product.

If an item is classified as an iron or steel product, a construction material, or an excluded material, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product may include components that are iron or steel products, construction materials, or excluded materials.

Iron or steel used in precast concrete manufactured products or Intelligent Transportation Systems (ITS) must meet the requirements of Iron or Steel Products regardless of the amount used.

Iron and steel used in other manufactured products must meet the requirements of section Iron or Steel Products if the cost of steel and iron components is 50 percent or more of the total cost of the manufactured product.

Furnish manufactured products to be permanently incorporated into the work with certificates of compliance with each project delivery. The manufacturer's certificate of compliance must identify where the manufacturing occurred and attest specifically to Buy America compliance.

[Delete the paragraph below if not applicable]

The following manufactured products have received an approved Buy America waiver for this project and are therefore not subject to Buy America requirements:

1._____

2._____

Construction Materials

Construction materials permanently incorporated into the project must be manufactured as defined in 2 CFR

184.6 in the United States.

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

Minor additions of articles, materials, supplies, or binding agents to these construction materials do not change the categorization of the construction material.

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

[Delete the paragraph below if not applicable]

The following construction materials have received an approved Buy America waiver for this project and are therefore not subject to Buy America requirements:

1._____

2._____

Buy America Waiver for De Minimis Cost for Manufactured Products and Construction Materials

A De Minimis Cost Waiver can waive the application of FHWA's Buy America requirements for manufactured products and construction materials under a single project when the total value of non-compliant manufactured products and construction materials is no more that the lesser of $1,000,000 or 5 percent of the total applicabl e material costs for the project.

The percent threshold is calculated based on the following formula:

X = NC / TA

where:

X = percent threshold

NC = total value of non-compliant manufactured products and construction material

TA = total applicable project costs (iron or steel products, manufactured products, and construction materials; does not include excluded materials)

This threshold is based on the actual cost of the iron or steel products, manufactured products, and construction materials, not the anticipated cost of those materials. Compliant and non-compliant Agency Furnished Materials for the project must be accounted for in a De Minimis Cost Waiver Worksheet calculation, if provided by the Local Agency.

Provide copies of invoices for the actual costs of materials including transportation to the project site.

In applying a De Minimum Cost Waiver, total cost of non-compliant construction materials and manufactured products does not include the cost of any products subject to a separate Buy America waiver.

If De Minimis Cost Waiver Worksheet calculation for materials subject to Buy America is not submitted, the Local Agency may:

1. Withhold from the next progress payment

2. Reject your request for a De Minimis Costs waiver for non-compliant construction materials or manufactured products

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

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.

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.

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]. The form is also attached as reference. See Appendix B – Federal Requirements.

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 Co lusa; 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-S anta 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 refer red 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 agreem ent 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 r efuses 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 des cribed 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 hav e 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 toenter, 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”) tha t (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_____c redits 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.

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.

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, 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 in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below 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.

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:

(l) 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.

EXHIBIT 10-Q 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)

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

(attach Continuation Sheet(s) if necessary)

12. Amount of Payment (check all that apply)

$_____ ☐ actual ☐ planned

13. Form of Payment (check all that apply):

☐ a. cash
☐ b. in-kind; specify: nature_____
Value _____

14. Type of Payment (check all that apply)

☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e deferred
☐ f. other, specify_____

15. 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:

16. Continuation Sheet(s) attached: **Yes** ☐ **No** ☐

17. 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:

Standard Form LLL Rev. 04-28-06 **Distribution:** Orig- Local Agency Project Files

INSTRUCTIONS FOR COMPLETION OF SF-LLL,

DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of covered Federal action or a material change to previous filing pursuant to title 31 U.S.C. section 1352. The filing of a form is required for such payment or agreement to make payment to lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress an officer or employee of Congress or an employee of a Member of Congress in connection with a covered Federal action. Attach a continuation sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence, the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last, previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District if known. Check the appropriate classification of the reporting entity that designates if it is or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in Item 4 checks "Subawardee" then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organization level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identification in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract grant. or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitments for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influenced the covered Federal action.
    (b) Enter the full names of the individual(s) performing services and include full address if different from 10 (a). Enter Last Name, First Name and Middle Initial (Ml).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box. Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box. Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed or will be expected to perform and the date(s) of any services rendered. Include all preparatory and related activity not just time spent in actual contact with Federal officials. Identify the Federal officer(s) or employee(s) contacted or the officer(s) employee(s) or Member(s) of Congress that were contacted.
15. Check whether or not a continuation sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name title and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503. SF-LLL-Instructions Rev. 06-04-90«ENDIF»

BUY AMERICA REQUIREMENTS
49 U.S.C. 5323(j)
49 CFR Part 661

Applicability to Contracts

The Buy America requirements apply to the following types of contracts: Construction Contracts and Acquisition of Goods or Rolling Stock (valued at more than $100,000).

Flow Down

The Buy America requirements flow down from Federally funded recipients and subrecipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance. The $100,000 threshold applies only to the grantee contract, subcontracts under that amount are subject to Buy America.

Mandatory Clause/Language

The Buy America regulation, at 49 CFR 661.13, requires notification of the Buy America requirements in FHWA-funded contracts, but does not specify the language to be used. The following language has been developed by FHWA.

Buy America - The Contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FHWA-funded projects are produced in the United States, unless a waiver has been granted by FHWA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the FHWA recipient the appropriate Buy America certification (below) with all bids or offers on FHWA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

Certification requirement for procurement of steel, **iron, or manufactured products.**
Certificate of Compliance with 49 U.S.C. 5323(j)(1)

BUY AMERICA REQUIREMENTS
49 U.S.C. 5323(j)
49 CFR Part 661

Certification of Bidder or Offeror

The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 C.F.R. Part 661.5.

Date

_____

Signature

_____

Company Name

_____

Title

_____

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1)

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Date

_____

Signature

_____

Company Name

_____

Title

_____

Certification requirement for procurement of bridge materials and associated parts.

Certificate of Compliance with 49 U.S.C. 5323(j)(2)(C).

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(2)(C) and the regulations at 49 C.F.R. Part 661.11.

Date

_____

Signature

_____

Company Name

_____

Title

_____

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(2)(C)

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11, but may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 CFR 661.7.

Date

Signature

Company Name

Title _

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 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 or $10,000 (whichever is greater). **Photocopy this form for additional firms.**
Federal Project Number: _____

Subcontractor Name and Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Sub-contracted	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: ___ yrs.
Name: : City, State							<$1 million <$5 million <$10 million <$15 million ge of Firm: ___ yrs.
Name: : City, State							<$1 million <$5 million <$10 million <$15 million ge of Firm: ___ yrs.
Name: City, State:							<$1 million <$5 million <$10 million <$15 million ge of Firm: ___ yrs.
Name: City, State:							<$1 million <$5 million <$10 million <$15 million ge of Firm: ___ yrs.
Name:							<$1 million

City, State							<$5 million
							<$10 million
							<$15 million
							ge of Firm: ___ yrs.

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

The bidder shall list all subcontractors who provided a quote or bid **but were not selected** to participate as a subcontractor on this project. This is required for compliance with Title 49, Section 26 of the Code of Federal Regulations. Photocopy this form for additional firms.

Subcontractor Name and Location	Line Item & Description	Subcontract Amount	Percentage of Bid Item Sub-contracted	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: ___ yrs.
Name: City, State:							☐ $1 million ☐ $5 million ☐ $10 million ☐ $15 million Age of Firm: ___ yrs.
Name: City, State:							☐ $1 million ☐ $5 million ☐ $10 million ☐ $15 million Age of Firm: ___ yrs.
Name: City, State:							☐ $1 million ☐ $5 million ☐ $10 million ☐ $15 million Age of Firm: ___ yrs.
Name: City, State:							☐ $1 million ☐ $5 million ☐ $10 million ☐ $15 million Age of Firm: ___ yrs.
Name: City, State:							☐ $1 million ☐ $5 million ☐ $10 million ☐ $15 million Age of Firm: ___ yrs.

Distribution: 1) Original – Local Agency File 2) Copy-DLAE w/ Award Package

PUBLIC CONTRACT CODE

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ___ , has not ___been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a checkmark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In conformance with Public Contract Code Section 10162, the Bidder must complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

PUBLIC CONTRACT CODE 10232 STATEMENT

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

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

CHECKLIST FOR EXECUTION OF CONTRACT

TO BE SUBMITTED BY SUCCESSFUL BIDDER:

_____ Two (2) executed and notarized copies of the Contract

_____ Payment Bond in amount of the Contract

_____ Performance Bond in amount of the Contract

_____ Workers' Compensation Certificate

_____ Liability Insurance certificate in the amounts specified in Section 5-4.2 of the General Provisions, naming the City as a co-insured

_____ Automobile insurance certificate in the amount specified in Section 5-4.4 of the General Provisions, naming the City as a co-insured

_____ Copy of City Business License

_____ Additional Insured Certification – Commercial General Liability

_____ Additional Insured Certification – Automobile Liability

_____ Additional Insured Certification – Excess Liability

CONTRACT

CITY OF NORWALK
TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

THIS CONTRACT ("Contract") is made and entered this _____, 20__ ("Effective Date"), by and between the CITY OF NORWALK, a California municipal corporation ("City") and _____, a _____ [Legal Form of Entity and state of formation, e.g., California corporation, limited partnership, limited liability company] ("Contractor"). Contractor's California State Contractor's license number is _____; Class ____). Contractor's DIR registration number is _____.

In consideration of the mutual covenants hereinafter set forth, the parties hereto agree as follows:

1. Contract Documents. The Contract Documents consist of this Contract, the Notice Inviting Bids, Instructions to Bidders, Bid (including documentation accompanying the Bid and any post-Bid documentation submitted before the Notice of Award), the Bonds, permits from regulatory agencies with jurisdiction, General Provisions, Special Provisions, Plans, Standard Plans, Standard Specifications, Reference Specifications, Addenda, Change Orders, and Supplemental Agreements. The Contract Documents are attached hereto and incorporated herein by reference.

2. Scope of Services. Contractor shall perform the Work in a good and workmanlike manner for the project identified as _____ ("Project"), as described in this Contract and in the Contract Documents.

3. Compensation. In consideration of the services rendered hereunder, City shall pay Contractor a sum not to exceed _____ dollars ($_____) in accordance with the prices as submitted in the Bid. The sum stated herein shall only be exceeded by making of a change order or amendment, agreed to in writing by both parties.

4. Incorporation by Reference. All of the following documents are attached hereto and incorporated herein by this reference: Workers' Compensation Certificate of Insurance, Additional Insured Certification (Commercial General Liability), Additional Insured Certification (Automobile Liability), and Additional Insured Certification (Excess Liability).

5. Antitrust Claims. In entering into this Contract, Contractor offers and agrees to assign to City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. § 15) or under the Cartwright Act (Business and Professions Code Section 16700 *et seq*.) arising from purchases of goods, services, or materials pursuant to the Contract. This assignment shall be made and become effective at the time City tenders final payment to Contractor without further acknowledgment by the parties.

6. Prevailing Wages. City and Contractor acknowledge that the Project is a public work to which prevailing wages apply.

SAMPLE

7. Workers' Compensation. Labor Code Sections 1860 and 3700 provide that every contractor will be required to secure the payment of compensation to its employees. In accordance with the provisions of Labor Code Section 1861, by signing this Contract, the Contractor certifies as follows:

> "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' 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."

8. Indemnification. To the fullest extent permitted by law, Contractor shall indemnify and save harmless the City of Norwalk, its officers, officials, employees, agents, attorneys, and volunteers from and against any and all claims, demands, damages, losses, liabilities, costs, and expenses, including reasonable attorneys' fees and costs, arising out of or resulting from the performance of the Work under this Contract, but only to the extent caused by the negligent acts or omissions, recklessness, or willful misconduct of Contractor, its officers, employees, agents, subcontractors, or anyone directly or indirectly employed by them or for whose acts they may be liable. This indemnification obligation includes, but is not limited to, claims for bodily injury, personal injury, illness, disease, death, property damage, loss of use, or violation of applicable federal, state, or local laws, regulations, or ordinances, arising out of or in any manner connected with the performance of the Work. Nothing in this Contract shall be construed to require Contractor to indemnify, defend, or hold harmless the City for the City's sole negligence, active negligence, or willful misconduct. This indemnification obligation shall apply only to the extent permitted by California law. The provisions of this section shall survive completion of the Work and termination or expiration of this Contract.

9. Titles. The titles used in this Contract are for convenience only and shall in no way define, limit or describe the scope or intent of this Contract or any part of it.

10. Authority. Any person executing this Contract on behalf of Contractor warrants and represents that he or she has the authority to execute this Contract on behalf of Contractor and has the authority to bind Contractor to the performance of its obligations hereunder.

11. Entire Agreement. This Contract, including the Contract Documents and any other documents incorporated herein by specific reference, represents the entire and integrated agreement between City and Contractor. This Contract supersedes all prior oral or written negotiations, representations or agreements. This Contract may not be modified or amended, nor any provision or breach waived, except in a writing signed by both parties that expressly refers to this Contract.

12. Counterparts. This Contract may be executed in counterpart originals, duplicate originals, or both, each of which is deemed to be an original for all purposes.

IN WITNESS WHEREOF, the parties hereto have executed the Contract the day and year first above written.

SAMPLE

CITY OF NORWALK

By: _____
Jesus M. Gomez, City Manager

Date:_____

ATTEST:

By: _____
Theresa Devoy, City Clerk, CMC

APPROVED AS TO FORM:

By: _____
Arnold M. Alvarez-Glasman, City Attorney

NAME OF CONTRACTOR HERE

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

(Please note: Two signatures required for corporations pursuant to California Corporations Code Section 313, unless corporate documents authorize only one person to sign this Agreement on behalf of the corporation.)

SAMPLE

Bond No. _____

PAYMENT BOND
(LABOR AND MATERIALS)

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Norwalk ("City"), State of California, has awarded to _____

_____

_____ ("Principal")

(Name and address of Contractor)

a contract (the "Contract") for the Work described as follows:

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

WHEREAS, under the terms of the Contract, the Principal is required before entering upon the performance of the Work, to file a good and sufficient payment Bond with the City to secure the claims to which reference is made in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code.

NOW, THEREFORE, we, the undersigned Principal, and _____

_____

_____

(Name and address of Surety)

("Surety") a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City and all contractors, subcontractors, laborers, material suppliers, and other persons employed in the performance of the Contract and referred to in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code in the penal sum of _

_____

Dollars ($_____), for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to this Work or labor, that the Surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this Bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by City in successfully enforcing this obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this Bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this Bond.

Upon expiration of the time within which the California Labor Commissioner may serve a civil wage and penalty assessment against the principal, any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1741, and upon expiration of the time within which a joint labor management committee may commence an action against the principal,

any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1771.2, if the condition of this Bond be fully performed, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

The Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or the Specifications accompanying the same shall in any manner affect its obligations on this Bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

"Principal"	"Surety"
_____	_____
_____	_____
By: _____	By: _____
Its	Its
By: _____	By: _____
Its	Its
(Seal)	*(Seal)*

Note: *This Bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached. DATE OF BOND MUST NOT BE BEFORE DATE OF CONTRACT AWARD.* Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

Bond No. _____

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Norwalk ("City"), has awarded to _____

_____ ("Principal")

(Name and address of Contractor)

a contract (the "Contract") for the Work described as follows:

TRAFFIC SIGNAL AND FIBER OPTIC COMMUNICATION IMPROVEMENTS ALONG PIONEER BOULEVARD FROM 166TH STREET TO LAKELAND ROAD
CITY PROJECT NO. 7239 & 7240
FEDERAL-AID PROJECT NO. HSIPL-5347(046)

WHEREAS, Principal is required under the terms of the Contract to furnish a Bond for the faithful performance of the Contract.

NOW, THEREFORE, we, the undersigned Principal, and _____

_____,

(Name and address of Surety)

("Surety") a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City in the penal sum of _____

_____

Dollars ($_____), this amount being not less than the total Contract Price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors executors and administrators, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal, his, her or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the Contract and any alteration thereof made as therein provided, on the Principal's part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefor, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered. Surety hereby waives any statute of limitations as it applies to an action on this Bond.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or of the Work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations under this Bond, and it does hereby

waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the specifications. Surety hereby waives the provisions of California Civil Code Sections 2845 and 2849. The City is the principal beneficiary of this Bond and has all rights of a party hereto.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

"Principal"	"Surety"
_____	_____
_____	_____
By: _____	By: _____
Its	Its
By: _____	By: _____
Its	Its
(Seal)	*(Seal)*

Note: This Bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached. DATE OF BOND MUST NOT BE BEFORE DATE OF CONTRACT AWARD. Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

WORKERS' COMPENSATION
CERTIFICATE OF INSURANCE

WHEREAS, the City of Norwalk ("City") has required certain insurance to be provided by:

_____

NOW THEREFORE, the undersigned insurance broker does hereby certify that it has issued the policy or policies described below to the following named insureds and that the same are in force at this time:

1. This certificate is issued to:

   City of Norwalk
   City Hall-City Clerk
   12700 Norwalk Boulevard
   Norwalk, CA 90650

   The insureds under such policy or policies are:

   _____

2. Workers' Compensation Policy or Policies in a form approved by the Insurance Commissioner of California covering all operations of the named insureds as follows:

Policy Number	Effective Date	Expiration Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____

_____

_____

By: _____
Its Authorized Representative

ADDITIONAL INSURED CERTIFICATION
COMMERCIAL GENERAL LIABILITY

Name and address of named insured ("Named Insured"):

Name and address of insurance company ("Company"):

General description of agreement(s), permit(s), license(s), and/or activity(ies) insured:

Notwithstanding any inconsistent statement in the policy to which this Certification applies to (the "Policy"), it is agreed as follows:

1. The City of Norwalk ("City"), its elected officials, officers, attorneys, agents, employees, and volunteers are additional insureds (the above named additional insureds are hereafter referred to as the "Additional Insureds") under the Policy in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured. The Additional Insureds have no liability for the payment of any premiums or assessments under the Policy.

2. The insurance coverages afforded the Additional Insureds under the Policy shall be primary insurance, and no other insurance maintained by the Additional Insureds shall be called upon to contribute with the insurance coverages provided by the Policy.

3. Each insurance coverage under the Policy shall apply separately to each Additional Insured against whom claim is made or suit is brought except with respect to the limits of the Company's liability.

4. Nothing in this contract of insurance shall be construed to preclude coverage of a claim by one insured under the policy against another insured under the policy. All such claims shall be covered as third-party claims, i.e., in the same manner as if separate policies had been issued to each insured. Nothing contained in this provision shall operate to increase or replicate the Company's limits of liability as provided under the policy.

5. The insurance afforded by the Policy for contractual liability insurance (subject to the terms, conditions and exclusions applicable to such insurance) includes liability assumed by the Named Insured under the indemnification and/or hold harmless provision(s) contained in or executed in conjunction with the written agreement(s) or permit(s) designated above, between the Named Insured and the Additional Insureds.

6. The policy shall not be subject to cancellation, change in coverage, reduction of limits (except as the result of the payment of claims), or non-renewal except after written notice to City, by certified mail, return receipt requested, not less than thirty (30) Days before the effective date thereof. In the event of Company's failure to comply with this notice provision, the policy as initially drafted will continue in full force and effect until compliance with this notice requirement.

7. Company hereby waives all rights of subrogation and contribution against the Additional Insureds, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to the perils insured against in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured regardless of any prior, concurrent, or subsequent active or passive negligence by the Additional Insureds.

8. It is hereby agreed that the laws of the State of California shall apply to and govern the validity,

construction, interpretation, and enforcement of this contract of insurance.

9. All notices given hereunder shall be sent to City at:

City Clerk
City of Norwalk
City Hall
12700 Norwalk Boulevard
Norwalk, CA 90650

10. Except as stated above, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy.

TYPE OF COVERAGES TO WHICH THIS CERTIFICATION ATTACHES	POLICY PERIOD FROM/TO	LIMITS OF LIABILITY

11. Scheduled items or locations are to be identified on an attached sheet. The following inclusions relate to the above coverages. Includes:

- □ Contractual Liability
- □ Owners/Landlords/Tenants
- □ Manufacturers/Contractors
- □ Products/Completed Operations
- □ Broad Form Property Damage
- □ Extended Bodily Injury
- □ Broad Form Comprehensive
- □ General Liability Certification
- □ Explosion Hazard
- □ Collapse Hazard
- □ Underground Property Damage
- □ Pollution Liability
- □ Liquor Liability
- □ _____
- □ _____
- □ _____

12. A □ deductible or □ self-insured retention *(check one)* of $_____ applies to all coverage(s) except: _____ *if none, so state)*. The deductible is applicable □ per claim or □ per occurrence *(check one)*.

13. This is an □ occurrence or □ claims made policy *(check one)*.

14. I, _____ *(print name)*, hereby declare under penalty of perjury under the laws of the State of California, that I have the authority to sign this certification.
Executed _____, 20____

_____
Signature of Authorized Representative
(Original signature only; no facsimile signature or initialed signature accepted)

Telephone No.: (_____) _____

ADDITIONAL INSURED CERTIFICATION
AUTOMOBILE LIABILITY

Name and address of named insured ("Named Insured"):

Name and address of insurance company ("Company"):

General description of agreement(s), permit(s), license(s), and/or activity(ies) insured:

Notwithstanding any inconsistent statement in the policy to which this certification applies to (the "Policy"), it is agreed as follows:

1. The City of Norwalk ("City"), its elected officials, officers, attorneys, agents, employees, and volunteers are additional insureds (the above named additional insureds are hereafter referred to as the "Additional Insureds") under the Policy in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured. The Additional Insureds have no liability for the payment of any premiums or assessments under the Policy.

2. The insurance coverages afforded the Additional Insureds under the Policy shall be primary insurance, and no other insurance maintained by the Additional Insureds shall be called upon to contribute with the insurance coverages provided by the Policy.

3. Each insurance coverage under the Policy shall apply separately to each Additional Insured against whom claim is made or suit is brought except with respect to the limits of the Company's liability.

4. Nothing in this contract of insurance shall be construed to preclude coverage of a claim by one insured under the policy against another insured under the policy. All such claims shall be covered as third-party claims, i.e., in the same manner as if separate policies had been issued to each insured. Nothing contained in this provision shall operate to increase or replicate the Company's limits of liability as provided under the policy.

5. The insurance afforded by the Policy for contractual liability insurance (subject to the terms, conditions and exclusions applicable to such insurance) includes liability assumed by the Named Insured under the indemnification and/or hold harmless provision(s) contained or executed in conjunction with the written agreement(s) or permit(s) designated above, between the Named Insured and the Additional Insureds.

6. The policy to which this certification applies, shall not be subject to cancellation, change in coverage, reduction of limits (except as the result of the payment of claims), or non-renewal except after written notice to City, by certified mail, return receipt requested, not less than thirty (30) Days before the effective date thereto. In the event of Company's failure to comply with this notice provision, the policy as initially drafted will continue in full force and effect until compliance with this notice requirement.

7. Company hereby waives all rights of subrogation and contribution against the Additional Insureds, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to the perils insured against in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured regardless of any prior, concurrent, or subsequent active or passive negligence by the Additional Insureds.

8. It is hereby agreed that the laws of the State of California shall apply to and govern the validity, construction, interpretation, and enforcement of this contract of insurance.

9. This certification and all notices given hereunder shall be sent to City at:

City Clerk
City of Norwalk
City Hall
12700 Norwalk Boulevard
Norwalk, CA 90650

10. Except as stated above, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this certification is attached.

TYPE OF COVERAGES TO WHICH THIS CERTIFICATION ATTACHES	POLICY PERIOD FROM/TO	LIMITS OF LIABILITY

11. Scheduled items or locations are to be identified on an attached sheet. The following inclusions relate to the above coverages. Includes:

- □ Any Automobiles
- □ All Owned Automobiles
- □ Non-owned Automobiles
- □ Hired Automobiles
- □ Scheduled Automobiles
- □ Garage Coverage
- □ Truckers Coverage
- □ Motor Carrier Act
- □ Bus Regulatory Reform Act
- □ Public Livery Coverage
- □ _____
- □ _____

12. A □ deductible or □ self-insured retention *(check one)* of $_____ applies to all coverage(s) except: _____ *(if none, so state)*. The deductible is applicable □ per claim or □ per occurrence *(check one)*.

13. This is an □ occurrence or □ claims made policy *(check one)*.

14. I, _____ *(print name)*, hereby declare under penalty of perjury under the laws of the State of California, that I have the authority to sign this certification and that by my execution hereof.

Executed _____, 20____

_____
Signature of Authorized Representative
(Original signature only; no facsimile signature or initialed signature accepted)

Telephone No.: (_____) _____

ADDITIONAL INSURED CERTIFICATION
EXCESS LIABILITY

Name and address of named insured ("Named Insured"):

Name and address of insurance company ("Company"):

General description of agreement(s), permit(s), license(s), and/or activity(ies) insured:

Notwithstanding any inconsistent statement in the policy to which this certification is attached (the "Policy"), it is agreed as follows:

1. The City of Norwalk ("City"), its elected officials, officers, attorneys, agents, employees, and volunteers are additional insureds (the above named additional insureds are hereafter referred to as the "Additional Insureds") under the Policy in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured. The Additional Insureds have no liability for the payment of any premiums or assessments under the Policy.

2. The insurance coverages afforded the Additional Insureds under the Policy shall be primary insurance, and no other insurance maintained by the Additional Insureds shall be called upon to contribute with the insurance coverages provided by the Policy.

3. Each insurance coverage under the Policy shall apply separately to each Additional Insured against whom claim is made or suit is brought, except with respect to the limits of the Company's liability.

4. Nothing in this contract of insurance shall be construed to preclude coverage of a claim by one insured under the policy against another insured under the policy. All such claims shall be covered as third-party claims, i.e., in the same manner as if separate policies had been issued to each insured. Nothing contained in this provision shall operate to increase or replicate the Company's limits of liability as provided under the policy.

5. The insurance afforded by the Policy for contractual liability insurance (subject to the terms, conditions and exclusions applicable to such insurance) includes liability assumed by the Named Insured under the indemnification and/or hold harmless provision(s) contained in or executed in conjunction with the written agreement(s) or permit(s) designated above, between the Named Insured and the Additional Insureds.

6. The policy to which this certification applies, shall not be subject to cancellation, change in coverage, reduction of limits (except as the result of the payment of claims), or non-renewal except after written notice to City, by certified mail, return receipt requested, not less than thirty (30) Days before the effective date thereto. In the event of Company's failure to comply with this notice provision, the policy as initially drafted will continue in full force and effect until compliance with this notice requirement.

7. Company hereby waives all rights of subrogation and contribution against the Additional Insureds, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to the perils insured against in relation to those activities described generally above with regard to operations performed by or on behalf of the Named Insured regardless of any prior, concurrent, or subsequent active or passive negligence by the Additional Insureds.

8. It is hereby agreed that the laws of the State of California shall apply to and govern the validity, construction, interpretation, and enforcement of this contract of insurance.

9. All notices given hereunder shall be sent to City at:

City Clerk
City of Norwalk
City Hall
12700 Norwalk Boulevard
Norwalk, CA 90650

10. Except as stated above nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this certification is attached.

TYPE OF COVERAGES TO WHICH THIS CERTIFICATION ATTACHES	POLICY PERIOD FROM/TO	LIMITS OF LIABILITY

□ Following Form
□ Umbrella Liability
□ _____

11. Applicable underlying coverages:

INSURANCE COMPANY	POLICY NUMBER	AMOUNT

12. The following inclusions, exclusions, extensions or specific provisions relate to the above coverages:

13. A □ deductible or □ self-insured retention *(check one)* of $_____ _____ applies to all coverage(s) except: _____ _____ *(if none, so state)*. The deductible is applicable □ per claim or □ per occurrence *(check one)*.

14. This is an □ occurrence or □ claims made policy *(check one)*.

15. I, _____ *(print name)*, hereby declare under penalty of perjury under the laws of the State of California, that I have the authority to sign this certification and that by my execution hereof.

Executed _____, 20____

_____
Signature of Authorized Representative
(Original signature only; no facsimile signature or initialed signature accepted)

Telephone No.: (_____) _____

GENERAL PROVISIONS

Add the following Section:

SECTION 0. GENERAL PROVISIONS DEFINED

0-1 STANDARD SPECIFICATIONS

The 2024 edition of "Standard Specifications for Public Works Construction" ("SSPWC" or "GREENBOOK"), as amended by the Contract Documents, is incorporated into the Contract Documents by this reference. The Work described herein shall be done in accordance with the provisions of the Standard Specifications, as amended by the Contract Documents.

0-2 NUMBERING OF SECTIONS

The number of sections and subsections in these General Provisions are compatible with the numbering in the Greenbook.

0-3 SUPPLEMENTATION OF STANDARD SPECIFICATIONS

The Sections that follow supplement, but do not replace, the corresponding provisions in Part 1 (General Provisions) of the Standard Specifications, except as otherwise indicated herein. In the event of any conflict between the Standard Specifications and these General Provisions, these General Provisions shall control.

0-4 CONTRADICTIONS BETWEEN PLANS, SPECIFICATIONS, OR OTHER REFERENCES

Any contradictions found in the plans, specifications, project documents, or other references shall be brought to the attention of the City. If any such contradictions are found, the more stringent application, design, or specification shall apply.

SECTION 1. GENERAL, TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

1-2 TERMS AND DEFINITIONS

Whenever in the Standard Specifications or in the Contract Documents the following terms are used, they shall be understood to mean the following:

Agency – The City of Norwalk, California.

Board – The City Council of the City of Norwalk.

Contract Documents – As defined in Standard Specifications Section 1-2, but also including these General Provisions.

Engineer – The City Engineer or his/her designee, acting either directly or through properly authorized agents. Such agents shall act within the scope of the particular duties entrusted to them.

Inspector – An authorized representative of the City, assigned by the City to make inspections of Work performed by or materials supplied by the Contractor.

Laboratory – A laboratory authorized by the City to test materials and Work involved in the Contract.

Notice of Completion – The notice authorized by Civil Code Section 9204.

Project – See Work.

Submittal – Any drawing, calculation, specification, product data, samples, manuals, requests for substitutes, spare parts, photographs, survey data, traffic control plans, record drawings, Bonds or similar items required to be submitted to the City under the terms of the Contract.

1-3.3 Institutions

The institutions listed in Section 1-3.3 of Part 1 of the Standard Specifications shall be supplemented by the list below:

Abbreviation	Word or Words
AAN	American Association of Nurserymen
ACI	American Concrete Institute
AGCA	Associated General Contractors of America
ANSI	American National Standards Institute
APWA	American Public Works Association
ASTM	American Society for Testing and Materials
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
IAPMO	International Association of Plumbing and Mechanical Officials
NEC	National Electric Code
NFPA	National Fire Protection Association
SSS	State of California Standard Specifications, Latest edition, Department of Transportation
SSP	State of California Standard Plans, Latest edition, Department of Transportation

1-7.2 CONTRACT BONDS

This subsection shall be supplemented by the following:

The Faithful Performance Bond shall remain in force until the date of recordation of the Notice of Completion and the end of all warranty periods set forth in the Contract Documents. The Material and Labor Bond shall remain in force until expiration of the time within which the California Labor Commissioner may serve a civil wage and penalty assessment against the principal, any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1741, and until the expiration of the time within which a joint labor management committee may commence an action against the principal, any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1771.2.

All Bonds must be submitted using the required forms, which are in the Contract Documents, or on any other form approved by the City Attorney.

SECTION 2. SCOPE OF THE WORK

This subsection shall be supplemented by the following:

The Contractor shall perform, with its own organization (rather than with Subcontractors), Work amounting to at least fifty percent (50%) of the Contract Price.

2-2 PERMITS

This subsection shall be supplemented by the following:

Before starting any construction work, the Contractor will be required to obtain all necessary permits from the City, which may include obtaining a no fee encroachment permit for Work within the public right-of-way, as well as all other permits required from all other agencies. Should this Project require construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend, the Contractor shall obtain a Cal/OSHA permit and furnish the City with a copy before Work can commence on this Project. Contractor shall bear all cost for fees for all agencies except for the City's permit fees.

2.2.1 Encroachment Permit

1. **General.** Coordination

2. **General.** The Contractor shall obtain and maintain all permits approvals, and authorizations required to perform the work within the public right-of-way and on property under the jurisdiction of the City of Norwalk, adjacent cities, and all other agencies having jurisdiction (AHJs), including but not limited to county, flood control, railroad, utility owners, transit agencies, and special districts, as applicable. Permit requirements apply to all work activities as applicable including traffic control, lane closures, detours, lane closures, detours, material staging, excavation, paving, striping, utility adjustments, and restoration.

3. **Permit responsibility.**

    - Permits are the Contractor's responsibility as part of the Contractor's means and methods unless expressly stated otherwise in the Contractor's responsibility as part of the Contractor's Contract Documents.

    - The Contractor shall coordinate directly with each AHJ to determine means and methods unless expressly stated otherwise in the Contract Documents.

    - The Contractor shall coordinate directly with each AHJ to determine permit requirements, processing times, submittal permit requirements, submittal content, inspection requirements, work hour restrictions, content, restoration standards, and notification obligations.

    - The Contractor shall comply with all permit conditions, including agency-specific standards, work windows, and inspection hold points. Failure to obtain or comply with required permits shall not relieve the Contractor of responsibility for completion, quality, or safety of the Work.

4. **City of Norwalk encroachment permits.** Encroachment permits issued by the City of Norwalk for work within the City of Norwalk right-of-way work shall be a no-fee permit. All other requirements of the City of Norwalk encroachment permit process (including

submittals, insurance, bonding, traffic control requirements, and inspections) remain applicable.

- Encroachment permits in other jurisdictions: For work within right-of-way under the jurisdiction of agencies other than the City of Norwalk, the Contractor shall be responsible for obtaining all required encroachment permits and complying with all applicable requirements of the respective agency.

- **Caltrans Encroachment Permit**

  1. Caltrans R.O.W Scope and Coordination:

  2. The Contractor shall be responsible for coordinating with Caltrans for any work within their jurisdiction at the following locations:

     - Pioneer Boulevard at NB I-5 Underpass
     - Pioneer Boulevard at SB I-5 Underpass

  3. Contractor shall be responsible to provide construction schedule updates and work notifications minimum one (1) week prior to any operations to Caltrans inspector.

  4. The City is in the process of obtaining encroachment permit approvals and will provide the approved encroachment permit and numbers to the awarded Contractor.

     The Contractor shall coordinate with Caltrans in order to obtain a permit to conduct the work. As part of Caltrans requirements, the Contractor shall provide Traffic Control Plans for review and approval prior to construction. The Traffic Control Plans shall be prepared in accordance with latest edition of the Caltrans Standard Plans and Specifications, and the California Manual on Uniform Traffic Control Devices. The Traffic Control Plans shall be signed and stamped by a California Registered Engineer.

     During construction, if there is any disruption to Caltrans traffic signal infrastructure such as, pull boxes, conduit or detector loops, the Contractor will be required to replace or repair in kind per Caltrans requirements at the Contractor's expense.

     Full compensation for Caltrans Coordination and for conforming to this section shall be considered as included in the various items of work. This includes, but not limit to, all related costs and fees for coordination, permits, preparation of traffic control plans, and traffic control per Caltrans requirements, and no additional payment shall be made therefore.

- **Southern California Edison (SCE) Coordination**

  1. The Contractor shall be responsible for coordinating with SCE for any work within their jurisdiction at the following locations:

     - Pioneer Boulevard and Excelsior Drive

- Pioneer Boulevard and Allard Street

2. The City is in the process of obtaining SCE approval of new service request application and electrical design plans for the location of the new service pedestals and size of the conduit and will provide the approved application and design to the awarded Contractor.

3. Electrical service equipment installation and service conduit run details shall conform to Southern California Edison (SCE) requirements. The contractor shall contact the SCE service planner for coordination and pre-construction conference regarding the size and depth of the service conduit, location of the pedestal and other requirements. The contractor shall not refill any trench prior to SCE inspection and approval. The contractor shall pay all fees for SCE services and permits.

4. Full compensation for SCE Coordination and for conforming to this section shall be considered as included in the various items of work. This includes, but not limit to, all related costs and fees for coordination, permits, preparation of traffic control plans, and traffic control per Caltrans requirements, and no additional payment shall be made therefore.

- **City of Santa Fe Springs Coordination**

1. The Contractor shall be responsible for coordinating with the City of Santa Fe Springs for any work within their jurisdiction at the following locations:

   - Pioneer Boulevard and Lakeland Road

2. The contractor shall be responsible for submitting an encroachment Permit Application and any construction documents to the City of Santa Fe Springs at the following website:

   https://santafespringspwpermit.portal.iworq.net/portalhome/santafespringspwpermit

3. Full compensation for City of Santa Fe Springs Coordination and for conforming to this section shall be considered as included in the various items of work. This includes, but not limit to, all related costs and fees for coordination, permits, preparation of traffic control plans, and traffic control per City of Santa Fe Springs requirements, and no additional payment shall be made therefore.

- **City of Artesia Coordination**

1. The Contractor shall be responsible for coordinating with the City of Artesia for any work within their jurisdiction at the following locations:

   - Pioneer Boulevard and 166th Street

2. The contractor shall be responsible for submitting an encroachment Permit Application and any construction documents to the City of Artesia.

3. Full compensation for City of Artesia Coordination and for conforming to this section shall be considered as included in the various items of work. This includes, but not limit to, all related costs and fees for coordination, permits, preparation of traffic control plans, and traffic control per City of Artesia requirements, and no additional payment shall be made therefore.

5. **Permit submittal timing and integration with schedule.**

   - Within 10 calendar days of Notice to Proceed (or as otherwise directed by the City), Contractor shall submit to the City a Permit Matrix identifying all anticipated permits and approvals, including: issuing agency, permit type, affected locations/limits, required submittals (Temporary Traffic Control plans, schedules, drawings), lead times/processing durations, fees (if any), inspection requirements, inspection requirements, and planned submittal dates.

   - Contractor shall submit complete permit applications early enough to support the approved project schedule and seasonal construction window, including all required traffic control plans and supporting documentation.

   - Contractor shall not begin work in any jurisdiction or right-of-way segment until all required permits and approvals for that segment are obtained and in effect.

6. **Weekly workplan requirements.** The Contractor's weekly workplan shall include, at a minimum:

   - A list of permits;

   - A list of permits/approvals required for the week's operations by segment and activity;

   - Permit numbers, status (submitted / in review / approved / issued / conditions);

   - Agency-required work hours, inspection requirements, and special conditions;

   - Any required public notifications or agency notifications tied to permitted work;

   - Identification of any permit-related constraints that could impact the planned schedule. Workplan submittals that do not demonstrate permit readiness for the planned work may be rejected and revised at no additional cost.

7. **Coordination, meetings, and inspections.**

   - Contractor shall attend permit coordination meetings as required by the City and/or issuing agencies as required by the City and/or issuing agencies.

   - Contractor shall schedule and coordinate all required inspections with each AHJ.

   - Contractor shall schedule and coordinate all required inspections with each AHJ and provide required notice periods.

   - Contractor shall maintain copies of active permits and approved traffic control plans on site and available at all times.

8. **Changes and additional requirements.** If any AHJ imposes additional requirements (restoration thickness, material type, striping, hours, detour routes, traffic control revisions, etc.), the Contractor shall promptly notify the City and incorporate the requirements into the schedule and weekly workplans. Unless the Contract Documents state otherwise, compliance with permit conditions is included in the Contract Price.

9. **Non-compliance.** Work performed without required encroachment permits or in violation of permit conditions may be stopped by the City or AHJ. Contractor shall promptly correct non-compliant work, restore affected facilities, and obtain required approvals at no additional cost to the City.

2-3 RIGHT-OF-WAY

Add the following subsections:

2-3.1 ALLOTED WORKING SPACE

The City will make available the working limits shown in the Plans and/or identified by the City. The Contractor may stage equipment and materials only within areas approved by the City and only in a manner that maintains required access, traffic control, and safety. Storage is prohibited in traveled ways, sidewalks, driveways, and other areas not expressly approved. The Contractor shall keep the site free of debris and shall remove waste and removed materials daily unless otherwise approved in writing.

It shall be the responsibility of the Contractor to secure a temporary staging area, provide adequate fencing, security of the yard and equipment to the City Engineer or his/her designee's acceptance, and to restore the assigned area to its original, pre-use condition, or better, to the acceptance of the City.

2-3.2 ACCESS TO PRIVATE PROPERTY

Unless otherwise stated in the Special Provisions, access to private property required for the Work shall be coordinated through the City. The Contractor shall not independently contact or seek authorization from property owners.

Prior to accessing any private property, the Contractor shall coordinate with the City Engineer or the City Engineer's designee. The City will obtain the necessary Right-of-Entry approvals from the property owner.

The Contractor shall obtain a copy of the approved Right-of-Entry from the City Engineer prior to performing any work on private property. No work shall proceed on private property without written authorization from the City.

2.4 COOPERATION AND COLLATERAL WORK

This subsection shall be supplemented by the following:

The Contractor shall be responsible for coordinating all Work with the City's street sweeping, trash pick-up, and street maintenance contractors, emergency services departments, utility companies' crews, and others when necessary. Contractor shall cooperate fully with their operations to avoid conflicts and to facilitate progress of each other's work. Payment for conforming to these

requirements shall be included in other items of Work, and no additional payment shall be made thereof.

2-5 HAUL ROUTES

Subsection 2-5.4 of Part 1 of the Standard Specifications shall be deleted and replaced as follows:

> The Contractor must obtain the City Engineer or his/her designee's approval before using any haul routes. Further detailed requirements for haul traffic are delineated in the Special Provisions.

2-7 CHANGES INITIATED BY THE AGENCY

2-7.1 GENERAL.

This subsection shall be supplemented by the following:

The City reserves the right, without notice to the Surety, to increase or decrease the quantity of any item or portion of the Work described in the Contract Documents or to alter or omit portions of the Work so described, as may be deemed necessary or expedient by the City Engineer or his/her designee or his/her designee, without in any way making the Contract void. Such increases, alterations or decreases of Work shall be considered and treated as though originally contracted for, and shall be subject to all the terms, conditions and provisions of the original Contract. The Contractor shall not claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease, alteration or omission of any kind of Work to be done.

The City Engineer and his/her designee 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 Contract Price, or the Contract Time, an equitable adjustment will be authorized by issuance of a Change Order. The Contractor shall not execute such changes pending the receipt of an executed Change Order or further instructions from the City Engineer and his/her designee.

Each Change Order shall not be considered approved until executed by the Agency.

The Engineer may, at any time, request changes to the Plans, Specifications, quantities of Contract Unit Price Bid items, and other details of the Work by issuance of a Field Order with not to exceed value. The Contractor shall proceed with the performance of any changes in the Work so ordered by the City Engineer and his/her designee unless the Contractor believes that such Field Order entitles it to a change in the Contract Time. Thereafter the Contractor shall submit the basis for a change in the Contract Time within five (5) days.

Add the following subsection(s):

2-7.2 Balancing Change Order

Throughout the duration of the Contract, the Contractor shall perform field measurements and associated calculations documenting the quantity of each Contract Unit Price Bid item with confirmation from the City inspector. The Contractor shall submit the documentation to the City Engineer and his/her designee each month prior to the date for request of the progress payment. The City Engineer and his/her designee will independently measure and calculate the aforementioned quantities. In the case of a difference in the quantities, the quantity calculated by the City Engineer and his/her designee will prevail.

Upon completion of the Work per project plans and specifications, the Contractor and the City Engineer and his/her designee will meet to discuss the final quantities of each Contract Unit Price Bid item. If the quantity of each item cannot be agreed upon, the quantity determined by the City Engineer and his/her designee will prevail.

After determination of the final quantities, the Agency will issue a Balancing Change Order for the difference between the Bid quantity and final quantity of each Contract Unit Price Bid item constructed in accordance with the Contract Documents and the associated adjustment in the Contract Price.

2-7.3 Surety Notification

The Contractor shall notify its sureties of any Change Orders affecting the scope of the Work or change in the Contract Price, or Contract Time, or a combination thereof. The amount of the applicable Bonds and insurance coverage shall be adjusted accordingly. The Contractor shall furnish proof of such adjustments to the City Engineer and his/her designee.

2-8 EXTRA WORK

This subsection shall be supplemented by the following:

New and unforeseen work will be classified as Extra Work only when the Work is not covered and cannot be paid for under any of the various items or combination of items for which a Bid price appears on the Bid. The Contractor shall not do any Extra Work except upon written order from the City Engineer or his/her designee.

Add the following subsections:

2-8.1 MARKUP

The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:.

- Labor 20%
- Materials 15%
- Equipment Rental 15%
- Other Items and Expenditures 15%

To the sum of the costs and markups provided for in this subsection, one (1) percent shall be added as compensation for bonding.

2-8.1.1 WORK BY SUBCONTRACTOR

A markup of five (5) percent of the subcontracted portion of the extra work may be added to the sum of the Subcontractor's costs and markup and shall constitute the markup for all overhead and profit for the Contractor on Extra Work done by the Subcontractor.

The markups mentioned hereinafter shall include, but are not limited to, all costs for the services of superintendents, project managers, timekeepers and other personnel not working directly on the change order, and pickup or yard trucks used by the above personnel, and other vehicles and/or equipment present at the job site but not directly used in actual construction activities. Incidental movements of labor, materials, supplies or equipment shall not be considered as use in actual construction activities. These costs shall not be reported as labor or equipment elsewhere, except when actually performing work directly on the change order and then shall only be reported at the labor classification of the work performed.

2-9 CHANGED CONDITIONS (NOT USED)

2-10 DISPUTED WORK

Add the following subsections:

2-10.1 CLAIM DISPUTE RESOLUTION

In the event of any dispute or controversy with the City over any matter whatsoever, the Contractor shall not cause any delay or cessation in or of work, but shall proceed with the performance of the Work in dispute. The Contractor shall retain any and all rights provided that pertain to the resolution of disputes and protests between the parties. The Disputed Work will be categorized as an “unresolved dispute” and payment, if any, shall be as later determined by mutual agreement or a court of law. The Contractor shall keep accurate, detailed records of all Disputed Work, claims and other disputed matters.

All claims arising out of or related to the Contract Documents or this Project, and the consideration and payment of such claims, are subject to the Government Claims Act (Government Code Section 810 et seq.) with regard to filing claims. All such claims are also subject to Public Contract Code Section 9204 and Public Contract Code Section 20104 et seq. (Article 1.5), where applicable. This Contract hereby incorporates those provisions as through fully set forth herein. Thus, the Contractor or any Subcontractor must file a claim in accordance with the Government Claims Act as a prerequisite to filing a construction claim in compliance with Section 9204 and Article 1.5 (if applicable), and must then adhere to Section 9204 and Article 1.5 (as applicable), pursuant to the definition of “claim” as individually defined therein.

2-10.2 THIRD PARTY CLAIMS

The City shall have full authority to compromise or otherwise settle any claim relating to the Project at any time. The City shall timely notify the Contractor of the receipt of any third-party claim relating to the Project. The City shall be entitled to recover its reasonable costs incurred in providing this notice.

SECTION 3. CONTROL OF THE WORK

3-1 ASSIGNMENT

This subsection shall be supplemented by the following paragraphs:

Any purported assignment without written consent of the City shall be null, void, and of no effect, and the Contractor shall hold harmless, defend and indemnify the City and its officers, officials,

employees, agents and representatives with respect to any claim, demand or action arising from or relating to any unauthorized assignment.

If the City opts to consent to assignment, the City's consent shall be contingent upon: (1) a letter from the Surety agreeing to the assignment and assigning all of the Bonds to the assignee without any reduction, or the assignee supplying all new Bonds in the amounts originally required under the Contract Documents; and (2) the assignee supplying all of the required insurance in the amounts required in the Contract Documents. Until the Surety assigns all of the Bonds or the assignee supplies all of the new Bonds, and until the assignee supplies all of the required insurance, an assignment otherwise consented to in writing by the City shall not be effective. Even if the City consents to assignment, no assignment shall relieve the Contractor of liability under the Contract.

3-4 REFERENCES

The following standards apply to all work:

A. Standard Specifications for Public Works Construction (SSPWC), latest edition.

B. California Department of Transportation (Caltrans), Standard Specifications, latest edition.

C. California Department of Transportation (Caltrans), Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition

D. City of Norwalk Standards, latest edition.

Should there be any conflict between references above or the specifications herein, the stricter shall apply.

3-5 INSPECTION

This subsection shall be supplemented by the following:

All materials furnished and all work performed under the Contract shall be subject to review and inspection by the City Engineer or his/her designee. Such review may include mill, plant, shop, nursery, or field inspection as required.

3-6 THE CONTRACTOR'S REPRESENTATIVE

This subsection shall be supplemented by the following:

At the time of the Pre-Construction meeting, the Contractor shall furnish a written list of their personnel who are authorized to sign work orders. There shall be at all times Contractor's personnel on the job who have the authority to sign work orders.

The City reserves the right, at its sole discretion, to require the Contractor to replace project management or field supervisory staff due to unsatisfactory performance, failure to comply with contract requirements, lack of cooperation with City staff, safety concerns, or any other conduct determined by the City to be detrimental to the successful completion of the Project. Removal of management and supervisory staff shall require City approval**.**

Contractor shall submit resume of project manager prior to the first project coordination meeting for review and approval by the City. Upon review of the project manager, City will provide written

approval. Project manager shall have a minimum of 10 years of relevant experience and have managed a minimum of 10 similar projects. Upon City approval of project manager, said project manager shall remain on the project for the full duration of the project. Should the Contractor or City deem it necessary to replace the project manager, a new project manager with similar qualifications shall be appointed by the Contractor with the review and written approval by the City.

3-7 CONTRACT DOCUMENTS

3-7.1 General

This subsection shall be supplemented by the following:

In addition to the requirements under Section 3-7.1 in the Standard Specifications, the Contractor shall maintain a control set of Plans and Specifications on the Project site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on the control set to show the as-built conditions. This control set of Plans shall also be edited for all Addenda, Requests for Information, Change Orders, field changes not involving cost, and any other variation that occurred during construction. Upon completion of all Work, the Contractor shall return the control set to the City Engineer or his/her designee. Final payment will not be made until this requirement is met.

Where a work feature is shown on the drawings or identified in the Specifications but is not specifically indicated as an item in the Bid sheets, and there is no ambiguity regarding the requirement to construct, install, or construct and install that work feature, the Contractor is required to complete the work feature. All costs to the Contractor for constructing, installing, or both constructing and installing such a work feature shall be included in the Bid.

The Contractor shall examine and compare the Contract Documents with each other and with the other information made available to the Contractor by the Agency and shall immediately notify the Engineer of any errors, inconsistencies, or omissions discovered. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency, or omission in the Contract Documents without notice to the City Engineer and his/her designee, the Contractor shall be responsible for costs resulting from proceeding with the work without first notifying the City Engineer of a known and reasonably apparent error, inconsistency, or omission.

The Contractor shall perform field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the City Engineer and his/her designee immediately.

If discrepancies are discovered between the drawings and specifications, and no specific interpretation is issued prior to bidding, the decision regarding this interpretation shall rest with the Agency. The Contractor shall be compelled to act on the Agency decision as directed. In the event the installation is **not in compliance** with the direction of the Agency, the installation shall be corrected by and at the expense of the Contractor at no additional cost to the Agency.

3-7.2 Precedence of the Contract Documents

This subsection shall be supplemented by the following:

With regard to Section 3-7.2 in the Standard Specifications, the General Provisions shall control over the Special Provisions, and the Notice Inviting Bids and Instructions to Bidders (in that order)

shall control over the Bid, such that the order of precedence shall be as follows from highest to lowest:

1. Permits issued by regulatory agencies with jurisdiction.
2. Change Orders and Supplemental Agreements, whichever occurs last.
3. Contract/Agreement.
4. Addenda.
5. Notice Inviting Bids.
6. Instructions to Bidders.
7. Bid/Proposal.
8. General Provisions.
9. Special Provisions.
10. Technical Provisions.
11. City Engineer Conformed Plans.
12. Standard Plans.
13. Standard Specifications.
14. Reference Specifications.

Contractor shall submit a pre-bid RFI (Request for Information) if there is any conflict.

3-8 SUBMITTALS

3-8.1 General

This subsection shall be supplemented by the following:

Within ten (10) days after issuance of Notice to Proceed 1 (unless otherwise specified in the Contract Documents), the Contractor will prepare and deliver a Schedule of Submittals to the City that has been fully integrated with the progress schedule and identifies each submittal required by the Contract Documents as well as the date on which Contractor will deliver each submittal to the City.

Submittal Procedure

1. Contractor will follow the following procedure for each submittal, shop drawing and sample required by the Contract Documents:

   A. Submittals shall be transmitted electronically with a cover page providing following information:

      1. Project name and number
      2. Submittal number (unique and sequential), if the submittal is revised, include the revision number
      3. Specification section and paragraph reference
      4. Description of item being submitted
      5. Contractor's review and approval stamp, certifying compliance with Contract requirements
      6. Date of submission
      7. Space for Engineer's action (Approved, Approved as Noted, Revise and Resubmit, or Rejected.

Each submittal shall be transmitted as a separate, standalone submission. Multiple items shall not be combined into a single submittal.

Each submittal shall be sent under a separate email. The email subject line shall clearly identify the submittal using the following format: Project Name – Submittal No. [XXX] – Revision [X] – [Description of Item]

B. Transmittals will be sequentially numbered. The Contractor to mark revised submittals with original number and sequential alphabetic suffix.

C. Each submittal will identify the Project, Contractor, Subcontractor and Supplier, pertinent drawing and detail number, and Specification Section number appropriate to submittal.

D. By transmitting a submittal, the Contractor certifies it has reviewed and approved each submittal, verified products required, field dimensions, adjacent construction Work, and that coordination of information is according to requirements of the Work and Contract Documents.

E. Identify variations in Contract Documents and product or system limitations that may differ and/or be detrimental to successful performance of completed Work.

F. When submittal is revised for resubmission, the Contractor shall promptly address the City's comments and resubmit. The Contractor shall identify changes made since previous submission.

G. The City's review of shop drawings shall not relieve the Contractor from responsibility for deviations from the Contract Documents unless the Contractor has, in writing, called the City's attention to such deviations at time of submission and the City has taken no exception to the deviation. The City's review of shop drawings shall not relieve the Contractor from responsibility for errors in shop drawings.

H. Submittals not required by the Contract Documents or requested by the City will not be acknowledged or processed.

I. Incomplete submittals will not be reviewed by the City. Delays resulting from incomplete submittals are not the responsibility of the City.

J. The Contractor shall not be entitled to any extension of the Contract times as a result of the submittal process.

K. The Contractor shall allow a minimum of 20 working days for review of submittals unless otherwise specified in the Contract Documents.

2. Where a submittal, shop drawing or sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to the City review and approval of the pertinent submittal will be performed at the sole risk and expense and responsibility of Contractor.

3. A Certificate of Compliance shall be furnished to the Engineer prior to the use of any

material or assembled material for which these Specifications require or if required by the Engineer.

4. Copies of mill certificates of composition and quality of all component materials (reinforcing steel, structural steel, lumber, etc.) incorporated in the construction of the Work shall be provided to the City at the time of delivery. The City shall retain the right to reject any raw material not provided with a mill certificate at the time of delivery.

Schedule Milestones for Submittals

The Contractor must submit all submittals required by the Contract Documents in accordance with the Schedule of Submittals. If the Contractor fails to submit the submittals in accordance with the Schedule of Submittals, the Contractor will be solely liable for any delays or impacts caused by the delayed submittal, whether direct or indirect. The Contractor will be liable for the time calculated from the date the submittal is due until the date a compliant submittal is made. A compliant submittal will be one that is complete and satisfies the requirements of the Contract Documents.

3-8.3 Shop Drawings

This subsection shall be supplemented by the following**:**

1. Data shown on the shop drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show the City the services, materials, and equipment Contractor proposes to provide and to enable the City to review the information for assessing conformance with information given and design concept expressed in Contract Documents.

2. When required by individual specification sections, provide shop drawings signed and sealed by a professional engineer responsible for designing components shown on shop drawings. Shop drawings must include signed and sealed calculations to support design in a form suitable for submission to and approval by authorities having jurisdiction.

3. Shop drawings for steel structures shall consist of shop details, erection and other working drawings showing details, dimensions, sizes of members and other information necessary for the complete fabrication and erection of the metal work.

4. Shop drawings of concrete structures shall consist of such detailed drawings as may reasonably be required for the successful prosecution of the Work and which are not included in the drawings furnished by the Engineer. These may include drawings for false work, bracing, centering and form work, masonry layout diagrams, and diagrams for bent reinforcement.

5. The Contractor shall make revisions and provide additional information when required by authorities having jurisdiction.

Shop Drawings Submittal Procedure

1. Before submitting each shop drawing, the Contractor shall have:

A. Reviewed and coordinated each shop drawing with other shop drawings and with the requirements of the Work and the Contract Documents;

B. Determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

C. Determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

D. Determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. With each shop drawing, the Contractor shall give the City specific written notice of any variations that the shop drawing may have from the requirements of the Contract Documents. This notice shall be both written communication separate from the shop drawings submittal and a specific notation made on each shop drawing submitted to the City for review and approval of each such variation.

Add the following subsections:

3-8.7 Samples

Clearly identify each sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as required to enable the City to review the submittal for assessing conformance with information given and design concept expressed in Contract Documents. Samples should be of appropriate size and detail to assess functional, aesthetic, color, texture, patterns and finish selection.

3-9 SUBSURFACE DATA

This subsection shall be supplemented by the following paragraphs:

If the City or its consultants have made investigations of subsurface conditions in areas where the Work is to be performed, such investigations shall be deemed made only for the purpose of study and design. If a geotechnical or other report has been prepared for the Project, the Contractor may inspect the records pertaining to such investigations subject to and upon the conditions hereinafter set forth. The inspection of the records shall be made in the office of the City Engineer or his/her designee. It is the Contractor's sole responsibility to determine whether such investigations exist, and the City makes no affirmative or negative representation concerning the existence of such investigations.

The records of any such investigations are made available solely for the convenience of the Contractor. It is expressly understood and agreed that the City, the City Engineer or his/her designee, their agents, consultants or employees assume no responsibility whatsoever with respect to the sufficiency or accuracy of any investigations, the records thereof, and the interpretations set forth therein. No warranty or guarantee is expressed or implied that the conditions indicated by any such investigations or records are representative of those existing in the Project area. The Contractor agrees to make such independent investigations and

examination as necessary to be satisfied of the conditions to be encountered in the performance of the Work.

The Contractor represents that it has studied the Plans, Specifications and other Contract Documents, and all surveys and investigation reports of subsurface and latent physical conditions, has made such additional surveys and investigations as necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents, and that it has correlated the results of all such data with the requirements of the Contract Documents. No claim of any kind shall be made or allowed for any error, omission or claimed error or omission, in whole or in part, of any geotechnical exploration or any other report or data furnished or not furnished by the City.

Macadam and petromat or generally accepted equivalent are known to exist within the City of Norwalk. No additional payment will be made for the removal, hauling, and disposal of Macadam and petromat. If the Macadam base is disturbed during the construction, the Contractor shall replace the full depth section of the compromised road sections and the area shall be determined by City Engineer or his/her designee at no additional cost to the City.

3-10 SURVEYING

3-10.1 General

This subsection shall be supplemented by the following paragraphs:

The Contractor shall furnish all surveying, layout, and monument preservation necessary to complete the work, except as otherwise specified. The Contractor shall verify all dimensions and control shown on the plans and shall notify the City in writing of any discrepancy, ambiguity, or conflict before proceeding with affected work. Proceeding with work constitutes acceptance of the field conditions and layout for that portion of the work.

All surveying and monument work shall be performed by or under the responsible charge of a Professional Land Surveyor (PLS) currently licensed in the State of California, or a California-registered Civil Engineer authorized to practice land surveying. Surveying shall conform to the Professional Land Surveyors' Act (California Business and Professions Code (BPC) §8700 et seq.) and applicable local agency requirements.

Unless otherwise directed in writing by the City, all work shall be constructed to match existing street alignments and grades shown on the plans or established in the field. The Contractor is solely responsible for establishing and maintaining horizontal and vertical control and providing layout for all items requiring line, grade, or alignment at intervals consistent with standard practice.

Unless a separate bid item is provided, all costs for surveying, staking, re-staking, monument preservation, monument reset, documentation, coordination, permits, and required filings and fees are included in the Contract Price. Re-staking and replacement of construction survey markers damaged due to the work, vandalism, accident, or weather is at the Contractor's expense.

3-10.2 Standards and Minimum Requirements

At a minimum, comply with the following, as applicable to the Work:

Comply with, at a minimum:

- California Professional Land Surveyors' Act / Business & Professions Code (BPC) requirements for monument perpetuation and filings, including BPC §8771 (monument referencing and perpetuation) and related filing requirements.
- Record of Survey filing triggers and timelines under BPC §8762, including the mandatory filing conditions and the 90-day filing requirement.
- Corner Record requirements and format under BPC §8773 and §8773.1 and the Board's prescribed form requirements (Title 16 CCR §464).
- Los Angeles County Code, Title 21, Chapter 21.20, including applicable checking/processing fees for Records of Survey.
- Caltrans and SSPWC (Greenbook) surveying/monument preservation practices to the extent applicable to the work (staking, layout, verification, and protection/re-establishment of survey control/monuments).

The Contractor is responsible for all preparation, inventory, field work, office processing, monument preservation measures, agency coordination, checking/processing, and all filing fees and charges necessary to comply with the requirements of this Section, unless a separate bid item is provided.

3-10.3 Construction Staking

The Contractor shall provide construction staking and layout for all work, including establishment of lines, grades, offsets, and reference points necessary for construction and inspection. Construction staking shall be performed by or under the responsible charge of the licensed survey professional identified in Section 3-10.1. Staking shall be set sufficiently in advance of construction operations to avoid delays and to allow City verification, and shall meet the timing requirements below.

- **Timing.** Provide a staking/look-ahead plan as part of the weekly schedule and set stakes/marks for each feature no less than two (2) working days before beginning the related construction in that area (including excavation, forming, concrete placement, paving, or grading). When the City requests verification, provide a minimum one (1) working day notice before covering, pouring, paving, or otherwise making the staked work inaccessible. Replace disturbed or destroyed stakes/marks within one (1) Working Day of discovery and before continuing affected work.
- **Control and verification.** Verify project horizontal and vertical control prior to staking. Immediately notify the City in writing of any discrepancy before proceeding with affected work.
- **Items to be staked.** Stake, mark, and/or otherwise lay out, as applicable, centerline and offsets; curb and gutter; sidewalk and driveways; curb ramps and detectable warning surfaces; pavement structural section limits and grade; milling/grinding limits; utility appurtenances and adjustments; striping and markings layout control; and any other features shown on the plans requiring line and grade.

- **Cut/fill information.** Provide cut sheets or stakes with clearly legible station/offset and cut/fill information sufficient for the City to review construction elevations. Provide updated cut sheets when grades change by approved field adjustment.

- **Preservation and replacement.** Protect stakes and marks. Replace stakes/marks that are disturbed, destroyed, or become unreadable at the Contractor's expense, including those affected by the Contractor's operations, traffic control operations, weather, vandalism, or construction traffic.

- **Coordination.** Coordinate staking with the City. When requested, provide staking checks and additional layout to support verification of line and grade. Do not cover or obscure reference marks needed for verification until released by the City.

- **Tolerances.** Construct to the tolerances specified elsewhere in the contract documents. Where tolerances are not specified for a given feature, construct to industry standard tolerances appropriate for public street improvements and as necessary to achieve positive drainage and ADA-compliant slopes.

3-10.4 Additional Survey and Monument Preservation Requirements

This subsection specifies submittals, sequencing constraints, and monument perpetuation requirements in addition to Sections 3-10.1 through 3-10.3. No operation that could disturb monuments (including grinding, milling, paving, curb ramp work, sawcutting, excavation, striping layout, or utility adjustments) shall begin until the applicable pre-construction requirements below are complete and approved in writing by the City.

3-10.4.1 Prior to Construction

1. **Records research and field search.** Before any activity that could disturb monuments, perform records research and a diligent field search for survey monuments and control within and adjacent to the project limits that could be affected by the work.

2. **Monument Inventory and Preservation Plan submittal.** At least ten (10) working days before starting any work that could disturb monuments, submit a Monument Inventory and Preservation Plan for the area(s) to be disturbed. Do not begin disturbance work in any area until the City has reviewed the submittal and provided written authorization to proceed for that area. The submittal shall include, at a minimum, monument type; record reference(s); found/not found status; condition and cap/tag markings; location description (station/offset or ties); photographs of each found monument/control point; and the proposed preservation method (protect-in-place, reference/witness, or remove-and-reset when required and approved).

3. **Search methods.** Use appropriate methods (including a metal detector and/or careful exposure by hand tools) to locate record monuments not visible at the surface. Do not disturb the monument more than necessary to positively identify and reference it.

4. **Required referencing (pre-ties).** Before a monument or control point is disturbed, covered, or made inaccessible, reference it to stable points sufficient to perpetuate and reestablish its position. When monuments provide control of streets/highways or provide horizontal/vertical control, reference them prior to improvement, reconstruction, maintenance, resurfacing, or relocation of the right-of-way.

5. **Pre-construction deliverables.** Provide the City copies of pre-tie notes/cut-sheets, tie sheets, and/or coordinate-based ties adequate to reestablish monuments if disturbed, no later than five (5) working days after completion of the pre-ties for each area and before paving or placement of permanent improvements in that area.

6. **Record of Survey (ROS).** File a Record of Survey when required by BPC §8762, including when the field survey discloses conditions requiring filing under BPC §8762(b) including:

   - Material evidence/physical change not shown on recorded maps/records
   - Material discrepancies in the position of points/lines or dimensions
   - Evidence that could reasonably result in materially alternate positions of lines/points
   - Establishment/reestablishment/retracement of points/lines not shown or not ascertainable from record maps
   - Points/lines set for parcels described by deed that are not shown on record maps
   - Timing: The ROS required by §8762 must be filed within 90 days after setting boundary monuments or completion of the field survey (whichever occurs first), subject to the statute's allowable extension conditions.

7. **Corner Record (CR).** Prepare and file Corner Records when required by BPC §8773 and §8773.1 and Title 16 CCR §464, including for monuments found, set, reset, or used as control, as applicable.

8. **Agency processing and proof of filing.** Submit ROS/CR documents to the applicable County Surveyor in accordance with current procedures and provide the City evidence of acceptance/filing (receipt, filing number, or other documentation) prior to Final Acceptance.

3-10.4.2 During Construction

9. **Protection.** Protect all monuments and control points from disturbance. Protection measures may include marking, lath/flagging, covers, delineation, exclusion zones, and sequencing. Implement only methods that will not damage the monument.

10. **Monument log.** Maintain a current monument log identifying each monument/control point and its status (protected, referenced, disturbed, reset, filed). Submit the updated log weekly with the Contractor's weekly report.

11. **Immediate notification.** If any monument is disturbed, damaged, removed, covered, or destroyed, notify the City within two (2) hours of discovery and suspend work in the affected area until the City authorizes corrective action. Mobilize the responsible-charge surveyor immediately.

12. **Perpetuation.** When a monument could be destroyed, damaged, covered, disturbed, or obliterated by the work, perpetuate its position by referencing and/or resetting a permanent monument in the finished surface, or by setting witness monuments, as appropriate. File the required Corner Record and/or Record of Survey.

3-10.4.3 After Construction and Closeout

13. **Post-construction verification.** After final paving and grade adjustments, verify and tie all monuments impacted or potentially impacted by the work, and confirm reset monuments are accessible and set to finished grade.

14. **County filings.** Complete and submit all required ROS/CR documents and obtain proof of acceptance/filing. Follow current County Surveyor submittal procedures and requirements.

15. **City closeout deliverables (condition of Final Acceptance).** Prior to Final Acceptance, provide the City all of the following:

    - Final monument inventory identifying monuments preserved, referenced, reset, replaced, or set.

    - Copies of filed ROS/CR documents and/or County filing receipts and filing numbers.

    - Summary of monuments reset/replaced and their final referenced locations.

Include monument preservation activities in the weekly look-ahead schedule, identifying the areas to be worked, monuments potentially impacted, and required survey operations that must occur before milling, grinding, excavation, paving, or other disturbance Work.

Do not perform work that could disturb monuments in any area until required pre-ties are complete and the City has issued written authorization to proceed for that area.

3-10.5 Measurement and Payment

When the Bid Schedule includes the item Construction Surveying and Monument Preservation (Lump Sum), payment at the Contract Unit Price shall constitute full compensation for all work required by this Section, including control, layout and construction staking (Section 3-10.3); monument preservation and perpetuation; pre- and post-construction ties; monument reset/replacement and appurtenances; records research; documentation; and all required ROS/CR preparation, processing, filing, and associated fees. No additional compensation will be made.

All costs to the Contractor for protecting, removing, restoring, relocating, repairing, replacing, or reestablishing existing improvements where no specified bid item is listed will be included in related items of work, and no additional compensation will be allowed therefor.

All permanent survey monuments that may be disturbed shall be restored by the Contractor at its own expense.

3-10.6 Cleanup

Prior to Final Acceptance, remove all temporary survey and construction markings (“construction graffiti”), including paint, flagging, lath, and other layout markings, from pavement, curb, sidewalk, and appurtenant surfaces, except for permanent survey monuments and markings specifically required to remain.

It shall be the Contractor's responsibility to completely remove all "construction graffiti" (spray paint or other marking for utilities, survey points and construction limits) prior to acceptance of the work as completed.

3-11 CONTRACT INFORMATION SIGNS

Subsection 3-11 of the Standard Specifications is replaced with the following:

The names, addresses and specialties of the Contractor, Subcontractors, architects or engineers may not be displayed on any signage within the public right-of-way. This signage prohibition includes advertising banners hung from truck beds or other equipment.

Add the following subsection:

3-11.1 Construction Information Signs

A minimum of ten (10) days prior to the start of construction, the Contractor shall install two project construction information signs at locations to be directed by the City Engineer. At a minimum, the information on the sign shall include the following:

- Name of the project
- Start date of construction
- Completion date
- Project funding
- City contact information phone number

Payment for **FURNISH AND INSTALL CONSTRUCTION INFORMATION SIGNS** shall be made at the VARIOUS BID ITEMS OF WORK and shall include all work including maintenance, graffiti removal, and removal from the site and no additional compensation will be allowed therefor.

3-12 WORKSITE MAINTENANCE

3-12 WORKSITE MAINTENANCE

3-12.1 General

This subsection shall be supplemented by the following paragraphs:

Clean-up shall be done as Work progresses at the end of each day and thoroughly before weekends. The Contractor shall not allow the Work site to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction operation. Materials which need to be disposed shall not be stored at the Project site, but shall be removed by the end of each Working Day. If the job site is not cleaned to the satisfaction of the City Engineer or his/her designee, the cleaning will be done or contracted by the City and shall be back-charged to the Contractor and deducted from the Contract Price.

The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, debris, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the City will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final clean-up of the Project site.

The Contractor will be responsible for maintaining all areas within and around the job site in a safe and clean condition. The Contractor's attention is directed especially to the requirement that dust caused by his operation shall be controlled by sweeping, watering or any and all acceptable means at all times. In addition, the Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, debris, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the City will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final clean-up of the Project site.

The Contractor will be responsible for maintaining all driveways in a usable, clean condition. If during the paving operation, the driveways are marked up with the tack coat or asphalt, it will be the responsibility of the Contractor to clean the driveways to the satisfaction of the City Engineer or his/her designee.

The Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day to keep paved areas acceptably clean. The Contractor shall never leave the construction premises dirty and dusty.

Additional water shall be applied for the mitigation or prevention of dust nuisance. Water shall be applied either by pipelines, pressure, or pressure-type distributors or mobile units through a spray system or nozzles that will ensure a uniform application of water. The application of water for alleviation of dust nuisance shall be under the control of the City Engineer or his/her designee. Water shall be applied by the Contractor, minimum twice a day or as necessary to prevent dust nuisance and in amounts and at locations designated by the City Engineer or his/her designee.

When Contractor uses City Water Division fire hydrants as a source of water supply, the Contractor shall make application with the City or contact Jacque Koontz at (562) 929-5511. Deposit fees for City hydrant meter shall be paid for by Contractor.

No separate payment shall be made for any work performed or material used to control dust resulting from the Contractor's performance of the work, or by public traffic, either inside or outside the right-of-way or any work required in compliance with this subsection and no additional compensation shall be allowed therefor.

It shall be the Contractor's responsibility to conduct its operations in such a manner so as to prevent damage to existing substructures. In the event of substructure damage, the Contractor shall bear full responsibility and total expense for repair and/or replacement of said substructure.

Failure to comply with these provisions shall result in liquidated damages of $2,000 per day per event and/or the cost of Agency making the repairs, if necessary, to correct for public safety.

3.12.4 Storage of Equipment and Materials

3-12.4.1 General

This subsection shall be supplemented by the following:
The Contractor shall make arrangements for storing its equipment and materials. The Contractor shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work. Approved areas within Work site may be used for temporary storage; however, the Contractor shall be responsible for obtaining any necessary permits from the City. In any case, the Contractor's equipment and personal vehicles of the Contractor's

employees shall not be parked on the traveled way or on any section where traffic is restricted at any time.

The Contractor shall deliver, handle, and store materials in accordance with the manufacturer's written recommendations and by methods and means that will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at the Project site and overcrowding of construction spaces. In particular, the Contractor shall provide the Material Safety Data Sheets (MSDS) prior to delivery of the materials and installation coordination to ensure minimum holding or storage times for materials recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

Storage shall be arranged to provide access for inspection. The Contractor shall periodically inspect to assure materials are undamaged and are maintained under required conditions.

All costs associated with the clean-up and storage required to complete the Project shall be included in MOBILIZATION AND DEMOBILIZATION and no additional compensation shall be allowed therefore

3-12.4.2 Storage in Public Streets
This subsection shall be supplemented by the following:

Construction materials and equipment shall not be stored in Streets, roads, or highways unless otherwise specified in the Special Provisions or approved by the City Engineer or his/her designee.

3.12.6 Water Pollution Control

3-12.6.1 General
This subsection shall be supplemented by the following:

If a Storm Water Pollution Prevention Plan (SWPPP) is not required by a jurisdictional regulatory agency, the Contractor shall prepare and submit a Water Pollution Control Plan (WPCP). The WPCP shall be prepared per local guidelines and the Caltrans WPCP Preparation manual, latest edition and these Special Provisions.

3.12.6.2 Best Management Practices (BMPs)
This subsection shall be supplemented by the following:

1. Every effort should be made to eliminate the discharge of non-stormwater from the project site at all times.

2. Eroded sediments and other pollutants must be retained on-site and may not be transported from the site via sheet flow, swales, area drains, natural drainage courses or wind.

3. Stockpiles of earth and other construction related materials must be protected from being transported from the site by the forces of wind or water.

4. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage

containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of in a proper manner. Spills may not be washed into the drainage system.

5. Excess or waste concrete may not be washed into the public way or any other drainage system. Provisions shall be made to retain concrete wastes on-site until they can be disposed of as solid waste.

6. Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.

7. Sediments and other materials may not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental depositions must be swept up immediately and may not be washed down by rain or other means.

8. Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to inhibit erosion by wind and water.

9. All catch basins and curb inlets shall be protected from receiving runoff from unstabilized or otherwise active work areas. Inlet protection shall be used in conjunction with other erosion and sediment controls to prevent sediment laden stormwater and non-stormwater discharges from entering the storm drain system.

3.12.6.3 Storm Water Pollution Prevention Plan (SWPPP)
This subsection shall be supplemented by the following:

The City has not prepared a SWPPP or other stormwater compliance plan for the project site. The Contractor is responsible for filing the PRDs and for obtaining coverage under the NPDES Permit. This includes preparing and implementing a SWPPP for the project site, and coordinating all submittals with the City's Legally Responsible Person (LRP) and Authorized Signatory as those terms are defined in the Permit. Before any PRDs, SWPPP, or other Permit related document may be submitted to the State Board or implemented on the project site, it must first be reviewed by the City, who retains the right to reject or require revisions thereto. If the Project is less than one acre in size, the Contractor is still required to develop and implement an Erosion and Sediment Control Plan for the Work site. Contractor must include all costs of compliance with specified requirements in the Contract amount.

The Contractor, without limitation, shall be responsible to provide and implement Best Management Practices to comply with National Pollution Discharge Elimination System (NPDES) standards and practices. The Contractor shall be responsible, to the fullest extent possible, not to permit any contaminants, including soil, to enter any drainage system. The Contractor shall be responsible to provide hay bales or similar devices to prevent erosion from being washed into the storm drain system. Contractor shall be responsible to maintain equipment so that oil, grease, gasoline, diesel fuel, et al., does not contaminate areas subject to run-off. The Contractor and its Surety shall fully indemnify the City for any pollution damage and/or cleaning costs.

All construction on off-site or on-site improvements shall adhere to NPDES Best Management Practices (BMPs) to prevent deleterious materials or pollutants from entering the City or County storm drain systems. The following are the areas to be addressed:

- Handle, store and dispose of materials properly.
- Avoiding excavation and grading activities during wet weather.
- Construct diversion dikes and drainage swales around working sites.
- Cover stockpiles and excavated soil with secured tarps or plastic sheeting.
- Develop and implement erosion control plans.
- Check and repair leaking equipment away from construction site.
- Designate a location away from storm drains for refueling.
- Cover and seal catch basins whenever working in their vicinity.
- Use vacuum with all concrete sawing operations.
- Never wash excess material from aggregate, concrete or equipment onto a street
- Catch drips from paver with drip pans or absorbent material.
- Clean up all spills using dry methods.
- Sweep all gutters at the end of each working day. Gutters shall be kept clean after leaving construction site.
- Call 911 in case of a hazardous spill.
- Keep a running log of all activities in connection with the Storm Water Pollution Prevention Plan (SWPPP)
- Name a person, on site, responsible for complying with S.W.P.P.P.

The Contractor to comply with these requirements and City Engineer or his/her designee directions during the course of construction.

3.12.6.5 Payment
This subsection shall be replaced by the following:

Payment for preparation and implementation of WATER POLLUTION CONTROL PLAN OR SWPPP as may be required shall be included in the Contract Unit Price per LUMP SUM (LS) and shall include full compensation for furnishing all labor, materials, tools, equipment to perform all the work involved in Section 3-12.6, including preparing and modifying a WPCP or SWPPP, permitting fees, City filing and processing, furnishing, installing, maintaining and removing BMPs, monitoring and reporting, and all incidentals for doing all the work involved as described herein or as otherwise required by the permit process and no additional compensation shall be allowed therefor.

Add the following subsections:
3.12.7 Waste Management Plan Requirements

The Contractor shall comply with the requirements of AB 939 and the City of Norwalk Recycling and Disposal of Construction and Demolition Debris Ordinance (Nos. 1544 and 1556) and submit a Waste Management Plan (WMP) for the approval of the Engineer. This involves taking waste materials for recycling and furnishing the City with documents verifying that materials leaving the project have been taken to recycling agents.

To ensure that the City receives receipts for the recycled materials, $1,000 will be retained from each WO listing completed until the delivery of the receipts for that WO listing work.

Full compensation for conforming to the requirements in this subsection shall be considered as included in the prices bid for the various contract items of work and no additional compensation will be allowed therefor.

3.12.8 Solid Waste Management and Recycling Plan

The Contractor shall submit a Solid Waste Management and Recycling Plan to the City Engineer or his/her designee for review and approval prior to issuance of a demolition permit and/or grading permit for the project. Said plan shall indicate that the Permittee/Contractor shall provide documentation such as receipts from landfills, salvage and recycling facilities upon completion of the demolition/construction. Said plan shall identify:

- Types of materials for recycling, reuse, or sorting
- Estimated quantities
- Separation requirements
- On site storage
- Transportation methods
- Destinations
- Plan Manager (Contractor's representative)

Prior to issuance of a demolition and/or grading permit, the Permittee/Contractor shall contact the California Integrated Waste Management Board (Recycling hotline 800-553-2962) to obtain an approved recycler (processor and/or receiver) for demolition and construction waste. At the minimum the contractor shall recycle each of the following demolition and construction waste materials:

- Asphalt paving: 75%
- Concrete and concrete masonry units: 75%
- Non-lead based painted wood wastes (dimensional lumber and broken crates and pallets): 50%
- Metals: 60%
- Toilets: 75%
- Appliances: 75%
- Copper cable/wire: 50%
- Transformers and ballasts: 100%
- Fluorescent lamps: 100%
- Glass: 50%
- Unpainted gypsum board: 50%

A minimum of 50% of the total weight of the waste (demolition and construction wastes) shall be diverted from landfill.

Full compensation for conforming to the requirements in this subsection shall be considered as included in the prices bid for the various contract items of work and no additional compensation will be allowed therefor.

3.12.8.1 Refuse Route Schedule

The Contractor shall accommodate and coordinate with the City's refuse pick-up service in the project area. The Contractor shall accommodate and coordinate with the City's street sweeping service and trash pick-up in the project area.

3.12.9 Workplan

Contractor shall submit a detailed weekly workplan for City review (and acceptance/approval) prior to commencement of work each week. The workplan shall be updated weekly and shall include at minimum (a) date range and daily schedule, (b) locations with treatment types, (c) equipment and labor, (d) temporary traffic control layouts and devices, (e) driveway and pedestrian impacts/detours, (f) public notification actions, and (g) a three-week look-ahead schedule. Work limits and temporary traffic control locations shall be shown on a map.

Purpose. Contractor shall prepare, submit, and implement a weekly workplan that defines the sequencing (phasing), locations, hours, staffing, equipment, traffic control, access management, notifications, and curing/protection measures for related work. The workplan is intended to provide clear direction and coordination of work activities and public impacts.

Submittal timing and review.

- Submit the weekly workplan to the City no later than 12:00 PM (local time) on Thursday for the following week's operations, unless otherwise directed by the City.
- No work shall begin for the week until the workplan is reviewed, accepted, and approved by the City.
- Contractor shall update and resubmit the workplan weekly and as needed for schedule changes, weather impacts, emergencies, events, or City directed revisions.

Look-ahead schedule. The weekly workplan shall include:

- A detailed plan for the upcoming week (day-by-day), and
- A three-week look-ahead identifying anticipated work locations, major activities, and expected traffic and access impacts.

Minimum content. The weekly workplan shall include, at a minimum, the following:

A. General information

- Project name and contract number (if applicable)
- Date range covered by the weekly plan and the three-week look-ahead
- Proposed work hours, including any weekend or night work (if allowed)
- Contractor's on-site superintendent and 24-hour contact phone number

B. Work activities and locations

- Daily list of planned tasks
- Exact limits of work for each day identified by stationing and/or cross streets
- Planned quantities/production goals (optional but recommended)
- Contractor shall perform daily sweeping and have a full-time sweeper available, including weekends and/or holidays.

C. Phasing and sequencing (required for all paving operations)

- Proposed phase limits for each day with a clear sequence (Phase 1, Phase 2, etc.)
- Maximum daily limits per phase consistent with the contract requirements (or as proposed for City review, acceptance, and approval)
- Curing/protection approach and anticipated reopen times per phase
- Driveway, intersection, and pedestrian routing plan per phase
- Contractor shall be responsible for coordinating with the Agency for any potential work that may affect projects in the same area.

D. Traffic control and access management

- Temporary Traffic Control (TTC) layouts for each day/phase, including detours where required
- Signage, barricades, delineation, flagging, and pedestrian/ADA detours
- Parking restriction plan (posting locations, posting dates/times, tow coordination if applicable)
- Emergency and non-emergency access plan and coordination needs (fire, police, transit, waste hauler, school bus route)
- Coordinate bus and/or transit stops with the associated agency. Follow transit agency requirements and implement requirements as part of the work plan.

E. Public notifications and stakeholder coordination

- Notification limits and distribution method(s) (door hangers, mailers, email list, website, message boards, social media, etc.)
- Draft notification content for that week, including dates/times, work limits, access/parking restrictions, and contact info
- List of special stakeholders impacted that week (schools, businesses, HOAs, transit, waste hauler) and coordination actions
- Upon approval of notices by the City, Contractor shall provide 72-hour notice for closures and scheduled work. Notification shall be by zone and location. Should there be any changes, notifications must go out to residents. “No Parking” signs to be added with specific date and time range (i.e. Tuesday 8 am - 12pm).

F. Resources

- List of equipment assigned to the week’s work (by major type)
- Crew counts by trade/operation (e.g., milling crew, paving crew, slurry crew, concrete crew, traffic control crew)
- Material sources and anticipated delivery schedule as applicable (HMA plant, emulsion, aggregate, etc.)

G. Quality control and inspection coordination

- Planned QC testing/verification activities (as applicable)
- Requested City inspection hold points (start of placement, transitions, reopen authorization)
- Striping/markers plan or temporary delineation plan if permanent striping will be delayed

Workplan map requirement. Contractor shall include a map exhibit for the weekly plan that clearly shows:

- Daily work limits and phase limits
- Treatment type by segment
- Lane closures, detours, and flagging locations
- Pedestrian detours/ADA routes
- “No Parking” posting limits and notice locations

Field implementation. Contractor shall keep the approved weekly workplan (including TTC sheets and maps) on-site at all times and shall implement the work in accordance with the workplan. Deviations require City authorization. Contractor remains solely responsible for means, methods, safety, and protection of the worksite.

Noncompliance. Failure to submit an adequate workplan, failure to follow an approved workplan, or performing work outside the stated constraints may be cause for work stoppage, additional

public notification, revised TTC requirements, or other corrective actions at no additional cost to the City.

No separate payment shall be made for any work performed or material used to control dust resulting from the Contractor's performance of the work, or by public traffic, either inside or outside the right-of-way or any work required in compliance with this subsection and no additional compensation shall be allowed therefor.

Failure to meet the Section 3-12.9 Workplan requirements shall subject the Contractor to liquidated damages in the amount of $2,500 per location and/or occurrence.

- **Failure to complete sweeping as required or directed by the City Engineer shall subject the Contractor to a liquidated damage of $2,500 per calendar day per street. Sweeper sequence shall be verified and approved by the City's representative.**

- **Street sweeper shall not leave job site until work has been approved by the City's representative per daily scope operations. Failure to do so shall subject the Contractor to liquidated damages in the amount of $2,500 per occurrence.**

The parties agree that each violation described in this subsection constitutes a separate violation for purposes of liquidated damages and that liquidated damages are cumulative. Therefore, where both violations occur, liquidated damages of $2,000 shall be assessed for each violation, for a total of $5,000.

3-13 COMPLETION, ACCEPTANCE, AND WARRANTY

3-13.1 Completion

Add the following sentence to this subsection:

The Contractor shall complete all Work under the Contract within **one hundred and eighty (180) working days** indicated in Section NIB - NOTICE INVITING BIDS.

3-13.2 Acceptance.

This subsection shall be supplemented by the following paragraphs:

The Project will not be considered complete and ready for City Council direction to staff regarding recordation of the Notice of Completion until all required Work is completed, the Work site is cleaned up in accordance with Section 3-12 of Part 1 of the Standard Specifications and the Special Provisions, and all of the following items have been received by the City Engineer or his/her designee :

1. A form of Notice of Completion, with all information required by the California Civil Code;
2. All written guarantees and warranties;
3. All “as-builts”;
4. Duplicate copies of all operation and maintenance manuals (O&M) and manufacturer’s operating catalogs and data, together with such field instructions as necessary to fully instruct City personnel in correct operation and maintenance procedures for all equipment installed listed under the electrical, air conditioning, heating, ventilating and other trades. This data and instructions shall be furnished for all equipment requiring periodic adjustments, maintenance

or other operation procedures.
5. Certificate of Compliance for all materials being furnished.
6. Certified payroll copies and all appurtenant documents.
7. All conditional and unconditional waiver and releases.
8. **THE PROJECT IS FEDERALLY FUNDED, CHAPTER 17 REQUIRED FORMS [FEDERAL-AID PROJECT NO. HSIPL-5347(046)]**

The Contractor shall allow at least seven (7) Working Days' notice for final inspection. Such notice shall be submitted to the City Engineer or his/her designee in writing.

In accordance with Section 6-8 of the Standard Specifications for Public Works Construction (Greenbook) and the California Public Contract Code, the Contractor shall not be entitled to final payment or release of retention until all closeout documentation specified herein has been furnished to and approved by the City Engineer or his/her designee.

3-13.3 Warranty

This subsection shall be supplemented by the following:

For the purposes of the calculation of the warranty period, the Work shall be deemed complete upon the date of recordation of the Notice of Completion in accordance with the California Public Contract Code. If such recordation is contingent on the completion of any remaining punchlist items, the Work shall be deemed complete upon the date of the City Engineer or his/her designee's acceptance of the final punchlist item(s), consistent with the definition of completion under the Public Contract Code. The Contractor shall repair or replace defective materials and workmanship as required in this Section 3-13.3 at its own expense. Additionally, the Contractor agrees to defend, indemnify and hold the City harmless from claims of any kind arising from damage, injury or death due to such defects.

The parties agree that no certificate given shall be conclusive evidence of the faithful performance of the Contract, either in whole or in part, and that no payment shall be construed to be in acceptance of any defective Work or improper materials. Further, the certificate or final payment shall not terminate the Contractor's obligations under the warranty herein. The Contractor agrees that payment of the amount due under the Contract and the adjustments and payments due for any Work done in accordance with any alterations of the same, shall release the City, the City Council and its officers and employees from any and all claims or liability on account of Work performed under the Contract or any alteration thereof.

SECTION 4. CONTROL OF MATERIALS

4-1 GENERAL

This subsection shall be supplemented with the following:

The Contractor and all Subcontractors, suppliers, and vendors shall guarantee that the Work will meet all requirements of this Contract as to the quality of materials, equipment, and workmanship.

Add the following subsection:

4-3.1.1 Access to Work

The City, City Engineer or his/her designee, its consultants and other representatives and personnel, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the site and Work at reasonable times for their observation, inspection, and testing. The Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs.

The City Engineer or his/her designee shall be permitted access to all parts of the work, including plants where materials are manufactured or fabricated, and shall be furnished with such materials, information and assistance by the Contractor and its subcontractors and suppliers as is required to make a complete and detailed inspection.

4-3.2 Inspection By The Agency
This subsection shall be supplemented with the following:

The City Engineer or his/her designee will make, or have made, such inspections and tests as he/she deems necessary to see that the work is being accomplished in accordance with the requirements of the Contract Documents. In the event such inspections or tests reveal non-compliance with the requirements of the Contract, the Contractor shall bear the cost of such corrective measures deemed necessary by the City Engineer or his/her designee, as well as the cost of the subsequent re-inspection and re-testing. It shall be understood and agreed that the inspection or making of tests shall not constitute an acceptance of any portion of the work nor relieve the Contractor from compliance with the terms of the Contract.

It shall be the Contractor's responsibility to obtain Inspection in a timely manner prior to proceeding with any phase of construction. The Contractor shall neither allow nor cause any of its work to be covered or enclosed until it has been inspected, tested and approved by the Engineer.

The Contractor shall pay for the cost of any minimum “show up” costs of a materials testing technician that was called for by the Contractor but ultimately the Contractor work was not ready for the inspection. Any such costs shall be deducted from any amounts due to the Contractor.

4-3.3 Inspection of Items Not Locally Produced
This subsection shall be supplemented with the following:

If the manufacture of materials to be inspected or tested will occur in a plant or location greater than sixty (60) miles from the City, the Contractor shall pay for any excessive or unusual costs associated with such testing or inspection, including but not limited to excessive travel time, standby time and required lodging.

Add the following subsections:
4-3.4 Other Inspection Requirements

The City will provide standard progress building and public works inspection at no cost to the Contractor. Contractor shall arrange and pay for all other inspections required by ordinance or governing authorities, including tests in connection therewith, as may be assigned to it in other sections of the specifications.

Defective work shall be made good, and unsuitable materials will be rejected, notwithstanding the fact that such defective work and unsuitable materials have been previously overlooked by the City Engineer or his/her designee and accepted or estimated for payment.

Work done in the absence of prescribed inspection may be required to be removed and replaced under the proper inspection, and the entire cost of removal and replacement, including the cost

of all materials which may be furnished by the City and used in the work thus removed, shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work covered without the authority of the City Engineer or his/her designee shall, upon order of the City Engineer or his/her designee, be uncovered to the extent required, and the Contractor shall similarly bear the entire cost of performing all the work and furnishing all the materials necessary for the removal of the covering and its subsequent replacement.

Where a work feature is shown on the drawings or identified in the Specifications but is not specifically indicated as an item in the bid sheets, and there is no ambiguity regarding the requirement to construct and/or install that work feature, the Contractor is required to complete the work feature. All costs to the Contractor for constructing and/or installing such a work feature shall be included in the bid.

4-3.5 Inspection and Final Acceptance

The City may inspect and accept or reject any of Contractor's work, either during performance or when completed. The City shall reject or finally accept Contractor's work within forty-five (45) days after submitted to City. City shall accept work by a timely written acceptance, otherwise, work shall be deemed to have been rejected. The City's acceptance shall be conclusive as to such work except with respect to latent defects, fraud and such gross mistakes as to amount to fraud. Acceptance of any work by the City shall not constitute a waiver of any of these provisions including, but not limited to pertaining to warranty and indemnification and insurance, respectively.

The Contractor shall allow at least seven (7) working days' notice for final inspection. Such notice shall be submitted to the City Engineer or his/her designee in writing.

The City shall not be held responsible for the care or protection of any material or parts of the work prior to final acceptance, except as expressly provided in these Special Provisions.

4-4 TESTING

This subsection shall be supplemented with the following:

Except as elsewhere specified, the City shall bear the cost of verification testing for materials and workmanship that meet or exceed the requirements indicated in the Standard Specifications and the Special Provisions. The cost of all other tests, including the retesting of material or workmanship that fails to pass the first test, shall be borne by the Contractor.

Add the following subsection:

4-4.1 SOILS ENGINEERING AND TESTING

A certified materials testing firm may be retained by the City to perform materials tests during the Contractor's entire operation to ascertain compliance with the Contract requirements. The City shall be responsible for the first series of tests. If the initial tests do not meet the Contract requirements, the Contractor shall bear the cost of all subsequent tests.

If the City requires other tests or more specific requirements for testing regarding this Project, those details will be included in the Special Provisions.

4-6 TRADE NAMES

If the Contractor requests to substitute an equivalent item for a brand or trade name item, the burden of proof as to the comparative quality and suitability of alternative equipment or articles or materials shall be upon the Contractor, and the Contractor shall furnish, at its own expense, all information necessary or related thereto as required by the City Engineer or his/her designee. All requests for substitution shall be submitted, together with all documentation necessary for the City Engineer or his/her designee to determine equivalence, no later than five (5) Days after the award of Contract, unless a different deadline is listed in the Special Provisions, or as mutually agreed with City Engineer or his/her designee.

SECTION 5. LEGAL RELATIONS AND RESPONSIBILITIES

5-3 LABOR

5-3.1 GENERAL

Add the following subsection:

5-3.1.1 Public Work

The Contractor acknowledges that the Project is a "public work" as defined in Labor Code Section 1720 *et seq*. ("Chapter 1"), and that this Project is subject to (a) Chapter 1, including without limitation Labor Code Section 1771 and (b) the rules and regulations established by the Director of Industrial Relations ("DIR") implementing such statutes. The Contractor shall perform all Work on the Project as a public work. The Contractor shall comply with and be bound by all the terms, rules and regulations described in (a) and (b) as though set forth in full herein.

5-3.2 Prevailing Wages

This subsection shall be supplemented by the following paragraphs:

Pursuant to Labor Code Section 1773.2, copies of the prevailing rate of per diem wages for each craft, classification, or type of worker needed to perform the Project are on file at City Hall and will be made available to any interested party on request. By initiating any Work, the Contractor acknowledges receipt of a copy of the DIR determination of such prevailing rate of per diem wages, and the Contractor shall post such rates at each job site covered by these Contract Documents.

The Contractor shall comply with and be bound by the provisions of Labor Code Sections 1774 and 1775 concerning the payment of prevailing rates of wages to workers and the penalties for failure to pay prevailing wages. The Contractor shall, as a penalty paid to the City, forfeit two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the DIR for the work or craft in which the worker is employed for any public work done pursuant to these Contract Documents by the Contractor or by any Subcontractor.

5-3.3 Payroll Records

This subsection shall be supplemented by the following:

The Contractor shall comply with and be bound by the provisions of Labor Code Section 1776, which requires the Contractor and each Subcontractor to (1) keep accurate payroll records and verify such records in writing under penalty of perjury, as specified in Section 1776, (2) certify and make such payroll records available for inspection as provided by Section 1776, and (3) inform the City of the location of the records. The Contractor has ten (10) days in which to comply

subsequent to receipt of a written notice requesting these records, or as a penalty to the City, the Contractor shall forfeit one hundred dollars ($100) for each day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

5-3.4 Hours of Labor

This subsection shall be supplemented by the following:

The Contractor acknowledges that eight (8) hours labor constitutes a legal day's work. The Contractor shall comply with and be bound by Labor Code Section 1810. The Contractor shall comply with and be bound by the provisions of Labor Code Section 1813 concerning penalties for workers who work excess hours. The Contractor shall, as a penalty paid to the City, forfeit twenty-five dollars ($25) for each worker employed in the performance of this Project by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one calendar week in violation of the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code. Pursuant to Labor Code Section 1815, work performed by employees of the Contractor in excess of eight (8) hours per day, and forty (40) hours during any one week shall be permitted upon public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay.

5-3.5 Apprentices

This subsection shall be supplemented by the following:

The Contractor shall comply with and be bound by the provisions of Labor Code Sections 1777.5, 1777.6 and 1777.7 and California Code of Regulations Title 8, Section 200 *et seq*. concerning the employment of apprentices on public works projects. The Contractor shall be responsible for compliance with these Sections for all apprenticeable occupations. Before commencing Work on this Project, the Contractor shall provide the City with a copy of the information submitted to any applicable apprenticeship program. Within sixty (60) Days after concluding Work, Contractor and each of its Subcontractors shall submit to the City a verified statement of the journeyman and apprentice hours performed under this Contract.

Add the following subsections to the Standard Specifications:

5-3.6 Debarment or Suspension

The Contractor shall not perform Work with any Subcontractor that has been debarred or suspended pursuant to California Labor Code Section 1777.1 or any other federal or State law providing for the debarment of contractors from public works. The Contractor and Subcontractors shall not be debarred or suspended throughout the duration of this Contract pursuant to Labor Code Section 1777.1 or any other federal or State law providing for the debarment of contractors from public works. If the Contractor or any Subcontractor becomes debarred or suspended during the duration of the Project, the Contractor shall immediately notify the City.

5-3.7 Registration with the DIR

In accordance with Labor Code Sections 1725.5 and 1771.1, no contractor or subcontractor shall 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, unless currently registered and qualified to perform public work pursuant to Section 1725.5.

5-3.8 Compliance Monitoring and Posting Job Sites

This Project is subject to compliance monitoring and enforcement by the DIR. The Contractor shall post job site notices, as prescribed by regulation.

5-3.9 Subcontractors

For every Subcontractor who will perform Work on the Project, the Contractor shall be responsible for such Subcontractor's compliance with Chapter 1 and Labor Code Sections 1860 and 3700, and the Contractor shall include in the written Contract between it and each Subcontractor a copy of the provisions in this Section 5-3 of the General Provisions and a requirement that each Subcontractor shall comply with those provisions. The Contractor shall be required to take all actions necessary to enforce such contractual provisions and ensure Subcontractor's compliance, including without limitation, conducting a periodic review of the certified payroll records of the Subcontractor and upon becoming aware of the failure of the Subcontractor to pay its workers the specified prevailing rate of wages. The Contractor shall diligently take corrective action to halt or rectify any failure.

5-3.10 Prevailing Wage Indemnity

To the maximum extent permitted by law, the Contractor shall indemnify, hold harmless and defend (at the Contractor's expense with counsel reasonably acceptable to the City) the City, its officials, officers, employees, agents and independent contractors serving in the role of City officials, and volunteers from and against any demand or claim for damages, compensation, fines, penalties or other amounts arising out of or incidental to any acts or omissions listed in Section 5-3 of the General Provisions by any Person (including the Contractor, its Subcontractors, and each of their officials, officers, employees and agents) in connection with any Work undertaken or in connection with the Contract Documents, including without limitation the payment of all consequential damages, attorneys' fees, and other related costs and expenses. All duties of the Contractor under this Section 5-3.10 shall survive expiration or termination of the Contract.

5-4 INSURANCE

5-4.1 General

The first paragraph of Section 5-4.1 of Part 1 of the Standard Specifications shall not be incorporated and shall instead be replaced with the following:

> The Contractor shall provide and maintain insurance naming the City, its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials as insureds or additional insureds regardless of any inconsistent statement in the policy or any subsequent certification whether liability is attributable to the Contractor or the City. The insurance provisions shall not be construed to limit the Contractor's indemnity obligations contained in the Contract. The City will not be liable for any accident, loss, or damage to the Work before completion, except as otherwise specified in Section 6-5.
>
> The Contractor shall furnish the City with a current Certificate of Insurance annually for the duration of the Work.

Add the following subsections:

5-4.1.1 Insurance Coverages

Without limiting Contractor's indemnification of City, and prior to commencement of any services under this Agreement, Contractor shall obtain, provide and maintain at its own expense during the term of this Agreement, policies of insurance of the type and amounts described below and in a form satisfactory to City.

5-4.1.2 Proof of Insurance

Contractor shall provide certificates of insurance to City as evidence of the insurance coverage required herein, along with a waiver of subrogation endorsement for workers' compensation. Insurance certificates and endorsements must be approved by City's Risk Manager prior to commencement of performance. Current certification of insurance shall be kept on file with City at all times during the term of this Agreement. City reserves the right to require complete, certified copies of all required insurance policies, at any time.

5-4.1.3 Duration of Coverage

Contractor shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property, which may arise from or in connection with the performance of the Services hereunder by Contractor, its agents, representatives, employees or subcontractors.

5-4.1.4 Primary/Noncontributing

Coverage provided by Contractor shall be primary and any insurance or self-insurance procured or maintained by City shall not be required to contribute with it. The limits of insurance required herein may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of City before the City's own insurance or self-insurance shall be called upon to protect it as a named insured.

5-4.1.5 City's Rights of Enforcement

In the event any policy of insurance required under this Agreement does not comply with these specifications or is canceled and not replaced, City has the right but not the duty to obtain the insurance it deems necessary and any premium paid by City will be promptly reimbursed by Contractor or City will withhold amounts sufficient to pay premium from Contractor payments. In the alternative, City may cancel this Agreement.

5-4.1.6 Acceptable Insurers

All insurance policies shall be issued by an insurance company currently authorized by the Insurance Commissioner to transact business of insurance or that is on the List of Approved Surplus Line Insurers in the State of California, with an assigned policyholders' Rating of A- (or higher) and Financial Size Category Class VI (or larger) in accordance with the latest edition of Best's Key Rating Guide, unless otherwise approved by the City's Risk Manager.

5-4.1.7 Waiver of Subrogation

All insurance coverage maintained or procured pursuant to this agreement shall be endorsed to waive subrogation against City, its elected or appointed officers, agents, officials, employees and volunteers or shall specifically allow Contractor or others providing insurance evidence in compliance with these specifications to waive their right of recovery prior to a loss. Contractor hereby waives its own right of recovery against City, and shall require similar written express waivers and insurance clauses from each of its subcontractors.

5-4.1.8 Enforcement of Contract Provisions (Non-Estoppel)

Contractor acknowledges and agrees that any actual or alleged failure on the part of the City to inform Contractor of non-compliance with any requirement imposes no additional obligations on the City nor does it waive any rights hereunder.

5-4.1.9 Requirements not Limiting

Requirements of specific coverage features or limits contained in this section are not intended as a limitation on coverage, limits or other requirements, or a waiver of any coverage normally provided by any insurance. Specific reference to a given coverage feature is for purposes of clarification only as it pertains to a given issue and is not intended by any party or insured to be all inclusive, or to the exclusion of other coverage, or a waiver of any type. If the Contractor maintains higher limits than the minimums shown above, the City requires and shall be entitled to coverage for the higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

5-4.1.10 Notice of Cancellation

Contractor agrees to oblige its insurance agent or broker and insurers to provide to City with a thirty (30) day notice of cancellation (except for nonpayment for which a ten (10) day notice is required) or nonrenewal of coverage for each required coverage.

5-4.1.11 Additional Insured Status

General liability policies shall provide or be endorsed to provide that City and its officers, officials, employees, and agents, and volunteers shall be additional insureds under such policies. This provision shall also apply to any excess/umbrella liability policies.

5-4.1.12 Prohibition of Undisclosed Coverage Limitations

None of the coverages required herein will be in compliance with these requirements if they include any limiting endorsement of any kind that has not been first submitted to City and approved of in writing.

5-4.1.13 Separation of Insureds

A severability of interests provision must apply for all additional insureds ensuring that Contractor’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the insurer’s limits of liability. The policy(ies) shall not contain any cross-liability exclusions.

5-4.1.14 Pass Through Clause

Contractor agrees to ensure that its subconsultants, subcontractors, and any other party involved with the project who is brought onto or involved in the project by Contractor, provide the same minimum insurance coverage and endorsements required of Contractor. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this section. Contractor agrees that upon request, all agreements with consultants, subcontractors, and others engaged in the project will be submitted to City for review.

5-4.1.15 Agency's Right to Revise Specifications

The City reserves the right at any time during the term of the contract to change the amounts and types of insurance required by giving the Contractor ninety (90) days advance written notice of such change. If such change results in substantial additional cost to the Contractor, the City and Contractor may renegotiate Contractor's compensation.

5-4.1.16 Self-Insured Retentions

Any self-insured retentions must be declared to and approved by City. City reserves the right to require that self-insured retentions be eliminated, lowered, or replaced by a deductible. Self-insurance will not be considered to comply with these specifications unless approved by City.

5-4.1.17 Timely Notice of Claims

Contractor shall give City prompt and timely notice of claims made or suits instituted that arise out of or result from Contractor's performance under this Agreement, and that involve or may involve coverage under any of the required liability policies.

5-4.1.18 Additional Insurance

Contractor shall also procure and maintain, at its own cost and expense, any additional kinds of insurance, which in its own judgment may be necessary for its proper protection and prosecution of the work.

5-4.2 General Liability Insurance

Contractor shall maintain commercial general liability insurance with coverage at least as broad as Insurance Services Office form CG 00 01, in an amount not less than $2,000,000 per occurrence, $4,000,000 general aggregate, for bodily injury, personal injury, and property damage. The policy must include contractual liability that has not been amended. Any endorsement restricting standard ISO "insured contract" language will not be accepted.

The Contractor shall at all times during the term of the Contract carry, maintain, and keep in full force and effect the insurance referenced in Section 5-4 of Part 1 of the Standard Specifications, as modified below.

Add the following subsections:
5-4.2.1 Additional Insureds

The City, its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials, shall be the insured or named

as additional insureds covering the Work, regardless of any inconsistent statement in the policy or any subsequent certification, whether liability is attributable to the Contractor or the City.

5-4.2.2 No Limitation on Indemnity

The insurance provisions shall not be construed to limit the Contractor's indemnity obligations contained in these Contract Documents.

5-4.2.3 Replacement Insurance

The Contractor agrees that it will not cancel, reduce or otherwise modify the insurance coverage. The Contractor agrees that if it does not keep the required insurance in full force and effect, and such insurance is available at a reasonable cost, the City may take out the necessary insurance and pay the premium thereon, and the repayment thereof shall be deemed an obligation of the Contractor and the cost of such insurance may be deducted, at the option of the City, from payments due the Contractor. This shall be in addition to all other legal options available to the City to enforce the insurance requirements.

5-4.2.4 Certificates of Insurance with Original Certification

The Contractor shall submit to the City certificates of insurance with the original certifications, both of which reference the same policy number, for each of the insurance policies that meet the insurance requirements, not less than one (1) day before beginning of performance under the Contract. The certifications are to be signed by a person authorized by that insurer to bind coverage on its behalf. Certifications may be executed on the City's standard forms titled "Additional Insured Certification," copies of which are provided in the Contract Documents, or on any other form that contains substantially the same terms and is approved by the City's Risk Manager. In any case, the certifications must specifically name the City of Norwalk and its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials as insureds or additional insureds. Current insurance certificates and certifications shall be kept on file with the City at all times during the term of this Contract. The City reserves the right to require complete, certified copies of all required insurance policies at any time.

5-4.2.5 Subcontractors

The Contractor shall require each Subcontractor (of every tier) to procure and maintain insurance meeting the requirements of these Contract Documents and to name the City and the Contractor as additional insureds as required. The Contractor shall obtain and maintain certificates and endorsements from each Subcontractor and shall provide them to the City upon request. Failure of any Subcontractor to maintain required insurance shall not relieve the Contractor of any obligation or liability under the Contract.

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and certified endorsements for each subcontractor. All coverages for subcontractors shall include all of the requirements stated herein.

5-4.3 Workers' Compensation Insurance

This section shall be supplemented with the following:

Contractor shall maintain Workers' Compensation Insurance (Statutory Limits) and Employer's Liability Insurance (with limits of at least $1,000,000).

5-4.4 Automobile Liability Insurance

This subsection shall be replaced in its entirety by the following:

Contractor shall maintain automobile insurance at least as broad as Insurance Services Office form CA 00 01 covering bodily injury and property damage for all activities of the Contractor arising out of or in connection with Services to be performed under this Agreement, including coverage for any owned, hired, non-owned or rented vehicles, in an amount not less than $1,000,000 combined single limit for each accident.

5.7 SAFETY

5-7.8 Steel Plate Covers

5-7.8.1 General

This subsection shall be supplemented with the following:

The Contractor shall cover all openings, trenches and excavations at the end of each Work Day with steel plate covers.

Section 5-8 is hereby added to Section 5 of Part 1 of the Standard Specifications, as follows:

5-8 INDEMNIFICATION.

5-8.1 Contractor's Duty.

To the maximum extent permitted by law, the Contractor hereby agrees, at its sole cost and expense, to defend with competent defense counsel approved by the City Attorney, protect, indemnify, and hold harmless the City, its elected and appointed officials, officers, employees, volunteers, attorneys, agents (including those City agents serving as independent contractors in the role of City representatives), successors, and assigns (collectively "Indemnitees") from and against any and all claims (including, without limitation, claims for bodily injury, death or damage to property), demands, charges, obligations, damages, causes of action, proceedings, suits, losses, stop payment notices, judgments, fines, liens, penalties, liabilities, costs and expenses of every kind and nature whatsoever, in any manner arising out of, incident to, related to, in connection with or resulting from any act, failure to act, error or omission of the Contractor or any of its officers, agents, attorneys, servants, employees, Subcontractors, material suppliers or any of their officers, agents, servants or employees, and/or arising out of, incident to, related to, in connection with or resulting from any term, provision, image, plan, covenant, or condition in the Contract Documents; including, without limitation, the payment of all consequential damages, attorneys' fees, experts' fees, and other related costs and expenses (individually, a "Claim," or collectively, "Claims"). The Contractor shall promptly pay and satisfy any judgment, award or decree that may be rendered against any of the Indemnitees as to any such Claim. The Contractor shall reimburse Indemnitees for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the Contractor or Indemnitees. This indemnity shall apply to all Claims regardless of whether any

insurance policies are applicable or whether the Claim was caused in part or contributed to by an Indemnitees.

5-8.2 Civil Code Exception

Nothing in this Section 5-8 shall be construed to encompass Indemnitees' sole negligence or willful misconduct to the limited extent that the underlying Contract is subject to Civil Code Section 2782(a) or the City's active negligence to the limited extent that the underlying Contract Documents are subject to Civil Code Section 2782(b), provided such sole negligence, willful misconduct or active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction.

5-8.3 Nonwaiver of Rights

Indemnitees do not and shall not waive any rights that they may possess against the Contractor because the acceptance by the City, or the deposit with the City, of any insurance policy or certificate required pursuant to these Contract Documents. This indemnity provision is effective regardless of any prior, concurrent, or subsequent active or passive negligence by Indemnitees and shall operate to fully indemnify Indemnitees against any such negligence.

5-8.4 Waiver of Right of Subrogation

The Contractor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all Claims arising out of or incident to the activities or operations performed by or on behalf of the Contractor regardless of any prior, concurrent or subsequent active or passive negligence by Indemnitees.

5-8.5 Survival

The provisions of this Section 5-8 shall survive the term and termination of the Contract, are intended to be as broad and inclusive as is permitted by the law of the State, and are in addition to any other rights or remedies that Indemnitees may have under the law. Payment is not required as a condition precedent to an Indemnitee's right to recover under this indemnity provision, and an entry of judgment against the Contractor shall be conclusive in favor of the Indemnitee's right to recover under this indemnity provision.

SECTION 6. PROSECUTION AND PROGRESS OF THE WORK

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK

6-1.1 Construction Schedule

This subsection shall be supplemented with the following paragraphs:

The Contractor shall submit a Construction Baseline Schedule to the City Engineer or his/her designee upon issuance of Notice to Proceed 1, in accordance with the Project Milestone Schedule as provided in Section Instruction to Bidders at Milestone 1 task (within ten (10) working days). Any failure or delay by the Contractor to provide this schedule shall constitute sufficient cause for the City to withhold issuance of Notice to Proceed 2, suspend further work, and/or withhold progress payments until such time as the required schedule has been submitted and accepted by the City Engineer or his/her designee. In addition, such failure or delay shall be

deemed a delay to the start of the Work for which the Contractor shall be liable for liquidated damages, as specified in the Contract Documents, for each calendar day beyond the required submittal date until the Construction Schedule is received and accepted.

The Contractor must submit to the City Engineer or his/her designee for review and approval the construction baseline schedule required by the first paragraph of Section 6-1.1. The baseline schedule shall include a master list of all material submittals. The Contractor shall make revisions as required by the City Engineer or his/her designee. The schedule must account for all subcontract work, as well as the work of the Contractor, submittals, coordination with the other contractors performing concurrent work and the Traffic Control Plan. The Contractor shall update this Construction Schedule when directed by the City Engineer or his/her designee, or when:

a. A Change Order significantly affects the Contract completion date or the sequence of construction approach or activities; or

b. The actual sequence of the Work, or the planned sequence of the Work, is changed and does not conform to the Contractor's current accepted Project construction schedule.

The Contractor shall submit a three-week lookahead schedule every week and an updated construction schedule with its monthly invoice every month with variance report and milestone updates. Progress payments shall be contingent upon the receipt of monthly updated construction schedules.

No work may be started until the schedule has been approved in writing. The Work shall be scheduled to ensure that construction will be completed within the specified duration. The Contractor shall be held responsible for coordination of all phases of the operation so that the time schedule can be met.

Add the following subsections:

6-1.1.1 Construction Schedule Requirements

The Work under this Contract shall be planned, scheduled, executed, and reported by the Contractor using a Critical Path Method (CPM) schedule within a Work Breakdown Structure. The Contractor shall adhere to established technical standards for CPM scheduling using a computerized precedence diagram method. The Contractor is required to provide baseline schedule and monthly schedule updates for the City's review and approval; schedule shall be submitted to the City in hard copy (PDF format) and electronic format (Microsoft Project, Primavera P6, or approved equal).

The Contractor shall be responsible for coordinating its own schedule, including that of all subcontractors, as well as the construction activities of others as directed by the City Engineer or his/her designee. The Contractor shall ensure that all subcontractor activities are coordinated to maintain compliance with the approved construction baseline schedule. Any deviation resulting in delay shall be the sole responsibility of the Contractor and all delay impacts shall be attributed to the Prime Contractor.

The construction schedules include the baseline construction schedule, all monthly updates, revised schedules, recovery schedules, and weekly look-ahead schedules. All schedules shall be prepared by the Contractor in accordance with the project plans and specifications and must accurately reflect the Contractor's plan and status of the Work. The City Engineer or his/her designee's review or acceptance of any schedule does not relieve the Contractor of responsibility

for complying with the Contract requirements, adhering to the required sequence of work, or completing any work omitted from the schedule within the Contract duration.

The construction baseline schedule shall bear the Contractor's stamp of approval signed by the Contractor. The Contractor's stamp of approval shall constitute a representation to the City Engineer or his/her designee that the Contractor verified all data in the Contractor's construction baseline schedule and assumes full responsibility for doing so, and that the Contractor has reviewed and coordinated all activities and logic in the Contractor's construction baseline schedule with the requirements of the Work.

The construction baseline schedules shall show the breakdown of Work into activities and relationships only to the extent required to effectively manage the Work. The baseline schedule shall show the division of the Work into activities and specify the progression from the Notice to Proceed to the completion of the Work. The Contract schedule shall include a Master List of Submittals and show appropriate time allowances for submittals, items of interface with work performed by others, and specified Construction, Purchase Order, Field Test, Functional Test, Start-up and Performance Test activities or items such as these. Site-related activities shall not reflect a combining of work located in separate structures, work corresponding to different specifications, work performed by different subcontractors (first and second tiers), or rough-in and finish work of the same trade. All activity durations shall be in working days.

The construction baseline schedule shall include all procurement-related activities which lead to the delivery of permanent materials to the site. Procurement activities include, but may not be limited to, preparation of shop drawings, review and acceptance of shop drawings, materials fabrication, and materials delivery. Upon written approval by the City Engineer or his/her designee, these activities may be displayed or reported as a separate Off-Site Activities Schedule, properly correlated to the Contractor's construction baseline schedule.

If revisions are required, the Contractor shall make the necessary adjustments or corrections and resubmit the revised construction baseline schedule to the City Engineer or his/her designee. The resubmittal shall clearly identify, in writing, all adjustments or corrections made other than those specifically requested by the City Engineer or his/her designee's previous review comments.

The Contractor shall also provide written justification and a corresponding critical path variance report. A Time Impact Analysis (TIA) shall be submitted whenever a revision or change has the potential to affect the critical path or contract duration, including, but not limited to: Change Orders involving additional or revised work; delays due to unforeseen site conditions, utility conflicts, regulatory actions, or Force Majeure events; Owner-directed changes or resequencing of work; concurrent delays; requests for acceleration or recovery schedules; or when milestone or completion dates show slippage in variance reports.

In preparing all construction schedules, it is the responsibility of the Contractor to work with each subcontractor and supplier to obtain information pertinent to the planning and updating of their respective activities and schedules.

When the Construction Schedule is reviewed and accepted, it becomes the construction baseline schedule. From then on, all activities and their relationships may not be changed, added, or deleted without the consent of the City Engineer or his/her designee. The construction baseline schedule shall be revised when a Change Order is executed.

Software/Interface Requirements

The Contractor shall use CPM scheduling software to produce the Contract schedules and reports as specified herein. The software shall be commercially available for lease or purchase and be capable of processing and plotting schedule data as specified in this section.

The Contractor shall provide all schedules and schedule updates in electronic data format. The schedule files shall be in Microsoft Project or Primavera Project Planner (P6) format version or approved equal.

The Contractor shall use the work breakdown structure and guidelines.

The Contractor shall produce a construction schedule which will be an accurate representation of the proposed means and methods for accomplishing the Work. This schedule will show all logical relationships and constraints between activities.

The Contractor shall establish milestones such that the project can be completed on or before the Contract completion date. Contract interface milestones shall have an early start constraint date matching the milestone date.

Contract interim milestones and Contract completion shall have a late finish constraint date matching the milestone or Contract completion date. These are the only constraints allowed in the schedule without prior written approval by the City Engineer or his/her designee.

Use of Float

Total Float and Contract Float belong to the project and are not for the exclusive benefit of any party. Total Float is the number of days by which a part of the Work in the construction schedule may be delayed from its early dates without necessarily extending the Contract time. Contract Float is the number of days between the Contractor's anticipated date for early completion of the Work, or specified part, and the corresponding Contract time. They shall be available to the City, their consultants, or the Contractor, to accommodate changes in the Work, or to mitigate the effect of events which may delay performance or completion. The City will monitor and optimize the use of float for the benefit of the project.

Early Completion

An early completion schedule is one which anticipates completion of all or specified part of the Work ahead of the corresponding Contract time. Since Contract Float belongs to the project, the Contractor shall not be entitled to any extension in Contract time or recovery for any delay cost incurred because of extensions in an early completion date, until all Contract Float is used or consumed and performance or completion of the Work extends beyond the corresponding Contract Time.

Float Suppression

Float suppression techniques are prohibited. The Contractor shall remove any float suppression techniques, e.g. preferential sequencing (crew movements, equipment use, for reuse, etc.), extended durations, imposed dates, scheduling of non-critical work, artificial logic, and others as a prerequisite to a request for an increase in Contract price or Contract time. Use of any type of schedule constraint requires prior approval by the City Engineer or his/her designee.

6-1.1.2 Pre-Construction Conference

Minimum of fourteen (14) days before the commencement of Work at the site, a Pre-Construction conference will be held at the City and shall be attended by the Contractor's Project Manager, its on-site Field Superintendent, and any subcontractors that the Contractor deems appropriate. Attendance by the Contractor and any subcontractors designated is mandatory.

Contractor shall submit its twenty-four (24) hour emergency telephone numbers to the City Engineer or his/her designee for approval a minimum of two (2) Working Days before the Pre-Construction conference. The purpose of the conference is to designate responsible personnel and establish a working relationship. The parties will discuss matters requiring coordination and establish procedures for handling such matters. The complete agenda will be furnished to the Contractor before the meeting date.

Unless previously submitted to the City Engineer, the Contractor shall bring to the Pre-Construction conference copies of each of the following and be prepared to discuss each:

1) Construction baseline schedule.
   a. if the scope of work requires phasing, Contractor shall provide color coded map showing all work locations and dates on map.
2) Procurement schedule of major equipment and materials and items requiring long lead time. This item shall be provided in construction baseline schedule.
3) Shop drawing/sample submittal schedule.
4) Preliminary schedule of values (lump sum price breakdown) for progress payment purposes.
5) Written designation of the on-site Field Superintendent and Project Manager. Both daytime and emergency telephone numbers shall be included in the written designation.
6) Stamped Traffic Control Plan by Professional Civil/Traffic Engineer.
7) Inspection and Testing Requirements.
8) Notification of residents/businesses before starting any work and keeping them informed throughout the Project.
9) Posting of temporary "No Parking" signs.
10) Inspection and testing requirements.
11) Processing applications for payment.
12) Maintaining record documents.
13) Critical Work sequencing.
14) Maintaining sewage service during construction, including proposed bypasses.
15) NPDES requirements, if any.
16) Field decisions and Change Orders.
17) Use of Project site, office and storage areas, security, housekeeping, and the City's needs.
18) Major equipment deliveries and priorities.
19) Special City requirements.
20) Any other item that the City representative states is relevant to the meeting.

6-1.1.3 Weekly Progress Meetings

Progress meetings will be held each week during the course of the Project. The meeting location, day of the week and time of day will be mutually agreed to by the City and the Contractor. The Contractor shall provide a three (3) week "look ahead" schedule for each meeting. The Construction Manager will preside at these meetings and will prepare the meeting agenda, meeting minutes and will distribute minutes to all persons in attendance. As the Work progresses,

if it is determined by agreement of the attendees, that weekly meetings are not necessary, the weekly progress meetings may be changed to bi-weekly progress meetings.

6-1.2 Commencement of the Work
This subsection shall be supplemented by the following:

The Contractor shall not begin any construction activity at the site before the issuance of the Notice to Proceed. Any Work that is done by the Contractor in advance of the Notice to Proceed shall be considered as being done at the Contractor's own risk and responsibility, and consequently, may be subject to rejection.

Prior to the issuance of Notice to Proceed, the Contractor shall provide the following:

- The Contractor shall provide all required contract bonds and evidence of insurance
- The Contractor shall submit a construction schedule to the City Engineer upon Notice to Proceed 1 issuance in accordance with the Instruction to Bidders milestone schedule as described in Milestone 1 Task
- The Contractor shall submit traffic control plans prepared by a licensed Traffic/Civil Engineer to the City Engineer or his/her designee for approval upon Notice to Proceed 1 issuance in accordance with the Instruction to Bidders milestone schedule as described in Milestone 1 Task
- The Contractor shall obtain a City of Norwalk business license
- Obtain a no-fee Construction Permit from the City of Norwalk

Notwithstanding any other provisions of the Contract, the Contractor shall not be obligated to perform any Work and the City shall not be obligated to accept or pay for any Work performed by the Contractor prior to delivery of a Notice to Proceed. The City's knowledge of work being performed prior to delivery of the Notice to Proceed shall not obligate the City to accept or pay for such work.

Add the following subsection:
6-1.2.1 Construction Schedule Updates

The Contractor shall be solely responsible for the preparation, maintenance, and updating of the construction schedule. Contract time, including all milestone dates shall not be modified except by a duly executed Change Order approved by the City.

The Contractor shall update the construction schedule each month when submitting progress payment applications. Updating the schedule shall consist of the following:

1.1 Monthly Schedule Updates:

The Contractor shall submit an updated construction schedule each month with the progress payment application. The updated schedule shall show actual start and finish dates, progress of activities and remaining durations. The monthly schedule updates shall include critical path variance report. Submission of an updated schedule shall be a condition precedent to processing payment. Updating the construction schedule shall not in itself amend or extend Contract time, the Contract completion date or milestone dates.

1.2 Corrections to the Schedule:

The Contractor shall correct errors or omissions in the schedule identified by the City Engineer or his/her designee, including but not limited to, inaccurate dates, out-of-sequence activities, or failure to show required milestones. The Contractor shall also correct any known errors whether or not identified by the City. It shall be Contractor's responsibility to provide accuracy on all schedules. Failure to comply may result in the City's issuance of Stop Notices.

2.1 Revisions to the Schedule:

Revisions are defined as any change to activities, durations, or logic beyond the routine updating of actual progress. All schedule revisions shall require prior written approval of the City Engineer or his/her designee.

Revisions to the schedule shall be limited to changes necessitated by approved Change Orders, City-directed modifications, or other delays or conditions as recognized by the City. Each revision shall be accompanied by a written explanation identifying the reason for the change and describing its effect on related activities. If changes in activity sequencing or other adjustments result in delays, the Contractor shall be responsible for providing a schedule update and recovery schedule along with a Time Impact Analysis (TIA).

All added activities shall include a notation identifying the reason for the addition, which may include, but is not limited to: Requests for Information (RFIs), change orders, force majeure events, unforeseen conditions, equipment lead times, design errors or omissions, Owner-directed changes, regulatory or permitting requirements, utility conflicts, value engineering proposals, material or product substitutions, third-party impacts or time adjustments.

Within five (5) working days after a schedule problem is recognized and documented, the Contractor shall submit to the City Engineer or his/her designee a recovery schedule which shall consist of proposed revisions to the construction baseline schedule demonstrating how the Contractor intends to achieve all contractual milestones including contract completion within the allotted contract time. The accompanying narrative should describe the cause of the problems and the actions planned by the Contractor to recover the schedule. The Contractor shall promptly undertake appropriate action at no additional cost to the City.

Add the following subsections:

6-1.3 Working Days and Hours

The Contractor shall do all Work between the hours of 7:30 AM to 4:30 PM on residential areas and 8:30 AM to 3:30 PM on arterials and secondary streets, Monday through Friday. No additional compensation shall be paid for night or weekend work.

No Work will be allowed on Saturdays, Sundays or City holidays, which are as follows:

- New Year's Day
- Martin Luther King Jr. Day
- Presidents' Day
- Memorial Day
- Juneteenth Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day

- Day after Thanksgiving
- Christmas Eve
- Christmas Day

In addition, no Work will be allowed on any special election day that may be declared. Should a special election day be declared, a time extension of one (1) Working Day will be granted for each such day.

A permit may have other hours or days for the Contractor to do the Work, and those hours and days shall supersede any hours and days written in this section.

Whenever the Contractor is permitted or directed to perform night Work or to vary the period during which Work is performed during the Working Day, the Contractor shall give twelve (12) hours' notice to the City Engineer or his/her designee so that inspection may be provided. A charge may be made to the Contractor for approved overtime or weekend inspections requested by the Contractor.

6-1.4 Non-Compliance

The City Engineer or his/her designee may refuse to recommend the whole or part of any payment if the Contractor's failure, refusal, or neglect to provide the required schedule information precludes proper evaluation of the Contractor's progress. The City may withhold from any payment a set-off, if in the City's opinion, the Contractor's failure refusal or neglect to provide the required schedule information precludes a proper evaluation of whether the Contractor is prosecuting the Work with the diligence that will ensure its completion within Contract Time.

The Contractor agrees that the Contractor's failure, neglect, or refusal to comply with the requirements of this section, or any portion thereof, constitute a material breach of the Contractor's obligations under this Contract. The Contractor recognizes and agrees that such failure, neglect, or refusal prejudices the City's ability to recognize and mitigate delay, and such failure, neglect, or refusal prevent the timely issuance of extensions of Contract time, when such extension may be warranted. Therefore, the Contractor hereby waives all rights to additional costs or time extensions due to delays or accelerations that result from or occur during periods of time that Contractor fails, neglects, or refuses to fully comply with the requirements of this Section.

These remedies for the Contractor's failure, neglect or refusal to comply with the requirements of this section are in addition to, and not in limitation of, those provided under other sections of the Contract.

The Contractor's refusal, failure or neglect to take appropriate recovery action or to submit a recovery schedule shall constitute reasonable evidence that the Contractor is not prosecuting the Work, or separable part, with the diligence that will ensure its completion within the applicable Contract time. Such lack of action shall constitute sufficient basis for the City Engineer or his/her designee to recommend the withholding of some or all of any payment due and shall be considered grounds for termination by the City.

6-1.5 Payment

Payment for complying with the requirements of this section shall be included in the Contract Unit Price for MOBILIZATION AND DEMOBILIZATION and no additional compensation shall be allowed therfor. Payment shall include full compensation for furnishing all labor, materials, tools,

equipment and incidentals, and for doing all the work involved as specified herein.

6-3 TIME OF COMPLETION

6-3.1 General

The Contractor shall complete all Work under the Contract within **one hundred and eighty (180) working days** from the Notice to Proceed 2.

The Contractor shall submit evidence to the City that all materials have been purchased by the date indicated in the construction baseline schedule in INSTRUCTIONS TO BIDDERS SECTION of these specifications. The date construction shall begin will be specified in the Notice to Proceed, by the date indicated in the construction schedule in INSTRUCTIONS TO BIDDERS SECTION of these Specifications.

During periods when weather or other conditions are unfavorable for construction, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work whose acceptable quality or efficiency will be affected by any unfavorable conditions shall be constructed while those conditions exist. It is expressly understood and agreed by and between the Contractor and the City that the Contract time for completion of the work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.

The City is under no obligation to consider early completion of the Project; and the Contract completion date shall not be amended by the City's receipt or acceptance of the Contractor's proposed earlier completion date. Any difference in time between the Contractor's early completion and the Contract time shall be considered a part of the Project float. The Contractor shall not be entitled to compensation, and the City will not compensate the Contractor for delays which impact early completion. The Contractor shall not, under any circumstances, receive additional compensation from the City (including but not limited to indirect, general, administrative or other forms of overhead costs) for the period between the time of earlier completion proposed by the Contractor and the Contract completion date.

6-4 DELAYS AND EXTENSIONS OF TIME

6-4.1 General

This subsection shall be supplemented by the following paragraph:

Unless otherwise agreed in writing, an adjustment to the Contract time by reason of a Change Order shall be agreed to at the time the Change Order is issued and accepted by Contractor. If the Change Order does not reserve the right of the parties, or either of them, to seek an adjustment to the Contract time, then the parties forever relinquish and waive such right and there shall be no further adjustments to the Contract time.

No extension of time shall be granted for a delay caused by the inability to obtain materials unless the Contractor either obtains advance written approval from the City Engineer or his/her designee or obtains from the supplier and furnishes to the City Engineer or his/her designee documentary proof that such materials could not be obtained due to war, government regulations, labor disputes, strikes, fires, floods, adverse weather conditions necessitating the cessation of Work, or other similar action of the elements. The Contractor is required to order materials in a timely manner as specified in the "Instruction to Bidders".

If materials are delayed, the Contractor shall provide to the City Engineer or his/her designee the

following:

1. Copy of the purchase order
2. Proof of payment or receipts
3. Shipment tracking or delivery information
4. Manufacturer's letter on company letterhead verifying the cause of delay; and
5. A written narrative explaining the impact of the delay on the Work from the Contractor.

6-4.2 Extensions of Time

This subsection shall be supplemented by the following:

Whenever the Contractor requests time extension of the Contract time or any Contract milestone, the Contractor shall provide an analysis of the critical path. At a minimum, the analysis must include the following:

1. The version of the Contractor's construction schedule on which the analysis is based.
2. The contract milestones affected, and the number of days extension requested for each.
3. A plot starting at the timeline and showing the controlling path to each affected milestone before the change or delay in question.
4. A plot including the activities which were added to represent the change or delay starting at the timeline and showing the controlling path to each affected milestone after the change or delay in question.
5. A listing of all activities and logic added, deleted or changed to represent the impact of the change or other delay being analyzed.

In the event it is deemed appropriate by the City to extend the time for completion of the Work, any such extension shall not release any guarantee for the Work required by the Contract Documents, nor shall any such extension of time relieve or release the Sureties on the Bonds executed. In executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such extensions of time. The amount of time allowed by an extension of time shall be limited to the period of the delay giving rise to the same as determined by the City. Notwithstanding any dispute which may arise in connection with a claim for adjustment of the Contract time, the Contractor shall promptly proceed with the Work.

6-4.3 Payment for Delays

This subsection shall be supplemented by the following paragraphs:

Notwithstanding any other terms and conditions of the Contract Documents, the City shall have no obligation whatsoever to increase the Contract Price or extend the time for delays.

Unless compensation and/or markup is agreed upon by the City, the Contractor agrees that no payment of compensation of any kind shall be made to the Contractor for damages or increased overhead costs caused by any delays in the progress of the Contract, whether such delays are avoidable or unavoidable or caused by any act or omission of the City or its agents. Any accepted delay claim shall be fully compensated for by an extension of time to complete the performance of the Work.

This Section shall not apply to compensable delays caused solely by the City. If a compensable delay is caused solely by the City, the Contractor shall be entitled to a Change Order that:

(1) extends the time for completion of the Contract by the amount of delay caused by the City; and (2) provides equitable adjustment, as determined by the City, to the Contractor.

6-8 TERMINATION OF THE CONTRACT FOR CONVENIENCE

The following sentence is added to Section 6-8:

In no event (including termination for impossibility or impracticability, due to conditions or events beyond the control of the City, for any other reason or for no reason) shall the total amount of money to Contractor exceed the amount which would have been paid to Contractor for the full performance of the services described in the Contract.

6-9 LIQUIDATED DAMAGES

Subsection 6-9 of the Standard Specifications is replaced with the following paragraphs:

For the purposes of the calculation of the start of the liquidated damages, the Work shall be deemed to be completed when the same has been completed in accordance with the Plans and Specifications therefor and to the satisfaction of the City Engineer, and the City Engineer or his/her designee has certified such completion in accordance with Section 3-13.1 of Part 1 of the Standard Specifications. Liquidated damages daily cost shall be **$2,500** per Calendar Day.

SECTION 7. MEASUREMENT AND PAYMENT

7.3 PAYMENT

7.3.1 General

This subsection shall be supplemented by the following:

The Contract Price shall constitute full compensation for all labor, equipment, materials, tools and incidentals required to complete the Project as outlined in these Contract Documents and as directed by the City Engineer or his/her designee. In accordance with Public Contract Code Section 7107, if no claims have been filed and are still pending, the amount deducted from the final estimate and retained by the City will be paid to the Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be withheld for any other lawful purposes.

7-3.2 Partial and Final Payment

This subsection shall be supplemented by the following paragraphs:

Within 30 days after proposed final estimate has been submitted to the Contractor, the Contractor shall submit to the Engineer their written approval of said proposed final estimate or a written statement of all claims the Contractor has arising under or by virtue of the contract. No claim will be considered that was not included in said written statement of claims, or will any claim be allowed as to which a notice or protest is required under the provisions in Section 2-9 “Changed Conditions”, 6-4.4 “Written Notice and Report”, and 6-3.2 “Contract Time Accounting”, unless the Contractor has complied with the notice or protest requirements in said sections.

The claims filed by the Contractor shall be sufficient detail to enable the Engineer to ascertain the basis and the amount of said claims. The Engineer will consider and determine the Contractor’s claims and it will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer to determine the facts or contentions involved in their claims. Failure to submit such information and details will be

sufficient cause for denying the claims.

The City Council will make the final determination of any claims, which remain in dispute after completion of claim review by the Agency. A board or person designated by said City Council will review such claims and make written recommendations thereon. The Contractor may meet with the review board or person to make a presentation in support of such claims.

Upon final determination of the claims, the Engineer shall then make and issue their final estimate in writing and within 30 days thereafter the Agency will pay the entire sum, if any, found due thereon. Such final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor.

All prior estimates and payments shall be subject to correction in the proposed final estimate.

The following subsections shall be added to Section 7 of the Standard Specifications**:**

7-3.2.1 Monthly Closure Date and Invoice Date

For purposes of Section 7-3.2, the monthly closure date shall be the last Day of each month. A measurement of Work performed and a progress estimate of the value thereof based on the Contract and of the monthly payment shall be prepared by the Contractor and submitted to the City Engineer or his/her designee before the tenth (10th) Day of the following month for verification and payment consideration.

7-3.2.2 Payments

The City shall make payments within thirty (30) Days after receipt of the Contractor's undisputed and properly submitted payment request, including an updated construction schedule pursuant to Section 6-1.1 of the General Provisions. The City shall return to the Contractor any payment request determined not to be a proper payment request as soon as practicable, but not later than seven (7) Days after receipt, and shall explain in writing the reasons why the payment request is not proper.

7-3.2.3 Retention

The City shall withhold not less than five percent (5%) from each progress payment. However, at any time after fifty percent (50%) of the Work has been completed, if the City Council finds that satisfactory progress is being made, it may, at its discretion, make any of the remaining progress payments in full for actual Work completed. The City shall withhold not less than five percent (5%) of the Contract Price from the Final Payment Amount (defined in Section 7-3.2.4) until at least thirty-five (35) days after recordation of the Notice of Completion, or recordation of a notice of completion or cessation, but not later than the period permitted by Public Contract Code Section 7107.

7-3.2.4 Final Invoice and Payment

Whenever the Contractor shall have completely performed the Contract in the opinion of the City Engineer, the City Engineer or his/her designee shall notify the City Clerk that the Contract has been completed in its entirety. The Contractor shall then submit to the City Engineer or his/her designee a written statement of the final quantities of Contract items for inclusion in the final invoice. Upon receipt of such statement, the City Engineer or his/her designee shall check the quantities included therein and shall authorize a payment amount, which in the City Engineer's

opinion shall be just and fair, covering the value of the total amount of Work done by the Contractor, less all previous payments and all amounts to be retained under the provisions of the Contract Documents ("Final Payment Amount"). The City Engineer or his/her designee shall then request that the City accept the Work and that the City Clerk be authorized to file, on behalf of the City in the office of the County Recorder, a Notice of Completion of the Work herein agreed to be done by the Contractor. In addition, the final payment will not be released until the Contractor returns the control set of Plans and Specifications showing the redlined as-built conditions.

The Contractor shall maintain a control set of Plans and Specifications on the Project site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on the control set to show the as-built conditions. This control set of Plans shall incorporate all Addenda, Requests for Information, Change Orders, field changes not involving cost, and any other variation that occurred during construction. Upon completion of all Work, the Contractor shall return the control set to the City Engineer or his/her designee. Final payment will not be made until this requirement is met.

7-3.2.5 Substitute Security

In accordance with Public Contract Code Section 22300, the Contractor may request that it be permitted to substitute securities in lieu of having retention withheld by the City from progress payments when such payments become due or, in the alternative, the Contractor may request that the City make payments of earned retentions directly to an agreed upon designated escrow agent at the Contractor's expense. If the Contractor selects either one of these alternatives, the following shall control.

7.3.2.5.1 Substitution of Securities for Performance Retention

At some reasonable time before any progress payment would otherwise be due and payable to the Contractor in the performance of Work under these Contract Documents, the Contractor may submit a request to the City in writing to permit the substitution of retentions with securities equivalent to the amount estimated by the City ("estimated amount of retention") to be withheld. The Contractor shall deposit such securities with the City or may, in the alternative, deposit such securities in escrow with a State or federally chartered bank in California, as the escrow agent, at the Contractor's expense. Such securities will be the equivalent or greater in value of the estimated amount of retention. If the Contract is modified by written Modifications or Change Orders or the Contractor otherwise becomes entitled to receive an amount more than the Contract Price at the time the securities are deposited, the Contractor shall, at the request of the City, deposit with the City or escrow agent, whichever is applicable, additional securities within a reasonable time so that the amount of securities on deposit with the City or escrow agent is equivalent or greater in value than the amount of retention the City would otherwise be entitled to withhold from progress payments due or to become due to the Contractor as the Work progresses. The City shall withhold any retention amount that exceeds the security amount until the additional securities are deposited and, if the deposit is with an escrow agent, the City has confirmation from that escrow agent of the new total value of securities. Upon satisfactory completion of the Contract, which shall mean, among other things, that the City is not otherwise entitled to retain proceeds from progress payments as elsewhere provided in the Contract or under applicable law, the securities shall be returned to the Contractor. The City shall, within its sole discretion, determine whether the amount of the securities on deposit with the City or escrow agent is equal to or greater than the amount of estimated retention of progress payments that could otherwise be held by the City if the Contractor had not elected to substitute same with securities.

7-3.2.5.2 Deposit of Retention Proceeds with an Escrow Agent

As an alternative to the substitution of securities, as provided above, or the City otherwise retaining and holding retention proceeds from progress payments, the Contractor may request the City to make payments of retentions earned directly to an escrow agent with the same qualifications as required in Section 7-3.2.5.1 above and at the expense of the Contractor. At its sole expense, the Contractor may direct the investment of such retention payments into only such securities as mentioned in Section 7-3.2.5.4 below and shall be entitled to interest earned on such investments on the same terms provided for securities deposited by the Contractor. Upon satisfactory completion of the Contract, which shall mean when the City would not otherwise be entitled to withhold retention proceeds from progress payments had the Contractor not elected to have such proceeds deposited into escrow, the Contractor shall be allowed to receive from the escrow agent all securities, interest and payments deposited into escrow pursuant to the terms of this Section. The Contractor shall pay to each Subcontractor, not later than ten (10) Days of receipt of payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount withheld to ensure performance of the Contractor.

7-3.2.5.3 Subcontractor Entitlement to Interest

If the Contractor elects to receive interest on any moneys withheld in retention by the City, then the Subcontractor shall receive the identical rate of interest received by the Contractor on any retention moneys withheld from the Subcontractor by the Contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the Subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the Subcontractor. If the Contractor elects to substitute securities in lieu of retention, then, by mutual consent of the Contractor and the Subcontractor, the Subcontractor may substitute securities in exchange for the release of moneys held in retention by the Contractor. The Contractor shall pay each Subcontractor, not later than ten (10) Days after receipt of escrow moneys, the amount owed to each Subcontractor from the moneys plus the respective amount of interest earned, net of costs attributed to the retention held from each Subcontractor, on the amount of retention withheld to ensure performance of the Subcontractor.

7-3.2.5.4 Securities Eligible for Investment

Securities eligible for investment shall include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed upon between the Contractor and the City. The Contractor shall be the beneficial owner of any securities substituted for any monies withheld and shall receive any interest thereon.

7-3.2.5.5 Escrow Agreement for Security Deposits in Lieu of Retention

The escrow agreement that shall be used for the deposit of securities in lieu of retention shall substantially conform to the form prescribed in Public Contract Code Section 22300(f).

7-3.2.5.6 Inconsistencies with Prevailing Statutory Requirements

If there is any inconsistency between or differences in Public Contract Code Section 22300 and the terms of this provision, or any future amendments thereto, Section 22300 shall control.

7-3.4 Mobilization.
This subsection shall be supplemented by the following:

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, materials and incidentals to the project site necessary for work on the project and for all other work and operations which must be performed. This item shall also include costs incurred including bonds, insurance, and financing prior to beginning work on the various contract items on the project site.

Mobilization shall include the cost, time and labor to move the necessary construction equipment to and from the job site, supervisory time on the job by the Contractor's personnel to keep the construction site in a safe condition and all other related work as required for all non-working days during the course of construction. The Contractor is responsible for securing an adequate storage site for equipment and materials. As part of the Mobilization payment, the Contractor shall have on the work site at all times, as its agent, a Field Superintendent capable of reading and thoroughly understanding the plans, specifications, other related documents, and directions from the Engineer.

Payment for **MOBILIZATION AND DEMOBILIZATION** shall be per the Contract Unit Price of LUMP SUM (LS) indicated in the Contract Documents and shall include obtaining and paying for all permits and business licenses as required from the City of Norwalk, and other related agencies, preparing, implementing and updating construction schedules and other items specified in this section. The lump sum bid price shall not exceed 5% of the total bid price. The City of Norwalk will waive its encroachment permit fee.

The Contractor shall comply with the requirements specified by each license or permit. Progress payments for this item shall be paid in accordance with the completion percentage of the project to the Contractor and shall include the costs of such mobilization and administration for the entire Contract period including preparation and implementation of progress schedule (CPM) as specified in these specifications.

Section 7-3.9 is hereby added to Section 7-3 of Part 1 of the Standard Specifications, as follows:

7-3.9 AUDIT

The City or its representative shall have the option of inspecting and/or auditing all records and other written materials used by the Contractor in preparing its billings to the City as a condition precedent to any payment to the Contractor or in response to a construction claim or a Public Records Act (Government Code Section 6250 *et seq.*) request. The Contractor will promptly furnish documents requested by the City at no cost. Additionally, the Contractor shall be subject to State Auditor examination and audit at the request of the City or as part of any audit of the City, for a period of three (3) years after final payment under the Contract.

The Contractor shall include a copy of this Section 7-3.9 in all contracts with its Subcontractors, and the Contractor shall be responsible for immediately obtaining those records or other written material from its Subcontractors upon a request by the State Auditor or the City. If the Project includes other auditing requirements, those additional requirements will be listed in the Special Provisions.

SECTION 8 FACILITIES FOR AGENCY PERSONNEL

8-1 General

Section 8-1 is replaced with the following:

No field offices for City personnel shall be required; however, City personnel shall have the right to enter upon the Project at all times and shall be admitted to the offices of the Contractor to use the telephone, desk and sanitary facilities provided by the Contractor for its own personnel.

Section 9 is hereby added to Part 1 of the Standard Specifications, as follows:

SECTION 9 ADDITIONAL TERMS

9-1 NONDISCRIMINATORY EMPLOYMENT

The Contractor shall not unlawfully discriminate against any individual based on race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation or military and veteran status. The Contractor understands and agrees that it is bound by and will comply with the nondiscrimination mandates of all statutes and local ordinances and regulations.

9-2 CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the final acceptance of the Work by the City Council in accordance with Section 3-13.2 of the General Provisions, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part of the Work by the action of the elements, criminal acts, or any other cause. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the Work occasioned by any cause before its completion and acceptance and shall bear the expense thereof, except for such injuries or damages arising from the sole negligence or willful misconduct of the City, its officers, agents or employees. In the case of suspension of Work from any cause whatever, the Contractor shall be responsible for all materials and the protection of Work already completed, shall properly store and protect them if necessary, and shall provide suitable drainage and erect temporary structures where necessary.

9-3 PROCEDURE IN CASE OF DAMAGE TO PUBLIC PROPERTY

Any portions of curb, gutter, sidewalk or any other City improvement damaged by the Contractor during the course of construction shall be replaced by the Contractor at its own cost. The cost of additional replacement of curb, gutter or sidewalk in excess of the estimated quantities shown in the Bid form and Specifications, and found necessary during the process of construction (but not due to damage resulting from carelessness on the part of the Contractor during its operation), shall be paid to the Contractor at the unit prices submitted in his or her Bid.

9-4 REMOVAL OF INTERFERING OBSTRUCTIONS

The Contractor shall remove and dispose of all debris, abandoned structures, tree roots and obstructions of any character encountered during the process of excavation. It is understood that the cost of any such removals are made a part of the unit price bid by the Contractor under the item for excavation or removal of existing Work.

9-5 COMPLIANCE WITH LAWS

The Contractor shall comply with all applicable federal, State and local laws, ordinances, codes and regulations in force at the time the Contractor performs pursuant to the Contract Documents.

9-6 CONTRACTOR'S REPRESENTATIONS

By signing the Contract, the Contractor represents, covenants, agrees, and declares under penalty of perjury under the laws of the State of California that: (a) the Contractor is licensed, qualified, and capable of furnishing the labor, materials, and expertise necessary to perform the services in accordance with the terms and conditions set forth in the Contract Documents; (b) there are no obligations, commitments, or impediments of any kind that will limit or prevent its full performance under the Contract Documents; (c) there is no litigation pending against the Contractor that could adversely affect its performance of the Contract, and the Contractor is not the subject of any criminal investigation or proceeding; and (d) to the Contractor's actual knowledge, neither the Contractor nor its personnel have been convicted of a felony.

9-7 CONFLICTS OF INTEREST

The Contractor agrees not to accept any employment or representation during the term of the Contract or within twelve (12) months after acceptance as defined in Section 3-13.2 of the General Provisions that is or may likely make the Contractor "financially interested," as provided in Government Code Sections 1090 and 87100, in any decisions made by the City on any matter in connection with which the Contractor has been retained pursuant to the Contract Documents.

9-8 APPLICABLE LAW

The validity, interpretation, and performance of these Contract Documents shall be controlled by and construed under the laws of the State of California, excluding California's choice of law rules. Venue for any such action relating to the Contract shall be in the Superior Court with geographic jurisdiction over the City.

9-9 TIME

Time is of the essence in these Contract Documents.

9-10 INDEPENDENT CONTRACTOR

The Contractor and Subcontractors shall at all times remain, as to the City, wholly independent contractors. Neither the City nor any of its officials, officers, employees or agents shall have control over the conduct of the Contractor, Subcontractors, or any of their officers, employees, or agents, except as herein set forth, and the Contractor and Subcontractors are free to dispose of all portions of their time and activities that they are not obligated to devote to the City in such a manner and to such Persons that the Contractor or Subcontractors wish except as expressly provided in these Contract Documents. The Contractor and Subcontractors shall have no power to incur any debt, obligation, or liability on behalf of the City, bind the City in any manner, or otherwise act on behalf of the City as agents. The Contractor and Subcontractors shall not, at any time or in any manner, represent that they or any of their agents, servants or employees, are in any manner agents, servants or employees of the City. The Contractor and Subcontractors agree to pay all required taxes on amounts paid to them under the Contract, and to indemnify and hold the City harmless from any and all taxes, assessments, penalties, and interest asserted against the City by reason of the independent contractor relationship created by the Contract Documents. The Contractor shall include this provision in all contracts with all Subcontractors.

9-11 CONSTRUCTION

In the event of any asserted ambiguity in, or dispute regarding the interpretation of any matter herein, the interpretation of these Contract Documents shall not be resolved by any rules of interpretation providing for interpretation against the party who causes the uncertainty to exist or against the party who drafted the Contract Documents or who drafted that portion of the Contract Documents.

9-12 NON-WAIVER OF TERMS, RIGHTS AND REMEDIES

Waiver by either party of any one (1) or more of the conditions of performance under these Contract Documents shall not be a waiver of any other condition of performance under these Contract Documents. In no event shall the making by the City of any payment to the Contractor constitute or be construed as a waiver by the City of any breach of covenant, or any default that may then exist on the part of the Contractor, and the making of any such payment by the City shall in no way impair or prejudice any right or remedy available to the City with regard to such breach or default.

9-13 TERM

The Contract is effective as of the Effective Date listed, and shall remain in full force and effect until the Contractor has fully rendered the services required by the Contract Documents or the Contract has been otherwise terminated by the City. However, some provisions may survive the term listed within this Section, as stated in those provisions.

9-14 NOTICE

Except as otherwise required by law, any notice or other communication authorized or required by these Contract Documents shall be in writing and shall be deemed received on (a) the day of delivery if delivered by hand or overnight courier service during the City's regular business hours or (b) on the third (3rd) business day following deposit in the United States mail, postage prepaid, to the addresses listed on the Contractor's Bid and City Hall, or at such other address as one party may notify the other.

9-15 SEVERABILITY

If any term or portion of these Contract Documents is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of these Contract Documents shall continue in full force and effect.

SPECIAL PROVISIONS

1. ACCEPTANCE OF SITE

The Contractor shall accept the site and the character of the work as they exist on the first day of work under this contract.

2. THE CONTRACTOR'S REPRESENTATIVE

At the time of the pre-job conference, the Contractor shall furnish a written list of their personnel who are authorized to sign work orders. There shall be at all times Contractor's personnel on the job who have the authority to sign work orders.

The City reserves the right, at its sole discretion, to require the Contractor to replace project management or field supervisory staff due to unsatisfactory performance, failure to comply with contract requirements, lack of cooperation with City staff, safety concerns, or any other conduct determined by the City to be detrimental to the successful completion of the Project. Removal of management and supervisory staff shall require City approval.

3. MAINTENANCE OF EXISTING PLANTINGS, IMPROVEMENTS AND FACILITIES

The Contractor shall protect and maintain all existing trees and shrubs (plantings) to remain from the first day of work under this contract to acceptance. In similar fashion, Contractor shall protect and maintain all improvements and facilities in place to remain from the first day of work under this contract to acceptance. Contractor shall notify City Engineer or his/her designee of any damage to any existing plantings, improvements, or facilities as soon as possible. Contractor shall replant or repair any damage to the satisfaction of City Engineer or his/her designee at no cost or extra burden to the City.

4. PUBLIC CONVENIENCE AND SAFETY

Add the following to Section 7-10. "Public Convenience and Safety" of the SSPWC:

1. At the end of the Work Day the job site shall be left in a neat and orderly manner. Roadway and parking shall be made available, accessible and usable to the acceptance of the City Engineer or his/her designee.

2. During construction the Contractor shall provide adequate access to each residence or business affected by this project to the acceptance of the City Engineer or his/her designee.

3. Should any change in these requirements be necessitated by extraordinary occurrences or requirements during the execution of the work, the Contractor shall obtain prior written approval of the City Engineer or his/her designee.

5. NOTIFICATION OF PROPERTY OWNERS/OCCUPANTS

The Contractor shall notify all affected residents and/or businesses in writing twice prior to construction:

1. First notice (general information) two (2) weeks before.
2. Second notice one (1) week before, specifying the exact day/s and exact locations that construction will occur, and during what hours. Said notice shall be submitted to City Engineer or his/her designee for approval at the pre-construction meeting. Compensation for the aforementioned shall be paid for in the total contract price bid and no additional compensation will be allowed.

   Contractor shall notify the following entities at least ten (10) days in advance of any street closure or restriction to access.

   - Fire Department
   - Sheriff Department
   - Schools and School Bus Organizations
   - Trash Collector
   - Street Sweeping
   - Transit Services

The Contractor shall cooperate with local authorities relative to handling traffic through the area. The Contractor shall also coordinate with Norwalk Transit to ensure the safe operation of all buses and access to all bus stops in the construction area.

The Contractor shall provide ongoing written notifications to affected residents and businesses throughout the duration of the project, particularly for site-specific locations and phased construction activities. Each construction phase, zone, area, or street shall be separately notified no less than one (1) week in advance to all affected residents and businesses, at no additional cost to the City.

In the event of any change to the approved construction schedule, the Contractor shall provide revised written notifications a minimum of seventy-two (72) hours in advance of the revised work date(s). All revised notices shall be submitted to the City Engineer or his/her designee for review and approval prior to distribution, and shall be provided at no additional cost to the City.

All notifications shall be clear, legible, and easy to understand, and shall include both written descriptions and visual exhibits. At a minimum, notifications shall clearly identify and depict the project limits, specific work locations, anticipated durations, dates and hours of work, and any phasing or sequencing of construction activities. Refer to attached Exhibit A

If the construction schedule is delayed, the Contractor shall immediately prepare revised construction notices and submit them to the City Engineer or his/her designee for review. Upon approval, the Contractor shall redistribute the revised notices to affected residents and businesses no less than seven (7) days prior to the new construction date at no additional cost to the City.

6. LIMITS OF WORK

Limits of work shall be the legal property boundaries of the site unless modified by Contract limit lines indicated on the plans or as noted otherwise.

7. PROTECTION AND RESTORATION

The Sections that follow supplement, but do not replace, the corresponding provisions in Part 4 (Existing Improvements) of the Standard Specifications (SSPWC), except as otherwise indicated herein. In the event of any conflict between the Standard Specifications and these Special Provisions, these Special Provisions shall control.

7.1 GENERAL

All costs to the Contractor for protecting, removing, restoring, relocating, repairing, replacing, or reestablishing existing improvements shall be included in the Bid.

7.2 UTILITIES

7.2.1 LOCATION

The location and existence of any underground Utility or substructure has not been obtained. The methods used and costs involved to locate existing elements, points of connection and all construction methods are the Contractor's sole responsibility. Accuracy of information furnished, as to existing conditions, is not guaranteed by the City. The Contractor, at its sole expense, must make all investigations necessary to determine locations of existing elements, which may include contacting Underground Service Alert and other private underground locating firm(s), utilizing specialized locating equipment, hand trenching, or both. For every Dig Alert Identification Number issued by Underground Service Alert during the course of the Project, the Contractor must submit to the City the following form. The Contractor shall be responsible for preserving the integrity of the existing underground utilities at the site.

UNDERGROUND SERVICE ALERT IDENTIFICATION NUMBER FORM

No excavation will be permitted until this form is completed and returned to the City.

Government Code Section 4216 *et seq*. requires a Dig Alert Identification Number to be issued before a permit to excavate will be valid.

To obtain a Dig Alert Identification Number, call Underground Service Alert at **811** a minimum of three (3) Working Days before scheduled excavation. For best response, provide as much notice as possible up to ten (10) Working Days.

Dig Alert Identification Number: _____

Dated: _____

_____
("CONTRACTOR")

By: _____

Printed Name: _____

Title: _____

By: _____

Printed Name: _____

Title: _____

Note: This form is required for every Dig Alert Identification Number issued by Underground Service during the course of the Work. Additional forms may be obtained from the City upon request

7.2.2 ENTRY BY UTILITY OWNERS

The right is reserved to the owners of public Utilities or franchises to enter the Project site for the purpose of making repairs or changes in their property that may be necessary as a result of the Work as well as any other reason authorized by the City. When the Contract Documents provide for the Utility owners to alter, relocate or reconstruct a Utility, or when the Contract Documents are silent in this regard and it is determined by the City Engineer or his/her designee that the Utility owners must alter, relocate or reconstruct a Utility, the Contractor shall schedule and allow adequate time for those alterations, relocations or reconstructions by the respective Utility owners. City employees and agents shall likewise have the right to enter upon the Project site at any time and for any reason or no reason at all.

7.2.3 PROTECTION

The Contractor shall protect all utilities and other improvements which may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities, including service laterals, and other improvements indicated on the drawings that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be directed by the City Engineer or his/her designee.

If Contractor damages or breaks the Utilities, it will be the Contractor’s responsibility to repair the Utility at no cost to the Utility or the City.

7.2.4 REMOVAL

Facilities encountered during the prosecution of the Work that are determined to be abandoned shall be removed by the Contractor as required for the Work, unless directed otherwise by the City Engineer or his/her designee. The remaining portion of the existing Utility which is left in place shall be accurately recorded, in elevation and plan, on the control set of Contract Drawings.

7.2.5 RELOCATION

The Contractor shall cooperate fully with all Utility forces of the City or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities that interfere with the progress of the Work. The Contractor shall schedule the Work so as to minimize interference with the relocation, altering, or other rearranging of facilities.

7.2.6 COOPERATION

The Contractor’s attention is directed to the fact that Work may be conducted at or adjacent to the site by other contractors during the performance of the Work under this Contract. The Contractor shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts. Compensation for compliance shall be included in the various items of the Work, and no additional compensation shall be allowed therefor.

7.2.7 NOTIFICATION

The Contractor shall notify the City Engineer or his/her designee and the owners of all Utilities and substructures not less than forty-eight (48) hours before starting construction. The following list of names and telephone numbers is intended for the convenience of the Contractor and is not guaranteed to be complete or accurate:

Agency: Charter Communications - Irwindale
Phone Number: (626) 430-3586
Contact Person: Ernie Correa

Agency: Charter Communications - Irwindale
Phone Number: (626) 430-3300
Contact Person: Steve Fear

Agency: City of Norwalk - Engineering
Phone Number: (562) 929-5723
Contact Person: Diego Alvares

Agency: City of Norwalk – Public Services
Phone Number: (562) 929-5511
Contact Person: Marco Ramirez /Tim Chhay

Agency: City of Artesia
Phone Number: (562) 865-6262
Contact Person: Fiona Graham

Agency: City of Cerritos
Phone Number: (562) 916-1220
Contact Person: Kanna Vancheswaran

Agency: Chevron
Phone Number: (714) 228-1506
Contact Person: Al Super

Agency: Chevron
Phone Number: 1-877-596-2813
Contact Person: Emergency Number

Agency: Chevron Oil Company
Phone Number: (310) 669-1014
Contact Person: Dave Zerler

Agency: Crimson California Pipeline
Phone Number: (562) 595-9044
Contact Person: A. Morales

Agency: Crimson California Pipeline
Phone Number: (800) 351-7473
Contact Person: Emergency Number

Agency: Department of the Navy
Phone Number: (310) 241-2834
Contact Person: Todd E. H. Williams

Agency: Frontier – Huntington Beach
Phone Number: (714) 375-6760
Contact Person: Ray Roundtree

Agency: Liberty Utilities (Park Water)
Phone Number: (562) 299-5123
Contact Person: Frank Heldman

Agency: Liberty Utilities (Park Water)
Phone Number: (562) 299-5122
Contact Person: Janelle Rellosa

Agency: Los Angeles County Sanitation Districts
Phone Number: (310) 638-1161
Contact Person: Supt. Of Sewer Maintenance

Agency: Southern California Edison (SCE) - Whittier
Phone Number: (562) 903-3186
Contact Person: Ernie Chavez

Agency: Southern California Edison (SCE) - Whittier
Phone Number: (800) 611-1911
Contact Person: SCE Personnel Line

Agency: Southern California Gas Company (SoCalGas) - Whittier
Phone Number: (714) 634-3040
Contact Person: Imelda Noon

Agency: Southern California Gas Company (SoCalGas) - Whittier
Phone Number: (800) 603-7060
Contact Person: Lead Dispatcher

Agency: Caltrans
Phone Number: (626) 301-0742
Contact Person: Andy Bott

Agency: Golden State Water Company
Phone Number: (909) 305-5427 ext. 349
Contact Person: Julia Rivas

Agency: Central Basin Municipal Water District
Phone Number: (323) 621-0749
Contact Person: Braden Yu

7.3 PAYMENT

Payment for complying with the requirements of this section shall be included in the various Lump Sum (LS) items of the bidding schedule unless specified otherwise. Payment shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved as specified herein.

8. TEMPORARY TRAFFIC CONTROL

The 2024 Edition of "Standard Specifications for Public Works Construction" ("SSPWC" or "GREENBOOK"), as amended by the Contract Documents, is incorporated into the Contract Documents by this reference. The Work described herein shall be done in accordance with the provisions of the Standard Specifications, as amended by the Contract Documents.

600-1 GENERAL.
This subsection shall be supplemented by the following:

At the end of each workday, the job site shall be left in a neat and orderly manner. Roadway and parking shall be made available, accessible, and usable to the satisfaction of the Engineer.

During construction, the Contractor shall provide adequate access to each residence or business affected by this Project to the satisfaction of the Engineer. The Contractor shall ensure that access to all side streets and driveways are maintained at all times. Work in front of or within driveways and side streets shall be conducted in a manner where at no time is access to property denied. Portions of driveway approaches that are not ready to be opened for traffic at the end of the workday shall be steel-plated per the requirements noted in the previous paragraph. The Contractor shall use temporary AC surfacing at his own expense as required to maintain traffic in a safe non-disruptive manner.

The Contractor shall provide access through the project site for the use of emergency vehicles at all times.

Should any change in these requirements be necessitated by extraordinary occurrences or requirements during the execution of the Work, the Contractor shall obtain prior written approval from the Engineer.

Add the following subsection:
600-2 NOTIFICATION OF PROPERTY OWNERS/OCCUPANTS.

The Contractor shall notify all affected residents and/or businesses in writing at least two times prior to start of construction:

3. First notice (general information) two (2) weeks before start of construction.
4. Second notice one (1) week before, specifying the exact days and locations that construction will occur, and during what hours. Said notice shall be submitted to the City Engineer or his/her designee for approval at the Pre-Construction meeting. Compensation for the aforementioned notifications shall be paid for in the total Contract Unit Price bid for TRAFFIC CONTROL and no additional compensation shall be allowed.

The Contractor shall notify the following entities at least ten (10) days in advance of any street

closure or restriction to access.

- Fire Department
- Sheriff Department
- Schools and School Bus Organizations
- Trash Collector
- Street Sweeping
- Transit Services

The Contractor shall be responsible for notifying adjacent businesses and residents (within 500-foot radius), trash collection services, and the Los Angeles Metropolitan Transportation Authority (Metro) in writing seven (7) days in advance of any work that involves limited access. Said notice shall be reviewed and approved by the Engineer in advance of its circulation. The Contractor shall provide verification to the Engineer that proper circulation of the notice has been accomplished.

The Contractor shall cooperate with local authorities relative to handling traffic through the area. The Contractor shall also coordinate with Norwalk Transit to ensure the safe operation of all buses and access to all bus stops in the construction area.

If the construction schedule is delayed, the Contractor shall immediately prepare revised construction notices and submit them to the Engineer for review. Upon approval, Contractor shall redistribute the revised notices to affected residents and businesses no less than seven (7) days prior to the new construction date at no additional cost to the City.

Add the following subsection:
600-2.1 Payment.

Payment for preparing and distributing public notifications as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

SECTION 601 - TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK ZONES

601-1 GENERAL.
This subsection shall be supplemented by the following:

Prior to the start of construction, traffic control devices shall be installed and approved by the Engineer in accordance with the approved Traffic Control Plan (TCP).

During non-construction hours, the Contractor shall maintain all lanes open and free of sand, gravel, debris, and other materials. The Contractor shall provide sufficient traffic safety devices to protect traffic from any hazard. No open excavation in street or sidewalk shall be left overnight. The Contractor shall cover the excavation area, if left overnight with steel plate or fill it with aggregate base to grade and compact and seal with temporary asphalt concrete to yield a safe driving and/or walking surface. The work area shall be adequately prepared to permit driving on the constructed surface during non-construction hours. Any location yielding a situation that is not considered drivable by the Engineer shall be resolved at the direction of the Engineer and the Contractor will not be paid for the cost incurred by corrective action and shall be charged for any City costs incurred for corrective action.

The Contractor shall accommodate and coordinate with the City's refuse pick-up service in the project area. The Contractor shall accommodate and coordinate with the City's street sweeping service in the project area.

Add the following subsection:
601-1.1 Lane Closures.

No lane closures on major highways shall be permitted during the rush hours from 6:30 AM to 8:30 AM and 3:30 PM to 8:30 PM, Mondays through Fridays. One lane in each direction shall be open to traffic at all times.

No night or weekend work shall be allowed unless approved in writing by the Engineer. No additional compensation shall be paid for night or weekend work if so approved by the Engineer.

Lane closures and maintenance of access to abutting properties shall conform to the requirements specified in these Specifications.

601-2 TEMPORARY TRAFFIC CONTROL PLAN (TCP).
601-2.1 General.
This subsection shall be supplemented by the following:

This Project requires the preparation and submittal of stamped and signed TCPs including diagrams and references that adequately show phasing of segmented street closures, alternative resident parking areas, street closure detour plans and the traffic control measures proposed for all phases of work in order to adequately convey the necessary traffic control measures as required in the CA MUTCD and WATCH manuals.

The Contractor shall prepare all necessary TCPs and submit to the Engineer for approval upon Notice to Proceed 1 issuance. The TCPs shall be prepared by a California Licensed Traffic Engineer and shall include the following:

1. Notification Signs.
2. Temporary traffic control devices
3. Temporary "No Parking" signs and restrictions
4. Adjacent on-street parking available for residents and businesses
5. Existing and temporary lane lines.
6. Dimensions of the Work zone and street improvements.
7. Advance warning signs.
8. Delineators
9. Lighting, for night time work
10. Portable Changeable Message signs (PCMS)

Should street closures be performed, the Contractor shall use water-filled barriers to block incoming traffic. The addition of water in the water-filled barriers shall be optional. The Contractor shall properly dispose of water.

Prior to commencement of paving operations, Contractor shall prepare and submit a TCP detailing the phasing and paving operations for all the streets in the project. The TCP shall be approved by the Engineer and shall include, but not limited to the following:

- Dates of paving operations
- Map of streets coded for each phase of work
- Adjacent on-street parking available for residents and businesses
- List of equipment, materials, and labor
- "Temporary No Parking" notifications
- Verify surface is drivable prior to opening street
- Maintain cleanliness of street
- Remove all loose aggregates
- Identify trades within each work area

601-2.3 Payment.
This subsection shall be replaced with the following:

Full compensation for conforming to the requirements for Traffic Control, including preparing Traffic Control Plans, creating and revising permit applications, acquiring an approved permitted traffic control permit, furnishing all labor, tools, equipment, materials and incidentals required for doing all the work involved in all temporary traffic control related work involving placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of traffic control system, complete in place, all associated temporary signing and striping; placing temporary asphalt concrete paving as necessary to facilitate traffic control for the project, to accommodate rerouting of both vehicular and pedestrian circulation; flashing arrow signs; portable changeable message signs (PCMS); flagging and/or flagger costs; and project notifications, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Payment for this item shall be made at the contract Lump Sum (LS) bid price for **TRAFFIC CONTROL** and shall include preparing and implementing traffic control plans, including furnishing, installing, maintaining and finally removing any necessary traffic control including wayfinder signs for pedestrians, temporary railings/barricades where required, temporary traffic signage, striping, detours, road closures, lights, fences, flares, temporary paving, flashing arrow signs, PCMS, flagging, and such other items and services shown on the plans and/or as are necessary to adequately safeguard the public from hazard and unnecessary inconvenience. All such work shall be as provided herein, and/or directed by the Engineer. Payment will be made on a pro-rata basis of the price bid and will be paid with each payment application based on the value of work completed.

601-3 TEMPORARY TRAFFIC CONTROL (TTC) ZONE DEVICES
601-3.1 General
This subsection shall be supplemented by the following:

All traffic control devices, signs, barricades and delineators shall be as specified in the "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways" issued by the State of California Department of Transportation and in accordance with Part VI of the current CA MUTCD.

Portable delineators (traffic cones are not allowed) shall be spaced as necessary for proper delineation of the travel way. The spacing between delineators shall not exceed 50 feet. The minimum lane transitions shall be a 50 to 1 taper unless otherwise shown on the approved TCPs.

The Contractor shall provide and maintain all temporary traffic control devices, signs, barricades,

pedestals, flashers, delineators and other necessary facilities for the protection of the public, including motorists and pedestrians within the limits of the construction area. The Contractor shall post proper signs to notify the public regarding detours and condition of the roadway in accordance with the provisions of the California Vehicle Code and current State of California Department of Transportation Manual of Traffic Controls. If any traffic cones or portable delineators are damaged, displaced or are not in an upright position, from any cause, said cones or portable delineators shall immediately be replaced or restored to their original location, in an upright position by the Contractor at no additional cost to the City.

601-3.4 Operation and Maintenance
This subsection shall be supplemented by the following:
The Contractor shall keep the areas adjacent to the project site clear of any objects that may be hazardous to motorists and pedestrians.

The Contractor shall maintain a 24-hour emergency service to remove, install, relocate, and maintain warning devices and shall furnish to the City names and telephone numbers of three persons responsible for this emergency service. In the event these persons do not promptly respond when notified, or it becomes necessary to call other forces to accomplish emergency service, the Contractor will be held liable for any costs incurred.

The Contractor shall furnish such flagmen as are necessary to give adequate warning to traffic or to the public of any dangerous conditions to be encountered. Flagmen, while on duty and assigned to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof shall perform their duties and shall be provided with the necessary equipment in accordance with the current “Instructions to Flagmen” of the Department of Transportation. The equipment shall be furnished and kept clean and in good repair by the Contractor at his expense.

Should the Contractor appear to be neglectful or negligent in furnishing warning and protective measures as provided, the Engineer may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the Contractor at his expense. Should the Contractor fail to furnish sufficient precautionary traffic control devices within one (1) hour after notification by the City, the City shall place the necessary items or personnel and the Contractor shall be billed for said items or personnel.

Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety or abrogate his obligation to furnish and pay for these devices.

Payment for as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

601-3.5 Signs and Signage.
This subsection shall be supplemented by the following:

The Contractor shall post “Temporary No Parking – Tow Away” signs (even if streets have posted “No Parking” signs) along the streets during each working day at least 48 hours prior to start of restriction, excluding holidays, Saturdays, and Sundays before commencing any road work. All signs shall include the following code reference:

- **“California Vehicle Code (CVC) §22651(l)”**

This section of the CVC authorizes the removal of vehicles illegally parked in areas designated for street cleaning, repair, construction, or installation of underground utilities, provided that signs giving notice of potential removal are erected or placed by the local authority at least twenty-four (24) hours prior to removal.

The Contractor shall submit a text of all signs and notices to the Engineer for approval before installation or distribution.
Payment for furnishing and installing signs as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

601-3.7 Traffic Sign Enhancement Devices
601-3.7.5 Portable Changeable Message Signs (PCMS)
This subsection shall be supplemented by the following:

PCMS shall be furnished, placed, operated and maintained as designated by the Engineer in conformance with the provisions in Section 12-3.32, "Portable Changeable Message Signs," of the State Standard Specifications and these Special Provisions. The Contractor shall furnish two (2) solar-powered PCMS for this Project. PCMS shall be in place two (2) weeks prior to start of construction as directed by the Engineer.

The Engineer shall determine the exact message wording and location. The Contractor may be required to update the changeable message daily, depending on the type of work performed. The Contractor shall be responsible for maintaining, relocating, programming, and re-programming the PCMS as specified and as directed by the Engineer.

Approximate locations of the PCMS are as follows:

- Begin & End Limits of **[INSERT PREFERRED PCMS LOCATION]** (Total of 2)
- Begin & End Limits of **[INSERT PREFERRED PCMS LOCATION]** (Total of 2)
- Add more as needed.

Primary message before commencement of construction shall be:

SCREEN 1	SCREEN 2	SCREEN 3
ROAD WORK STREET 1 AT STREET 2	MONTH XXX TO MONTH XXX	EXPECT DELAYS

Primary message during construction shall be:

SCREEN 1	SCREEN 2	SCREEN 3
ROAD WORK STREET 1 AT STREET 2	MONTH XXX TO MONTH XXX	USE ALTERNATE ROUTE

The Contractor shall take pictures and document implementation of use of PCMS. Pictures and documentation shall be provided to City and filed with project documents.

Payment for furnishing, placing, updating and maintaining PCMS as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

601-3.7.6 Flashing Arrow Signs
This subsection shall be supplemented by the following:

Each flashing arrow sign shall be solar-powered, mounted on a truck or trailer and shall be capable of operating while the vehicle is moving or as directed by the Engineer.

Signs mounted on the cab of a truck shall be mounted to provide a minimum of 7 feet clearance between the bottom of the sign and the roadway. Signs mounted on a trailer, or on anything other than the cab of a truck, shall be mounted to provide a minimum of 8 feet clearance between the bottom of the sign and the roadway.

The total weight of trailer mounted flashing arrow sign including the trailer, sign, power source and other components shall not exceed 1,500 pounds and the height of the level trailer bed shall be no higher than 21 inches above the roadway. The trailer shall be equipped with a minimum of 3 leveling jacks.

Electrical energy, to operate the sign, shall be obtained from the vehicle on which the sign is mounted. The supply of electrical energy shall be capable of operating the sign in the manner specified. The electronic circuitry shall provide between 30 and 45 complete operating cycles of the sign per minute in each of the modes specified.

Alternative types of lamps may be used in flashing arrow signs if visibility is equal to the specified lamps. Each Type AX flashing arrow sign shall be a minimum of 2 feet high and 4 feet wide and shall be furnished with flat black enamel. A minimum of 13 No.4414AX 12-volt, yellow or amber lamps shall be installed in the panel. The lamp configuration shall be for 3 arrowheads or an arrow shaft with 2 arrowheads, one pointing in each direction on the face of the sign with a minimum of 5 lamps forming each arrowhead. Each lamp shall be provided with a visor.

The lamp shall be activated by a switch on a control panel and shall be controlled by electronic circuitry to provide a minimum of 4 selectable modes of operation as follows:

Pass Left Mode - Sequencing of lighted arrowheads or sequencing the lamps forming the arrow shaft and arrowhead to the left or a flashing left arrow with the lamps in the arrow shaft and arrowhead flashing on and off simultaneously.

Pass Right Mode - Sequencing of lighted arrowheads or sequencing the lamps forming the arrow shaft and arrowhead to the right or a flashing right arrow with the lamps in the arrow shaft and arrowhead flashing on and off simultaneously.

Simultaneous Mode - Either the outside arrowheads pointing in opposite directions are continuously illuminated, except for the center lamp forming each arrowhead, while the arrow shaft lamps flash on and off simultaneously or the outside arrowhead pointing in opposite directions and the arrow shaft lamps all flash simultaneously to indicate passing on either side.

Travel Mode - Travel or caution mode shall flash in a manner not resembling any other mode.

Payment for furnishing and installing flashing arrow signs as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

601-4 TEMPORARY TRAFFIC STRIPING AND PAVEMENT MARKINGS

601-4.1 General

This subsection shall be supplemented by the following:

The Contractor shall provide temporary delineation as directed/approved by the Engineer. Temporary delineation shall include sandblasting of conflicting markings; installation and removal of temporary centerlines or lane lines, detour signing, barricading; and replacement of traffic lines and markings in their proper locations upon termination of the detour. Conflicting existing and temporary striping, as required for traffic control during construction, shall be removed by the Contractor by using wet nozzle sandblasting methods with immediate clean-up of residues. Blacking out pavement markings shall not be allowed. Temporary reflective striping tape may be used, except that it shall not be applied to final asphalt surfaces. Said tape shall be removed from temporary surfaces prior to placement of additional asphalt.

Payment for furnishing, installing and maintaining temporary striping and pavement markings as specified in this section shall be included in the Contract Unit Price per LUMP SUM (LS) for TRAFFIC CONTROL and no additional compensation shall be allowed therefor.

601-5 TRAFFIC LANE WIDTHS AND CLEARANCES

601-5.1 General

This subsection shall be supplemented by the following:

There shall be a minimum of three (3) feet clearance from open excavations and one (1) foot from other obstructions (curbs, k-rail, etc.). All lanes shall be open to traffic during non-working hours. AC cold milling and paving work in any one intersection shall be performed continuously until said work is complete. Work shall not be allowed to proceed on to a second intersection until said work is complete at the first intersection, nor shall any given intersection be subject to multiple separate “move-ins” that require lane closures and disruption to traffic. No two adjacent intersections shall be impacted by lane closures at the same time, regardless of the number of crews that the Contractor utilizes. Work by multiple crews at alternating intersections would be allowed.

The Contractor will not be allowed to excavate a larger quantity of area ("Localized Repair") than he can successfully repave in the same working day. No incomplete paving work will be allowed to remain during the hours designated as requiring "all" lanes open to traffic, except in specific instances in which a minor amount of area can safely be covered by approved means with nonskid steel plates, capable of carrying HS20 (AASHTO) wheel loading, or patched with temporary AC to bring the excavation up to grade. Said temporary AC shall be ground down to permanent AC sub-grades and approved by the Engineer prior to placement of additional permanent AC.

Excavations of less than four (4) feet in width may be covered with non-skid steel plates capable of carrying HS20 wheel loading over the span of the excavation. Plates shall have a minimum width equal to the excavation width plus 24 inches and be securely fastened to the street surface. Asphalt fillets, a minimum of six (6) inches wide shall be placed around the perimeter of the plate. When traffic is transferred to any type of temporary pavement surface, good drivability of the

surfaces shall be maintained and shall be subject to approval by the Engineer prior to allowing traffic to be transferred upon it.

601-6 COVERING OF EXISTING TRAFFIC SIGNS AND SIGNAL FACES

601-6.1 General

This subsection shall be supplemented by the following:

Where construction detours and signing conflict with existing signing, the Contractor shall cover existing signs in a manner approved by the City Engineer or his/her designee. The Contractor shall provide temporary traffic re-striping at the conclusion of each working day, if not sooner as directed by the City Engineer or his/her designee, for any centerline, painted median or lane line which is obliterated by construction

TECHNICAL PROVISIONS

SECTION 700 – STREET LIGHTING AND TRAFFIC SIGNAL SYSTEMS

Delete the entire section and replace with the following:
All equipment, materials, and components for street lighting and traffic signals, and the installation thereof, shall conform to the Caltrans Standard Plans and Standard Specifications, Division X, "Electrical Work", 2018 edition, except as noted in the Special Provisions and on the Plans. These Plans and Specifications are hereinafter referred to as State Standard Plans and State Standard Specifications. Copies of these documents are available from the Caltrans online at:

https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications

86 – GENERAL (State Standard Specification References)

86-1.01 General

Furnishing and installing traffic signal and highway lighting systems, and payment shall conform to the provisions in Division X, "Electrical Work", of the latest edition Standard Specifications, amendments to the Standard Specifications, and these Special Provisions.

Location of Work
The following summarizes project limits:

Location
Pioneer Boulevard from 166th Street to Lakeland Road

86-1.01C Submittals

86-1.01C(1) General

Equipment Orders
The Contractor shall furnish all equipment and materials specified in the plan and these special provisions. All equipment shall be new and purchased by the Contractor for this project only.

The Contractor shall furnish the Engineer written statements from vendors stating that they have accepted the order for the said equipment within twenty-one (21) calendar days of the date that the City of Norwalk awarded this contract. Delay in equipment delivering shall not be considered as justification for the suspension of the construction contract.

In addition to the liquidated damages set forth elsewhere in these contract documents, the Contractor shall pay to the City of Norwalk the sum of $250 same as project LD per day for each and every calendar day delay in receiving all of the below listed equipment, onto the job site or the contractors storage facility, and available for installation, within one hundred (100) calendar days of the contract award.

Shop Drawings
All equipment and hardware supplied by the Contractor must be reviewed approved by the City,

the Engineer, or designated personnel for review and approval prior to ordering. Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, product sheets, and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the work. The Contractor shall review, stamp with its approval, and submit for review by the City, the Engineer, or designated personnel, electronic copies (PDF format is preferred) of shop drawings for the following items including, but not limited to:

1. Portland Cement Concrete mix for: pedestrian ramps, cabinet foundations, and pole foundations
2. Truncated Domes
3. Signs and Mountings (for signal mast arms)
4. PVC Conduit
5. HDPE Conduit
6. Tracer Wire
7. Pull Tape
8. Fiber Optic Cables
9. CAT6 Cables (Outdoor Rated)
10. Pull Boxes (No. 6 and No. 6E)
11. Splice Vault (Type N40)
12. Splice Closures, Splice Enclosures, and Splice Trays
13. Fiber Distribution Units (FDU)
14. Fiber Patch Panels
15. Fiber Optic Connectors
16. Ethernet Switches (Edge, Aggregate at the HUB, Core at the TMC)
17. SFP Modules
18. Traffic Signal Poles
19. Conductors
20. Signal Heads
21. Pedestrian Heads
22. Luminaires (LED)
23. Audible Pedestrian Signals (APS) / Pedestrian Push Buttons (PPB)
24. Type P-44 Traffic Signal Cabinets
25. Communication Hub Cabinets
26. Service Cabinet Enclosures
27. Illuminated Street Name Signs (IISNS) LED Type
28. Video Detection Systems (VDS)
29. Advanced Transportation Controllers (ATC) and software (Econolite Cobalt ATC with the latest OS software)
30. Malfunction Monitoring Units (MMU) IP Type

Drawings shall show the name of the project, project number, the name of the Contractor, and, if any, the name of suppliers, manufacturers, and subcontractors. Show drawings shall be submitted with promptness and in orderly sequence so as to cause no delay in prosecution of the work. Drawings shall be submitted electronically (PDF format is preferred) on 8-1/2” by 11” or 11” by 17” sheets. By submitting shop drawings, the Contractor represents that materials, equipment, and other work shown thereon conform to the plans and specifications, except for the deviations set forth in the letter of transmittal. Within twenty **(20) days** after receipt of said drawings or sooner, the City, the Engineer, or designated personnel will return electronic drawings to the

Contractor with its comments noted thereon. For response to comments and resubmittals: The Contractor shall correct the drawings and resubmit them in the same manner as specified for the original submittal. The Contractor shall direct specific attention in the letter of transmittal accompanying resubmitted shop drawings to revisions other than the corrections requested by the City, the Engineer, or designated personnel on previous submittals. No portion of the work requiring a shop drawing submittal shall be commenced until the submittal has been reviewed by the City's representative and returned to the Contractor with a notation indicating that resubmittal is not required. The review by the City, the Engineer, or designated personnel is only of general conformance with the design concept of the project and general compliance with the plans and specifications, and shall not be construed as relieving the Contractor of the full responsibility for providing materials, equipment, and work required by the Contract; the proper fitting and construction of the work; the accuracy and completeness of the shop drawings; selecting fabrication processes and techniques of construction; and performing the work in a safe manner. These items represent the minimum and additional may be requested by the City, the Engineer, or designated personnel. In addition, the shop drawing submittals shall conform to the provisions in Section 5-1.23, "Submittals", of the State Standard Specifications and these Special Provisions.

Warranties, Guaranties, Instruction Sheets, and Manuals
Warranties, guaranties and instruction sheets shall conform to these Special Provisions.

1. LED modules shall have five (5) years of manufacturer warranty.
2. Edge Lit LED internally illuminated street name sign shall have two (2) year of manufacturer warranty.
3. All other equipment and systems shall have at least one (1) year of manufacturer warranty.

Furnish the manufacturer's standard written warranty pertaining to defects in materials and workmanship for all equipment, and two (2) sets of user, operation, and maintenance manuals, written in English, on all equipment and components for the traffic signal and highway lighting system to the Engineer.

Schedule of Values
Determine quantities required to complete work. Submit the quantities as part of the schedule of values.

Provide a schedule of values for each lump sum bid item.

Do not include costs for traffic control system in the schedule of values.

The schedule of values must include type, size, and installation method for:

1. Portland Cement Concrete mix for: pedestrian ramps, cabinet foundations, and pole foundations
2. Truncated Domes
3. Signs and Mountings (for signal mast arms)
4. PVC Conduit
5. HDPE Conduit
6. Tracer Wire
7. Pull Tape
8. Fiber Optic Cables
9. CAT6 Cables (Outdoor Rated)
10. Pull Boxes (No. 6 and No. 6E)

11. Splice Vault (Type N40)
12. Splice Closures, Splice Enclosures, and Splice Trays
13. Fiber Distribution Units (FDU)
14. Fiber Patch Panels
15. Fiber Optic Connectors
16. Ethernet Switches (Edge, Aggregate at the HUB, Core at the TMC)
17. SFP Modules
18. Traffic Signal Poles
19. Conductors
20. Signal Heads
21. Pedestrian Heads
22. Luminaires (LED)
23. Audible Pedestrian Signals (APS) / Pedestrian Push Buttons (PPB)
24. Type P-44 Traffic Signal Cabinets
25. Communication Hub Cabinets
26. Service Cabinet Enclosures
27. Illuminated Street Name Signs (IISNS) LED Type
28. Video Detection Systems (VDS)
29. Advanced Transportation Controllers (ATC) and software (Econolite Cobalt ATC with the latest OS software)
30. Malfunction Monitoring Units (MMU) IP Type

86-1.01C(3) LED Luminaires

LED Luminaires shall conform to the provisions in Section 86-1.01C(3) and Section 86-1.02K(2), "LED Luminaires" of the State Standard Specifications and these Special Provisions.

The Contractor shall furnish and install LED Luminaire, 151W, 120/277V, Model ARCH-M-PA2150-740-U-T2R-AP-10MSP-PR7-10X, manufactured by Cooper ARCH Archeon Medium Cobrahead Roadway Luminaire or approved equal.

Construction

- Heavy-duty die-cast aluminum housing and door
- Tool-less entry, hinged removable door for easy maintenance
- 3G vibration rated

Optics

- Choice of four patented, high efficiency AccuLED Optics
- Available in Type IIR, IIU, III, IV wide and V square wide the optics are precisely designed to shape the distribution maximizing efficiency and application spacing
- Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 2200K, 2700K,3000K, and 5000K CCT
- For the ultimate level of spill light control, an optional house side shield accessory is available and can be field or factory installed
- Optics are IP66 enclosure rated
- IDA Certified for 3000K CCT and warmer only.

Electrical

- 120-277V, 347V, or 480V 50/50Hz operation
- Standard 0-10V dimming
- 10kV/10kA common- and differential- mode surge protection available
- Ambient operating temperature from -40°C to 40°C; 50°C HA, high ambient, capability available
- Standard with three position tunnel type compression terminal block
- Greater than 98% lumen maintenance expected at 60,000 hours
- Replaces 150W to 400W HID
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected.

Mounting

- Four-bolt / two-bracket slipfitter with cast-in pipe
- stop and 2.5° leveling steps
- Fixed-in-place bird guard seals around 1-1/4" to 2"
- (1-5/8" to 2-3/8" O.D.) mounting arms)
- Optional 15" pole mount arm available with round pole adapter and mounting hardware included

Finish

- Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear

- Consult your lighting representative at Cooper Lighting Solutions for a complete selection of standard colors

Shipping Data

- Approximate Net Weight: 18 lbs. (8.16 kgs.)
- Effective Projected Area: 0.71 (Sq. Ft.)

Warranty

- Five year limited warranty, consult website for details. www.cooperlighting.com/legal
- Optional ten-year warranty, please see your CLS Streetworks sales representative for more information

86-1.01C(3) Payment

Payment for installing **LED Luminaires** shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87 – ELECTRICAL SYSTEMS

87-1 GENERAL

87-1.03 Construction

87-1.03A General [add the following]

Maintaining Existing and Temporary Electrical Systems

Keep existing electrical system or temporary replacement in working order during the progress of the work. Shutdown is allowed for alteration or removal of the system. Lighting system shutdown must not interfere with the regular lighting schedule. Notify the Engineer before performing work on the existing system.

If lane closures are specified, traffic signal system shutdowns must be limited to the hours allowed for lane closures.

The Department or local agency will:

1. Continue the operation and maintenance of existing electrical facilities
2. Continue to provide electrical energy to operate existing electrical facilities
3. Repair or replace existing facilities damaged by traffic

Verify location and depth of existing detectors, conduits, pull boxes, and other electrical facilities before using tools or equipment that may damage those facilities or interfere with an electrical system.

Notify the Engineer immediately if existing facility is damaged by your activities. Repair or replace damaged facility promptly. If you fail to complete the repair or replacement, promptly, the City will repair or replace and deduct the costs.

If the roadway remains open to traffic while an existing lighting system is modified:

1. Keep the existing system in working order
2. Make the final connection so the modified circuit is in operation by nightfall

Keep temporary electrical installations in working order until no longer required. Remove temporary installations as specified in these Special Provisions.

Scheduling of Work

The first order of work must be to place the order for the electrical equipment. Furnish the Engineer a statement from the vendor that the order for the electrical equipment has been received and accepted by the vendor. Submit the statement as an informational submittal.

Except service installation and service equipment enclosure, do not work above ground until all materials are on hand to complete the electrical work at each location. Schedule work to allow each system to be completed and ready for operation before opening the corresponding section of the roadway to traffic.

Traffic signals will not be placed in operation until the roadways to be controlled are open to traffic.

Lighting and traffic signals, including flashing operation, will not be placed in operation before starting the functional test period specified in section 87-1-01D(2).

Do not pull conductors into conduit until:

1. Pull boxes are set to grade
2. Metallic conduit is bonded and grounded

The initial traffic signal turn-on must be made between 9:00 a.m. and 2:00 p.m. Before the initial turn on, all equipment, including pedestrian signals, pedestrian push buttons, vehicle detectors, lighting, signs, and pavement delineation must be installed and in working order. Direct louvers, visors, and signal faces to maximize visibility.

Start functional tests on any working day except Friday or the day before a holiday. Notify the Engineer 48 hours before the start of a functional test.

Excavating and Backfilling

Dispose of surplus excavated material.

Removing and Replacing Improvements

Replace or reconstruct underlying material damaged by your activities. Replacement material must be of equal or better quality than the material replaced.

If a part of a square or slab of concrete sidewalk, curb, gutter, or driveway is broken or damaged, the entire square or slab must be removed and reconstructed.

Cut the outline of concrete sidewalk or driveway to be removed:

1. Using a power-driven saw
2. On a neat line
3. To a 0.17-foot minimum depth

Field and Functional Testing

Before starting functional testing, perform the following tests in the presence of the Engineer:

1. Continuity: Test each circuit for continuity.
2. Ground: Test each circuit for grounds.
3. Insulation Resistance: Perform insulation resistance test at 500 V(dc) on each circuit between the circuit and a ground. Insulation resistance must be 10 MΩ minimum on all circuits, except for inductive loop detector circuits that must have an insulation resistance value at least 100 MΩ.

The functional testing period must comply with Scheduling of Work section of these Special provisions.

Acceptance of new or modified traffic signal will be made only after all traffic signal circuits have been thoroughly tested.

Perform functional test to show that each part of the system functions as specified.
The conflict monitor unit shall be tested in the field before signal turn on.

Functional test for each new or modified system must include at least 5 business days of continuous, satisfactory operation. If unsatisfactory performance of the system occurs, the condition must be corrected and the system retested until the 5 business days of continuous, satisfactory operation is obtained.

87-1.03B Conduit Installation

87-1.03B(1) General

Conduit shall conform to the provisions in Section 86-1.02B, "Conduit and Accessories", of the Standard Specifications and these Special Provisions.

Conduits shall be Type 3, **Schedule 80** Polyvinyl Chloride (PVC) conforming to UL Publication 651 requirements for Rigid Non-Metallic Conduit, for underground installation only.

Where High Density Polyethylene (HDPE) conduit is required per plan. HDPE shall be the smooth wall type packaged in continuous lengths for fast installation with minimal joints. HDPE conduit shall conform to ASTM D1248, D3035 and NEMA standards publication TC- 2, TC-7.

Galvanized rigid steel conduit shall be used for bridge crossings, and conduit entering foundations only, as shown on project plans. Galvanized rigid steel conduit shall be the rigid metallic type with zinc coating meeting the testing requirements established by ASTM Designation: A239.

HDPE conduit shall have the following characteristics:

3” diameter, Schedule 80 HDPE, Grey in color
Manufactured from flexible HDPE, makes gradual bends without special equipment
Continuous lengths reduce joining costs
Smoothwall, NEMA TC-7

Outstanding long term cable protection from shifting ground, rock and root impingement
Provides a permanent pathway, simplifies future cable repairs or replacement
UL Listing Available from ½" - 6" for SDR 13.5, SCH 40 and SCH 80

Conduits are required for traffic signal and fiber optic cable installations.

Conduit depth shall not exceed 60 inches below finish grade.

Conduit size shall be 2 inches minimum unless otherwise specified. New conduit shall not pass through foundations or standards.

Conduit bends shall be factory bends. Bend radius for signal interconnect conduits shall be 3 feet minimum.

A pull rope and a bare #12 AWG wire shall be installed in conduits intended for future use.

Bell bushings are required for all conduit ends. The ends of conduits terminating in pull boxes and controller cabinets shall be sealed with sealing compound approved by the Engineer after conductors have been installed.

Conduits shall be installed via jacking or drilling method per Section 87-1.03B(5), "Conduit Installation by the Jack and Drill Method", of the Standard Specifications and as amended in these Special Provisions.

87-1.03B(5) Conduit Installation by the Jack and Drill Method

[Add the following paragraphs].

Installation by Directional Boring Method

All directional boring shall be in conformance with Caltrans Encroachment Permit Guidelines and Specifications for Trenchless Technology Projects – August 2018 - Horizontal Directional Drilling Installation Effective January 1, 2000. The following paragraphs in this section are portions of sections taken and amended for City application from the above noted Caltrans Guidelines and Specification for HDD Installations and is provided here for the Contractor's convenience.

Pre-Construction & Site Evaluation

The following steps should be undertaken by the contractor in order to ensure safe and efficient construction with minimum interruption of normal, everyday activities at the site.

1. Notify owners of subsurface utilities along and on either side of the proposed drill path of the impending work through USA alert (the one-call program). All utilities along and on either side of the proposed drill path are to be located.

2. Obtain all necessary permits or authorizations to carry construction activities near or across all such buried obstructions.

3. All utility crossings should be exposed using a hydro-excavation, hand excavation or other approved method (potholing) to confirm depth.

4. Construction schedule should be arranged so as to minimize disruption (e.g. drilling under railroad beds, major highways, and/or river crossings).

5. The proposed drill path should be determined and documented, including its horizontal and vertical alignments and the location of buried utilities and substructures along the path.

The size of excavations for entrance and exit pits should be of sufficient size to avoid a sudden radius change of the pipe, and consequent excessive deformation at these locations. Sizing the pits is a function of the pipe depth, diameter and material. All pits, over 5' in depth must be shored as required by OSHA regulations.

Walk the area prior to the commencement of the project and visually inspect potential sites. The following should be addressed:

1. When on City R/W establish whether or not there is sufficient room at the site for: entrance and exit pits; Horizontal Directional Drilling (HDD) equipment and its safe unimpeded operation; support vehicles; fusion machines; stringing out the pipe to be pulled back in a single continuous operation.

2. Establishing suitability of soil conditions for HDD operations (The HDD method is ideally suited for soft sub-soils such as clays and compacted sands. Subgrade soils consisting of large grain materials like gravel, cobble, and boulders make HDD difficult to use and may contribute to pipe damage).

3. Check the site for evidence of substructures such as manhole covers, valve box covers, meter boxes, electrical transformers, conduits or drop lines from utility poles, and pavement patches. HDD may be a suitable method in areas where the substructure density is relatively high.

Installation Requirements

Conduit runs are shown schematically in the desired locations. Field conditions at the time of construction may dictate minor changes to facilitate the Contractor’s work. Such minor changes will not constitute extra work. Actual installation shall be done in the most direct manner or as directed the Engineer, or designated personnel and the local agency.

For directional bore method, North American Society of Trenchless Technology (NASTT) Horizontal Directional Drilling (HDD) Good Practices Guidelines shall be used in all HDD operations. While performing Directional Drilling and Trenching Operations for the avoidance of existing utilities and below ground structures Common Ground Alliance (CGA) Best Practices shall be followed. The Contractor shall also conform to Section 87-1.03B(5), “Conduit Installation by the Jack and Drill Method”, of the State Standard Specifications. Not all utilities or structures have been shown on the plans but those readily available through agency request have been identified to the best of our ability. Specific locations and field conditions are anticipated to change as these utilities are physically identified. It is the Contractors responsibility to use best practices when drilling for drilling fluid containment, clean up and disposal in accordance with all local and state laws and environmental practices. Daily clean-up of fluids and mud is expected during the project. All bore pits, trench dimension and backfill shall comply with the trench compaction requirements per the local agency standard “Trench Detail” requirements.

Any disturbance to the existing surface including, but not limited to roadway, landscape, and sidewalk shall be restored and/or replaced in kind per the local agency requirements. Restoration shall include, but not be limited to, the replacement of any damaged sidewalk, landscape planting, landscape irrigation systems, and pavement or pavement striping which is disturbed by the Contractor's operations in the course of work.

All existing surfaces, whether asphaltic or concrete, Portland Cement concrete, stamped concrete, decorative pavement, pavers, permanent fencing and barriers, landscape material such as turf, trees, shrubs, gravel, etc., or other, shall, after construction, be restored to a condition at least equal to that which existed prior to construction.

Contractor Responsibilities
The contractor should provide the following items: construction plan; site layout plan; project schedule; communication plan; safety procedures; emergency procedures; company experience record; contingencies plan and drilling fluid management plan.
Construction Plan Requirements

The contractor shall identify in the construction plan:

a) Location of entry and exit pits.
b) Working areas and their approximate size
c) Proposed pipe fabrication and layout areas.
d) Location of test pits or boreholes undertaken during the soil investigation.
e) Identify the proposed drilling alignment (both plan & profile view) from entry to exit.
f) Identify all grades and curvature radii.
g) Confirm the minimum clearance requirements of affected utilities and structures.
h) Required minimum clearances from existing utilities and structures.
i) Diameter of pilot hole, number and size of pre-reams/backreams.
j) Crew experience.
k) Type of tracking equipment.

Locating and Tracking

Locating and Tracking of the Reamer During The Backreaming Process Ii Required.

The contractor shall describe the method of locating and tracking the drillhead during the pilot bore. Systems include walkover, wireline, or wireline with wire surface grid. The locating and tracking system shall be capable of ensuring the proposed installation can be installed as intended.

Typical walkover sounds have an effective range of 30 to 50 feet depending on the Electromagnetic properties of the soil and the extent of local magnetic interference. Depending on the profile of the borehole, the driller may lose contact with the sound over certain sections of the alignment. If the "blind" section is expected to be too long or in the vicinity of a buried object, the project engineer may specify the use of a wire-line system or a magnetic navigation tool.

The locating and tracking system shall provide the following information:

- Clock and pitch information
- Depth

- Beacon Temperature
- Battery Status
- Position (x,y)
- Azimuth – where direct overhead readings (walkover) are not possible.

Site Restoration and Post Construction Evaluation

1. All surfaces affected by the work shall be restored to their pre-construction conditions. Performance criteria for restoration work will be similar to those employed in traditional pen excavation work.

2. If required, the contractor shall provide a set of as-built drawings including both alignment and profile. Drawings should be constructed from actual field readings. Raw data should be available for submission at any time upon request. As part of the "As-Built" document the contractor shall specify the tracking equipment used, including method or confirmatory procedure used to ensure the data was captured.

Open Trench Installation

All open trench and excavation operation shall conform to the local agency standard "Trench Detail" requirement, including the trench details shown on plans and per local agency standard plans or drawings, and these Technical Specifications.

All conduit runs shall be installed by approved boring, jacking or drilling methods.

Trenching shall only be allowed as authorized by the Engineer, or designated personnel and the local agency. After two failed attempts to directional bore conduit, due to rock or other unavoidable obstructions, as verified by the Inspector; the Contractor may use Section 87-1.03B(6), "Conduit Installation by the Trenching-In-Pavement Method", of the State Standard Specifications or the local agency standard "Trench Detail" requirements as approved by the Engineer, or designated personnel and the local agency.

PVC conduit shall be installed in open trenches and in pavement trenches whose edges have been sawcut, except in the vicinity of pull boxes or splice vaults where it may be bored in pre-drilled, augured or air-blown holes. Generally, trenches should be a minimum four inches wide. Where trenching occurs within Portland Cement Concrete, a 24-inch wide section of roadbed whose edges have been sawcut shall be removed.

Any disturbance to the existing surface including, but not limited to roadway, landscape, and sidewalk shall be restored and/or replaced in kind per the local agency requirements. Restoration shall include, but not be limited to, the replacement of any damaged sidewalk, landscape planting, landscape irrigation systems, and pavement or pavement striping which is disturbed by the Contractor's operations in the course of work.

All existing surfaces, whether asphaltic or concrete, Portland Cement concrete, stamped concrete, decorative pavement, pavers, permanent fencing and barriers, landscape material such as turf, trees, shrubs, gravel, etc., or other, shall, after construction, be restored to a condition at least equal to that which existed prior to construction.

Installation in Roadways

Communications conduit, and traffic signal conduits shall be installed at a consistent depth

throughout a block with minimum cover of 36 inches, unless otherwise specified on the Plans and per specified per agency requirement.

Where there is no gutter, the trench shall be at 36 inches from the existing or future curb face (which will accommodate the construction of a 24-inch wide gutter in the future), or as shown otherwise on the project plans. Removal and replacement of all pavement between the trench and the edge of the existing pavement shall be done at the discretion of the Engineer, or designated personnel and the local agency.

Asphalt concrete pavement resurfacing shall conform to each local agency standard “Trench Detail” requirement or applicable sections of the Greenbook Standard Specifications/Plans or the State Standard Specifications/Plans.

It is desirable to maintain a straight alignment. Routing of a conduit at a bus pad or at any other protrusions beyond the gutter edge must be approved by the Engineer, or designated personnel and the local agency. It should be noted that some installations might require locations in back of the curb. Locations where conduits are within one foot vertically and two feet horizontally from, or otherwise in conflict with, existing utilities will not be permitted.

All existing surfaces, whether asphaltic or concrete, Portland Cement concrete, stamped concrete, decorative pavement, pavers, pavement striping or other, shall, after construction, be restored to a condition at least equal to that which existed prior to construction per the local agency requirements. If surfaced is damaged to begin with, restore to a condition satisfactory of the agency.

Installation in Parkways/Sidewalks

All conduit installations in parkways either open trench or directional bore, shall have a minimum depth of 24-inch.

All existing improvements in parkways, including landscaping and sprinklers, shall be protected from damage or restored to pre-construction condition. Full compensation for this work shall be considered as included in the price bid for other items of work and no additional compensation will be allowed therefor.

Backfill

Backfill in pipe zone and bore pits shall be clean sand or pea gravel. The remaining backfill may be a one-sack sand-Portland Cement slurry mix or 3/4" crushed miscellaneous base (CMB) at the discretion of the Engineer.

All backfill shall comply per the local agency standard “Trench Detail” requirements and the Greenbook Standard Specifications for Public Works Construction.

Measurement

The measurement for conduit shall be in length feet on horizontal plane only, between two structures (such as foundations, pull boxes, splice vaults, etc.), and shall take into account of the bending radii and all additional length required within each structure. No additional payment is allowed for conduit bends (bending radii).

87-1.03B.1 Payment

Payment for installing conduit shall be considered as included in the various bid items associated Traffic Signal Modifications per location and in the **LUMP SUM (LS)** contract price paid including

full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Payment for installing conduit into existing pull box shall be considered as included in the various bid items associated Traffic Signal Modifications per location and in the **LUMP SUM (LS)** contract price paid including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Payment for connecting new and existing conduit, removing existing conductors, and installing conductors as indicated shall be considered as included in the various bid items associated Traffic Signal Modifications per location and in the **LUMP SUM (LS)** contract price paid including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

For all conduit with fiber optic cable:

Payment for furnishing and installing 3” schedule 80 HDPE conduit, pull tape, and tracer wire shall be paid at the Contract Unit Price per **LINEAR FOOT (LF)** including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Payment for furnishing and installing 2” and 3” schedule 80 PVC conduit, pull tape, and tracer wire shall be paid at the Contract Unit Price per **LINEAR FOOT (LF)** including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

For all conduit:
Compensation for furnishing and installing new bare #10 or #12 wire, Kevlar High Strength Conduit Measuring Tape, or pull rope shall be considered as included in the unit price per length foot for the installation of new conduit or the installation fiber optic cable as shown on plans, and no additional compensation will be made therefor.

Pull boxes and splice vaults shall conform to the provisions of Section 86-1.06C, "Pull Boxes", and Section 87-1.03C, “Installation of Pull Boxes”, of the State Standard Specifications and these Special Specifications.

Pull boxes shall have a “Fibrelyte” or equivalent cover and bolt down design. Cover shall have a non-skid surface.

Plastic pull boxes shall not be used. The pull boxes shown on the plans are to be installed as a

minimum. The Contractor may, at no additional cost to the City, install additional or larger pull boxes to facilitate the Contractor's work with the approval of the Engineer.

Pull boxes shall be No.6 unless noted otherwise on the construction plans. Pull box lids shall specify "TRAFFIC SIGNAL" on top of each for wiring and connections relating to the traffic signal operation. Pull boxes installed to accommodate the fiber optic cable installation shall specify “COMMUNICATION” on top. Pull box extensions shall not be required unless noted on the plans or as directed by the Engineer. All pull boxes shall be new.

No. 6E pull boxes shall be installed at locations adjacent to traffic signal cabinets (i.e. the "homerun" pull box).

Pull boxes shall be placed with their tops flush with surrounding finish grade or as directed by the Engineer.

Pull boxes shall be installed behind the curb or as shown on the plans and shall be spaced at no more than 500 feet intervals. The Engineer shall determine the exact locations.

Pull boxes shall not be installed in any part of a driveway, wheelchair access ramp or other traveled way.

[Add new subsection]
87-1.03C(4-3) Traffic Pull Boxes for Fiber

NO. 6 PULL BOX.

No. 6 Pull boxes shall conform to the provisions in the Caltrans Standard Specifications Section 86-1.02C and these Special Provisions. No.6 Pull boxes shall be pre-cast reinforced concrete with plastic lining.

No.6 pull boxes and shall have nominal dimensions of 36” long x 24” wide x 12” deep, unless otherwise noted on the Plans. The cover marking for each pull box shall read “COMMUNICATION”. Pull boxes shall be provided with locking mechanisms as specified in the Caltrans Standard Plans. An extension shall be provided if noted on plans (No. 6E pull box).

All pull boxes shall be located at locations shown on the Plans, or as directed by the Engineer. No pull box shall be located on the driveway apron or within one foot of any existing wheelchair ramp, or within 30 inches from any pole foundation unless approved by the Engineer.

No. 6 Pull boxes for fiber optic cable shall be spaced up to 500 feet apart, unless otherwise shown on the Plans.

Six (6) inches of clean crushed rock sump shall be provided at the bottom of the pull box prior to pull box installation. The bottom of the pull box shall be grouted prior to the installation of cables. The grout shall be between ½ inch and one inch in depth and shall be sloped towards the drain hole. The maximum thickness of the grout shall be one inch. A layer of roofing paper shall be placed between the grout and the crushed rock sump. A one-inch drain hole shall be provided in the center of the pull box through the grout and the roofing paper. Pull boxes shall be installed with lid and completely secured prior to any conductor or cable installation.

All conduit entering pull boxes or splice vaults for fiber optic cable installation shall be at a maximum of 45 degrees.

Where the sump of an existing pull box is disturbed or damaged by the Contractor's operations, the sump shall be reconstructed and, if the sump was grouted, the old grout shall be removed and new grout placed at the cost of the Contractor and not the City.

Backfill material shall not contain rocks graded larger than one inch.

Any existing improvements damaged by the Contractor shall be replaced per the Green Book at the cost of the Contractor and not the City.

FIBER OPTIC SPLICE VAULT (Type N40 PULL BOX)
Fiber optic splice vaults shall be a N40 Pull Box type with extension (8" to 12"), covers and splice vault extensions shall be Fiberlite/Polymer type. All splice vault lids shall be inscribed "COMMUNICATION". Fiber optic splice vault lids shall be Fibrelite/Polymer type, unless approved otherwise. All fiber optic splice vault lids shall include lid locking mechanisms, bolted type.

Contractor shall securely fasten each splice enclosure to the side of the vaults with a quick release fastener for maintenance or modifications including any miscellaneous cables and connections. All shall be outdoor rated, durable, and non-corrosive.

All conduit entering pull boxes or splice vaults for fiber optic cable installation shall be at a maximum of 45 degrees.

87-1.03C.1 Payment

Pull Boxes for Traffic Signal Modifications:
Payment for furnishing and installing No. 6 pull box, removing No. 6 pull box, furnishing and installing No. 6E pull box and installing pull box in existing conduit run shall be considered as included in the various bid items associated **Traffic Signal Modifications** per location and in the **LUMP SUM (LS)** contract price paid including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Pull Boxes for Fiber Optic Communications:
Payment for furnishing and installing No. 6 pull boxes including 45-degree conduit sweeps shall be paid at the Contract Unit Price per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary including restoration of PCC flatwork to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing No. 6E pull boxes including 45-degree conduit sweeps shall be paid at the Contract Unit Price per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary including restoration of PCC flatwork to perform the items of work and no additional compensation will be allowed therefor.

Payment for removing existing pull box/conduit sweeps and reconstructing sidewalk or matching existing surface, shall be paid at the Contract Unit Price per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary including restoration of PCC flatwork (or existing surface) to perform the items of work and no additional

compensation will be allowed therefor.

87-1.03D Battery Back-up System Cabinets

Battery back-up systems (BBS) shall conform to the provisions in Section 86-1.02Q(5), "Battery Backup System Cabinets", Section 87-1.01D(2)(c), "Battery Backup System", and Section 87-1.03D, "Battery Backup System Cabinets" of the State Standard Specifications and these Technical Specifications.

The battery back-up systems shall include the uninterruptable power supply (UPS) system control unit, batteries, cables, and cabinet (side-mounted) as shown on plans. The BBS unit shall be configured to run communication hub cabinet redundant power separate from the internal A/C unit.

The uninterruptable power supply (UPS) shall have a standard battery pack, capable of operating a full HUB cabinet location for over 2 hours at 700W (watts) output maintaining field ITS elements only. A typical intersection consuming 450W can be powered for approximately 4 hours. In Red-Flash operation, which consumes only about 300W, over 6 hours of backup is possible. These times assume fully charged batteries at the ambient temperature of 25°C.

The BBS cabinet shall be side mounted to the communication hub cabinets (Type 334L) and shall house the BBS unit and four (4) batteries. The BBS system shall not provide back-up power to the internal A/C unit inside the hub cabinet.

Operation
The uninterruptable power supply (UPS) shall be capable of producing a full regenerated and regulated, true sine wave power, with continuous AC outputs. There shall be a bypass box that provides the link between the utility power, the UPS power, and the loads.

The bypass box shall enable removal and replacement of the traffic UPS without shutting down the traffic control system (i.e. "hot swap" capability).

For Type 332/334 style cabinets, upon loss of power the Traffic UPS can actuate the existing Flash Transfer Relays (FTRs), Mercury Contactor (MC) or Railroad Preemption to allow the traffic control system to put the cabinet into Flash Mode operation.

Existing Flasher Modules and Flash Transfer Relays are utilized. The traffic UPS does not duplicate or take over flash operation or flash transfer relay functions.

The UPS provides continuous, fully regenerated, conditioned, regulated, sinusoidal (AC) power to selected devices such as signal controllers, counters, modems, communications hubs, NTCIP adapters, video equipment, etc.

To facilitate emergency crews and police activities, the traffic UPS shall be compatible with police panel functions (i.e. "Signals OFF" switch must kill power to the field wiring even when on UPS/Battery power). This will be determined on

Utility Voltage Windows and Battery Operation
The UPS operates on utility power if the utility voltage is between 75 and 155 VAC. When the utility falls below 75 VAC or climbs above 155 VAC the UPS shall operate from the batteries.

Description

The Traffic UPS shall consist of three major components, the UPS Power Module, the Bypass Box, and the Battery System.

The UPS Power Module consists of the following:

- True on-line, double conversion, pure sine wave, high frequency inverter utilizing IGBT
- technology
- Programmable LCD Display
- A DB9 RS232 and USB Type B connectors for remote signal alarms and true RS232 monitoring and remote communications
- Auxiliary Temp Sensor
- Multi-stage, temperature compensated battery charger

The bypass box shall be three-pole, double-throw switch that switches both hot and neutral lines to the UPS or cabinet.

The battery module shall be comprised of one or more strings of 4, 6 or 8 individual 12V batteries connected in series for a total string voltage of 48VDC nominal for SP1250LX-48 or 72VDC nominal for SP1250LX or 96VDC for SP2000LX.

The batteries shall be manufactured for extreme temperature, deep cycle, AGM/VRLA (Absorbed Glass Mat/ Valve Regulated Lead Acid) batteries that have been field proven and tested. The batteries supplied shall be certified to operate at extreme temperatures from –40°C to +74°C.

The batteries shall be provided with appropriate interconnect wiring harness. Optional battery mounting trays and brackets shall be available for selection by the Engineer.

The interconnect cable shall connect to the base module with a quick-release circular connector.

The UPS module shall include a charger that replenishes the Battery Pack whenever possible and required. This charger shall operate with a charging current of 0.6A. An Optional Fast Charger shall be available, which operates with a charging current of up to 3.5A.

Mounting/Configuration

NEMA Style: mounting method shall be shelf-mount or wall-mount, as indicated on the plans. In Type 332/334 Style Cabinets: The mounting method is 19” rack-mount. Shelf angles or rails, typically supplied by others, are available as optional accessories.

Battery construction shall be heavy-duty, with inter-cell connections for low-impedance between cells, and heavy-duty plates to withstand shock and vibration.

UPS Specifications

The specifications of the UPS system are provided in the following tables.

Electrical Specifications	
Input Specification	
Nominal Input Voltage	120 VAC, Single Phase
Input Voltage Range	75 VAC to 155 VAC
Input Frequency	45 to 65 Hz (+/-5%)
Input Configuration	3 Wire (Hot, Neutral & Ground)
Input Protection	Input breaker 20 amps, SP2000LX 30A
Output Specification	
Nominal Output Voltage	120 VAC, Single Phase
Power Rating	1.25 KVA (1250VA/875W), 2 KVA (2000VA/1400W)
Output Voltage Regulation	+/-4% for 100% step load change and from High battery to Low battery condition
Output Frequency	50 or 60 Hz (+/-.5%) unit not in sync.
Output Configuration	3 Wire (Hot, Neutral & Ground)
Output Wave Form	True Sine wave
Overload capability	110% for 10 minutes 200% for 50 milliseconds 2k PLUS 160% for 10 seconds
Fault clearing	Current limit and automatic shutdown
Short circuit protection	Current limit and automatic shutdown
Efficiency	85% at full load (on utility)
Load Power Factor	.7 lagging through unity to .7 leading

Physical Specifications, UPS Electronics Module	
Dimensions	Width = 19”, Depth = 10”, Height = 3.5”
Weight	UPS: 15 lbs., Shipping weight: 20 lbs.
Physical Specifications, Bypass Box	
Dimensions	Width = 7”, Depth =2.5”, Height =4.5”
Weight	Bypass Box: 5 lbs., Shipping weight: 5 lbs.
Environmental Specifications	
Temperature	- 40°C to +74°C
Design	
Standard Features	Power factor corrected input Fully regenerative True on-line continuous power Low distortion sine wave output Designed for non-linear loads Extended brownout protection

Physical Specifications, UPS Electronics Module	
	EIA/RS232 data interface
Certifications	IEEE 587/ANSI C62.4 IEC 555 @ 120 VA NEMA
Typical Recharge Time (to 85% capacity @ 100% load)	48-72 hrs.
Control and Indicators	
Switches / Control Panel	System power Cold start Test Alarm silence Four line LCD display panel
Alarms	Utility interrupt Inverter failure Overload Low battery Self-test
Intelligent Computer Interfaces	Serial interface for EIA 232 1 each DB9-F (RS232 and signal interface pins) and 1 each USB Full interactive remote computer monitoring and control of most features including load control (requires optional monitoring software) NTCIP and TCP/IP ready
Contact Closures	"D" connector Open collector Others per manufacturer specifications
Battery Specifications	
Temperature	- 40°C to +74°C
Ampere-Hour ratings	(see table below)
Hydrogen gas emissions	Meets Mil-Spec #MIL-B-8565J

Typical Battery Runtime Specifications, Wattage, Weight, and Dimensions									
		Estimated Runtime (Per set @ 77°F / 25°C) (New Batteries, fully charged)				Unit Weight (lb)	Overall Dimensions Per Battery (in)		
No. of Batteries	Volts/ A-hrs.	300 Watts	500 Watts	700 Watts	875 Watts		Length (in)	Width (in)	Height (in)
*Set of 6 Batteries	12VDC/ 41 AH	6.4 Hrs.**	3.5 Hrs.**	2.4 Hrs.**	1.7 Hrs.**	29	7.68	5.15	7.9
*Battery sets, with six (6) batteries per set, that are wired in series, shall provide 72 VDC.									
** Actual times may vary, runtimes are dependent on many factors.									

Communications, Controls & Diagnostics

UPS System shall be supplied with TCIP/Ethernet interface.

Front Panel controls shall include Power ON, Cold (DC) Start, Alarm Silence, Battery Test, Bypass Circuit Breaker, and DC/Battery Circuit Breaker.

Existing Battery Backup Systems (BBS)
Contractor shall relocate existing BBS assembly onto new cabinet as shown on plans. The existing BBS includes, but not limited to, the uninterruptable power supply (UPS) system control unit, batteries, cables, and cabinet (side-mounted) as shown on plans. Contractor shall connect the existing BBS to the new cabinet equipment and provide all cables and connectors as necessary to provide a fully operational system. Contractor shall test the existing BBS prior to relocation to confirm that it is functional and in operations. After relocation, the Contractor shall test the existing BBS to confirm that it is fully functional and in operations to the satisfactory of the local agency representative.

87-1.03D Payment

Payment for furnishing and installing the battery back-up systems shall be considered in the unit contract price paid per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing the battery back-up systems shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer be considered as included in the various items associated with the work. No additional compensation will be allowed therefor.

Payment for relocating the battery back-up systems shall be considered in the unit contract price paid per each bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-1.03E(3) Concrete Pads, Foundations, and Pedestals

Traffic Signal Foundations
Foundations shall conform to the provisions in Section 87-1.03E (3), "Concrete Pads, Foundations, and Pedestals", of the Standard Specifications and these Special Provisions.

Contractor shall locate all standards, conduits, and cabinets in the field prior to procuring the equipment. Contractor shall obtain City approval for exact equipment locations prior to final placement.

Contractor shall pothole all new traffic signal mast arm pole foundation locations prior to determine there are no utility conflicts prior to ordering the poles. The Contractor shall provide potholing reports of each location to the Engineer for review and approval prior to ordering the poles.

Contractor shall sawcut any PCC locations for potholing purposes.

All potholing required for utilities shown or not shown on the Plan shall be the responsibility of the contractor and cost for same shall be included in the contract bid price.

Reinforced CIDH concrete pile foundation must comply with section 56-3, except:

1. Dispose of material resulting from drilling holes under section 87-1.03E
2. Concrete for CIDH concrete piles will not be considered as designated by compressive strength

Concrete must contain not less than 590 pounds of cementitious material per cubic yard.

For standards and poles located in sidewalk areas, the pile foundation must be placed to final sidewalk grade before the sidewalk is placed. The top 4 inches must be square shaped.

Construct Type P controller cabinet foundation per dimensions in Standard Plans ES-3C, except height shall be 18” measured from the finished surface.

Vibrate all foundation concrete to eliminate air pockets.

87-1.03E(3).1 Payment

Payment for concrete pads, foundations, and pedestals shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved, complete in place as shown on the contract documents, as specified in the Standard Specifications, and these Special Provisions, and as directed by the Engineer be considered as included in the various items associated with the work. No additional compensation will be allowed therefor.

87-1.03F Conductors and Cable Installations

87-1.03F(1) General

Conductors and Cables shall conform to the provisions in Section 86-1.02F, "Conductors and Cables", of the Standard Specifications and these Special Provisions.

Specific cabling and wiring requirements for various systems or components shall be in accordance with the Special Provisions entitled to each herein.

Signal cable shall be installed continuously without splicing from the controller cabinet to each traffic signal pole. Traffic signal conductors, multiple circuit conductors, and signal cable conductors shall not be spliced unless otherwise shown.

All outer cable jacket for 12 conductor cable shall be removed from the traffic signal standard hand-hole to the terminal block located at the side mount traffic signal head.

Where splice is required, Type C or Type T splice shall be used and insulated as shown in the Standard Plans, ES-13A.

Where splice is required, “Liquid Electrical Tape” or equivalent in black color shall be used to provide a watertight electrical insulating coating with “Method B” as shown in the Standard Plans, ES-13A.

Minimum luminaire wiring shall be No. 10 AWG, including wiring within poles and mast arms.

Bonding and Grounding
Bonding and grounding shall conform to the provisions in Section 86-1.02F(1)(c)(ii), "Bonding Jumpers and Equipment Grounding Conductors", of the Standard Specifications and these Special Provisions.

Grounding jumper shall be attached by a 3/16 inch or larger brass bolt in the signal standard or controller pedestal and shall be run to the conduit, ground rod or bonding wire in the adjacent pull box.

Grounding jumper shall be visible after cap has been poured on foundation.

For equipment grounding jumper a No. 8 bare copper wire shall run continuously in all circuits except a No. 12 bare copper wire shall run continuously in conduits that contain only signal interconnect cable and/or loop detector cable.

Service Conductors for Type 334L Cabinets (Field Communication Hubs)
Electrical service for new Type 334L communication cabinets shall be provided by an existing service point to a proposed Type III-CF service enclosure as shown on project plans. These existing Type II/III service enclosures are used for the existing traffic signal controller cabinets and safety lighting. Therefore, the Contractor shall modify the service enclosure(s) and install the following:

- 3 - #8 AWG conductors from the existing service enclosure to proposed Type 334L communication hub cabinet. Service conductors shall be continuous from service to cabinet. Please note: the Contractor shall also furnish and install a 40A, 120V, 1 Pole service breaker inside the existing Type III or Type II service enclosures. See the “Electrical Service” section in these Technical Specifications for additional details and payment.

Payment for furnishing and installing 3 - #8 AWG conductors from service point to proposed Type 334L communication HUB cabinet (inside existing Type III service enclosure) as shown on plans shall be considered in the unit contract price paid per length foot including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-1.03F.1 Payment

Payment for furnishing and installing conductors and cables shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work. No additional compensation will be allowed therefor.

Payment for splicing new to existing shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work. No additional compensation will be allowed therefor.

Payment for installing 3 - #8 AWG conductors from service point to proposed Type 334L communication HUB cabinet (inside existing Type III service enclosure) as shown on plans shall be considered as included in the various items associated with the work including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

87-1.03J Standards, Poles, Steel Pedestals and Posts

Standards, poles, steel pedestals, and posts shall conform to the provisions in Section 86-1.02J, "Standards, Poles, Steel Pedestals and Posts", of the Standard Specifications and these Special Provisions.

Signal mast arms shall be installed in accordance with the "Signal Arm Connection Details" of the Standard Plans unless otherwise specified.

If required by the serving electric utility, and confirmed by the Engineer, State Certified Electric Workers shall be utilized for the installation of standards, steel pedestals, and posts in accordance with State of California High Voltage Safety Orders.

Contractor shall obtain City approval for exact equipment locations prior to final placement.

87-1.03J.1 Payment

Payment for “Standards, Poles, Steel Pedestals, and Posts” shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals

87-1.03P Service Equipment Enclosures

Electrical service shall conform to the provisions in Section 86-1.02P(2), "Service Equipment Enclosures", and Section 87-1.03P, "Service Equipment Enclosures", of the State Standard Specifications and these Special Provisions.

It shall be the Contractor’s responsibility to verify the location of and to make arrangements for and to pay for all costs to modify, as necessary, for the electrical service connections, as shown on plans.

The Contractor shall notify the Engineer, or designated personnel in writing at least 15 calendar days in advance of the date on which he desires any electrical service connections or disconnects to be made. The Contractor shall be entitled to no extension of time or other compensation for any delay to this operation resulting from his failure to give the prescribed notification.

Service for Type P Cabinets (Traffic Signal Controller Cabinets)

New Type III-BF Service Cabinets will be provided for the traffic signal system. The circuit breakers shall be installed as shown below for each meter. The Contractor shall furnish and

install new service enclosures at the locations shown on plans including circuit breakers, conductors, conduit, pull boxes, pull rope, and construction foundation.

Type III-BF Circuit Breakers for Meter

Circuit Breaker	Label	Meter	Service
100A, 240V, 2 Pole	Main Breaker	N/A	N/A
50A, 120V, 1Pole	Signal	1	TC-1
15A, 120V, 1 Pole	IISNS	1	TC-1
15A, 120V, 1Pole	IISNS PEC	1	TC-1
30A, 120V, 1 Pole	Lighting	1	TC-1
15A, 120V, 1 Pole	Lighting Control	1	TC-1
15A, 120V, 1 Pole	Spare	1	TC-1
15A, 120V, 1 Pole	Spare	1	TC-1

Service for Type 334L Cabinets (Field Communication Hubs)

New Type III-CF Service Cabinets will be provided for Hub cabinet systems only. The circuit breakers shall be installed as shown below for each meter. The Contractor shall furnish and install new service enclosures at the locations shown on plans including circuit breakers, conductors, conduit, pull boxes, pull rope, and construction foundation.

Type III-CF Circuit Breakers for Meter No. 1 (TC-1)

Circuit Breaker	Label	Meter No. 1	Service
100A, 240V, 2 Pole	Main Breaker	N/A	N/A
40A, 240V, 2 Pole	DMS Sign	1	TC-1
40A, 120V, 1 Pole	DMS Controller Cabinet	1	TC-1
15A, 120V, 1Pole	CCTV camera (or spare)	1	TC-1
15A, 120V, 1 Pole	Spare	1	TC-1
15A, 120V, 1 Pole	Spare	1	TC-1

Type III-CF Circuit Breakers for Meter No. 2 (LS-2)

Circuit Breaker	Label	Meter No. 2	Service
100A, 240V, 2 Pole	Main Breaker	N/A	N/A
40A, 240V, 2 Pole	Spare	1	LS-2
20A, 120V, 1 Pole	Spare	1	LS-2
15A, 120V, 1Pole	Spare	1	LS-2
15A, 120V, 1 Pole	Spare	1	LS-2
15A, 120V, 1 Pole	Spare	1	LS-2

Electrical service for new Type 334L communication cabinets shall be provided by an existing service enclosure as shown on project plans. These existing Type II/III service enclosures are used for the existing traffic signal controller cabinets and safety lighting. Therefore, the Contractor shall modify the service enclosure(s) and install the following:

- 40A, 120V, 1 Pole service breaker inside the existing Type III or Type II service

enclosures

- 3 - #8 AWG conductors from service enclosure to proposed Type 334L communication hub cabinet. Service conductors shall be continuous from service to cabinet. See the "Conductors and Cables" section in these Technical Specifications for additional details and payment.

The Contractor shall make arrangements with electrical utility company (SCE or IID) for installation and inspection of electrical service facilities during construction. Electrical utility company will furnish and install electrical service conductors.

All costs of all electrical energy utilized until the successful completion of the functional testing period(s) for new lighting and/or traffic signal systems shall be the Contractor's responsibility. Upon the successful completion of the functional testing period(s) the subsequent costs of all electrical energy utilized to operate the newly installed system shall be the responsibility of the City.

87-1.03P.1 Payment

Payment for furnishing, installing or modifying Type III-BF electrical service enclosure, cabinet, and foundation shall be considered in the unit contract **LUMP SUM (LS)** price paid per **Traffic Signal Modification location** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work. No additional compensation will be allowed therefor.

Payment for furnishing and installing 3 - #8 AWG conductors from service point to proposed Type 334L communication HUB cabinet and 40 amp service breaker (inside existing Type III service enclosure) shall be considered in the unit contract price paid per **EACH (EA)** bid item/Hub cabinet location including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing Type III-CF electrical service enclosure, cabinet, and foundation shall be considered in the unit contract price paid per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-1.03Q Cabinets

87-1.03Q(1) General

Controller Assembly

The Type P cabinet with Econolite Cobalt controller assembly and the Type 332 cabinet 2070LX controller assembly shall conform to the provisions in Section 86-1.02Q, "Cabinets", and Section 87-1.03Q "Cabinets "of the Standard Specifications and these Special Provisions.

All auxiliary equipment to be furnished shall be listed on the California Department of Transportation Qualified Products List.

A technician who is qualified to work on the controller assembly from the controller manufacturer or their representative shall install the auxiliary equipment and program the signal controller in accordance with the Engineer provided signal timing sheets, and to be present when the equipment is turned on.

Controller Unit

The contractor shall provide Econolite Cobalt ATC Traffic Controllers and 2070LX ATC Traffic Controllers. Installation in existing cabinets shall include any required cabinet and/or equipment modifications to maintain or update the operation as indicated on the plans or in these special provisions. This includes the associated modifications to existing and new cabinets to accommodate the fiber optic cable installations (added conduit in the foundation) and Ethernet switch components and connections. Contractor shall ensure the database and timing is converted from the existing controller to the new controller, and integrated to the City Centracs Advanced Traffic Management System (ATMS) at the City's Traffic Management Center located at the Norwalk Transit Building/Public Works Yard. Prior to delivery, testing shall be provided at the Econolite facility in Anaheim, CA.

For Type 332 style cabinets, the ATC units deployed on this project shall be Type 2070LX ATC units compatible with Type 332, Type 332L, Type 333L and 33X ATC style of cabinets. The ATC unit shall have an appropriate Type 1C module, field I/O module with parallel interface to 170/170E/2070 style cabinets, power supply and LED front panel module. Additionally, the type 2070 ATC unit shall support SDLC communications from a full function BIU and/or separate video detector processor capable of up to 64 channels of detection. This applies to the intersection of Pioneer Boulevard and 166th Street.

NEMA IP-capable Malfunction Monitoring Unit (MMU)

The Contractor shall furnish and install NEMA Malfunction Management Units (MMU) inside existing or new NEMA Traffic Signal Cabinets (shelf mount) at locations shown on plans.

The MMU shall be internet protocol (IP) capable and conform to the requirements of Section 4 of the NEMA TS2 Standard. Malfunction Management Units shall be a Type 16. The EDI Model MMU-16LEip or approved equal.

Contractor shall setup, configure, and test each MMU per traffic signal controller cabinet and operations including cables, connectors, and programming hardware and software per location.

NEMA MMU Features

A. NEMA TS2-2016 Standard: The MMU2-16LE SmartMonitor® meets all specifications of the NEMA Standard TS2-2016 for the MMU2 configuration while maintaining compatibility with NEMA TS1-1989 Assemblies.
B. NEMA Standard for Flashing Yellow Arrow PPLT: The MMU2-16LE SmartMonitor® supports MUTCD Flashing Yellow Arrow PPLT operation and meets / exceeds the NEMA Standard MMU2 requirements of TS2-2016 FYA, providing modes for both TS-2 or TS-1 cabinet configurations.
C. Standardized Communications: Real-time SDLC communications with the Controller Unit exchanges field input status, Controller Unit output status, fault status, MMU programming, and time and date.
D. Full Intersection & Status Display: Two high contrast, large area Liquid Crystal Displays (LCD) continuously show full RYG(W) intersection status. A separate graphic LCD provides a menu driven user interface to status, signal voltages, configuration, event logs, and the Help system.
E. Event Logging: A time-stamped nonvolatile event log records the complete intersection status as well as AC Line events, configuration changes, monitor resets, temperature and true RMS voltages.
F. Setup Wizard: Use the built-in Setup Wizard to configure the NEMA Enhanced settings of

the SmartMonitor® by answering a short series of questions regarding intersection design and operation.

G. Diagnostic Wizard and Help System: The Diagnostic Wizard automatically pinpoints faulty signals and offers trouble-shooting guidance. The integrated Help System provides context sensitive operational assistance.
H. TS-1 Type 12 with SDLC Mode: The MMU2-16LE SmartMonitor® can be configured to operate with the Port 1 SDLC function and Diagnostic Wizard enabled in a TS-1 twelve channel cabinet with no cabinet wiring changes.
I. Program Card Memory: Enhanced settings of the MMU2-16LE SmartMonitor® are stored in nonvolatile memory on the EDI Program Card. Moving the Program Card to another MMU2-16LE automatically transfers all settings.
J. Signal Sequence History Log: The five Signal Sequence History logs stored in nonvolatile memory graphically display up to 30 seconds of signal status prior to each fault event.
K. LEDguard®: This EDI innovative signal threshold technique can be used to increase the level of monitoring protection when using LED based signal heads.
L. EDI RMS-Engine: A DSP coprocessor converts AC input measurements to True RMS voltages, virtually eliminating false sensing due to changes in frequency, phase, or sine wave distortion.
M. ECcom PC Software: Access to the MMU2-16LE data is provided by the industry standard EDI ECcom Windows based software for status, event log retrieval, configuration, and data archival.

Type 334L Cabinets (Field Communication Hub Cabinets) with Air Conditioned (A/C) Unit Assembly

All proposed Type 334L cabinet with A/C unit assemblies shall conform to State Standard Specifications and Caltrans Standard Drawing Number ES-3C including conduit location, cabinet foundation and PCC sidewalk pad per “AC/PCC Pavement Trench/Pothole Restoration” section of these Technical Specifications. Construct controller cabinet foundation as shown for Type 334L cabinets, including furnishing and installing anchor bolts, install the controller cabinet on the foundation, and make field wiring connections to the terminal block in the controller cabinet. The Type 334L cabinet shall be appropriate for use in ITS environment to house the proposed fiber optic communication equipment.

At minimum, the Type 334L cabinet shall conform to the following:

Standard Features

- Insulated cabinet (doors, walls, and ceiling)
- Airtight seals
- 20 amp NEMA 5-20 receptacle for AC connection
- 30 amp circuit breaker
- Transient voltage & surge suppression filter
- Drawer / shelf combination

Cabinet Assemblies

- Service panel
- Police panel with signal “On/Off” and “Auto/Flash” switches, including two keys

General Specifications

- Dimensions: 67” H x 24” W x 30” D (rounded to the nearest inch)
- Material: 5052-H32 aluminum, 0.125” thick

- Finishes: Natural, powder coat (standard, anti-graffiti, and custom colors), anodized
- Access: Front door (1), back door (1), both full size
- Latching System: 3-point, choice of Corbin or Best locks
- Handles: 3/4" round, stainless steel, with padlock feature
- Door Stops: 90° (±10°), each door, top
- 90° and 180° (±10°), each door, bottom
- Rack Assembly: Removable 19" EIA rack
- Ventilation: Ambient air intake through the front door, warm air vented out through the back door
- Mounting: Base mounted
- Shipping Weight: 355 lbs. without plug-ins or controller(s)

Air-Conditioner Unit Assembly

- Furnish and install 19' rack mounted air conditioner, Kooltronics series KA4C3.5H9R or equivalent, that is thermostatically controlled and shall meet the following specifications:

UL/CUL Listed or Recognized	BTU/H Capacity	95/95 Rating BTU/H	Ambient Temp.		Volts	Hz	Running Amps	Approx. Weight	
			°F Max./Min.	°C Max./Min.				lbs	kg
Recognized	3500	3516	158/40	70/40	115/100	60/50	10	95	44

  - All **air conditioner equipment, cables,** and **controller** shall be NEMA rated and field hardened to withstand: **Temperature Range: -40 °C to 70 °C (-40 °F to 158 °F)**
  - Air conditioner shall be mounted near the bottom cabinet. Engineer shall approve exact location prior to installation.
  - There shall be adequate space for cables and conductors to enter the bottom of the cabinet and the air conditioner.
- Pull-out drawer/shelf assembly
- LED cabinet light(s) with door switch(es)
- 3/4" x 16" anchor bolts for mounting (4)
- Sunshields

Modified features shall include:

Standard 19" EIA rack
Up to 28 isolated inputs
9 AC switched outputs
Combined PDA-3 power distribution assembly, Model 206 24 VDC plug-in power supply, and 3 load switch positions
Service panel
Controller shelf
2 GFI duplex receptacles, 20 amp
Outlet strip, 6-position

Modify cabinet assembly if necessary and provide any necessary auxiliary equipment and cabling

to achieve the intended communications and operations as shown on the plans. The Contractor shall make all field wiring connections to the terminal blocks inside the controller cabinet.

The Type 334L Cabinet shall include one door for front and back access. Access to the front and back doors shall be clear of obstructions a minimum of 3-feet.

All cabinet switches and auxiliary equipment shall be labeled with permanent printed or engraved labels to match the phasing on the plans.

The Contractor shall arrange to have a qualified technician present at the time the equipment is turned on. Said technician shall be qualified to work on the communications unit and shall be an employee of the communications unit manufacturer or their representative.

The Contractor shall coordinate installation of all controller assembly equipment within the controller cabinet with the Engineer prior to installation. The Engineer shall approve the configuration of controller assembly components prior to their installation.

87-1.03Q.1 Payment

Payment for furnishing and installing Type P-44 traffic signal cabinet assembly shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing Cobalt ATC traffic signal controller assembly (with EOS software) and removing existing controller shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing new NEMA IP-capable malfunction monitoring unit (MMU) (shelf-mount) complete shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals, and setup, configure cables, connectors, and programming hardware and software per location as necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing new Type 334L communication HUB cabinet on new 4" high foundation complete shall be considered in the unit contract price paid per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

Payment for furnishing and installing new Air-Conditioner Unit Assembly within the Type 334L cabinet complete shall be considered in the unit contract price paid per **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-1.03R Signal Heads

Signal Heads shall conform to the provisions in Section 78-4.08C(2), “Traffic Signal Faces and Fittings”, Section 86-1.02R, “Signal Heads”, Section 86-1.02R(2), “Signal Mounting Assemblies” Section 86-1.02R(3), “Backplates”, Section 86-1.02R(4), “Signal Faces”, 86-1.02R(4)(a), “Signal Sections”, Section 86-1.02R(4)(a)(iii), “Signal Housings”, Section 86-1.02R(4)(b), “LED Signal Modules”, Section 86-1.02R(4)(c), “Visors and Directional Louvers”, and Section 87-1.03R Signal Heads”, of the State Standard Specifications, and these Special Provisions.

Signal head gaskets shall be of silicone type and shall provide a positive seal between the LED signal unit and the signal head and shall be replaceable.

All signal indications are LED per State Energy Commission requirements.

Unless furnished by City, Contractor conform to the following:

An LED signal module must comply with ITE publications ST-052-E, Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement and ST-054, Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement, except:

1. Maximum module weight must be 4 lb
2. Module must be a sealed unit with:
    a. 2 color-coded conductors for the power connection except lane control modules must use 3 color-coded conductors
    b. Printed circuit board that complies with TEES, chapter 1, section 6
    c. Lens that is:
        i. Convex or flat with a smooth outer surface
        ii. Made of UV-stabilized plastic or glass
    d. 1-piece EPDM gasket
3. Module must include 3-foot-long conductors with attached quick-disconnect terminals
4. Identification must include:
    a. Month and year of manufacture
    b. 1-inch-diameter symbol of the module type with the module color written adjacent to the symbol in 0.50-inch-high letters
5. LED must be the ultra-bright type rated for 100,000 hours of continuous operation
6. Module must have an integral power supply

Side mounted vehicle heads on major traffic signal poles have a terminal block included with the mounting. Terminal block shall be Lingo MFG or approved equal.

All indications shall be 12-inch diameter. All indications (red, yellow, and green) shall be LED.

The red, yellow and green 12" signal head section shall conform to the "Specifications for LED 12" Signal Head Section" or the "LED 12" Red, Yellow and Green Arrow Section".

All vehicle heads shall be equipped with back plates. Back plates shall be pre-manufactured metallic with louvers and shall be of one piece construction. Hardware attaching back plate to signal head shall be equipped with washers. Signal section housings, backplates, and visors shall be plastic type, unless noted otherwise on the plans, and shall be black in color. Signal head mounting hardware shall not be aluminum, including pipe and fittings. Elbow fittings shall be bronze.

The signal head equipment manufacturer shall have a stocking facility of the signal head equipment used in this project within a seventy five (75) mile radius to assure prompt service and deliveries and to assure future maintenance and repair parts availability.

Post-top slip-fitters, mast arm slip fitters, and terminal compartments shall be cast bronze. All parts including pipe framework shall be black in color.

Contractor shall provide shop drawings for review and approval by the Engineer prior to ordering.

87-1.03R.1 Payment

Payment for furnishing and installing signal heads shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-1.03S Pedestrian Signal Heads

Assemblies

Pedestrian signals assemblies shall conform to the provisions in Section 86-1.02S, "Pedestrian Signal Heads", of the Standard Specifications and these Special Provisions.

Pedestrian Signal Mounting Assemblies and Pedestrian Signal Housings shall be made from the same manufacturer and the section assemblies shall be uniform in appearance and alignment.

Pedestrian signals shall be provided with a polycarbonate egg crate or Z-crate screen.

Pedestrian signals shall be equipped with light emitting diode countdown pedestrian module in accordance to the following:

1. It shall comply with ITE specification: Pedestrian Traffic Control Signal Indications (PTCSI) Part 2: LED Pedestrian Traffic Signal Modules, Adopted March 19, 2004.
2. All modules shall fit in existing signal housings without the use of special tools.
3. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:



The PTCSI does not cover the countdown features of countdown pedestrian signal LED modules. The countdown features shall incorporate the following:

1. Fully compliant to NEMA TS-1, NEMA TS-2, Type 170, and Type 2070 traffic signal controller specifications.
2. The countdown portion of the pedestrian (ped) module shall have a high off-state input impedance so as not to provide a load indication to conflict monitors and interfere with the monitoring of the pedestrian signal. The input impedance of the countdown circuitry shall maintain a voltage reading above 25 VAC to the conflict monitor for up to four units connected on the same channel.
3. The countdown drive circuitry shall not be damaged when subjected to defective load switches providing a half wave signal input.
4. The countdown ped module shall have an internal conflict monitor circuit preventing any possible conflicts between the Hand, Person, and Countdown signal indications. It shall be impossible for the display to countdown during a solid Hand indication.
5. Per CA MUTCD Manual section 4E.07: "The countdown pedestrian signal shall display the number of seconds remaining until the termination of the pedestrian change interval. Countdown displays shall not be used during the walk interval or during the red clearance interval of a concurrent vehicular phase".
6. The countdown ped module shall have a micro-processor capable of recording its own time when connected to a traffic controller. It shall be capable of displaying the digits 0 through 99.
7. When power is first applied or restored to the ped module, the countdown display will be blank during the initial cycle while it records the countdown time using the walk (person) and don't walk (flashing hand) signal indications. The normal hand and person icons shall be displayed during this cycle.
8. The countdown ped module shall continuously monitor the traffic controller for any changes to the pedestrian phase time and re-program itself automatically if needed.
9. The countdown ped module shall register the time for the walk and clearance intervals individually and shall begin counting down at the beginning of the pedestrian clearance interval. The digits shall not flash during the countdown.
10. When the flashing hand becomes solid, the ped module shall display 0 for one second and then blank-out. The display shall remain dark until the beginning of the next countdown.
11. In the event of a pre-emption, the countdown ped module shall skip the remaining time, reach 0 at the same time as the flashing Hand becomes solid, and remain dark until the next cycle.
12. In the cycle following preemption call, the signal shall display the correct time and not be affected by the reduced previous cycle. The countdown shall remain synchronized with the signal indications and always reach 0 at the same time as the flashing Hand becomes solid.
13. If a pedestrian button is activated during the clearance interval, some controllers can change to a second walk cycle without a Don't Walk phase. The countdown module shall also be capable of consecutive walk cycles. The display digits will be blank during the second walk and countdown properly during the second flashing hand.
14. The countdown ped module shall not display an erroneous or conflicting time when subjected to defective load switches. Should there be a short power interruption during the ped clearance interval or if voltage is applied to both the hand and person simultaneously the display will go to "0" then blank.
15. The countdown ped module shall have accessible dip-switches for the user selectable options. The unit shall have a removable plug on the rear allowing easy access to control the user selectable functions. The countdown is disabled when all the switches are in the "ON" position. The unit shall be shipped from the factory with the specified default setting.

16. Switch 1 – Blank Cycle Following a Timing Change – Factory default is “OFF”. When this switch is “OFF” the unit will allow the time to be displayed normally during the cycle following a truncated timing such as a preemption call. The countdown shall be capable of displaying the correct time and not affected by the previous reduced cycle. The unit will require 2 consecutive reduced cycles of identical value to validate and record a new time setting. If the timing is extended, the unit will record it immediately. In the “ON” position when a change in timing is detected the unit will blank out during the following cycle while the new cycle time is measured and recorded if confirmed.
17. Switch 2 – Disables Auto-sync Mode- Factory default setting is “OFF”. When this switch is in the “OFF” position the auto-sync is enabled. When the clearance interval begins and the initial flash of the hand is not in sync with the walk signal the unit will measure the offset and reduce the duration of the first second by the value of the offset. This will ensure the countdown reached zero at the same time as the flashing hand becomes solid. In the “ON” position there is no time correction when the flashing hand is in offset with the walk signal. The duration of the first second will not be reduced and the hand will appear solid shortly before the countdown reaches zero.
18. Switch 3 – Countdown Starts with Flashing Hand Signal – Factory default setting is “ON”. When this switch is “ON” the countdown begins when the hand signal is turned on. With this switch “ON” and the auto-sync mode enabled a short power interruption will have no effect on the countdown display. With switch 3 in the “OFF” position the countdown begins when the walk signal is turned off. This eliminates the effect of an offset hand signal. When switch 3 is in the “OFF” position the auto-sync switch 2 has no effect on the countdown. In this mode if the power to the walk signal is interrupted, the unit will interpret this as the start of the clearance interval and will display the countdown time for 2 seconds before the operation is cancelled. The countdown will resume with the normal ending of the walk signal.
19. Switch 4 – Stores Time Value in Memory, Immediate. Restart. - Factory default setting is “OFF”. When this switch is in the “OFF” position and power is removed from the unit, the time value stored in the unit is erased. The unit will need to run a dark cycle before it can display the countdown again. In the “ON” position the countdown timing is stored in memory. Following a power interruption, the unit will restart with the stored value and not remain dark during the learning cycle. If the value is different after restart, it will be recorded and displayed correctly at the following cycle.
20. Switch 5 – All LEDs “ON”, Test Mode – Factory default setting is “OFF”. With this switch in the “ON” position all LEDs are turned on simultaneously. With both switches 4 and 5 in the “ON” position the LED test mode will also scan the 7 individual segments of both digits.
21. The countdown shall be disabled when all switches are placed in the “ON” position.
22. Nominal power usage for Ped Modules at 25ºC (77ºF), 120 VAC input shall not exceed the values shown in Table 1.

Table 1 -- Nominal Power of Pedestrian Signals

Size	Description	Wattage @ 25ºC		
		Hand	Person	Countdown[1]
16”x18”	Side by Side Hand & Person	8	7	N/A
16”x18”	Hand & Person Overlay with Countdown	9	7	5

[1] Wattage for the countdown is measured when the digits 18 are displayed.

23. All wiring shall meet the requirements of Section 13.02 of the VTCSH standard. Secured, color coded, 600V, 18 AWG jacketed wires, 1 meter (39 in) in length, conforming to the NFPA 70, National Electrical Code, and rated for service at +105°C, shall be provided.
24. The following color scheme shall be used for the ped module's AC power leads: Orange for the upraised hand, Blue for the walking person, and White for common. The countdown portion of the LED ped module shall be internally wired to the hand and walking person power.
25. The AC power leads shall exit the ped module via a rubber grommeted strain relief, and shall be terminated with insulated female quick connect terminals with spade / tab adapters. The leads shall be separate at the point at which they leave the ped module.
26. All external wiring utilized in the ped modules shall be anti-capillary type wire to prevent the wicking of moisture to the interior of the ped module.
27. The Hand and Person Icons shall utilize separate power supplies. On countdown products, the countdown ped module must have its own power supply but may take the incoming AC power from the hand / person AC signal lines. All power supplies shall be located inside the ped module.
28. All power supplies shall be conformally coated for additional protection.
29. Off State Voltage Decay: When the hand or person icon is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC).
30. For a minimum period of 60 months, measured at 80 to 135 VAC RMS and over the ambient temperatures of -40°C to +74°C (-40°F to +165°F), the minimum maintained luminance values for the ped modules, when measured normal to the plane of the icon surface, shall not be less than:

    - Walking Person, White: 2,200 cd/m^2
    - Upraised Hand, Portland Orange: 1,400 cd/m^2
    - Countdown Digits, Portland Orange: 1,400 cd/m^2

31. The external lens shall have a textured outer surface to reduce glare.
32. Icons that are printed on the lens shall be on the interior surfaces in order to prevent scratching and abrasion to the icons.
33. All icons and numbers shall have a uniform incandescent non-pixilated appearance.
34. All exposed components of a ped module shall be suitable for prolonged exposure to the environment, without appreciable degradation that would interfere with function or appearance. As a minimum, selected materials shall be rated for service for a period of a minimum of 60 months in a south-facing Arizona Desert installation.
35. All LEDs used to illuminate the ped module shall use material that has industry acceptance for use in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.
36. The countdown display shall consist of two 7 segment digits as shown below. All countdown display digits shall be 9 inches in height for use in all size crosswalks in compliance with MUTCD recommendations.

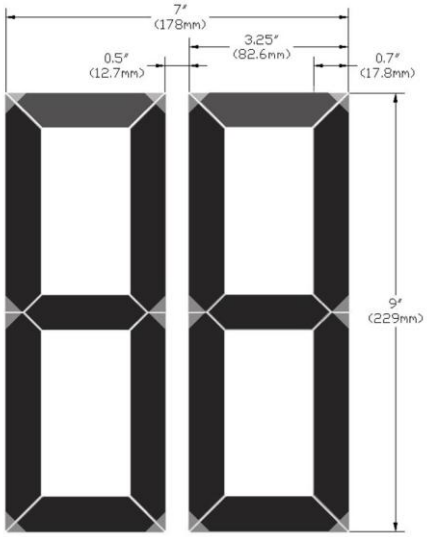


Figure 2: Countdown Display

37. Ped modules shall be repaired or replaced if the ped module fails to function as intended due to workmanship or material defects within warranty period.
38. Ped modules shall be repaired or replaced if the ped module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.
39. The manufacturer shall clearly disclose the country in which the factory of ped module origin is located, the name of the company or organization that owns the factory including all of its parent companies and organizations, and their respective country of corporate citizenship.

87-1.03S.1 Payment

Payment for furnishing and installing LED countdown pedestrian signal head and removing existing pedestrian signal head shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work. No additional compensation will be allowed therefor.

87-1.03T Accessible Pedestrian Signals

Accessible Pedestrian Signals shall conform to the provisions in Section 86-1.02T, "Accessible Pedestrian Signals", 87-1.03T Accessible Pedestrian Signals of the Standard Specifications and these Special Provisions.

Accessible Pedestrian Signals shall be Polara iNS2 2-wire push button station (iNS2 PBS) or approved equal and shall meet A.D.A. requirements. It consists of Intelligent Central Control Unit (Model: iCCU-S2) that is shelf mounted for NEMA Type P-44 cabinets. The vandal-resistant design of the iNS2 PBS includes the body, which houses the ADA compliant push button, a faceplate (5"X7" sign), and mounting hardware.

General

The iNS2 Accessible Pedestrian System (APS) consists of Push Button Stations (iNS2 PBS) installed on poles with existing or new pairs of button wires, and an Intelligent Central Control Unit (iCCU) installed in the traffic cabinet. The iCCU-S2 is compatible with all types of traffic cabinets and controllers and is normally placed on a shelf. The iCCU-S2 communicates with the Push Button Stations (PBS) using digital data over the two low voltage button wires. The buttons are powered by the same wires.

INS FEATURES

- 4 Locate Tone selectable options
- 13 Walk Sound selectable options, including 3 custom options
- 7 Clearance Sound selectable options
- Walk, Clearance, and Don't Walk sounds automatically adjust to ambient
- Separate ambient response settings for Locate Tone
- Independently set maximum and minimum volume on most sounds
- Button push confirmed by latching LED, tactile bounce, and audible "wait"
- Button vibrates during Walk
- Extended Push: optional volume boost for next Walk and Clearance
- Extended Push: optional direction of travel message
- Extended Push: activation adjustable 0-6 seconds, 0.5 second increments
- PedApp®: free mobility app allows touch-free activation via Bluetooth™, provides intersection information. Available for iOS and Android devices
- Wireless programming, custom audio, and firmware updates with the free Polara Field Service App, available for iOS and Android devices
- Built in health/event logging feature, up to 1000 events
- External speaker option at time of order
- Warranty: 3 year limited

iNS2 / 2-WIRE FEATURES

- Operates over a single pair of wires - uses existing button wires
- All PBS wired in parallel, individually assignable to any phase
- 16 buttons can operate on a single iCCU (dependent on power requirements and wire runs)
- Central & Remote Communication via Ethernet or Wireless (Wi-Fi & Bluetooth). SNMP (email alerts) & SNTP
- Preemption message broadcasting
- All sounds are synchronized
- Extended Push Priority: mutes all but selected crosswalk, capable
- False walk detection: four independent checks

iNS2 Accessible Pedestrian Signal Push Button Station (PBS)

The iNS2 is an Accessible Pedestrian Signal Push Button Station (PBS). These PBSs are typically used in pairs, mounted on poles at each end of a pedestrian crosswalk. Its purpose is to transmit a request for a Walk Signal to a Traffic Controller by pressing its button, then to provide audible and vibro-tactile feedback to the pedestrian, indicating the current status of the pedestrian signal. Complete system configuration via Bluetooth may be performed via any PBS in the system. Similarly, configuration may be performed via Wi-Fi when connected to the iCCU-X2.

Technical Specification

- Operating Voltage/Power: 24 VDC / 3W Nom

- External Connections:
  - 2 wires to interconnect board (iN2-ICB) located in the traffic cabinet
  - Bluetooth Low Energy for setup, maintenance, and other connectivity
- Operating Temperature Range: -34°C to +74°C, 95% Relative Humidity
- Storage Temperature Range: -40°C to +85°C
- Ingress Protection: NEMA 4X (IP65), follow installation instructions for proper
- protection
- Push button Operating Force Range: 1 to 3 lbs.
- Maximum Audio Output Level: 100 dBA @ 1 meter
- Dimensions W x D x H: 129 x 69 x 355 (mm - Reference Only)
- Weight: 4.4 lbs.
- Designed for Outdoor Use, Wet Location and Overvoltage Category: NEMA 250 4X

iCCU-S2 Intelligent Central Control Unit for Shelf

Technical Specifications

- Input Voltage / Current: 110-220V, 50/60Hz, 3A
- PBS Output: 24 VDC / 3.17A continuous, 3.75A surge
- Ped Walk / Don't Walk Inputs: Optically isolated 80 – 150 Volts AC/DC, 5mA max.
- Ped Outputs: Optically Isolated 36 Volts AC/DC peak, 300mA Solid State Fused Contact Closure
- General Purpose Inputs: 10 – 36 Volts AC/DC peak, 10mA max, Optically Isolated
- EV Inputs: Active when pulled low (< 5 V to Logic Ground)
- Communication: SDLC port, Ethernet, Wi-Fi (IEEE 802.11b/g/n)
  - *Operating Temperature Range: -34°C to +74°C, 95% Relative Humidity
  - *Storage Temperature Range: -40°C to + 85°C
- Environmental Conditions:
  - Mains supply voltage fluctuations up to ±10% of the nominal voltage
  - Overvoltage Category II
  - Pollution Degree 2
- Mounted inside all-weather enclosure, provided by customer
- Dimensions W x D x H: 81 x 224 x 161" (mm - Reference Only)
- Weight: 3.28 lbs.

*The LCD temperature range is limited to -20°C to +70°C operational and -30°C to +80°C storage.

Design Compliance	
Functionality Test Type	**Compliance**
Temperature and Humidity	MUTCD 2009-4E
Transient Voltage Protection	NEMA TS2
Transient Suppression	NEMA TS2
Mechanical Shock and Vibration	NEMA TS2
iNS3 PBS Enclosure	NEMA 250 Type 4X
Electrical Reliability	NEMA TS2

The audible speech message for the iNS2 system shall be programmed by the Contractor and vendor. A request for an approved message shall be submitted to the City of Norwalk along with

equipment submittals.

Signs attached to each APS unit shall include the street name crossing text and have braille street names.

Five inch (5”) by seven inch (7”) R10-3B push button plate shall be installed per the latest edition of the Caltrans Standard Specifications.

The Contractor shall provide shop drawings for review and approval to the City prior to ordering.

The Contractor shall fill out the form to program Audio Messages for each APS station. Contractor shall submit the filled out form to the City for review and approval prior. The Contractor shall coordinate with the vendor to program the Audio Messages. The audio messages shall have a consistent format.

The Contractor shall have the vendor on-site for programming, turn-on support, and troubleshooting.

87-1.03T.1 Payment

Payment for furnishing and installing accessible pedestrian system (APS) and removing pedestrian push button assembly shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work. No additional compensation will be allowed therefor.

87-1.03V Detectors

Detectors shall conform to the provisions in Section 86-1.02W, “Loop Detector Sealants", and Section 87-1.03V, “Detectors", of the State Standard Specifications and these Special Provisions.

Detector loop locations shall be approved by Engineer in the field prior to installation.

Detector loops shall be the type or types shown on the plans.

Curb terminations shall be as shown on State Standard Plan ES-5D, Type A.

Loop wire shall be Type 2.

The number of loop detector lead-in cables required to achieve the specified detection shall be installed.

The sides of the loop saw cut slots shall be vertical and the minimum radius of the slot entering and leaving the circular part of the loop shall be 1½-inches. Slot width shall be a maximum of ¾-inch. Slots of circular loops shall be filled with elastometric sealant.

Loops shall be installed on the same day in which the loop slots are cut. This shall include placement of the loop conductors and sealant.

Front loop to be installed 6" behind stop bar.

Unless shown otherwise on the plans, all new loop detectors shall conform to State Standard Plan ES-5B, Type E, and shall be spaced 10-feet apart in the direction of travel. Quadrupole loop detectors shall be installed as specified in the plans or the attached detail.

Installation of Inductive Loop Detectors shall be Type E – 6' Diameter Loops as shown the State Standard Plans ES-5B. Bicycle detector loops shall be a modified Type E (quadrapole) -6' Diameter Loops or Type Q loops as required conforming to Caltrans specifications.

Inductive loop detectors shall conform Section 87-1.03V, "Detectors", of the State Standard Specifications for both vehicle and bicycle detection.

All cuts shall be sealed with a sealant in accordance with the State of California Specification for Hot-Melt Rubberized Asphalt Sealant per Section 86-1.02W(4), "Hot-Melt Rubberized Asphalt Sealant", of the State Standard Specifications.

Loop wires in home runs, beginning at each loop, shall be tightly twisted together with a minimum of five (5) turns per foot. Home runs shall be cut to a sufficient width to accommodate the twisted wire.

All loops shall be connected in series. Splices shall use butt-splice connectors and shall be soldered by the hot-iron. No open flame shall be used on soldered connections.

Wires for each loop shall be marked with bands of colored tape to designate loop number, starting at the crosswalk in the number 1 lane and proceeding away from the intersection, then to the crosswalk in the number two lane, and so on.

Detector lead-in cables (DLC) shall conform to the provisions in Section 86-1.02F(3)(d)(iii), "Detector Lead-in Cables ", of the State Standard Specifications and these Special Provisions. Detector lead-in cables (DLC) shall be Type C, unless specified otherwise on the plans. DLC's shall be continuous without splices from the traffic signal cabinet to the pull box adjacent to the detector loops. Cables shall be labeled at the controller cabinet and stub out pull box as per plan.

Splicing and connecting the DLCs to the detector loop cables shall conform to the provisions in Section 86-1.02H, "Splicing Materials", of the State Standard Specifications and these Special Provisions. Contractor shall coordinate with Caltrans, the Engineer, or designated personnel and the local agency, for their preferred splicing method prior to conducting the work. Splices will not be allowed in the loop detector lead-in cable between the controller cabinet and the pull box adjacent to the loop detector installation. Heat-shrink tubing is disallowed.

Contractor shall furnish and install 2/4 CH Vehicle Detector (rack mount) modules for the vehicle detection as shown on plans. Contractor shall coordinate with Caltrans, the Engineer, or designated personnel and the local agency, for their preferred module type.

87-1.03V.1 Payment

Payment for furnishing and installing Detectors, DLCs, associated cables, detector modules and equipment shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-103X Video Detection System

The Contractor shall furnish and install High-Definition Video Detection System (Econolite Vision, latest version) at project locations as shown on the plans, this includes, but not limited to hardware/software system set-up, configuration, system integration, testing, and commissioning. Each system shall be high-definition video detection or hybrid video/radar detection based on the agency's use as shown on plans. All new vehicle detection systems shall be configured to transmit Ethernet IP video+data back to the local agency TOC.

These Technical Specifications describe the minimum physical and functional properties of the video detection system. This specification sets also forth the minimum requirements for a video detection system that detects vehicles, bicycles, and motorcycles on a roadway by processing video images, and that provides vehicle presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

The work to be done consists of furnishing all labor, materials, tools, equipment, appurtenances, performing all operations, systems integration, testing, and commissioning.

As part of the work under this section, the Contractor shall remove unused DLC cables, unless shown otherwise on plans.

Contractor shall install 6' mounting brackets at locations shown on plans (Astro-Brac type or approved equal) existing traffic signal mast arm. mount HD cameras and bracket per manufacturer specifications. At other locations, standard mounting brackets shall be used and installed at locations shown per plan, unless shown otherwise.

System Hardware

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

Video Sensor

The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video and performing detection.

Camera and Processor

1. The camera shall be a color CMOS imaging array.
2. The camera shall have HD resolution of at least 720p (1280x720 pixels).
3. The camera shall include a minimum 10X optical zoom.
    i. It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection.
    ii. It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate.
4. The camera shall have direct, real-time iris and shutter speed control by the integrated processor.
5. The processor shall support H.264 video compression for streaming output.

Video Sensor Enclosure Assembly

1. The camera and processor shall be housed in a sealed IP-67 enclosure.
2. The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the

exterior surface to reduce debris accumulation and maintenance.

3. The faceplate shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation, snow, ice and frost.
4. An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources.
5. An integral aiming sight shall assist in aiming the camera for the detection objectives.
6. A removable rear cap and cable strain relief shall seal the power connection.
7. The rear cap shall be tethered to the enclosure to avoid dropping the cap during installation.
8. The rear cap shall be fastened to the body of the video sensor with a single, captive bolt.
9. The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure while preventing moisture from entering the camera.
10. The sensor shall be self-supporting on manufacturer's mounting brackets for easier fastening during installation.
11. It shall be possible to rotate the field-of-view 360° without changing the angle of the visor.

Power and Communications

1. Power and communications for the video sensor shall be carried over a single three-conductor cable.
2. Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection.
3. The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz.
4. Power consumption shall be no more than 16 watts typical.
5. No supplemental surge suppression shall be required outside the cabinet.
6. All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

Communications Interface Panel

The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center, a maintenance technician, and the traffic cabinet itself.

Video Sensor Connection

The communications interface panel shall provide connection points for four video sensors. Each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor.

1. The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps.
2. The broadband-over-power connection shall support at least 1,000 feet of cabling to the video sensor.
3. Each video sensor connection shall include a power switch.
4. There shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications.
5. Each video sensor connection shall contain a resettable fuse.
6. Each video sensor connection shall provide high-energy transient protection.

Traffic Management Center (TMC) Communications

An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC). The TMC connection shall support 10/100/1000 Mbps Ethernet communication.

1. The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors.
2. All communications to the video detection system through the TMC connection shall be to a single IP address.
3. The system shall be able to provide Full HD quality video through its WAN port for use in streaming video back to the TMC or any remote location.

Local User Communications

A wired Ethernet port shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes.

1. The maintenance port shall support 10/100/1000 Mbps Ethernet communication.
2. All communications to the video detection system through the maintenance port shall be to a single IP address.
3. The maintenance port shall support DHCP to automatically assign an IP address to the user's computer.
4. An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.
5. All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address.
6. The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer.
7. The Wi-Fi access point shall include a dipole, omnidirectional antenna.
8. A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off.
9. The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices.
10. An LED shall indicate when the Wi-Fi access point is enabled.
11. The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.
12. The Wi-Fi access point shall require a password for connection by a user's computer. The default password shall be changeable.

Traffic Controller Connection

The communications interface panel shall provide one (1) connection to communicate to the traffic controller through the cabinet.

1. The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.
2. The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.
3. The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).
4. The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.
5. The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.
6. The wired I/O data communications link shall support at least 24 outputs and 16 inputs.

7. It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

USB Ports

The communications interface panel shall include two USB 2.0 ports.

1. If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.
2. Video recording of up to 2 cameras simultaneously shall commence automatically when an appropriately configured USB memory stick is installed in either USB port.

Power

The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet.

The communications interface panel shall be protected by two slow blow fuses. Spares shall be attached to the panel.

Wired Input/Output Card

The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module.

1. The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File.
2. The card shall occupy two slots of the detector rack.
3. The card shall provide four detector outputs on its rear-edge connector.
4. A front connector shall provide communication to the communications interface panel.
5. A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet.
6. A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output.
7. The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card.
8. The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

System Software

The video detection system shall include management software for configuration, monitoring and data collection purposes.

Management Software

1. Management software shall be a Windows-based application.
2. The software shall be compatible with Windows 7 and Windows 10 operating systems (OS).
3. The software shall communicate with the video detection system via Ethernet.
4. The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices.

5. The management software shall provide a means to add video sensors and communications interface panels on routed networks by the communications panel's WAN IP address.
6. The management software shall provide the user a means to name individual video sensors and communications interface panels.
7. The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream.
8. The management software shall provide a means for the user to easily calibrate distances in the field of view so as to create a 3-dimensional mapping of the complete field of view.
9. The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video.
10. The management software will overlay an outline of each detection zone over the background image.
11. It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection.
12. It shall be possible for the user to set the desired color of both the "on" and "off" states of the overlay for individual detection zones.
13. It shall be possible for the user to alter the size and shape of any previously created zone.
14. It shall be possible for the user to click and drag any of the 4 sides of a zone and the system will automatically scale the length of the side consistent with the 3-dimensional field of view.
15. It shall be possible for the user to move an entire zone without automatic rescaling.
16. It shall be possible for the user to create a new zone by selecting an existing zone and duplicating it on either left or right side, or specifying a new zone behind (for advance) with a specific length and distance back from selected zone.
17. It shall be possible for the user to easily rotate a zone by selecting any of its four corners and dragging to rotate it.
18. It shall be possible to easily flip the zone direction 180 degrees from its current orientation.
19. It shall be possible for the user to name each zone uniquely.
20. It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type.
21. It shall be possible for the user to specify the output of a zone as a presence, pulse, or snappy type output (presence during red and pulse during green signal phase state).
22. The pulse output shall be usable for both approaching and receding traffic.
23. The pulse output shall have a user programmable duration from 100 to 400 ms.
24. It shall be possible for a zone to have multiple output types (presence, pulse, snappy) on separate output channels.
25. It shall be possible for the user to tie the presence outputs of multiple zones as well as signal phase state together with AND/OR Boolean logic.
26. It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle.
27. It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on.
28. The management software shall be capable of creating at least 99 detection zones per video sensor.
29. It shall be possible for the management software to retrieve all configuration

parameters from video sensors or communications interface panels.

30. It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file.
31. The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel.
32. The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors.
33. The management software shall provide a screen to monitor operation of a video sensor.
34. The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution.
35. The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.
36. It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone.
37. The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text.
38. An indication of when either a zone or an output is on or off, along with a user-configurable name for that indicator, applicable to any zone or output type.
39. The current time in the video sensor.
40. A user-configurable title or name.
41. The version number of the video sensor software.
42. Configurable text as defined by the user.
43. Undo/Redo functions shall be available for operations during detection zone setup and programming.
44. It shall be possible for the user to turn the overlay graphics on or off with a single setting.
45. The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel.
46. The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels.
47. It shall be possible for the user to configure the order that the sensor videos appear in the quad-view.
48. The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously.
49. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a “snapshot” or single-frame image to save to a named file on a laptop.
50. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

System Functionality

The video detection system shall provide the following features and functionality.

Detection Performance

The video detection system shall detect the presence of vehicles & bicyclists in defined zones and turn on the assigned output when the vehicle is present in the zone.

Stop Line Detection

1. For detection zones placed at the stop line, the probability of not detecting the presence of a vehicle shall be 1% or less when aggregated over a 24-hour period (as stated in 3.1.2) when the video sensor is installed and configured properly.
2. For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less when aggregated over a 24-hour period (as stated in 3.1.2) when the video sensor is installed and configured properly.

Advance Detection

1. It shall be possible to place advance detector zones such that the farthest point of the zone is up to 600 feet from the video sensor. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone.
2. Receding Zones
3. The video detection system shall be capable of detecting receding vehicles in day or night conditions when the video sensor is installed and configured properly.
4. To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

Failsafe Mode

The video detection system shall provide three (3) failsafe options during optical contrast loss. The default shall be maximum recall. The end-user may also choose to use minimum recall or fixed recall in which a user-defined number of seconds may be implemented to hold call during green.

The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe glare, extreme fog, or temporary ice/snow on the faceplate), the sensor shall enable the chosen failsafe mode. When sufficient contrast is restored in the video, the sensor will exit the failsafe mode.

The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall end.

Data Collection

The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary.

Data functionality shall include the following:

1. Data shall be collected automatically for all zones created by the user once the learn period is complete and normal detection is active. No further setup shall be required.
2. Vehicle counts per zone.
3. Vehicle turning movements independent of zone.
4. Vehicle average speeds.
5. Vehicle lengths.
6. Detection statistics with the on/off timestamps when zones were activated.
7. Detection actuation statistics for whether a zone was triggered by a vehicle or a bicycle.

The management software shall be able to retrieve collected data over a specified period of time or for all currently stored data and save into a standard CSV file.

The sensor hardware shall include up to 8GB of memory storage capacity for data collection.

1. Data Download Types
2. Options shall be provided for downloaded data in the form of a .csv file for Raw data, Binned data, Detections and Zone Status as defined below:
    a. Raw Data – Includes time stamped Zone statistics for vehicle or bike actuations and average speed as well as time stamped Exiting Vehicle Statistics which include volume, turning movement direction, speed and length for vehicles exiting each zone.
    b. Binned Data – Pre-binned data with bin time set by the user down to as little as 1-minute. Data shall include volume, occupancy, turning movement counts and speed for vehicles for each zone.
    c. Detections – Date/time stamped data regarding vehicles exiting zones including type of object (vehicle or bike), speed, length and direction of movement (through, left, right).
    d. Zone Status – Date/Time stamped indications of whether a vehicle or bicycle actuated a zone and the average speed of all objects in the zone.

Remote Data Interface

1. Data including counts, turning movements, speed and length, as well as zone names, sensor status, and video snapshots shall be available to remote systems via remote communication to the system using an Applications Programming Interface (API). This API shall consist of a set of GET commands embedded in HTTP protocol. The resulting data returned shall be in JSON format.

Operations Log

The communications interface panel and each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

Time Synchronization

The video detection system and management software shall provide three methods to synchronize the time-of-day clocks in the communication interface panel and the video sensors, as follows:

1. Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.
2. A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.
3. A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

Video Streaming

In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a tablet, smartphone or laptop computer.

Video bitrate is user-definable between 100 Kbps-5000 Kbps. The default shall be 2048 Kbps.

All bitrates shall provide 30 fps.

Installation and Setup

The video detection system hardware shall be designed for flexible, fast and easy installation and setup.

1. It shall be possible to mount the video sensor on an intersection pole, mast arm, or luminaire arm.
2. No special tools or extra equipment, other than a laptop for configuration, will be required.
3. Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach in 30 minutes or less.

Warranty, Service and Support

The video detection system shall be provided with the following warranty, service and support options.

Warranty

The manufacturer shall warrant the video detection system for a minimum of three (3) years.

Service

Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the contracting agency in the form of a separate agreement for continuing support.

Support

A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available.

Training shall be available to personnel of the contracting agency in application design, operation, setup, and maintenance of the video detection system.

The Contractor shall provide manufacturer onsite tech support during system turn-on.

87-1.03X.1 Payment

Payment for furnishing and installing new the High-Definition Video Detection System, Econolite Vision Video Detection System and assembly including cameras, cables, and mounting hardware, VDS module(s), communication module, LED Monitor, patch cables, removal of unused DLC cables, and system setup, and configuration) shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per Traffic Signal Modification including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-4.02C Internally Illuminated Street Name Signs

Internally Illuminated Street Name Signs (IISNS) shall conform to the provisions in Sections 87-4.02C and 87-4.03C, “Internally Illuminated Street Name Signs” of the State Standard Specifications and these Special Provisions.

The Internally Illuminated Street Name Sign (IISNS) shall be SWARCO McCain, LED, City of Norwalk, free-swinging mounting assembly, reflective panels available in clear, impact-modified acrylic 0.125" thick with 3M VIP Diamond Grade, reflective sheeting, photocell, and 1/8" safety cable(s).

Standard Features

- 500' legibility
- Corrosion resistant
- Single-piece solid top with drip trays
- Continuous hinge
- Thumbscrews
- Drain holes
- SJTOW electric cord (available in varying lengths)
- Double sided sign

General Speciations

Dimensions:

- Length: 4', 6' or 8'
- Height: 18" or 29"
- Width: 12" (max)

Material:

- Top: 6063-T5 marine-grade aluminum extrusion top is 0.14" thick
- End Caps: 5052-H32 marine-grade aluminum 0.188" thick
- Hardware: Bronze thumb screws
- Stainless steel nuts and bolts
- Standard Panels: White translucent, impact-modified acrylic, 0.125" thick
- Natural (custom colors available)

Finish:

- Font: Highway Gothic series C, D & E

Character:

- Height: 8" (typical)
- Capacity: depends on font style & width
- No. of Lines: 1 (typical)

Lamp:

- LED light engine

Overlay Colors:

- Interstate blue

Power:

- Voltage: 120 VAC
- Consumption: 1.4 A (max)

Weight:1

- 6' x 18" : 65 lbs (with non-reflective panels)
- 8' x 18" : 81 lbs (with non-reflective panels)

A solid box superimposed upon the traffic signal mast arm symbol on the plans shall indicate that a complete Internally Illuminated Street Name Sign assembly shall be installed on the signal pole shaft as shown on the pole and equipment schedule.

Mounting height shall be 22 feet to bottom of sign from finish grade.

The following specifications define requirements for Internally Illuminated Pole Mounted Street Name Signs:

Sign Message:

Street Name Suffixes shall not be used. Street name shall be centered.

Letter size shall be 8” upper case and 6” lower case. Style, spacing, arrows, and logos shall generally conform to the Manual on Uniform Traffic Control Devices (MUTCD), Latest Edition. Internally Illuminated Pole Mounted Street Name Signs shall be double face unless noted otherwise on the plans.

The background color of the sign shall be solid Federal Highway Blue with white lettering and white border.

Shop drawings shall be approved by the Engineer, prior to the fabrication of the sign panels. The shop drawings shall show the message for each sign and shall include the size of letters, symbols, or arrows, and spacing between letters as shown on the plans or as furnished by the Engineer.

Contractor shall provide shop drawings for review and approval by the Engineer prior to ordering.

87-4.02C.1 Payment

Payment for furnishing and installing Internally Illuminated Street Name Signs (IISNS) shall be considered as included in the contract **LUMP SUM (LS)** price paid for the associated work per **Traffic Signal Modification** including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

87-9.02 Wireless Communications

Wireless communication equipment shall conform to all rules and regulations of the Federal Communications Commission (FCC) and shall conform to the plans and these Special Provisions.

Prior to ordering equipment, the CONTRACTOR shall provide the results of the spectral analysis in writing in a report that will indicate at a minimum the recommend radio frequencies (e.g. 2.4 GHz, 5.2 GHz, 5.8 GHz, etc.), point to point radio frequencies(15 GHz, 18 GHz, 23 GHz, etc.), wireless communication redundancy, mitigation for potential communication losses, bandwidth availability, and recommendations.

Wireless Spectral Analysis

As part of the first order of work, the CONTRACTOR shall perform a wireless spectral analysis and line-of-site survey for proposed licensed and unlicensed wireless links prior to the procurement and installation of the wireless equipment and auxiliary equipment, including connectors, cabling, cabinets, etc. The wireless spectral analysis shall confirm that the CONTRACTOR shall provide a complete wireless system conforming to the plans and these specifications.

Unlicensed PTMP Wireless Communications (Local)

A. Wireless point to multi-point communications shall consist of point to multi-point radios that serve as wireless links between the intersections and backhaul locations. The wireless equipment located at traffic signals shall serve as subscriber radios. The wireless equipment located at backhaul locations shall serve as base radio units. Wireless equipment at remote locations shall serve as subscriber radio units.
B. CONTRACTOR shall furnish, install, test, and commission the following wireless equipment including mounting, communication cables, and auxiliary equipment to provide a complete wireless communication system.
C. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
D. All systems and components shall have been thoroughly tested and proven in actual use on similar Traffic/ITS applications.
E. All systems and components shall be provided with the availability of a toll-free (U.S. and Canada), 24-hour technical assistance program from the manufacturer.
F. The entire wireless system shall be installed, tested, and commission by a certified wireless manufacturer's representative. Certification for installation shall be conducted by the manufacturer and shall provide all necessary knowledge to fulfill the systemization and deployment across diverse networks and infrastructures, as well as provide testing and commissioning abilities at the integrator level.
G. The certified wireless manufacturer's representative shall be employed by the manufacturer or his representative and shall be present throughout the wireless system installation, testing, and commissioning of the entire wireless system.

Equipment Assembly

Proxim Model # Tsunami MP-10250-BSX
Integrated radio unit
867Mbps radio supporting 4.9-5.85GHz
Point to Multi-Point capable
MIMO 2X2
Mountings, Cables, and Accessories
Power injector and country specific power cord
Connector weatherproofing kit (Includes all recommended weatherproofing material)

87-9.02 Payment

Payment for furnishing and installing unlicensed point-to-multipoint (PTMP) wireless broadband radio equipment and assembly including wireless spectral analysis shall be considered in the unit contract price paid for **EACH (EA)** bid item including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefore.

87-19 FIBER OPTIC CABLE SYSTEMS

87-19.01 GENERAL

The Contractor shall be Corning Network of Preferred Installers (NPI) certified. Proof of NPI membership shall be submitted with the bid. Installation procedures shall be in conformance with the procedures specified by the cable manufacturer for the specific cable being installed and at the discretion of the Engineer, or designated personnel and the local agency.

There shall be two principal outside plant cables as well as incidental cabling procured under this specification. They are identified using a naming convention of “distribution cable” which consists of a seventy-two (72) strand single-mode fiber optic (SMFO) cable, a forty-eight (48) strand SMFO cable, a twenty-four (24) strand SMFO cable, and a “drop cable” which shall consists of a twelve (12) strand SMFO cable. Each outside plant cable fiber optic cable shall be suitable for underground duct placement. Additionally, there will be ancillary service drop and connecting (patching) optical fiber cables procured under this specification, which are more precisely described elsewhere in this document.

All fibers in the cables shall be usable fibers and shall be free of surface imperfections and occlusions, in order to meet or exceed all of the optical, mechanical, and environmental requirements contained in this specification.

Outside plant cable optical fiber cable manufacturer shall have off-the-shelf applications for intelligent transportation systems, single mode Altos type, and meet the following minimum performance specifications:

- Altos Loose tube
- Gel-free, All-Dielectric
- Non-armored cable, Fast Access technology
- SMF-28 Ultra fiber, Single-mode (OS2)

All cables shall be free of material or manufacturing defects and dimensional non- uniformity that would:

- Interfere with the cable installation employing accepted cable installation practices.
- Degrade the transmission performance and environmental resistance after installation.
- Inhibit proper connection to interfacing elements.
- Otherwise yield an inferior product.
- Each fiber optic outside plant cable for this project shall be all-dielectric, dry water-blocking material, duct type, with loose buffer tubes, and shall conform to these special conditions.

Fiber optic cables shall be supplied in the configurations shown on the plans and specified in these special conditions.

The optical fibers shall be contained within buffer tubes. The buffer tubes shall be stranded around an all-dielectric central member. Aramid yarn and/or fiberglass shall be used as a primary strength

member, and a medium or high-density polyethylene outside jacket shall provide for overall protection.

All (FIBER OPTIC) cable on this project shall be from the same manufacturer and who is regularly engaged in the production of optical fiber material. Fiber optic cable and materials shall be approved by the Engineer before ordering.

The cable shall be qualified as compliant with Chapter XVII, of Title 7, Part 1755.900 of the Code of Federal Regulations, “REA Specification for Filled Fiber Optic Cables.”

Cable Marking. - The optical fiber cable outer jacket shall be marked with manufacturer's name, the month and year of manufacture, the words "Optical Cable," telecommunications handset symbol as required by Section 350G of the National Electrical Safety Code (NESC®), fiber count, fiber type, and sequential meter marks. The markings shall be repeated every two feet. The actual length of the cable shall be within -0/+1% of the length marking. The marking shall be in a contrasting color to the cable jacket. The marking shall be approximately –0/+1% of the actual length of the cable in height and must be permanent and weatherproof.

87-19.02C Fiber Optic Cable

Standards, poles, steel pedestals, and posts shall conform to the provisions in Section 87-19, "Fiber Optic Cable Systems" and Section 87-19.02C, "Fiber Optic Cable", of the Standard Specifications and these Special Provisions.

Fiber Optic Cable shall consist of 12 and 72 strand single mode fiber optic (SMFO) cable as defined herein. Fiber optic cable and materials shall be approved by the Engineer, or designated personnel before ordering.

Outside plant cable optical fiber cable manufacturer shall have off-the-shelf applications for intelligent transportation systems, single mode Altos type, and meet the following minimum performance specifications:

- Altos Loose tube
- Gel-free, All-Dielectric
- Non-armored cable, Fast Access technology
- SMF-28 Ultra fiber, Single-mode (OS2)

a. Single mode Fiber Optic Cabling – Outside Plant

i. Application: Use for outdoor underground installation through conduit, pull boxes, splice vaults, cabinets, and into each agency’s designated RTMC, Back-up TMC, and TOC communication rooms

ii. Fiber backbone cabling must be approved and covered by the connectivity manufacturer’s warranty

iii. Characteristics: Outdoor Fiber Optic Cable

A. General Specifications

1. The cable shall meet all requirements stated in this specification.
2. The cable shall be an accepted product of the United States Department of Agriculture Rural Utilities Service (RUS) 7 CFR 1755.900 (PE-90) and meet the requirements of

ANSI/ICEA Standard for Fiber Optic Outside Plant Communications Cable, ANSI/ICEA S-87-640-2006 and GR-20-CORE.

B. Design Specifications
For outside plant installations, or those meeting the NEC requirements, Outdoor cable shall be used:
1. ALTOS (all-dielectric)
2. ALTOS Lite (armored) – Only as approved by the Engineer, or designated personnel

C. Outside Plant Cable
1. Cable Construction
   a. Optical fibers shall be placed inside a loose buffer tube. The nominal outer diameter of the buffer tube shall be 2.5 mm. The buffer tube shall be polypropylene.
   b. Each buffer tube shall contain up to 12 fibers
   c. The fibers shall not adhere to the inside of the buffer tube.
   d. The buffer tubes shall be resistant to external forces and shall meet the buffer tube cold bend and shrinkback requirements of 7 CFR 1755.900.
   e. Fillers may be included in the cable core to lend symmetry to the cable cross-section where needed. Fillers shall be placed so that they do not interrupt the consecutive positioning of the buffer tubes. In dual layer cables, any fillers shall be placed in the inner layer. Fillers shall be nominally 2.5 mm in outer diameter.
   f. The central member shall consist of a dielectric, glass reinforced plastic (GRP) rod (optional steel central member). The purpose of the central member is to provide tensile strength and prevent buckling of the cable. The GRP rod shall be overcoated with a thermoplastic, when required to achieve dimensional sizing to accommodate buffer tubes/fillers.
   g. Each buffer tube shall contain water blocking material embedded in the inside wall of the buffer tube for water-blocking protection. The water blocking material shall be non-nutritive to fungus, electrically non-conductive, and homogeneous. It shall also be free from dirt or foreign matter. This element will preclude the need for other water-blocking material such as gels, yarns, foams, or tapes; the buffer tubes shall be gel-free.
   h. The optical fibers shall not require cleaning before placement into a splice tray or fan-out kit.
   i. Buffer tubes shall be stranded around the dielectric central member using the reverse oscillation, or "S-Z", stranding process.
   j. Water swellable yarn(s) shall be applied longitudinally along the central member during stranding. Water blocking elements shall be applied uniformly throughout the buffer tube.
   k. Two polyester yarn binders shall be applied contrahelically with sufficient tension to secure each buffer tube layer to the dielectric central member without crushing the buffer tubes. The binders shall be non-hygroscopic, non-wicking, and dielectric with low shrinkage.
   l. For single layer cables, a water swellable tape shall be applied longitudinally around the outside of the stranded tubes/fillers. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive, and homogenous. It shall also be free from dirt and foreign matter.
   m. For dual layer cables, a second (outer) layer of buffer tubes shall be stranded over the original core to form a two layer core. A water swellable tape shall be applied longitudinally over both the inner and outer layer. The water swellable tape shall be non-nutritive to fungus, electrically non-conductive, and homogenous. It shall

also be free from dirt and foreign matter.

n. Non-armored cables shall contain one ripcord under the sheath for easy sheath removal. Armored cables shall contain two ripcords under the steel armor for easy armor removal.
o. All tensile strength shall be provided by the central member.
p. Non-armored cables shall be sheathed with medium density polyethylene (MDPE). The minimum nominal jacket thickness shall be 1.3 mm. Jacketing material shall be applied directly over cable core and water swellable tape. The polyethylene shall contain carbon black to provide ultraviolet light protection and shall not promote the growth of fungus.
q. Armored cables without an inner jacket shall have an armor layer applied directly over the cable core and water swellable tape. The armor shall be a corrugated steel tape, plastic-coated on both sides for corrosion resistance, and shall be applied around cable core and water swellable tape with an overlapping seam with the corrugations in register. The outer jacket shall be applied over the corrugated steel tape armor. The outer jacket shall be a MDPE with a minimum nominal jacket thickness of 1.3 mm. The polyethylene shall contain carbon black to provide ultraviolet light protection and shall not promote the growth of fungus.
r. The MDPE jacket material shall be as defined by ASTM D1248, Type II, Class C, Category 4 and Grades J4, E7 and E8.
s. The jacket or sheath shall be free of holes, splits, and blisters.

2. Identification
   a. Each fiber shall be distinguishable by means of color coding in accordance with TIA/EIA-598-B, "Optical Fiber Cable Color Coding." The fibers shall be colored with ultraviolet (UV) curable inks.
   b. Buffer tubes containing fibers shall be color coded with distinct and recognizable colors in accordance with TIA/EIA-598-B, "Optical Fiber Cable Color Coding."
   c. Buffer tube colored stripes shall be inlaid in the tube by means of co-extrusion when required. The nominal stripe width shall be 1 mm.
   d. For cables containing more than 12 buffer tubes, standard colors are used for tubes 1 through 12 and stripes are used to denote tubes 13 through 24. The color sequence applies to tubes containing fibers only, and shall begin with the first tube. If fillers are required, they shall be placed in the inner layer of the cable. The tube color sequence shall start from the inside layer and progress outward.
   e. Cable jackets shall be marked with the manufacturer's name, month and year of manufacture, sequential meter or foot markings, a telecommunication handset symbol as required by Section 350G of the National Electrical Safety Code®(NESC®), fiber count, and fiber type.

3. Mechanical properties
   a. Maximum short term pulling tension of 600 lbs. and long term pulling tension of 200 lbs.
   b. Minimum Bend Radius during installation shall be 15x OD and during operation 10x OD.

b. Single mode Optical Fiber

A. General Specifications
   1. All fiber shall be manufactured using the Outside Vapor Deposition (OVD) process to ensure bandwidth consistency.

B. Design Specification

The fiber type utilized in the cabling infrastructure shall be of those listed below. Specific requirements for use OS2 shall be defined in project scope.

1. SMF-28e+® OS2

C. Single-mode fiber shall meet the specifications listed in the Tables (below)

D. Single-mode fiber shall meet ITU G.652 (Table D), ITU G.657 (Table A1), IEC Specification 60793-2-50 Type B1.3

Single-mode OS2 Fiber Geometry and Optical Performance (Outdoor/Indoor)

Optical Specifications

Maximum Attenuation

Wavelength (nm)	Maximum Value* (dB/km)
1310	≤ 0.32
1383±3**	≤ 0.32
1490	≤ 0.21
1550	≤ 0.18
1625	≤ 0.20

*Attenuation values at this wavelength represent post-hydrogen aging performance.

Attenuation vs. Wavelength

Range (nm)	Ref. λ (nm)	Max. α Difference (dB/km)
1285 – 1330	1310	0.03
1525 – 1575	1550	0.02

The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength (λ) by more than the value α.

Macrobend Loss

Mandrel Diameter (mm)	Number of Turns	Wavelength (nm)	Induced Attenuation* (dB)
32	1	1550	≤ 0.03
50	100	1310	≤ 0.03
50	100	1550	≤ 0.03
60	100	1625	≤ 0.03

*The induced attenuation due to fiber wrapped around a mandrel of a specified diameter.

Point Discontinuity

Wavelength (nm)	Point Discontinuity (dB)
1310	≤ 0.05
1550	≤ 0.05

Cable Cutoff Wavelength (λ_{cc})

$\lambda_{cc} \leq 1260$ nm

Mode-Field Diameter

Wavelength (nm)	MFD (μm)
1310	9.2 ± 0.4
1550	10.4 ± 0.5

Dispersion

Wavelength (nm)	Dispersion Value [ps/(nm·km)]
1550	≤ 18.0
1625	≤ 22.0

Zero Dispersion Wavelength (λ_0):
1310 nm ≤ λ_0 ≤ 1324 nm
Zero Dispersion Slope (S_0): ≤ 0.092 ps/(nm²·km)

Polarization Mode Dispersion (PMD)

	Value (ps/√km)
PMD Link Design Value	≤ 0.04*
Maximum Individual Fiber PMD	≤ 0.1

*Complies with IEC 60794-3: 2001, Section 5.5, Method 1, (m = 20, Q = 0.01%), September 2001.

The PMD link design value is a term used to describe the PMD of concatenated lengths of fiber (also known as PMDQ). This value represents a statistical upper limit for total link PMD. Individual PMD values may change when fiber is cabled.

87-19.03C Fiber Optic Cable Installation

Fiber optic cables shall be installed in continuous lengths without intermediate splices throughout the project, except at the location(s) specified in the Plans. The installation includes a #12 tracer wire when installing the fiber in new/existing conduits.

All Fiber Optic Cable installations shall include fiber optic cables and pull tape to remain for future to all conduits as defined on the plans and per these technical specifications.

Cable installation personnel shall be familiar with the cable manufacturer's recommended

procedures including, but not limited to the following:

1. Proper attachment to the cable strength elements for pulling during installation.
2. Cable tensile limitations and tension monitoring procedures.
3. Cable bending radius limitations.

The Contractor shall comply with the cable manufacturer's specifications at all times.

Single mode Fiber Optic Cable (SMFO) shall be continuous and un-spliced between cabinets, with splicing permitted only at designated splice cabinet locations. The Contractor shall submit the manufacturer's recommended procedures for pulling fiber optic cable to the Engineer at least 20 working days prior to installing cable.

During cable installation, the bend radius shall be maintained at a minimum of twenty times the outside diameter. In no case, shall the cable exceed the minimum bending radius of the cable for installation. At each intermediate pull box, provide at least two turns of slack of the fiber optic cable neatly coiled and secured. This slack could be used in the future for emergency cable repairs.

Fiber optic cable shall be installed using a cable pulling lubricant recommended by the fiber optic cable and/or the innerduct manufacturer.

To accommodate long continuous installation lengths, bi-directional pulling of the optical fiber cable is permissible and shall generally be implemented as follows:

1. From the midpoint of a pull station, pull the optical fiber cable into the conduit from the shipping reel in accordance with the manufacturer's specifications.
2. When this portion of the pull is complete, the remainder of the cable should be removed from the reel to make the inside end available for pulling in the opposite direction.
3. This is accomplished by hand pulling the cable from the reel and laying it into large "figure eight" loops on the ground. The purpose of the figure eight pattern is to avoid cable tangling and kinking.
4. The figure eight loops shall be laid carefully one upon the other (to prevent subsequent tangling) and shall be in a protected area.
5. The inside reel end of the cable should be available for testing.
6. Should it be necessary to set up a winch at an intermediate pull box, the required length of cable shall be pulled to that point and brought out of the pull box and coiled into a figure eight.
7. The figure eight is then turned over to gain access to the free cable end. This can then be reinserted into the duct system for installation into the next section.

Any damaged or broken optical fiber cable shall be replaced at the Contractor's expense and at no additional compensation. Damaged SMFO shall not be repaired, reused or spliced on this project.

Fiber optic cable shall be installed without splices except where specifically allowed on the

drawings and identified herein. Splices shall be permitted only as authorized in writing by the Engineer. Any midspan access splice or FDU termination shall involve only those fibers being spliced as shown on the drawings. Cable splices shall be located in splice closures within identified cabinets.

A minimum of 50 feet of slack shall be provided for each fiber optic cable at a splice vault without a splice closure. A minimum of 30 feet of slack for each fiber optic cable shall be provided on each side of the fiber optic splice closure within a splice vault. A minimum of 15 feet of slack shall be coiled in each cabinet and other pull box locations.

The project limit SMFO cable shall be tested end to end via Optical Time-Domain Reflectometer (OTDR), Power Meter and Light Source, in accordance with EIA Optical Test Procedure 171, and wavelengths specified for the OTDR tests bi-directionally. The differential in test results shall not exceed 0.5 dB. Should the link loss exceed the calculated link loss, the SMFO shall be removed and replaced only between the two stipulated splice points at Contractor's expense. Removal of small sections of cable and or additional splices shall not be permitted.

87-19.02C.1 and 87-19.03C.1 Payment

Payment for furnishing and installing 72-Strand SMFO Cable including #12 tracer wire shall be paid at the Contract Unit Price per **LINEAR FOOT (LF)** including full compensation for furnishing all labor, materials, tools, equipment, as-built plans, and other incidentals for installing the fiber optic cable in the conduit/innerduct, in compliance with the plans and specifications and these special conditions. This shall include all fiber optic splicing, termination, fiber optic patch cords, and all connectors. No additional compensation will be allowed therefor.

Payment for furnishing and installing 12-Strand SMFO Cable including #12 tracer wire shall be paid at the Contract Unit Price per **LINEAR FOOT (LF)** including full compensation for furnishing all labor, materials, tools, equipment, as-built plans, and other incidentals for installing the fiber optic cable in the conduit/innerduct, in compliance with the plans and specifications and these special conditions. This shall include all fiber optic splicing, termination, fiber optic patch cords, and all connectors. No additional compensation will be allowed therefor.

87-19.02D Fiber Optic Splice Enclosures

Contractor shall install underground splice enclosure with mechanical end cap designed for splicing fibers in aerial, duct and buried applications. The sealed canister closures shall be available in configurations that can accommodate from 72 to 576 single fiber splices.

Allowing reel-end to reel-end splicing in the open ribbon system, the splice closures offer split end caps for convenient installation of uncut cables. The QUICKSEAL Mechanical Seal drop cable ports allow quick and easy installation during the initial build or for future expansion. The consolidation of multiport tails for up to 24 flat cables is accomplished with optional add-a-cable kits. Approval and Listings Telcordia GR-771 tested.

- Modular fiber management system
- Aerial, wall, pole, direct-buried applications

- Sealed butt-style closure
- Ribbon reel-end to reel-end splicing
- Split end caps

Any below ground splices or splices exposed to the elements, shall be contained in a waterproof, re-enterable, splice closure designed for use on optical fiber cables in a cable vault environment where total and continuous submersion in water may be expected.

The fiber optic splice closure shall consist of an outer closure, an inner closure and splice trays, brackets, plugs, clips, cable ties, seals and sealant, a dry encapsulate and shall conform to the following special provisions. The splice closure should be a Corning Cable Systems Model SCF-418-01 or approved equal.

The fiber optic splice closure shall conform to the requirements of Bellcore GR 771 and shall be designed for a temperature range of -40 ° F. to +149° F.

The size of the closure shall allow all the fibers of the largest fiber optic cable to be spliced to a second cable of the same size. The closure shall be not more than 34 inches in length and not more than 8 inches in diameter. The closures shall be designed for both horizontal and butt splicing.

All materials in the closures shall be non-reactive and shall not support galvanic cell action. The outer-closure shall be compatible with the other closure components, the inner closure, splice trays, and cables.

The end plate shall consist of two sections and shall have capacity for two mainline fiber optic communication cables and 12 fiber optic service drop cables or four (4) mainline fiber optic cables.

The outer-closure shall protect the splices from mechanical damage; shall provide strain relief for the cable, and shall be resistant to salt corrosion.

The outer-closure shall be waterproof, and re-enterable. The outer-closure shall be flash-tested at 14.5 PSI.

The inner-closure shall be of metallic construction.

The inner-closure shall be compatible with the outer closure and the splice trays and shall allow access to and removal of individual splice trays.

The splice trays shall be compatible with the inner-closure and shall be constructed of rigid plastic or metal.

Adequate splice trays shall be provided to splice all fibers of the communication cable with the greatest fiber count entering the closure.

87-19.02E Splice Enclosures Installations

[Add the following]:

Upon completion of the splices, the splice trays shall be secured to the inner closure. The Contractor shall verify the quality of each splice prior to sealing the splice enclosure.

The closure shall be sealed using a procedure recommended by the manufacturer that will provide a waterproof environment for the splices. Encapsulant shall be injected between the

inner and outer closures.

Care shall be taken at the cable entry points to ensure a tight salt resistant and waterproof seal is made which will not leak upon aging. It is acceptable to have multiple service drop cables enter the fiber optic splice enclosure through one hole as long as all spaces between the cables are adequately sealed.

The Contractor shall install the fiber optic splice closure in the pull boxes or vaults where splicing is required. Separate closures shall be used for the distribution and trunk cables. The Contractor shall provide all mounting hardware normally found in communications cable vaults or otherwise required to securely mount the closures to brackets on the vault or pull box wall. The fiber optic splice enclosures shall be securely fastened to the vault wall using standard hardware.

The fiber optic splice enclosure shall be mounted horizontally in a manner that allows the cables to enter at the end of the closure without exceeding any minimum bending radius specification.

87-19.02D.1 and 87-19.02E.1 Payment

Payment for furnishing and installing underground Fiber Optic Splice Enclosure (72 Strand Capacity) including fiber splicing, splice trays, and connectors, shall be considered in the unit contract price paid for **EACH (EA)** bid item including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved in installing Splice Enclosures complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

Payment for modifying existing underground Fiber Optic Splice Enclosure including fiber splicing, splice trays, and connectors, shall be considered in the unit contract price paid for **EACH (EA)** bid item including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved in installing Splice Enclosures complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

87-19.03D Fiber Optic Cable Splices

This section describes minimum requirements for splicing and connecting of the specified optical fiber cables.

Fiber optic cable shall be installed without splices except where specifically allowed on the plans or described in these special conditions. The single-mode fiber optic cables used for distribution shall be spliced only at pull boxes as shown on the plans. When splicing into a distribution cable, only those fibers associated with a specific traffic control device shall be severed. All other fibers shall remain intact. The Engineer may allow additional splices between these specified locations.

Splicing. - Optical fibers shall be spliced using the fusion splice method and the insertion loss shall not exceed 0. 07 dB of loss per splice.

Field splicing is permitted for the following:

- Connection of cable reel sections.
- Connection of a mainline service distribution cable to a service drop cable or a breakout cable.
- Connection of service drop cable or breakout cable to an optical fiber pigtail at traffic equipment cabinets or the patch panels or fiber distribution unit in a hub equipment cabinet located in the field or at a City's Traffic Management Center (TMC). .
- Connection of the backbone cable to an optical fiber pigtail at a hub patch panel or in the TMC or Hub.
- Or as shown on the plans.

The Contractor shall not exceed the maximum number of field splices permitted as shown in the Plans. Completed splices shall be placed in a splice tray. The splice tray shall then be placed in a water tight splice enclosure. Field splices shall be conducted only at locations as shown in the Plans as an approved splice location.

All splicing equipment shall be in good working order, properly calibrated, and meeting all industry standards and safety regulations. Cable preparation, closure installation, and splicing shall be accomplished in accordance with accepted and approved industry standards.

Using a mid-span splicing method, a single-mode optical fiber service drop cable comprised of twelve (12) fibers shall be joined to the fibers in the optical fiber distribution cable span. The termination splices shall be placed in a splice tray and the splice tray(s) shall then be placed in a water tight splice closure. The splice closure should be a Corning Cable Systems Model SCF-418-01 or approved equal.

The service drop cable fibers shall terminate in an optical fiber termination panel containing factory fabricated pre-connectorized terminations with 2 meter pigtails and which shall be housed in a rack-mounted fiber termination housing unit in each traffic control equipment cabinet. The fiber terminations shall be ST-Ultra PC type connectors. All connected and stored cables shall be routed in each fiber termination unit in a manner that prevents damage during regular operation and maintenance functions. All exposed cable shall be secured every 300 mm to 450 mm to the equipment frame with nylon ties.

All splices shall be protected with a thermal shrink sleeve.

All fibers shall be labeled in the splice tray with permanent vinyl markers. Pigtail ends shall also be labeled to identify the destination of the fiber. Pigtail ends shall also be labeled to identify the destination of the fiber.

Upon completion of the splicing operation, all waste material shall be deposited in suitable containers, removed from the job site, and disposed of in an environmentally acceptable manner.

For additional details and requirements, see **Section, "88-1.02 Network Components, System Testing, and Documentation".**

87-19.03D.1 Payment

Payment for fiber optic cable splices shall be considered as included in the various items associated with the work including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

87-19.03F Fiber Optic Distribution Unit Installation

[Add the following]:

General

A Fiber Distribution Unit (FDU) shall be furnished and installed at the cabinets shown on the plans.

The FDU shall consist of two parts: a splice tray compartment and an optical fiber termination panel. The housing shall have fiber optic cable entrances with cable sheath strain relief.

Contractor shall make connections to fiber that is available to complete the communication network to the Norwalk Traffic Center. All fibers, both new and existing, shall be terminated in the FDU.

The splice tray compartment shall house and protect fusion splices of cable fibers to optical fiber pigtails with two (2) meters of slack for each pigtail. The termination and distribution cable trays shall have sufficient tray areas for excess optical fiber storage with provisions to assure that the optical fibers do not exceed a 2 inch bend diameter.

The FDU shall function as the demarcation point between the optical fiber cable and the terminal equipment. The FDU shall house and protect the terminations required for the quantity of fibers for each location as shown on the plans, as well as splices for each pigtail and slack for optical fiber patch cords. The termination panels shall include a designation strip or flip card for the identification of the optical couplers.

The fiber pigtail slack shall be neatly coiled and secured in a manner that does not allow the minimum operational bending radius of 2 inch bend diameter to be exceeded.

The SC-UPC optical connectors on the end of each pigtail shall connect into a corresponding coupler securely mounted to a panel within the enclosure. The maximum optical loss across the connection shall not exceed 0.5 dB.

Simplex SC Ultra-PC -type connectors shall be used for single mode connections. The termination panel shall be capable of housing single mode couplers grouped in connector panel. The magnitude of density of coupler groupings will be dependent upon the maximum quantity of terminations to be accommodated.

Acceptable equipment shall be from Corning Cable System, P.O. Box 489, Hickory, NC 28603 0489, or approved equal.

The FDU shall be installed in accordance to the applicable sections of these Special Provisions. In addition, the Contractor shall provide all necessary cables, brackets, connectors, and auxiliary materials required and connect the FDU with the communications equipment as shown on the plans.

Prior to ordering the FDU and associated equipment, the Contractor shall provide to the Engineer either a detailed engineering drawing containing plan, profile, and three dimensional views or a physical sample of the exact equipment proposed to be installed in the TMC. The Engineer must approve the samples prior to ordering any equipment.

At each FDU, the Contractor shall terminate the optical fibers of the fiber optic cable that are specified in the plans to the optical fiber termination panel couplers via the corresponding single-mode fiber pigtail assemblies. The optical fibers shall be spliced to the single-mode optical fiber pigtail assemblies within the splice tray(s). Terminate the optical fibers of the fiber optic cables that are designated as spare to the optical bulkhead adapters via the corresponding single-mode fiber pigtail assemblies. The optical fibers shall be of appropriate lengths to allow for future splicing within the splice drawer and shall be appropriately identified (tagged). All splices shall be fusion type and shall be arranged within the splice trays of the FDU in accordance with the organizational design of the splice trays. Appropriate heat-shrink splice protectors shall be applied to all fusion splices.

Patch Cords

Patch cords from the Ethernet Switch and fiber modems shall all terminate on the back of the FDU. All connections of active fibers to equipment shall be made with patch cords cross connecting the active field fibers to the equipment terminations on the front of the FDU.

The quality of patch cords shall conform to the requirements specified in SECTION 16120 for optical fiber cable and connectors.

The fiber optic cable patch cords, assemblies and components shall be compatible components, designed for the purpose intended, and manufactured by a company regularly engaged in the production of material for the fiber optic industry. All components or assemblies shall be best quality, non-corroding, with a design life of at least 20 years. All patch cords, components or assemblies of the same type shall be from the same manufacturer. The outer jacket of patch cords shall be yellow. Patch cords shall be simplex. All patch cords shall be at least 2 meters in length or of a length sufficient to avoid mechanical stress, and allow orderly routing. Patch cords shall have connectors on both ends.

Work at Norwalk Transportation Center (NTC) .

Work at the Norwalk NTC shall include material, equipment and testing of the fiber connections from Firestone Boulevard to establish communication with the hub and the local intersection equipment as designated on the plans to the traffic signal master located at the NTC.

The payment for the work at the Norwalk NTC shall be included in the unit prices of the various items to be installed, including any incidental items required, and no additional compensation shall be allowed

Fiber Patch Panel.

A fiber patch panel shall be furnished and installed at the locations as shown on the plans and shall consist of two parts: a splice tray compartment and an optical fiber termination panel.

The splice compartment shall house and protect fusion splices of cable fibers to optical fiber pigtails with two (2) meters of slack for each pigtail.

The optical fiber termination panel shall house and protect the terminations required to terminate all fibers dropped at each location (up to 12 fibers) as shown on the plans, as well as splices for each pigtail and slack for optical fiber patch cords.

The fiber pigtail slack shall be neatly coiled and secured in a manner that does not allow the minimum operational bending radius of 2-inch bend diameter to be exceeded.

The SC-UPC optical connectors on the end of each pigtail shall connect into a corresponding coupler securely mounted to a panel within the enclosure. The maximum optical loss across the connection shall not exceed 0.5 dB.

Simplex SC Ultra-PC -type connectors shall be used for single mode connections. The fiber distribution panel shall be capable of housing single mode couplers grouped in connector panel. The magnitude of density of coupler groupings will be dependent upon the maximum quantity of terminations to be accommodated in the fiber distribution panel.

The fiber patch panel shall be rack mountable in a standard EIA 19 inch equipment rack for installation in Type 332, 334, and 336 cabinet with a maximum height of 1.75" The fiber patch panel shall be wall-or shelf-mountable for installation in Type G or P cabinets. The housing shall have fiber optic cable entrances with cable sheath strain relief.

The termination panels shall include a designation strip or flip card for the identification of the optical couplers.

The fiber distribution panel shall function as the demarcation point between the optical fiber cable and the terminal equipment.

Acceptable equipment shall be from Corning Cable System, P.O. Box 489, Hickory, NC 28603 0489, or approved equal.

Prior to ordering any fiber distribution panel enclosure, and associated components, the Contractor shall provide to the Engineer a detailed engineering drawing containing plan, profile, and three dimensional views or a physical sample of the exact equipment proposed to be installed in each type of existing traffic controller cabinets or any proposed traffic signal controller cabinets. The Engineer must approve the samples prior to ordering any equipment.

At each Fiber Patch Panel, the Contractor shall terminate the optical fibers of the fiber optic cable that are specified in the plans to the optical fiber termination panel couplers via the corresponding single-mode fiber pigtail assemblies. The optical fibers shall be spliced to the single-mode optical fiber pigtail assemblies within the splice tray(s). Terminate the optical fibers of the fiber optic cables that are designated as spare to the optical bulkhead adapters via the corresponding single-mode fiber pigtail assemblies. The optical fibers shall be of appropriate lengths to allow for future splicing within the splice drawer and shall be appropriately identified (tagged). All splices shall be fusion type and shall be arranged within the splice trays of the Fiber Patch Panels in accordance with the organizational design of the splice trays. Appropriate heat-shrink splice protectors shall be applied to all fusion splices.

For additional details and requirements, see **87-19.03H Fiber Optic Cable Termination Assemblies**

87-19.03F.1 Payment

Payment for furnishing and installing 12 Port Fiber Patch Panel complete (shelf mount) shall be considered in the unit contract price paid for **EACH (EA)** bid item including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved in terminating fiber optic cable including fiber splicing, splice trays, and connectors, installing Fiber Patch Panels complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

Payment for furnishing and installing 288 Fiber Distribution Unit (FDU) complete (rack mounted) shall be considered in the unit contract price paid for **EACH (EA)** bid item including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved in terminating fiber optic cable including fiber splicing, splice trays, and connectors, installing FDU's complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

[Add new sections]:
87-19.03H Fiber Optic Cable Termination Assemblies

Cable termination assemblies (connectors, pigtails and couplers) shall be products of the same manufacturer. The cable used for cable assemblies shall be made of fiber meeting the performance requirements of these special conditions for the F/O cable being connected, except that the operating temperature shall be modified to -20°C. to +70°C.

Manufacturer's attenuation test results shall be provided for all cable assemblies.

a. Fiber Optic Pigtails and Jumpers

A. General: To maintain channel integrity, optical fiber patch cords and pigtails shall be fabricated to meet the performance parameters corresponding to the optical fiber cable approved product type specified below. Patch cord and pigtail plug connectors shall be equipped with boots, and shall have same colors as related optical fiber backbone cables, unless specified or indicated otherwise. Optical fiber patch cords and pigtails shall be available with the following options as specified or indicated:

1. Termination types: LC/SC (unless otherwise specified)
2. Connector/cable configuration: Simplex and Duplex
3. Fire ratings: Riser or Plenum
4. Simplex patch cord outside diameters: 2.0 millimeters (0.079 inches)
5. Pigtails: Tight-buffered optical fiber, 0.9 millimeters (0.035 inches) outside diameter
6. Connectors for both pigtails and jumpers shall be factory polished and meet the following parameters:

Single mode Connectors					
Connector Type	**Typical Insertion loss (dB)**	**Maximum Insertion loss (dB)**	**Typical Reflectance (dB)**	**Ferrule**	**Housing**
LC UPC	0.15	0.4	≤ -55	Ceramic	Composite
SC UPC	0.15	0.4	≤ -55	Ceramic	Composite

7. Standard Jumpers shall comply with the following:
   - The jumper shall be a 2-fiber cable assembly terminated with LC duplex connectors on both ends. Jumpers shall also be available with LC duplex at one end and SC Duplex at the other end.
   - Jumper shall be available in riser and plenum. Plenum or riser requirements shall be defined in scope of work.
   - The jumper shall be constructed with a single 2 mm zip cord cable
   - Jacket color shall be yellow for single-mode assemblies.

Full compensation for Fiber Optic Pigtails and Jumpers including furnishing all labor, material, equipment and incidentals necessary to perform the items of work shall be included in the various bid items of fiber termination hardware (related to Fiber Optic Splice Enclosure, 12 Port Fiber Patch Panel, or 144 Port Fiber Distribution Unit assemblies) and no additional compensation will be allowed therefor.

b. Fiber Optic Adapter Panels

A. General Specifications
1. Rack and wall mountable connector housings shall accept an interchangeable connector panel. An adapter panel is defined as a modular removable plate containing optical fiber connector adapters.
2. Fiber optic adapter panels shall meet all requirements in this specification

B. Design Specifications: LANscape CCH Adapter Panels and Pigtailed Panels

C. Physical Specifications
1. The adapter panel shall utilize a single mounting footprint and shall be interchangeable between the rack and wall mountable hardware used.
2. The panel shall be attached with two push-pull latches to allow quick installation and removal.
3. The adapter panel shall be available with industry standard single fiber and small form factor multi-fiber adapters, including the SC duplex, ST compatible, LC duplex and MTP.
4. The adapter panel shall OM3, OM4, and OS2 optical fiber.
5. Panels shall be manufactured from injection molded polycarbonate for structural integrity.
6. Panels shall be finished with a wrinkled black texture.
7. Pigtailed panel shall consist of an adapter panel as described above, factory-loaded with factory-terminated pigtails, 3 m in length. The pigtails shall be available in a variety of cable options, a MIC® Cable subunit or ribbon fiber.
8. Blank adapter panels shall be available to fill unused space within housings. The blank panels shall be manufactured from injection molded polycarbonate and shall be finished with a wrinkled black texture to match the housing. Housings shall be supplied with blank adapter panels for all available positions unless the housing is ordered with optical fiber adapters panels pre-installed. The blank panel shall be attached with at least two spring clips to allow quick installation and removal.

Full compensation for Fiber Optic Adapter Panels including furnishing all labor, material, equipment and incidentals necessary to perform the items of work shall be included in the various bid items of fiber termination hardware (related to Fiber Optic Splice Enclosure, 12 Port Fiber Patch Panel, or 288 Port Fiber Distribution Unit assemblies) and no additional compensation will be allowed therefor.

c. Fiber Optic Splice Cassettes

A. General Specifications

1. Rack mountable housings shall accept an interchangeable splice cassette. A splice cassette is defined as a removable module that is capable of holding a connector panel and splice organizer for pigtail and through splicing applications.
2. Fiber optic splice cassettes shall meet all requirements in this specification

B. Design Specifications: LANscape CCH Splice Cassettes

C. Physical Specifications

1. The splice cassette shall consist of a base constructed from injection-molded black plastic and a removable hinged lid or cover constructed from injection-molded tinted translucent plastic.
2. The splice cassette shall be available with pre-installed connector pigtails and panels.
3. The splice cassette shall allow one connector panel (as described in 2.3) to be installed into the base.
4. The splice cassette shall be able to hold and contain at least one meter of pigtail fiber slack on the interior floor of the base.
5. The splice cassette shall be able to hold and contain up to one meter of 2.0-3.0 mm buffer tube slack or jacketed pigtail slack (up to 24 fiber) on the exterior bottom of the base.
6. The splice cassette shall contain a pivoting (and removable) splice tray above the base in a horizontal position that rotates up into a vertical position at least 90 degrees relative to the base allowing access to the base.
    a. The splice tray shall contain one interchangeable splice organizer capable of holding up to (24) splice heat-shrinks, routing tabs and provisions for holding a total of two meters of 250 or 900 micron fiber slack, or 12-fiber ribbon slack (includes both incoming and outgoing fiber slack) and contain slots and provisions for installing cable ties ("ty-wraps") for securing incoming and outgoing buffer tubes and/or jacketed optical fibers.
7. The splice cassette shall contain relief slots for holding up to two buffer tube transition ("fan-out") kits on either side of the base.
8. The splice cassette shall contain two fiber retention tabs behind the connector panel location to maintain fiber below the connections and adapters in an installed connector panel.
9. The splice cassette shall contain two flexible curved tabs for grasping the cassette during installation and removal from the main connector housings.
10. The splice cassette shall contain integral slots on both sides of the cassette to hold and guide the cassette along tracks in the main connector housings.
11. The splice cassette lid/cover shall contain two retention tabs that snap onto the base and also provide slots for securing in a closed position with cable ties ("ty-wraps").
12. The splice cassette shall have a permanent U.L. label affixed that contains the following information: U.L. Listing number 41s4 (Communication Circuit Accessory), Country of Origin (for assembly) and Date and Lot number for manufacturing traceability.
13. The splice cassette shall have a permanent Part Number label affixed that contains the following information: Product description, Product part number (manufacturer's catalog number), Product serial number, Country of manufacturer, and U.S. Patent number.

d. Fiber Optic Housings

A. General Specifications

1. Fiber Optic housings shall provide a means for securing, strain-relieving, protecting, and labeling of fiber optic cable terminations. Housings shall be available in both rack-mount and wall-mount configurations, and accept one standard adapter panel footprint for all housings.
2. Fiber optic housings shall meet all requirements in this specification

B. Design Specifications

1. Closet Connector Housing (CCH), rack-mount

C. Rack-Mount Housing Specifications

1. Housings shall be designed for rack-mounted or frame-mounted applications that support conventional cross-connection and interconnection schemes as well as splicing applications.
2. Housings shall be available in 1U and 3U. One industry standard (EIA compliant) rack unit or panel height (denoted as 1U) is defined as being 44.45 mm (1.75“) in height in compliance with EIA-310-D (“Cabinets, Racks, Panels, and Associated Equipment”).
3. The housings shall have capacity specifications as listed in the table below:

Rack Mount Housing Fiber Capacity

Unit Size	Panel Capacity	Housing Fiber Capacity, using:		
		6f / panel	12f / panel	24f / panel
1U	2	12	24	48
2U	4	24	48	72
4U	12	72	144	288

4. The housings shall meet the design requirements of ANSI/TIA/EIA-598 and the plastics flammability requirements of UL 94 V-0.
5. The connector housings shall have a labeling scheme that complies with ANSI/TIA/EIA- 606.
6. The housings shall be mountable in an EIA-310 compatible 465 or 592 mm rack.
   a. The housings shall be mounted with a 12 cm frontal projection with the option to flush mount.
   b. The mounting brackets shall incorporate tear-drop shaped slots that allow pre-installation of the mounting screws prior to attachment of the mounting brackets to the rack or frame, by symmetric and of the same design for either side of the housing, attach to the side of the housing via screws or fasteners for the 1U, 2U, and 3U, slide into the side of the housing and attach in a “snap-on” manner via flexible retention tabs or buttons for the 4U.
   c. The 4U housing rear assembly shall be removable from the mounting brackets through depressing internal buttons on both sides of the housing and sliding the housing off of the mounting brackets.
7. The housings shall support cross-connection, inter-connection and/or splicing applications and routing schemes in the same housing.
   a. The housings shall accommodate direct connectorization via connector panels as specified in 2.3.
   b. The housings shall accommodate pigtail splicing and through splicing via interchangeable splice cassettes, as specified in 2.3.
8. 1U/2U/4U Housing

a. The housings shall have removable top covers, front and rear doors, and a slide-our drawer or tray, and be fully accessible from the top, rear and front sides.
b. The housing's slide-out tray shall provide jumper routing guides in the front to protect and manage jumpers.
    1) The slide-out tray shall incorporate and allow interchangeable attachment of three (3) jumper routing guides. They shall attach to either panel clip retention blocks or stackable rails. The routing guide shall incorporate an indentation on the top surface for grasping to manually assist with pulling out the sliding tray.
c. The front of the housing and interior slide-out tray shall be accessible via a tinted translucent door. It shall also contain jumper egress openings on both sides.
    1) The door shall be removable from metal hinges by removing a single screw on each side of the door.
d. The rear of the housings and interior slide-out tray shall be accessible via a metal door. The rear door shall incorporate pre-stamped punch-out openings that will allow fiber optic cable to enter the housing perpendicular to the rear of the housing.
    1) The rear door shall be removable from metal hinges by removing a single screw on each side of the door
e. The top of the housings shall be accessible via two slide-out top covers that converge and interface in the center of the housings via two alternating support tabs.
    1) The top covers shall be made from tinted translucent injection-molded plastic and incorporate pockets or slots for containing two labels cards.
f. The housing shall provide means for strain-relieving fiber optic cables.
g. External strain-relief shall be achieved through attachment of an external strain-relief bracket that attaches onto either side of the housing via two fasteners.
    1) The external strain-relief bracket shall be of a two-piece design that allows disassembly and reassembly such that it can be used in a universal fashion on either side of the housing and with either top or bottom cable entry into the housing.
h. Internal strain-relief shall be achieved through attachment of an internal strain relief bracket that mounts on the floor of the rear of the housing via retention studs and a spring-loaded plunger.
    1) The internal strain-relief bracket be installable on either side of the rear of the housing and of a singular design for either side and be removable and its support plate shall not interfere with removal or sliding action of the interior tray.
i. The housing's interior tray shall contain provisions for routing and maintaining fiber optic cable components, including cable sub-units and buffer tuber, 900 um optical fiber, and buffer tube transition kits.
    1) The sliding tray of the housing shall provide holes or slots for the installation (and removal) of fiber retention or slack management clips.
    2) The sliding tray of the housing shall provide holes or slots for the installation (and removal) of transitional strain-relief clips
    3) The sliding tray shall contain an embossed pattern that conveys the routing path that optical fiber and cable sub-units should follow in routing from cable entry to the fiber optic panels contain within the housing.

87-19.03H.1 Payment

Payment for Fiber Optic Cable Termination Assemblies shall be considered as included in the various items associated with the work including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

87-19.03I Fiber Optic Communication Network

87-19.03I(1) General

The communication network shall be completed and tested within the limits of the described project to verify the communication with the local intersection equipment connections and communication within the installed system through the local hub connection. Contractor shall also be required to provide network connections to existing intermediate communication hubs located at the streets and within the City of Norwalk Transportation Center (NTC) through the assigned network as identified by the City to establish and verify the communication between the traffic signal master and the local equipment of the current project .

IP NETWORKING EQUIPMENT

The Ethernet IP communications network system shall include hardened managed Ethernet Edge switches, hardened managed Ethernet Gigabit Aggregate switches, Layer 3 core network switch, SFP modules, fiber patch panels, CAT6 cable, patch cords, chassis, power supplies, connector module housings, couplers, drop cables, all necessary wiring, cables, and connectors.

Field installed switches shall be shelf mounted or din-rail mounted and 19" rack mounted at the discretion of the Engineer. All field switches shall be securely mounted against vibration and shock. Assemblies shall be plug compatible and interchangeable such that technicians can quickly exchange assemblies in the field. Prototype, rebuilt, or reconditioned equipment will not be allowed. It is the contractor's responsibility to obtain all appropriate equipment and assure full compatibility with the existing field and TMC components.

The proposed IP networking hardware (e.g. managed Ethernet switches) supplied by the Contractor shall be fully installed, configured, integrated, tested and commissioned to the manufacturer's specifications, these Special Provisions, and the project plans.

The networking equipment shall be configured to support simultaneous transmission traffic signal controller data and video (via CCTV cameras and video detection cameras). Contractor and equipment manufacturer shall instruct those involved in City operation and maintenance on how to set data rates, make configuration changes or provide for operations and maintenance. In-field electrical or optical adjustments shall not be required for these units. Managed, hardened networking equipment shall include the following (or approved equal):

a. Industrial Hardened Managed Ethernet Edge Switch - HIRSCHMANN BOBCAT SERIES

Model # BOBCAT - BRS40-0012OOOO-ETCT99HHSEA07.0. (Edge) or latest
Managed, Industrial Switch DIN Rail, fanless design

Enhanced Redundancy (PRP, Fast MRP, HSR)
8-port 10/100/1000 BASE-TX + 4-port 100/1000BASE-FX Hardened Managed Ethernet Switch
Certified by NEMA TS2 Environmental requirements for Traffic control equipment
Line - / star topology any
Operating voltage 2 x 12 to 24 VDC
Switching Independent VLAN Learning; Fast Aging; Static Unicast/Multicast Address Entries; QoS / Port Prioritization (802.1D/p)
Operating temperature -40 ºC ... 70 ºC + conformal coating

b. Industrial Hardened Managed Gigabit Aggregate Fiber Optic Switch - HIRSCHMANN GREYHOUND SERIES

Model # GRS1042-6T6ZEHL00T9HHSE3AMR.X. (Aggregate) or latest
Industrial managed Full Gigabit Ethernet Switch, 19" rack mount, fanless design according to IEEE 802.3, Store-and-Forward-Switching; HiOS Layer 3, PoE capable
28 port basic unit: 12 fixed ports, 4 x GE/2.5GE SFP, 2 x FE/GE SFP, 6 x Fe/Ge TX ports, expandable with media modules
Line - / star topology any
Operating voltage 110 - 250 VDC (88V - 288 VDC) and 110 - 240 VAC (88 - 276 VAC);
Certified by NEMA TS2 Environmental requirements for traffic control equipment
Redundancy functions Link Aggregation with LACP; Link Backup; Media Redundancy Protocol (MRP) (IEC62439-2); RSTP 802.1D-2004 (IEC62439-1); RSTP Guards
Time synchronization SNTP server and client, Buffered RTC
Switching Independent VLAN Learning; Fast Aging; Static Unicast/Multicast Address Entries; QoS / Port Prioritization (802.1D/p); TOS/DSCP Prioritization; Interface Trust Mode; CoS Queue Management; Flow Control (802.3X);
Operating temperature -40 ºC ... 70 ºC
Protection class IP30/ Mounting rack mount
Dual Power Supply # GPS1-KES9HH and # GPS3-PET9HH

Greyhound Media Module # GMM40-OOOOOOOOTT9HH.X. (Aggregate)
Industrial managed Gigabit Ethernet Media module
Basic unit: 8 ports, 8 x FE/GE SFP slot
Operating voltage 110 - 250 VDC (88V - 288 VDC) and 110 - 240 VAC (88 - 276 VAC);
Certified by NEMA TS2 Environmental requirements for traffic control equipment

Greyhound Media Module # GMM42-OOOOTTTTET9HH.X. (Aggregate)
Industrial managed Gigabit Ethernet Media module
Basic unit: 8 ports, 4 x FE/GE SFP slot, 4 x FE/GE RJ-45
Operating voltage 110 - 250 VDC (88V - 288 VDC) and 110 - 240 VAC (88 - 276 VAC);
Certified by NEMA TS2 Environmental requirements for traffic control equipment

All networking hardware shall be supplied with appropriate rated power supply for use within a hardened environment.

Industry standard SFP's (Small Form-Factor Pluggable) shall be included in all switches to the extent that the required data communication can occur. All SFP's shall be supplied by the same manufacturer of the switch. All fiber network switch SFPs shall all be rated for single mode 1310nm duplex operation with 10km operational distance rating, hardened type.

I. SFPs transmitting between all Core and Aggregate locations shall be 2.5 Gigabit Ethernet rated. Hirschmann **model # M-SFP-2.5-SM/LC EEC – 20km**
II. SFPs transmitting between all Aggregate and Edge locations shall be 1000base Gigabit Ethernet rated. Hirschmann **model # M-SFP-LX/LC EEC**

NETWORK MONITORING SOFTWARE

All switching equipment used on this project shall be equipped with Simple Network Management Protocol (SNMP) enabled to provide status/heartbeat to a centralized management software. The Contractor shall furnish and install a Network Management Software (NMS) suite (HIRSCHMANN HiVision 7.1, 256 nodes or approved equal).

The network management software is designed for configuring, monitoring, and diagnosing networking devices in industrial networks. The NMS provides an integrated management platform that can discover networking devices and SNMP/IP devices installed on subnets. All selected network components can be managed via a web browser from both local and remote sites—anytime and anywhere.

› Event Playback records network events and replays past network incidents
› Discovers and visualizes network devices and physical connections automatically
› Central management of configurations and firmware for Moxa devices
› Flexible events and notifications with self-defined threshold and duration
› Supports third-party devices with MIB compiler and MIB browser
› Comprehensive reports, including inventory, traffic, and availability reports
› Provides a virtual demonstration network that lets you experience the software without connecting any devices

The Contractor shall provide adequate licensing, configure, commission and test the proposed Network Monitoring Software for all network switches deployed on this project at the TMC.

CONTRACTOR SHALL SUBMIT PRODUCT SHEETS AND ORDER FORMS FOR ALL HARDWARE AND SOFTWARE TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

87-19.03I.1 Payment

Payment for Ethernet switches, Industrial Gigabit Ethernet Aggregate switches, SFP modules, power supply and patch cords complete, shall be considered in contract price paid per **each (EA) item** for including full compensation for furnishing all labor, materials, tools, equipment, testing, and incidentals for doing all the work involved in installing Ethernet Switches complete in place, as shown on the Plans, as specified in these special provisions, and as directed by the Engineer. No additional compensation shall be allowed therefor.

88-1.01 System Integration

This item shall consist of furnishing, installing, integrating, testing, and commissioning a completed Ethernet IP-based network for the City's traffic management system, which is comprised of the locations shown on the plans. The Ethernet IP-based communication system shall include all equipment listed or shown on the plans and any incidental items required for the satisfactory operation of the system as defined in testing, Section "Network Components, System Testing, and Documentation". The networking equipment shall be configured to support simultaneous two-way transmission of quality data (traffic management system) and video (video detection system) for all project locations using Internet Protocol (IP) based and IEEE standard compliant equipment as shown in the project plans. Data switches shall meet the minimum standards listed above and fully integrate with the City of Norwalk's network management system complete.

The Contractor will be provided with IP addresses for all Ethernet switches, video detection, and network equipment. The Contractor shall input the IP addressing scheme and set-up VLAN assignments (as shown below) per City requirements.

The Contractor shall configure all Networking equipment for a minimum of six virtual LAN's (VLAN's). The VLAN's are defined as:

1. Traffic VLAN - dedicated for roadside traffic signal communication equipment
2. Management VLAN - dedicated for management of all network switches
3. CCTV VLAN - dedicated for roadside CCTV video + data communication equipment
4. TMC VLAN - dedicated for all internal TMC server and workstation equipment
5. City Facilities VLAN– dedicated for future connections
6. City Police Department VLAN – dedicated for future connections

Each intersection will be configured with an Ethernet trunk line with all VLAN's tagged.

All VLAN information shall pass through to the Core switch located at the Communication Room located at the Norwalk Transit Center.

All Network switch configurations shall be provided to the City.

It is the Contractors responsibility to determine the appropriate devices required for the intended service and compatibility with existing field and TMC equipment. The contractor shall install all communications equipment in a neat and orderly fashion utilizing cable ties and connector labels. The contractor shall coordinate with the Engineer on the placement and mounting of equipment within the cabinets.

Switches, optical connectors, power supplies, rack and associated hardware including fiber splice enclosures, and associated hardware shall be furnished, installed and integrated within the existing equipment rack(s) complete. Length of fiber jumpers shall be determined after installation of patch panels and equipment. Jumper cables shall be yellow in color. Any switch configuration settings or testing of the fiber cable system for proper data transmission is the responsibility of the Contractor.

The contractor shall implement Rapid Spanning Tree Protocol (IEEE 802.1w) on all Ethernet switches within the network and shall demonstrate proper operation by creating breaks at different

points within the network and verifying that the network re-converges in less than 10 seconds.

The contractor shall develop and submit to the Engineer a cutover plan to connect, configure, and integrate the new and existing network communication equipment identifying planned outages (system offline) associated with testing and integration. Traffic Management System (Econolite Centracs Traffic Management System) downtime shall not be more than three (3) working days for any segment within the system.

The contractor shall coordinate with the City's IT Department, network equipment manufacturer, and Econolite representative for integration of new communication network.

88-1.01.1 Payment

Payment for System Integration shall be considered in the lump sum contract price paid for including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor.

88-1.02 Network Components, System Testing, and Documentation

As part of the first order of work, the Contractor shall fully test and document the existing fiber optic network backbone to verify its functionality and identify any unknown breaks in the line(s) prior to work on the new project improvements.

Prior to any work being performed, Contractor will provide the City with a Lump sum breakdown itemizing the total number of tests required and details.

FIBER OPTIC CABLE AND EQUIPMENT TESTING AND PROCESS

A. The City reserves the right to be present during any or all of testing.
B. Testing shall be of the optical link. An optical fiber link is defined as the passive cabling network between two optical cross-connects (patch panels or outlets). This includes cable, connectors and splices but does not include active components. The link test contains the representative connector loss at the patch panel associated with the mating of patch cables but does not include the performance of the connector at the equipment interface.
C. All cabling not tested strictly in accordance with these procedures shall be retested at no additional cost to the City.
D. 100% of the installed cabling must be tested. All tests must pass acceptance criteria defined in this test specification.
E. Either the test equipment shall be fully charged prior to each day’s testing or a fresh set of batteries shall be brought to the job site.

All field testing must be in the presence of the Engineer or authorized representative, or it will be re-tested.

a. General

Testing shall include the tests on elements of the passive fiber optic components:

(1) At the factory,
(2) After delivery to the project site but prior to installation and,
(3) After installation.
(4) Other:

A. Testing the existing fiber optic communication system from the field mainline connection to TMC at Norwalk Transit Center

This will be measured by an Optical Time Domain Reflectometer (OTDR) in order to verify if the fiber is good or bad quality through the fiber spans, connections, and splices. The Contractor contact the City of Norwalk for coordination and scheduling of work within two weeks prior to conducing the work.

The Contractor shall provide all personnel, equipment, instrumentation and materials necessary to perform all testing. The Engineer shall be notified two working days prior to all field tests. The notification shall include the exact location or portion of the system to be tested.

A minimum of 15 working days prior to arrival of the cable at the site, the Contractor shall provide detailed test procedures for all field-testing for the Engineer or assigned representative's review and approval. The procedures shall identify the tests to be performed and how the tests are to be conducted. Included in the test procedures shall be the model, manufacturer, configuration, calibration and alignment procedures for all proposed test equipment.

Documentation of all test results shall be provided to the Engineer or his/her assigned representative within 5 working days after the test is completed.

b. Factory Testing

Documentation of compliance with the fiber specifications as listed in the fiber characteristics table shall be supplied by the original fiber manufacturer. Before shipment, but while on the shipping reel, 100 percent of all fibers shall be tested for attenuation. Copies of the results shall be attached to the cable reel in a waterproof pouch and submitted to the Contractor and to the Engineer or his/her assigned representative.

c. Arrival On-Site

The cable and reel shall be physically inspected on delivery and the attenuation shall be measured for 100 percent of the fibers. The failure of any single fiber in the cable to comply with these special provisions is cause for rejection of the entire reel. Test results shall be recorded, dated, compared and filed with the copy accompanying the shipping reel in a weather proof envelope. Attenuation deviations from the shipping records of greater than 5 percent shall be brought to the attention of the Engineer or his/her assigned representative. The cable shall not be installed until completion of this test sequence and the Engineer or his/her assigned representative provides written approval. Copies of traces and test results shall be submitted to the Engineer or his/her assigned representative. If the test results are unsatisfactory, the reel of fiber optic cable shall be considered unacceptable and all records corresponding to that reel of cable shall be marked accordingly. The unsatisfactory reels of cable shall be replaced with new reels of cable at the Contractor's expense. The new reels of cable shall then be tested to demonstrate acceptability. Copies of the test results shall be submitted to the Engineer or his/her assigned representative.

d. After Cable Installation

After the fiber optic cable has been pulled but before breakout and termination, 100 percent of all the fibers shall be tested with an Optical Time-Domain Reflectometer (OTDR) for attenuation. Test results shall be recorded, dated, compared and filed with the previous copies of these tests. Copies of traces and test results shall be submitted to the Engineer or

his/her assigned representative. If the OTDR test results are unsatisfactory, the F/O cable segment will be unacceptable. The unsatisfactory segment of cable shall be replaced with a new segment, without additional splices, at the Contractor's expense. The new segment of cable shall then be tested to demonstrate acceptability. Copies of the test results shall be submitted to the Engineer or his/her assigned representative.

Singlemode fibers shall be tested at 1310 nm and 1550 nm. Attenuation readings for each direction shall be recorded on the cable data sheet.

e. Outdoor Splices

At the conclusion of all outdoor splices at one location, and before they are enclosed and sealed, all splices shall be tested with the OTDR, in both directions. Splices in segments shall be tested at 1310 nm and at 1550 nm. Individual fusion splice losses shall not exceed 0.07 dB. Measurement results shall be recorded, dated, validated by the OTDR trace printout and filed with the records of the respective cable runs. Copies of traces and test results shall be submitted to the Engineer or his/her assigned representative. If the OTDR test results are unsatisfactory, the splice shall be unacceptable. The unsatisfactory splice shall be replaced at the Contractor's expense. The new splice shall then be tested to demonstrate acceptability. Copies of the test results shall be submitted to the Engineer or his/her assigned representative.

f. Distribution Interconnect Package Testing and Documentation

All the components of the passive interconnect package (FDUs, pigtails, jumpers, couplers and splice trays) as shown on the plans and in these Special Provisions shall comprise a unit from a manufacturer who is regularly engaged in the production of the fiber optic components.

In developing the distribution interconnect package, each SC or LC termination (pigtail or jumper) shall be tested for insertion attenuation loss with the use of an optical power meter and light source. In addition, all single mode terminations shall be tested for return reflection loss. These values shall meet the loss requirements specified earlier and shall be recorded on a tag attached to the pigtail or jumper.

Once assembly is complete, the manufacturer shall visually verify that all tagging, including loss values, is complete. Then as a final quality control measure, the manufacturer shall do an "end to end" optical power meter/light source test from pigtail end to jumper lead end to assure continuity and overall attenuation loss values.

The final test results shall be recorded, along with previous individual component values, on a special form assigned to each FDU. The completed form shall be dated and signed by the Manufacturer's Quality control supervisor. One copy of this form will be attached in a plastic envelope to the assembled FDU unit. Copies will be provided separately to the Contractor and to the Engineer or his/her assigned representative, and shall be also be maintained on file by the manufacturer or supplier.

g. System Verification at Completion

Optical Time-Domain Reflectometer (OTDR) Testing. Once the passive cabling system has been installed and is ready for activation, 100 percent of the fiber links shall be tested with the OTDR for attenuation. Print out shall include at least link number, fiber color, buffer color and cable number. Test results shall be recorded, dated, compared and filed with previous copies. A hard copy printout and an electronic copy of the traces and test results along with a licensed copy of the associated software on a DOS based 89 mm disk shall be submitted to the

Engineer or his/her assigned representative. If the OTDR test results are unsatisfactory the link shall be replaced at the Contractor's expense. The new link shall then be tested to demonstrate acceptability. Copies of the test results shall be submitted to the Engineer or his/her assigned representative.

Power Meter and Light Source. At the conclusion of the final OTDR testing, 100 percent of all fiber links shall be tested end to end with a power meter and light source, in accordance with EIA Optical Test Procedure 171 and in the same wavelengths specified for the OTDR tests. These tests shall be conducted in both directions. Test results shall be recorded, compared and proven to be within the design link loss budgets, and filed with the other recordings of the same links. Test results shall be submitted to the Engineer or his/her assigned representative.

Cable Verification Worksheet. The Contractor shall provide Cable Verification Worksheets for 100 percent of all links in the fiber optic system, using the data gathered during cable verification. The completed worksheets shall be included as part of the system documentation.

Test Failures. If the link loss measured from the power meter and light source exceeds the calculated link loss, or the actual location of the fiber ends does not agree with the expected location of the fiber ends (as would occur with a broken fiber), the fiber optic link will not be accepted. The unsatisfactory segments of cable, or splices shall be replaced with a new segment of cable or splice at the Contractor's expense. The OTDR Testing, power meter and light source testing and Cable Verification Worksheet shall be completed for the repaired link to determine acceptability. Copies of the test results shall be submitted to the Engineer or his/her assigned representative. The removal and replacement of a segment of cable shall be interpreted as the removal and replacement of a single contiguous length of cable connecting two splices, two connectors or one splice and one connector. The removal of only the small section containing the failure and therefore introducing new unplanned splices will not be allowed.

h. Standards Compliance and Test Requirements
    1. Unless otherwise specified, singlemode fiber cable must meet the transmission performance parameters as specified in ANSI/TIA-568-C.3, unless specified in these Special Provisions. Singlemode fiber shall be Class IVa dispersion-unshifted fiber.
    2. Testing of installed Singlemode fiber cable
        a. Link attenuation shall be tested in accordance with ANSI/TIA-568-C.0. Reference measurements shall be made in accordance with one jumper reference method or equivalent. Optical Loss shall be measured on each fiber at 1310 nm.
        b. Link length shall be optically measured or calculated using cable sheath length markings.
        c. Cabling shall meet the following loss and length criteria. Single-mode fiber is typically used in backbone cabling between telecommunications rooms, entrance facilities, and equipment rooms within or between buildings. It includes the cross connect connectors and splices (if any).
        d. Singlemode Link criteria:
            1) Attenuation 1310 nm: fiber length (km) x .5 dB/km
            + number connector pairs x 0.5 dB
            + number of splices x 0.10 dB
            2) Length: less than 5000 m (16,400 ft)

3) Attenuation 1550 nm: fiber length (km) x .5 dB/km
+ number connector pairs x 0.5 dB
+ number of splices x 0.10 dB
4) Length: less than 5000 m (16,400 ft)

i. Documentation
   1. Test reports shall be submitted in electronic format.
   2. Electronic reports are to be submitted in PDF and one hard copy (bound or binder format). PDF and hard copy shall contain the software required to view test results. Electronic reports must be accompanied by a Certificate signed by an authorized representative of the Cabling Contractor warranting the truth and accuracy of the electronic report. Certificate must reference traceable circuit numbers that match the electronic record.
   3. Test reports shall include the following information for each cabling element tested:
      a. Actual measured and maximum allowable attenuation (loss) at the specified wavelengths per section above, and the margin. An individual test that fails the link criteria shall be marked as FAIL.
      b. Reference method.
      c. Number of mated connectors and number of splices (if any).
      d. Actual length and maximum allowable length per Section above. Any individual test that fails the link length criteria shall be marked as FAIL.
      e. Group refractive index (GRI) for the type of fiber tested, if length was optically measured.
      f. Tester manufacturer, model, serial number and software version.
      g. Circuit ID number and project/job name. The patch panel / cable label identifier shall be used to designate the circuit I.D.
      h. Link criteria (Autotest) used.
      i. Overall pass/fail indication.
      j. Project number, date, and time of test.
   4. Test reports shall be submitted within 5 business days of completion of testing.

j. Test Equipment
   1. Test equipment used under this contract shall be from manufacturers that have a minimum of 5 years of experience in producing field test equipment. Manufacturers must be ISO 9001 certified.
   2. All test tools of a given type shall be from the same manufacturer, and have compatible electronic results output.
   3. All testing equipment shall be calibrated to manufacturers specifications within last 2 years.
   4. Test equipment shall be capable of measuring relative or absolute optical power in accordance with TIA-568-C.0.
   5. Test equipment shall not include the loss or length of the test jumpers in the cable plant measurements.
   6. Singlemode test equipment shall incorporate both 1310 nm and 1550 nm sources in same unit.
   7. Sources and meters shall automatically synchronize wavelengths to prevent calibration-related errors.
   8. Test equipment shall store at least 100 tests in internal memory.
   9. Test equipment shall employ a serial port to facilitate uploading of saved information from tester to PC.

10. The time-of-flight methodology ("Characterized to a certain degree with one single scan along its length with two probes.") shall be employed when optically measuring fiber length.
11. Test equipment capable of measuring a Tx/Rx fiber pair simultaneously is recommended to enhance productivity.

k. Acceptance
   1. Once all work has been completed, test documentation has been submitted, and the Owner is satisfied that all work is in accordance with contract documents, the Owner shall notify Cabling Contractor in writing of formal acceptance of the system.

l. I. Acceptance Requirements
   1. The Cabling Contractor must warrant in writing that 100% of the installation meets the requirements as specified in this test specification.
   2. The Owner reserves the right to conduct, using Cabling Contractor equipment and labor, a random retest of up to five (5) percent of the cable plant to confirm documented results. Any failing cabling shall be retested and restored to a passing condition. In the event more than two (2) percent of the retested cable plant fails during retest, the entire cable plant shall be retested and restored to a passing condition at no additional cost to the Owner.
   3. Acceptance shall be subject to completion of all work, successful post installation testing which yields 100% PASS rating, and receipt of full documentation as specified in this test specification.

m. Warranty
   1. The Cabling Contractor shall warrant Installation against all product defects, and that all approved cabling components meet or exceed the requirements of this document.
   2. The fiber optic cabling and all passive fiber optic components (patch panels, splice enclosures, etc.) shall be warranted for a minimum of 25 years by the factory (Corning).

SYSTEM TESTING.

There are two progressive broad levels of testing: (1) Component Tests, and (2) System/Sub-System Tests. Progression to the next level of testing is built upon successful completion and acceptance of the previous level. Testing for the various system components shall be as specified herein and may include tests at (1) the factory, (2) upon arrival at the job site, (3) during installation, and (4) upon completion of the installation.

All test procedures and equipment required under this testing shall be furnished and maintained by the Contractor. Testing shall be performed in the presence of the Engineer. The Contractor shall also provide the Engineer with a copy of the manufacturer's test procedures and quality assurance procedures for information.

The Contractor shall submit documents containing proposed test procedures, test equipment and expected results to the Engineer for review and approval at least 30 calendar days prior to performing any tests. The test shall be complete in all details as determined by the Engineer. If the Engineer determines that the test procedure proposed by the Contractor is incomplete, the Contractor shall make modifications required by the Engineer. Tests shall not be performed without written approval of the Engineer.

The Contractor shall notify the City at least 14 calendar days in advance of each test. The Engineer shall have the right to delay the start of the testing up to seven (7) calendar days to accommodate personnel schedules. The Contractor shall plan on this possible delay, and if exercised by the City, this delay shall not be considered a valid cause for time extension, missed milestones, or additional compensation. If any piece of equipment fails during the individual testing, the Contractor shall request that the tests be rescheduled with appropriate notification and approval by the Engineer. All equipment must be repaired and restored to full operation before being resubmitted for inspection or testing.

A complete report of each test performed shall be submitted to the Engineer within two weeks following completion of the test. The report shall include all actions and results and all failures and corrective or preventative measures taken. System documentation shall incorporate test results, ongoing maintenance, and performance measurements.

COMPONENT TESTING.

Testing under this section applies to the components pertaining to the transmission of traffic data via the fiber optic hardware installed by the Contractor. All other testing is contained elsewhere in other sections of these Special Provisions.

Factory Tests - All communication equipment furnished by the Contractor shall be tested and subjected to a nominal 48-hour burn-in period at the factory. The factory tests shall be in accordance with equipment manufactures' standard procedures and quality assurance program. The Contractor shall provide documentation certifying that each item supplied has passed factory inspection, and burn-in testing.

Pre-Installation Tests - The Contractor shall conduct pre-installation tests on all of the communication equipment. These tests shall demonstrate the correct operation of the equipment.

Post-Installation Tests - The Contractor shall test each item after installation to ensure that the equipment has been installed without damage and operates correctly. The transmitters and receivers shall be tested with a power meter and source, to record the transmitter average power (dBm) and receiver sensitivity (dBm). These values shall be recorded in the Link Loss Budget Worksheet following this section.

Components Acceptance - Upon the completion of the installation of each component, the Contractor shall perform an isolated test and inspection to demonstrate that all components function properly and comply with the requirements of the Specifications and/or approved submittal(s). Each component shall be tested separately. Successful completion of this portion of the acceptance test shall be required for each component before the system tests can be performed.

SYSTEM INTEGRATION TESTING

The Contractor is responsible for integrating and testing the following components as a system in each field device location and in the Norwalk Transit Center (NTC), as shown on the plans, to provide a fully functional and operational system.

A fully functional and operational system shall allow the City to perform at least the following:

- View video images from cameras (video images shall be demonstrated from the decoder installed at the NTC)

- Send and receive data from the traffic signal controllers.
- Receive data from the Ethernet switches and the Gigabit Ethernet Switches.

This test shall demonstrate that all system components can function and operate as a complete system. The test shall be conducted in accordance with the approved test plan. The Engineer shall be notified a minimum of ten (10) working days before tests are to be conducted. The Engineer and/or his/her representative(s) reserve(s) the right to witness all tests. The test plan shall include demonstration of the complete functional system as shown on the Plans and as defined in these Special Provisions for system components specified in this project.

Prior to initiating the system integration test, the Contractor shall supply three (3) copies of the system operations manual to the Engineer.

The equipment shall be corrected if it fails the system integration test. No substitutions will be allowed without repeating the entire testing procedure on the substituted unit and the complete systems integration test repeated until successfully completed. Discrepancies noted in testing of the unit shall be documented and forwarded to the Engineer. Minor discrepancies noted in testing of the item shall be corrected within a maximum of 30 days of written notice to the Engineer. Major discrepancies that in the opinion of the Engineer will substantially delay receipt and acceptance of the unit will be cause for rejection of the unit.

If a unit requires modification or replacement as a result of the failure of the system integration test, a report shall be prepared and delivered to the Engineer prior to the modification or replacement of the unit. The written report shall describe the nature of the failure and the action(s) taken by the Contractor to remedy the situation.

If a failure pattern develops in similar units within the system, the Contractor shall implement any necessary corrective measures, including modification or replacement of unit, to all similar units within the system when directed by the Engineer. The necessary corrective measures shall be performed by the Contractor without additional cost or extension of the contract period.

COMPLETE SYSTEM TESTING REQUIREMENTS

Contractor shall be responsible for testing material and equipment as defined on the plans and these Special Provisions. Final acceptance tests shall be conducted after the site test results have been reviewed and accepted by the Engineer or his/her assigned representative. These tests include the complete system in normal operations.

The Contractor shall submit five copies of the acceptance test plan to the Engineer or his/her assigned representative for written approval prior to commencement of acceptance testing. The acceptance test plan shall address the full testing requirements of the specifications. The acceptance test plan shall detail all tests to be performed, the test results which are expected and the test schedule. The acceptance test plan will include the following major test and acceptance categories:

- Physical inspection
- Performance tests

Acceptance testing shall not commence until all testing material and equipment required by the Contract is delivered, installed, and aligned and all production test and site test documentation and results have been approved by the Engineer or his/her assigned representative. All acceptance test results shall be fully documented and such documentation provided as a condition of acceptance.

Physical Inspection
The physical inspection shall consist of inspecting all installed material to ensure workmanship satisfies the specified requirements.

Final Acceptance
The system will not be accepted until all of the following conditions have been met as follows:

- Physical and performance acceptance tests have been completed and the results are approved by the Engineer or his/her assigned representative
- All documentation has been completed and submitted to the Engineer or his/her assigned representative
- All connections that were changed to perform acceptance tests are restored and tested
- Commissioning tests have been performed and approved by the City

SYSTEM DOCUMENTATION

The Contractor shall provide documentation containing complete details of how the final communications system is actually configured, including theory of operation together with complete operating and maintenance information. All data shall be submitted on 22 inch by 36-inch sheets or on 8½ inch by 11 inch sheets in loose leaf bound manuals, as appropriate.

The Contractor shall provide a complete draft set of communication protocols and all other operational information as applicable for the system, the optical data and signal transmission system, and the fiber optic signal communication system prior to project completion.

Complete documentation shall be delivered at least 15 calendar days prior, and approved at least seven (7) days prior (unless otherwise approved by the Engineer), to conducting any training sessions.

The general requirements for documentation of major system components are as follows:

- General description of the system
- Overview of operation
- System and subsystem block diagrams
- Functional data flow diagrams
- Physical organization of system
- Overall system specifications
- Manufacturers' handbooks for equipment Detailed manuals shall be provided on the following:

- The Operations Manual shall include startup, shutdown, restart, and other recommended procedures to ensure satisfactory performance of the system.
- Communications equipment including layouts, cabling, wiring, controllers, modems, schematics, parts lists, etc.

Final documentation shall be grouped into two main manuals: (1) Operations and (2) Maintenance. Individual Operations and Maintenance Manuals shall be provided for each piece of equipment (one per each individual unit supplied).

(1) Operations Manual shall include, but need not be limited to, the following items:

- System schematics
- Equipment model/serial numbers and options
- System diagnostic procedure
- Design characteristics
- General operation theory
- Function for all controls
- Trouble shooting procedures (diagnostic routine)
- Block circuit diagram
- Geographic layout of components
- Schematic diagrams

(2) Maintenance Manual shall include, but need not be limited to, the following items:

- Equipment model/serial numbers and options
- As-built documentation
- Equipment model/serial numbers
- System schematics
- Recommend routine maintenance
- Recommended maintenance program
- System diagnostics procedures
- Results of all system tests performed
- Specifications
- Design characteristics

- Function for all controls
- Trouble shooting procedures (diagnostic routine)
- Block circuit diagram
- Geographical layout of all components
- Schematic diagrams
- List of replaceable component parts with stock numbers

The City shall have the right to reproduce copies of all documentation provided by the Contractor herein under, provided that such reproduction is solely for the use of the City and its designated representatives.

88-1.02.1 Payment

Payment for Network Components, System Testing, and Documentation shall be considered in the lump sum contract price paid for including full compensation for furnishing all labor, material, equipment and incidentals necessary to perform the items of work and no additional compensation will be allowed therefor. Ten percent (10%) retention will be held on all payments under Test Network Equipment and System Documentation by the City and released after all tests have been accepted by the City.

88-2.01 As-Built Plans

The Contractor shall maintain on the job site, a set of full-size red-line prints (half-sized may be used as well), to which the Engineer shall have access at all times.

The Plans, Specifications, and other Contract Documents will govern the project. The Contract Documents are intended to be complementary and cooperative and to describe and provide for a complete project. Anything in the Specifications and not on the Plans, or on the Plans and not in the Specifications, shall be as though shown or mentioned in both.

While it is believed that much of the project will be shown on the Plans or indicated in the Specifications, this does not warrant the completeness or accuracy of such information. The Contractor is required to submit to the Engineer "as-built" prints, prior to the City's accepting the installations. The prints shall indicate in red all deviations from the contract plans such as location number of fiber optic cable, pull boxes and runs, depths of conduit, number of conductors and other appurtenant work for future references.

The Contractor shall ascertain the existence of any conditions affecting the cost of the project which would have been disclosed by a reasonable examination of the site.

On these plans the Contractor shall mark all as-built conditions, locations, configurations, and other details which may vary from the details represented on the original drawings. This master record of as-built conditions, including all revisions made necessary by Addenda, Change Orders, and the like, shall be maintained up to date during the progress of the work.

In the case of those drawings which are superseded by final shop drawings, the as-built drawings shall be updated by indicating how those portions are superseded.

Upon completion of the work and prior to final acceptance, legible, as-built drawings shall be turned over to the Engineer.

88-2.01.1 Payment

Payment for As-Built Plans shall be considered in the lump sum contract price paid for including full compensation for furnishing all labor, material, equipment and incidentals to provide a complete set of As-Built Plans as required in these Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed therefore.

PART 9 – OTHER SPECIAL PROVISIONS

SECTION 900 – REMOVALS, EXCAVATION AND EARTHWORK

900-1 GENERAL.

Removals, clearing and grubbing, excavation and earthwork shall be done in accordance with Sections 300 and 400 of the Standard Specifications.

900-2 REPLACEMENT OF CURB AND GUTTER IMPROVEMENT.

With the exception of trees, shrubs, planters and fencing, the Contractor will be limited to removing (excavating) existing improvements not more than five (5) working days in advance of placing the new improvements. Access must be maintained to driveway approaches until the new improvements are made. The Contractor will provide at their expense all signs, barricades, pedestals, flashers and necessary facilities for the protection of the general public within the limits of the construction. Tree roots within 6” beneath the new improvements shall be removed.

900-3 NOTIFICATION.

Contractor is to provide residents with hand delivered notices that have sufficient information to alert them to the approximate start to work, expected duration and contact information for contractors’ representative. Wording for such notices shall be approved by the Engineer prior to delivery. Delivery shall be at least 10 days prior to start of work at affected location.

Approximate wording of the notices shall include that clearing work is to begin in approximately 10 days followed by excavation and construction work that will take no more than 5 working days to complete.

900-4 ORDER OF WORK.

The order in which sites are worked is a critical element of the project. The work is to proceed in an order mutually agreed at the start of the project.

900-5 TIMELY PROGRESS.

Completing work at a site within 5 working days of excavation is a critical element of the project. If the contractor’s schedule of operation produces sites where work is not completed within 5 working days, excavation will not be permitted at additional sites until previously excavated sites have been completed. No additional time will be added to the contract due to any such stoppages.

900-6 WATER.

Furnishing and applying water shall be considered as included in the unit prices paid for the various contract items of work requiring such water and no additional compensation will be made therefor. The use of water from residential hose bibs is not permitted without express authorization from the property owner.

900-7 DISPOSAL OF EXCAVATED MATERIAL.

Excess excavated material shall become the property of the Contractor and shall be removed

from the site and disposed of by the Contractor at the Contractor's expense.

SECTION 901 – PORTLAND CEMENT CONCRETE IMPROVEMENTS

901-1 GENERAL.

All Portland cement concrete shall be per Section 303 of the Standard Specifications. **Minimum strength 3250 psi.**

Contractor shall protect the work from vandalism. Any and all concrete defaced by markings, scoring or breakage, shall be removed and replaced and no additional payment shall be allowed therefor.

Subgrade disturbed or loosened shall be re-compacted by the use of a "Jay" tamp to the satisfaction of the Engineer prior to placing concrete and shall be considered as included in the unit prices bid.

901-2 CURB AND GUTTER.

Portland cement concrete 8" curb and 24" or 12" gutters shall conform to the applicable portions of Section 303 of the Standard Specifications and City of Norwalk Standard Plan No. 105. The Contractor shall sawcut and remove a strip of pavement to a limit line of 1 foot adjacent to the existing gutter or the new gutter that is to be installed, and replace with 5" thickness of 1" thick C2-PG-64-10 AC over 4" thick B-PG-64-10 AC pavement.

Contractor shall supply construction surveying for curb work.

The slope of replaced curb and gutter is typically 0.1% (1/10th foot per 100 feet). The contractor shall use skilled finishers and careful work practices to achieve this uniform slope. Water test all curb and gutter.

One half (1/2) inch expansion joints shall be placed at intervals not to exceed 60 feet with weakened plane joints at intervening 15 foot intervals.

Payment for concrete curb and/or gutter shall be at the contract bid price **LINEAR FOOT (LF)**. This price shall include compensation for removals, survey, curb and gutter placement, the placement of the 1-foot-wide full depth AC paving strip next to new curb and/or gutter and cleanup.

Contractor shall protect existing curb drain pipe(s) associated with concrete curb and gutter replacement or replace at their own costs.

901-3 HANDICAP ACCESS RAMP.

Curb ramp shall be ADA curb access ramp with yellow truncated domes per Standard Plans for Public Work Construction Standard 111-5, including saw cutting, AC replacement, removal and disposal of existing sidewalk, and or concrete curb access ramp. **The area of Sidewalk outside of the standard ramp is included with the ramp and has a maximum allowance of 80 square feet per ramp.** Curb access ramp shall also include modifying the entire width of existing curved and straight shape of sidewalk, creating retaining curb or provide a smooth concrete surface of at least 2" thick against the wall to match the existing improvement. Work includes replacement of existing curb and gutter. The Contractor shall sawcut and remove a strip of pavement to a limit

of at least 1 foot adjacent to the gutter that is to be installed and replace with 5" thick full depth AC pavement. Slope of gutter and pavement in the first 5 feet towards intersection at bottom of ramp has to be at 5 percent or less. Contractor shall notify City if the new gutter flowline cannot be raised high enough to meet this requirement. Contractor shall furnish and install yellow truncated domes from Armor cast Product Company or approved equal by the Engineer.

Contractor shall supply construction surveying for the curb work. Payment for access ramps shall be at the contract bid price per each. This price shall include everything necessary to finish the ramp in professional and acceptable methods. It is not limited to the compensation for removals, survey, curb and gutter placement, truncated domes, the placement of the full depth AC paving strip, replacement of spandrel and cleanup. The price also includes retaining curb as it is a portion of the ramp.

For curb and gutter section repairs, the Contractor shall dowel 2 each, #4 rebar with 4" embedment into BOTH the vertical and horizontal portions of existing, adjacent curb-gutter sections. Rebar shall be placed with a minimum of 3" clear from any existing edge. A minimum of 4" exposure of ALL #4 rebar's shall be maintained from the BOTH the existing curb and gutter prior to pour of proposed curb & gutter.

In the event where curb ramps are abutting to existing cross gutters, the Contractor shall perform a radial cut along the curb line and dowel the new ramp with the existing spandrel. Contractor shall Protect in Place the spandrel of the cross gutters.

Contractor shall install truncated dome panels in four (4) inch thick PCC access ramps, in accordance with Sections 303-5.5.5 and 302-6 of the Standard Specifications and Special Provisions.

Truncated domes shall be "Cast in Place Tactile/Detectable Warning Surface Tile" panels made of vitrified polymer composite construction, embedded type, manufactured by Armor Tile Tactile Systems, Buffalo, New York or approved equal.

The orientation of the dome pattern for all panels shall be parallel with the panel edges.

The color of the truncated dome panels shall be Yellow conforming to Federal Color No. 33538.

The contract unit price per each shall include full compensation for furnishing all labor, excavation, disposal of existing materials, tools, equipment, forming, removing and installing adjacent curb, gutter, retaining curb, survey, sidewalk, and entire sidewalk return, installing truncated dome panel, placement of the full depth AC paving strip and all other work necessary for the construction of the four (4) inches thick concrete wheelchair ramp in professional and acceptable methods and no other compensation will be allowed.

SECTION 902 – CLEANUP AND RESTORATION

902-1 CLEANUP.

The Contractor shall properly clean the work as it progresses and prevent their operations from producing dust in amounts damaging property or annoying persons living in the vicinity. Contractor shall provide a street sweeper to clean all loose material from the street. No excavated materials may remain in the roadway overnight.

902-2 RESTORATION.

All lawns, shrubs, trees, sprinkler systems and other landscaping, fences and walls which have been disturbed during construction and are not required to be removed by the construction shall be replaced in a workmanlike manner and as nearly as possible to their original condition.

Repaint address numbers and repaint red and blue curb segments where curbs are replaced. Include costs in other items of work.

All costs for cleanup, curb repainting, and restoration of the project area shall be included in the bid item costs.

902-3 PROTECTION OF EXISTING TREES, GRASS AREAS, PUBLIC RIGHT-OF-WAY, AND PRIVATE PROPERTIES.

The Contractor shall protect in place all trees at the worksite. The entire cost of replacing damaged or destroyed trees shall be borne by the Contractor. Replacement trees shall be of the size, species, and variety as those being replaced.

The Contractor shall, at all times, exercise care in the prosecution of the work to minimize the damage to private properties, and to existing grass areas and sprinkler systems. Any damage caused by the Contractor to grass areas and sprinkler systems shall be replaced, or restored to the original state. All replacements, repairs, and clean up shall be at the Contractor's expense to the satisfaction of the Engineer.

Cable TV and fiber optic conduits are installed at various locations adjacent to the curb and gutter in parkways. Contractor shall exercise extreme care while excavating in these areas.

902-4 PAYMENT.

Payment for **MOBILIZATION**, which includes DEMOBILIZATION, AND CLEANUP shall be paid at the Contract Unit Price per **LUMP SUM (LS)** and include full compensation for all labor, materials, tools, equipment, and incidentals required to complete the work and no additional compensation will be allowed therefor.

APPENDIX A – PROJECT PLANS

CITY OF NORWALK

FIBER OPTIC COMMUNICATIONS AND TRAFFIC SIGNAL IMPROVEMENTS

CITY PROJECT NO. 7239 & 7240

FEDERAL PROJECT NO. HSIPL-5347(046)

PIONEER BOULEVARD

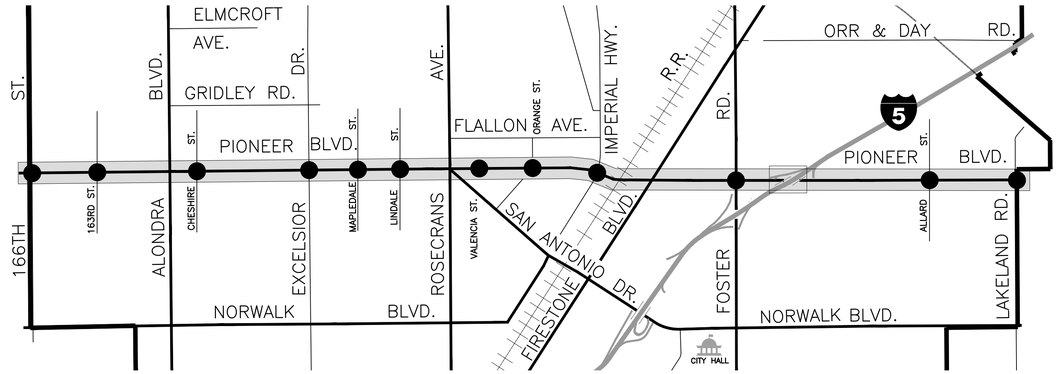
FROM 166TH STREET TO LAKELAND ROAD

UTILITY

COMPANY/AGENCY	CONTACT	TELEPHONE
AT&T DISTRIBUTION	MARCO MACIAS	(626) 318-9039
CRIMSON PIPELINE LP	CORDELIA CISNEROS	(562) 285-4133
GOLDEN STATE WATER	MELYNDA HOLM	(562) 907-9200
METROPOLITAN WATER DISTRICT	SUBSTRUCTURE TEAM	(213) 217-6679
SO CAL GAS (DISTRIBUTION)	GABRIEL DAVALOS	(714) 634-3040
SO CAL GAS (TRANSMISSION)	ROSALYN SQUIRES	(818) 701-4546
MCI	CHUCK CZUMAK	(941) 906-6703
SCE DISTRIBUTION	GAIL GARDNER	(562) 903-3167
EXXON MOBIL PIPELINE CO	ADRIANE R. SIMON	(310) 212-1794
CENTRAL BASIN MWD	JACQUE KOONTZ	(323) 201-5528
COUNTY SANITATION DISTRICT	UTILITY COORDINATOR	(562) 908-4288
LEVEL 3 COMMUNICATIONS	UTILITY COORDINATOR	(720) 888-2639
ZAYO FNA ABOVENET	GEORGE HUSS	(443) 403-2023
CROWN CASTLE – LA & VEN	RANDY OLIVER	(724) 416-2725
CITY OF SANTA FE SPRINGS	FRANK BEACH	(562) 868-0511
SUNESYS LLC	STEVE ALFONSI	(951) 256-0474
XO COMMUNICATIONS SERVICES, LLC	MATT BERGINE	(949) 417-7841
SPRINT	TIBOR LAKY	(800) 659-9698
UTILIQUEST 4 CHARTER COMM – IRWINDALE	RICH SHUMAR	(626) 430-3335
PARK WATER CO INC	JANELLE RELLOSA	(562) 299-5122
QWEST	SUE BEAM	(303) 707-6892
KINDER MORGAN ENERGY PARTNERS/SFPP	P.P. MARTIN	(714) 560-4400
SHELL OIL PIPELINE – SOUTH	UTILITY COORDINATOR	(310) 816-2063
VERIZON	TOM MONAHAN	(562) 903-7939
SPECTRUM COMMUNICATIONS	ERNEST CHANG	(562) 383-9989
NORWALK WATER COMPANY	NOEL FORD	(562) 929-5599
SOCAL GAS (GAS OPERATIONS)	HAU TSAN	(714) 634-3063

LOCATION MAP

NO SCALE



LEGEND

[SEE CALTRANS STANDARD PLAN ES-1A FOR ADDITIONAL LEGENDS]

- EXISTING LOOP DETECTION
- VIDEO DETECTION ZONE
- EXISTING VIDEO DETECTION CAMERA
- EXISTING SERVICE CABINET
- EXISTING TYPE P CABINET
- EXISTING LUMINAIRE
- EXISTING EVP
- EXISTING VEHICLE HEAD
- EXISTING MAST ARM SIGN
- EXISTING SIGN
- EXISTING PED HEAD
- EXISTING FIBER OPTIC SPLICE VAULT
- MODIFIED TYPE E LOOP
- EXISTING BROADBAND RADIO
- BLUETOOTH/WI-FI DETECTOR
- EXISTING CCTV CAMERA
- EXISTING PULL BOX
- EXISTING CONDUIT
- SMFO SINGLE MODE FIBER OPTIC CABLE
- SIC SIGNAL INTERCONNECT CABLE
- NEW PULL BOX
- NEW FIBER OPTIC SPLICE VAULT
- NEW FIBER OPTIC PULL BOX
- PROPOSED CONDUIT
- PROPOSED 1A WITH PED
- PROPOSED TYPE III SERVICE CABINET
- PROPOSED 332L HUB CABINET
- PROPOSED P TYPE CABINET
- PROPOSED MAST ARM SIGN
- PROPOSED SIGN
- PROPOSED PED HEAD
- NEW VIDEO DETECTION CAMERA
- NEW CCTV CAMERA
- DRIVEWAY

CALTRANS NOTES

- AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN
- CB INSTALL CONDUIT INTO EXISTING PULL BOX
- CC CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
- PP PROTECT IN PLACE
- RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- RL RELOCATE EQUIPMENT
- RS REMOVE AND SALVAGE EQUIPMENT
- SC SPLICE NEW TO EXISTING CONDUCTORS

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TITLE SHEET
PIONEER BOULEVARD FIBER OPTIC COMMUNICATIONS AND TRAFFIC SIGNAL IMPROVEMENTS

Approved — CITY ENGINEER — RCE 90882 — 5/15/26 DATE
Recommended — Principal Civil Engineer — RCE 75709 — 4/28/26 DATE
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-100
SHEET 1 OF 50

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE 2023 EDITIONS, INCLUDING SUPPLEMENTS THERETO, OF STANDARD PLANS AND SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CITY OF NORWALK STANDARD PLANS FOR CONSTRUCTION, STATE OF CALIFORNIA STANDARD PLANS AND SPECIFICATIONS, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF NORWALK, ENGINEERING DIVISION AT LEAST TWO WORKING DAYS PRIOR TO STARTING CONSTRUCTION. TEL (562) 929-5723.
3. FLASHING ARROW BOARDS SHALL BE USED ON ANY LANE CLOSURES ON ARTERIAL STREETS. USE ONE FLASHING ARROW BOARD PER LANE CLOSED.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR AND COORDINATE THE RELOCATION OF ANY EXISTING UTILITIES DEEMED NECESSARY BY THE PROPOSED IMPROVEMENT.
5. ALL FINISH SURFACES SHALL BE CONSTRUCTED TO MAINTAIN POSITIVE DRAINAGE.
6. BEFORE STARTING WORK THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF NORWALK, ENGINEERING DIVISION (NO FEE).
7. HARD HATS, ORANGE VESTS, AND OTHER REQUIRED SAFETY EQUIPMENT SHALL BE WORN AT ALL TIMES WHEN WORKING ON THIS PROJECT.
8. THE CONTRACTOR SHALL COMMUNICATE DIRECTLY WITH THE UTILITY COMPANIES WHEN REQUESTING FACILITIES TO BE LOCATED, MARKED OR REPAIRED, NO EXCAVATIONS ARE PERMITTED UNTIL ALL UTILITIES ARE MARKED.
9. SAFETY IS STRESSED. ANY OPERATIONS OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL, WILL CAUSE THE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE, AND NO ADDITIONAL WORKING DAYS WILL BE ALLOWED.
10. APPROVAL OF THIS PLAN BY CITY ENGINEER DOES NOT CONSTITUTE A REPRESENTATION OF THE ACCURACY OF THE LOCATION OF, OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES WITHIN THE LIMITS OF THE PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE TRUE LOCATION OF ALL PUBLIC AND PRIVATE UTILITIES, AND FOR MAINTAINING SERVICE TO ANY INDIVIDUAL PROPERTY WHOSE UTILITY SERVICE MAY BE DAMAGED BY THE CONTRACTOR IN THE PERFORMANCE OF THE WORK.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES (BY POTHOLING OR OTHER MEANS). CONTRACTORS SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) 800/227-2600 OR 811 AT LEAST TWO WORKING DAYS PRIOR TO ANY EXCAVATION TO LOCATE EXISTING UTILITIES.
12. NO BACKFILL MATERIAL, PAVING MATERIAL OR EQUIPMENT MAY BE STORED OVERNIGHT IN PUBLIC RIGHT-OF-WAY OF STREETS.
13. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE REFLECTORIZED AND APPLIED IN TWO COATS. A MINIMUM OF SEVEN DAYS SHALL BE PROVIDED BETWEEN FIRST AND SECOND COATS.
14. ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, AND CURB PAINT SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW STRIPING, MARKING OR PAINT. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED.
15. AREAS ADJACENT TO THE CONSTRUCTION SITE SHALL BE KEPT CLEAN AT ALL TIMES. ALL SWEEPING PERFORMED BY CITY CREWS WILL BE CHARGED TO THE CONTRACTOR AT OVERTIME RATES.
16. STATIONING REFERS TO SURVEY CENTERLINE OF STREET.
17. LANE CLOSURES ON MAJOR ARTERIAL HIGHWAYS ARE PERMITTED ONLY BETWEEN 8:30 A.M. AND 3:30 P.M. AND ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL REMAIN OPEN AT ALL TIMES.
18. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS AND AT CONTRACTOR'S EXPENSE, FOR CITY'S REVIEW AND APPROVAL BEFORE CONSTRUCTION BEGINS.
19. CONSTRUCTION STAKING SHALL BE PERFORMED BY A REGISTERED SURVEYOR OR ENGINEER RETAINED AND PAID FOR BY THE CONTRACTOR. THE SURVEYOR OR ENGINEER SHALL CERTIFY ON THE FINAL CONSTRUCTION DRAWING THAT THE STAKING WAS PERFORMED ACCORDING TO APPROVED PLANS.
20. CONTRACTOR TO CONTACT NORWALK TRANSIT SYSTEM (NTS) AND METRO AT LEAST 72 HOURS PRIOR TO CONSTRUCTION FOR COORDINATION.
21. CONTRACTOR SHALL NOTIFY NTS AT LEAST 14 DAYS IN ADVANCE OF ALL CONSTRUCTION AFFECTING TRANSIT OPERATIONS. CONTRACTOR SHALL WORK WITH NTS TO ESTABLISH AN APPROVED TEMPORARY BUS STOP LOCATION.
22. CONTRACTOR MAY NOT REMOVE ANY BUS STOP SIGNS WITHOUT PRIOR AUTHORIZATION FROM NTS.
23. TEMPORARY REMOVAL OF STREET FURNITURE TO AVOID DAMAGE AND CONFLICT DURING CONSTRUCTION REQUIRES A 30 DAY ADVANCE NOTICE TO NTS AND THE OWNER OF THE STREET FURNITURE.

GENERAL NOTES (TRAFFIC SIGNAL)

1. ALL TRAFFIC SIGNAL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE STANDARD PLANS AND SPECIFICATIONS DATED 2023, THE CALIFORNIA MUTCD 2014, APWA STANDARDS AND SPECIFICATIONS AND ALL REVISIONS AND DOCUMENTS REFERENCED THEREBY. SEE CITY OF NORWALK SPECIAL PROVISIONS.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES WITHIN THE CONSTRUCTION LIMITS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL WORK ON THIS PROJECT INCLUDING WORK WITHIN CITY OF SANTA FE SPRINGS AND LOS ANGELES COUNTY.
4. WHERE NEW CONDUCTOR CABLES ARE SPECIFIED, THE EXISTING CABLES SHALL BE REMOVED.
5. FACE OF POLES TO BE 3' BEHIND NEW CURB, LOCATION FROM BCR AND ECR AS SHOWN IN POLE SCHEDULE. LOCATION OF POLE TO BE APPROVED BY THE CITY INSPECTOR PRIOR TO CONSTRUCTION OF FOUNDATION.
6. SALVAGED POLES, EQUIPMENT, SIGNS, ETC, SHALL BE RETURNED COMPLETE WITH ALL ASSOCIATED HARDWARE TO THE CITY YARD PER CITY'S DIRECTION.
7. CONDUIT BETWEEN STANDARD AND ADJACENT PULLBOX SHALL BE 3" PVC UNLESS SHOWN OTHERWISE.
8. ALL PULL BOXES SHALL BE NO. 6 EXCEPT WHERE NOTED ON THE PLAN.
9. ALL SIGNAL HEADS SHALL BE 12" AND ALL BACKPLATES SHALL BE METAL, LOUVERED, WITH TUNNEL VISORS, ALUMINUM FRAMEWORK, AND BRONZE MOUNTS.
10. ALL PEDESTRIAN SIGNALS SHALL BE COUNTDOWN TYPE WITH AUDIBLE TONE(S) FOR THE BLIND.
11. ALL VEHICLE AND PEDESTRIAN INDICATORS SHALL BE L.E.D.
12. ALL SIGN NUMBERS REFER TO 2014 CALIFORNIA MUTCD.
13. ALL NEW PEDESTRIAN PUSH BUTTON SIGN MOUNT SHALL BE TYPE "B" WITH TAMPER PROOF SCREWS, 5"X7" 1/2"-R10-3b (CAMUTCD) SIGNS AND ADA "BULLDOG" PUSH BUTTONS (OR APPROVED EQUAL).
14. HIGH DEFINITION VIDEO DETECTION SYSTEM (VDS) SHALL BE A INTEGRATED CAMERA-PROCESSOR SENSOR UNIT CAPABLE OF DETECTING VEHICLE/BICYCLE DIFFERENTIATION, ADVANCE DETECTION, TRAFFIC DATA COLLECTION AND HD VIDEO SURVEILLANCE.
15. THE CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
16. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS, OR STRUCTURES SHOWN ON THESE PLANS WAS OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT EXISTING UTILITIES. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY THE LOCATION, AND ANY DISCREPANCY ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
17. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL CALL AND OBTAIN UNDERGROUND SERVICE ALERT ID NUMBER BY CALLING 811.
18. REQUEST FOR INSPECTION SERVICE BY THE CITY OF NORWALK DEPARTMENT OF PUBLIC WORKS SHALL BE MADE BY THE CONTRACTOR AT LEAST TWENTY FOUR (24) HOURS BEFORE THE SERVICES ARE REQUIRED. TO REQUEST INSPECTION SERVICES, CALL (562) 929-5727.
19. ACCESS TO ALL DRIVEWAYS AND BUSINESSES SHALL BE PROVIDED AND MAINTAINED DURING THE ENTIRE PERIOD OF CONSTRUCTION.
20. NO WORK IN CONNECTION HEREWITH SHALL BE CONDUCTED BETWEEN THE HOURS OF 5:00 PM AND 7:00 AM OF ANY DAY, NOR ON SATURDAYS, SUNDAYS, OR HOLIDAYS WITHOUT PRIOR WRITTEN APPROVAL OF THE NORWALK CITY ENGINEER, OR OTHERWISE DIRECTED BY THE PLANS AND SPECIFICATIONS.
21. HOLES LEFT IN THE SHAFT OF AN EXISTING STANDARD DUE TO THE REMOVAL OF EQUIPMENT MUST BE SEALED BY FASTENING A GALVANIZED STEEL DISK TO COVER THE HOLE. FASTEN USING A SINGLE CENTRAL GALVANIZED STEEL FASTENER. SEAL EDGES OF THE DISK AND HOLE WITH A POLYSULFIDE OR POLYURETHANE SEALING COMPOUND COMPLYING WITH ASTM C 920, TYPE 'S', GRADE 'NS', CLASS 25, USE 'O'.
22. THE CONTRACTOR SHALL REPAIR ALL DAMAGED LANDSCAPING AND IRRIGATION TO THE SATISFACTION OF THE CITY ENGINEER.
23. ADA ACCESSIBLE RAMPS SHALL COMPLY TO APWA STANDARDS AND CITY STANDARD PLANS. ALL REMOVALS SHALL BE TO THE NEAREST SCORELINE OR AS DIRECTED BY THE ENGINEER. NEW CONCRETE SHALL HAVE TRANSVERSED BROOMED SURFACE TEXTURE. INSTALL DETECTABLE WARNING SURFACE (TRUNCATED DOMES) PER CITY STANDARD.
24. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE BEFORE WORK IS STARTED, DEVICES NO LONGER REQUIRED SHALL BE REMOVED. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS TO CITY ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. TRAFFIC CONTROL PLANS SHALL CONFORM TO CITY STANDARDS.
25. PEDESTRIAN TRAFFIC MUST BE MAINTAINED AT ALL TIMES. PEDESTRIANS MAY BE RELOCATED ONTO PRIVATE PROPERTY WITH OWNER'S PERMISSION ONLY.
26. NO EQUIPMENT OR MATERIALS SHALL BE STORED ON SIDEWALK AT ANY TIME.
27. BURIED TRAFFIC SIGNAL LOOPS, DAMAGED OR CUT SHALL BE REPLACED BY CONTRACTOR IN KIND TO CALTRANS SPECIFICATIONS. NOTIFY CITY INSPECTOR OF SUCH DAMAGE IMMEDIATELY, AND TRAFFIC DEPARTMENT 24 HOURS PRIOR TO ANY RESTORATIVE WORK IN THESE AREAS.
28. TRAFFIC SIGNAL CIRCUITS AND INTERCONNECT CONDUITS MAY NOT BE SHOWN. CONTRACTOR SHALL LOCATE ALL TRAFFIC SIGNAL CIRCUITS AND INTERCONNECT CONDUITS PRIOR TO ANY TRENCHING OR BORING. PROVIDE 3' SEPARATION BETWEEN NEW CONDUITS AND ALL TRAFFIC SIGNAL AND INTERCONNECT CONDUITS AND 3' FROM ALL TRAFFIC SIGNAL CONTROLLERS AND PULL BOXES. ALL TRAFFIC SIGNAL AND INTERCONNECT CONDUITS SHALL BE MAINTAINED AND PROTECTED.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS OR MARKERS DURING CONSTRUCTION.
30. ALL TRAFFIC SIGNAL PULL BOXES, LIDS AND EXTENSIONS SHALL BE No. 6, UNLESS SHOWN OTHERWISE. PULL BOX LIDS SHALL BE FIBERLYTE MATERIAL. PULL BOX LID MARKINGS SHALL BE INSCRIBED "TRAFFIC SIGNAL".

GENERAL NOTES (FIBER OPTIC)

1. UTILITIES SHOWN ON THESE PLANS ARE CORRECT AND ACCURATE TO THE EXTENT OF AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE STEPS TO ASCERTAIN THE EXACT LOCATION OF ALL KNOWN SUBSTRUCTURES PRIOR TO DOING WORK THAT MAY DAMAGE OR INTERFERE WITH SUCH FACILITIES ("UNDERGROUND SERVICE ALERT" – DIAL 811). CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING UTILITIES.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL AFFECTED AGENCIES AND UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
3. NO LANES MAY BE CLOSED OR OBSTRUCTED AT ANY TIME UNLESS SPECIFICALLY ALLOWED PER THE ENCROACHMENT PERMIT AND/OR AS DIRECTED BY THE CITY'S REPRESENTATIVE.
4. SEE SPECIAL PROVISIONS FOR SPECIFICATIONS ON COMMUNICATION CONDUIT, FIBER OPTIC CABLE, AND ETHERNET DATA/VIDEO TRANSMISSION EQUIPMENT.
5. ALL SIGNAL INTERCONNECT/FIBER OPTIC PULL BOXES, LIDS AND EXTENSIONS SHALL BE No. 6, FIBERLYTE MATERIAL, UNLESS SHOWN OTHERWISE. PULL BOX LID MARKINGS SHALL BE INSCRIBED "COMMUNICATION". MAXIMUM PULL BOX SPACING SHALL BE 500'.
6. ALL COMMUNICATION CONDUIT SHALL BE 3" PVC SCHEDULE 80, UNLESS OTHERWISE NOTED. USE 45° ELBOWS INTO ALL PULL BOXES. ALL NEW CONDUIT SHALL INCLUDE A #10 GREEN BOND WIRE AND PULL TAPE. PLUG END OF ALL UNUSED CONDUITS.
7. BORE AND JACK METHOD SHALL BE USED FOR INSTALLING CONDUIT UNDER PAVEMENT. 24" MINIMUM COVER REQUIRED IN ALL AREAS. 36" COVER REQUIRED UNDER ALL ROADWAY SURFACES. ALL TRENCH, EXCAVATION AND BACKFILL REQUIREMENTS IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE CITY'S STANDARD TRENCH PAVING DETAIL AND SECTION 306 OF CURRENT EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK).
8. CONDUIT ROUTINGS SHOWN ARE SCHEMATIC ONLY. ACTUAL ROUTINGS SHALL BE BY THE MOST DIRECT PATH POSSIBLE THAT DOES NOT PRODUCE THE CONFLICTS IDENTIFIED HERE IN.
9. WHERE CONDUIT IS INSTALLED AND DISTURBS EXISTING STRIPING, CONTRACTOR SHALL ARRANGE AND PAY FOR STRIPING. SEE SPECIAL PROVISIONS FOR CONTRACTOR RESPONSIBILITY FOR TEMPORARY PAVEMENT MARKINGS.
10. POTHOLING REQUIRED FOR UTILITIES SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COST BE INCLUDED IN THE CONTRACT BID PRICE. THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS ON PUBLIC STREETS. THE CONTRACTOR SHALL VERIFY DEPTH OF ALL SERVICE UTILITY CROSSINGS UNDER SIDEWALK/PARKWAY.
11. NEW PULL BOXES OR SPLICE VAULTS SHALL NOT BE LOCATED IN OR WITHIN 1' OF ANY CURB ACCESS RAMP.
12. THE LOCATIONS OF THE PROPOSED CABINETS, SPLICE VAULTS AND PULL BOXES ARE APPROXIMATE AND MAY CHANGE TO SUIT FIELD CONDITIONS AS DIRECTED BY THE CITY'S REPRESENTATIVE.
13. ALL CONCRETE SIDEWALK, ADA ACCESS RAMP, ASPHALT CONCRETE (AC) AND PORTLAND CEMENT CONCRETE (PCC) PAVEMENT DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN KIND IN ACCORDANCE TO THE CITY OF NORWALK REQUIREMENTS. THE REMOVAL LIMITS SHALL BE OUTLINED AND ACCEPTED BY THE PUBLIC WORKS INSPECTOR PRIOR TO REPLACEMENT.
14. ALL NEW COMMUNICATION BACKBONE, DISTRIBUTION & DROP CABLE SHALL BE SINGLE MODE FIBER OPTIC CABLE (ITU G.652.D COMPLIANT) UNLESS OTHERWISE NOTED. INSTALLATION OF FIBER OPTIC CABLE SHALL NOT EXCEED MANUFACTURER'S MINIMUM BEND RADIUS. ALL FIBER OPTIC COMMUNICATION CABLE SHALL BE MARKED (TAGGED) FOR FUNCTION AND TERMINATION LOCATIONS.
15. FIBER SPLICES SHALL BE DONE EITHER IN SPLICE VAULTS OR IN CABINETS AS SHOWN ON THE PLANS. FIBER OPTIC CABLE SPLICES SHALL BE FUSION TYPE. COMPLETED SPLICES SHALL BE PROTECTED BY HEAT SHRINKABLE TUBING. ONLY THE FIBERS TO BE SPLICED MAY BE CUT.
16. AT LOCATIONS WHERE A PROPOSED FIBER SPLICE DOES NOT CONTAIN ADEQUATE SLACK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PULL CABLE SLACK FROM ADJACENT PULL BOX(S) TO PERFORM THE NECESSARY OPERATION.
17. COIL 50' OF FIBER CABLE SLACK IN A SPLICE VAULT THAT HAS NO SPLICING. COIL 30' OF SLACK FOR EACH END OF CABLE IN A SPLICE VAULT WITH A COMPLETED SPLICE CLOSURE. COIL 20' OF SLACK IN ALL OTHER PULL BOX LOCATIONS AND CABINET TERMINATIONS, UNLESS OTHERWISE NOTED. CAP END OF ALL UNUSED CABLES.
18. ALL SALVAGED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE INDICATED. ANY SALVAGED FIBER OPTIC CABLE SHALL BE PROPERTY OF THE CONTRACTOR AND NOT RE-USED OR RE-SPLICED ON THIS PROJECT.
19. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, TESTING AND COMMISSIONING A COMPLETED ETHERNET IP COMMUNICATION NETWORK SYSTEM COMPRISED OF LOCATIONS SHOWN ON THE PLANS. THE ETHERNET IP COMMUNICATION NETWORK SYSTEM SHALL INCLUDE ALL EQUIPMENT LISTED OR SHOWN ON THE PLANS AND SHALL INCLUDE ANY INCIDENTAL ITEMS NECESSARY FOR THE SATISFACTORY OPERATION OF THE SYSTEM. NO RE-USED OR RECONDITIONED EQUIPMENT MAY BE INSTALLED ON THIS PROJECT.
20. CONTRACTOR SHALL ARRANGE TO HAVE A QUALIFIED TECHNICIAN TO WORK ON THE ETHERNET IP COMMUNICATIONS SYSTEM EMPLOYED BY THE MANUFACTURER OR HIS REPRESENTATIVE, PRESENT AT THE TIME THE SYSTEM IS TURNED ON AND AVAILABLE DURING THE TESTING BURN-IN PERIOD.
21. GROUND AND BONDING SYSTEMS SHALL CONFORM TO SECTION 86-2.10 "BONDING AND GROUNDING" OF THE STATE STANDARD SPECIFICATIONS AND PER THE MANUFACTURERS SPECIFICATIONS.
22. A 12" VERTICAL SEPARATION BETWEEN NEW CONDUITS AND OTHER UTILITIES SHALL BE MAINTAINED AT CROSSINGS. A 3" MIN. HORIZONTAL SEPARATION BETWEEN NEW CONDUITS AND POWER AND WATER UTILITIES THAT RUN PARALLEL SHALL BE MAINTAINED. A 3' (EXCEPT WHERE NOTED) MINIMUM SEPARATION BETWEEN CONDUIT AND SANITARY SEWER AND STORM DRAINS THAT RUN PARALLEL SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY THE CITY. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 3' CLEARANCE FOR ALL OTHER FACILITIES.
23. AT THE END OF EACH WORK DAY, CONDUIT CAPS SHALL BE PLACED ON ALL VACANT DUCTS. DUCTS IN BUILDING ENTRANCES, NEW OR EXISTING SHALL BE SEALED PRIOR AND AFTER PLACEMENT OF FIBER OPTIC CABLE, INCLUDING DUCTS ON WALLS WHERE CORRING REQUIRED.
24. THE REMOVAL, STORAGE, AND REPLACEMENT OF ALL SHRUBBERY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL LANDSCAPING SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION. ALL BORINGS SHALL BE OUTSIDE THE DRIP LINE OF ALL TREES TO PREVENT ROOT DAMAGE.
25. COST TO REMOVE AND REPLACE EXISTING PAVEMENT OVER UTILITY LINE TRENCHES SHALL BE INCLUDED IN THE BID PRICE. TRENCHES SHALL BE BACKFILLED AND PAVEMENT SHALL BE REPLACED PER CITY SPECIFICATIONS. PAVEMENT SHALL BE REPLACED IN KIND (MINIMUM OF 4" AC ON 12" AB) AS DETERMINED IN THE FIELD BY THE ENGINEER. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE RESTORED (TO ORIGINAL CONDITIONS).
26. THE CONTRACTOR SHALL FIELD VERIFY ELECTRICAL SERVICE LOCATIONS AND PROVIDE ALL NECESSARY ACCESSORIES FOR INSTALLING FIBER AND COMMUNICATION EQUIPMENT.
27. THE CONTRACTOR SHALL COORDINATE FIBER CABLE CONSTRUCTION WITH TRAFFIC SIGNAL CONTROLLER AND ETHERNET SYSTEMS.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS AND AS-BUILT INFORMATION FOR ALL WORK THROUGHOUT THE COURSE OF CONSTRUCTION.

811 Know what's below. Call before you dig.

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
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www.advantec-usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY: 07/16/24
JOHN A. DORADO II, PE — DATE
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

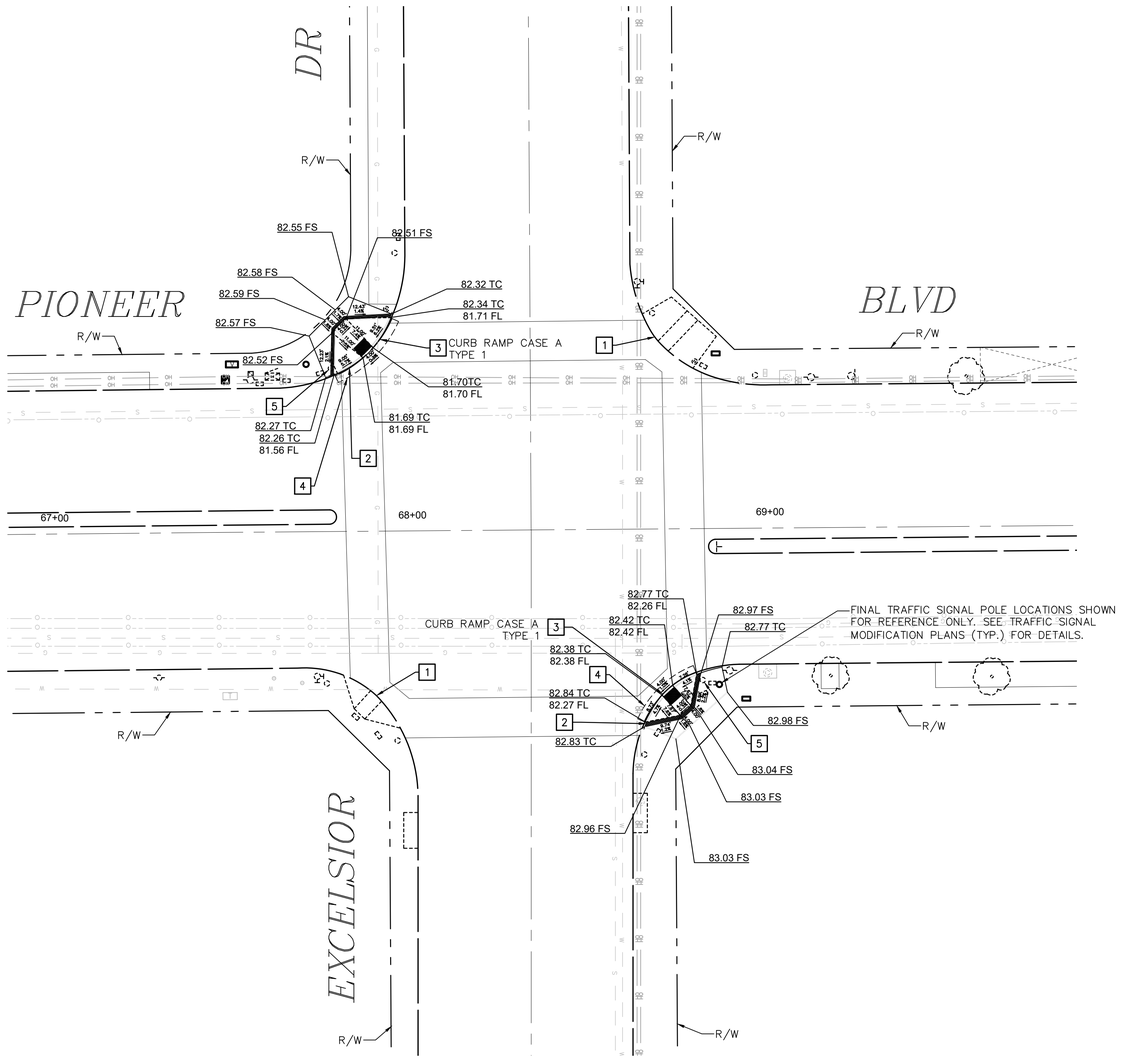
CITY OF NORWALK

TITLE:
GENERAL NOTES
PIONEER BOULEVARD FIBER OPTIC COMMUNICATIONS AND TRAFFIC SIGNAL IMPROVEMENTS

Approved — CITY ENGINEER — RCE 90882 — 5/15/26 DATE
Recommended — Principal Civil Engineer — RCE 75709 — 4/28/26 DATE
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-101
SHEET 2 OF 50

0 20' 40'
SCALE: 1" = 20'



CONSTRUCTION NOTES (THIS SHEET ONLY):

1. PROTECT EXISTING PEDESTRIAN RAMP IN PLACE.
2. REMOVE EXISTING PEDESTRIAN RAMP.
3. CONSTRUCT CURB RAMP PER SPPWC STD 111-5. CASE AND TYPE PER PLAN.
4. SAWCUT AND REMOVE EXISTING ASPHALT TO A DEPTH OF 6" AND PLACE 6" THICK FULL DEPTH AC.
5. REMOVE AND SALVAGE (ITEM AS NOTED).

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NOTE:

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SEE SHEET 2 FOR GENERAL NOTES.

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REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT EXCELSIOR DRIVE

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

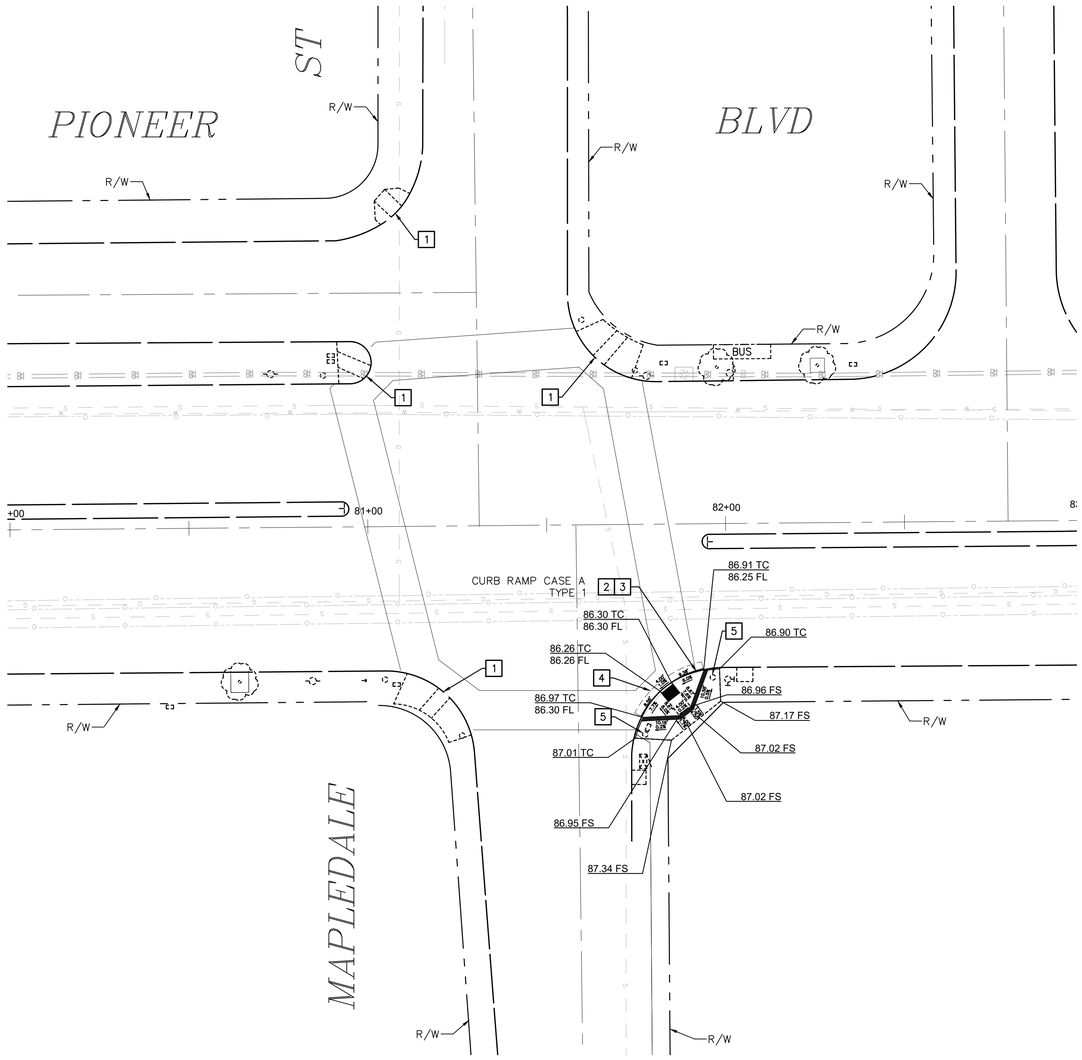
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-102

SHEET 3 OF 50

0 20' 40'
SCALE: 1" = 20'



CONSTRUCTION NOTES (THIS SHEET ONLY):

1. PROTECT EXISTING PEDESTRIAN RAMP IN PLACE.
2. REMOVE EXISTING PEDESTRIAN RAMP.
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JOHN A. DORADO II
No. 74405
CIVIL
STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT
MAPLEDALE STREET

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

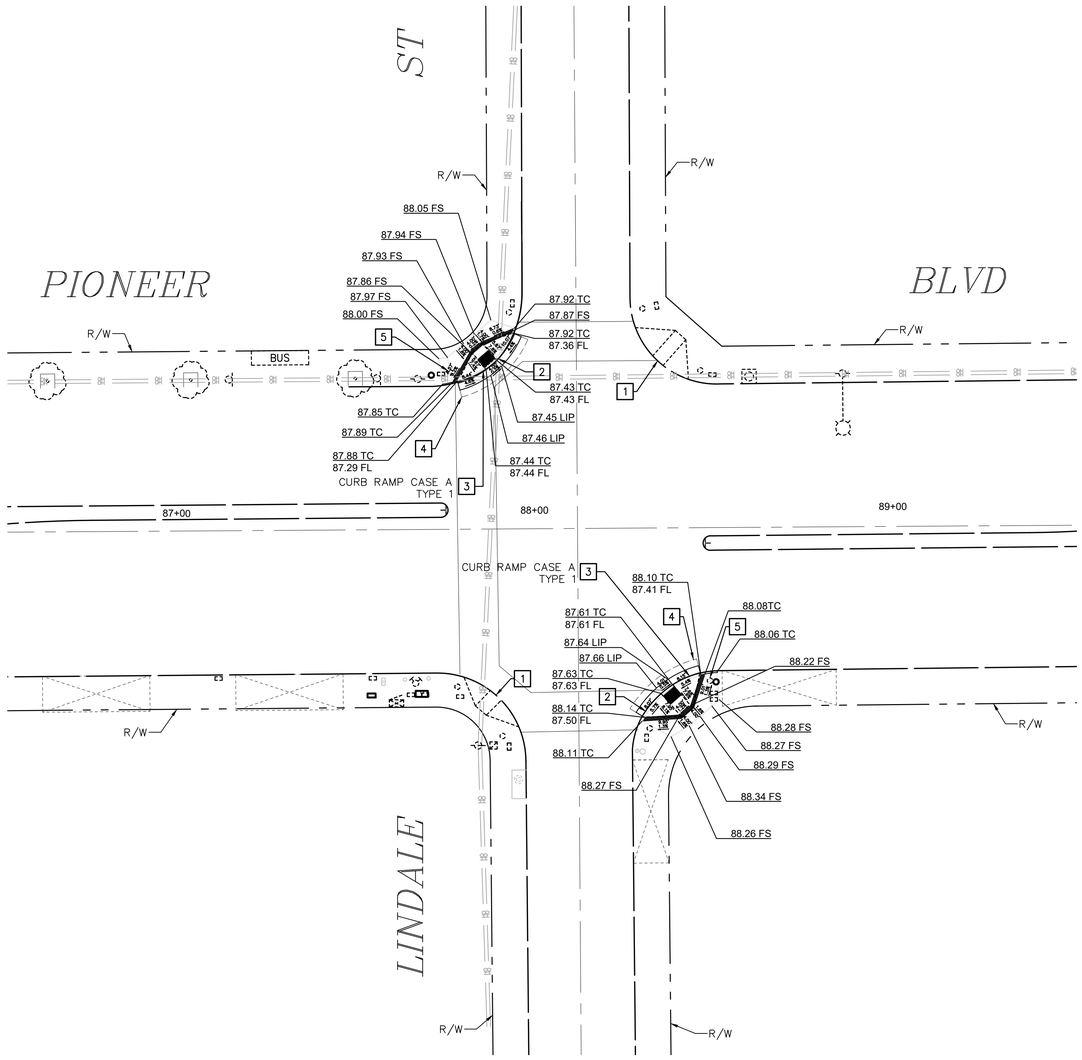
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-103

SHEET 4 OF 50

0 20' 40'
SCALE: 1" = 20'



CONSTRUCTION NOTES (THIS SHEET ONLY):

1. PROTECT EXISTING PEDESTRIAN RAMP IN PLACE.
2. REMOVE EXISTING PEDESTRIAN RAMP.
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REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS		
DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT
LINDALE STREET

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

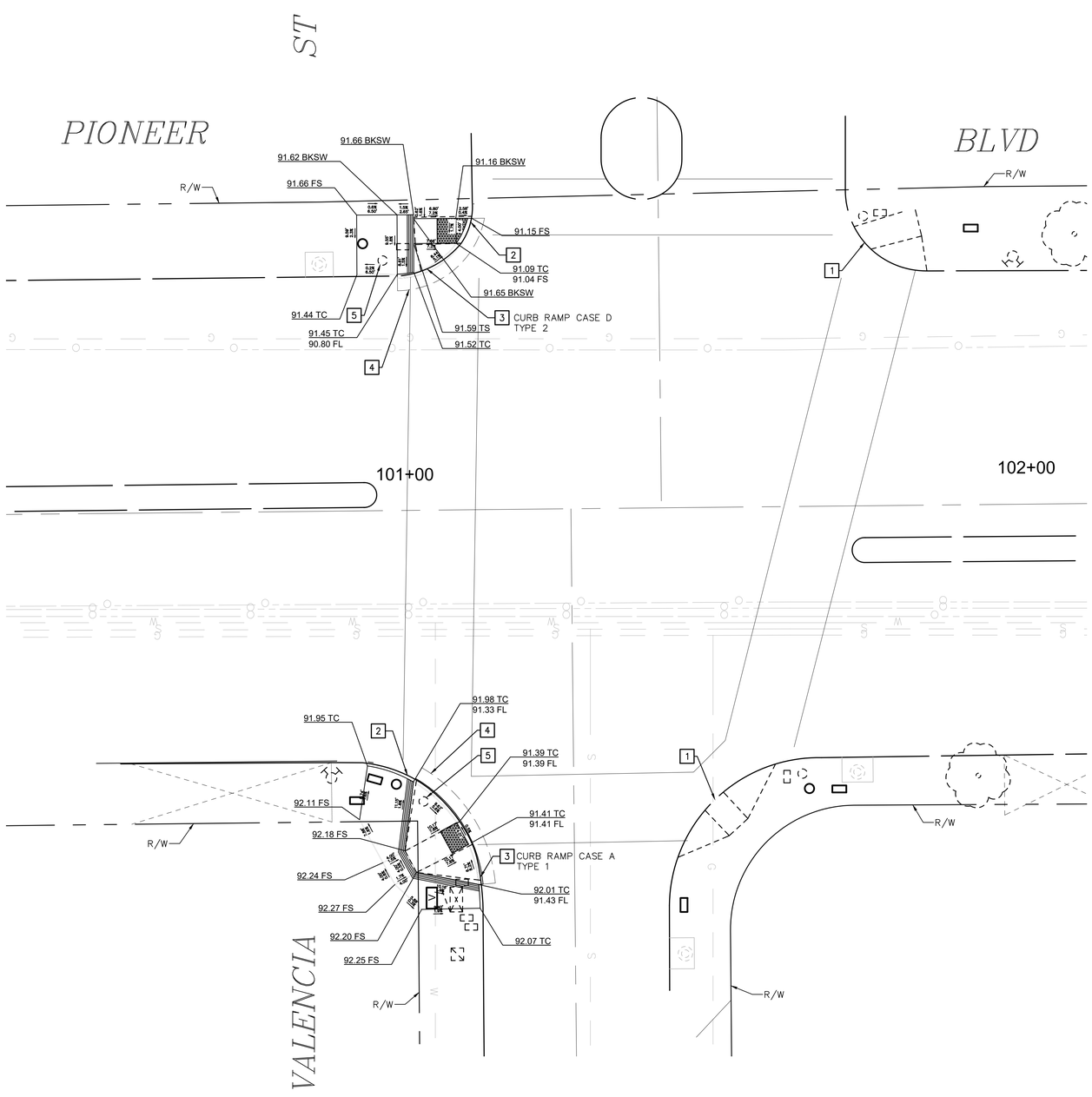
PROJECT NO. 7239 & 7240

DRAWING NO. T-104

Drawn By _____ Checked By _____

SHEET 5 OF 50

0 20' 40'
SCALE: 1" = 20'



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2. REMOVE EXISTING PEDESTRIAN RAMP.
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REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT
VALENCIA STREET

Approved
CITY ENGINEER RCE 90882 DATE 5/15/26

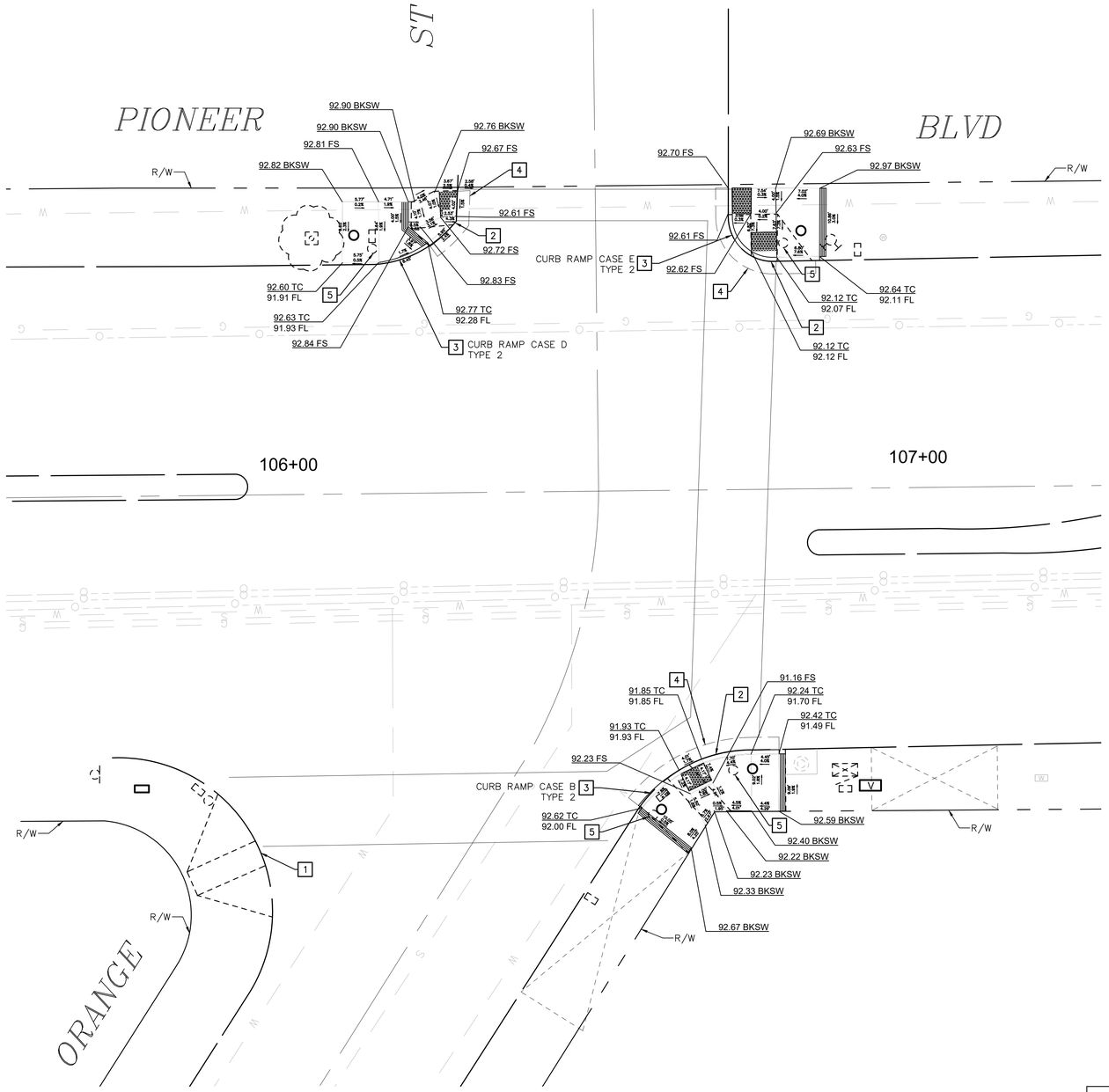
Recommended
Principal Civil Engineer RCE 75709 DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-105

Drawn By _____ Checked By _____

SHEET 6 OF 50

0 20' 40'
SCALE: 1" = 20'



CONSTRUCTION NOTES (THIS SHEET ONLY):

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STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE 07/16/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT
ORANGE STREET

Approved
CITY ENGINEER RCE 90882 DATE 5/15/26

Recommended
Principal Civil Engineer RCE 75709 DATE 4/28/26

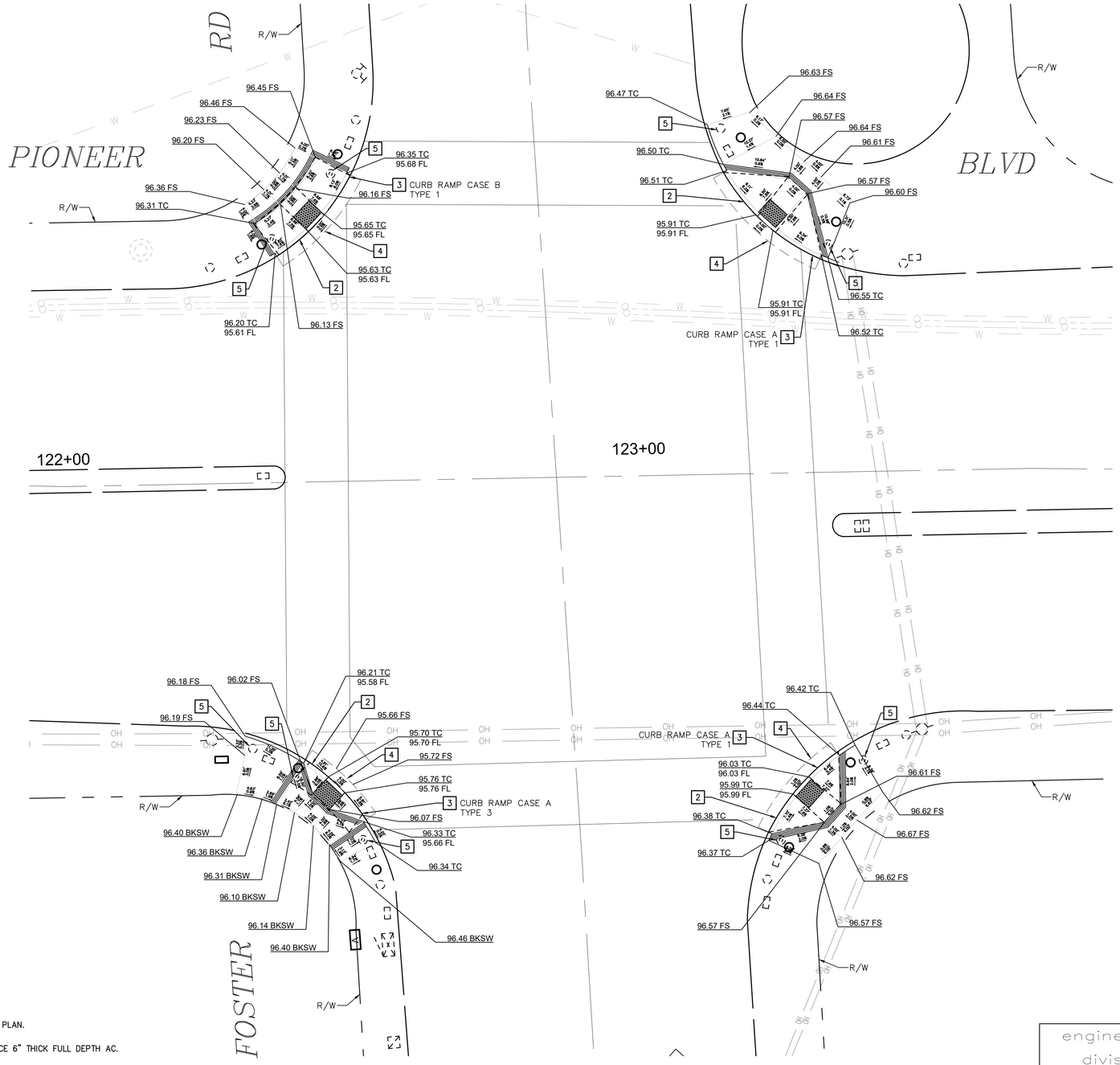
Drawn By _____ Checked By _____

PROJECT NO.
7239 & 7240

DRAWING NO.
T-106

SHEET 7 OF 50

0 20' 40'
SCALE: 1" = 20'



CONSTRUCTION NOTES (THIS SHEET ONLY):

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4. SAWCUT AND REMOVE EXISTING ASPHALT TO A DEPTH OF 6" AND PLACE 6" THICK FULL DEPTH AC.
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: ROADWAY IMPROVEMENT PLAN
PIONEER BOULEVARD AT
FOSTER ROAD

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-107

SHEET 8 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5	6	7	8	9
12 WIRE CONDUCTOR CABLE	1	ø4,ø7,ø4P / ø6PPB	–	–	–	–	–	–	–	1	1
	2	ø5,ø6,ø6P / ø4PPB	–	–	–	–	1	1	–	1	1
	3	ø2,ø5,ø2P / ø4PPB	–	–	–	1	1	1	–	1	1
	4	ø3,ø4,ø4P / ø2PPB	–	–	–	1	1	1	–	1	1
	5	ø3,ø8,ø8P / ø2PPB	–	–	1	1	1	1	–	1	1
3 WIRE CONDUCTOR CABLE	6	ø1,ø2,ø2P / ø8PPB	1	1	1	1	1	1	–	1	1
	7	ø1,ø6,ø6P / ø8PPB	–	–	–	–	–	–	1	1	1
	8	ø7,ø8,ø8P / ø6PPB	–	–	–	–	–	–	1	1	1
		TOTAL CABLES	1	1	2	2	4	4	4	8	8
#10		LUMINAIRE	2	2	2	2	2	2	2	2	2
#8		SERVICE	–	–	–	–	3	–	–	3	3
12 SMFO CABLE			–	–	–	–	–	–	–	–	1(N)
VIDEO DETECTOR CABLE (3–#18 AWG)		ø1/ø6	–	–	–	–	–	–	1(N)	1(N)	1(N)
		ø5/ø2	–	–	–	1(N)	1(N)	–	–	1(N)	1(N)
		ø3/ø8	–	1(N)	1(N)	1(N)	1(N)	–	–	1(N)	1(N)
		ø7/ø4	–	–	–	–	–	–	–	1(N)	1(N)
		TOTAL	–	1(N)	1(N)	2(N)	2(N)	–	1(N)	4(N)	4(N)
CONDUIT SIZE			2"	2–2"	2–2"	2–2"	2–2"	2"	2"	3–2"	2–2"
PERCENT FILL			20.6%	22.0%	40.7%	43.1%	55.1%	20.6%	44.0%	58.6%	41.6%

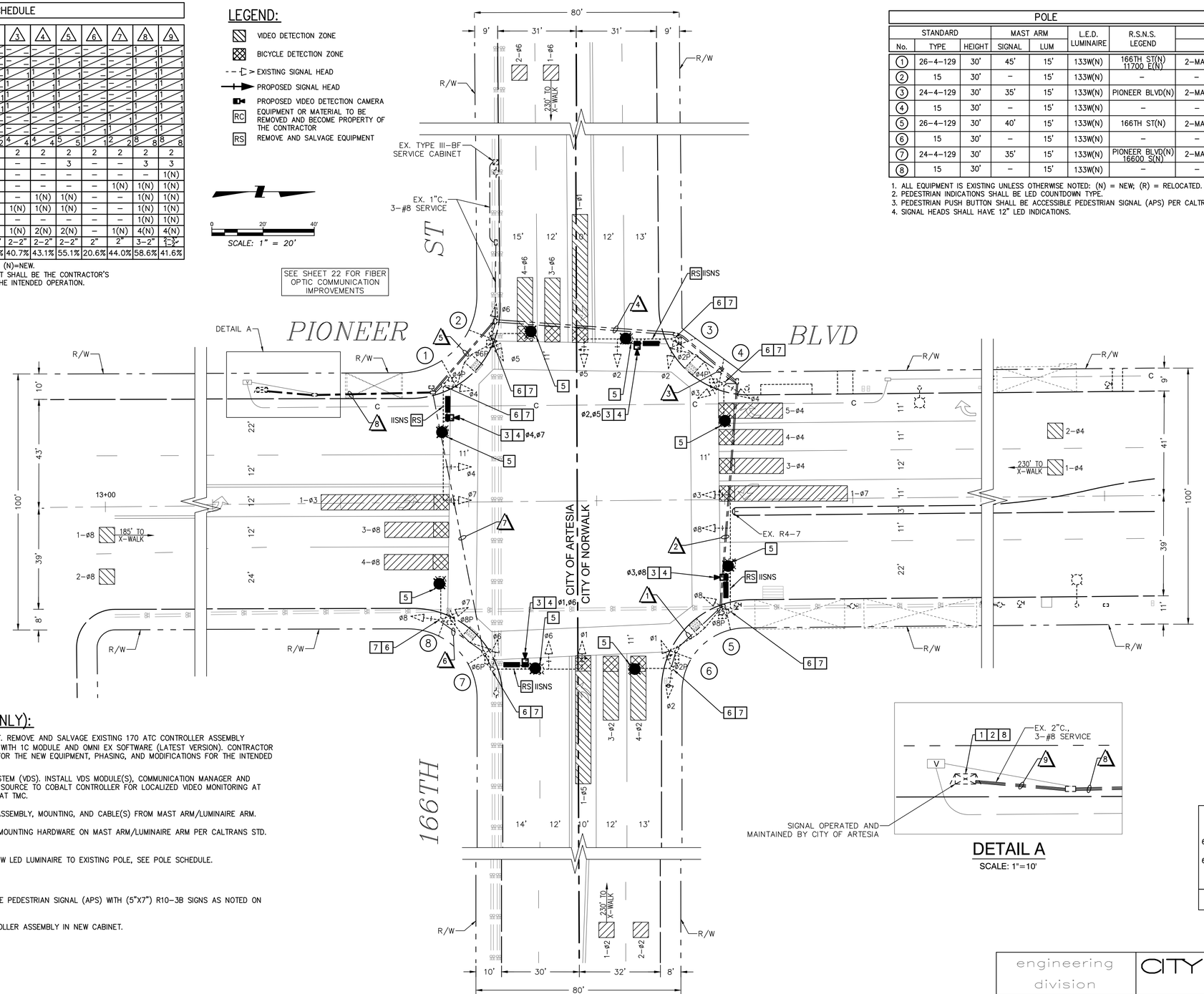
ALL CONDUITS & CONDUCTORS ARE EXISTING, UNLESS OTHERWISE NOTED: (N)=NEW.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

- VIDEO DETECTION ZONE
- BICYCLE DETECTION ZONE
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- PROPOSED VIDEO DETECTION CAMERA
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- RS — REMOVE AND SALVAGE EQUIPMENT

SCALE: 1" = 20'

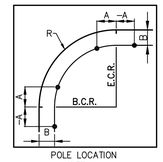
SEE SHEET 22 FOR FIBER OPTIC COMMUNICATION IMPROVEMENTS



POLE SCHEDULE

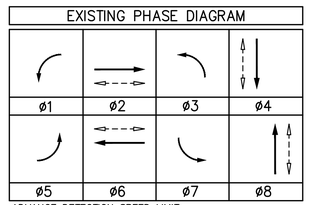
No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
1	26–4–129	30'	45'	15'	133W(N)	166TH ST(N) 11700 E(N)	2–MAS	SV–1–T	SP–1–CS	ø6(N)	LT	EXISTING	
2	15	30'	–	15'	133W(N)	–	–	SV–2–TA	SP–1–CS	ø4(N)	RT	EXISTING	
3	24–4–129	30'	35'	15'	133W(N)	PIONEER BLVD(N)	2–MAS	SV–1–T	SP–1–CS	ø4(N)	LT	EXISTING	
4	15	30'	–	15'	133W(N)	–	–	SV–2–TA	SP–1–CS	ø2(N)	RT	EXISTING	
5	26–4–129	30'	40'	15'	133W(N)	166TH ST(N)	2–MAS	SV–1–T	SP–1–CS	ø2(N)	LT	EXISTING	
6	15	30'	–	15'	133W(N)	–	–	SV–2–TA	SP–1–CS	ø8(N)	RT	EXISTING	
7	24–4–129	30'	35'	15'	133W(N)	PIONEER BLVD(N) 16600 S(N)	2–MAS	SV–1–T	SP–1–CS	ø8(N)	LT	EXISTING	
8	15	30'	–	15'	133W(N)	–	–	SV–2–TA	SP–1–CS	ø6(N)	RT	EXISTING	

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES–5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.



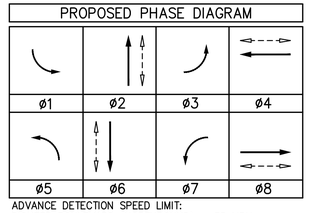
POLE LOCATION DETAIL

EXISTING PHASE DIAGRAM



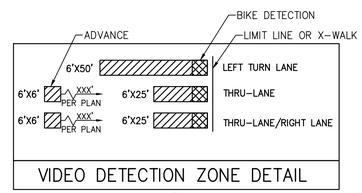
ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD (NORTHBOUND) = 35 MPH
PIONEER BOULEVARD (SOUTHBOUND) = 40 MPH
166TH STREET (EASTBOUND) = 35 MPH
166TH STREET (WESTBOUND) = 40 MPH

PROPOSED PHASE DIAGRAM



ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD (NORTHBOUND) = 35 MPH
PIONEER BOULEVARD (SOUTHBOUND) = 40 MPH
166TH STREET (EASTBOUND) = 35 MPH
166TH STREET (WESTBOUND) = 40 MPH

DETAIL A
SCALE: 1"=10'



VIDEO DETECTION ZONE DETAIL
N.T.S.

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. PROTECT IN PLACE EXISTING TYPE 332 CONTROLLER CABINET. REMOVE AND SALVAGE EXISTING 170 ATC CONTROLLER ASSEMBLY COMPLETE. FURNISH AND INSTALL NEW 2070LX CONTROLLER WITH 1C MODULE AND OMNI EX SOFTWARE (LATEST VERSION). CONTRACTOR SHALL MODIFY THE EXISTING TYPE 332 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
2. FURNISH AND INSTALL HIGH DEFINITION VIDEO DETECTION SYSTEM (VDS). INSTALL VDS MODULE(S), COMMUNICATION MANAGER AND CABLES AT CONTROLLER CABINET COMPLETE. OUTPUT VIDEO SOURCE TO COBALT CONTROLLER FOR LOCALIZED VIDEO MONITORING AT CONTROLLER CABINET. CONFIGURE FOR REMOTE MONITORING AT TMC.
3. REMOVE AND SALVAGE EXISTING VIDEO DETECTION CAMERA ASSEMBLY, MOUNTING, AND CABLE(S) FROM MAST ARM/LUMINAIRE ARM.
4. FURNISH AND INSTALL VIDEO DETECTION CAMERA (HD) AND MOUNTING HARDWARE ON MAST ARM/LUMINAIRE ARM PER CALTRANS STD. PLAN ES–7R.
5. RS EXISTING LUMINAIRE ASSEMBLY. FURNISH AND INSTALL NEW LED LUMINAIRE TO EXISTING POLE, SEE POLE SCHEDULE.
6. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
7. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10–3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.

811 Know what's below. Call before you dig.

NOTE:
SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

City of Artesia
18747 Clarkdale Avenue
Artesia, CA 90701
APPROVED BY: _____ DATE

PREPARED BY:
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Fax: (949) 502–5522
www.advantec–usa.com

JOHN A. DORADO II — No. 74405 — REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

REVIEWED BY: JOHN A. DORADO II, PE — DATE 07/16/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT 166TH STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-108
SHEET 9 OF 50

CONDUCTOR SCHEDULE

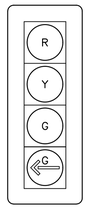
AWG	POLE #	PHASES	1	2	3	4	5	6	7
12 WIRE CONDUCTOR CABLE	①	ø2,ø4,ø7,ø1P,ø4P / ø1PPB,ø4PPB	– –	– –	2 2	2 2	– –	– –	2 2
	②	ø2 /	– –	– –	– –	1 –	– –	– –	1 –
	③	ø2,ø3,ø4P / ø4PPB	– –	– –	– –	– –	– –	– –	1 1
	④	ø3,ø8,øBP /	– –	– –	– –	– –	1 –	– –	1 –
3 WIRE CONDUCTOR CABLE	⑤	ø1 / øBPPB	– –	– –	– –	– –	1 1	1 1	1 1
	⑥	ø1,ø1P / øBPPB	1 1	1 1	1 1	1 1	– –	– –	1 1
	⑦	ø7,øBP / ø1PPB	– –	1 1	1 1	1 1	– –	– –	1 1
	TOTAL CABLES		1 1	2 2	4 4	5 4	1 1	2 1	8 6
#10	LUMINAIRE		2	2	2	2	–	2	–
#8	SERVICE		–	–	–	–	–	–	–
VIDEO DETECTOR CABLE (3–#18 AWG)	ø4/ø7		–	–	1	1	–	–	1
	ø3/ø8		–	–	–	–	–	1	1
	ø1		1	1	1	1	–	–	1
	ø2		–	–	1	1	–	–	1
	TOTAL		1	1	3	3	–	1	4
TYPE B DETECTOR LEAD–IN CABLE	ø4		–	–	–	–	–	–	2
	ø8		–	2	2	2	–	–	2
	ø2		–	–	–	–	1	1	1
	TOTAL		–	2	2	2	1	1	5
CONDUIT SIZE			3"(E)	3"(E)	3"(E)	2–3"(E)	–"(E)	4"(E)	2–3"
PERCENT FILL			11.5%	22.0%	43.4%	25.1%	19.2%	12.2%	36.6%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

- VIDEO DETECTION ZONE
- BICYCLE DETECTION ZONE
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- PROPOSED VIDEO DETECTION CAMERA
- REMOVED CALTRANS TYPE E LOOPS
- CB — INSTALL CONDUIT INTO EXISTING PULLBOX
- PP — PROTECT IN PLACE
- SC — SPLICE NEW TO EXISTING CONDUCTORS

0 20' 40'
SCALE: 1" = 20'



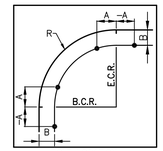
DETAIL "A"
(NO SCALE)

SEE SHEET 22 FOR FIBER OPTIC COMMUNICATION IMPROVEMENTS

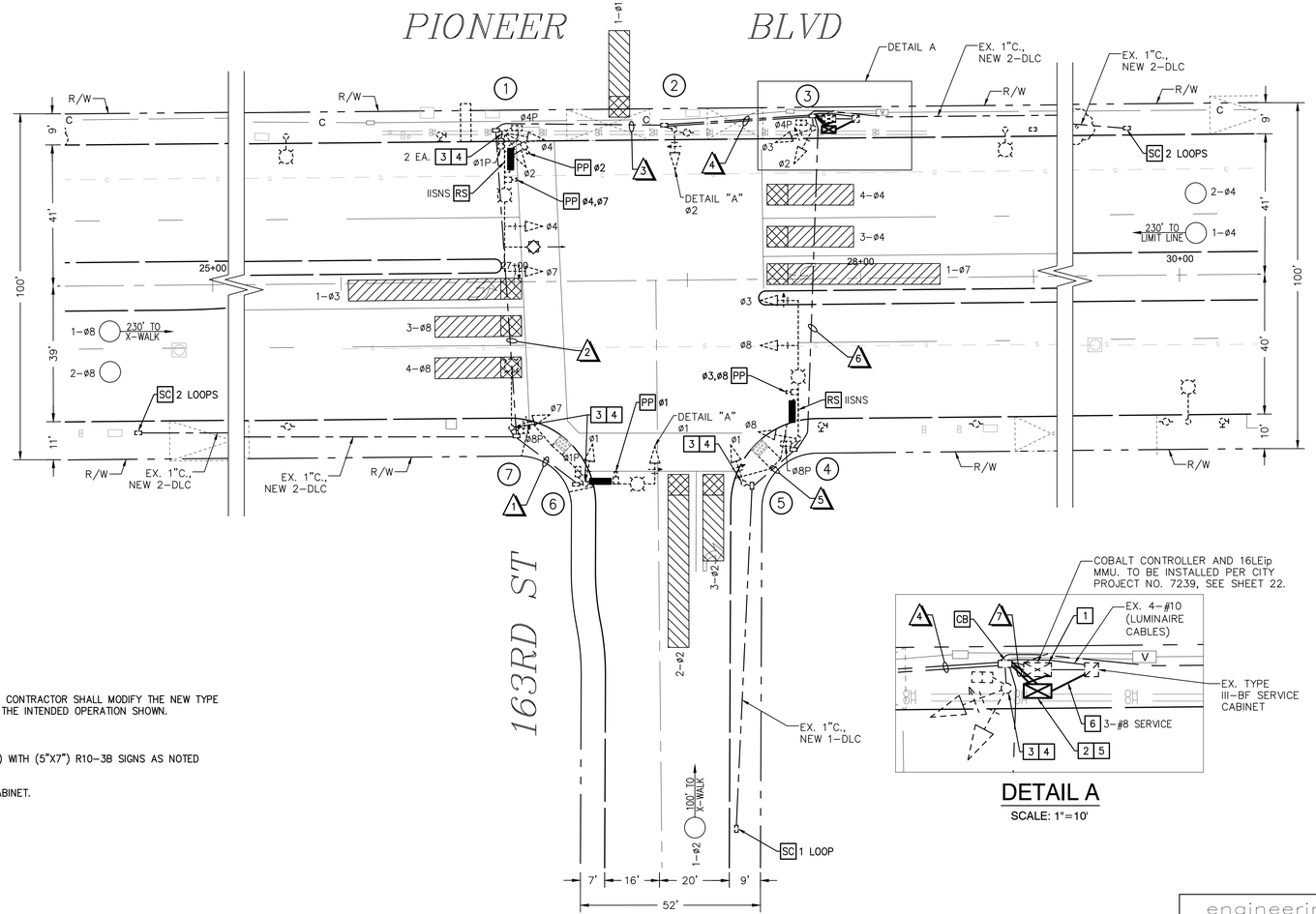
POLE SCHEDULE

No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
①	26–4–100	30'	40'	15'	133W	163RD ST(N)	2–MAS	SV–2–TA	SP–2–T	ø1(N)/ø4(N)	LT/LT	EXISTING	
②	1–A	10'	–	–	–	–	–	TV–1–T	–	–		EXISTING	
③	1–A	10'	–	–	–	–	–	TV–2–T	SP–1–T	ø4(N)	RT	EXISTING	
④	26–4–100	30'	40'	15'	133W	163RD ST(N)	2–MAS	SV–1–T	SP–1–T	–	–	EXISTING	
⑤	1–A	10'	–	–	–	–	–	TV–1–T	–	ø8(N)	RT	EXISTING	
⑥	17–3–100	30'	20'	15'	133W	PIONEER(N)	MAS–4B	SV–1–T	SP–1–T	ø8(N)	LT	EXISTING	
⑦	15	30'	–	15'	133W	–	–	TV–1–T	SP–1–T	ø8(N)	RT	EXISTING	

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES–5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.



POLE LOCATION DETAIL



DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM

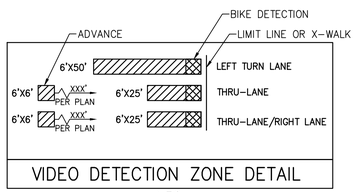
ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
163RD STREET = 25 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
163RD STREET = 25 MPH



VIDEO DETECTION ZONE DETAIL
N.T.S.

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE P CONTROLLER CABINET. REMOVE FOUNDATION.
2. FURNISH AND INSTALL NEW TYPE P–44 CONTROLLER CABINET ON NEW 24" FOUNDATION. CONTRACTOR SHALL MODIFY THE NEW TYPE P–44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
4. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10–3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
5. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.
6. INSTALL 2" SCHEDULE 80 PVC CONDUIT WITH CONDUCTORS, AS SHOWN.

811 Know what's below. Call before you dig.

NOTE:
SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

PREPARED BY:
ADVANTEC Consulting Engineers
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE:
TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT 163RD STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-109
SHEET 10 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5	6	7
12 WIRE CONDUCTOR CABLE	1	ø2,ø4,ø4P / ø4PPB	–	–	–	–	–	1	1
	2	ø2,ø3,ø2P,ø4P / ø4PPB,ø2PPB	–	–	–	–	2	2	2
	3	ø3,ø8,ø8P / ø2PPB	1	1	1	1	–	1	1
3 WIRE CONDUCTOR CABLE	4	ø6,ø2P / ø8PPB	–	1	1	1	–	1	1
	5	ø6 / ø8PPB	–	–	1	1	–	1	1
	6	ø4,ø8P	–	–	–	1	–	1	–
		TOTAL CABLES	1	2	3	4	2	7	6
#10		LUMINAIRE	2	2	2	2	–	2	2
#8		SERVICE	–	–	2	2	–	2	2
VIDEO DETECTOR CABLE (3–#18 AWG)		ø4	–	–	–	–	–	1	1
		ø3/ø8	1	1	1	1	–	1	1
		ø6	1	1	1	1	–	1	1
		ø2	–	–	–	–	1	1	1
		TOTAL	2	2	2	2	1	4	4
CONDUIT SIZE			3"(E)	3"(E)	3"(E)	3"(E)	3"(E)	2–3"(E)	2–3"(E)
PERCENT FILL			13.7%	22.2%	32.3%	39.1%	19.2%	34.5%	34.5%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

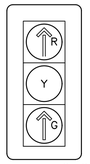
- VIDEO DETECTION ZONE
- BICYCLE DETECTION ZONE
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- PROPOSED VIDEO DETECTION CAMERA
- REMOVED CALTRANS TYPE E LOOPS
- RS REMOVE AND SALVAGE EQUIPMENT

0 20' 40'
SCALE: 1" = 20'

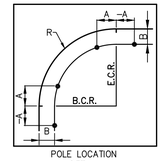
POLE SCHEDULE

No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
1	19–2–70	30'	25'	15'	133W	CHESHIRE(N)	1–MAS	SV–2–TA	SP–1–CS	ø4(N)	LT	EXISTING	
2	16–1–70	30'	15'	–	–	–	1–MAS	SV–2–TA	SP–2–CS	ø4(N)/ø2(N)	LT/LT	EXISTING	
3	26–4–70	30'	45'	15'	133W	CHESHIRE(N)	2–MAS	SV–1–T	SP–1–CS	ø2(N)	LT	EXISTING	
4	1–A	10'	–	–	–	–	–	TV–1–T(N)	SP–1–CS	ø8(N)	RT	EXISTING	
5	1–A	10'	–	–	–	–	–	TV–1–T	–	ø8(N)	LT	EXISTING	
6	1–A	10'	–	–	–	–	–	TV–1–T	SP–1–CS	–	–	EXISTING	

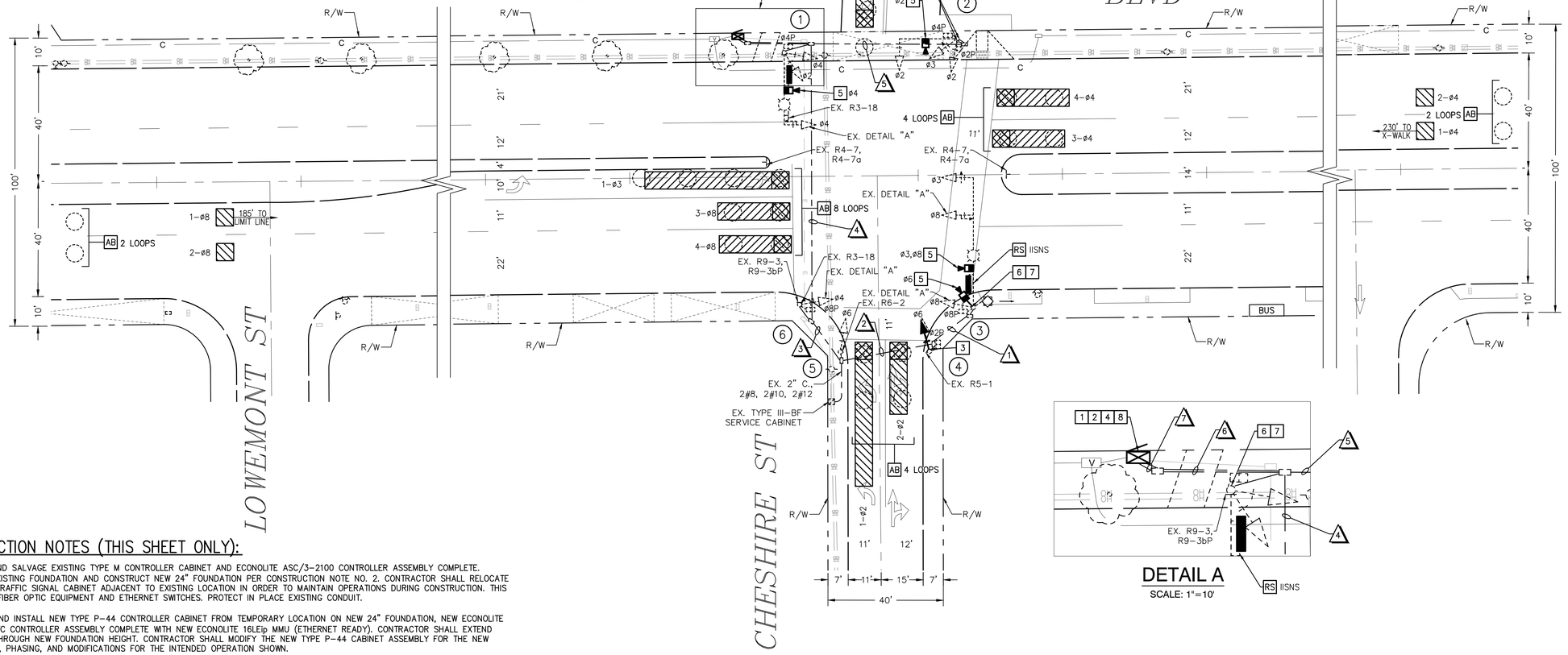
1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES–5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.



DETAIL "A"
(NO SCALE)



POLE LOCATION DETAIL



DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM

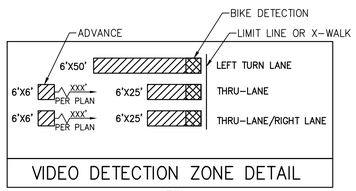
ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
CHESHIRE STREET = 25 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
CHESHIRE STREET = 25 MPH



VIDEO DETECTION ZONE DETAIL
N.T.S.

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3–2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 2. CONTRACTOR SHALL RELOCATE THE NEW TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
2. FURNISH AND INSTALL NEW TYPE P–44 CONTROLLER CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. CONTRACTOR SHALL MODIFY THE NEW TYPE P–44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. PROTECT IN PLACE EXISTING TYPE 1–A POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS AND PPB ASSEMBLY. SEE POLE SCHEDULE.
4. FURNISH AND INSTALL HIGH DEFINITION VIDEO DETECTION SYSTEM (VDS). INSTALL VDS MODULE(S), COMMUNICATION MANAGER AND CABLES AT CONTROLLER CABINET COMPLETE. OUTPUT VIDEO SOURCE TO COBALT CONTROLLER FOR LOCALIZED VIDEO MONITORING AT CONTROLLER CABINET. CONFIGURE FOR REMOTE MONITORING AT TMC.
5. FURNISH AND INSTALL VIDEO DETECTION CAMERA (HD) AND MOUNTING HARDWARE ON MAST ARM/LUMINAIRE ARM PER CALTRANS STD. PLAN ES–7R.
6. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
7. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10–3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.

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NOTE:
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SEE SHEET 2 FOR GENERAL NOTES.

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JOHN A. DORADO II, PE — 07/16/24 DATE
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engineering division

REVISIONS

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		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT CHESHIRE STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-110
SHEET 11 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5	6	7	8
12 WIRE CONDUCTOR CABLE	1	ø4,ø7,ø4P / ø6PPB	–	–	–	–	–	–	1	1
	2	/ ø4PPB	–	–	–	–	–	–	1	1
	3	ø2,ø5,ø6P /	–	–	–	–	–	–	1	1
	4	ø2,ø5,ø2P / ø4PPB	–	–	–	–	1	1	1	1
	5	/ ø2PPB	–	–	–	–	1	1	1	1
	6	ø3,ø8,ø4P /	–	–	–	–	1	1	1	1
	7	ø3,ø8,ø8P / ø2PPB	–	1	1	–	1	1	1	1
	8	ø1,ø6,ø2P / ø8PPB	1	1	1	–	1	1	1	1
3 WIRE CONDUCTOR CABLE	9	ø1,ø6,ø6P / ø8PPB	–	–	–	1	1	1	1	1
	10	ø4,ø7,ø8P / ø6PPB	–	–	–	1	1	–	1	1
		TOTAL CABLES	1	1	2	2	4	2	8	8
#10		LUMINAIRE	–	2	2	2	2	–	2	–
#8		SERVICE	–	–	–	–	–	–	–	3
TYPE B DETECTOR LEAD–IN CABLE		ø1/ø6	–	–	–	–	–	3	3	3
		ø5/ø2	3	3	–	3	–	–	3	3
		ø3/ø8	–	–	–	6	–	–	6	6
		ø7/ø4	–	–	–	–	6	–	6	6
		TOTAL	3	3	–	9	6	3	18	18
CONDUIT SIZE			2"(E)	2"(E)	2"(E)	4"	2"(E)	1.5"(E)	2–4"	2–4"
PERCENT FILL			25.2%	45.8%	20.6%	25.4%	52.3%	41.6%	25.2%	25.7%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

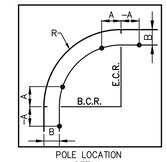
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- AB — ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- RS — REMOVE AND SALVAGE EQUIPMENT
- SC — SPLICE NEW TO EXISTING CONDUCTORS

0 20' 40'
SCALE: 1" = 20'

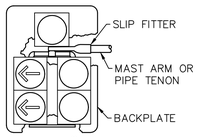
POLE SCHEDULE

No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
• 1	26–4–100(N)	30'	45'(N)	15'(N)	133W(R)	EXCELSIOR DR(N)	2–MAS(N)	SV–1–T(N)	SP–1–T(R)	ø6(N)	LT	7.5'	5.5'	
2	PPB POST	3'–10"	–	–	–	–	–	–	–	ø4(N)	RT	EXISTING		
3	1–A	10'	–	–	–	–	–	TV–1–T	SP–1–T	–	–	EXISTING		
4	17–2–70	30'	20'	15'	133W	PIONEER BL(N)	MAS–5A(N)	SV–1–T(N)	SP–1–T	ø4(N)	LT	EXISTING		
5	PPB POST	3'–10"	–	–	–	–	–	–	–	ø2(N)	RT	EXISTING		
6	1–A	10'	–	–	–	–	–	TV–1–T(N)	SP–1–T	–	–	EXISTING		
• 7	26–4–100(N)	30'	45'(N)	15'(N)	133W(R)	EXCELSIOR DR(N)	2–MAS(N)	SV–1–T(N)	SP–1–T(R)	ø2(N)	LT	4.5'	5'	
8	1–A	10'	–	–	–	–	–	TV–1–T	SP–1–T	ø8(N)	RT	EXISTING		
9	17–2–70	30'	20'	15'	133W	PIONEER BL(N)	MAS–5A(N)	SV–1–T(N)	SP–1–T	ø8(N)	LT	EXISTING		
10	1–A	10'	–	–	–	–	–	TV–1–T(N)	SP–1–T	ø6(N)	RT	EXISTING		

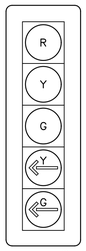
1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES–5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
• 5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



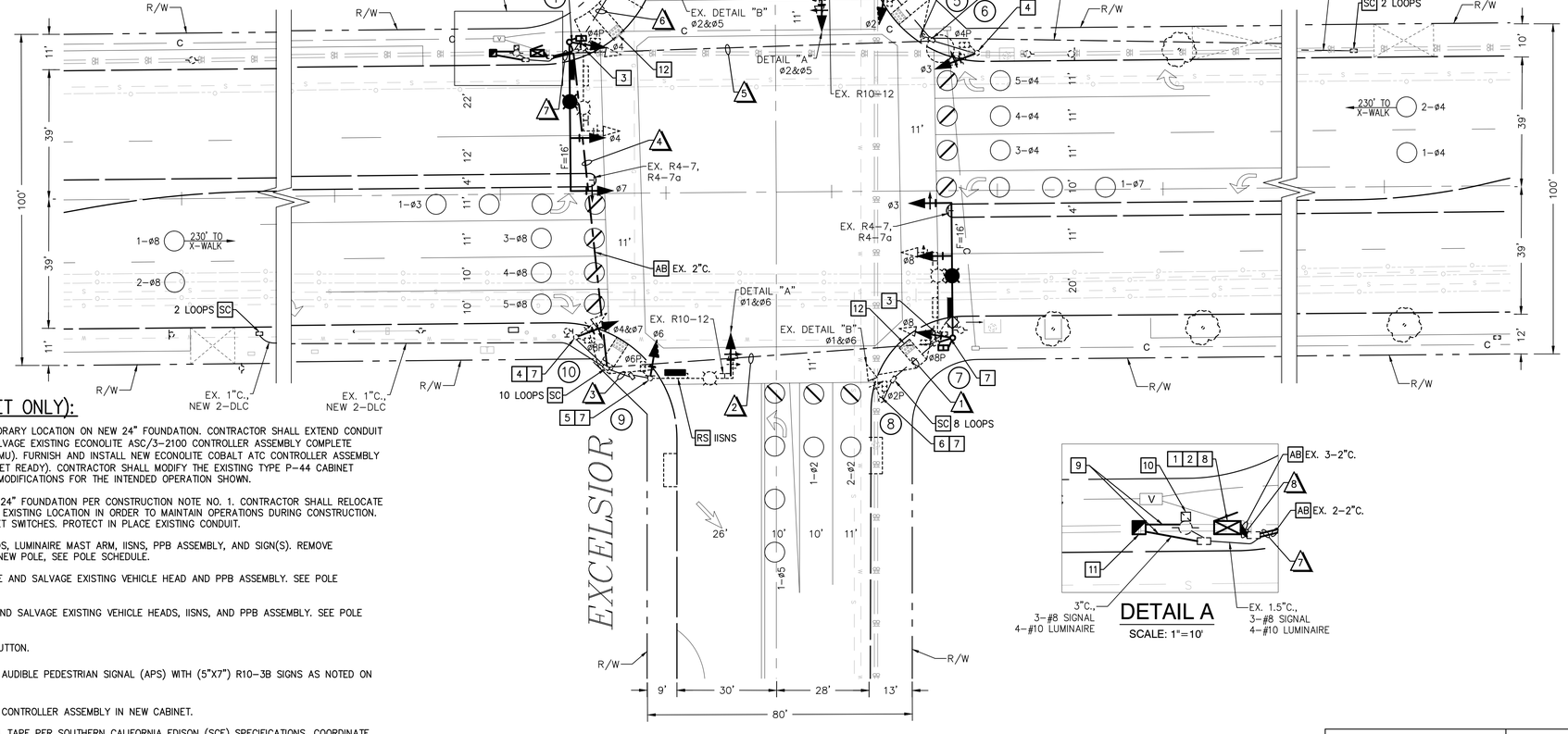
POLE LOCATION DETAIL



DETAIL "A" (NO SCALE)



DETAIL "B" (NO SCALE)



DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

*PROTECTED–PERMISSIVE LEFT TURN PHASING
ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
EXCELSIOR DRIVE = 35 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

*PROTECTED–PERMISSIVE LEFT TURN PHASING
ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
EXCELSIOR DRIVE = 35 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. RELOCATE EXISTING TYPE P–44 CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION. CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. REMOVE AND SALVAGE EXISTING ECONOLITE ASC/3–2100 CONTROLLER ASSEMBLY COMPLETE INCLUDING THE MALFUNCTIONING MONITORING UNIT (MMU). FURNISH AND INSTALL NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL MODIFY THE EXISTING TYPE P–44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
2. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 1. CONTRACTOR SHALL RELOCATE THE EXISTING TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. PROTECT IN PLACE EXISTING TYPE 1–A POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEAD AND PPB ASSEMBLY. SEE POLE SCHEDULE.
5. PROTECT IN PLACE EXISTING SIGNAL POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS, IISNS, AND PPB ASSEMBLY. SEE POLE SCHEDULE.
6. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
7. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10–3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.
9. FURNISH AND INSTALL 3" SCH 80 PVC CONDUIT+PULL TAPE PER SOUTHERN CALIFORNIA EDISON (SCE) SPECIFICATIONS. COORDINATE WORK WITH SCE REPRESENTATIVE PRIOR TO CONSTRUCTION.
10. REMOVE & DISPOSE EXISTING TYPE I SERVICE ENCLOSURE. CONSTRUCT NEW SERVICE RISER PER SCE STANDARDS. COORDINATE WORK WITH SCE REPRESENTATIVE PRIOR TO CONSTRUCTION.
11. FURNISH AND INSTALL 120/240V TYPE III–BF SERVICE ENCLOSURE ON 4'FOUNDATION WITH THE FOLLOWING CIRCUIT BREAKERS: METERED –100AMP/240V/2P (MAIN), 50AMP/120V /1P (SIGNAL), 15AMP/120V/1P (IISNS), 15 AMP/120V/1P (IISNS TYPE V PEC), AND 15 AMP/120V/1P (SPARE); UNMETERED –100AMP/240V/2P (MAIN), 30AMP/240V/1P (LIGHTING), 15AMP/120V/1P (LIGHTING CONTROL).
12. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.

811 Know what's below. Call before you dig.

NOTE:

SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

PREPARED BY:
ADVANTEC Consulting Engineers
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www.advantec–usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT
EXCELSIOR DRIVE

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-111
SHEET 12 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4
12 WIRE CONDUCTOR CABLE / 3 WIRE CONDUCTOR CABLE	①	ø2,ø4,ø7,ø4P,ø6P / ø4PPB,ø6PPB	2 2	2 2	– –	2 2
	②	ø2,ø2P / ø4PPB	– –	1 1	– –	1 1
	③	ø2,ø3,ø4P / ø2PPB	– –	1 1	– –	1 1
	④	ø3,ø8,ø8P / ø2PPB	– –	– –	– –	1 1
	⑤	ø6,ø2P / ø8PPB	– –	– –	– –	1 1
	⑥	ø6,ø6P / ø8PPB	– –	– –	1 1	1 1
	⑦	ø7,ø8P / ø6PPB	– –	– –	1 1	1 1
		TOTAL CABLES	2 2	4 4	2 2	8 8
#10		LUMINAIRE	2	2	2	–
#8		SERVICE	–	–	–	3
TYPE B DETECTOR LEAD-IN CABLE		ø6	2	2	–	2
		ø3/ø8	–	–	5	5
		ø2	–	–	–	2
		ø4/ø7	–	5	–	5
		TOTAL	2	7	5	14
CONDUIT SIZE			2"(E)	4"	2"(E)	2-4"
PERCENT FILL			45.1%	24.7%	50.1%	24.5%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
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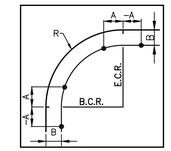
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- PROPOSED CALTRANS TYPE E LOOPS
- AB — ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- SC — SPLICE NEW TO EXISTING CONDUCTORS

0 20' 40'
SCALE: 1" = 20'

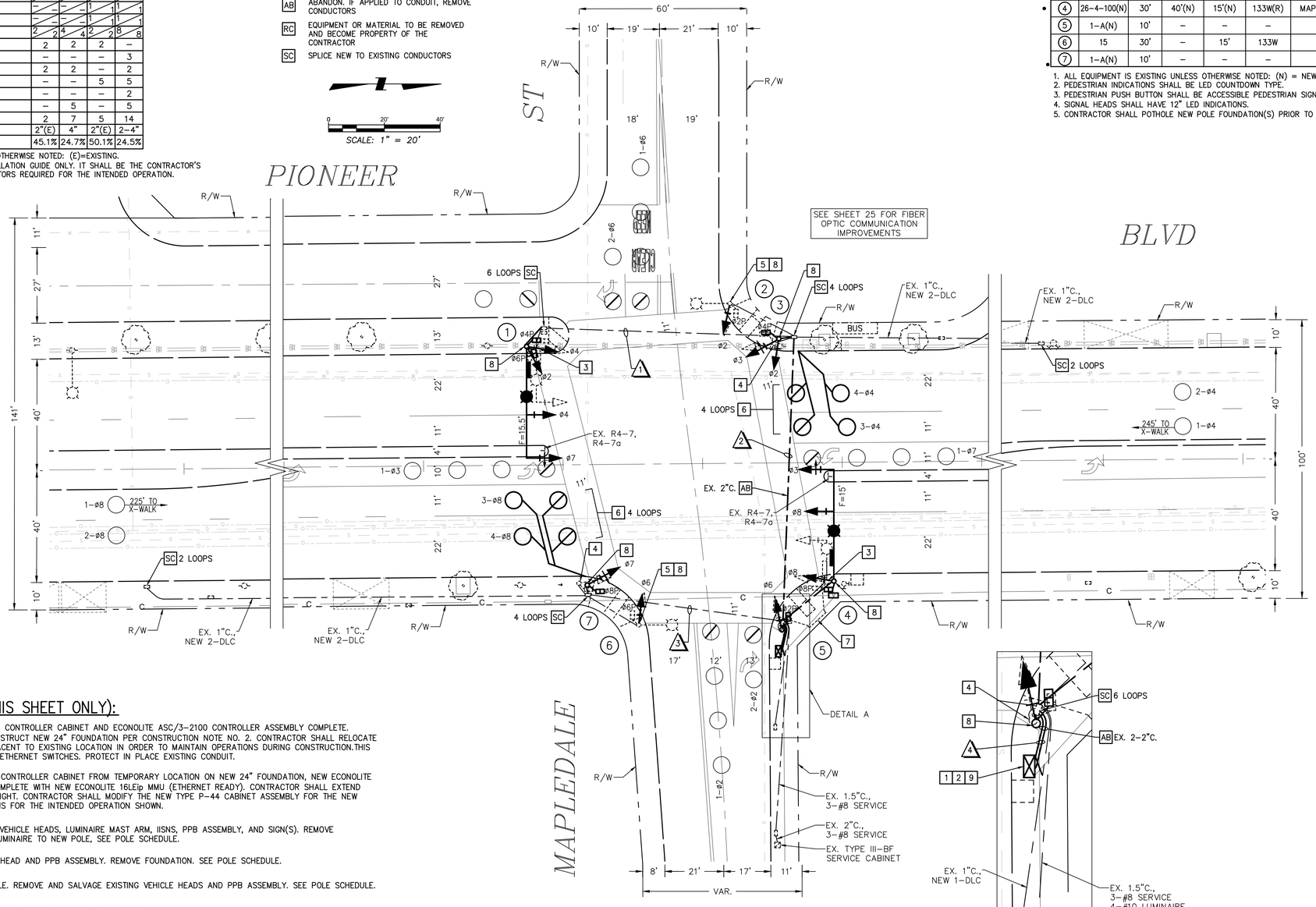
POLE SCHEDULE

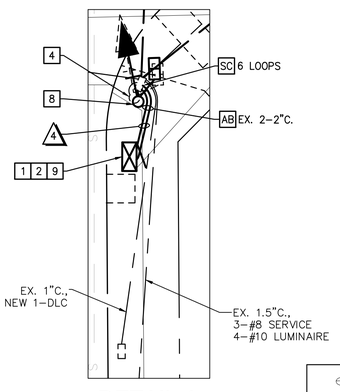
No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
①	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	MAPLEDALE(N)	2-MAS(N)	SV-2-T(N)	SP-1-T(R)	ø4(N)/ø6(N)	LT/LT	8'	2.5'	
②	15	30'	–	15'	133W	–	–	SV-1-T(N)	SP-1-T	ø4(N)	LT	EXISTING		
③	1-A(N)	10'	–	–	–	–	–	TV-2-T(N)	SP-1-T(R)	ø2(N)	RT	3.5'	4'	
④	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	MAPLEDALE(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø2(N)	LT	1.5'	2.5'	
⑤	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø8(N)	RT	5'	4'	
⑥	15	30'	–	15'	133W	–	–	SV-1-T(N)	SP-1-T	ø8(N)	LT	EXISTING		
⑦	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø6(N)	RT	3'	3'	

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



POLE LOCATION DETAIL





DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
MAPLEDALE STREET = 30 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
MAPLEDALE STREET = 30 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 2. CONTRACTOR SHALL RELOCATE THE NEW TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION.THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
2. FURNISH AND INSTALL NEW TYPE P-44 CONTROLLER CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. CONTRACTOR SHALL MODIFY THE NEW TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. RC EXISTING TYPE 1-A POLE, VEHICLE HEAD AND PPB ASSEMBLY. REMOVE FOUNDATION. SEE POLE SCHEDULE.
5. PROTECT IN PLACE EXISTING SIGNAL POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS AND PPB ASSEMBLY. SEE POLE SCHEDULE.
6. INSTALL TYPE E DETECTOR LOOPS AS SHOWN PER THIS SHEET. SEE LEGEND.
7. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
9. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.

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NOTE:
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SEE SHEET 2 FOR GENERAL NOTES.

PREPARED BY:
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — DATE 07/16/24
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT MAPLEDALE STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-112

Drawn By _____ Checked By _____

SHEET 13 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5	6	7	8	9
12 WIRE CONDUCTOR CABLE / 3 WIRE CONDUCTOR CABLE	①	ø4,ø7,ø4P / ø6PPB	–	–	–	–	1	1	–	–	–	1	1	1
	②	ø2,ø6P / ø4PPB	–	–	–	1	1	1	–	–	–	1	1	1
	③	ø2 / ø4PPB	1	1	1	–	1	1	–	–	–	1	1	1
	④	ø3,ø4P /	–	–	–	–	1	1	–	–	–	1	1	1
	⑤	ø3,ø8,ø8P /	–	–	–	–	–	–	1	1	1	1	1	1
	⑥	ø6 / ø8PPB	–	–	–	–	–	–	1	1	1	1	1	1
	⑦	ø6,ø6P / ø8PPB	–	–	–	–	–	–	1	1	1	1	1	1
	⑧	ø7,ø8P / ø6PPB	–	–	–	–	–	–	1	1	1	1	1	1
		TOTAL CABLES	1	1	2	1	4	3	1	2	1	8	6	8	6
#10		LUMINAIRE	2	2	–	2	–	2	2	3	–
#8		SERVICE	–	–	–	–	–	–	–	–	3
TYPE B DETECTOR LEAD-IN CABLE		ø6	–	–	1	1	–	–	–	1	1
		ø2	–	–	–	–	1	1	–	1	1
		ø3/ø8	–	–	–	–	–	–	–	5	5
		ø7/ø4	–	5	–	5	–	–	–	5	5
		TOTAL	–	5	1	6	1	1	–	12	12
CONDUIT SIZE			3"(E)	3"(E)	3"(E)	3"(E)	3"(E)	3"(E)	3"(E)	2-3"(E)	2-3"(E)
PERCENT FILL			9.4%	21.1%	9.5%	39.2%	9.5%	17.2%	9.4%	38.9%	42.3%

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LEGEND:

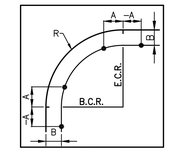
- VIDEO DETECTION ZONE
- BICYCLE DETECTION ZONE
- PROPOSED VIDEO DETECTION CAMERA
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- REMOVED CALTRANS TYPE E LOOPS
- RS REMOVE AND SALVAGE EQUIPMENT
- SC SPLICE NEW TO EXISTING CONDUCTORS

SCALE: 1" = 20'

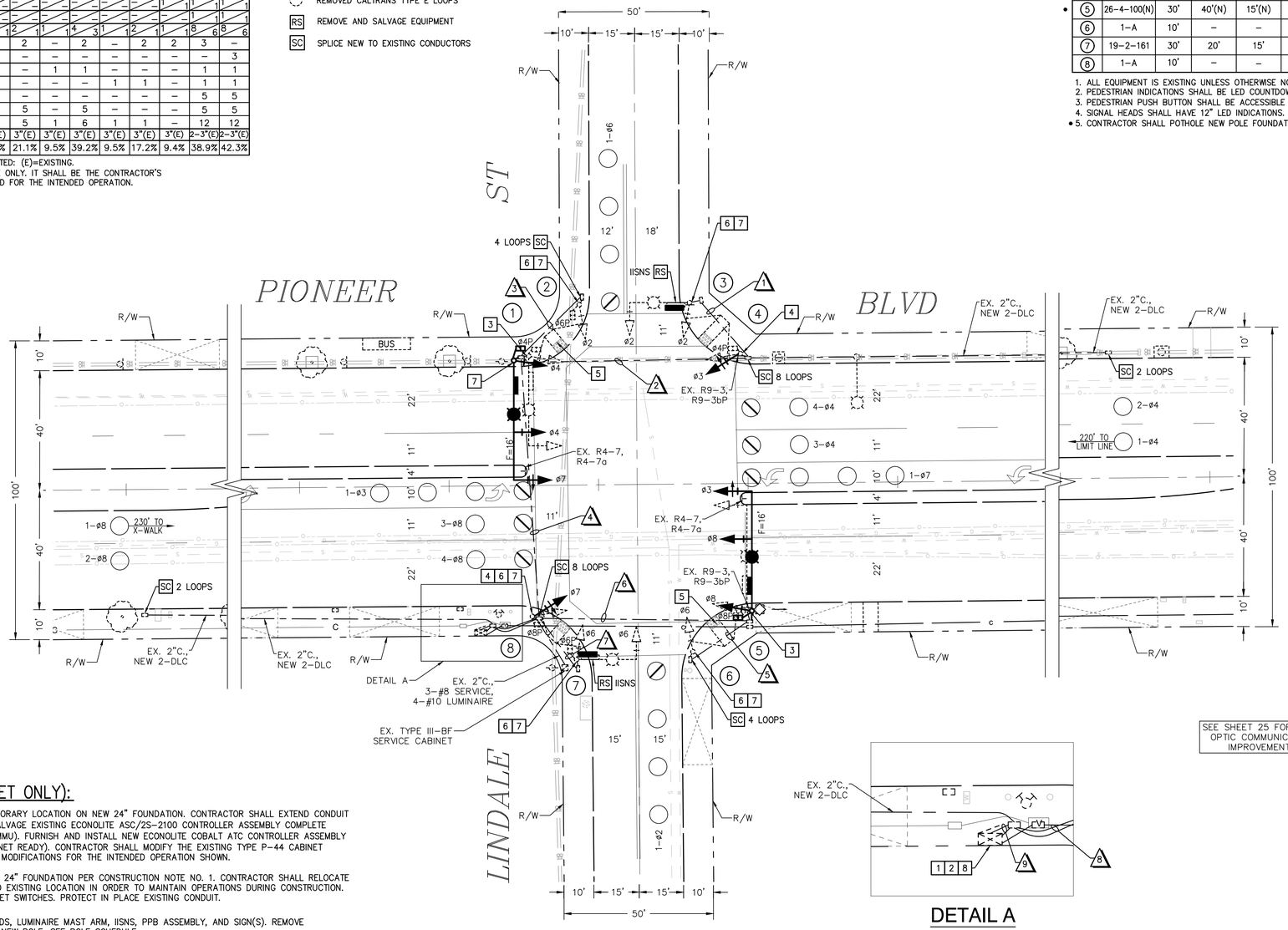
POLE SCHEDULE

No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
• ①	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	LINDALE(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø6(N)	LT	-0.5'	2'	
②	1-A	10'	–	–	–	–	–	TV-1-T	SP-1-T	ø4(N)	RT	EXISTING		
③	19-2-161	30'	20'	15'	133W	PIONEER(N)	1-MAS	SV-1-T	–	ø4(N)	LT	EXISTING		
④	1-A	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T	–	–	EXISTING		
• ⑤	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	LINDALE(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	–	–	1.5'	2.5'	
⑥	1-A	10'	–	–	–	–	–	TV-1-T	–	ø8(N)	RT	EXISTING		
⑦	19-2-161	30'	20'	15'	133W	PIONEER(N)	1-MAS	SV-1-T	SP-1-T	ø8(N)	LT	EXISTING		
⑧	1-A	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T	ø6(N)	RT	EXISTING		

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
- 5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



POLE LOCATION DETAIL



DETAIL A
SCALE: 1"=10'

SEE SHEET 25 FOR FIBER OPTIC COMMUNICATION IMPROVEMENTS

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
LINDALE STREET = 25 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
LINDALE STREET = 25 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. RELOCATE EXISTING TYPE P-44 CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION. CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. REMOVE AND SALVAGE EXISTING ECONOLITE ASC/2S-2100 CONTROLLER ASSEMBLY COMPLETE INCLUDING THE MALFUNCTIONING MONITORING UNIT (MMU). FURNISH AND INSTALL NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL MODIFY THE EXISTING TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
2. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 1. CONTRACTOR SHALL RELOCATE THE EXISTING TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. PROTECT IN PLACE EXISTING TYPE 1-A POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS AND PPB ASSEMBLY. SEE POLE SCHEDULE.
5. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.
6. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
7. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN EXISTING CABINET.

811 Know what's below. Call before you dig.

NOTE:
SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT LINDALE STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-113
SHEET 14 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5
12 WIRE CONDUCTOR CABLE / 3 WIRE CONDUCTOR CABLE	①	ø2,ø4,ø7,ø4P,ø6P / ø4PPB,ø6PPB	2 2	2 2	2 2	– –	2 2
	②	ø2,ø3,ø2P,ø4P / ø2PPB,ø4PPB	– –	2 2	2 2	– –	2 2
	③	ø3,ø6,ø8,ø2P,ø8P / ø2PPB,ø8PPB	– –	– –	2 2	– –	2 2
	④	ø6,ø7,ø6P,ø8P / ø6PPB,ø8PPB	– –	– –	– –	2 2	2 2
	TOTAL CABLES		2 2	4 4	6 6	2 2	8 8
#10	LUMINAIRE		2	2	2	2	–
#8	SERVICE		–	–	–	–	3
TYPE B DETECTOR LEAD-IN CABLE	ø6		2	2	2	–	2
	ø3/ø8		–	–	–	5	5
	ø2		–	–	–	–	1
	ø4/ø7		–	7	7	–	7
	TOTAL		2	9	9	5	15
CONDUIT SIZE			2"(E)	4"	4"	3"	2–2" 1–2"
PERCENT FILL			43.6%	25.4%	35.3%	22.8%	24.8%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

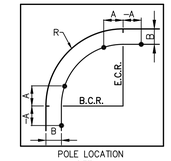
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- PROPOSED CALTRANS TYPE E LOOPS
- AB — ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- CB — INSTALL CONDUIT INTO EXISTING PULLBOX
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- RS — REMOVE AND SALVAGE EQUIPMENT.

0 20' 40'
SCALE: 1" = 20'

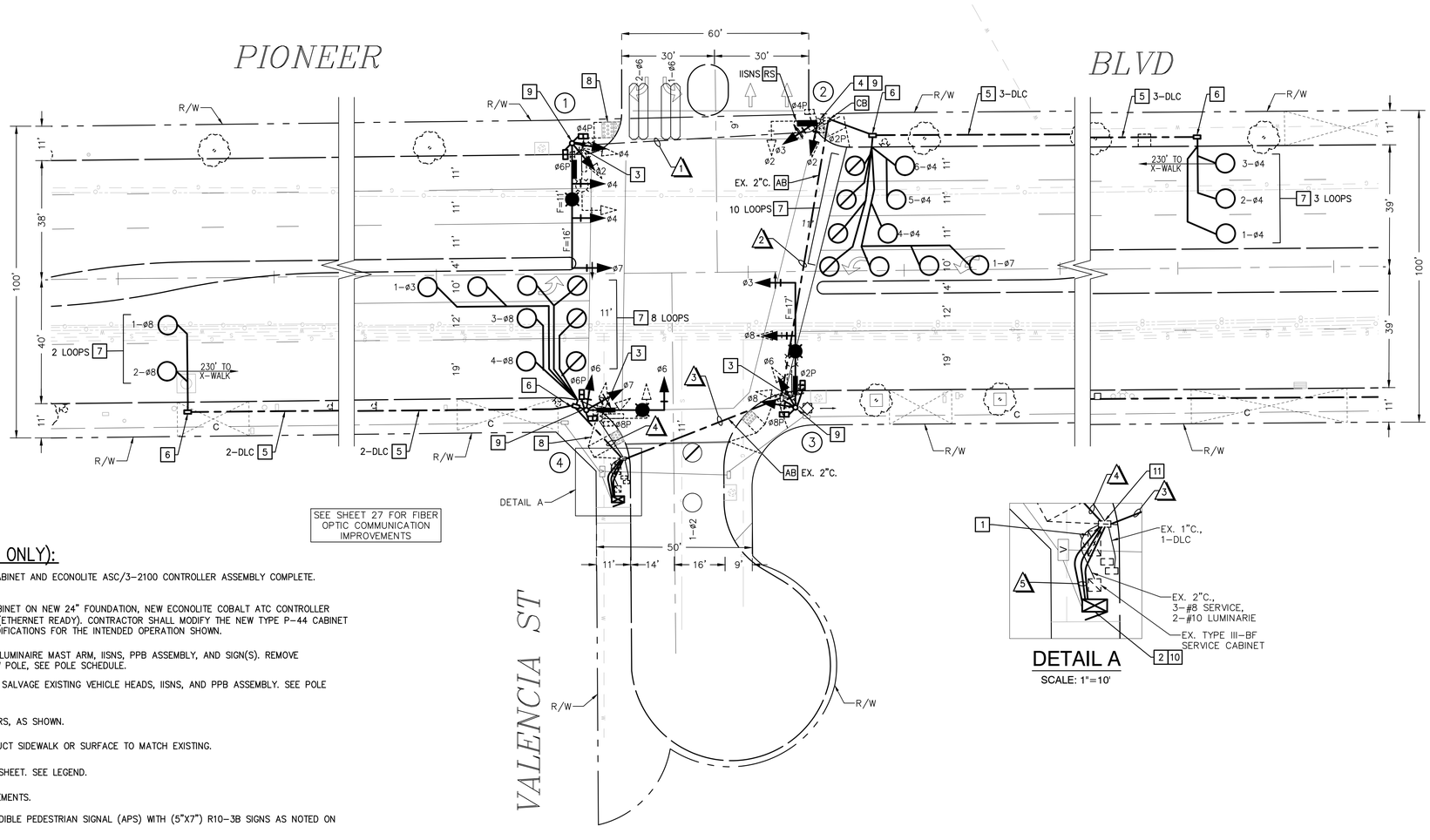
POLE SCHEDULE

	STANDARD No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	LOCATION ARW	LOCATION A	LOCATION B	COMMENTS
•	①	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	◀ VALENCIA(N)	3-MAS(N)	SV-2-T(N)	SP-2-T(R)	ø6(N)/ø4(N)	LT/LT	-3'	3.5'	
	②	17-2-100	30'	–	–	–	PIONEER(N)	1-MAS	SV-2-T(N)	SP-2-T	ø4(N)/ø2(N)	RT/RT	EXISTING		
•	③	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	VALENCIA(N) ▶	2-MAS(N)	SV-2-T(N)	SP-2-T(R)	ø2(N)/ø8(N)	LT/LT	2'	5'	
•	④	19-3-100(N)	30'	25'(N)	15'(N)	133W(N)	PIONEER(N)	1-MAS(N)	SV-2-T(N)	SP-2-T(R)	ø8(N)/ø6(N)	RT/RT	9'	2'	

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
- 5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



POLE LOCATION DETAIL



SEE SHEET 27 FOR FIBER OPTIC COMMUNICATION IMPROVEMENTS

DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
VALENCIA STREET = 25 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
VALENCIA STREET = 25 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE FOUNDATION.
2. FURNISH AND INSTALL NEW TYPE P-44 CONTROLLER CABINET ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL MODIFY THE NEW TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. PROTECT IN PLACE EXISTING SIGNAL POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS, IISNS, AND PPB ASSEMBLY. SEE POLE SCHEDULE.
5. INSTALL 2" SCHEDULE 80 PVC CONDUIT WITH CONDUCTORS, AS SHOWN.
6. FURNISH AND INSTALL NEW NO. 6 PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
7. INSTALL TYPE E DETECTOR LOOPS AS SHOWN PER THIS SHEET. SEE LEGEND.
8. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.
9. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
10. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.
11. FURNISH AND INSTALL NEW NO. 6E PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

811 Know what's below. Call before you dig.

NOTE:
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SEE SHEET 2 FOR GENERAL NOTES.

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT
VALENCIA STREET

Approved — CITY ENGINEER — RCE 90882 — 5/15/26 DATE
Recommended — Principal Civil Engineer — RCE 75709 — 4/28/26 DATE
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-114
SHEET 15 OF 50

CONDUCTOR SCHEDULE							
AWG	POLE #	PHASES	1	2	3	4	5
12 WIRE CONDUCTOR CABLE	①	ø2,ø4,ø7,ø4P / ø4PPB	2 / 1	2 / 1	– / –	– / –	2 / 1
	②	ø2,ø3,ø2P,ø4P / ø2PPB,ø4PPB	– / –	2 / 2	– / –	– / –	2 / 2
3 WIRE CONDUCTOR CABLE	③	ø3,ø8,ø8P / ø2PPB	– / –	– / –	– / –	– / –	1 / 1
	④	ø6,ø2P / ø8PPB	– / –	– / –	– / –	1 / 1	1 / 1
	⑤	ø6,ø7,ø8P / ø8PPB	– / –	– / –	1 / 1	– / –	1 / 1
		TOTAL CABLES	2 / 1	4 / 3	1 / 1	1 / 1	7 / 6
#10		LUMINAIRE	2	2	–	–	–
#8		SERVICE	–	–	–	–	3
TYPE B DETECTOR LEAD-IN CABLE		ø6	2	2	–	–	2
		ø3/ø8	–	–	5	–	5
		ø2	–	–	–	2	2
		ø4/ø7	–	7	–	–	7
		TOTAL	2	9	5	2	16
CONDUIT SIZE			2"(E)	4"	2"(E)	2"(E)	2–4"
PERCENT FILL			39.9%	24.4%	29.6%	23.1%	22.1%

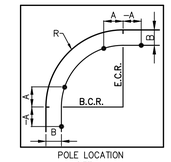
ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- PROPOSED CALTRANS TYPE E LOOPS
- AB — ABANDON, IF APPLIED TO CONDUCTOR, REMOVE CONDUCTORS
- CB — INSTALL CONDUIT INTO EXISTING PULLBOX
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- SC — SPLICE NEW TO EXISTING CONDUCTORS

POLE SCHEDULE															
	STANDARD		MAST ARM		L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING			PED PUSH BTN	LOCATION		
No.	TYPE	HEIGHT	SIGNAL	LUM			VEHICLE		PED	PHASE	ARW	A	B	COMMENTS
①	26–4–100(N)	30'	40'(N)	15'(N)	133W(R)	◀ ORANGE(N)	3–MAS(N)	SV–2–T(N)	SP–1–T(R)	ø4(N)	LT	–4'	2.5'	
②	15TS(N)	30'	–	15'(N)	133W(N)	–	–	SV–2–T(N)	SP–2–T(R)	ø4(N)/ø2(N)	RT/RT	–1'	2'	
• ③	26–4–100(N)	30'	40'(N)	15'(N)	133W(R)	ORANGE(N) ▶	2–MAS(N)	SV–1–T(N)	SP–1–T(R)	ø2(N)	LT	5'	2.5'	
④	1–A(N)	10'	–	–	–	–	–	TV–1–T(N)	SP–1–T(R)	ø8(N)	RT	6'	2.5'	
⑤	1–A	10'	–	–	–	–	–	TV–2–T(N)	SP–1–T	ø8(N)	RT	EXISTING		

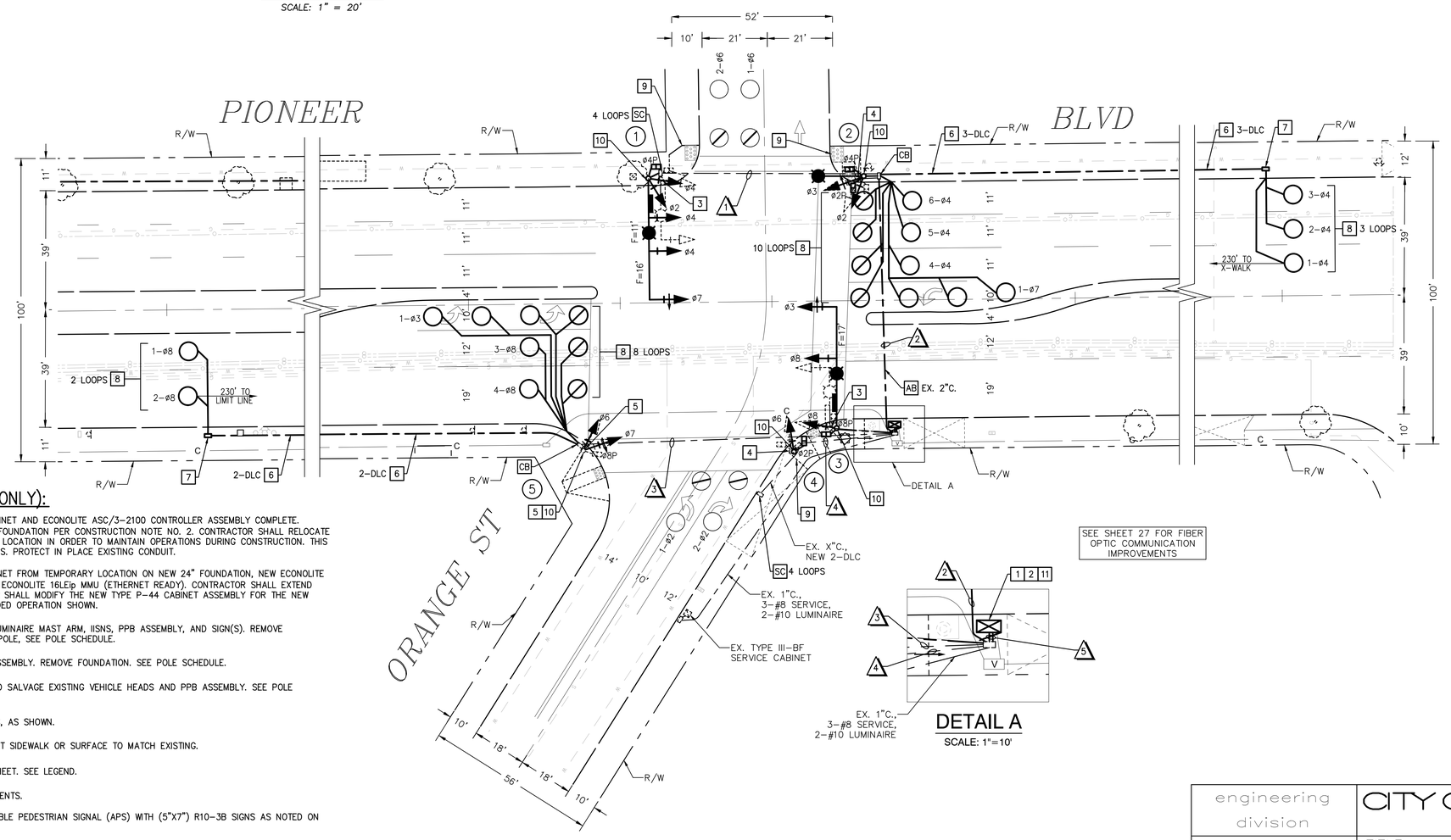
1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES–5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
• 5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



POLE LOCATION DETAIL



SCALE: 1" = 20'



DETAIL A
SCALE: 1"=10'

EXISTING PHASE DIAGRAM			
ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
ORANGE STREET = 25 MPH

PROPOSED PHASE DIAGRAM			
ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
ORANGE STREET = 25 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3–2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 2. CONTRACTOR SHALL RELOCATE THE NEW TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
2. FURNISH AND INSTALL NEW TYPE P–44 CONTROLLER CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. CONTRACTOR SHALL MODIFY THE NEW TYPE P–44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. RC EXISTING TYPE 1–A POLE, VEHICLE HEAD AND PPB ASSEMBLY. REMOVE FOUNDATION. SEE POLE SCHEDULE.
5. PROTECT IN PLACE EXISTING TYPE 1–A POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS AND PPB ASSEMBLY. SEE POLE SCHEDULE.
6. INSTALL 2" SCHEDULE 80 PVC CONDUIT WITH CONDUCTORS, AS SHOWN.
7. FURNISH AND INSTALL NEW NO. 6 PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
8. INSTALL TYPE E DETECTOR LOOPS AS SHOWN PER THIS SHEET. SEE LEGEND.
9. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.
10. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10–3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
11. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.

811 Know what's below. Call before you dig.

NOTE:
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CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

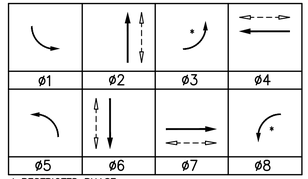
TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT
ORANGE STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-115
SHEET 16 OF 50

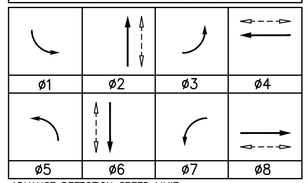
0 20' 40'
SCALE: 1" = 20'

EXISTING PHASE DIAGRAM

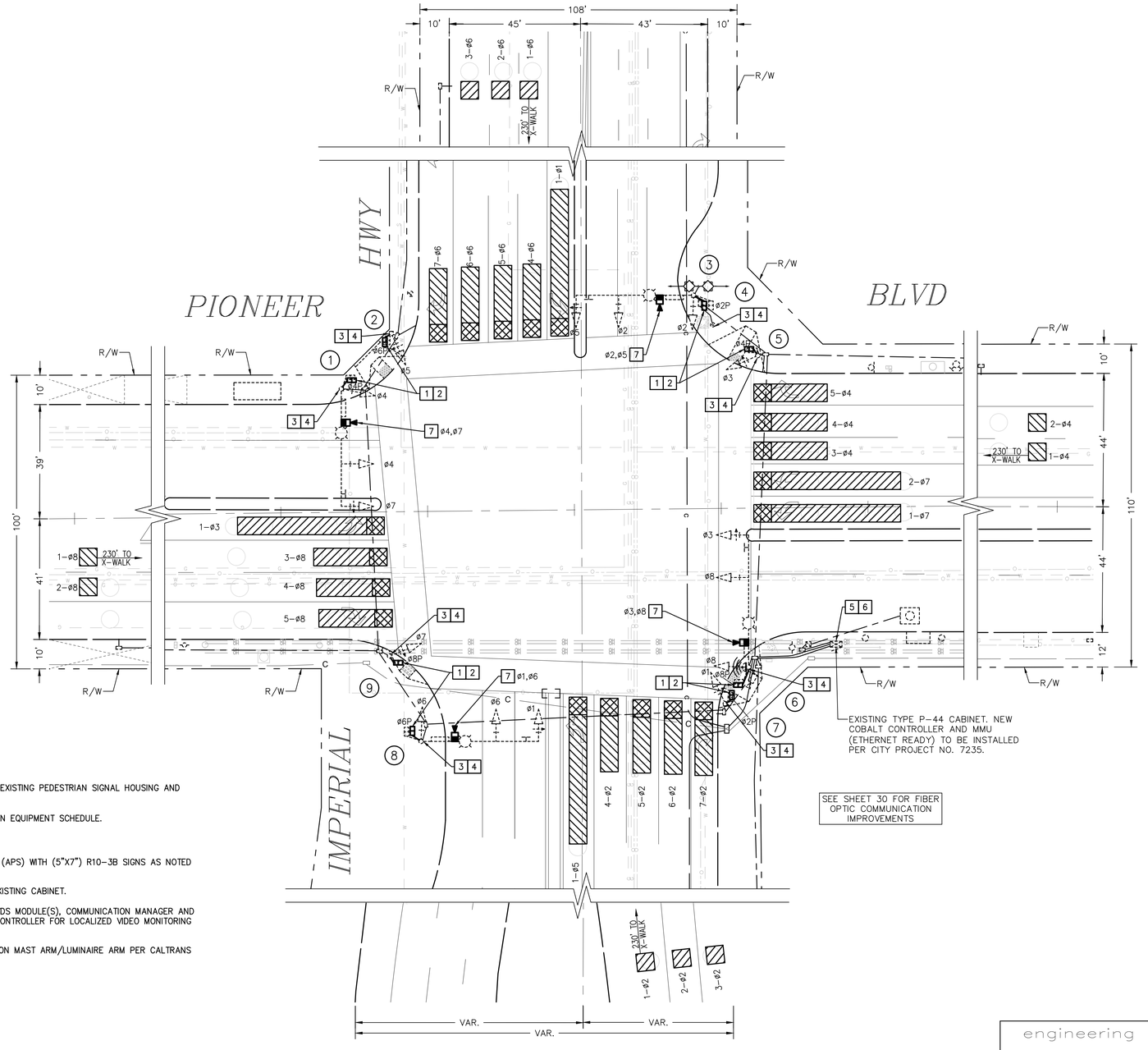


* RESTRICTED PHASE
ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
IMPERIAL HIGHWAY = 40 MPH

PROPOSED PHASE DIAGRAM



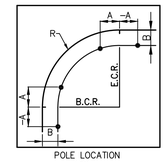
ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
IMPERIAL HIGHWAY = 40 MPH



EQUIPMENT SCHEDULE

POLE		PEDESTRIAN INDICATION		PED PUSH BUTTON	
No.	TYPE	MOUNTING	PHASE	PHASE	ARROW
1	26-4-100	SP-1-T	ø4P(N)	ø6P(N)	LT
2	1-A	SP-1-T	ø6P(N)	ø4P(N)	RT
3	26-4-100	SP-1-T	ø2P(N)	–	–
4	PPB POST	–	–	ø4P(N)	LT
5	1-A	SP-1-T	ø4P(N)	ø2P(N)	RT
6	29-5-100	SP-1-T	ø8P(N)	ø2P(N)	LT
7	1-A	SP-1-T	ø2P(N)	ø8P(N)	RT
8	26-4-100	SP-1-T	ø6P(N)	ø8P(N)	LT
9	1-A	SP-1-T	ø8P(N)	ø6P(N)	RT

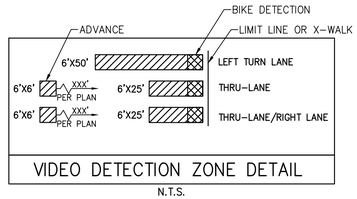
1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE, ITE SPECIFICATION WITH UNIFORM DISPLAY.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STD PLAN ES-5C, DETAIL A.
4. POLE TYPE AND PEDESTRIAN INDICATION MOUNTING SHOWN FOR INFORMATION PURPOSES ONLY.



POLE LOCATION DETAIL

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND DISPOSE EXISTING PEDESTRIAN SIGNAL MODULES. PROTECT IN PLACE EXISTING PEDESTRIAN SIGNAL HOUSING AND MOUNTING.
2. FURNISH AND INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL MODULE, AS NOTED ON EQUIPMENT SCHEDULE.
3. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
4. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
5. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN EXISTING CABINET.
6. FURNISH AND INSTALL HIGH DEFINITION VIDEO DETECTION SYSTEM (VDS). INSTALL VDS MODULE(S), COMMUNICATION MANAGER AND CABLES AT CONTROLLER CABINET COMPLETE. OUTPUT VIDEO SOURCE TO COBALT CONTROLLER FOR LOCALIZED VIDEO MONITORING AT CONTROLLER CABINET. CONFIGURE FOR REMOTE MONITORING AT TMC.
7. FURNISH AND INSTALL VIDEO DETECTION CAMERA (HD) AND MOUNTING HARDWARE ON MAST ARM/LUMINAIRE ARM PER CALTRANS STD. PLAN ES-7R.



VIDEO DETECTION ZONE DETAIL
N.T.S.

811 Know what's below. Call before you dig.

NOTE:

SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT 163RD STREET
PIONEER BOULEVARD AT IMPERIAL HIGHWAY

Approved — CITY ENGINEER — RCE 90882 — 5/15/26 DATE

Recommended — Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-116

SHEET 17 OF 50

CONDUCTOR SCHEDULE

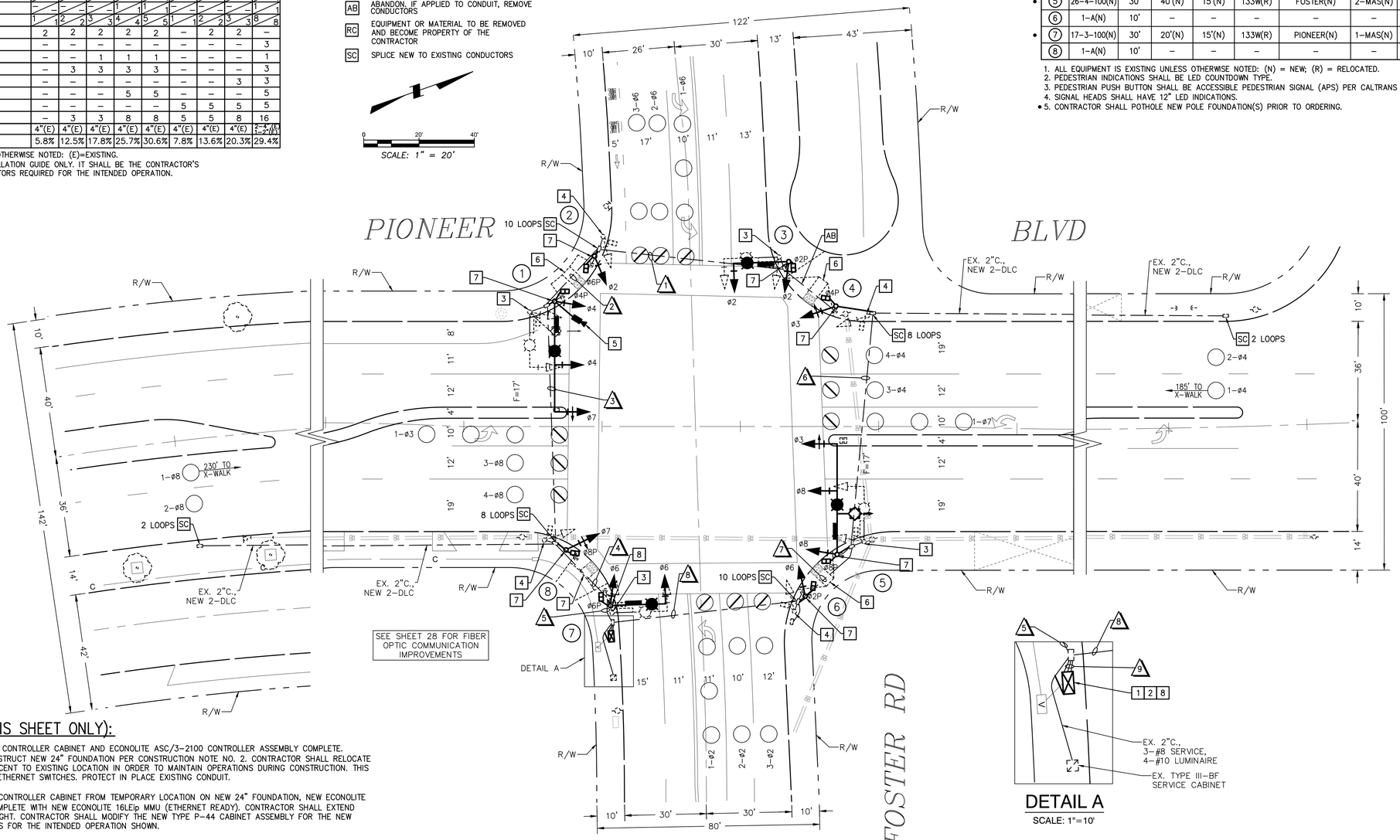
AWG	POLE #	PHASES	1	2	3	4	5	6	7	8	9
12 WIRE CONDUCTOR CABLE / 3 WIRE CONDUCTOR CABLE	①	ø4,ø7,ø4P / ø6PPB	–	–	–	1	1	1	–	–	1
	②	ø2,ø6P / ø4PPB	–	1	1	1	1	1	–	–	1
	③	ø2,ø2P / ø4PPB	1	1	1	1	1	1	–	–	1
	④	ø3,ø4P / ø2PPB	–	–	–	–	–	–	1	1	1
	⑤	ø3,ø8,ø8P / ø2PPB	–	–	–	–	–	–	1	1	1
	⑥	ø6,ø2P / ø8PPB	–	–	–	–	–	–	1	1	1
	⑦	ø6,ø6P / ø8PPB	–	–	–	–	1	1	–	–	1
	⑧	ø7,ø8P / ø6PPB	–	–	–	1	1	1	–	–	1
	TOTAL CABLES		1	1	2	2	3	3	4	4	5	5	1	1	2	2	3	3	8	8
#10	LUMINAIRE		2	2	2	2	2	–	2	2	–
#8	SERVICE		–	–	–	–	–	–	–	–	3
CCTV CABLE (OUTDOOR RATED CAT6)			–	–	1	1	1	–	–	–	1
TYPE B DETECTOR LEAD-IN CABLE	ø6		–	3	3	3	3	–	–	–	3
	ø2		–	–	–	–	–	–	–	3	3
	ø3/ø8		–	–	–	5	5	–	–	–	5
	ø7/ø4		–	–	–	–	–	5	5	5	5
	TOTAL		–	3	3	8	8	5	5	8	16
CONDUIT SIZE			4"(E)	4"(E)	4"(E)	4"(E)	4"(E)	4"(E)	4"(E)	4"(E)	2-4"(E) 1-2"(E)
PERCENT FILL			5.8%	12.5%	17.8%	25.7%	30.6%	7.8%	13.6%	20.3%	29.4%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

LEGEND:

- VIDEO DETECTION ZONE
- BICYCLE DETECTION ZONE
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- EXISTING WIRELESS RADIO
- AB — ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- SC — SPLICE NEW TO EXISTING CONDUCTORS

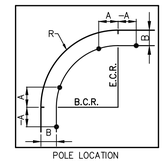
0 20' 40'
SCALE: 1" = 20'



POLE SCHEDULE

No.	STANDARD TYPE	STANDARD HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	PED PUSH BTN ARW	LOCATION A	LOCATION B	COMMENTS
①	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	FOSTER(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø6(N)	–	19'	2'	
②	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø4(N)	–	18'	2.5'	
③	17-3-100(N)	30'	20'(N)	15'(N)	133W(R)	PIONEER(N)	1-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø4(N)	–	12'	4.5'	
④	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø2(N)	–	10'	4'	
⑤	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	FOSTER(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø2(N)	–	21'	2'	
⑥	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø8(N)	–	18'	3.5'	
⑦	17-3-100(N)	30'	20'(N)	15'(N)	133W(R)	PIONEER(N)	1-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø8(N)	–	6'	2'	
⑧	1-A(N)	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T(R)	ø6(N)	–	16'	2.5'	

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



POLE LOCATION DETAIL

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
FOSTER ROAD (EAST) = 40 MPH
FOSTER ROAD (WEST) = 35 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
FOSTER ROAD (EAST) = 40 MPH
FOSTER ROAD (WEST) = 35 MPH

DETAIL A
SCALE: 1"=10'

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 2. CONTRACTOR SHALL RELOCATE THE NEW TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
2. FURNISH AND INSTALL NEW TYPE P-44 CONTROLLER CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. CONTRACTOR SHALL MODIFY THE NEW TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. RC EXISTING TYPE 1-A POLE, VEHICLE HEAD AND PPB ASSEMBLY. REMOVE FOUNDATION. SEE POLE SCHEDULE.
5. FURNISH AND INSTALL HIGH DEFINITION IP MIC CCTV CAMERA ASSEMBLY, CCTV CABLE AND MOUNTING HARDWARE ON TRAFFIC SIGNAL COMPLETE. INSTALL POE INJECTOR/AUXILIARY EQUIPMENT IN CONTROLLER CABINET. CONFIGURE FOR REMOTE VIDEO+CONTROL AT TMC.
6. SEE ADA RAMP DETAILS FOR PEDESTRIAN RAMP IMPROVEMENTS.
7. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.

811 Know what's below. Call before you dig.

NOTE:
SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT FOSTER ROAD

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-117
SHEET 18 OF 50

CONDUCTOR SCHEDULE											
AWG	POLE #	PHASES	1	2	3	4	5	6	7	8	9
12 WIRE CONDUCTOR CABLE	①	ø2,ø4,ø7,ø4P,ø6P / ø4PPB,ø6PPB	–	–	–	–	–	–	–	–	2
	②	ø2,ø3,ø2P,ø4P / ø2PPB,ø4PPB	–	2	2	2	–	–	2	2	2
3 WIRE CONDUCTOR CABLE	③	ø3,ø6,ø8,ø2P,ø8P / ø2PPB,ø8PPB	2	2	–	2	2	–	2	2	2
	④	ø6,ø7,ø6P,ø8P / ø6PPB,ø8PPB	–	–	–	–	2	2	2	2	2
	TOTAL CABLES		2	2	2	4	4	2	6	6	8
#10	LUMINAIRE		2	–	2	–	–	–	2	–	2
#8	SERVICE		–	–	–	–	–	–	–	–	3
TYPE B DETECTOR LEAD-IN CABLE	ø6		–	–	–	–	–	–	–	1	1
	ø2		–	–	–	1	1	–	1	–	1
	ø3/ø8		–	–	–	–	3	2	5	–	5
	ø7/ø4		–	3	5	–	–	–	5	–	5
	TOTAL		–	3	5	1	4	2	11	1	12
CONDUIT SIZE			2"(E)	2"(E)	2-2"(E)	1.5"(E)	2"(E)	2"(E)	2-3"	1.5"(E)	2-4"
PERCENT FILL			39.3%	44.0%	43.8%	3.6%	46.1%	4.3%	31.4%	3.6%	24.2%

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

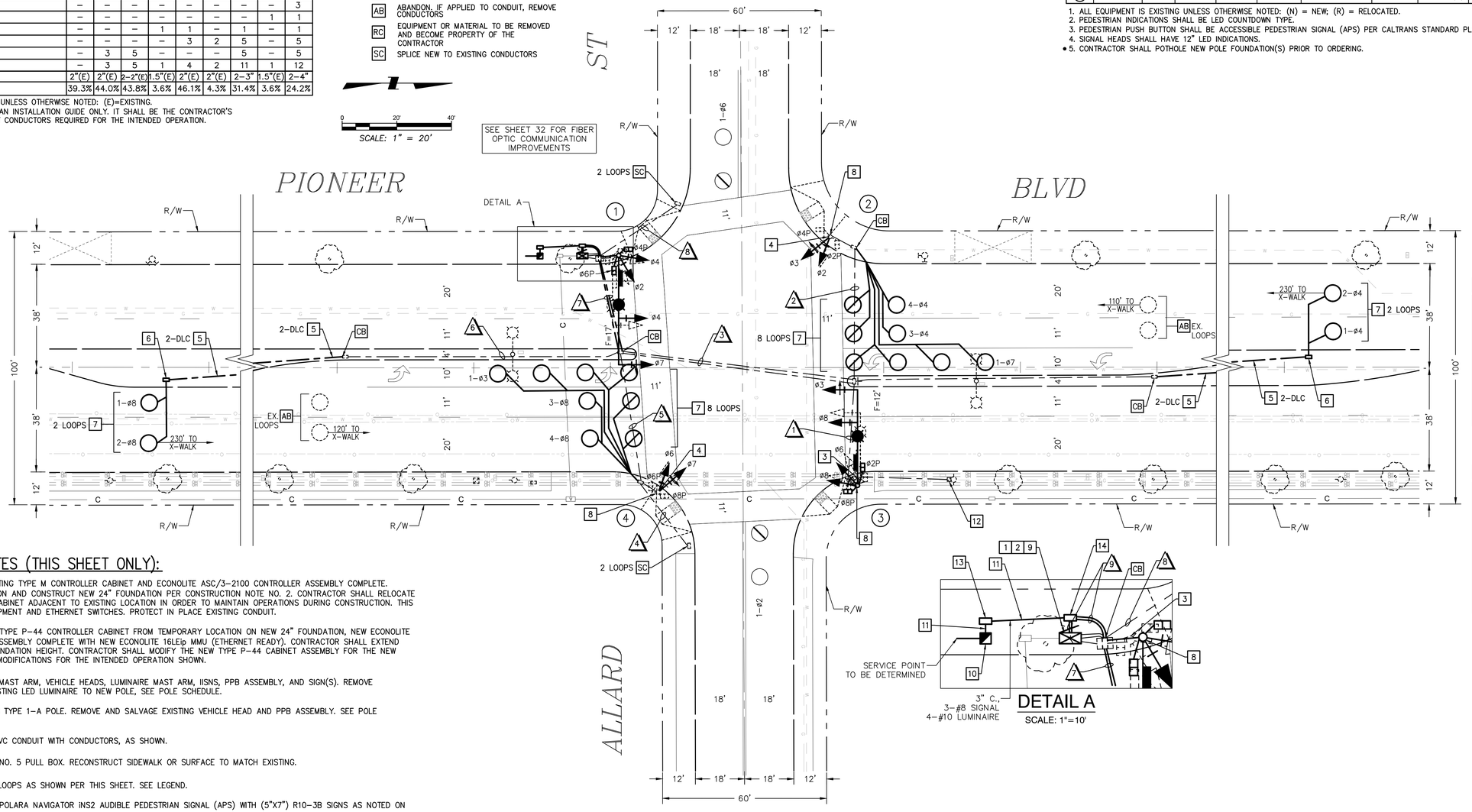
LEGEND:

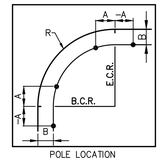
- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- PROPOSED CALTRANS TYPE E LOOPS
- CB — INSTALL CONDUIT INTO EXISTING PULLBOX
- AB — ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- RC — EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- SC — SPLICE NEW TO EXISTING CONDUCTORS

SCALE: 1" = 20'

POLE SCHEDULE														
	STANDARD			MAST ARM		L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING			PED PUSH BTN		LOCATION		
No.	TYPE	HEIGHT		SIGNAL	LUM			VEHICLE		PED	PHASE	ARW	A	B	COMMENTS
①	26-4-100(N)	30'		40'(N)	15'(N)	133W(R)	ALLARD(N)	2-MAS(N)	SV-2-T(N)	SP-2-T(R)	ø6(N)/ø4(N)	LT/LT	9'	2.5'	
②	1-A	10'		–	–	–	–	–	TV-2-T(N)	SP-2-T(E)	ø4(N)/ø2(N)	RT/LT	EXISTING		
③	24-4-100(N)	30'		35'(N)	15'(N)	133W(R)	ALLARD(N)	2-MAS(N)	SV-2-T(N)	SP-1-T(R)	ø2(N)/ø8(N)	LT/LT	6'	4'	
④	1-A	10'		–	–	–	–	–	TV-2-T(N)	SP-2-T(E)	ø8(N)/ø6(N)	RT/RT	EXISTING		

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.





POLE LOCATION DETAIL

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
ALLARD STREET = 30 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD = 40 MPH
ALLARD STREET = 30 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. REMOVE AND SALVAGE EXISTING TYPE M CONTROLLER CABINET AND ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY COMPLETE. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 2. CONTRACTOR SHALL RELOCATE THE NEW TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
2. FURNISH AND INSTALL NEW TYPE P-44 CONTROLLER CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION, NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. CONTRACTOR SHALL MODIFY THE NEW TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. PROTECT IN PLACE EXISTING TYPE 1-A POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEAD AND PPB ASSEMBLY. SEE POLE SCHEDULE.
5. INSTALL 2" SCHEDULE 80 PVC CONDUIT WITH CONDUCTORS, AS SHOWN.
6. FURNISH AND INSTALL NEW NO. 5 PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
7. INSTALL TYPE E DETECTOR LOOPS AS SHOWN PER THIS SHEET. SEE LEGEND.
8. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
9. FURNISH AND INSTALL NEW POLARA NAVIGATOR iNS2 CONTROLLER ASSEMBLY IN NEW CABINET.
10. FURNISH AND INSTALL 120/240V TYPE III-BF SERVICE ENCLOSURE ON 4" FOUNDATION WITH THE FOLLOWING CIRCUIT BREAKERS: METERED -100AMP/240V/2P (MAIN), 50AMP/120V/1P (SIGNAL), 15AMP/120V/1P (IISNS), 15AMP/120V/1P (IISNS TYPE V PEC), AND 15AMP/120V/1P (SPARE); UNMETERED -100AMP/240V/2P (MAIN), 30AMP/240/1P (LIGHTING), 15AMP/120V/1P (LIGHTING CONTROL).
11. FURNISH AND INSTALL 3" SCH 80 PVC CONDUIT+PULL TAPE PER SOUTHERN CALIFORNIA EDISON (SCE) SPECIFICATIONS. COORDINATE WORK WITH SCE REPRESENTATIVE PRIOR TO CONSTRUCTION.
12. REMOVE & DISPOSE EXISTING TYPE I SERVICE ENCLOSURE. CONSTRUCT NEW SERVICE RISER PER SCE STANDARDS. COORDINATE WORK WITH SCE REPRESENTATIVE PRIOR TO CONSTRUCTION.
13. FURNISH AND INSTALL NEW NO. 6 PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
14. FURNISH AND INSTALL NEW NO. 6E PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

811 Know what's below. Call before you dig.

NOTE:
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SEE SHEET 2 FOR GENERAL NOTES.

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REVIEWED BY:
JOHN A. DORADO II, PE — DATE 07/16/24
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT ALLARD STREET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-118

Drawn By _____ Checked By _____
SHEET 19 OF 50

CONDUCTOR SCHEDULE

AWG	POLE #	PHASES	1	2	3	4	5	6	7	8	9
12 WIRE CONDUCTOR CABLE	1	ø4,ø7,ø4P / ø6PPB	–	–	1	1	–	–	1	1	1	–	1	1
	2	ø2,ø6P / ø4PPB	–	–	1	1	–	–	1	1	1	–	1	1
	3	ø2,ø2P / ø4PPB	1	1	1	1	–	–	1	1	1	–	1	1
	4	ø3,ø4P / ø2PPB	1	1	1	1	–	–	1	1	1	–	1	1
	5	ø3,ø8,ø8P / ø2PPB	–	–	–	–	–	–	–	–	–	1	1	1
3 WIRE CONDUCTOR CABLE	6	ø6,ø2P / ø8PPB	–	–	–	–	–	–	–	–	–	1	1	1
	7	ø6,ø6P / ø8PPB	–	–	–	–	–	–	1	1	1	–	1	1
	8	ø7,ø8P / ø6PPB	–	–	–	–	–	–	1	1	1	–	1	1
		TOTAL CABLES	2	2	3	4	–	–	5	5	6	1	8	8
#10		LUMINAIRE	–	2	2	–	–	2	2	2	–			
#8		SERVICE	–	–	–	–	–	–	–	–	3			
TYPE B DETECTOR LEAD-IN CABLE		ø6	–	1	1	–	–	1	1	–	1			
		ø2	–	–	–	–	–	–	–	1	1			
		ø3/ø8	–	–	–	2	5	5	5	–	5			
		ø7/ø4	5	5	5	–	–	5	5	–	5			
		TOTAL	5	6	6	2	5	11	11	1	12			
CONDUIT SIZE			2"(E)	3"(E)	3"(E)	1.5"(E)	1.5"(E)	4"	2-3"(E)	2"(E)	2-4"(E)			
PERCENT FILL			48.3%	32.3%	40.9%	7.2%	17.9%	31.5%	31.4%	22.7%	25.5%			

ALL CONDUITS & CONDUCTORS ARE NEW, UNLESS OTHERWISE NOTED: (E)=EXISTING.
CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

0 20' 40'
SCALE: 1" = 20'

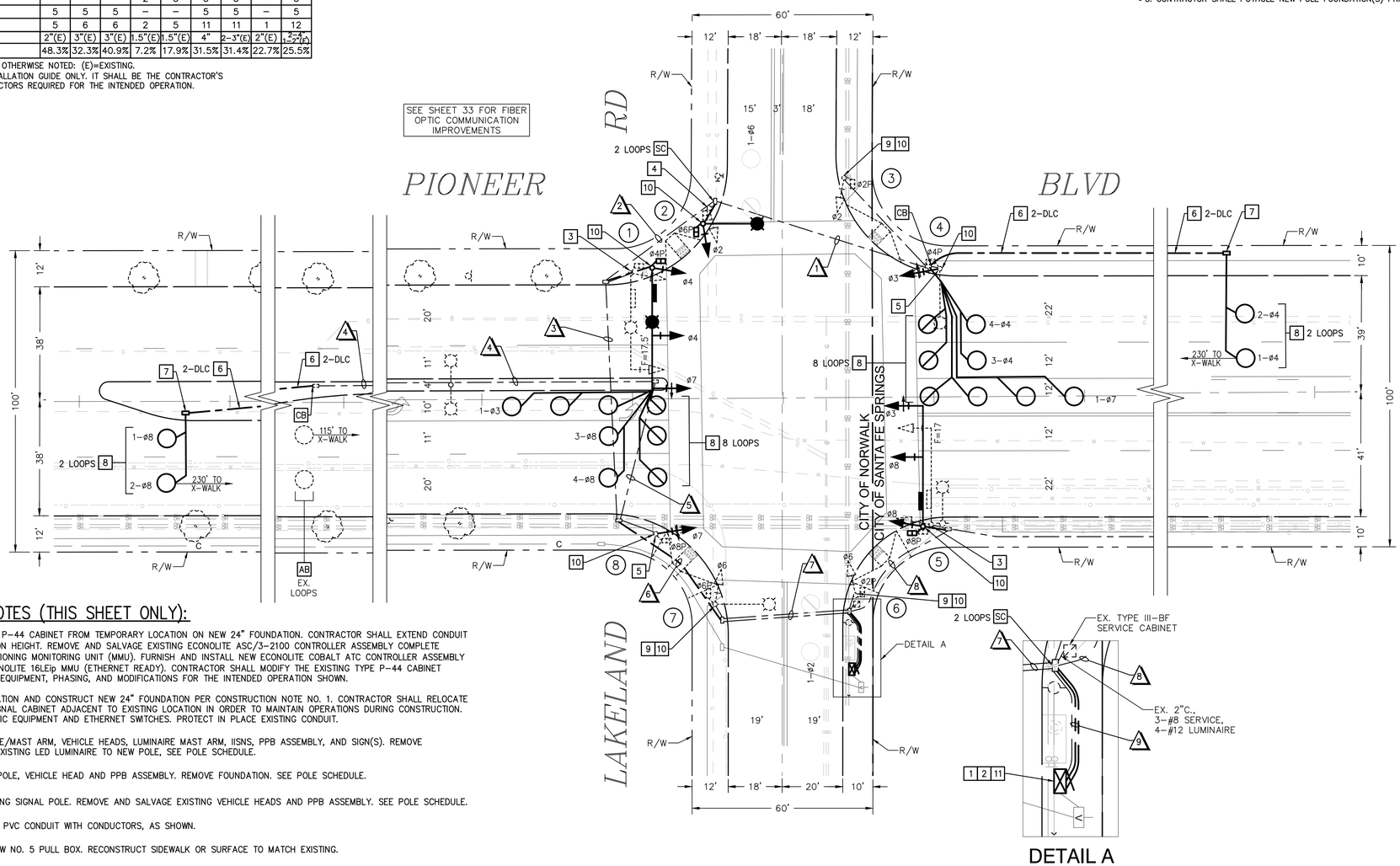
LEGEND:

- EXISTING SIGNAL HEAD
- PROPOSED SIGNAL HEAD
- EXISTING CALTRANS TYPE E LOOPS
- PROPOSED CALTRANS TYPE E LOOPS
- CB — INSTALL CONDUIT INTO EXISTING PULLBOX
- AB — ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- SC — SPLICE NEW TO EXISTING CONDUCTORS

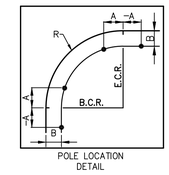
POLE SCHEDULE

	STANDARD No.	TYPE	HEIGHT	MAST ARM SIGNAL	MAST ARM LUM	L.E.D. LUMINAIRE	R.S.N.S. LEGEND	SIGNAL MOUNTING VEHICLE	SIGNAL MOUNTING PED	PED PUSH BTN PHASE	LOCATION ARW	LOCATION A	LOCATION B	COMMENTS
•	1	26-4-100(N)	30'	40'(N)	15'(N)	133W(R)	LAKELAND(N)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø6(N)	LT	15'	2.5'	
•	2	15TS(N)	30'	–	15'(N)	133W(N)	–	–	SV-1-T(N)	SP-1-T(R)	ø4(N)	RT	19.5'	2.5'	
	3	1-A	10'	–	–	–	–	–	TV-1-T	SP-1-T	ø4(N)	LT	EXISTING		
	4	15	30'	–	15'	133W	–	–	SV-1-T(N)	SP-1-T	ø2(N)	RT	EXISTING		
•	5	27-4-100(N)	17'	40'(N)	–	–	LAKELAND(R)	2-MAS(N)	SV-1-T(N)	SP-1-T(R)	ø2(N)	LT	8.5'	2.5'	
	6	1-A	10'	–	–	–	–	–	SV-1-T	SP-1-T	ø8(N)	RT	EXISTING		
	7	15	30'	–	15'	133W	–	–	SV-1-T	SP-1-T	ø8(N)	LT	EXISTING		
	8	1-A	10'	–	–	–	–	–	TV-1-T(N)	SP-1-T	ø6(N)	RT	EXISTING		

1. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED: (N) = NEW; (R) = RELOCATED.
2. PEDESTRIAN INDICATIONS SHALL BE LED COUNTDOWN TYPE.
3. PEDESTRIAN PUSH BUTTON SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) PER CALTRANS STANDARD PLAN ES-5C, DETAIL A.
4. SIGNAL HEADS SHALL HAVE 12" LED INDICATIONS.
5. CONTRACTOR SHALL POTHOLE NEW POLE FOUNDATION(S) PRIOR TO ORDERING.



DETAIL A
SCALE: 1"=10'



POLE LOCATION DETAIL

EXISTING PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD (NORTH) = 45 MPH
PIONEER BOULEVARD (SOUTH) = 40 MPH
LAKELAND ROAD (WEST) = 25 MPH
LAKELAND ROAD (EAST) = 35 MPH

PROPOSED PHASE DIAGRAM

ø1	ø2	ø3	ø4
ø5	ø6	ø7	ø8

ADVANCE DETECTION SPEED LIMIT:
PIONEER BOULEVARD (NORTH) = 45 MPH
PIONEER BOULEVARD (SOUTH) = 40 MPH
LAKELAND ROAD (WEST) = 25 MPH
LAKELAND ROAD (EAST) = 35 MPH

CONSTRUCTION NOTES (THIS SHEET ONLY):

1. RELOCATE EXISTING TYPE P-44 CABINET FROM TEMPORARY LOCATION ON NEW 24" FOUNDATION. CONTRACTOR SHALL EXTEND CONDUIT THROUGH NEW FOUNDATION HEIGHT. REMOVE AND SALVAGE EXISTING ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY COMPLETE INCLUDING THE MALFUNCTIONING MONITORING UNIT (MMU). FURNISH AND INSTALL NEW ECONOLITE COBALT ATC CONTROLLER ASSEMBLY COMPLETE WITH NEW ECONOLITE 16LEip MMU (ETHERNET READY). CONTRACTOR SHALL MODIFY THE EXISTING TYPE P-44 CABINET ASSEMBLY FOR THE NEW EQUIPMENT, PHASING, AND MODIFICATIONS FOR THE INTENDED OPERATION SHOWN.
2. REMOVE EXISTING FOUNDATION AND CONSTRUCT NEW 24" FOUNDATION PER CONSTRUCTION NOTE NO. 1. CONTRACTOR SHALL RELOCATE THE EXISTING TRAFFIC SIGNAL CABINET ADJACENT TO EXISTING LOCATION IN ORDER TO MAINTAIN OPERATIONS DURING CONSTRUCTION. THIS INCLUDES FIBER OPTIC EQUIPMENT AND ETHERNET SWITCHES. PROTECT IN PLACE EXISTING CONDUIT.
3. RC EXISTING SIGNAL POLE/MAST ARM, VEHICLE HEADS, LUMINAIRE MAST ARM, IISNS, PPB ASSEMBLY, AND SIGN(S). REMOVE FOUNDATION. RELOCATE EXISTING LED LUMINAIRE TO NEW POLE, SEE POLE SCHEDULE.
4. RC EXISTING TYPE 1-A POLE, VEHICLE HEAD AND PPB ASSEMBLY. REMOVE FOUNDATION. SEE POLE SCHEDULE.
5. PROTECT IN PLACE EXISTING SIGNAL POLE. REMOVE AND SALVAGE EXISTING VEHICLE HEADS AND PPB ASSEMBLY. SEE POLE SCHEDULE.
6. INSTALL 2" SCHEDULE 80 PVC CONDUIT WITH CONDUCTORS, AS SHOWN.
7. FURNISH AND INSTALL NEW NO. 5 PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.
8. INSTALL TYPE E DETECTOR LOOPS AS SHOWN PER THIS SHEET. SEE LEGEND.
9. REMOVE AND SALVAGE EXISTING PEDESTRIAN PUSH BUTTON.
10. FURNISH AND INSTALL NEW POLARA NAVIGATOR INS2 AUDIBLE PEDESTRIAN SIGNAL (APS) WITH (5"X7") R10-3B SIGNS AS NOTED ON EQUIPMENT SCHEDULE.
11. FURNISH AND INSTALL NEW POLARA NAVIGATOR INS2 CONTROLLER ASSEMBLY IN NEW CABINET.

811 Know what's below. Call before you dig.

NOTE:
SEE TITLE SHEET FOR LEGEND AND ABBREVIATIONS.
SEE SHEET 2 FOR GENERAL NOTES.

City of Santa Fe Springs
11710 E. Telegraph Road
Santa Fe Springs, CA 90670
APPROVED BY:
_____ DATE

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
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Fax: (949) 502-5522
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE: 07/16/24
CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: TRAFFIC SIGNAL MODIFICATION PLAN
PIONEER BOULEVARD AT LAKELAND ROAD

Approved
CITY ENGINEER — RCE 90882 — 5/15/26 DATE

Recommended
Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-119

SHEET 20 OF 50

CONSTRUCTION NOTES:

1 RC EXISTING COPPER INTERCONNECT CABLE FROM CONDUIT AS SHOWN. SIC CABLE TO BECOME PROPERTY OF CONTRACTOR.

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

5 RC EXISTING PULL BOX AND FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

6 RC EXISTING PULL BOX AND CONDUIT SWEEPS. CONNECT NEW CONDUIT END TO END. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING. SEE CONSTRUCTION DETAIL SHEETS.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

13 RS EXISTING MALFUNCTION MONITORING UNIT (MMU). FURNISH AND INSTALL SHELF–MOUNT 16LEip MMU WITH ETHERNET PORT, AND CONFIGURE THE INTERSECTION FOR THE INTENDED OPERATION. MMU SHALL UTILIZE JUMPER CARD.

14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

15 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID–SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLES AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET. CONTRACTOR TO COORDINATE WITH HSIPL–5347 (040), CITY PROJECT NO. 7230 CONTRACTOR PRIOR TO MODIFICATIONS.

16 FURNISH AND INSTALL 5GHz UNLICENSED POINT–TO–MULTIPOINT (PTMP) WIRELESS BROADBAND RADIO SYSTEM, ANTENNA CABLE AND MOUNTING SOFTWARE, PoE INJECTOR AND AUXILIARY EQUIPMENT. RADIO MASTER UNIT AND RADIO RECEIVER UNITS SHALL BE AS SHOWN PER PLAN. EXACT LOCATION OF RADIO UNIT SHALL BE DETERMINED BY RADIO ANALYSIS PERFORMED IN THE FIELD. SEE CONSTRUCTION DETAILS AND MANUFACTURER SPECIFICATIONS.

17 FURNISH AND INSTALL ASTRO–BRAC ANTENNA BRACKET EXTENSION. MOUNT WIRELESS RADIO & BRACKET ON LUMINAIRE MAST ARM.

18 FURNISH AND INSTALL OUTDOOR RATED CATEGORY 6 DATA+POWER WIRELESS ANTENNA CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM WIRELESS RADIO TO CONTROLLER CABINET, NO SPLICES ALLOWED.

19 FURNISH AND INSTALL TYPE 334L COMMUNICATION HUB CABINET ON 4" HIGH FOUNDATION PER CALTRANS STD PLAN ES–3C.

20 FURNISH AND INSTALL HIRSCHMANN GREYHOUND HARDENED MANAGED 24 PORT GIGABIT AGGREGATE SWITCH, EXPANSION MODULES, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE.

21 FURNISH AND INSTALL NEW 288 PORT FIBER DISTRIBUTION UNIT COMPLETE (RACK MOUNT). TERMINATE FIBER OPTIC CABLE(S) PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

22 FURNISH AND INSTALL BATTERY BACK–UP SYSTEM (BBS) AND BATTERIES ON EXTERNAL SIDE–MOUNT CABINET. BBS SYSTEM SHALL BE CONFIGURED TO RUN ON RESERVE POWER FOR TWO–HOURS CONTINUOUS OPERATION.

23 FURNISH AND INSTALL OUTDOOR RATED CATEGORY 6 CABLE(S) IN EXISTING/PROPOSED CONDUIT AS SHOWN.

24 FURNISH AND INSTALL 120/240V TYPE III–BF SERVICE CABINET ON 4" HIGH FOUNDATION PER CALTRANS STD PLAN ES–2F. PROVIDE SERVICE BREAKERS AS SHOWN PER PLAN.

25 FURNISH AND INSTALL 3–#8 AWG SERVICE CONDUCTORS INSIDE EXISTING/PROPOSED CONDUIT.

26 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

27 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT STUB–OUT AND CAP ENDS, TO BE PROVIDED FOR FUTURE CONNECTION.

LEGEND

[SEE CALTRANS STANDARD PLAN ES–1A FOR ADDITIONAL LEGENDS]

- EXISTING LOOP DETECTION
- VIDEO DETECTION ZONE
- EXISTING VIDEO DETECTION CAMERA
- EXISTING SERVICE CABINET
- EXISTING TYPE P CABINET
- EXISTING LUMINAIRE
- EXISTING EVP
- EXISTING VEHICLE HEAD
- EXISTING MAST ARM SIGN
- EXISTING SIGN
- EXISTING PED HEAD
- EXISTING FIBER OPTIC SPLICE VAULT
- MODIFIED TYPE E LOOP
- EXISTING BROADBAND RADIO
- BLUETOOTH/WI–FI DETECTOR
- EXISTING CCTV CAMERA
- EXISTING PULL BOX
- EXISTING CONDUIT
- SMFO SINGLE MODE FIBER OPTIC CABLE
- SIC SIGNAL INTERCONNECT CABLE
- NEW FIBER OPTIC SPLICE VAULT
- NEW FIBER OPTIC PULL BOX
- PROPOSED 1A WITH PED
- PROPOSED TYPE III SERVICE CABINET
- PROPOSED P TYPE CABINET
- PROPOSED MAST ARM SIGN
- PROPOSED SIGN
- PROPOSED PED HEAD
- DRIVEWAY

CALTRANS NOTES

- AB ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN
- CB INSTALL CONDUIT INTO EXISTING PULL BOX
- CC CONNECT NEW AND EXISTING CONDUIT, REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
- RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR
- RL RELOCATE EQUIPMENT
- RS REMOVE AND SALVAGE EQUIPMENT
- SC SPLICE NEW TO EXISTING CONDUCTORS

811 Know what's below. Call before you dig.

PREPARED BY:
ADVANTEC Consulting Engineers
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.

PLAN REF.

CITY OF NORWALK

TITLE:
CONSTRUCTION NOTES AND LEGEND
PIONEER BOULEVARD FIBER OPTIC COMMUNICATION DESIGN

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-120

SHEET 21 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

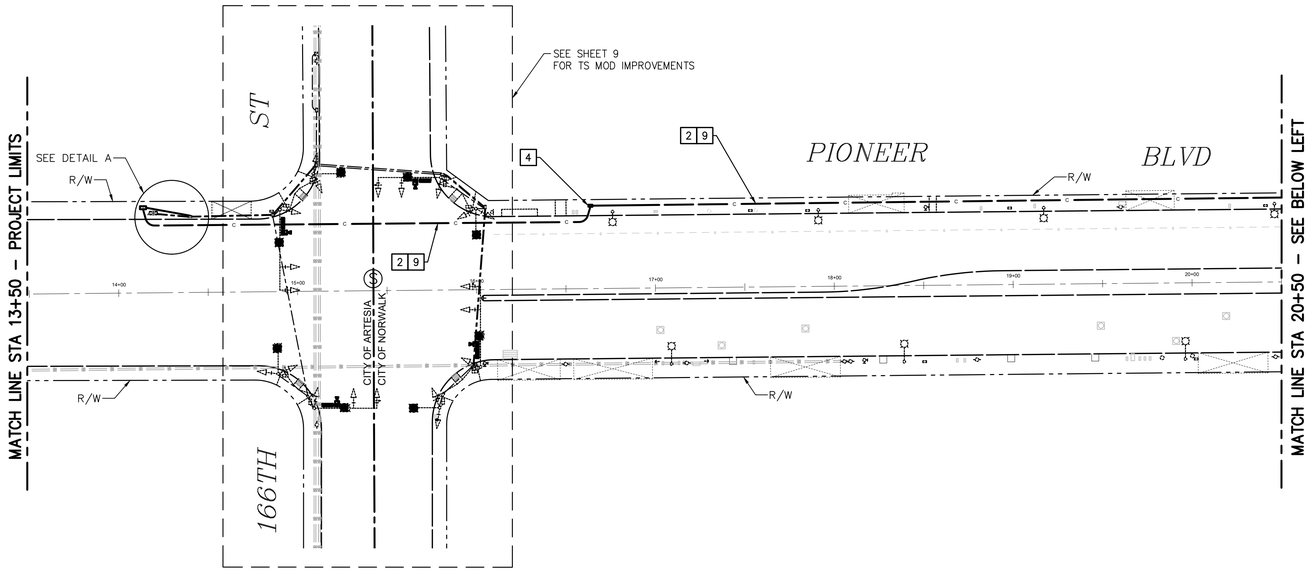
8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

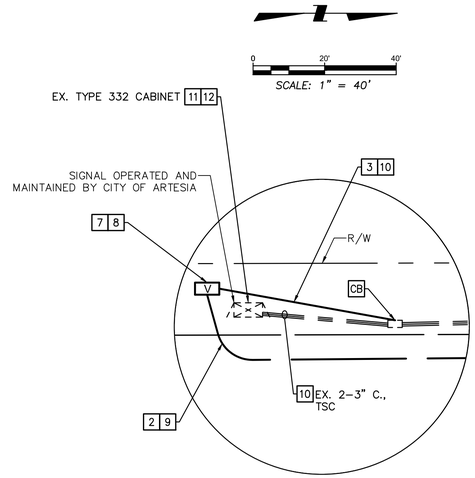
9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

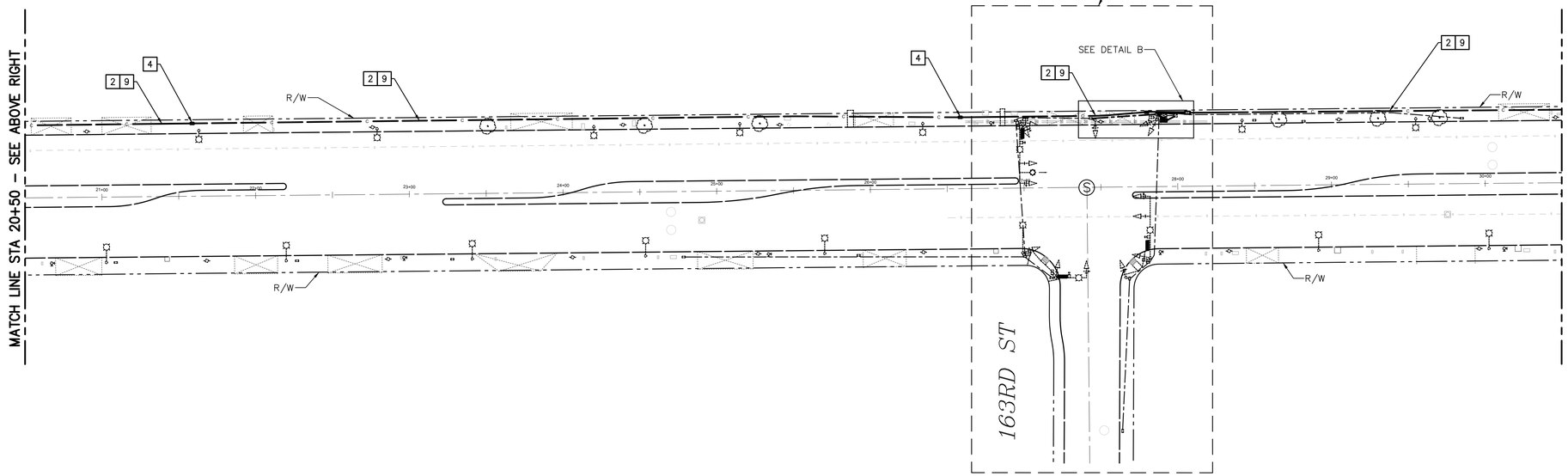
11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

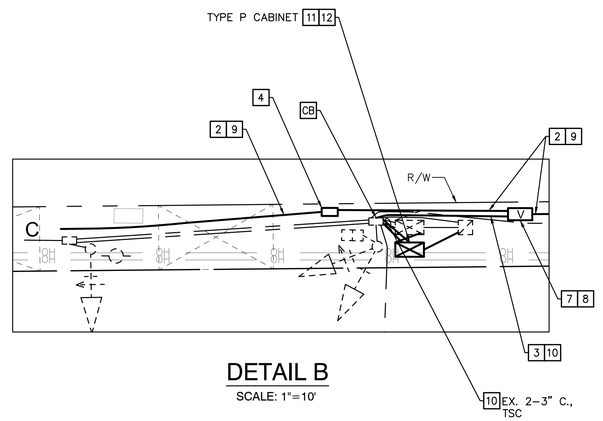
12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.





DETAIL A
SCALE: 1"=10'





DETAIL B
SCALE: 1"=10'

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

811 Know what's below. Call before you dig.

City of Artesia
18747 Clarkdale Avenue
Artesia, CA 90701
APPROVED BY:

DATE

PREPARED BY:
ADVANTEC Consulting Engineers
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REVIEWED BY: 01/25/24
JOHN A. DORADO II, PE — DATE
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE:
FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 13+50 TO STA 30+50

Approved
CITY ENGINEER — RCE 90882 — 5/15/26 DATE

Recommended
Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-121

SHEET 22 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500-600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

13 RS EXISTING MALFUNCTION MONITORING UNIT (MMU). FURNISH AND INSTALL SHELF-MOUNT 16LEip MMU WITH ETHERNET PORT, AND CONFIGURE THE INTERSECTION FOR THE INTENDED OPERATION. MMU SHALL UTILIZE JUMPER CARD.

14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE-USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

19 FURNISH AND INSTALL TYPE 334L COMMUNICATION HUB CABINET ON 4" HIGH FOUNDATION PER CALTRANS STD PLAN ES-3C.

20 FURNISH AND INSTALL HIRSCHMANN GREYHOUND HARDENED MANAGED 24 PORT GIGABIT AGGREGATE SWITCH, EXPANSION MODULES, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE.

21 FURNISH AND INSTALL NEW 288 PORT FIBER DISTRIBUTION UNIT COMPLETE (RACK MOUNT). TERMINATE FIBER OPTIC CABLE(S) PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

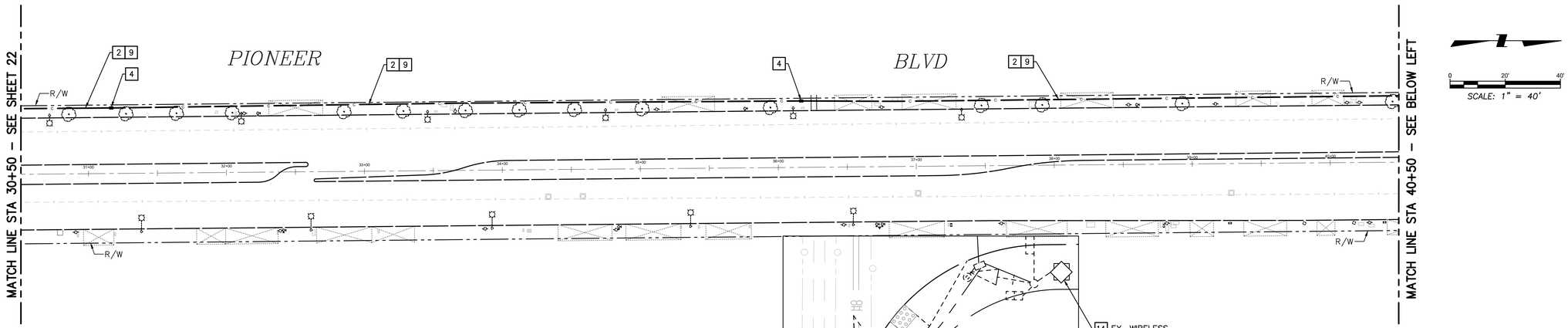
22 FURNISH AND INSTALL BATTERY BACK-UP SYSTEM (BBS) AND BATTERIES ON EXTERNAL SIDE-MOUNT CABINET. BBS SYSTEM SHALL BE CONFIGURED TO RUN ON RESERVE POWER FOR TWO-HOURS CONTINUOUS OPERATION.

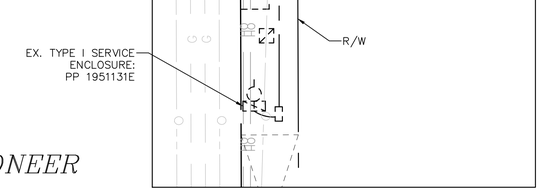
23 FURNISH AND INSTALL OUTDOOR RATED CATEGORY 6 CABLE(S) IN EXISTING/PROPOSED CONDUIT AS SHOWN.

24 FURNISH AND INSTALL 120/240V TYPE III-BF SERVICE CABINET ON 4" HIGH FOUNDATION PER CALTRANS STD PLAN ES-2F. PROVIDE SERVICE BREAKERS AS SHOWN PER PLAN.

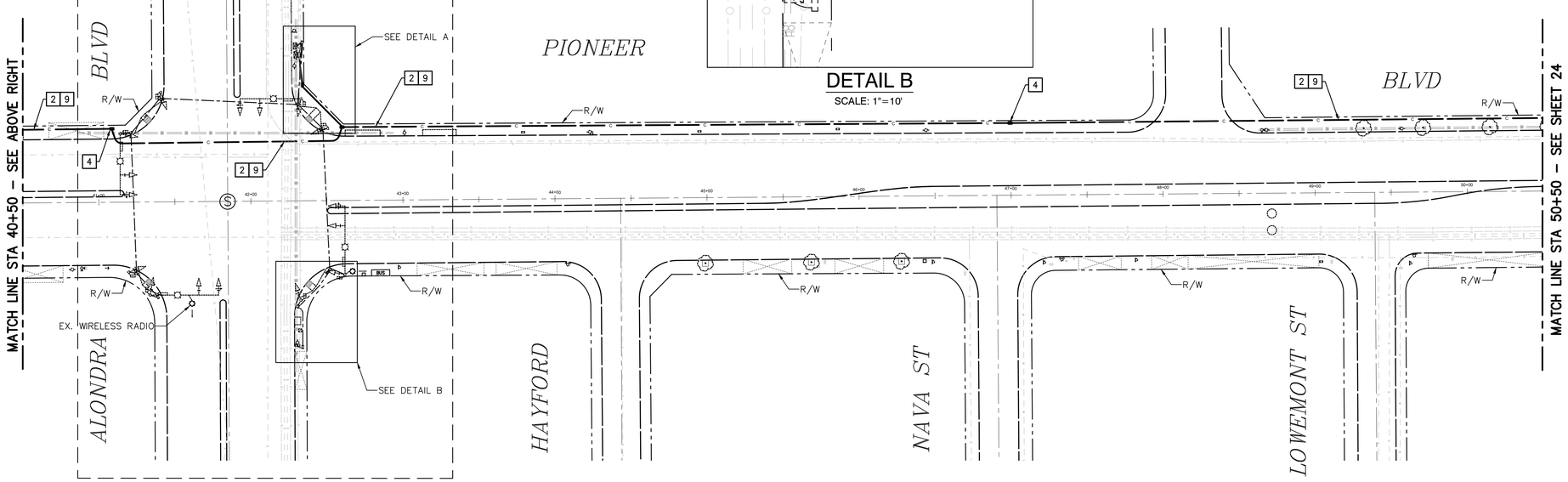
25 FURNISH AND INSTALL 3-#8 AWG SERVICE CONDUCTORS INSIDE EXISTING/PROPOSED CONDUIT.

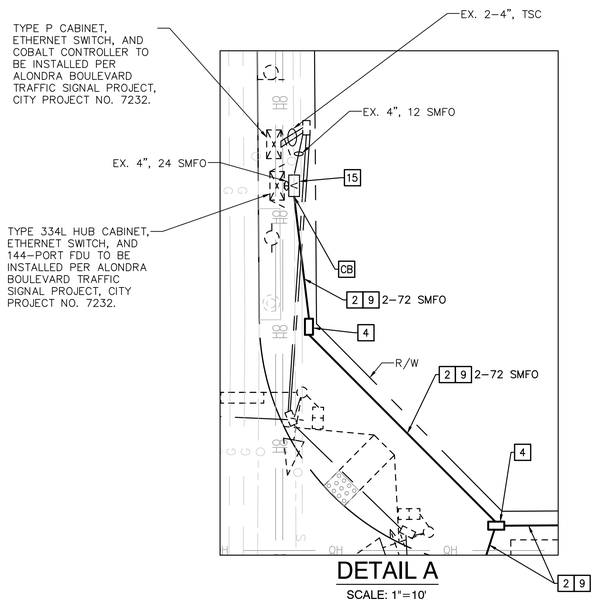
26 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.





DETAIL B
SCALE: 1"=10'





DETAIL A
SCALE: 1"=10'

811 Know what's below. Call before you dig.

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
Tel: (949) 861-4999
Fax: (949) 502-5522
www.advantec-usa.com

REGISTERED PROFESSIONAL ENGINEER JOHN A. DORADO II No. 74405 CIVIL STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE 01/25/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 30+50 TO STA 50+50

Approved
CITY ENGINEER RCE 90882 5/15/26 DATE

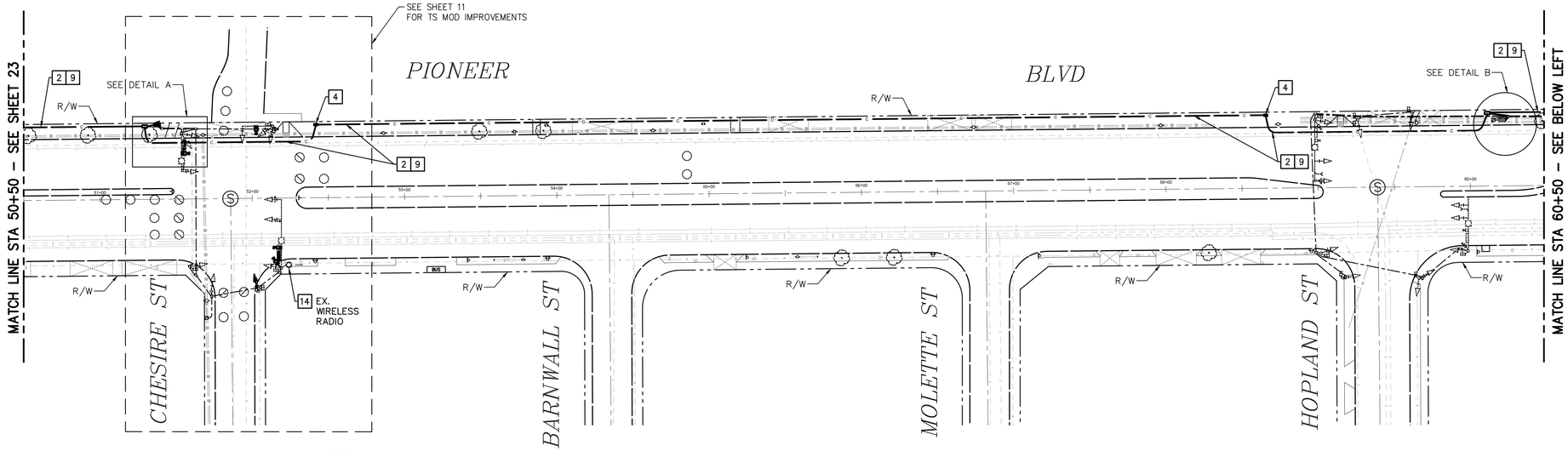
Recommended
Principal Civil Engineer RCE 75709 4/28/26 DATE

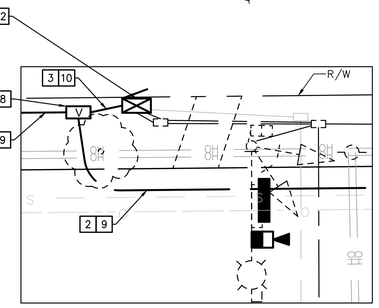
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

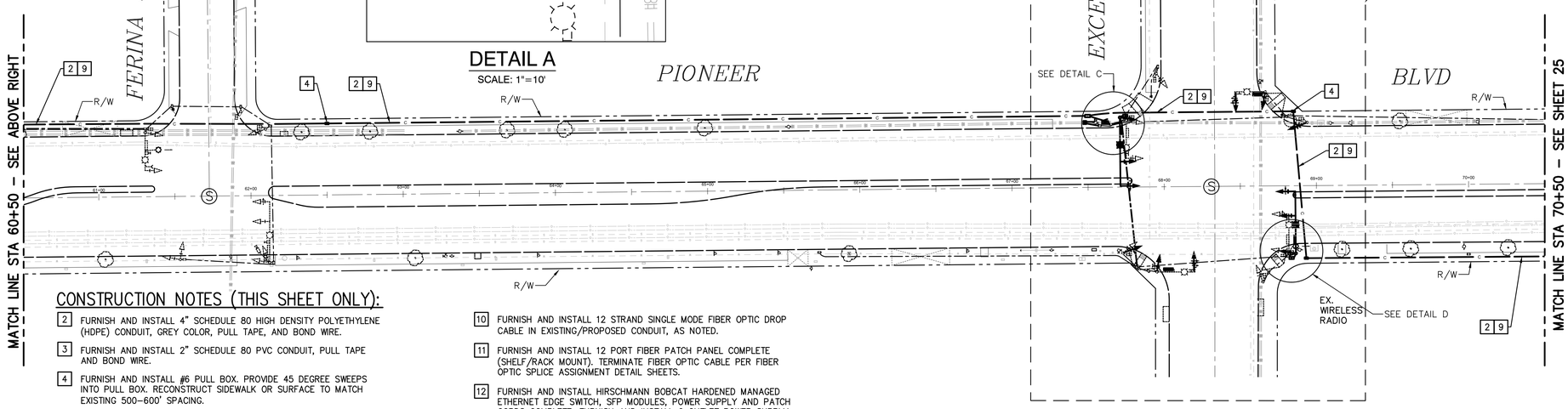
DRAWING NO. T-122

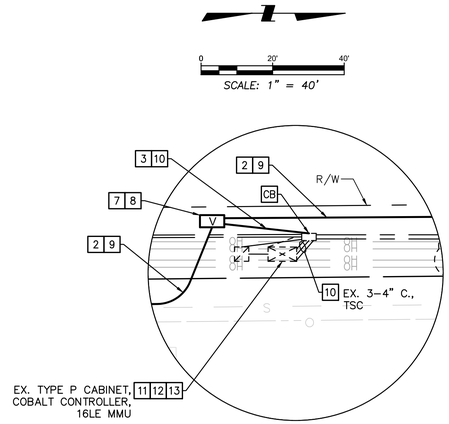
SHEET 23 OF 50



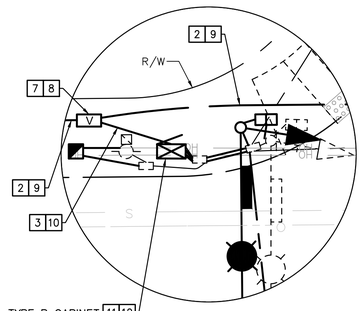


DETAIL A
SCALE: 1"=10'

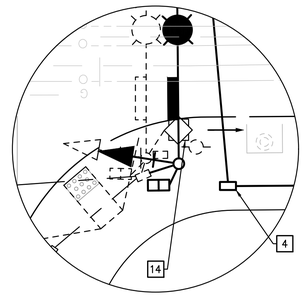




DETAIL B
SCALE: 1"=10'



DETAIL C
SCALE: 1"=10'



DETAIL D
SCALE: 1"=10'

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

13 RS EXISTING MALFUNCTION MONITORING UNIT (MMU). FURNISH AND INSTALL SHELF–MOUNT 16LEip MMU WITH ETHERNET PORT, AND CONFIGURE THE INTERSECTION FOR THE INTENDED OPERATION. MMU SHALL UTILIZE JUMPER CARD.

14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

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REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 50+50 TO STA 70+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240

DRAWING NO. T-123

Drawn By _____ Checked By _____

SHEET 24 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

1 RC EXISTING COPPER INTERCONNECT CABLE FROM CONDUIT AS SHOWN. SIC CABLE TO BECOME PROPERTY OF CONTRACTOR.

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

5 RC EXISTING PULL BOX AND FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

6 RC EXISTING PULL BOX AND CONDUIT SWEEPS. CONNECT NEW CONDUIT END TO END. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING. SEE CONSTRUCTION DETAIL SHEETS.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

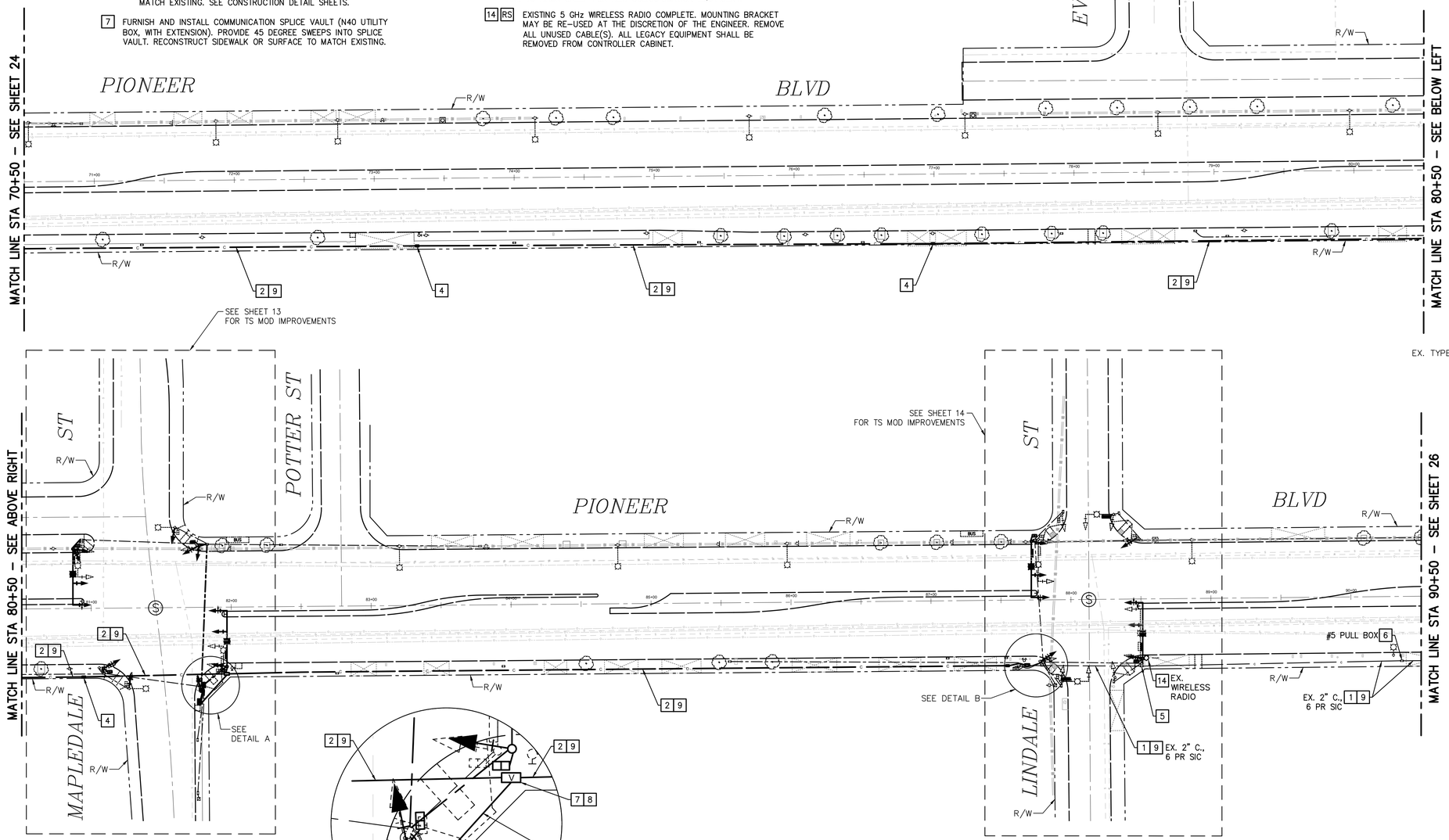
10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

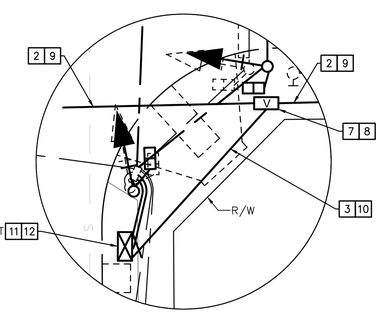
11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

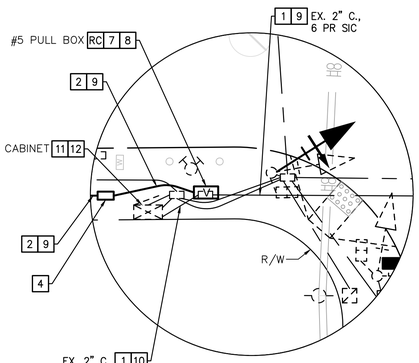
14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

0 20' 40'
SCALE: 1" = 40'





DETAIL A
SCALE: 1"=10'



DETAIL B
SCALE: 1"=10'

CALTRANS NOTES

RC EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME PROPERTY OF THE CONTRACTOR

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Fax: (949) 502–5522
www.advantec–usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 70+50 TO STA 90+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-124

Drawn By _____ Checked By _____

SHEET 25 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

1 RC EXISTING COPPER INTERCONNECT CABLE FROM CONDUIT AS SHOWN. SIC CABLE TO BECOME PROPERTY OF CONTRACTOR.

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500-600' SPACING.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

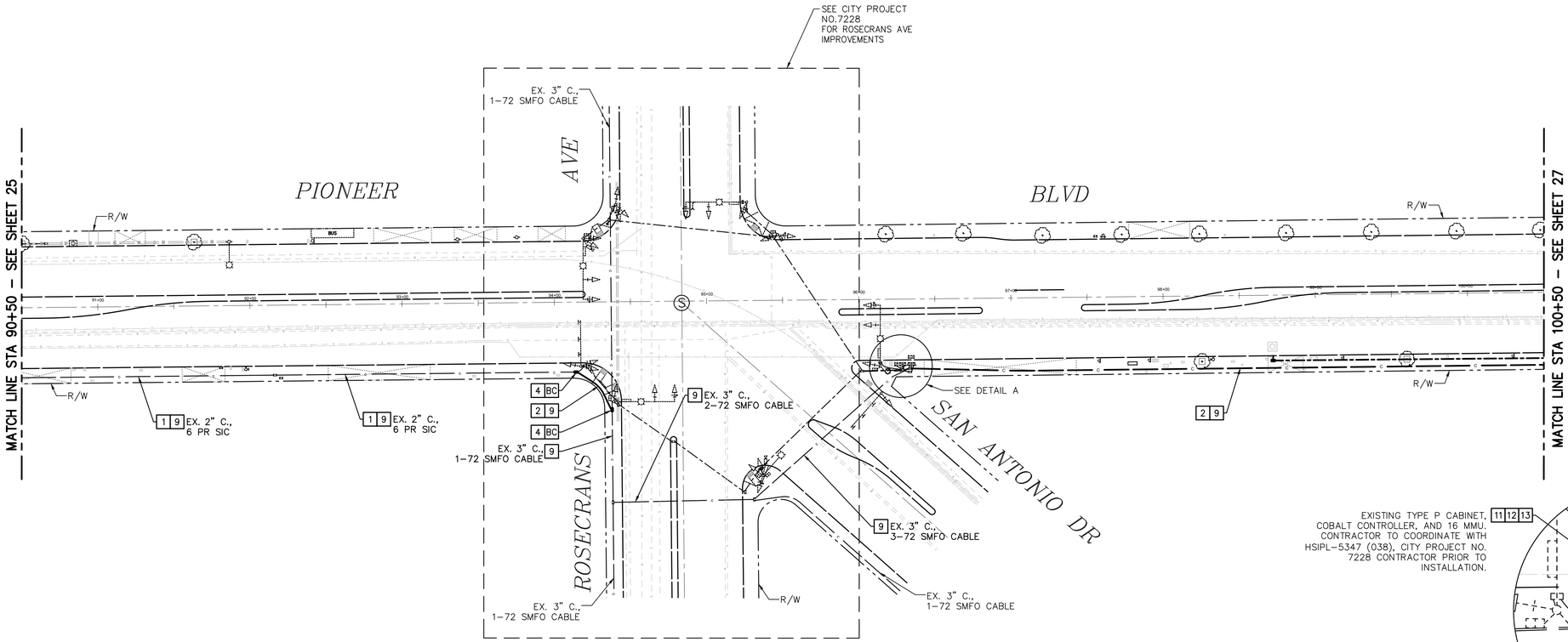
12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

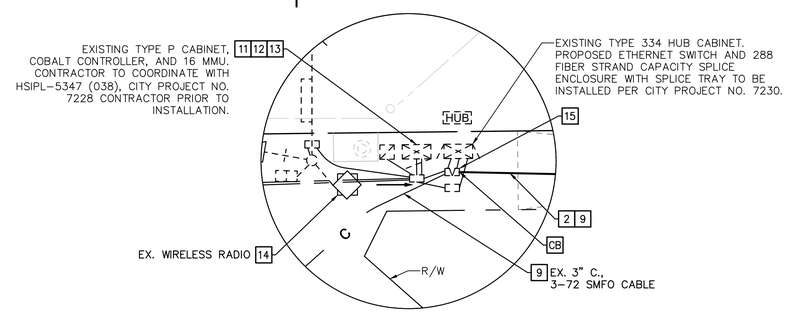
13 RS EXISTING MALFUNCTION MONITORING UNIT (MMU). FURNISH AND INSTALL SHELF-MOUNT 16LEip MMU WITH ETHERNET PORT, AND CONFIGURE THE INTERSECTION FOR THE INTENDED OPERATION. MMU SHALL UTILIZE JUMPER CARD.

14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE-USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

15 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID-SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLES AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET. CONTRACTOR TO COORDINATE WITH HSIPL-5347 (040), CITY PROJECT NO. 7230 CONTRACTOR PRIOR TO MODIFICATIONS.

0 20' 40'
SCALE: 1" = 40'





DETAIL A
SCALE: 1"=10'

811 Know what's below. Call before you dig.

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

BC INSTALL PULL BOX IN EXISTING CONDUIT RUN

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Fax: (949) 502-5522
www.advantec-usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.

PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 90+50 TO STA 100+50

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

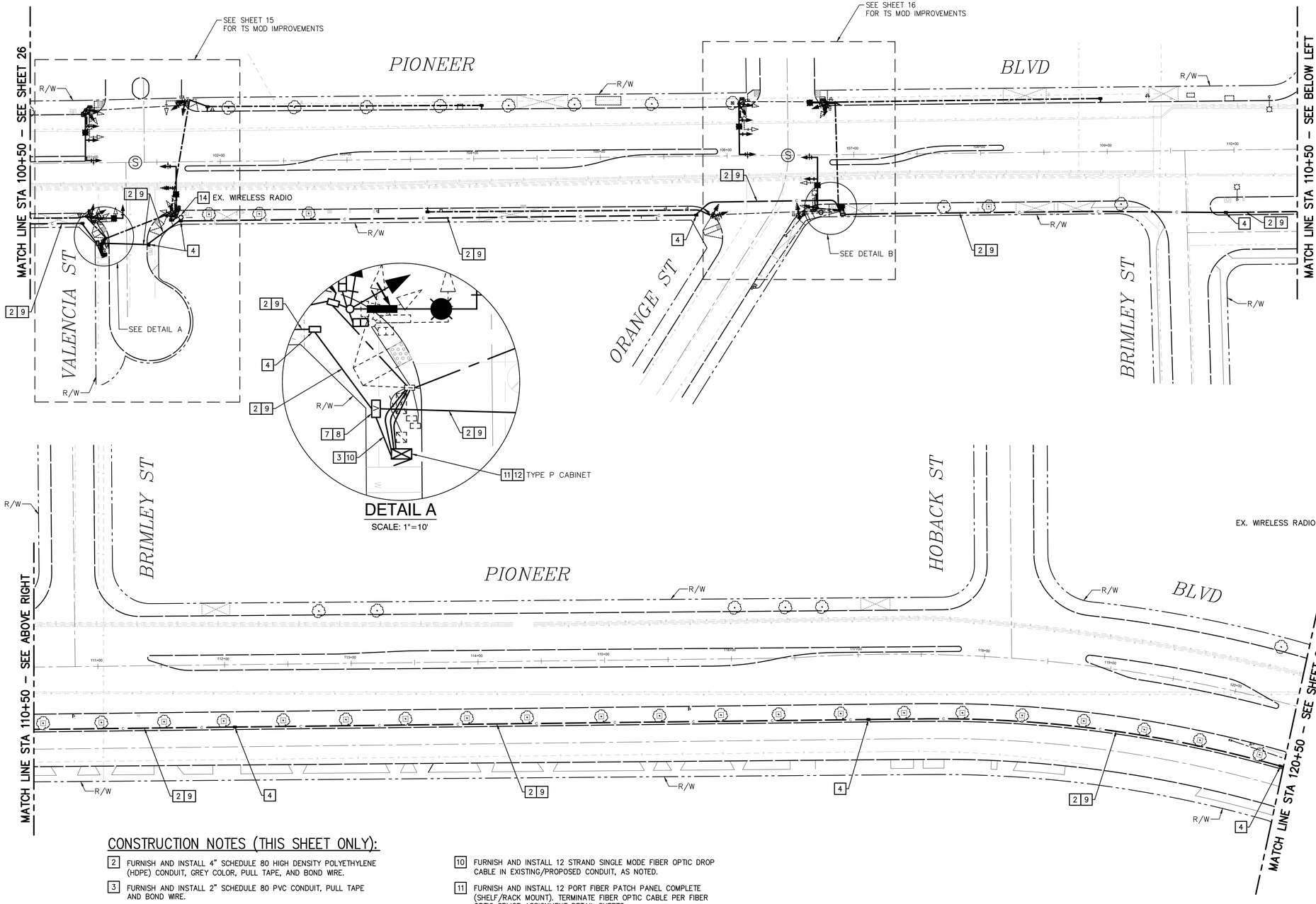
Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

Drawn By _____ Checked By _____

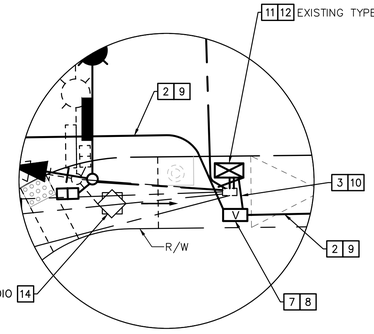
PROJECT NO. 7239 & 7240

DRAWING NO. T-125

SHEET 26 OF 50



DETAIL A
SCALE: 1"=10'



DETAIL B
SCALE: 1"=10'

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

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CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 100+50 TO STA 120+50

Approved
CITY ENGINEER RCE 90882 DATE 5/15/26

Recommended
Principal Civil Engineer RCE 75709 DATE 4/28/26

PROJECT NO. 7239 & 7240

DRAWING NO. T-126

Drawn By _____ Checked By _____

SHEET 27 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

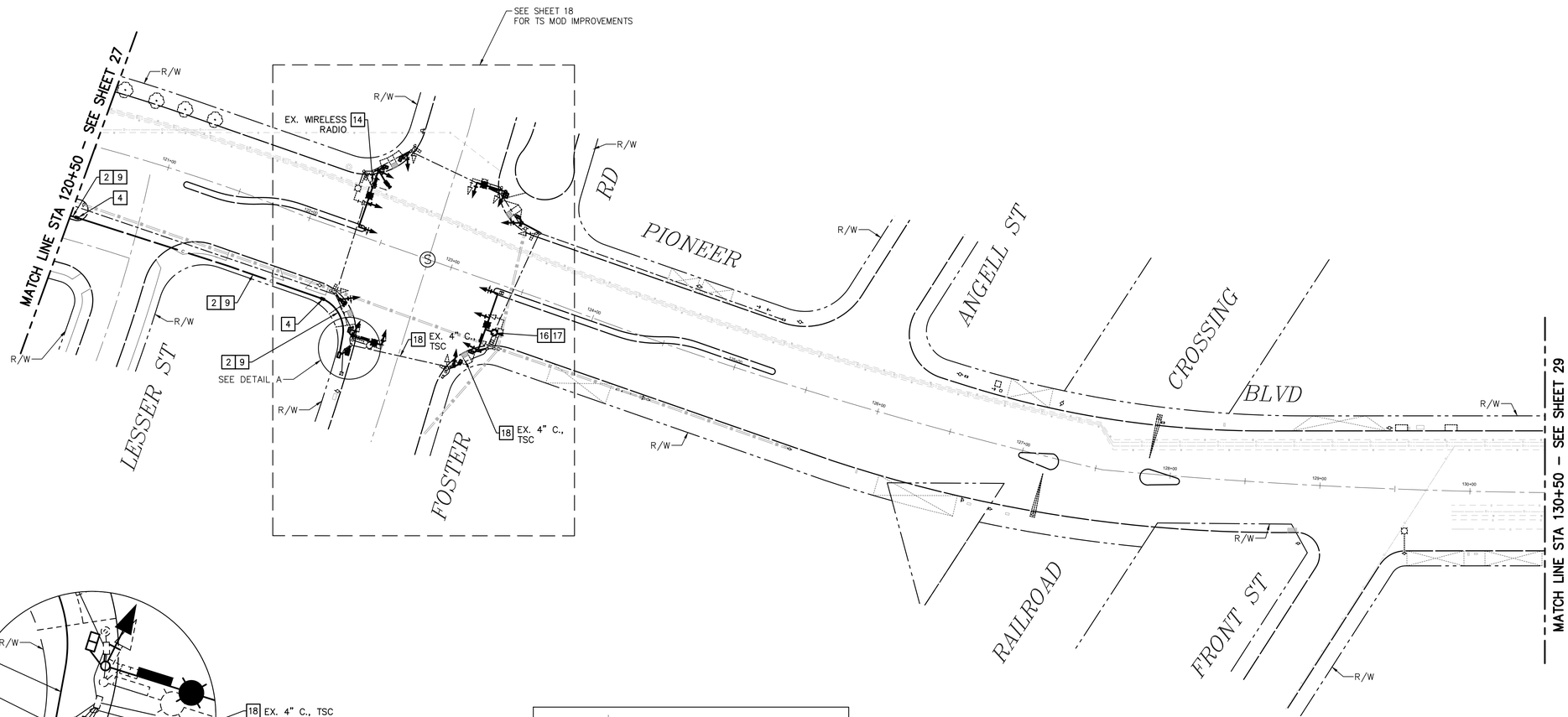
12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

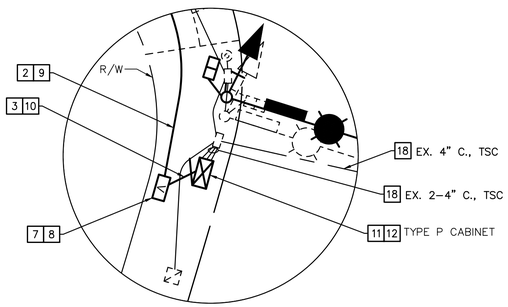
14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

16 FURNISH AND INSTALL 5GHz UNLICENSED POINT–TO–MULTIPOINT (PTMP) WIRELESS BROADBAND RADIO SYSTEM, ANTENNA CABLE AND MOUNTING SOFTWARE, PoE INJECTOR AND AUXILIARY EQUIPMENT. RADIO MASTER UNIT AND RADIO RECEIVER UNITS SHALL BE AS SHOWN PER PLAN. EXACT LOCATION OF RADIO UNIT SHALL BE DETERMINED BY RADIO ANALYSIS PERFORMED IN THE FIELD. SEE CONSTRUCTION DETAILS AND MANUFACTURER SPECIFICATIONS.

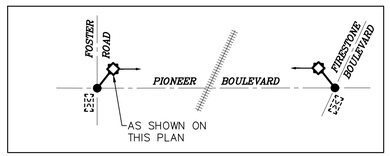
17 FURNISH AND INSTALL ASTRO–BRAC ANTENNA BRACKET EXTENSION. MOUNT WIRELESS RADIO & BRACKET ON LUMINAIRE MAST ARM.

18 FURNISH AND INSTALL OUTDOOR RATED CATEGORY 6 DATA+POWER WIRELESS ANTENNA CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM WIRELESS RADIO TO CONTROLLER CABINET, NO SPLICES ALLOWED.





DETAIL A
SCALE: 1"=10'



WIRELESS COMMUNICATION SCHEMATIC
N.T.S.

SCALE: 1" = 40'

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Fax: (949) 502–5522
www.advantec–usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 120+50 TO STA 130+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-127

Drawn By _____ Checked By _____

SHEET 28 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

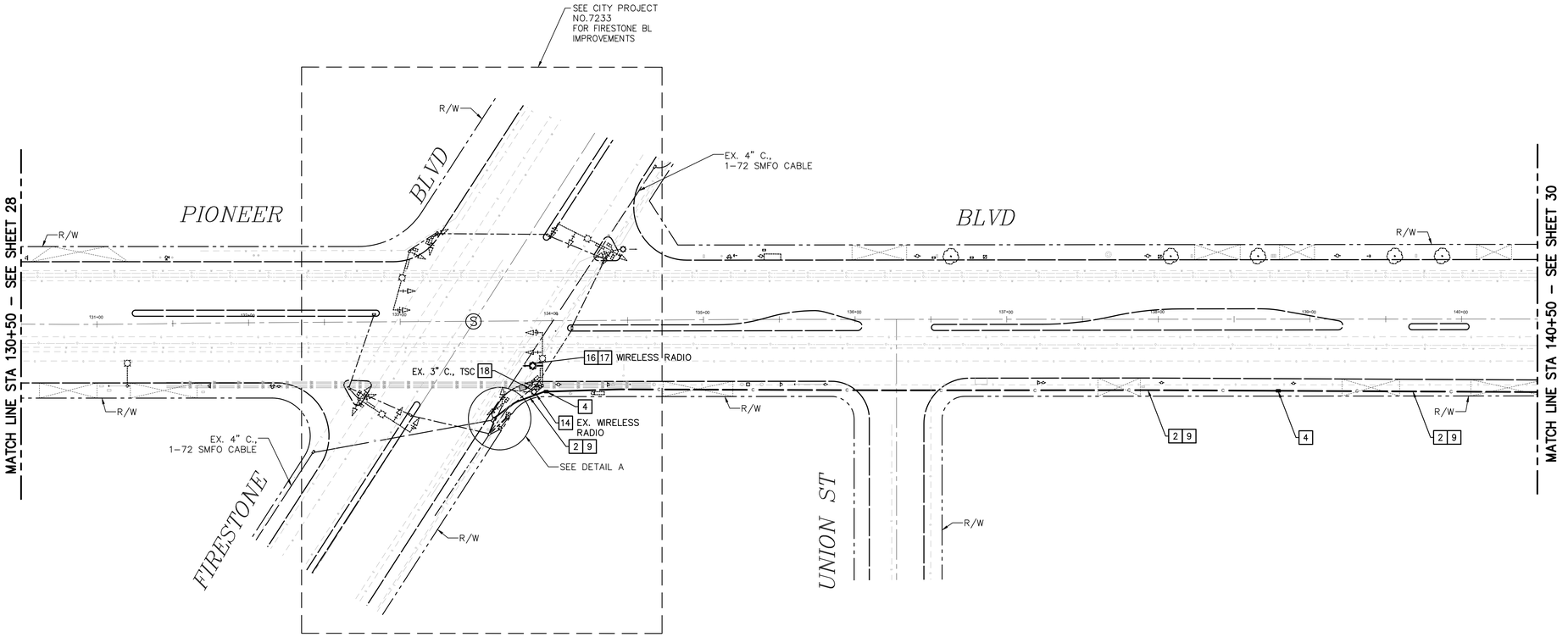
14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

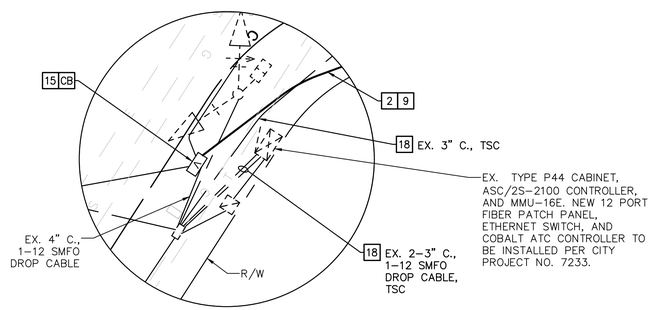
15 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID–SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLES AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET. CONTRACTOR TO COORDINATE WITH HSIPL–5347 (040), CITY PROJECT NO. 7230 CONTRACTOR PRIOR TO MODIFICATIONS.

16 FURNISH AND INSTALL 5GHz UNLICENSED POINT–TO–MULTIPOINT (PTMP) WIRELESS BROADBAND RADIO SYSTEM, ANTENNA CABLE AND MOUNTING SOFTWARE, PoE INJECTOR AND AUXILIARY EQUIPMENT. RADIO MASTER UNIT AND RADIO RECEIVER UNITS SHALL BE AS SHOWN PER PLAN. EXACT LOCATION OF RADIO UNIT SHALL BE DETERMINED BY RADIO ANALYSIS PERFORMED IN THE FIELD. SEE CONSTRUCTION DETAILS AND MANUFACTURER SPECIFICATIONS.

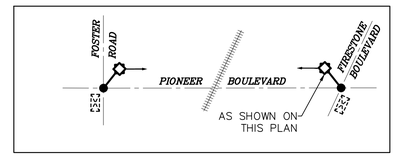
17 FURNISH AND INSTALL ASTRO–BRAC ANTENNA BRACKET EXTENSION. MOUNT WIRELESS RADIO & BRACKET ON LUMINAIRE MAST ARM.

18 FURNISH AND INSTALL OUTDOOR RATED CATEGORY 6 DATA+POWER WIRELESS ANTENNA CABLE(S) IN EXISTING/PROPOSED CONDUIT FROM WIRELESS RADIO TO CONTROLLER CABINET, NO SPLICES ALLOWED.





DETAIL A
SCALE: 1"=10'



WIRELESS COMMUNICATION SCHEMATIC
N.T.S.

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.

PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 130+50 TO STA 140+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

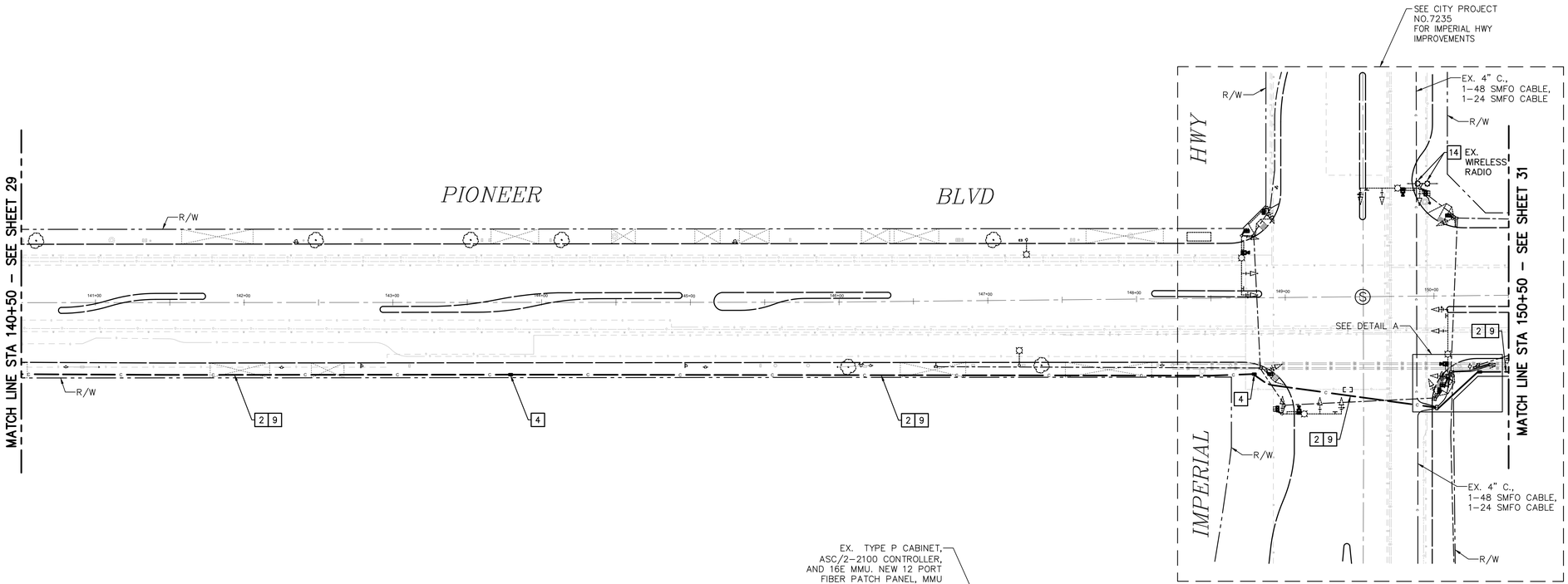
Drawn By _____ Checked By _____

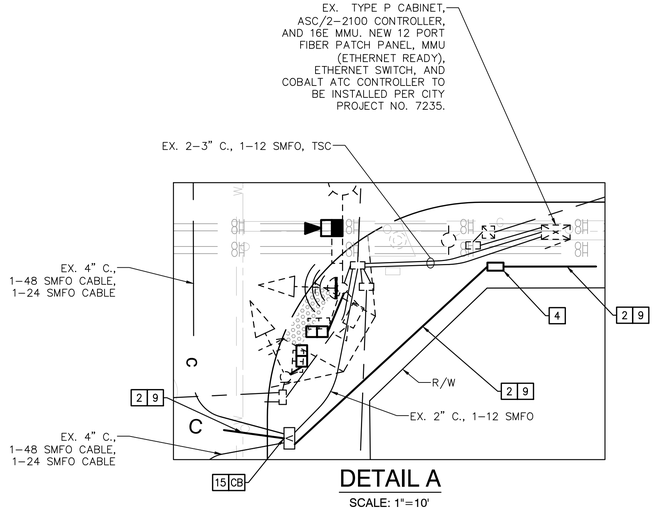
PROJECT NO. 7239 & 7240

DRAWING NO. T-128

SHEET 29 OF 50

0 20' 40'
SCALE: 1" = 40'





DETAIL A
SCALE: 1"=10'

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

14 RS EXISTING 5 GHz WIRELESS RADIO COMPLETE. MOUNTING BRACKET MAY BE RE–USED AT THE DISCRETION OF THE ENGINEER. REMOVE ALL UNUSED CABLE(S). ALL LEGACY EQUIPMENT SHALL BE REMOVED FROM CONTROLLER CABINET.

15 MODIFY EXISTING UNDERGROUND FIBER OPTIC SPLICE ENCLOSURE. PERFORM MID–SPAN SPLICE OF EXISTING FIBER DISTRIBUTION CABLES AND NEW FIBER OPTIC CABLE. SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEET. CONTRACTOR TO COORDINATE WITH HSIPL–5347 (040), CITY PROJECT NO. 7230 CONTRACTOR PRIOR TO MODIFICATIONS.

CALTRANS NOTES

CB INSTALL CONDUIT INTO EXISTING PULL BOX

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REVIEWED BY:
JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

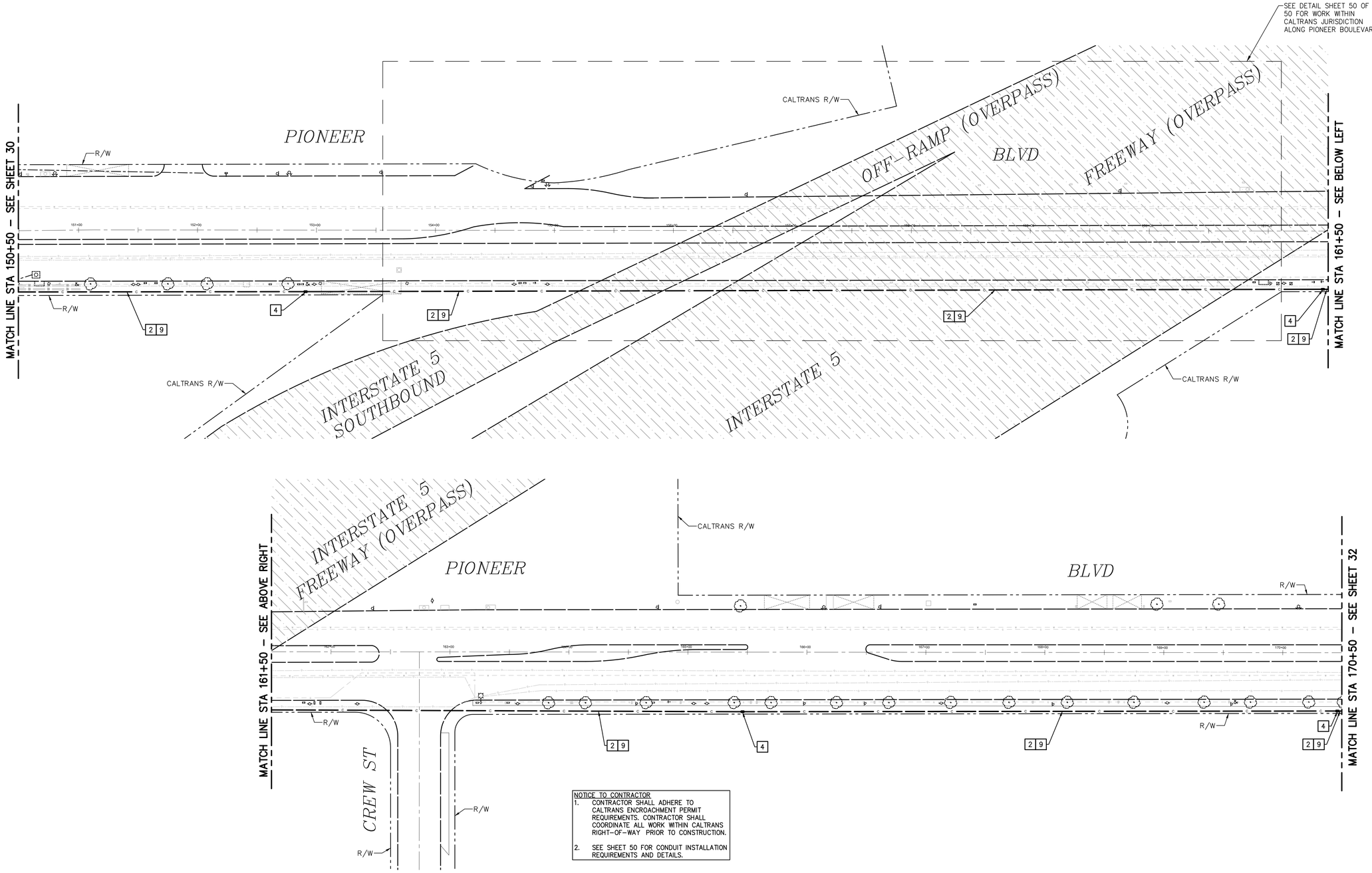
DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 140+50 TO STA 150+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-129
SHEET 30 OF 50



NOTICE TO CONTRACTOR
1. CONTRACTOR SHALL ADHERE TO CALTRANS ENCROACHMENT PERMIT REQUIREMENTS. CONTRACTOR SHALL COORDINATE ALL WORK WITHIN CALTRANS RIGHT-OF-WAY PRIOR TO CONSTRUCTION.
2. SEE SHEET 50 FOR CONDUIT INSTALLATION REQUIREMENTS AND DETAILS.

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500-600' SPACING.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

CALTRANS ENCROACHMENT PERMIT #XX-2X-N-SN-XXXX

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engineering division

REVISIONS		
DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

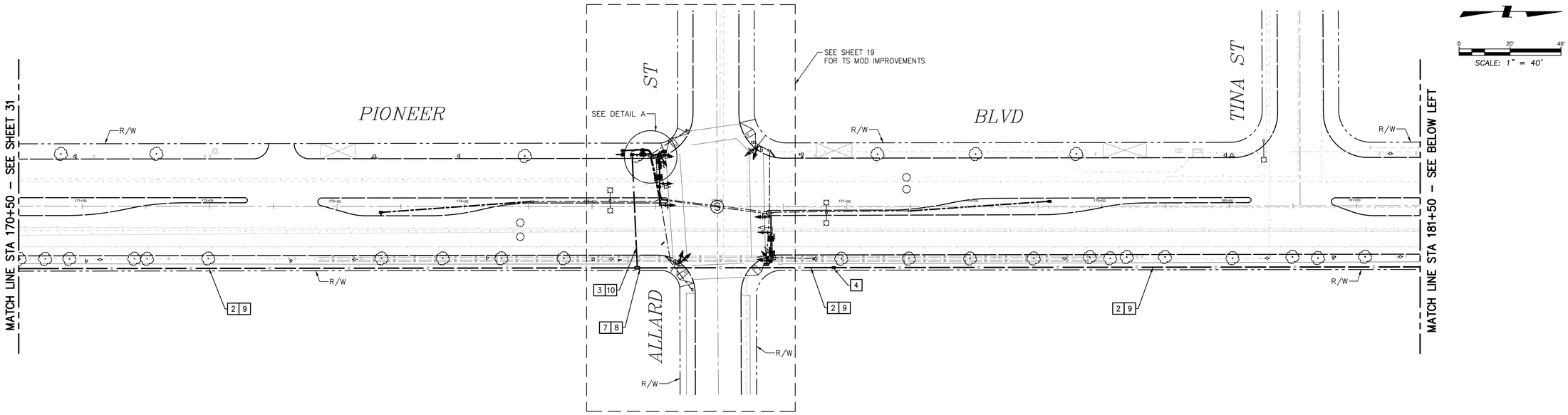
CITY OF NORWALK

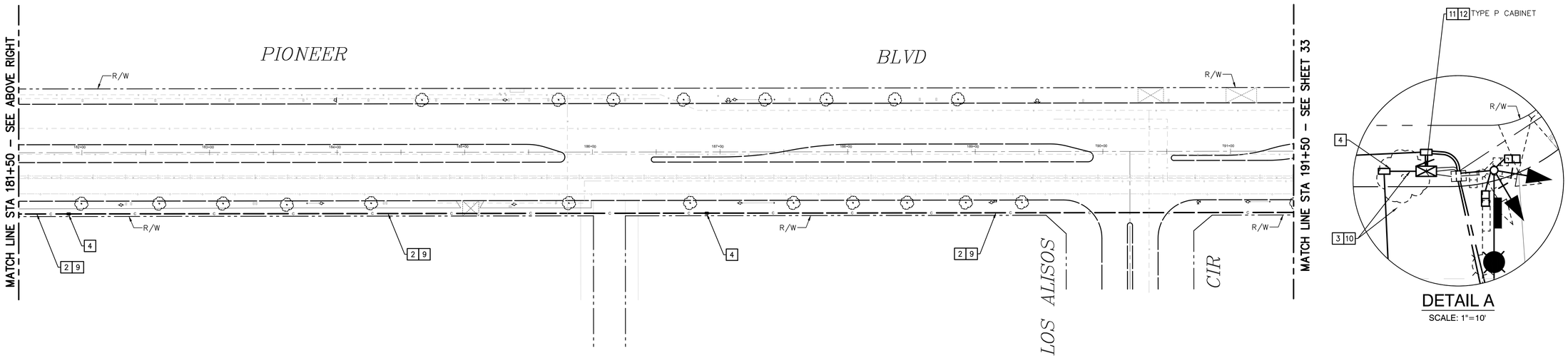
TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 150+50 TO STA 170+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-130
Drawn By _____ Checked By _____
SHEET 31 OF 50

811 Know what's below. Call before you dig.





DETAIL A
SCALE: 1"=10'

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

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DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 170+50 TO STA 191+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-131
SHEET 32 OF 50

CONSTRUCTION NOTES (THIS SHEET ONLY):

2 FURNISH AND INSTALL 4" SCHEDULE 80 HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT, GREY COLOR, PULL TAPE, AND BOND WIRE.

3 FURNISH AND INSTALL 2" SCHEDULE 80 PVC CONDUIT, PULL TAPE AND BOND WIRE.

4 FURNISH AND INSTALL #6 PULL BOX. PROVIDE 45 DEGREE SWEEPS INTO PULL BOX. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING 500–600' SPACING.

7 FURNISH AND INSTALL COMMUNICATION SPLICE VAULT (N40 UTILITY BOX, WITH EXTENSION). PROVIDE 45 DEGREE SWEEPS INTO SPLICE VAULT. RECONSTRUCT SIDEWALK OR SURFACE TO MATCH EXISTING.

8 FURNISH AND INSTALL UNDERGROUND FIBER OPTIC ENCLOSURE. PERFORM MID–SPAN SPLICE OF FIBER BACKBONE/DISTRIBUTION CABLE(S) AND BREAK–OUT SPLICE OF FIBER DROP CABLE(S). SEE FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

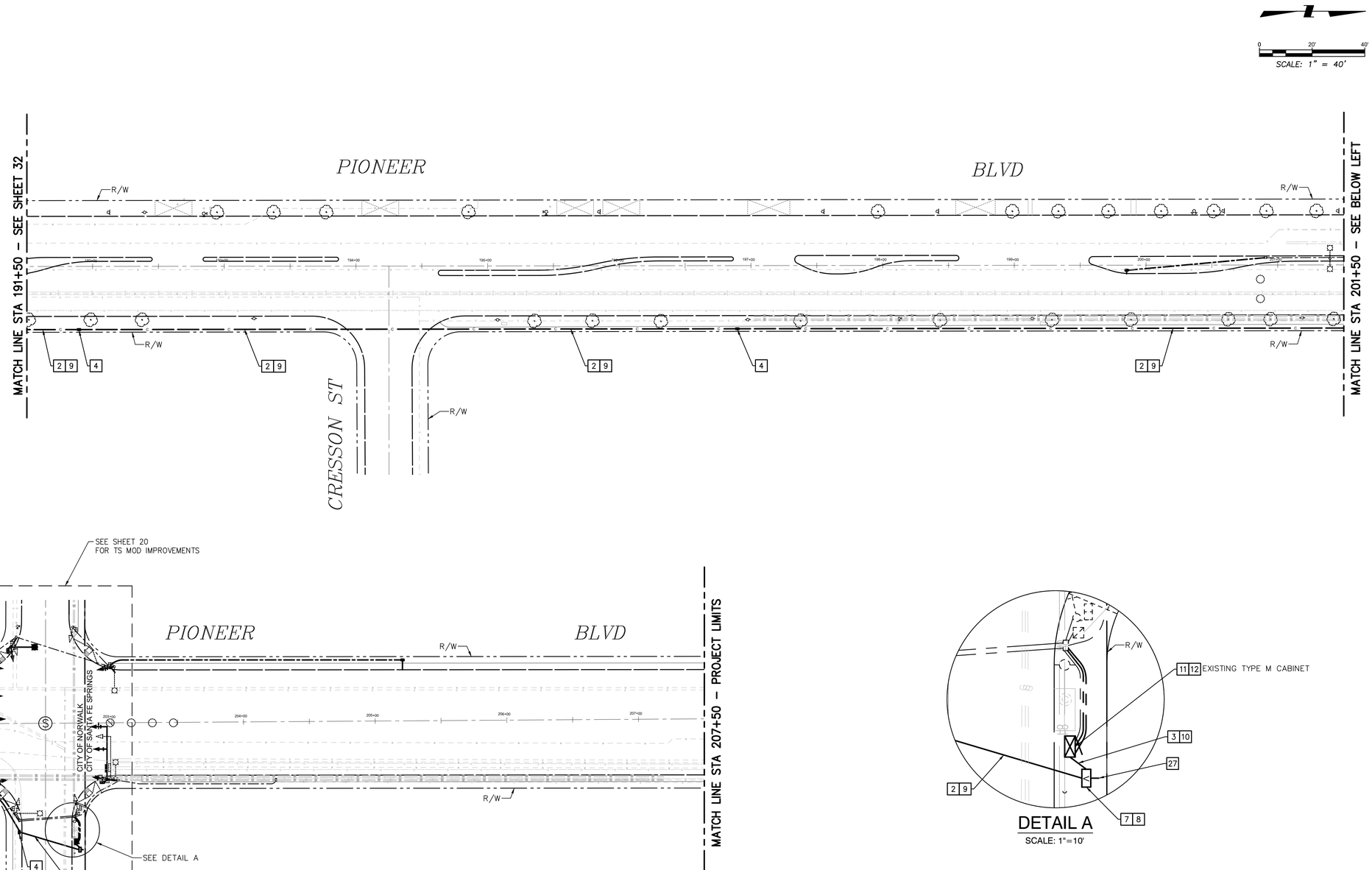
9 FURNISH AND INSTALL 72 STRAND SINGLE MODE FIBER OPTIC CABLE, PULL TAPE, AND TRACE WIRE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

10 FURNISH AND INSTALL 12 STRAND SINGLE MODE FIBER OPTIC DROP CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.

11 FURNISH AND INSTALL 12 PORT FIBER PATCH PANEL COMPLETE (SHELF/RACK MOUNT). TERMINATE FIBER OPTIC CABLE PER FIBER OPTIC SPLICE ASSIGNMENT DETAIL SHEETS.

12 FURNISH AND INSTALL HIRSCHMANN BOBCAT HARDENED MANAGED ETHERNET EDGE SWITCH, SFP MODULES, POWER SUPPLY AND PATCH CORDS COMPLETE. FURNISH AND INSTALL 6 OUTLET POWER SUPPLY AND 1U RACK SHELF FOR NEW COMMUNICATION EQUIPMENT.

27 FURNISH AND INSTALL 4" SCHEDULE 80 PVC CONDUIT STUB–OUT AND CAP ENDS, TO BE PROVIDED FOR FUTURE CONNECTION.



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REVIEWED BY: JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
STA 191+50 TO STA 207+50

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-132

Drawn By _____ Checked By _____
SHEET 33 OF 50

CONSTRUCTION STAGE AND TRAFFIC HANDLING GENERAL NOTES

1. ALL TRAFFIC CONTROL WORK FOR CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF CALTRANS STANDARD PLANS AND SPECIFICATIONS, AND CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) FOR REDUCTION OF TRAVEL WAY ON ANY STREET.
2. LANE CLOSURES SHALL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY ENGINEER.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING WORK ON A PUBLIC STREET TO INSTALL AND MAINTAIN CONTROL DEVICES AS SHOWN HEREON, AS WELL AS ANY SUCH ADDITIONAL DEVICES AS MAY BE REQUIRED TO INSURE THE SAFE MOVEMENT OF TRAFFIC AND PEDESTRIANS THROUGH OR AROUND THE WORK AREA. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
4. ALL EXISTING SIGNING NOT IN CONFORMANCE WITH THE DETOUR PLANS SHALL BE COVERED FOR THE DURATION OF THE DETOUR. ALL SIGN COVERS PLACED OVER EXISTING SIGNING SHALL BE COMPLETELY REMOVED WHEN DETOUR IS NOT IN USE. ALL DETOUR SIGNING SHALL BE COVERED WHEN DETOUR IS NOT IN OPERATION.
5. ANY PAVEMENT MARKINGS AND STRIPING DAMAGED AND/OR BADLY WORN DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR. ALL EXISTING FACILITIES INCLUDING SIGNING, STRIPING, MARKINGS, MARKERS AND SIGNALS SHALL BE RESTORED TO THE ORIGINAL CONDITION AND/OR LOCATION AT THE END OF THE CONSTRUCTION PERIOD FOR EACH STAGE.
6. A MINIMUM FIVE FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN ANY OPEN EXCAVATION AND THE ADJACENT MOVING TRAFFIC LANE. NO OPEN TRENCH ADJACENT TO A TRAFFIC LANE SHALL EXCEED 300 FEET. TEMPORARY CONCRETE BARRIER (TYPE K PER CALTRANS STANDARD PLAN T-3) SHALL BE USED WHENEVER SHOWN ON THE PLANS. THE C27(CA) "OPEN TRENCH" SIGN SHALL BE UTILIZED WHENEVER AN OPEN EXCAVATION AREA EXIST ADJACENT TO THE TRAVEL WAY.
7. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF THE BUS ROUTES AND BUS STOPS WITH THE NORWALK AND LA METRO TRANSIT AGENCY STAFF THREE WEEKS IN ADVANCE OF CONSTRUCTION ACTIVITY AFFECTING BUS STOPS.
8. THE CONTRACTOR SHALL PROVIDE SAFE AND CONTINUOUS PASSAGE OF LOCAL PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES.
9. SINGLE LANE CLOSURE TRAFFIC CONTROL DEVICES SHALL CONFORM TO CALTRANS STANDARD PLAN NO. T11.
10. EXACT LOCATION AND TYPE OF CONSTRUCTION SIGN(S) SHALL BE AS DIRECTED BY ENGINEER BASED ON CONSTRUCTION CONDITION.
11. CONSTRUCTION TRUCK TRAFFIC MERGING INTO TRAFFIC LANES SHALL BE BY USE OF FLAGGER AND APPROPRIATE SIGNAGE AS DIRECTED BY ENGINEER.
12. TRAFFIC CONES FOR NIGHTTIME USE SHALL BE INTERNALLY ILLUMINATED OR BE PROVIDED WITH 13" REFLECTIVE SILVER SLEEVE.
13. CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL AND TEMPORARY SIGNING UPON COMPLETION OF DAILY CONSTRUCTION, AND RESTORE SIGNING AND STRIPING, TO CONDITIONS SHOWN AS EXISTING.
14. SEE CALTRANS STD. PLANS A20 (A–D) & A24 (A–E) FOR STRIPING DETAILS. SEE CALTRANS STD. PLANS T1A, T1B & T2 FOR TEMPORARY CRASH CUSHION ARRAYS.
15. TRAFFIC CONTROL CONES WITH DOUBLE BASES MAY BE USED IN LIEU OF CHANNELIZERS FOR DAILY OR SHORT TERM (ONE WEEK MAX.) CONSTRUCTION ACTIVITIES.
16. CONSTRUCTION PAVEMENT REMOVAL AND RECONSTRUCTION FOR TRENCHING, JACK AND BORE PITS, OR OTHER REPLACED WORK OUTSIDE CONSTRUCTION AREAS SHOWN ON THE PLANS SHALL BE BY SINGLE LANE CLOSURE AS DIRECTED BY THE ENGINEER.
17. STEEL PLATES OR A MINIMUM OF 4:1 SLOPE SHALL BE MAINTAINED FOR OPEN EXCAVATIONS DURING NON–WORKING HOURS. "STEEL PLATES AHEAD" SIGNS SHALL BE PROVIDED AT ALL TIMES.
18. A TRAFFIC CONTROL PERMIT MUST BE OBTAINED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
19. CONSTRUCTION ACTIVITY WITHIN THE TRAVEL WAY SHALL BE LIMITED TO THE WORK HOURS PER AGENCY. ALL EXCAVATION WITHIN THIS AREA SHALL BE COVERED WITH STEEL PLATES AS DIRECTED BY THE AGENCY. A MINIMUM OF ONE TRAFFIC LANE SHALL BE MAINTAINED THROUGH THE INTERSECTION DURING CONSTRUCTION ONLY FOR EACH DIRECTION, UNLESS SHOWN OTHERWISE OR AS DIRECTED BY THE ENGINEER. LEFT TURNS MAY BE PROHIBITED DURING INTERSECTION CONSTRUCTION AS DIRECTED BY THE ENGINEER.
20. THESE TRAFFIC CONTROL PLANS SHOW TRAFFIC CONTROL DEVICES FOR LONG TERM TRAFFIC CONTROL FOR CONSTRUCTION LIMITS SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFORM TO SHORT TERM TRAFFIC CONTROL REQUIREMENTS IN ACCORDANCE WITH THE CAMUTCD. SHORT TERM TRAFFIC CONTROL AND CHANGES TO THESE PLANS DURING CONSTRUCTION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE AGENCY.
21. ALL TRAFFIC TRANSITIONS SHALL UTILIZE ARROW BOARDS. USE AND PLACEMENT OF FLASHING ARROW BOARD SIGN(S) SHALL BE AS DIRECTED BY THE ENGINEER.
22. FLASHING BEACONS AND/OR WARNING LIGHTS SHALL BE USED WHERE DIRECTED BY THE ENGINEER.
23. CONTRACTOR MAY USE PREFABRICATED REMOVABLE DETOUR STRIPING TAPE, PAVEMENT MARKINGS AND RAISED MARKERS WHERE SHORT TERM USE WILL OCCUR (24 HOURS OR LESS), OR AS SHOWN ON PLANS.
24. PROVIDE ACCESS TO ALL ADJACENT DRIVEWAYS DURING CONSTRUCTION.

TRAFFIC SIGNAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH AGENCY TRAFFIC ENGINEERING DEPARTMENT A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO WORK AFFECTING ANY TRAFFIC SIGNAL WITHIN THE CONSTRUCTION AREA. CONTACT THE AGENCY'S TRAFFIC ENGINEERING DEPARTMENT FOR TRAFFIC SIGNAL OPERATIONAL CHANGES WHEN TRAFFIC LOOPS ARE DAMAGED OR FOR TRAFFIC CONTROL CONDITIONS NOTED ON THE PLANS.
2. CONTRACTOR SHALL MAINTAIN EXISTING SIGNAL OPERATION AT ALL TIMES.
3. CONTRACTOR SHALL REPLACE LOOP DETECTORS AT ALL LOCATIONS WHERE THE EXISTING LOOP DETECTORS ARE NOT IN THE CENTER OF THE LANE. CONTRACTOR MAY USE VIDEO DETECTION DURING CONSTRUCTION UPON WRITTEN APPROVAL BY THE ENGINEER.
4. ANY UNANTICIPATED DAMAGES TO THE TRAFFIC SIGNAL INTERCONNECT CONDUIT, INTERCONNECT CABLE, OR DETECTION LOOP SYSTEM DURING OPERATIONS OF THIS PERMIT SHALL BE REPLACED WITHIN 72 HOURS TO THE SATISFACTION OF THE CITY INSPECTOR.

TABLE 1

TAPER LENGTHS (FOR 12' OFFSET WIDTH)

SPEED* S (MPH)	MINIMUM TAPER LENGTH**			
	MERGING L (FT)	SHIFTING L/2 (FT)	SHOULDER L/3 (FT)	DOWN STREAM (FT)
20	80	40	27	50 (100 MAX)
25	125	63	42	50 (100 MAX)
30	180	90	60	50 (100 MAX)
35	245	123	82	50 (100 MAX)
40	320	160	107	50 (100 MAX)
45	540	270	180	50 (100 MAX)
50	600	300	200	50 (100 MAX)
55	660	330	220	50 (100 MAX)
60	720	360	240	50 (100 MAX)
65	780	390	260	50 (100 MAX)
70	840	420	280	50 (100 MAX)
75	900	450	300	50 (100 MAX)

*–TAPER LENGTH BASED ON POSTED SPEED LIMIT IN MPH.

**–FOR OTHER OFFSETS USE THE FOLLOWING MERGING TAPER LENGTH FORMULA FOR L:
FOR SPEEDS OF 40 MPH OR LESS, $L=WS^2/60$
FOR SPEEDS OF 45 MPH OR MORE, $L=WS$

WHERE: L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT

TABLE 3

ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
URBAN – 25 MPH OR LESS	100	100	100
URBAN – MORE THAN 25 MPH TO 40 MPH	250	250	250
URBAN – MORE THAN 40 MPH	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1000	1000

TABLE 2

MAXIMUM SPACING OF CHANNELIZING DEVICES

SPEED (MPH)	MAXIMUM CHANNELIZING DEVICES SPACING		
	TAPER* (FT)	TANGENT (FT)	CONFLICT (FT)
20	20	40	10
25	25	50	12
30	30	60	15
35	35	70	17
40	40	80	20
45	45	90	22
50	50	100	25
55	50	100	25
60	50	100	25
65	50	100	25
70	50	100	25
75	50	100	25

*–MAXIMUM CHANNELIZING DEVICE SPACING FOR ONE–LANE TAPERS IS 20 FEET.
MAXIMUM CHANNELIZING DEVICE SPACING FOR DOWNSTREAM TAPERS IS 20 FEET.

TABLE 4

BUFFER LENGTH (FT)

SPEED	DISTANCE
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

LEGEND

- FLASHING ARROW BOARD
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- SIGN
- DIRECTION OF TRAVEL
- WORK AREA
- (S) SIGNALIZED INTERSECTION

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REVIEWED BY:
JOHN A. DORADO II, PE — 07/16/24 — DATE
R.C.E. No. 74405 — Exp. 09/30/2025

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CHECKED BY:	JD	DATE: 07/16/24
DESIGNED BY:	FG/MO	DATE: 07/16/24

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FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE:
TRAFFIC CONTROL PLAN
GENERAL NOTES, TABLES, AND LEGEND

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-133

Drawn By _____ Checked By _____

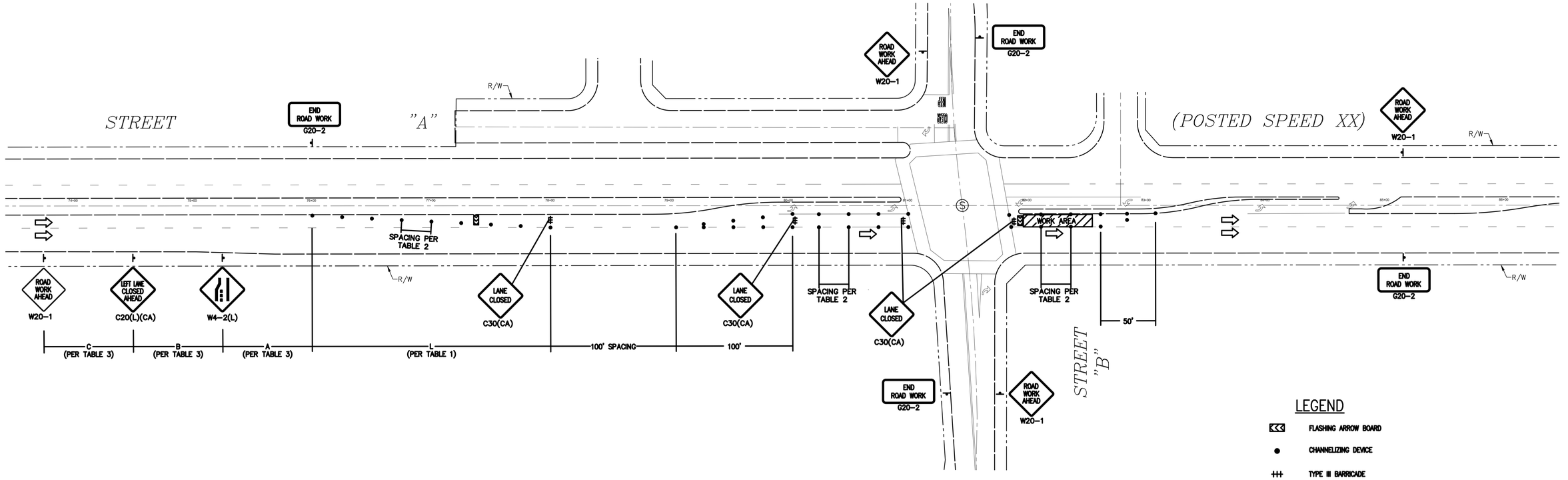
SHEET 34 OF 50

DETAIL A - TYPICAL LEFT LANE CLOSURE - FAR SIDE OF INTERSECTION

GENERAL NOTES

1. SEE SHEET T-133 FOR GENERAL NOTES, LEGEND, AND TABLES REFERENCED ON THIS SHEET.
2. CONTACT PROPERTY OWNER(S) 72 HOURS PRIOR TO START OF WORK.
3. CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES.
4. COORDINATE WORK HOURS WITH SCHOOL ADMINISTRATION, IF APPLICABLE.
5. CONTACT NORWALK TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (203) 852-9999, IF APPLICABLE.
6. CONTACT LA METRO TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (213) 922-6235, IF APPLICABLE.

SCALE: 1" = 40'



LEGEND

- FLASHING ARROW BOARD
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- SIGN
- DIRECTION OF TRAVEL
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CITY OF NORWALK

TITLE: TYPICAL LEFT LANE CLOSURE FAR SIDE OF INTERSECTION TRAFFIC CONTROL PLAN

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240

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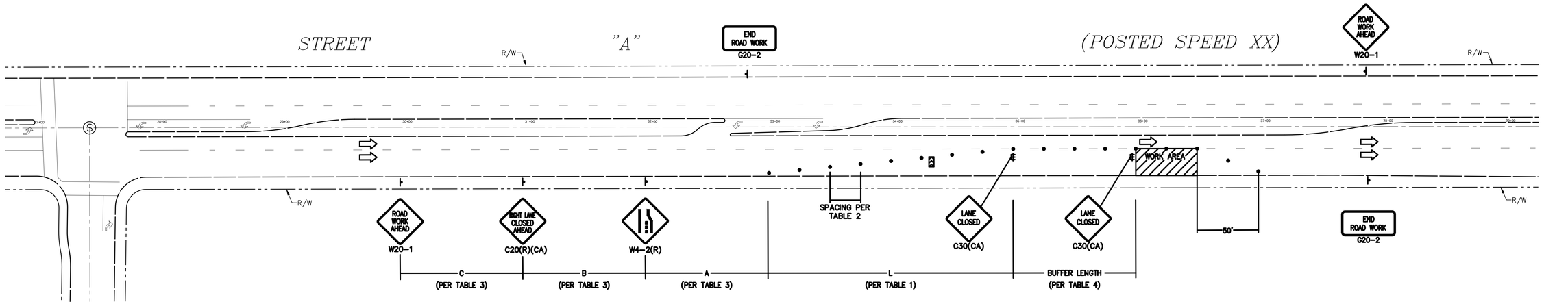
SHEET 35 OF 50

DETAIL B - TYPICAL RIGHT LANE CLOSURE - AT MID BLOCK

GENERAL NOTES

1. SEE SHEET T-133 FOR GENERAL NOTES, LEGEND, AND TABLES REFERENCED ON THIS SHEET.
2. CONTACT PROPERTY OWNER(S) 72 HOURS PRIOR TO START OF WORK.
3. CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES.
4. COORDINATE WORK HOURS WITH SCHOOL ADMINISTRATION, IF APPLICABLE.
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6. CONTACT LA METRO TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (213) 922-6235, IF APPLICABLE.

SCALE: 1" = 40'



LEGEND

- FLASHING ARROW BOARD
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- SIGN
- DIRECTION OF TRAVEL
- WORK AREA
- SIGNALIZED INTERSECTION

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CITY OF NORWALK

TITLE: TYPICAL RIGHT LANE CLOSURE MIDBLOCK OF INTERSECTION TRAFFIC CONTROL PLAN

Approved — City Engineer — RCE 90882 — 5/15/26 DATE
Recommended — Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

PROJECT NO. 7239 & 7240
DRAWING NO. T-135

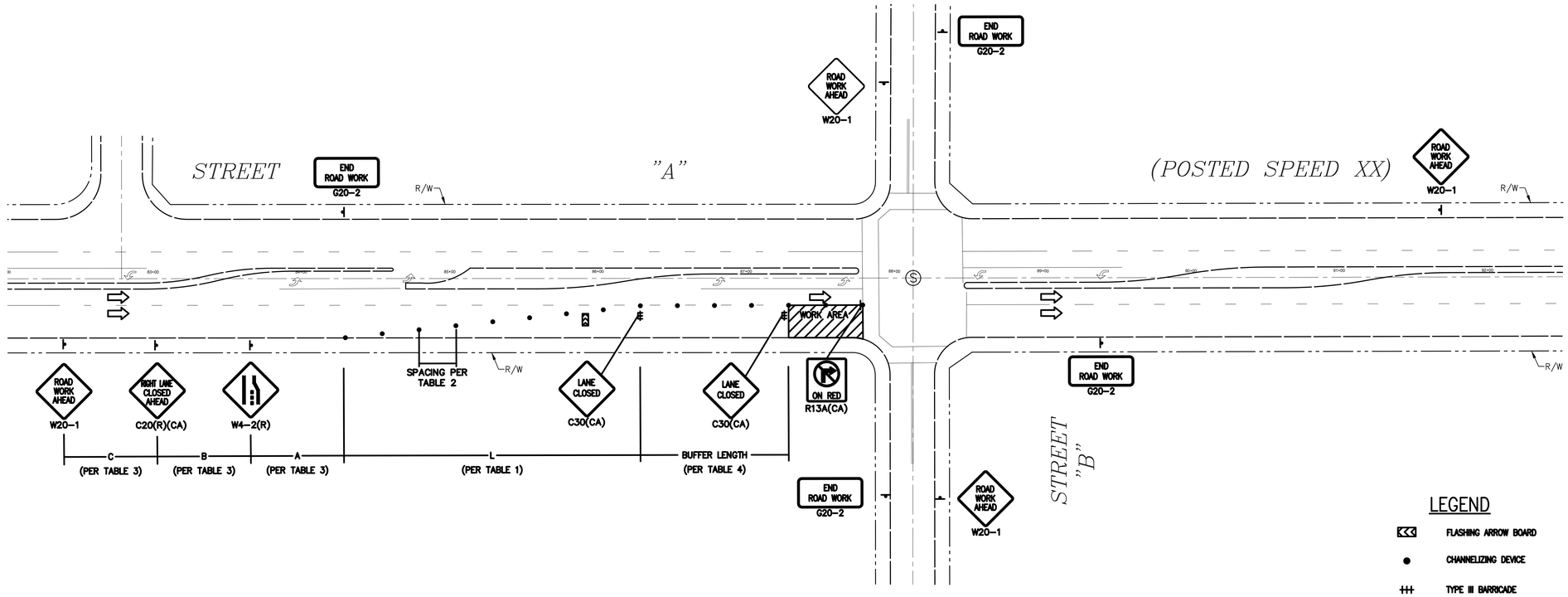
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DETAIL C - TYPICAL RIGHT LANE CLOSURE - NEAR SIDE OF INTERSECTION

GENERAL NOTES

1. SEE SHEET T-133 FOR GENERAL NOTES, LEGEND, AND TABLES REFERENCED ON THIS SHEET.
2. CONTACT PROPERTY OWNER(S) 72 HOURS PRIOR TO START OF WORK.
3. CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES.
4. COORDINATE WORK HOURS WITH SCHOOL ADMINISTRATION, IF APPLICABLE.
5. CONTACT NORWALK TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (203) 852-9999, IF APPLICABLE.
6. CONTACT LA METRO TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (213) 922-6235, IF APPLICABLE.

SCALE: 1" = 40'



LEGEND

- FLASHING ARROW BOARD
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- SIGN
- DIRECTION OF TRAVEL
- WORK AREA
- SIGNALIZED INTERSECTION

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TITLE: TYPICAL RIGHT LANE CLOSURE NEAR SIDE OF INTERSECTION TRAFFIC CONTROL PLAN

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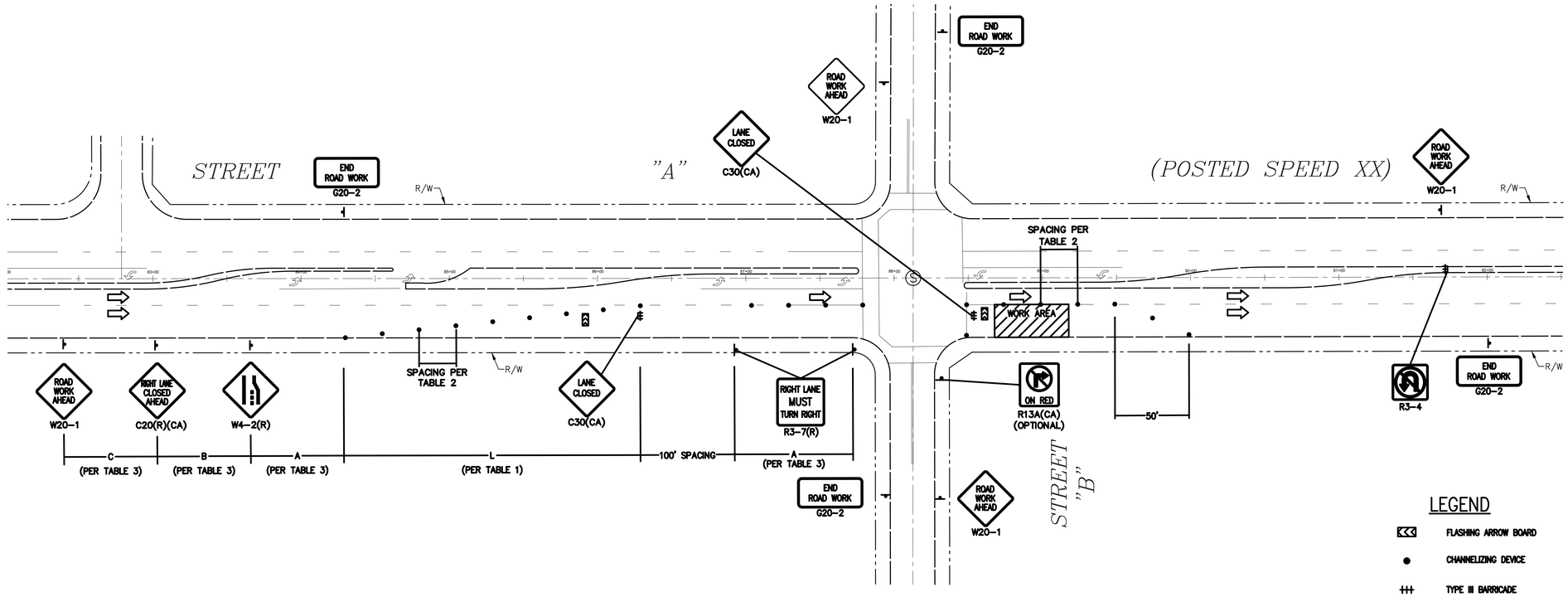
SHEET 37 OF 50

DETAIL D - TYPICAL RIGHT LANE CLOSURE - FAR SIDE OF INTERSECTION

GENERAL NOTES

1. SEE SHEET T-133 FOR GENERAL NOTES, LEGEND, AND TABLES REFERENCED ON THIS SHEET.
2. CONTACT PROPERTY OWNER(S) 72 HOURS PRIOR TO START OF WORK.
3. CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES.
4. COORDINATE WORK HOURS WITH SCHOOL ADMINISTRATION, IF APPLICABLE.
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6. CONTACT LA METRO TRANSIT AGENCY BUS STOP 3 WORKING DAYS PRIOR TO START OF WORK FOR TEMPORARY RELOCATION OF BUS STOP (213) 922-6235, IF APPLICABLE.

SCALE: 1" = 40'



LEGEND

- FLASHING ARROW BOARD
- CHANNELIZING DEVICE
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- SIGN
- DIRECTION OF TRAVEL
- WORK AREA
- SIGNALIZED INTERSECTION

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TITLE: TYPICAL RIGHT LANE CLOSURE FAR SIDE OF INTERSECTION TRAFFIC CONTROL PLAN

Approved — CITY ENGINEER — RCE 90882 — 5/15/26 DATE

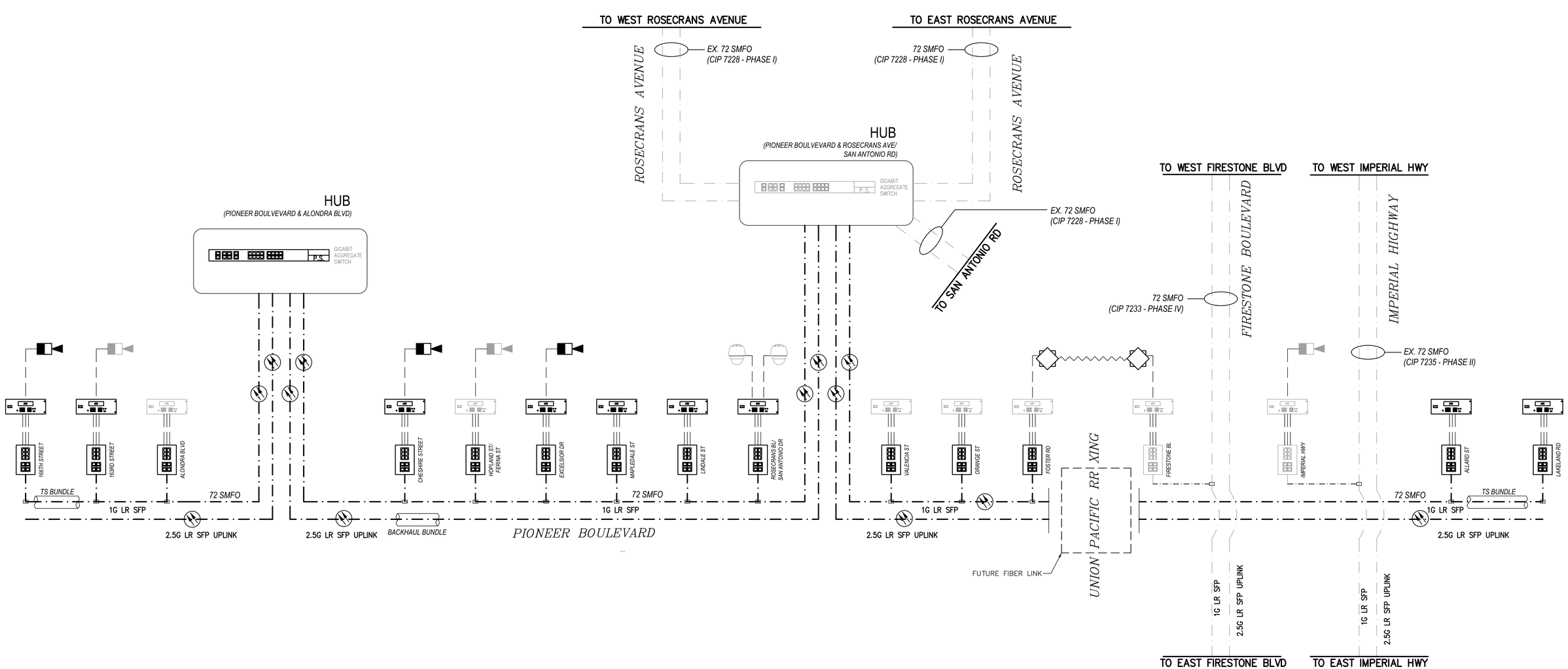
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CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
COMMUNICATIONS SCHEMATIC

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26

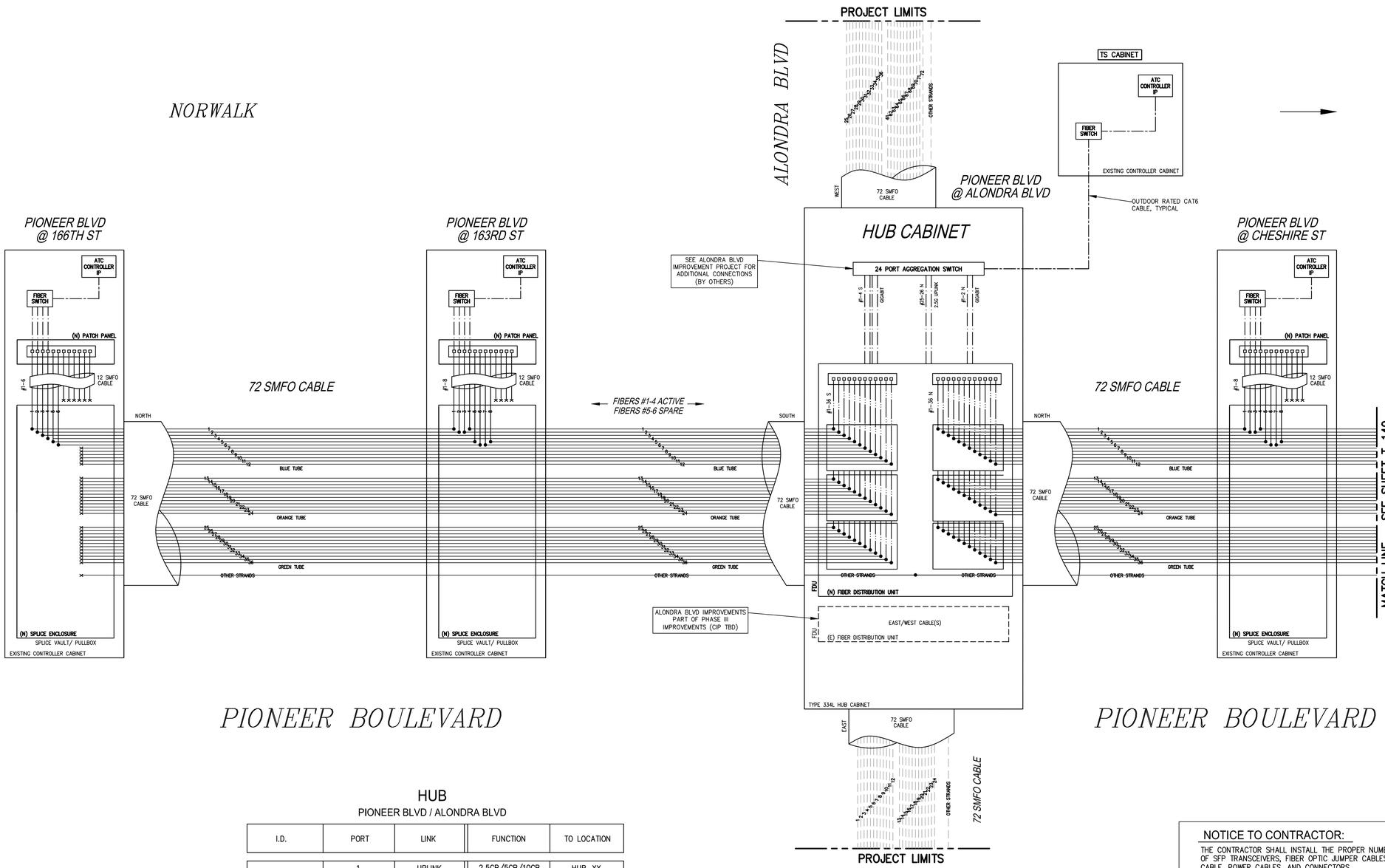
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PROJECT NO. 7239 & 7240

DRAWING NO. T-138

SHEET 39 OF 50



HUB
PIONEER BLVD / ALONDRA BLVD

I.D.	PORT	LINK	FUNCTION	TO LOCATION
AGGREGATION SWITCH PORT/LINK TABLE	1	UPLINK	2.5GB/5GB/10GB	HUB–XX
	2	UPLINK	2.5GB/5GB/10GB	HUB–XX
	3	UPLINK	2.5GB/5GB/10GB	HUB–XX
	4	UPLINK	2.5GB/5GB/10GB	–
	5	–	–	–
	6	–	–	–
	7	–	–	–
	8	–	–	–
	9	–	–	–
	10	–	–	–

LEGEND (THIS SHEET):

- NEW FIBER OPTIC CABLE
- EXISTING FIBER OPTIC CABLE
- PROPOSED FIBER SPLICE
- FIBER CUT
- —1— FIBER STRAND NUMBER
- FIBER JUMPER
- FIBER FAN–OUT KIT
- CAT 5/6
- SC CONNECTOR
- – NEW EQUIPMENT, TYPE AS NOTED
- – EXISTING EQUIPMENT

NOTICE TO CONTRACTOR:
THE CONTRACTOR SHALL INSTALL THE PROPER NUMBER OF SFP TRANSCEIVERS, FIBER OPTIC JUMPER CABLES, CAT 6 CABLE, POWER CABLES, AND CONNECTORS TO PROVIDE THE PROPER COMMUNICATION AS REQUIRED.

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CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
FIBER ASSIGNMENTS

Approved
CITY ENGINEER — RCE 90882 — 5/15/26 DATE

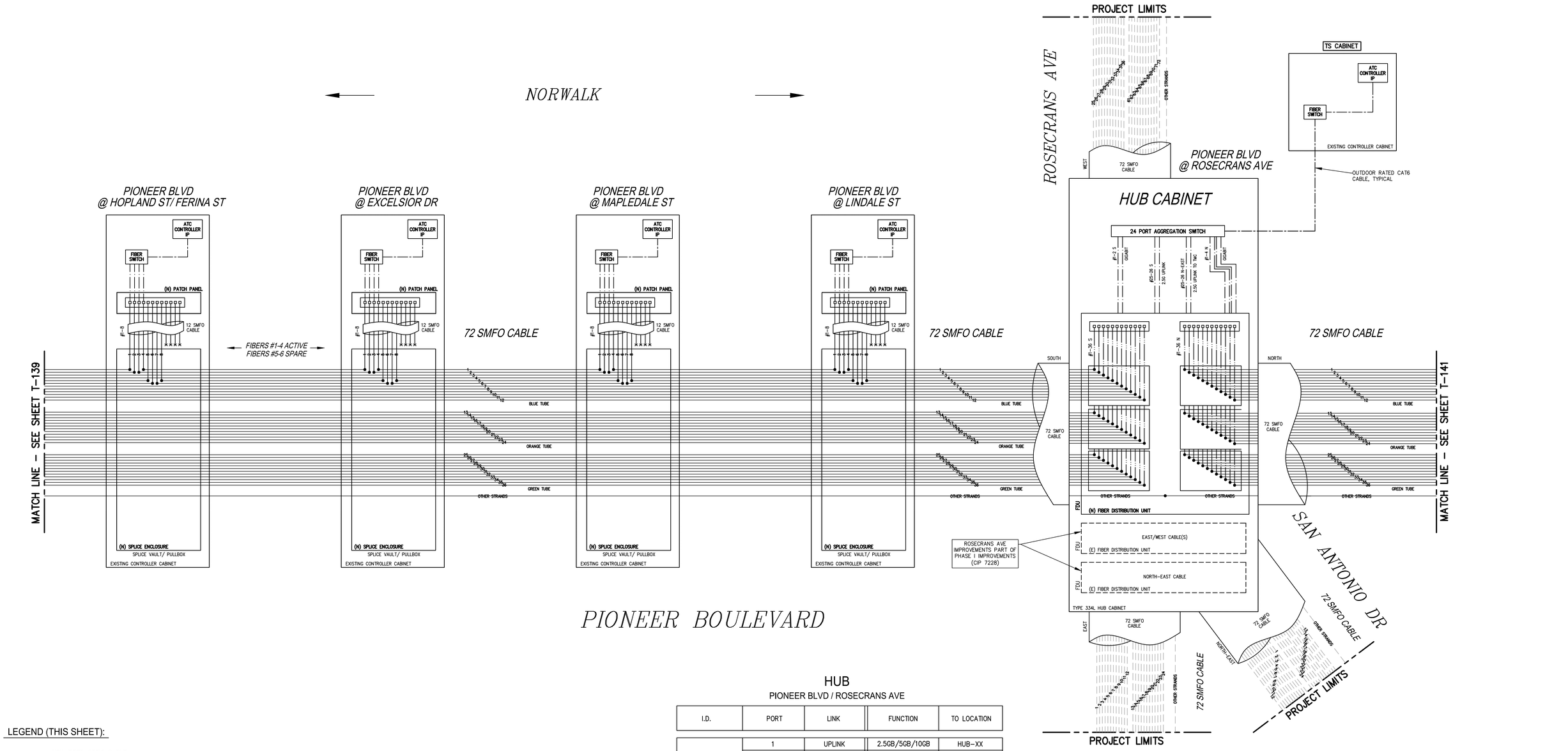
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Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

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PROJECT NO. 7239 & 7240

DRAWING NO. T-139

SHEET 40 OF 50



HUB

PIONEER BLVD / ROSECRANS AVE

I.D.	PORT	LINK	FUNCTION	TO LOCATION
AGGREGATION SWITCH PORT/LINK TABLE	1	UPLINK	2.5GB/5GB/10GB	HUB-XX
	2	UPLINK	2.5GB/5GB/10GB	HUB-XX
	3	UPLINK	2.5GB/5GB/10GB	HUB-XX
	4	UPLINK	2.5GB/5GB/10GB	–
	5	–	–	–
	6	–	–	–
	7	–	–	–
	8	–	–	–
	9	–	–	–
	10	–	–	–

LEGEND (THIS SHEET):

- NEW FIBER OPTIC CABLE
- EXISTING FIBER OPTIC CABLE
- PROPOSED FIBER SPLICE
- X FIBER CUT
- —1— FIBER STRAND NUMBER
- FIBER JUMPER
- FIBER FAN-OUT KIT
- CAT 5/6
- SC CONNECTOR
- – NEW EQUIPMENT, TYPE AS NOTED
- – EXISTING EQUIPMENT

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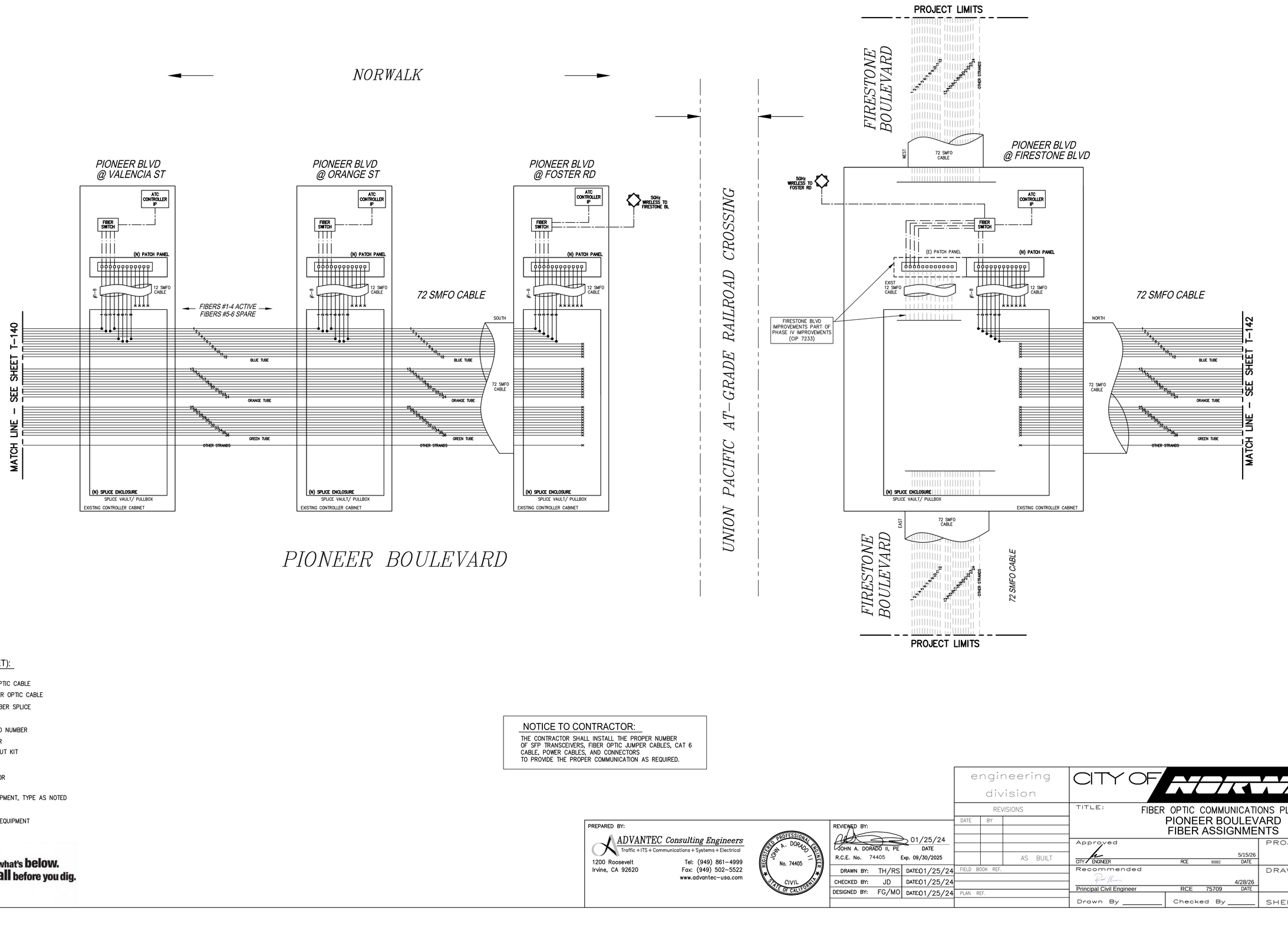
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PLAN REF.

CITY OF NORWALK

TITLE:
FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
FIBER ASSIGNMENTS

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-140
SHEET 41 OF 50



LEGEND (THIS SHEET):

- NEW FIBER OPTIC CABLE
- EXISTING FIBER OPTIC CABLE
- PROPOSED FIBER SPLICE
- FIBER CUT
- 1 FIBER STRAND NUMBER
- FIBER JUMPER
- FIBER FAN-OUT KIT
- CAT 5/6
- SC CONNECTOR
- NEW EQUIPMENT, TYPE AS NOTED
- EXISTING EQUIPMENT

811 Know what's below. Call before you dig.

NOTICE TO CONTRACTOR:

THE CONTRACTOR SHALL INSTALL THE PROPER NUMBER OF SFP TRANSCEIVERS, FIBER OPTIC JUMPER CABLES, CAT 6 CABLE, POWER CABLES, AND CONNECTORS TO PROVIDE THE PROPER COMMUNICATION AS REQUIRED.

PREPARED BY:
ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
1200 Roosevelt
Irvine, CA 92620
Tel: (949) 861-4999
Fax: (949) 502-5522
www.advantec-usa.com

REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY: 01/25/24
JOHN A. DORADO II, PE — DATE
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
FIBER ASSIGNMENTS

Approved _____ 5/15/26
CITY ENGINEER — RCE 90882 — DATE

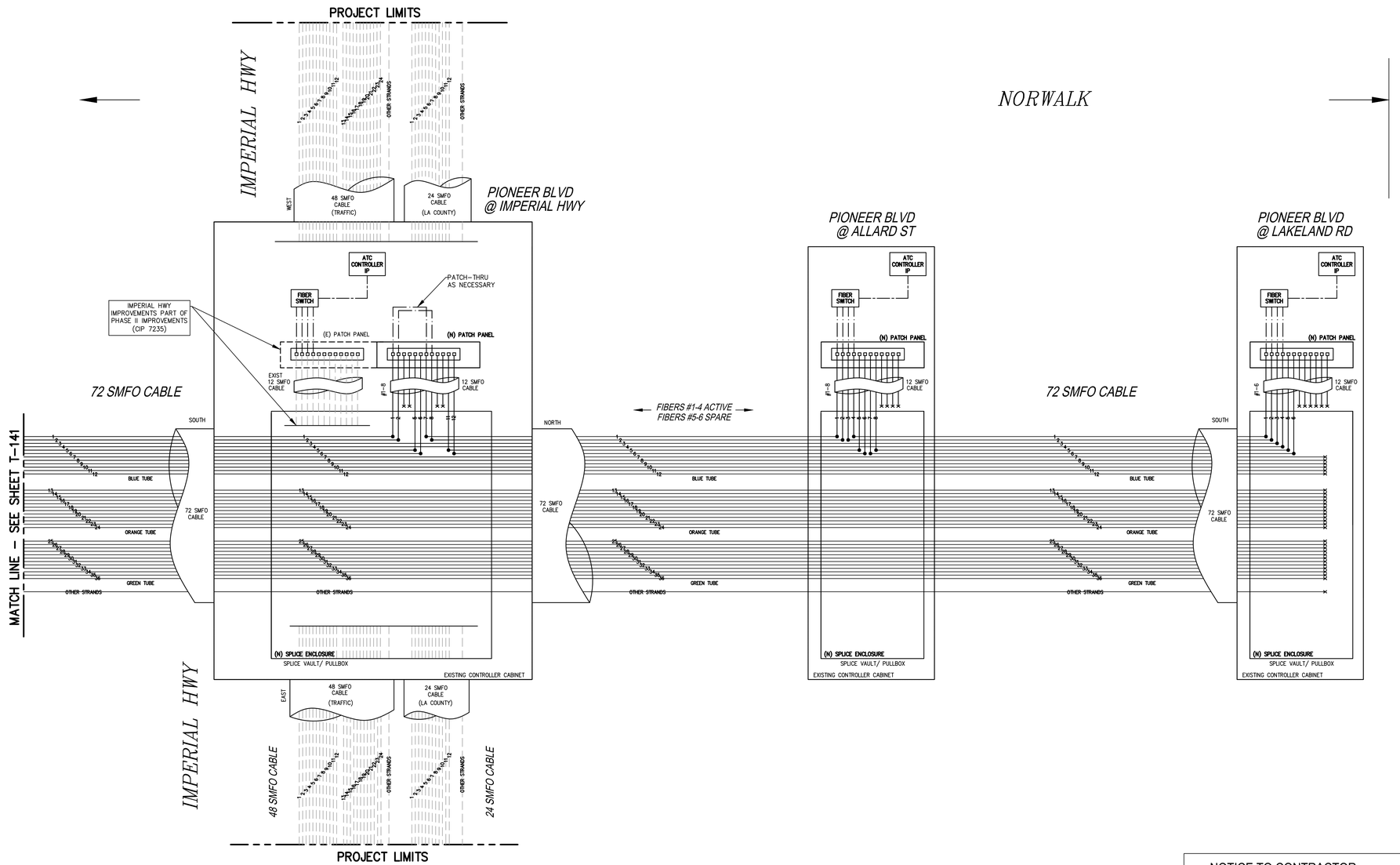
Recommended _____ 4/28/26
Principal Civil Engineer — RCE 75709 — DATE

Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-141

SHEET 42 OF 50



LEGEND (THIS SHEET):

- NEW FIBER OPTIC CABLE
- EXISTING FIBER OPTIC CABLE
- PROPOSED FIBER SPLICE
- FIBER CUT
- 1 FIBER STRAND NUMBER
- FIBER JUMPER
- FIBER FAN-OUT KIT
- CAT 5/6
- SC CONNECTOR
- NEW EQUIPMENT, TYPE AS NOTED
- EXISTING EQUIPMENT

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REVIEWED BY: JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

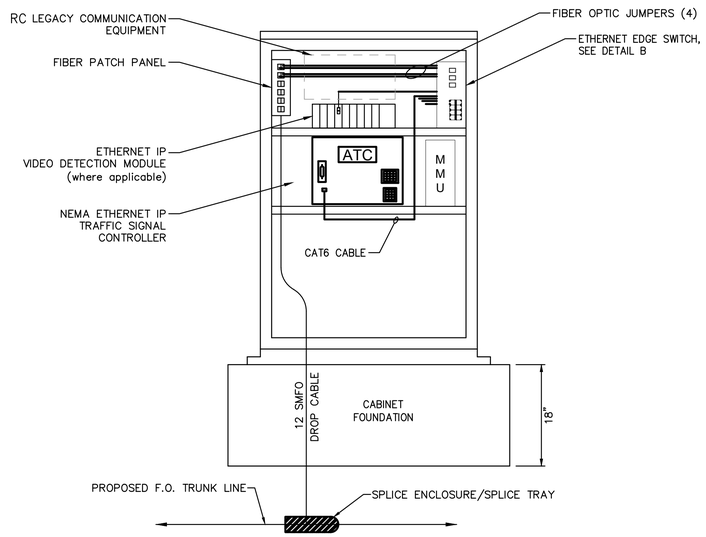
CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
FIBER ASSIGNMENTS

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

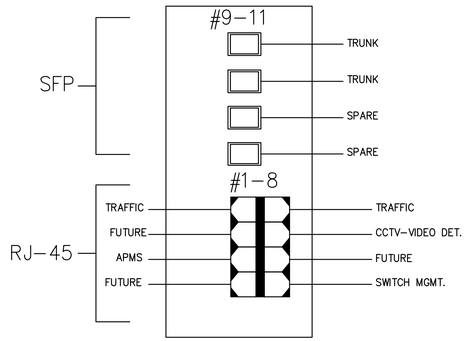
PROJECT NO. 7239 & 7240
DRAWING NO. T-142
SHEET 43 OF 50

DETAIL A:



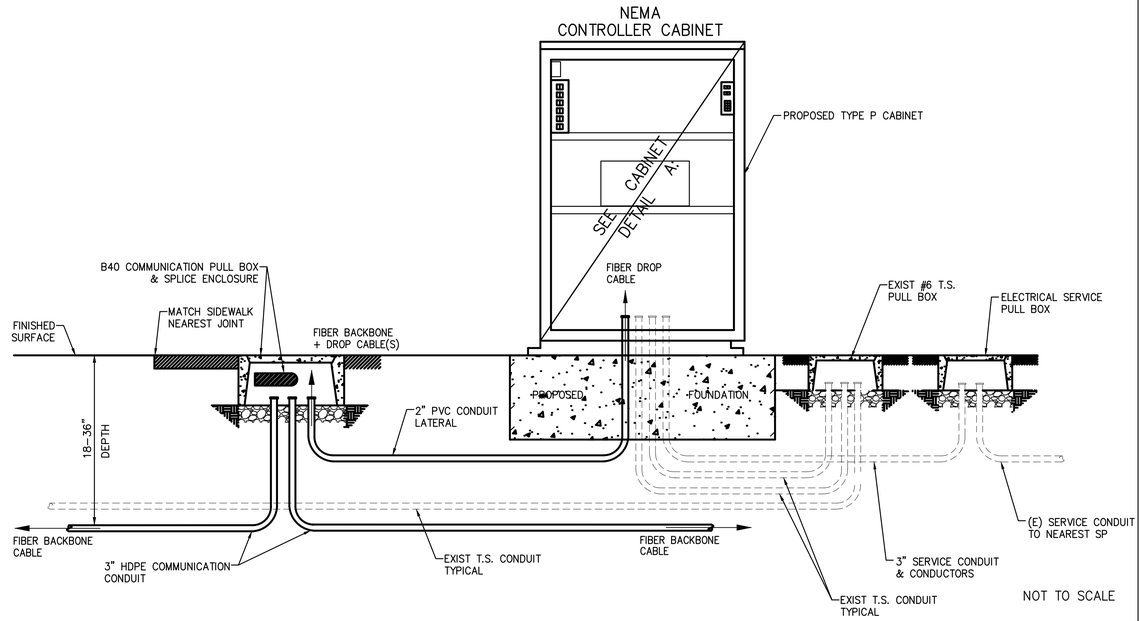
NEMA CABINET DETAIL
NOT TO SCALE

DETAIL B:



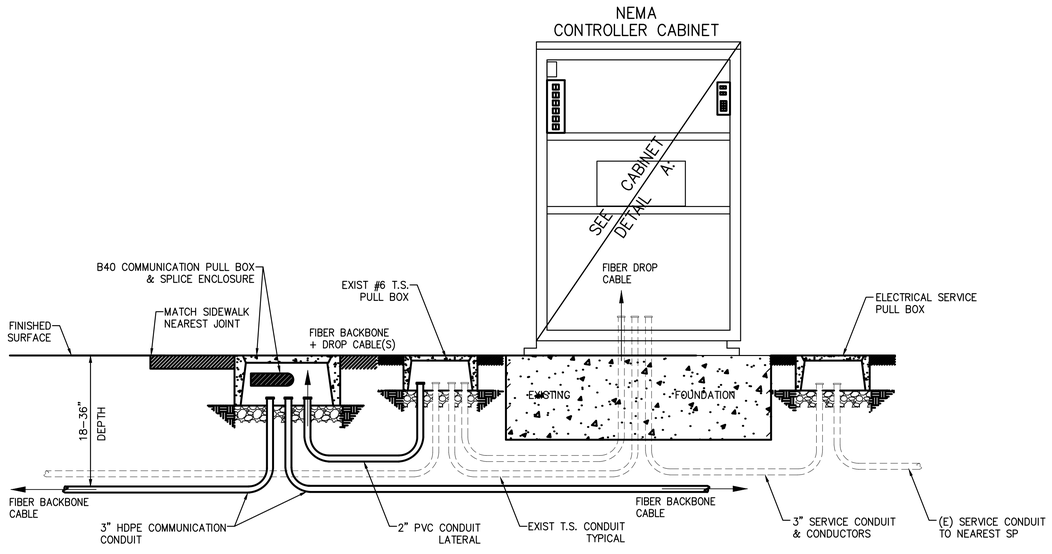
EDGE SWITCH LAYOUT
NOT TO SCALE

DETAIL C:



NOT TO SCALE

DETAIL D:



NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE	01/25/24
CHECKED BY:	JD	DATE	01/25/24
DESIGNED BY:	FG/MO	DATE	01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

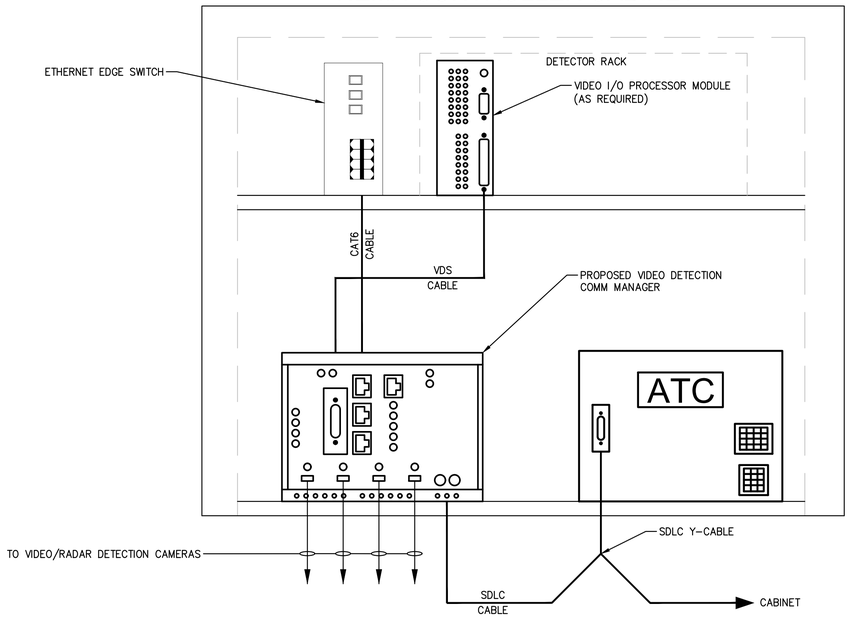
CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
CABINET

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

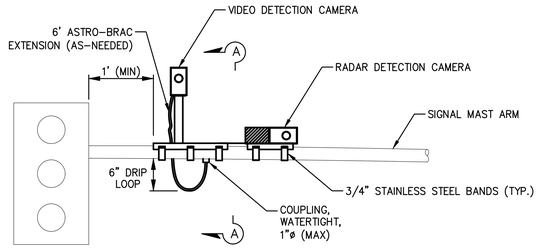
PROJECT NO. 7239 & 7240
DRAWING NO. T-143
SHEET 44 OF 50

NEMA CONTROLLER CABINET

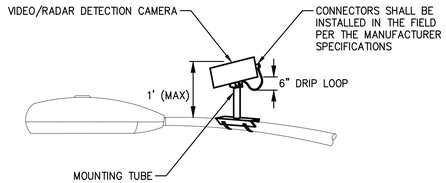


SHELF RACK DETAIL
NOT TO SCALE

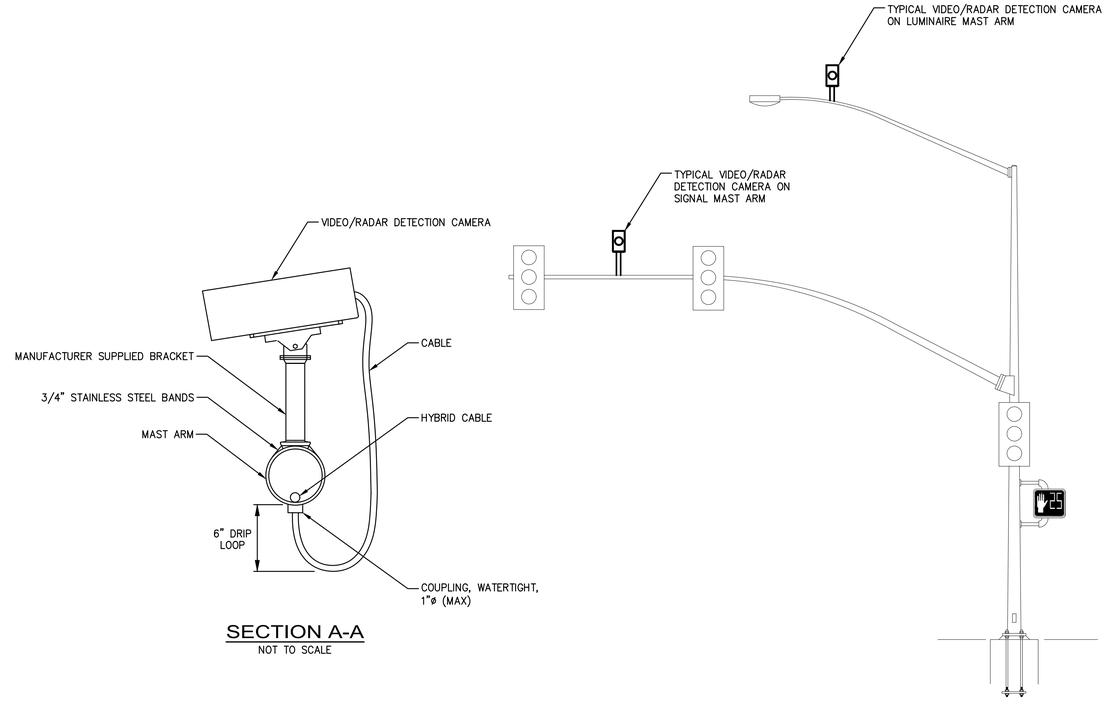
NOTE: ANY PROPOSED FIXED OBJECT SUCH AS CABINETS, ETC. WITHIN STATE RIGHT OF WAY NEEDS TO MEET CLEAR RECOVERY ZONE AS REQUIRED IN CALTRANS HDM INDEX 309.1 (2) AND 309.1 (2)(A) AND SHALL ALSO MEET MINIMUM HORIZONTAL CLEARANCE AS REQUIRED IN CALTRANS HDM INDEX 309.31(2)(C). "ON CONVENTIONAL HIGHWAYS WITH POSTED SPEEDS LESS THAN OR EQUAL TO 35 MILES PER HOUR AND CURBS, CLEAR RECOVERY ZONE WIDTHS DO NOT APPLY. SEE MINIMUM HORIZONTAL INDEX 309.1(3)(C)." A DESIGN STANDARD DECISION DOCUMENT IS REQUIRED TO BE SUBMITTED TO CALTRANS FOR REVIEW AND APPROVAL FOR ANY NONSTANDARD FEATURES THAT DO NOT SATISFY THE ABOVE REQUIREMENTS.



SIGNAL MAST ARM MOUNT
NOT TO SCALE



LUMINAIRE MAST ARM MOUNT
NOT TO SCALE



SECTION A-A
NOT TO SCALE

CAMERA MOUNTING DETAIL
NOT TO SCALE

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REVIEWED BY: 01/25/24
JOHN A. DORADO II, PE — DATE
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE:
FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
VIDEO DETECTION

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

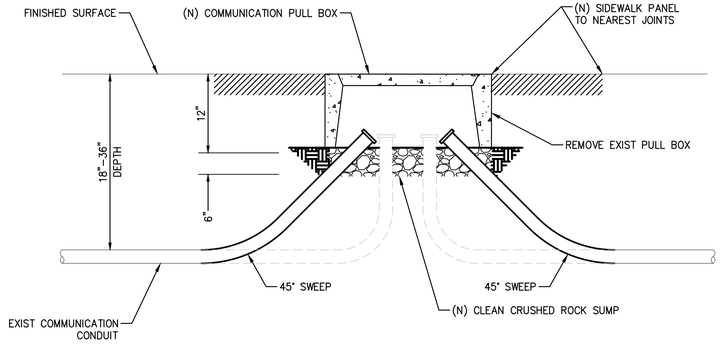
Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO.
7239 & 7240

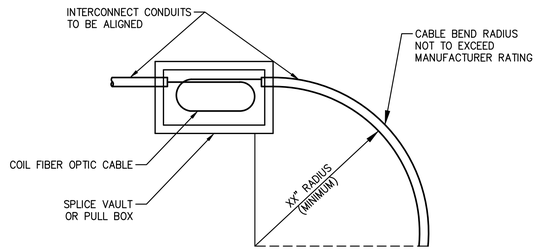
DRAWING NO.
T-144

Drawn By _____ Checked By _____

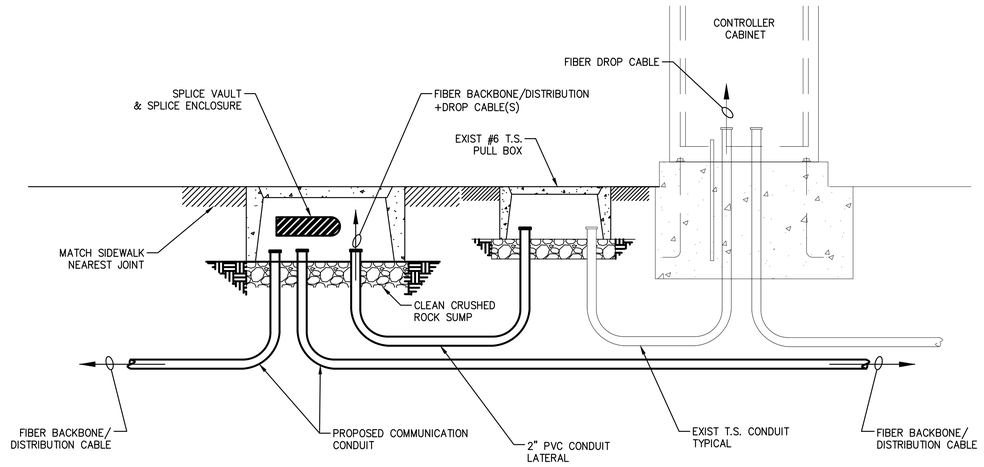
SHEET 45 OF 50



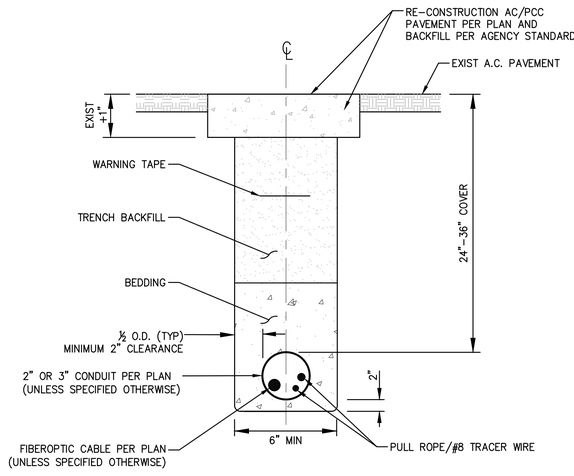
REMOVAL AND REPLACEMENT OF EXISTING PULL BOX/SPLICE VAULT
NOT TO SCALE



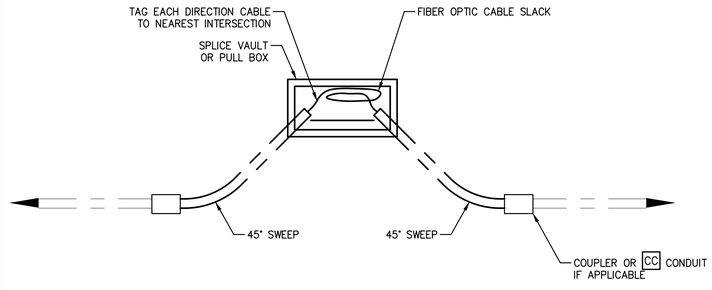
TYPICAL CONDUIT RADIUS
NOT TO SCALE



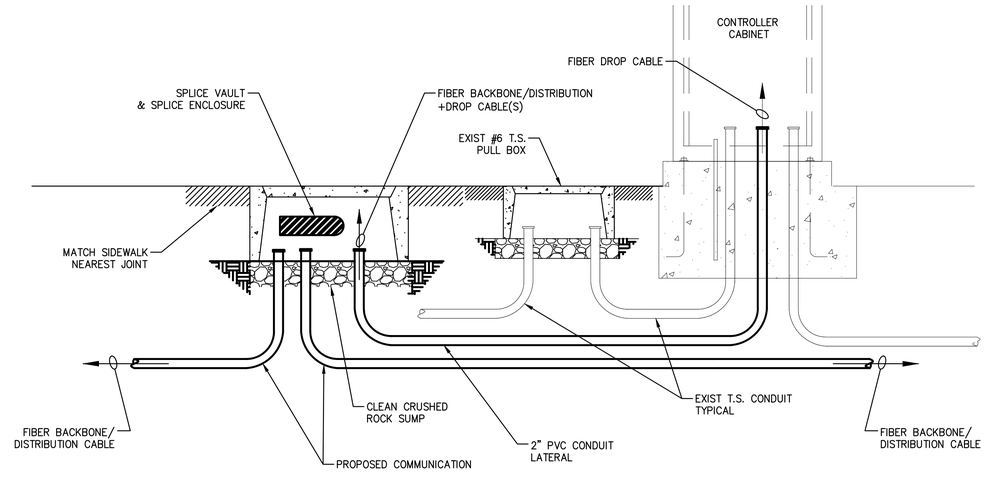
TYPICAL SPLICE VAULT/ FIBER OPTIC ENTERING EXISTING CABINET DETAIL
NOT TO SCALE



TYPICAL TRENCH DETAIL (OUTSIDE CALTRANS RIGHT-OF-WAY)



TYPICAL CONDUIT ENTERING SPLICE VAULT/ PULL BOX DETAIL
NOT TO SCALE



TYPICAL SPLICE VAULT/ FIBER OPTIC ENTERING PROPOSED CABINET DETAIL
NOT TO SCALE

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REVIEWED BY:
JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY
AS BUILT	

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE:
FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
PULL BOX

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

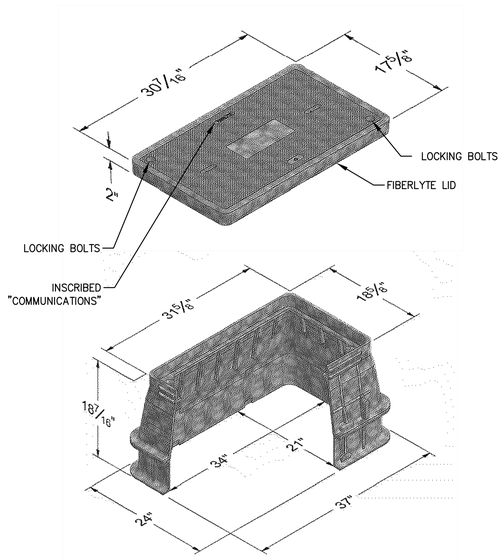
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240

DRAWING NO. T-145

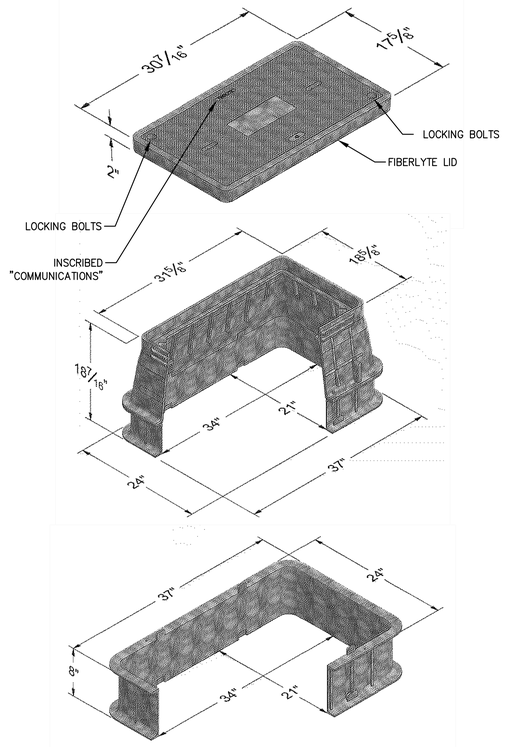
SHEET 46 OF 50

ALL NEW PULL BOXES SHALL BE No. 6, FIBERLYTE MATERIAL, UNLESS SHOWN OTHERWISE. PULL BOX LID MARKINGS SHALL BE INSCRIBED "COMMUNICATIONS". MAXIMUM PULL BOX SPACING SHALL BE 500'.



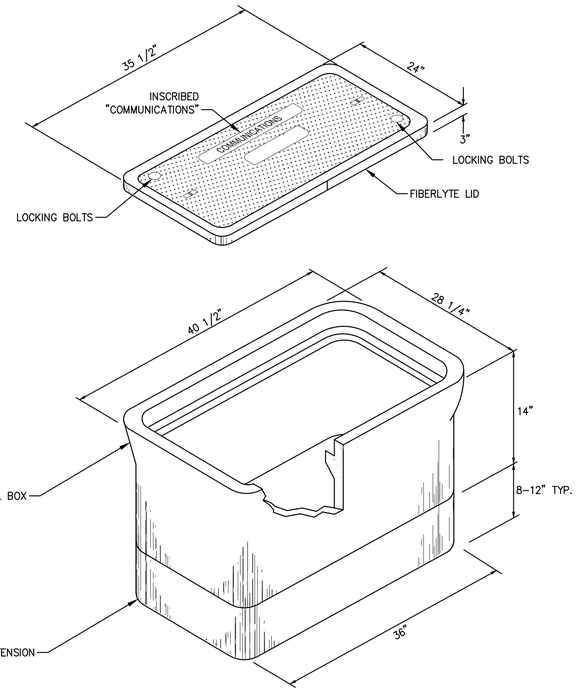
NO. 6 PULL BOX/SPLICE VAULT DETAIL
NOT TO SCALE

ALL NEW PULL BOXES SHALL BE No. 6, FIBERLYTE MATERIAL, UNLESS SHOWN OTHERWISE. PULL BOX LID MARKINGS SHALL BE INSCRIBED "COMMUNICATIONS".

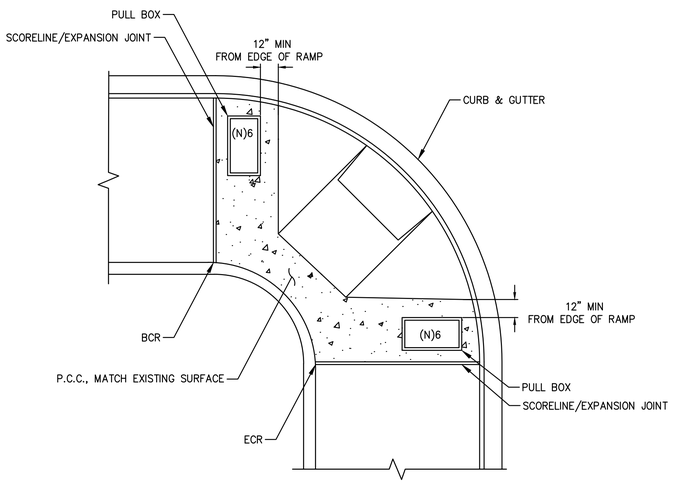


NO. 6E PULL BOX/SPLICE VAULT DETAIL
NOT TO SCALE

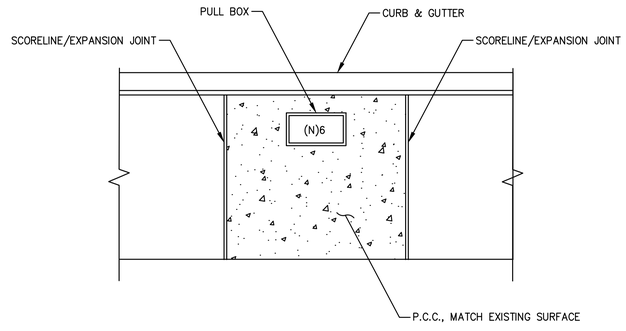
ALL NEW SPLICE VAULTS SHALL BE N40 TYPE UTILITY BOX WITH EXTENSION, UNLESS SHOWN OTHERWISE. SPLICE VAULT LID SHALL BE A CO-POLYMER TYPE MATERIAL WITH LOCKING MECHANISM. SPLICE VAULT LID MARKINGS SHALL BE INSCRIBED "COMMUNICATIONS".



N40 PULL BOX/SPLICE VAULT DETAIL
NOT TO SCALE



NO. 6E PULL BOX/ADA RAMP DETAIL
NOT TO SCALE



NO. 6E PULL BOX/SIDEWALK DETAIL
NOT TO SCALE

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REVIEWED BY:
JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 — Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
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DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
SPLICE VAULT

Approved
CITY ENGINEER — RCE 90882 — DATE 5/15/26

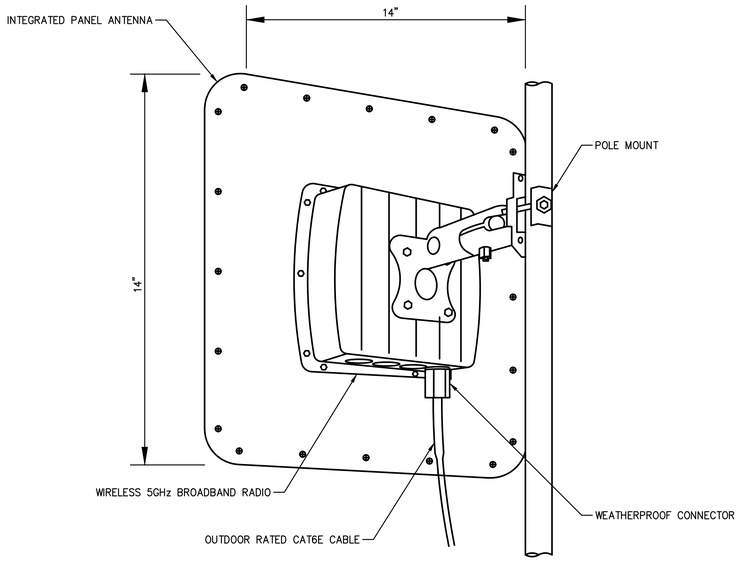
Recommended
Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240

DRAWING NO. T-146

Drawn By _____ Checked By _____

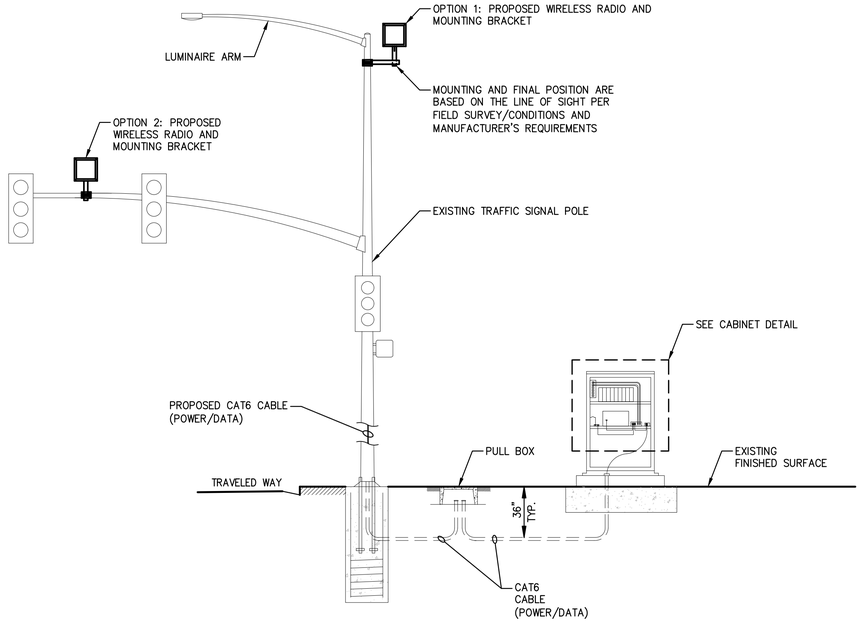
SHEET 47 OF 50



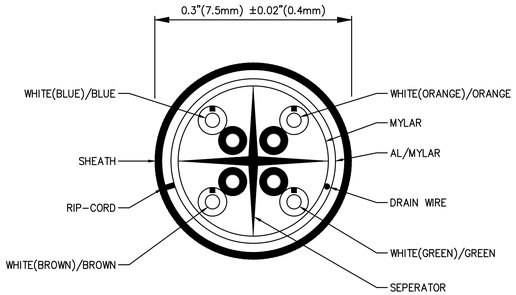
WIRELESS RADIO AND ANTENNA DETAIL
NOT TO SCALE

NOTES:
WIRELESS COMMUNICATION EQUIPMENT

1. CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER'S REPRESENTATIVE PRIOR TO INSTALLATION TO DETERMINE THE EXACT LOCATION OF WIRELESS ANTENNA.
2. THE MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE LINE OF SIGHT ANALYSIS TO DETERMINE THE FINAL WIRELESS ANTENNA LOCATION.
3. CONTRACTOR SHALL COORDINATE WITH CITY STAFF TWO WEEKS PRIOR TO LINE OF SIGHT ANALYSIS AND WIRELESS EQUIPMENT INSTALLATION.



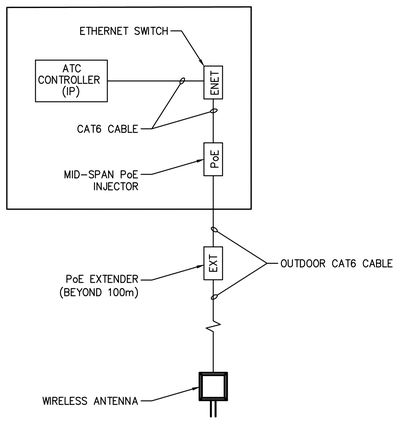
WIRELESS RADIO MOUNTING DETAIL
NOT TO SCALE



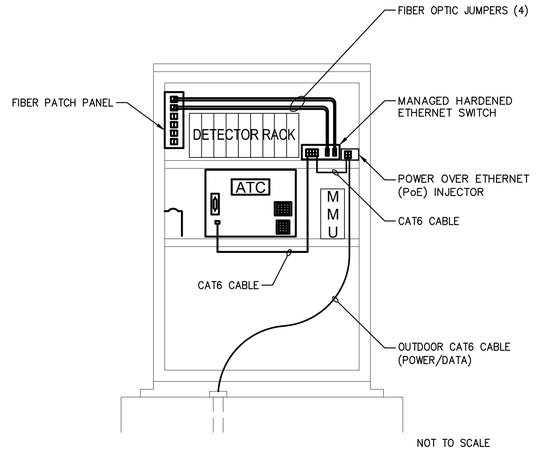
23 AWG / SOLID CONDUCTOR

OUTDOOR RATED CATEGORY 6 SHIELDED CABLE DETAIL
NOT TO SCALE

TYPE 33X OR NEMA CONTROLLER CABINET



CABLE ROUTING DETAIL
NOT TO SCALE



NOT TO SCALE

NEMA CABINET DETAIL
NOT TO SCALE

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engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.
PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
WIRELESS ANTENNA

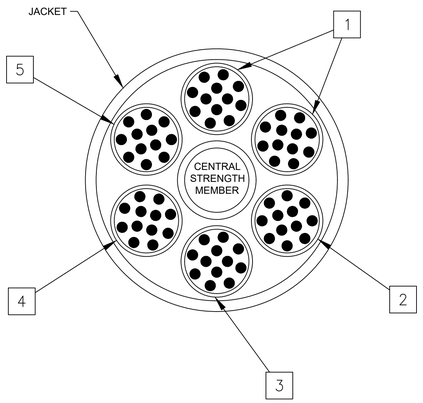
Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26
Drawn By _____ Checked By _____

PROJECT NO. 7239 & 7240
DRAWING NO. T-147
SHEET 48 OF 50

72 SMFO CABLE ASSIGNMENT

LEGEND

1. LOCAL TRAFFIC SIGNAL COMMUNICATIONS
2. BACKBONE TRAFFIC SIGNAL COMMUNICATIONS
3. CITY IT OWNED
4. INTER-AGENCY COMMUNICATIONS
5. SMART CITIES COMMUNICATIONS



FIBER ALLOCATIONS - FIBERS #1-48

CABLE NO.	TUBE NO.	FIBER NO.	FUNCTION	DESCRIPTION
TBD	1 – BLUE	1	LOCAL TRAFFIC SIGNAL COMMUNICATIONS	ACTIVE
		2		ACTIVE
		3		ACTIVE
		4		ACTIVE
		5		ACTIVE
		6		ACTIVE
		7		ACTIVE
		8		ACTIVE
		9		ACTIVE
		10		ACTIVE
		11		ACTIVE
		12		ACTIVE
	2 – ORANGE	13		RESERVED
		14		RESERVED
		15		RESERVED
		16		RESERVED
		17		RESERVED
		18		RESERVED
		19		RESERVED
		20		RESERVED
		21		RESERVED
		22		RESERVED
		23		RESERVED
		24		RESERVED
	3 – GREEN	25	BACKBONE TRAFFIC SIGNAL COMMUNICATIONS	ACTIVE
		26		ACTIVE
		27		ACTIVE
		28		ACTIVE
		29		ACTIVE
		30		ACTIVE
		31		ACTIVE
		32		ACTIVE
		33		ACTIVE
		34		ACTIVE
		35		ACTIVE
		36		ACTIVE
	4 – BROWN	37	CITY IT OWNED	RESERVED
		38		RESERVED
		39		RESERVED
		40		RESERVED
		41		RESERVED
		42		RESERVED
		43		RESERVED
		44		RESERVED
		45		RESERVED
		46		RESERVED
		47		RESERVED
		48		RESERVED

FIBER ALLOCATIONS - FIBERS #49-72

CABLE NO.	TUBE NO.	FIBER NO.	FUNCTION	DESCRIPTION
	5 – SLATE	49	INTER-AGENCY (C2C) COMMUNICATIONS	RESERVED
		50		RESERVED
		51		RESERVED
		52		RESERVED
		53		RESERVED
		54		RESERVED
		55		RESERVED
		56		RESERVED
		57		RESERVED
		58		RESERVED
		59		RESERVED
		60		RESERVED
	6 – WHITE	61	SMART CITIES COMMUNICATIONS	ACTIVE
		62		ACTIVE
		63		ACTIVE
		64		ACTIVE
		65		ACTIVE
		66		ACTIVE
		67		ACTIVE
		68		ACTIVE
		69		ACTIVE
		70		ACTIVE
		71		ACTIVE
		72		ACTIVE

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ADVANTEC Consulting Engineers
Traffic + ITS + Communications + Systems + Electrical
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Irvine, CA 92620
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY:
JOHN A. DORADO II, PE — 01/25/24 DATE
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT

FIELD BOOK REF.

PLAN REF.

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
PIONEER BOULEVARD
CONSTRUCTION DETAILS

Approved
CITY ENGINEER — RCE 90882 — 5/15/26 DATE

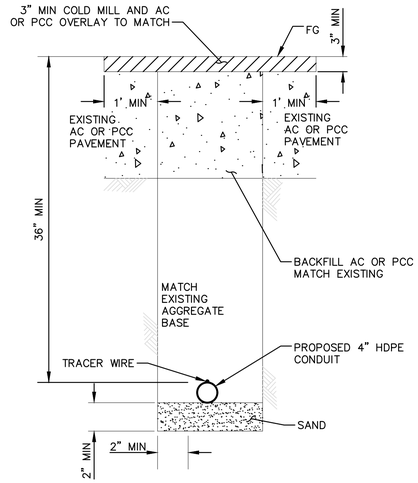
Recommended
Principal Civil Engineer — RCE 75709 — 4/28/26 DATE

PROJECT NO. 7239 & 7240

DRAWING NO. T-148

Drawn By _____ Checked By _____

SHEET 49 OF 50



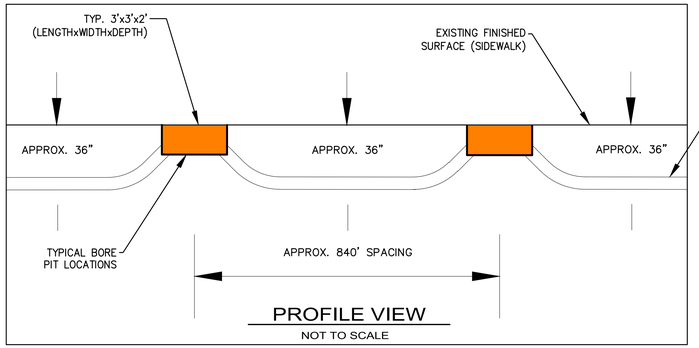
TRENCH IN PAVEMENT DETAIL

PER CALTRANS ENCROACHMENT PERMIT MANUAL
TYPICAL TRENCH DETAIL TR-1053

NOT TO SCALE

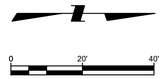
PIONEER BOULEVARD AT I-5 FREEWAY OVERCROSSING

TYPICAL CONDUIT INSTALLATION - JACK AND BORE METHOD



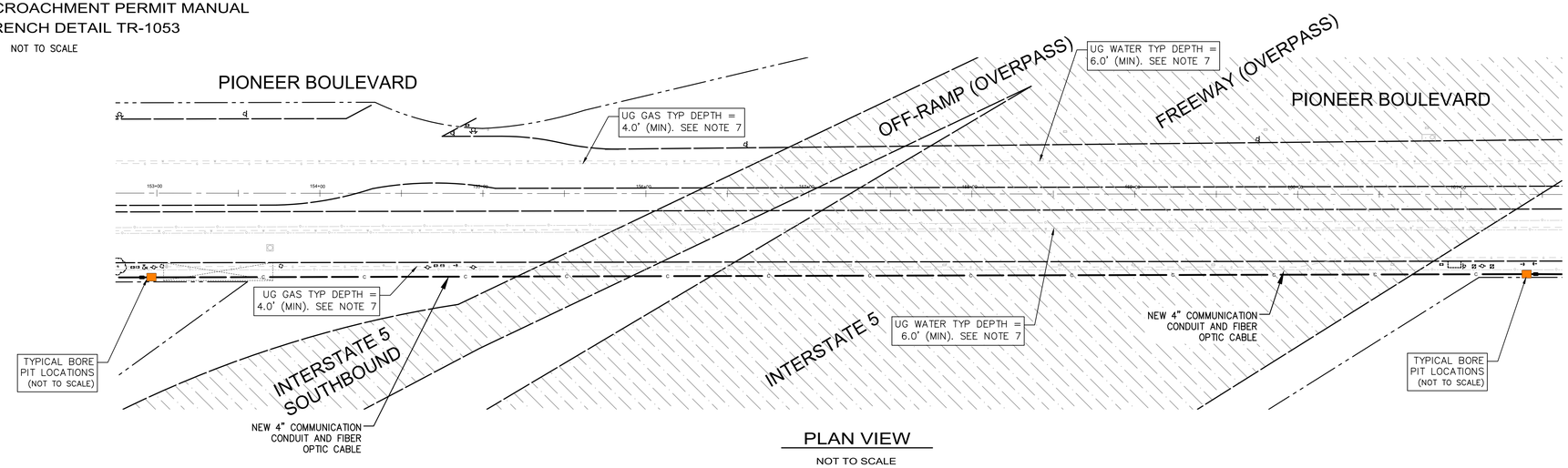
PROFILE VIEW

NOT TO SCALE



NOTES (FOR TRENCH IN PAVEMENT)

1. STRUCTURE BACKFILL SHALL CONFORM TO SECTION 19-3.06 OF THE STANDARD SPECIFICATIONS.
2. SLURRY CEMENT BACKFILL SHALL CONFORM TO SECTION 19-3.062 OF THE STANDARD SPECIFICATIONS.
3. HMA SHALL CONFORM TO SECTION 39 OF THE STANDARD SPECIFICATIONS.
4. ALL METHODS OF COMPACTION SHALL BE BY MECHANICAL MEANS. PONDING, JETTING OR FLOODING SHALL NOT BE ALLOWED.
5. AGGREGATE BASE SHALL CONFORM TO SECTION 26 OF THE STANDARD SPECIFICATIONS.
6. WHEN CLSM IS UTILIZED THE MIX DESIGN AND TEST RESULTS SHALL BE SUBMITTED TO CALTRANS REPRESENTATIVE.
7. ALL WORK SHALL BE AS AUTHORIZED BY THE APPROVED ENCROACHMENT PERMIT PLANS, AND/OR AS DIRECTED BY CALTRANS REPRESENTATIVE.
8. WHEN THE UW IS > 6" THEN THE MINIMUM CLR SHALL BE 6" COLD PLANING AND RE-SURFACING OVERLAY SHALL BE PARALLEL TO THE ROADWAY AND TO THE NEAREST LANE LINE FOR THE ENTIRE LENGTH OF THE TRENCH/DISTURBED AREAS, AND/OR AS DIRECTED BY CALTRANS REPRESENTATIVE.
9. WHEN COLD PLANING IS REQUIRED, THE MINIMUM SHALL BE 0.10' OR AS DIRECTED BY THE STATE'S REPRESENTATIVE TO ACCOMMODATE FIELD CONDITIONS.
10. COLD PLANING MAY BE REQUIRED AT THE DIRECTION OF THE STATE'S REPRESENTATIVE TO ACCOMMODATE THE PLACEMENT OF STEEL PLATES.
11. WHEN TRENCH PLACEMENT IS WITHIN 4' OF CURB & GUTTER, ADDITIONAL COLD PLANING MAY BE REQUIRED AT THE DISCRETION OF CALTRANS REPRESENTATIVE.
12. ANY PAVEMENT MARKINGS AND/OR STRIPING REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AS DIRECTED BY CALTRANS REPRESENTATIVE.
13. A TRACER WIRE SHALL BE PLACED ON TOP OF THE FACILITY, WHEN REQUIRED BY CALTRANS REPRESENTATIVE.
14. OTHER TRENCH RELATED DETAILS ARE SHOWN IN FIGURE 6.1, CHAPTER 6 OF THE ENCROACHMENT PERMITS MANUAL.
15. A PAINT BINDER (TACK COAT) OF ASPHALTIC EMULSION CONFORMING TO SECTION 39-4.02, PRIME COAT & PAINT BINDER (TACK COAT) SHALL BE FURNISHED AND APPLIED.
16. NEW PAVEMENT BASE SHALL CONSIST OF EITHER CL. II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS < 24,"CL. II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.
17. NEW SUBGRADE SHALL CONSIST OF EITHER CL. II AGGREGATE BASE, 2-SACK SLURRY CEMENT, OR CLSM. WHEN TW IS < 24," CL. II AGGREGATE BASE IS NOT RECOMMENDED FOR BACKFILL.



PLAN VIEW

NOT TO SCALE

GENERAL NOTES (WITHIN CALTRANS ROW)

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND STANDARD SPECIFICATIONS, CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CITY OF HUNTINGTON BEACH SPECIAL PROVISIONS, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) AND AS DIRECTED BY THE CITY REPRESENTATIVE.
2. LOCATION OF UTILITIES AND SUBSTRUCTURES HAVE BEEN SHOWN FROM A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811, AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING UTILITIES.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND NOTIFY ALL AFFECTED AGENCIES AND UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. BACKFILLING OF EXCAVATIONS AND TRENCHES SHALL COMPLY WITH 2018 CALTRANS STANDARD SPECIFICATIONS SECTION 19-3.03E STRUCTURE BACKFILL, SECTION 19-3.03F SLURRY CEMENT BACKFILL AND SECTION 20-2.01C(2) TRENCHING AND BACKFILLING.
5. WHEN THE TRENCH WIDTH IS LESS THAN 2' THE BACKFILL FOR SUBGRADE MUST CONSIST OF EITHER SLURRY CEMENT OR CONTROLLED LOW-STRENGTH MATERIAL (CLSM). SEE APPENDIX H PAGE H-27 OF THE CALTRANS ENCROACHMENT PERMITS MANUAL FOR CLSM SPECIFICATIONS.
6. WHEN BACKFILLING OPERATIONS OF AN EXCAVATION CANNOT BE COMPLETED WITHIN A WORK DAY, STEEL PLATE BRIDGING WITH A NON-SKID SURFACE SHALL BE REQUIRED AS PER SECTION 602.1 TEMPORARY STEEL PLATE BRIDGING WITH NON-SKID SURFACE OF CALTRANS ENCROACHMENT PERMIT MANUAL.
7. THE CONTRACTOR SHALL POTHOLE ALL UTILITIES SHOWN AND NOT SHOWN ON PLANS. THE CONTRACTOR SHALL ALSO POTHOLE ALL UTILITIES MARKED BY UNDERGROUND SERVICE ALERT. THE CONTRACTOR SHALL VERIFY ELEVATIONS OF ALL UTILITIES WHERE THE PROPOSED IMPROVEMENTS AND NEW CONDUIT WILL BE INSTALLED. THE ELEVATIONS OF THESE EXISTING UTILITIES SHALL BE SHOWN IN A POTHOLE REPORT FORMAT, AND ON THE PROJECT PLAN(S). THIS MUST BE PROVIDED TO CALTRANS REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO STARTING THE WORK. THE COST OR THE POTHOLING REQUIRED SHALL BE INCLUDED IN THE CONTRACT BID PRICE.
8. THE CONTRACTOR SHALL REPLACE EXISTING DECORATIVE SIDEWALK IN-KIND FROM SCORE LINE TO SCORE LINE. LIMITS OF SIDEWALK REPLACEMENT SHALL BE APPROVED BY THE ENGINEER.
9. THE CONTRACTOR/PERMITTEE MUST PROVIDE A COPY OF THE BORE-LOG SHOWING HORIZONTAL AND VERTICAL ALIGNMENT (DEPTH). A BORE-LOG MUST BE KEPT FOR BOTH THE PILOT AND THE REAMING PROCESS. THESE RECORDS MUST BE PROVIDED TO CALTRANS' REPRESENTATIVE DAILY. UPON COMPLETION OF THE WORK, THE CONTRACTOR/PERMITTEE MUST PROVIDE AN ACCURATE "AS-BUILT" DRAWING OF THE INSTALLED PIPE.
10. CONDUIT USED FOR HORIZONTAL DIRECTIONAL DRILLING MUST BE HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT SHALL BE TYPE IPS, DR 9 AND COMPLY WITH ASTM F714. THE CONDUIT MATERIAL MUST COMPLY WITH ASTM D3350.
11. TRACER WIRE MUST BE A MINIMUM NO. 12 SOLID COPPER CONDUCTOR WITH ORANGE INSULATION TYPE TW, THW, RHW OR USE.

LEGEND

UG = UNDERGROUND
ELEC = ELECTRICAL LINE
TEL = TELEPHONE LINE
SD = STORM DRAIN LINE
W = WATER LINE
G = GAS LINE
TS = TRAFFIC SIGNAL
TYP = TYPICAL
MIN = MINIMUM

NOTICE TO CONTRACTOR
THE PERMITTEE MUST PROVIDE A COPY OF THE BORE-LOG SHOWING HORIZONTAL AND VERTICAL ALIGNMENT (DEPTH). A BORE-LOG MUST BE KEPT FOR BOTH THE PILOT AND THE REAMING PROCESS. THESE RECORDS MUST BE PROVIDED TO CALTRANS' REPRESENTATIVE DAILY. UPON COMPLETION OF THE WORK, THE PERMITTEE MUST PROVIDE AN ACCURATE "AS-BUILT" DRAWING OF THE INSTALLED PIPE.

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CALTRANS ENCROACHMENT PERMIT #XXX-XXX-XXXX

PREPARED BY:
ADVANTEC Consulting Engineers
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Fax: (949) 502-5522
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REGISTERED PROFESSIONAL ENGINEER — JOHN A. DORADO II — No. 74405 — CIVIL — STATE OF CALIFORNIA

REVIEWED BY: JOHN A. DORADO II, PE — DATE 01/25/24
R.C.E. No. 74405 Exp. 09/30/2025

DRAWN BY:	TH/RS	DATE 01/25/24
CHECKED BY:	JD	DATE 01/25/24
DESIGNED BY:	FG/MO	DATE 01/25/24

engineering division

REVISIONS

DATE	BY	
		AS BUILT
FIELD BOOK REF.		
PLAN REF.		

CITY OF NORWALK

TITLE: FIBER OPTIC COMMUNICATIONS PLAN
CONSTRUCTION DETAILS
CONDUIT IN CALTRANS R/W

Approved — CITY ENGINEER — RCE 90882 — DATE 5/15/26
Recommended — Principal Civil Engineer — RCE 75709 — DATE 4/28/26

PROJECT NO. 7239 & 7240
DRAWING NO. T-149

Drawn By _____ Checked By _____

SHEET 50 OF 50

APPENDIX B - FEDERAL REQUIREMENTS

BABA Language for Bid Package and Construction Contract

Applicability of the Build America, Buy America

The Build America, Buy America Act (BABA) requires that all of the iron, steel, manufactured products, and construction materials used in infrastructure projects are produced in the United States.

Under Sections 70912 and 70914, the BAP applies to the purchase of iron, steel, manufactured products, and construction materials for Covered Community Planning and Development (CPD) Programs when funds are used for the construction, alteration, maintenance, or repair of infrastructure, as defined by BABA.

Categorization of Articles. The term “categorization of articles” refers to the requirement that articles, materials, and supplies should only be classified into one of the following categories:

- Iron or steel products;
- Manufactured products;
- Construction materials; or
- Section 70917(c) materials.

Construction Materials are also:

- Non-ferrous metals;
- Plastic and polymer-based products (including polyvinylchloride, composite
- building materials, and polymers used in fiber optic cables);
- Glass (including optic glass);
- Fiber optic cable (including drop cable);
- Optical fiber;
- Lumber;
- Engineered wood, and
- Drywall.

Covered Materials includes the following when used in connection with an Infrastructure Project:

A. all iron and steel;
B. all Manufactured Products; and
C. all Construction Materials.

Under the U.S. Department of Housing and Urban Development’s (HUD) Phased Implementation Schedule, iron and steel are covered material under BABA for this Project. Contractors, manufacturers,

and suppliers will be required to purchase iron and steel that are American-made only. Contractors, manufacturers, and suppliers will be required to provide signed certification forms with short description to identify where the covered material was made, supplied to, and where the material will be installed or used. Signed certifications must be submitted with copies of purchase order, invoice, and/or work order.

BABA only applies to articles, materials and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. BABA does not apply to building appliances (e.g., microwaves, refrigerators, dishwashers, etc.), air conditioning units, and generators that are used at or within the finished infrastructure project but are not an integral part of or permanently affixed to the structure.

BABA does not apply to “removable” objects that are not an integral part of the structure or permanently affixed to the infrastructure project. For example, security cameras or fire/smoke/carbon monoxide detectors are not subject to the domestic preference requirements because they are removable and are not an integral part of the structure. This same reasoning applies to air conditioning units and building appliances within the infrastructure project; they are not an integral part of or permanently affixed to the structure. For equipment that is permanently affixed to infrastructure or that is integral to the structure and remains in a permanent location the equipment is subject to BABAA requirements. The purchasing of appliances and “removable objects” do not apply to BABA.

Contractors and their subcontractors who apply or bid for an award for an infrastructure project subject to the domestic preference requirement in the Build America, Buy America Act (BABAA) shall file the required certification to the non-federal entity **with each bid** or offer for an infrastructure project, unless a domestic preference requirement is waived by FEMA. Contractors and subcontractors certify that no federal financial assistance funding for infrastructure projects will be provided unless all the iron, steel, manufactured projects, and construction materials used in the project are produced in the United States. BABAA, Pub. L. No. 117-58, §§ 70901-52. Contractors and subcontractors shall also disclose any use of federal financial assistance for infrastructure projects that does not ensure compliance with BABAA domestic preference requirement. Such disclosures shall be forwarded to the recipient who, in turn, will forward the disclosures to FEMA, the federal awarding agency; subrecipients will forward disclosures to the pass-through entity, who will, in turn, forward the disclosures to FEMA.

For federally assisted public works projects subject to BABAA, contractors and subcontractors must sign and submit the following certification to the next tier (e.g., subcontractors submit to the contractor; contractors submit to the non-federal entity) **in each bid** or offer for an infrastructure project that has not been waived by a BABAA waiver:

Build America, Buy America Act
Required Self-Certification

The undersigned certifies, to the best of their knowledge and belief, that:

The Build America, Buy America Act (BABAA) requires that no federal financial assistance for "infrastructure" projects is provided "unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States." Section 70914 of Public Law No. 117-58, §§ 70901-52.

The undersigned certifies that for the _____ (Project Name and Location) ____ that the iron, steel, manufactured products, and construction materials used in this contract are in full compliance with the BABAA requirements including:

1. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All manufactured products purchased with FEMA financial assistance must be produced in the United States. For a manufactured product to be considered produced in the United States, the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55% of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

"The [Contractor or Subcontractor], _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the [Contractor or Subcontractor] understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any."

_____
Signature of [Contractor's or Subcontractor's] Authorized Official

_____
Name and Title of [Contractor's or Subcontractor's] Authorized Official

_____
Date

FHWA-1273 – Revised October 23, 2023

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

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 part 26 in the award and administration of DOT-assisted 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. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

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

a. 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.

b. 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 Form to Report Lobbying," in accordance with its instructions.

2. 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 31 U.S.C. 1352. 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.

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

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

"General Decision Number: CA20260022 05/18/2026

State: California

Construction Types: Building, Heavy and Highway

Counties: California Counties of
Los Angeles

Building Construction Projects
Dredging Projects-Includes Dredging Projects (does not include hopper dredge work)
Heavy Construction Projects (excludes water well drilling)
Highway Construction Projects

Modification Number	Publication Date
2	01/30/2026
3	05/18/2026

ASBE0005-002 07/01/2024

	Rates	Fringes
ASBESTOS WORKERS/INSULATOR (INCLUDES THE APPLICATION OF ALL INSULATING MATERIALS, PROTECTIVE COVERINGS, COATINGS, AND FINISHES TO ALL TYPES OF MECHANICAL SYSTEMS)	$ 56.32	26.52
FIRE STOP TECHNICIAN (APPLICATION OF FIRESTOPPING MATERIALS FOR WALL OPENINGS AND PENETRATIONS IN WALLS, FLOORS, CEILINGS AND CURTAIN WALLS)	$ 39.94	20.65

ASBE0005-002 09/01/2024

	Rates	Fringes
ASBESTOS WORKERS/INSULATOR (INCLUDES THE APPLICATION OF ALL INSULATING MATERIALS, PROTECTIVE COVERINGS, COATINGS, AND FINISHES TO ALL TYPES OF MECHANICAL SYSTEMS)	$ 56.32	26.52
FIRE STOP TECHNICIAN (APPLICATION OF FIRESTOPPING MATERIALS FOR WALL OPENINGS AND PENETRATIONS IN WALLS, FLOORS, CEILINGS AND CURTAIN WALLS)	$ 39.94	20.65

ASBE0005-004 07/04/2022

	Rates	Fringes
ASBESTOS REMOVAL WORKER/HAZARDOUS MATERIAL HANDLER (INCLUDES PREPARATION, WETTING, STRIPPING, REMOVAL, SCRAPPING, VACUUMING, BAGGING AND DISPOSING OF ALL INSULATION MATERIALS FROM MECHANICAL SYSTEMS, WHETHER THEY CONTAIN ASBESTOS OR NOT)	$ 23.52	13.37

BOIL0092-003 01/01/2024

	Rates	Fringes
BOILERMAKER	$ 51.98	42.11

BRCA0004-007 05/01/2024

	Rates	Fringes
BRICKLAYER; MARBLE SETTER *THE WAGE SCALE FOR PREVAILING WAGE PROJECTS PERFORMED IN BLYTHE, CHINA LAKE, DEATH VALLEY, FORT IRWIN, TWENTY-NINE PALMS, NEEDLES AND 1-15 CORRIDOR (BARSTOW TO THE NEVADA STATE LINE) WILL BE THREE DOLLARS ($3.00) ABOVE THE STANDARD SAN BERNARDINO/RIVERSIDE COUNTY HOURLY WAGE RATE	$ 45.53	20.29

BRCA0018-004 06/01/2024

	Rates	Fringes
TILE LAYER	$ 51.82	19.32
TILE FINISHER	$ 37.96	13.77
MARBLE FINISHER	$ 43.38	15.36

BRCA0018-010 09/01/2024

	Rates	Fringes
TERRAZZO WORKER/SETTER	$ 49.62	15.26
TERRAZZO FINISHER	$ 42.11	14.67

CARP0213-001 07/01/2025

	Rates	Fringes
CARPENTER: (7) TABLE POWER SAW OPERATOR FOOTNOTE: WORK OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL	$ 52.34	26.18
CARPENTER: (6) SCAFFOLD BUILDER FOOTNOTE: WORK		

OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL.....$ 45.37 25.43

CARPENTER: (5) SAWFILER FOOTNOTE: WORK OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL.....$ 52.34 26.18

CARPENTER: (4) PNEUMATIC NAILER, POWER STAPLER FOOTNOTE: WORK OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL.....$ 52.37 26.18

CARPENTER: (3) PILEDRIVERMEN/DERRICK BARGEMAN, BRIDGE OR DOCK CARPENTER, HEAVY FRAMER, ROCK BARGEMAN OR SCOWMAN, ROCKSLINGER, SHINGLER (COMMERCIAL) FOOTNOTE: WORK OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL. .....$ 52.37 26.18

CARPENTER: (2) MILLWRIGHT FOOTNOTE: WORK OF FORMING IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL.....$ 52.24 26.68

CARPENTER: (1) CARPENTER, CABINET INSTALLER, INSULATION INSTALLER, HARDWOOD FLOOR WORKER AND ACOUSTICAL INSTALLER FOOTNOTE: WORK OF FORMING

IN THE CONSTRUCTION OF OPEN CUT SEWERS OR STORM DRAINS, ON OPERATIONS IN WHICH HORIZONTAL LAGGING IS USED IN CONJUNCTION WITH STEEL H-BEAMS DRIVEN OR PLACED IN PRE- DRILLED HOLES, FOR THAT PORTION OF A LAGGED TRENCH AGAINST WHICH CONCRETE IS POURED, NAMELY, AS A SUBSTITUTE FOR BACK FORMS (WHICH WORK IS PERFORMED BY PILEDRIVERS): $0.13 PER HOUR ADDITIONAL.....$ 52.24 26.18

CARP0213-002 07/01/2025

	Rates	Fringes
DIVER: (4) ASSISTANT TENDER AMOUNTS IN ""RATES' COLUMN ARE PER DAY	$ 418.96	26.18
DIVER: (3) TENDER AMOUNTS IN ""RATES' COLUMN ARE PER DAY	$ 442.96	26.18
DIVER: (2) STANDBY AMOUNTS IN ""RATES' COLUMN ARE PER DAY	$ 450.96	26.18
DIVER: (1) WET AMOUNTS IN ""RATES' COLUMN ARE PER DAY	$ 901.92	26.18

CARP0213-004 07/01/2025

	Rates	Fringes
DRYWALL (STOCKER/SCRAPPER)	$ 21.45	11.27
DRYWALL (DRYWALL INSTALLER/LATHER)	$ 52.24	26.18

CARP0721-001 07/01/2025

	Rates	Fringes
MODULAR FURNITURE INSTALLER	$ 25.00	13.06

ELEC0011-004 06/30/2023

	Rates	Fringes

ELECTRICIAN: INTELLIGENT TRANSPORTATION SYSTEMS STREET LIGHTING, TRAFFIC SIGNALS, CCTV, AND UNDERGROUND SYSTEMS: TECHNICIAN FOOT NOTE: CABLE SPLICER & INSTRUMENT PERSON: RECIEVE 5% ADDITIONAL PER HOUR ABOVE JOURNEYMAN ELECTRICIAN BASIC HOURLY RATE. TUNNEL WORK: 10% ADDITIONAL PER HOUR. SCOPE OF WORK - TRANSPORTATION SYSTEMS TECHNICIAN: DISTRIBUTION OF MATERIAL AT JOB SITE, MANUAL EXCAVATION AND BACKFILL, INSTALLATION OF SYSTEM CONDUITS AND RACEWAYS FOR ELECTRICAL, TELEPHONE, CABLE TELEVISION AND COMMUNICATION SYSTEMS. PULLING, TERMINATING AND SPLICING OF TRAFFIC SIGNAL AND STREET LIGHTING CONDUCTORS AND ELECTRICAL SYSTEMS INCLUDING INTERCONNECT, DETECTOR LOOP, FIBER OPTIC CABLE AND

VIDEO/DATA.....$ 45.60 31.14
ELECTRICIAN: INTELLIGENT TRANSPORTATION SYSTEMS
STREET LIGHTING, TRAFFIC SIGNALS, CCTV ,AND
UNDERGROUND SYSTEMS: JOURNEYMAN TRANSPORTATION
ELECTRICIAN FOOT NOTE: CABLE SPLICER &
INSTRUMENT PERSON: RECIEVE 5% ADDITIONAL PER HOUR
ABOVE JOURNEYMAN ELECTRICIAN BASIC HOURLY RATE.
TUNNEL WORK: 10% ADDITIONAL PER HOUR. SCOPE OF
WORK - TRANSPORTATION SYSTEMS ELECTRICIAN:
INSTALLATION OF STREET LIGHTS AND TRAFFIC
SIGNALS,INCLUDING ELECTRICAL CIRCUITRY,
PROGRAMMABLE CONTROLLERS, PEDESTAL-MOUNTED
ELECTRICAL METER ENCLOSURES AND LAYING OF
PRE-ASSEMBLED MULTI-CONDUCTOR CABLE IN DUCTS,
LAYOUT OF ELECTRICAL SYSTEMS AND COMMUNICATION
INSTALLATION, INCLUDING PROPER POSITION OF TRENCH
DEPTHS AND RADIUS AT DUCT BANKS, LOCATION FOR MAN
HOLES, PULL BOXES, STREET LIGHTS AND TRAFFIC
SIGNALS. INSTALLATION OF UNDERGROUND DUCTS FOR
ELECTRICAL,TELEPHONE, CABLE TELEVISION AND
COMMUNICATION SYSTEMS. PULLING,TERMINATION AND
SPLICING OF TRAFFIC SIGNAL AND STREET LIGHTING
CONDUCTORS AND ELECTRICAL SYSTEMS INCLUDING
INTERCONNECT,DETECTOR LOOP, FIBER OPTIC CABLE AND
VIDEO/CABLE. .....$ 60.80 31.59
ELECTRICIAN: INSIDE ELECTRICAL WORK: JOURNEYMAN
ELECTRICIAN FOOT NOTE: CABLE SPLICER &
INSTRUMENT PERSON: RECIEVE 5% ADDITIONAL PER HOUR
ABOVE JOURNEYMAN ELECTRICIAN BASIC HOURLY RATE.
TUNNEL WORK: 10% ADDITIONAL PER HOUR.....$ 60.80 31.59

ELEC0011-007 01/01/2024

Rates Fringes

COMMUNICATIONS SYSTEM: INSTALLER COMMUNICATIONS &
SYSTEMS WORK (EXCLUDES ANY WORK ON INTELLIGENT
TRANSPORTATION SYSTEMS OR CCTV HIGHWAY SYSTEMS)
SCOPE OF WORK THE WORK COVERED SHALL INCLUDE THE
INSTALLATION, TESTING, SERVICE AND MAINTENANCE, OF
THE FOLLOWING SYSTEMS THAT UTILIZE THE TRANSMISSION
AND/OR TRANSFERENCE OF VOICE, SOUND, VISION AND
DIGITAL FOR COMMERCIAL, EDUCATION, SECURITY AND
ENTERTAINMENT PURPOSES FOR TV MONITORING AND
SURVEILLANCE, BACKGROUND FOREGROUND MUSIC, INTERCOM
AND TELEPHONE INTERCONNECT, INVENTORY CONTROL
SYSTEMS, MICROWAVE TRANSMISSION, MULTI-MEDIA,
MULTIPLEX, NURSE CALL SYSTEM, RADIO PAGE, SCHOOL
INTERCOM AND SOUND, BURGLAR ALARMS AND LOW VOLTAGE
MASTER CLOCK SYSTEMS. A. COMMUNICATION SYSTEMS
THAT TRANSMIT OR RECEIVE INFORMATION AND/OR CONTROL

SYSTEMS THAT ARE INTRINSIC TO THE ABOVE LISTED SYSTEMS SCADA (SUPERVISORY CONTROL/DATA ACQUISITION PCM (PULSE CODE MODULATION) INVENTORY CONTROL SYSTEMS DIGITAL DATA SYSTEMS BROADBAND & BASEBAND AND CARRIERS POINT OF SALE SYSTEMS VSAT DATA SYSTEMS DATA COMMUNICATION SYSTEMS RF AND REMOTE CONTROL SYSTEMS FIBER OPTIC DATA SYSTEMS B. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS BACKGROUND-FOREGROUND MUSIC INTERCOM AND TELEPHONE INTERCONNECT SYSTEMS SOUND AND MUSICAL ENTERTAINMENT SYSTEMS NURSE CALL SYSTEMS RADIO PAGE SYSTEMS SCHOOL INTERCOM AND SOUND SYSTEMS BURGLAR ALARM SYSTEMS LOW-VOLTAGE MASTER CLOCK SYSTEMS MULTI-MEDIA/MULTIPLEX SYSTEMS TELEPHONE SYSTEMS RF SYSTEMS AND ANTENNAS AND WAVE GUIDE C. *FIRE ALARM SYSTEMS-INSTALLATION, WIRE PULLING AND TESTING. D. TELEVISION AND VIDEO SYSTEMS TELEVISION MONITORING AND SURVEILLANCE SYSTEMS VIDEO SECURITY SYSTEMS VIDEO ENTERTAINMENT SYSTEMS VIDEO EDUCATIONAL SYSTEMS CATV AND CCTV E. SECURITY SYSTEMS, PERIMETER SECURITY SYSTEMS, VIBRATION SENSOR SYSTEMS SONAR/INFRARED MONITORING EQUIPMENT, ACCESS CONTROL SYSTEMS, CARD ACCESS SYSTEMS *FIRE ALARM SYSTEMS 1. FIRE ALARMS-IN RACEWAYS: WIRE AND CABLE PULLING IN RACEWAYS PERFORMED AT THE CURRENT ELECTRICIAN WAGE RATE AND FRINGE BENEFITS. 2. FIRE ALARMS-OPEN WIRE SYSTEMS: INSTALLED BY THE TECHNICIAN.....$ 46.47 18.47

ELEC1245-001 01/01/2025

	Rates	Fringes
LINE CONSTRUCTION: (3) GROUNDMAN HOLIDAYS: NEW YEAR'S DAY, M.L. KING DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS DAY, THANKSGIVING DAY AND DAY AFTER THANKSGIVING, CHRISTMAS DAY.....	$ 40.76	21.76
LINE CONSTRUCTION: (2) EQUIPMENT SPECIALIST (OPERATES CRAWLER TRACTORS, COMMERCIAL MOTOR VEHICLES, BACKHOES, TRENCHERS, CRANES (50 TONS AND BELOW), OVERHEAD & UNDERGROUND DISTRIBUTION LINE EQUIPMENT) HOLIDAYS: NEW YEAR'S DAY, M.L. KING DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS DAY, THANKSGIVING DAY AND DAY AFTER THANKSGIVING, CHRISTMAS DAY.....	$ 53.30	22.26
LINE CONSTRUCTION: (1) LINEMAN; CABLE SPLICER HOLIDAYS: NEW YEAR'S DAY, M.L. KING DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS DAY, THANKSGIVING DAY AND DAY AFTER THANKSGIVING, CHRISTMAS DAY.....	$ 70.16	24.71

ELEV0018-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC FOOTNOTE: A. PAID VACATION: EMPLOYER CONTRIBUTES 8% OF REGULAR HOURLY RATE AS VACATION PAY CREDIT FOR EMPLOYEES WITH MORE THAN 5 YEARS OF SERVICE, AND 6% FOR 6 MONTHS TO 5 YEARS OF SERVICE. B. PAID HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, VETERANS' DAY, THANKSGIVING DAY, FRIDAY AFTER THANKSGIVING, AND CHRISTMAS DAY	$ 69.43	38.44

ENGI0012-004 08/01/2025

	Rates	Fringes
OPERATOR, POWER EQUIPMENT: (6) BARGE MATE (DREDGING)	$ 61.34	40.95
OPERATOR, POWER EQUIPMENT: (5) FIREMAN-OILER, DECKHAND, BARGEMAN, LEVEEHAND (DREDGING)	$ 60.73	40.95
OPERATOR, POWER EQUIPMENT: (4) WINCH OPERATOR (STERN WINCH ON DREDGE) (DREDGING)	$ 61.27	40.95
OPERATOR, POWER EQUIPMENT: (3) DECKMATE (DREDGING)	$ 61.82	40.95
OPERATOR, POWER EQUIPMENT: (2) DREDGE DOZER (DREDGING)	$ 61.93	40.95
OPERATOR, POWER EQUIPMENT: (1) LEVERMAN (DREDGING)	$ 67.90	40.95

ENGI0012-024 07/01/2025

	Rates	Fringes
OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 7- Tunnel mole boring machine operator PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator	$ 66.91	33.20
OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 6- Heavy Duty Repairman PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards		

AFB, 29 Palms Marine Base and Camp Pendleton
Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional.
Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 66.79 33.20

OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 5-
Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons) PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton
Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional.
Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 66.68 33.20

OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 4-
Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons) PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 66.46 33.20

OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 3-
Dinkey locomotive or motorperson (up to and including 10 tons) PREMIUM PAY: $10.00 per hour

shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 66.32 33.20

OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 2- Power-driven jumbo form setter operator PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 66.03 33.20

OPERATOR: POWER EQUIPMENT, TUNNEL WORK: GROUP 1- Skiploader (wheel type up to 3/4 yd. without attachment) PREMIUM PAY: $10.00 per hour shall be paid on all Power Equipment Operator work on the followng Military Bases: China Lake Naval Reserve, Vandenberg AFB, Point Arguello, Seely Naval Base, Fort Irwin, Nebo Annex Marine Base, Marine Corp Logistics Base Yermo, Edwards AFB, 29 Palms Marine Base and Camp Pendleton Workers required to suit up and work in a hazardous material environment: $2.00 per hour additional. Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.....$ 65.25 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 13 Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower crane operator (over 300 tons).....$ 70.75 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 12- Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over

200 tons, up to and including 300 tons mrc)
PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL
POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG
MILITARY BASES: CHINA LAKE NAVAL RESERVE,
VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE,
FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP
LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE
BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT
UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT:
$2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND
COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE
CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 69.75 33.20
OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING &
HOISTING: GROUP 11- Crane operator (over 100 tons
and up to and including 200 tons mrc); Derrick
barge operator (over 100 tons up to and including
200 tons mrc); Hoist operator, stiff legs, Guy
derrick or similar type (over 100 tons up to and
including 200 tons mrc); Mobile tower crane
operator (over 100 tons up to and including 200
tons mrc) ; Tower crane operator and tower gantry
PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL
POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG
MILITARY BASES: CHINA LAKE NAVAL RESERVE,
VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE,
FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP
LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE
BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT
UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT:
$2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND
COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE
CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 68.75 33.20
OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING &
HOISTING: GROUP 10- Crane operator (over 50 tons
and up to and including 100 tons mrc); Derrick
barge operator (over 50 tons up to and including
100 tons mrc); Hoist operator, stiff legs, Guy
derrick or similar type (over 50 tons up to and
including 100 tons mrc), Mobile tower crane
operator (over 50 tons, up to and including 100
tons M.R.C.) PREMIUM PAY: $10.00 PER HOUR SHALL
BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE
FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE,
VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE,
FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP
LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE
BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT
UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT:
$2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND
COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE

CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.75 33.20
OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING &
HOISTING: GROUP 9 Crane operator (over 25 tons and
up to and including 50 tons mrc); Derrick barge
operator (over 25 tons up to and including 50 tons
mrc); Highline cableway operator; Hoist operator,
stiff legs, Guy derrick or similar type (over 25
tons up to and including 50 tons mrc); K-crane
operator; Polar crane operator; Self erecting tower
crane operator maximum lifting capacity ten tons
PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL
POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG
MILITARY BASES: CHINA LAKE NAVAL RESERVE,
VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE,
FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP
LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE
BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT
UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT:
$2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND
COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE
CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.75 33.20
OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING &
HOISTING: GROUP 8 Crane operator (up to and
including 25 ton capacity); Crawler transporter
operator; Derrick barge operator (up to and
including 25 ton capacity); Hoist operator, stiff
legs, Guy derrick or similar type (up to and
including 25 ton capacity); Shovel, backhoe,
dragline, clamshell operator (over 7 cu. yds.,
M.R.C.) PREMIUM PAY: $10.00 PER HOUR SHALL BE
PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE
FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE,
VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE,
FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP
LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE
BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT
UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT:
$2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND
COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE
CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.58 33.20
OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING &
HOISTING: GROUP 7 PEDESTAL CRANE OPERATOR; SHOVEL,
BACKHOE, DRAGLINE, CLAMSHELL OPERATOR (OVER 5 CU.
YDS. MRC); TOWER CRANE REPAIR; TUGGER HOIST
OPERATOR (3 DRUM) PREMIUM PAY: $10.00 PER HOUR
SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK
ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL
RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY
NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE,
MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29

PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.41 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 6 Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.29 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 5 HYDRAULIC BOOM TRUCK; STINGER CRANE (AUSTIN-WESTERN OR SIMILAR TYPE); TUGGER HOIST OPERATOR (1 DRUM) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.18 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 4- Bridge-type unloader and turntable operator; Helicopter hoist operator PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP

LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 65.96 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 3- A-frame or winch truck operator; Ross carrier operator (jobsite) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 65.82 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 2- Truck crane oiler PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 65.53 33.20

OPERATOR: POWER EQUIPMENT, CRANES, PILEDRIVING & HOISTING: GROUP 1- Engineer oiler; Fork lift operator (includes loed, lull or similar types) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.
.....$ 64.75 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 25- CONCRETE PUMP OPERATOR-TRUCK MOUNTED;

RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH THE TANDEM PUSH-PULL SYSTEM (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR TYPE, OVER 50 CU. YDS. STRUCK); SPYDER EXCAVATOR OPERATOR, WITH ALL ATTACHMENTS PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR. $ 68.08 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 24- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH THE TANDEM PUSH-PULL SYSTEM (SINGLE ENGINE, OVER 50 YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH THE TANDEM PUSH-PULL SYSTEM (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR, OVER 25 YDS. AND UP TO 50 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.91 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 23- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH THE TANDEM PUSH-PULL SYSTEM (SINGLE ENGINE, CATERPILLAR, EUCLID, ATHEY WAGON AND SIMILAR TYPES WITH ANY AND ALL ATTACHMENTS OVER 25 YDS. AND UP TO AND INCLUDING 50 YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING WITH THE TANDEM PUSH-PULL SYSTEM (MULTIPLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE

BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.79 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 22- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH THE TANDEM PUSH-PULL SYSTEM (SINGLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.68 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 21- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR TYPE, OVER 50 CU. YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.58 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 2-0 RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - SINGLE ENGINE, OVER 50 YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS, AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR, OVER 25 YDS. AND UP TO 50 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE

NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.41 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 19- ROTEX CONCRETE BELT OPERATOR (OR SIMILAR TYPES); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - SINGLE ENGINE, CATERPILLAR, EUCLID, ATHEY WAGON AND SIMILAR TYPES WITH ANY AND ALL ATTACHMENTS OVER 25 YDS.AND UP TO AND INCLUDING 50 CU. YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - MULTIPLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.29 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 18- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING IN TANDEM (SCRAPERS, BELLY DUMPS AND SIMILAR TYPES IN ANY COMBINATION, EXCLUDING COMPACTION UNITS - SINGLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.18 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 17- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR, OVER 50 CU. YDS. STRUCK); TANDEM TRACTOR OPERATOR (OPERATING CRAWLER TYPE TRACTORS IN TANDEM - QUAD 9 AND SIMILAR TYPE) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 67.08 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 16- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (SINGLE ENGINE, OVER 50 YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR, OVER 25 YDS. AND UP TO 50 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.91 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 15- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (SINGLE ENGINE, CATERPILLAR, EUCLID, ATHEY WAGON AND SIMILAR TYPES WITH ANY AND ALL ATTACHMENTS OVER 25 YDS. AND UP TO AND INCLUDING 50 YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR, OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (MULTIPLE ENGINE-UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO

ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.79 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 14- CANAL LINER OPERATOR; CANAL TRIMMER OPERATOR; REMOTE- CONTROL EARTH-MOVING EQUIPMENT OPERATOR (OPERATING A SECOND PIECE OF EQUIPMENT: $1.00 PER HOUR ADDITIONAL); WHEEL EXCAVATOR OPERATOR (OVER 750 CU. YDS.) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.71 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 13- RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR OPERATING EQUIPMENT WITH PUSH-PULL SYSTEM (SINGLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.68 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 12- AUTO GRADER OPERATOR; AUTOMATIC SLIP FORM OPERATOR; DRILLING MACHINE OPERATOR, BUCKET OR AUGER TYPES (CALWELD, AUGER 200 CA OR SIMILAR TYPES - WATSON, AUGER 6000 OR SIMILAR TYPES - HUGHES SUPER DUTY, AUGER 200 OR SIMILAR TYPES - DRILLING DEPTH OF 175' MAXIMUM); HOE RAM OR SIMILAR WITH COMPRESSOR; MASS EXCAVATOR OPERATOR LESS THA 750 CU. YARDS; MECHANICAL FINISHING MACHINE OPERATOR; MOBILE FORM TRAVELER OPERATOR; MOTOR PATROL OPERATOR (MULTI-ENGINE); PIPE MOBILE MACHINE OPERATOR; RUBBER-TIRED EARTH- MOVING EQUIPMENT

OPERATOR (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR TYPE, OVER 50 CU. YDS. STRUCK); RUBBER-TIRED SELF- LOADING SCRAPER OPERATOR (PADDLE-WHEEL-AUGER TYPE SELF-LOADING - TWO (2) OR MORE UNITS) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.58 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 10- DRILLING MACHINE OPERATOR, BUCKET OR AUGER TYPES (CALWELD 200 B BUCKET OR SIMILAR TYPES-WATSON 3000 OR 5000 AUGER OR SIMILAR TYPES-TEXOMA 900 AUGER OR SIMILAR TYPES-DRILLING DEPTH OF 105' MAXIMUM); DUAL DRUM MIXER, DYNAMIC COMPACTOR LDC350 (OR SIMILAR TYPES); MONORAIL LOCOMOTIVE OPERATOR (DIESEL, GAS OR ELECTRIC); MOTOR PATROL-BLADE OPERATOR (SINGLE ENGINE); MULTIPLE ENGINE TRACTOR OPERATOR (EUCLID AND SIMILAR TYPE-EXCEPT QUAD 9 CAT.); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR (SINGLE ENGINE, OVER 50 YDS. STRUCK); PNEUMATIC PIPE RAMMING TOOL AND SIMILAR TYPES; PRESTRESSED WRAPPING MACHINE OPERATOR; RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR (SINGLE ENGINE, OVER 50 YDS. STRUCK); RUBBER TIRED EARTH MOVING EQUIPMENT OPERATOR (MULTIPLE ENGINE, EUCLID, CATERPILLAR AND SIMILAR OVER 25 YDS. AND UP TO 50 YDS. STRUCK), TOWER CRANE REPAIRMAN; TRACTOR LOADER OPERATOR (CRAWLER AND WHEEL TYPE OVER 6-1/2 YDS.); WOODS MIXER OPERATOR (AND SIMILAR PUGMILL EQUIPMENT) PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.41 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 8- ASPHALT OR CONCRETE SPREADING OPERATOR (TAMPING OR FINISHING); ASPHALT PAVING MACHINE OPERATOR

(BARBER GREENE OR SIMILAR TYPE); ASPHALT-RUBBER DISTRIBUTION OPERATOR; BACKHOE OPERATOR (UP TO AND INCLUDING 3/4 YD.), SMALL FORD, CASE OR SIMILAR TYPES; CABLE BUNDLING MACHINE OPERATOR (EXCLUDING HANDHELD); CABLE TRENCHING MACHINE OPERATOR (SPIDER PLOW OR SIMILAR TYPES) CAST-IN-PLACE PIPE LAYING MACHINE OPERATOR; COMBINATION MIXER AND COMPRESSOR OPERATOR (GUNITE WORK); COMPACTOR OPERATOR (SELF-PROPELLED); CONCRETE MIXER OPERATOR (PAVING); CRUSHING PLANT OPERATOR; DRILL DOCTOR; DRILLING MACHINE OPERATOR, BUCKET OR AUGER TYPES (CALWELD 150 BUCKET OR SIMILAR TYPES - WATSON 1500, 2000 2500 AUGER OR SIMILAR TYPES - TEXOMA 700, 800 AUGER OR SIMILAR TYPES - DRILLING DEPTH OF 60' MAXIMUM); ELEVATING GRADER OPERATOR; GRADE CHECKER; GRADALL OPERATOR; GROUTING MACHINE OPERATOR; HEAVY-DUTY REPAIRMAN; HEAVY EQUIPMENT ROBOTICS OPERATOR; KALAMAZOO BALLISTE REGULATOR OR SIMILAR TYPE; KOLMAN BELT LOADER AND SIMILAR TYPE; LE TOURNEAU BLOB COMPACTOR OR SIMILAR TYPE; LOADER OPERATOR (ATHEY, EUCLID, SIERRA AND SIMILAR TYPES); MOBARK CHIPPER OR SIMILAR; OZZIE PADDER OR SIMILAR TYPES; P.C. SLOT SAW; PNEUMATIC CONCRETE PLACING MACHINE OPERATOR (HACKLEY-PRESSWELL OR SIMILAR TYPE); PUMPCRETE GUN OPERATOR; RCM CEMENTING UNIT OPERATOR, RAIL/SWITCH GRINDER OPERATOR (HARSCO OR SIMILAR TYPES) ROCK DRILL OR SIMILAR TYPES; ROTARY DRILL OPERATOR (EXCLUDING CAISSON TYPE); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR (SINGLE ENGINE, CATERPILLAR, EUCLID, ATHEY WAGON AND SIMILAR TYPES WITH ANY AND ALL ATTACHMENTS OVER 25 YDS. UP TO AND INCLUDING 50 CU. YDS. STRUCK); RUBBER-TIRED EARTH-MOVING EQUIPMENT OPERATOR (MULTIPLE ENGINE UP TO AND INCLUDING 25 YDS. STRUCK); RUBBER-TIRED SCRAPER OPERATOR (SELF-LOADING PADDLE WHEEL TYPE-JOHN DEERE, 1040 AND SIMILAR SINGLE UNIT); SELF- PROPELLED CURB AND GUTTER MACHINE OPERATOR; SHUTTLE BUGGY; SKIPLOADER OPERATOR (CRAWLER AND WHEEL TYPE OVER 1-1/2 YDS. UP TO AND INCLUDING 6-1/2 YDS.); SOIL REMEDIATION PLANT OPERATOR; SURFACE HEATERS AND PLANER OPERATOR; TRACTOR COMPRESSOR DRILL COMBINATION OPERATOR; TRACTOR OPERATOR (ANY TYPE LARGER THAN D-5 - 100 FLYWHEEL H.P. AND OVER, OR SIMILAR-BULLDOZER, TAMPER, SCRAPER AND PUSH TRACTOR SINGLE ENGINE); TRACTOR OPERATOR (BOOM ATTACHMENTS), TRAVELING PIPE WRAPPING, CLEANING AND BENDNG MACHINE OPERATOR; TRENCHING MACHINE OPERATOR (OVER 6 FT. DEPTH CAPACITY, MANUFACTURER'S RATING); TRENCHING MACHINE WITH ROAD MINER ATTACHMENT (OVER

6 FT DEPTH CAPACITY): ULTRA HIGH PRESSURE WATERJET CUTTING TOOL SYSTEM MECHANIC; WATER PULL (COMPACTION) OPERATOR PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.29 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 6- ARTICULATING MATERIAL HAULER; ASPHALT PLANT ENGINEER; BATCH PLANT OPERATOR; BIT SHARPENER; CONCRETE JOINT MACHINE OPERATOR (CANAL AND SIMILAR TYPE); CONCRETE PLANER OPERATOR; DANDY DIGGER; DECK ENGINE OPERATOR; DERRICKMAN (OILFIELD TYPE); DRILLING MACHINE OPERATOR, BUCKET OR AUGER TYPES (CALWELD 100 BUCKET OR SIMILAR TYPES - WATSON 1000 AUGER OR SIMILAR TYPES - TEXOMA 330, 500 OR 600 AUGER OR SIMILAR TYPES - DRILLING DEPTH OF 45' MAXIMUM); DRILLING MACHINE OPERATOR; HYDROGRAPHIC SEEDER MACHINE OPERATOR (STRAW, PULP OR SEED), JACKSON TRACK MAINTAINER, OR SIMILAR TYPE; KALAMAZOO SWITCH TAMPER, OR SIMILAR TYPE; MACHINE TOOL OPERATOR; MAGINNIS INTERNAL FULL SLAB VIBRATOR, MECHANICAL BERM, CURB OR GUTTER(CONCRETE OR ASPHALT); MECHANICAL FINISHER OPERATOR (CONCRETE, CLARY-JOHNSON-BIDWELL OR SIMILAR); MICRO TUNNEL SYSTEM (BELOW GROUND); PAVEMENT BREAKER OPERATOR (TRUCK MOUNTED); ROAD OIL MIXING MACHINE OPERATOR; ROLLER OPERATOR (ASPHALT OR FINISH), RUBBER-TIRED EARTH MOVING EQUIPMENT (SINGLE ENGINE, UP TO AND INCLUDING 25 YDS. STRUCK); SELF-PROPELLED TAR PIPELINING MACHINE OPERATOR; SKIPLOADER OPERATOR (CRAWLER AND WHEEL TYPE, OVER 3/4 YD. AND UP TO AND INCLUDING 1-1/2 YDS.); SLIP FORM PUMP OPERATOR (POWER DRIVEN HYDRAULIC LIFTING DEVICE FOR CONCRETE FORMS); TRACTOR OPERATOR-BULLDOZER, TAMPER-SCRAPER (SINGLE ENGINE, UP TO 100 H.P. FLYWHEEL AND SIMILAR TYPES, UP TO AND INCLUDING D-5 AND SIMILAR TYPES); TUGGER HOIST OPERATOR (1 DRUM); ULTRA HIGH PRESSURE WATERJET CUTTING TOOL SYSTEM OPERATOR; VACUUM BLASTING MACHINE OPERATOR PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB,

POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 66.18 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 4- ASPHALT PLANT FIREMAN; BACKHOE OPERATOR (MINI-MAX OR SIMILAR TYPE); BORING MACHINE OPERATOR; BOXMAN OR MIXERMAN (ASPHALT OR CONCRETE); CHIP SPREADING MACHINE OPERATOR; CONCRETE CLEANING DECONTAMINATION MACHINE OPERATOR; CONCRETE PUMP OPERATOR (SMALL PORTABLE);DIRECT PUSH OPERATOR (GEOPROBE OR SIMILAR TYPES) DRILLING MACHINE OPERATOR, SMALL AUGER TYPES (TEXOMA SUPER ECONOMATIC OR SIMILAR TYPES - HUGHES 100 OR 200 OR SIMILAR TYPES - DRILLING DEPTH OF 30' MAXIMUM); EQUIPMENT GREASER (GREASE TRUCK); GUARD RAIL POST DRIVER OPERATOR; HIGHLINE CABLEWAY SIGNALMAN; HYDRA-HAMMER-AERO STOMPER; MICRO TUNNELING (ABOVE GROUND TUNNEL); POWER CONCRETE CURING MACHINE OPERATOR; POWER CONCRETE SAW OPERATOR; POWER-DRIVEN JUMBO FORM SETTER OPERATOR; POWER SWEEPER OPERATOR; ROCK WHEEL SAW/TRENCHER; ROLLER OPERATOR (COMPACTING); SCREED OPERATOR (ASPHALT OR CONCRETE); TRENCHING MACHINE OPERATOR (UP TO 6 FT.); VACUUM OR MUCH TRUCK PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 65.96 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 3- ASPHALT-RUBBER BLEND OPERATOR; BOBCAT OR SIMILAR TYPE (SKID STEER); EQUIPMENT GREASER (RACK); FORD FERGUSON (WITH DRAGTYPE ATTACHMENTS); HELICOPTER RADIOMAN (GROUND); STATIONARY PIPE WRAPPING AND CLEANING MACHINE OPERATOR PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE

BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 64.67 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 2- ASPHALT-RUBBER PLANT OPERATOR (NURSE TANK OPERATOR);COIL TUBING RIG OPERATOR, CONCRETE MIXER OPERATOR-SKIP TYPE; CONVEYOR OPERATOR; FIREMAN; FORKLIFT OPERATOR (INCLUDES LOED, LULL OR SIMILAR TYPES OVER 5 TONS; HYDROSTATIC PUMP OPERATOR; OILER CRUSHER (ASPHALT OR CONCRETE PLANT); PETROMAT LAYDOWN MACHINE; PJU SIDE DUM JACK; SCREENING AND CONVEYOR MACHINE OPERATOR (OR SIMILAR TYPES); SKIPLOADER (WHEEL TYPE UP TO 3/4 YD. WITHOUT ATTACHMENT); TAR POT FIREMAN; TEMPORARY HEATING PLANT OPERATOR; TRENCHING MACHINE OILER PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 64.18 33.20

OPERATOR: POWER EQUIPMENT, ALL OTHER WORK: GROUP 1- BARGEMAN; BRAKEMAN; COMPRESSOR OPERATOR; DITCH WITCH, WITH SEAT OR SIMILAR TYPE EQUIPMENT; ELEVATOR OPERATOR-INSIDE; ENGINEER OILER; FORKLIFT OPERATOR (INCLUDES LOED, LULL OR SIMILAR TYPES UNDER 5 TONS; GENERATOR OPERATOR; GENERATOR, PUMP OR COMPRESSOR PLANT OPERATOR; PUMP OPERATOR; SIGNALMAN; SWITCHMAN PREMIUM PAY: $10.00 PER HOUR SHALL BE PAID ON ALL POWER EQUIPMENT OPERATOR WORK ON THE FOLLOWNG MILITARY BASES: CHINA LAKE NAVAL RESERVE, VANDENBERG AFB, POINT ARGUELLO, SEELY NAVAL BASE, FORT IRWIN, NEBO ANNEX MARINE BASE, MARINE CORP LOGISTICS BASE YERMO, EDWARDS AFB, 29 PALMS MARINE BASE AND CAMP PENDLETON WORKERS REQUIRED TO SUIT UP AND WORK IN A HAZARDOUS MATERIAL ENVIRONMENT: $2.00 PER HOUR ADDITIONAL. COMBINATION MIXER AND COMPRESSOR OPERATOR ON GUNITE WORK SHALL BE CLASSIFIED AS A CONCRETE MOBILE MIXER OPERATOR.....$ 63.40 33.20

IRON0433-006 01/01/2025

	Rates	Fringes
IRONWORKER (ORNAMENTAL, REINFORCING AND STRUCTURAL)	$ 50.70	35.15
IRONWORKER (FENCE ERECTOR)	$ 45.78	26.51

LABO0300-001 11/01/2025

	Rates	Fringes
BRICK TENDER	$ 42.60	22.13

LABO0300-003 07/01/2025

	Rates	Fringes
LABORER, TUNNEL: GROUP 4: DIAMOND DRILLER; SANDBLASTER; SHAFT AND RAISE WORK	$ 55.07	25.74
LABORER, TUNNEL: GROUP 3: BLASTER, DRILLER, POWDER PERSON; CHEMICAL GROUT JET PERSON; CHERRY PICKER PERSON; GROUT GUN PERSON; GROUT MIXER PERSON; GROUT PUMP PERSON; JACKLEG MINER; JUMBO PERSON; KEMPER AND OTHER PNEUMATIC CONCRETE PLACER OPERATOR; MINER, TUNNEL (HAND OR MACHINE); NOZZLE PERSON; OPERATING OF TROWELING AND/OR GROUTING MACHINES; POWDER PERSON (PRIMER HOUSE); PRIMER PERSON; SANDBLASTER; SHOTCRETE PERSON; STEEL FORM RAISER AND SETTER; TIMBER PERSON, RETIMBER PERSON, WOOD OR STEEL; TUNNEL CONCRETE FINISHER	$ 54.38	25.74
LABORER, TUNNEL: GROUP 2: CHUCKTENDER, CABLETENDER; LOADING AND UNLOADING AGITATOR CARS;; VIBRATOR PERSON, JACK HAMMER, PNEUMATIC TOOLS (EXCEPT DRILLER); BULL GANG MUCKER, TRACK PERSON; CONCRETE CREW, INCLUDING RODDER AND SPREADER	$ 53.92	25.74
LABORER, TUNNEL: GROUP 1: BATCH PLANT LABORER; CHANGEHOUSE PERSON; DUMP PERSON; DUMP PERSON (OUTSIDE); SWAMPER (BRAKE PERSON AND SWITCH PERSON ON TUNNEL WORK); TUNNEL MATERIALS HANDLING PERSON; NIPPER; POT TENDER, USING MASTIC OR OTHER MATERIALS (FOR EXAMPLE, BUT NOT BY WAY OF LIMITATION, SHOTCRETE, ETC.)	$ 53.60	25.74
LABORER GROUP 5: BLASTER POWDER, ALL WORK OF LOADING HOLES, PLACING AND BLASTING OF ALL POWDER AND EXPLOSIVES OF WHATEVER TYPE, REGARDLESS OF METHOD USED FOR SUCH LOADING AND PLACING; DRILLER: ALL POWER DRILLS, EXCLUDING JACKHAMMER, WHETHER CORE, DIAMOND, WAGON, TRACK, MULTIPLE UNIT, AND ANY AND ALL OTHER TYPES OF MECHANICAL DRILLS WITHOUT REGARD TO THE FORM OF MOTIVE POWER; TOXIC WASTE REMOVAL	$ 49.48	25.95
LABORER GROUP 4: ASPHALT RAKER, LUTE PERSON, IRONER, ASPHALT DUMP PERSON, AND ASPHALT SPREADER		

BOXES (ALL TYPES); CONCRETE CORE CUTTER (WALLS, FLOORS OR CEILINGS), GRINDER OR SANDER; CONCRETE SAW PERSON, CUTTING WALLS OR FLAT WORK, SCORING OLD OR NEW CONCRETE; CRIBBER, SHORER, LAGGING, SHEETING AND TRENCH BRACING, HAND-GUIDED LAGGING HAMMER; HEAD ROCK SLINGER; LABORER, ASPHALT- RUBBER DISTRIBUTOR BOOT PERSON; LASER BEAM IN CONNECTION WITH LABORERS' WORK; OVERSIZE CONCRETE VIBRATOR OPERATOR, 70 LBS. AND OVER; PIPELAYER PERFORMING ALL SERVICES IN THE LAYING AND INSTALLATION OF PIPE FROM THE POINT OF RECEIVING PIPE IN THE DITCH UNTIL COMPLETION OF OPERATION, INCLUDING ANY AND ALL FORMS OF TUBULAR MATERIAL, WHETHER PIPE, METALLIC OR NON-METALLIC, CONDUIT AND ANY OTHER STATIONARY TYPE OF TUBULAR DEVICE USED FOR THE CONVEYING OF ANY SUBSTANCE OR ELEMENT, WHETHER WATER, SEWAGE, SOLID GAS, AIR, OR OTHER PRODUCT WHATSOEVER AND WITHOUT REGARD TO THE NATURE OF MATERIAL FROM WHICH THE TUBULAR MATERIAL IS FABRICATED; NO-JOINT PIPE AND STRIPPING OF SAME; PREFABRICATED MANHOLE INSTALLER; SANDBLASTER (NOZZLE PERSON), WATER BLASTING, PORTA SHOT-BLAST.....$ 49.13 25.95

LABORER GROUP 3: BUGGYMOBILE PERSON; CONCRETE CUTTING TORCH; CONCRETE PILE CUTTER; DRILLER, JACKHAMMER, 2-1/2 FT. DRILL STEEL OR LONGER; DRI-PAK-IT MACHINE; GAS, OIL AND/OR WATER PIPELINE WRAPPER, 6-IN. PIPE AND OVER, BY ANY METHOD, INSIDE AND OUT; HIGH SCALER (INCLUDING DRILLING OF SAME); HYDRO SEEDER AND SIMILAR TYPE; IMPACT WRENCH MULTI-PLATE; KETTLE PERSON, POT PERSON AND WORKERS APPLYING ASPHALT, LAY-KOLD, CREOSOTE, LIME CAUSTIC AND SIMILAR TYPE MATERIALS (""APPLYING"" MEANS APPLYING, DIPPING, BRUSHING OR HANDLING OF SUCH MATERIALS FOR PIPE WRAPPING AND WATERPROOFING); OPERATOR OF PNEUMATIC, GAS, ELECTRIC TOOLS, VIBRATING MACHINE, PAVEMENT BREAKER, AIR BLASTING, COME-ALONGS, AND SIMILAR MECHANICAL TOOLS NOT SEPARATELY CLASSIFIED HEREIN; PIPELAYER'S BACKUP PERSON, COATING, GROUTING, MAKING OF JOINTS, SEALING, CAULKING, DIAPERING AND INCLUDING RUBBER GASKET JOINTS, POINTING AND ANY AND ALL OTHER SERVICES; ROCK SLINGER; ROTARY SCARIFIER OR MULTIPLE HEAD CONCRETE CHIPPING SCARIFIER; STEEL HEADERBOARD AND GUIDELINE SETTER; TAMPER, BARKO, WACKER AND SIMILAR TYPE; TRENCHING MACHINE, HAND-PROPELLED.....$ 47.58 25.95

LABORER GROUP 2: ASPHALT SHOVELER; CEMENT DUMPER (ON 1 YD. OR LARGER MIXER AND HANDLING BULK CEMENT); CESSPOOL DIGGER AND INSTALLER; CHUCKTENDER; CHUTE HANDLER, POURING CONCRETE, THE

HANDLING OF THE CHUTE FROM READYMIX TRUCKS, SUCH AS WALLS, SLABS, DECKS, FLOORS, FOUNDATION, FOOTINGS, CURBS, GUTTERS AND SIDEWALKS; CONCRETE CURER, IMPERVIOUS MEMBRANE AND FORM OILER; CUTTING TORCH OPERATOR (DEMOLITION); FINE GRADER, HIGHWAYS AND STREET PAVING, AIRPORT, RUNWAYS AND SIMILAR TYPE HEAVY CONSTRUCTION; GAS, OIL AND/OR WATER PIPELINE WRAPPER - POT TENDER AND FORM PERSON; GUINEA CHASER; HEADERBOARD PERSON - ASPHALT; LABORER, PACKING ROD STEEL AND PANS; MEMBRANE VAPOR BARRIER INSTALLER; POWER BROOM SWEEPER (SMALL); RIPRAP STONEPAVER, PLACING STONE OR WET SACKED CONCRETE; ROTO SCRAPER AND TILLER; SANDBLASTER (POT TENDER); SEPTIC TANK DIGGER AND INSTALLER(LEAD); TANK SCALER AND CLEANER; TREE CLIMBER, FALLER, CHAIN SAW OPERATOR, PITTSBURGH CHIPPER AND SIMILAR TYPE BRUSH SHREDDER; UNDERGROUND LABORER, INCLUDING CAISSON BELLOWER.....$ 47.03 25.95

LABORER GROUP 1: CLEANING AND HANDLING OF PANEL FORMS; CONCRETE SCREEDING FOR ROUGH STRIKE-OFF; CONCRETE, WATER CURING; DEMOLITION LABORER, THE CLEANING OF BRICK IF PERFORMED BY A WORKER PERFORMING ANY OTHER PHASE OF DEMOLITION WORK, AND THE CLEANING OF LUMBER; FIRE WATCHER, LIMBER, BRUSH LOADER, PILER AND DEBRIS HANDLER; FLAG PERSON; GAS, OIL AND/OR WATER PIPELINE LABORER; LABORER, ASPHALT-RUBBER MATERIAL LOADER; LABORER, GENERAL OR CONSTRUCTION; LABORER, GENERAL CLEAN-UP; LABORER, LANDSCAPING; LABORER, JETTING; LABORER, TEMPORARY WATER AND AIR LINES; MATERIAL HOSE OPERATOR (WALLS, SLABS, FLOORS AND DECKS); PLUGGING, FILLING OF SHEE BOLT HOLES; DRY PACKING OF CONCRETE; RAILROAD MAINTENANCE, REPAIR TRACK PERSON AND ROAD BEDS; STREETCAR AND RAILROAD CONSTRUCTION TRACK LABORERS; RIGGING AND SIGNALING; SCALER; SLIP FORM RAISER; TAR AND MORTAR; TOOL CRIB OR TOOL HOUSE LABORER; TRAFFIC CONTROL BY ANY METHOD; WINDOW CLEANER; WIRE MESH PULLING - ALL CONCRETE POURING OPERATIONS......$ 46.48 25.95

LABO0300-005 07/01/2025

	Rates	Fringes
ASBESTOS REMOVAL LABORER SCOPE OF WORK: INCLUDES SITE MOBILIZATION, INITIAL SITE CLEANUP, SITE PREPARATION, REMOVAL OF ASBESTOS-CONTAINING MATERIAL AND TOXIC WASTE, ENCAPSULATION, ENCLOSURE AND DISPOSAL OF ASBESTOS- CONTAINING MATERIALS AND TOXIC WASTE BY HAND OR WITH EQUIPMENT OR MACHINERY; SCAFFOLDING, FABRICATION OF TEMPORARY WOODEN BARRIERS AND ASSEMBLY OF DECONTAMINATION STATIONS...	$ 46.48	25.93

LABO0345-001 07/01/2025

	Rates	Fringes
LABORER, GUNITE: GROUP 3 REBOUNDMEN FOOTNOTE: GUNITE PREMIUM PAY: WORKERS WORKING FROM A BOSN'N'S CHAIR OR SUSPENDED FROM A ROPE OR CABLE SHALL RECEIVE 40 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES. WORKERS DOING GUNITE AND/OR SHOTCRETE WORK IN A TUNNEL SHALL RECEIVE 35 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES, PAID ON A PORTAL-TO-PORTAL BASIS. ANY WORK PERFORMED ON, IN OR ABOVE ANY SMOKE STACK, SILO, STORAGE ELEVATOR OR SIMILAR TYPE OF STRUCTURE, WHEN SUCH STRUCTURE IS IN EXCESS OF 75'-0"" ABOVE BASE LEVEL AND WHICH WORK MUST BE PERFORMED IN WHOLE OR IN PART MORE THAN 75'-0"" ABOVE BASE LEVEL, THAT WORK PERFORMED ABOVE THE 75'-0"" LEVEL SHALL BE COMPENSATED FOR AT 35 CENTS PER HOUR ABOVE THE APPLICABLE CLASSIFICATION WAGE RATE	$ 51.39	23.77
LABORER, GUNITE: GROUP 2 GUNMEN FOOTNOTE: GUNITE PREMIUM PAY: WORKERS WORKING FROM A BOSN'N'S CHAIR OR SUSPENDED FROM A ROPE OR CABLE SHALL RECEIVE 40 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES. WORKERS DOING GUNITE AND/OR SHOTCRETE WORK IN A TUNNEL SHALL RECEIVE 35 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES, PAID ON A PORTAL-TO-PORTAL BASIS. ANY WORK PERFORMED ON, IN OR ABOVE ANY SMOKE STACK, SILO, STORAGE ELEVATOR OR SIMILAR TYPE OF STRUCTURE, WHEN SUCH STRUCTURE IS IN EXCESS OF 75'-0"" ABOVE BASE LEVEL AND WHICH WORK MUST BE PERFORMED IN WHOLE OR IN PART MORE THAN 75'-0"" ABOVE BASE LEVEL, THAT WORK PERFORMED ABOVE THE 75'-0"" LEVEL SHALL BE COMPENSATED FOR AT 35 CENTS PER HOUR ABOVE THE APPLICABLE CLASSIFICATION WAGE RATE	$ 54.93	23.77
LABORER, GUNITE: GROUP 1 RODMEN, NOZZLEMEN FOOTNOTE: GUNITE PREMIUM PAY: WORKERS WORKING FROM A BOSN'N'S CHAIR OR SUSPENDED FROM A ROPE OR CABLE SHALL RECEIVE 40 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES. WORKERS DOING GUNITE AND/OR SHOTCRETE WORK IN A TUNNEL SHALL RECEIVE 35 CENTS PER HOUR ABOVE THE FOREGOING APPLICABLE CLASSIFICATION RATES, PAID ON A PORTAL-TO-PORTAL BASIS. ANY WORK PERFORMED ON, IN OR ABOVE ANY SMOKE STACK, SILO, STORAGE ELEVATOR OR SIMILAR TYPE OF STRUCTURE, WHEN SUCH STRUCTURE IS IN EXCESS OF 75'-0"" ABOVE BASE LEVEL AND WHICH		

WORK MUST BE PERFORMED IN WHOLE OR IN PART MORE THAN 75'-0"" ABOVE BASE LEVEL, THAT WORK PERFORMED ABOVE THE 75'-0"" LEVEL SHALL BE COMPENSATED FOR AT 35 CENTS PER HOUR ABOVE THE APPLICABLE CLASSIFICATION WAGE RATE.....$ 55.88 23.77

LABO1184-001 07/01/2025

	Rates	Fringes
LABORERS:, STRIPING/SLURRY SEAL: GROUP 4 STRIPER: LAYOUT AND APPLICATION OF TRAFFIC STRIPES AND MARKINGS; HOT THERMO PLASTIC; TAPE TRAFFIC STRIPES AND MARKINGS, INCLUDING TRAFFIC CONTROL; OPERATION OF ALL RELATED MACHINERY AND EQUIPMENT.....	$ 54.35	23.97
LABORERS:, STRIPING/SLURRY SEAL: GROUP 3 TRAFFIC DELINEATING DEVICE APPLICATOR: LAYOUT AND APPLICATION OF PAVEMENT MARKERS, DELINEATING SIGNS, RUMBLE AND TRAFFIC BARS, ADHESIVES, GUIDE MARKERS, OTHER TRAFFIC DELINEATING DEVICES INCLUDING TRAFFIC CONTROL. THIS CATEGORY INCLUDES ALL TRAFFIC RELATED SURFACE PREPARATION (SANDBLASTING, WATERBLASTING, GRINDING) AS PART OF THE APPLICATION PROCESS. TRAFFIC PROTECTIVE DELINEATING SYSTEM INSTALLER: REMOVES, RELOCATES, INSTALLS, PERMANENTLY AFFIXED ROADSIDE AND PARKING DELINEATION BARRICADES, FENCING, CABLE ANCHOR, GUARD RAIL, REFERENCE SIGNS, MONUMENT MARKERS; OPERATION OF ALL RELATED MACHINERY AND EQUIPMENT; POWER BROOM SWEEPER.....	$ 52.61	23.97
LABORERS:, STRIPING/SLURRY SEAL: GROUP 2 TRAFFIC SURFACE ABRASIVE BLASTER; POT TENDER - REMOVAL OF ALL TRAFFIC LINES AND MARKINGS BY ANY METHOD (SANDBLASTING, WATERBLASTING, GRINDING, ETC.) AND PREPARATION OF SURFACE FOR COATINGS. TRAFFIC CONTROL PERSON: CONTROLLING AND DIRECTING TRAFFIC THROUGH BOTH CONVENTIONAL AND MOVING LANE CLOSURES; OPERATION OF ALL RELATED MACHINERY AND EQUIPMENT....	$ 50.60	23.97
LABORERS:, STRIPING/SLURRY SEAL: GROUP 1 PROTECTIVE COATING, PAVEMENT SEALING, INCLUDING REPAIR AND FILLING OF CRACKS BY ANY METHOD ON ANY SURFACE IN PARKING LOTS, GAME COURTS AND PLAYGROUNDS; CARSTOPS; OPERATION OF ALL RELATED MACHINERY AND EQUIPMENT; EQUIPMENT REPAIR TECHNICIAN.....	$ 49.30	23.97
LABORERS: HORIZONTAL DIRECTIONAL DRILLING: (4) ELECTRONIC TRACKING LOCATOR.....	$ 51.96	20.86
LABORERS: HORIZONTAL DIRECTIONAL DRILLING: (3) HORIZONTAL DIRECTIONAL DRILL OPERATOR.....	$ 49.96	20.86
LABORERS: HORIZONTAL DIRECTIONAL DRILLING: (2) VEHICLE OPERATOR/HAULER.....	$ 48.11	20.86
LABORERS: HORIZONTAL DIRECTIONAL DRILLING: (1) DRILLING CREW LABORER.....	$ 47.94	20.86

LABO1414-001 08/06/2025

	Rates	Fringes
LABORER: PLASTER TENDER WORK ON A SWING STAGE SCAFFOLD: $1.00 PER HOUR ADDITIONAL	$ 48.72	25.97
LABORER: PLASTER CLEAN-UP LABORER WORK ON A SWING STAGE SCAFFOLD: $1.00 PER HOUR ADDITIONAL	$ 46.17	25.97

PAIN0036-001 07/01/2023

	Rates	Fringes
PAINTERS: INCLUDING LEAD ABATEMENT: (2) ALL OTHER WORK	$ 38.52	18.64

PAIN0036-006 09/01/2024

	Rates	Fringes
DRYWALL FINISHER/TAPER (REMAINDER OF LOS ANGELES COUNTY)	$ 49.33	26.82
DRYWALL FINISHER/TAPER (ANTELOPE VALLEY NORTH OF THE FOLLOWING BOUNDARY: KERN COUNTY LINE TO HWY. #5, SOUTH ON HWY. #5 TO HWY. N2, EAST ON N2 TO PALMDALE BLVD., TO HWY. #14, SOUTH TO HWY. #18, EAST TO HWY. #395)	$ 45.20	26.82

PAIN0036-015 01/01/2025

	Rates	Fringes
GLAZIER FOOTNOTE: ADDITIONAL $1.25 PER HOUR FOR WORK IN A CONDOR, FROM THE THIRD (3RD) FLOOR AND UP ADDITIONAL $1.25 PER HOUR FOR WORK ON THE OUTSIDE OF THE BUILDING FROM A SWING STAGE OR ANY SUSPENDED CONTRIVANCE, FROM THE GROUND UP	$ 53.05	30.64

PAIN1247-002 01/01/2025

	Rates	Fringes
SOFT FLOOR LAYER	$ 45.15	19.43

PLAS0200-009 08/03/2022

	Rates	Fringes
PLASTERER	$ 47.37	19.64

PLAS0500-002 07/01/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 47.70	27.07

PLUM0016-001 09/01/2025

	Rates	Fringes
PLUMBER/PIPEFITTER (WORK ONLY ON STRIP MALLS, LIGHT COMMERCIAL, TENANT IMPROVEMENT AND REMODEL WORK)	$ 44.29	24.16
PLUMBER/PIPEFITTER (ALL OTHER WORK EXCEPT WORK ON NEW ADDITIONS AND REMODELING OF BARS, RESTAURANT, STORES AND COMMERCIAL BUILDINGS NOT TO EXCEED 5,000 SQ. FT. OF FLOOR SPACE AND WORK ON STRIP MALLS, LIGHT COMMERCIAL, TENANT IMPROVEMENT AND REMODEL WORK)	$ 61.73	26.81
PLUMBER/PIPEFITTER (WORK ONLY ON NEW ADDITIONS AND REMODELING OF BARS, RESTAURANT, STORES AND COMMERCIAL BUILDINGS NOT TO EXCEED 5,000 SQ. FT. OF FLOOR SPACE)	$ 59.85	25.83

PLUM0345-001 09/01/2025

	Rates	Fringes
PLUMBER (SEWER & STORM DRAIN WORK)	$ 48.84	23.58
PLUMBER (LANDSCAPE/IRRIGATION FITTER)	$ 44.75	26.20

ROOF0036-002 08/01/2025

	Rates	Fringes
ROOFER FOOTNOTE: PITCH PREMIUM: WORK ON WHICH EMPLOYEES ARE EXPOSED TO PITCH FUMES OR REQUIRED TO HANDLE PITCH, PITCH BASE OR PITCH IMPREGNATED PRODUCTS, OR ANY MATERIAL CONTAINING COAL TAR PITCH, THE ENTIRE ROOFING CREW SHALL RECEIVE $1.75 PER HOUR ""PITCH PREMIUM"" PAY	$ 52.63	20.73

SFCA0669-013 01/01/2026

	Rates	Fringes
SPRINKLER FITTER (DOES NOT INCLUDE THE CITY OF POMONA, CATALINA ISLAND, AND THAT PART OF LOS ANGELES COUNTY WITHIN 25 MILES OF THE CITY LIMITS OF LOS ANGELES:)	$ 50.79	29.80

SFCA0709-005 09/01/2025

	Rates	Fringes
SPRINKLER FITTER: FIRE (THE CITY OF POMOMA, CATALINA ISLAND, AND THAT PART OF LOS ANGELES COUNTY WITHIN 25 MILES OF THE CITY LIMITS OF LOS ANGELES:)	$ 58.60	33.65

SHEE0105-002 01/01/2025

	Rates	Fringes
SHEET METAL WORKER: (1) LIGHT COMMERCIAL: WORK ON GENERAL SHEET METAL AND HEATING AND AC UP TO 4000 SQ FT. (LOS ANGELES (SOUTH OF A STRAIGHT LINE BETWEEN GORMAN AND BIG PINES INCLUDING CATALINA ISLAND))	$ 35.57	10.63

SHEE0105-003 01/01/2025

	Rates	Fringes
SHEET METAL WORKER: (1) COMMERCIAL - NEW CONSTRUCTION AND REMODEL WORK (LOS ANGELES (SOUTH OF A STRAIGHT LINE DRAWN BETWEEN GORMAN AND BIG PINES)AND CATALINA ISLAND, INYO, KERN (NORTHEAST PART, EAST OF HWY 395), MONO ORANGE, RIVERSIDE, AND SAN BERNARDINO COUNTIES)	$ 59.31	30.43

SHEE0105-004 07/01/2023

	Rates	Fringes
SHEET METAL WORKER (KERN (EXCLUDING PORTION EAST OF HWY 395) & LOS ANGELES (NORTH OF A STRAIGHT LINE DRAWN BETWEEN GORMAN AND BIG PINES INCLUDING CITIES OF LANCASTER AND PALMDALE) COUNTIES)	$ 45.98	29.24

TEAM0011-002 07/01/2025

	Rates	Fringes
TRUCK DRIVER GROUP 12 BOOM TRUCK 17K AND ABOVE WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB]	$ 44.05	35.69
TRUCK DRIVER GROUP 11 WATER PULL - TWIN ENGINE; WATER PULL - TWIN ENGINE WITH ATTACHMENTS; WINCH TRUCK DRIVER - $1.25 ADDITIONAL WHEN OPERATING WINCH OR SIMILAR SPECIAL ATTACHMENTS WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB]	$ 43.62	35.69
TRUCK DRIVER GROUP 10 DUMP TRUCK - 50 YDS. OR MORE WATER LEVEL; WATER PULL - SINGLE ENGINE WITH		

ATTACHMENT WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB].....$ 43.12 35.69

TRUCK DRIVER GROUP 9 TRUCK REPAIR PERSON/WELDER; LOW BED DRIVER, 9 AXLES OR OVER WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB].....$ 42.82 35.69

TRUCK DRIVER GROUP 8 DUMP TRUCK, 25 YDS. TO 49 YDS. WATER LEVEL; TRUCK REPAIR PERSON; WATER PULL - SINGLE ENGINE; WELDER WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB].....$ 42.62 35.69

TRUCK DRIVER GROUP 7.....$ 42.37 35.69

TRUCK DRIVER GROUP 6 TRANSIT MIX TRUCK, 3 YDS. OR MORE; DUMPCRETE TRUCK, 6-1/2 YDS. WATER LEVEL AND OVER; VEHICLE OR COMBINATION OF VEHICLES - 4 OR MORE AXLES; OIL SPREADER TRUCK; DUMP TRUCK, 16 YDS. TO 25 YDS. WATER LEVEL WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB]...$ 42.12 35.69

TRUCK DRIVER GROUP 5 WATER TRUCK, 3 OR MORE AXLES; TRUCK GREASER AND TIRE PERSON ($0.50 ADDITIONAL FOR TIRE PERSON); PIPELINE AND UTILITY WORKING TRUCK DRIVER, INCLUDING WINCH TRUCK AND PLASTIC FUSION, LIMITED TO PIPELINE AND UTILITY WORK; SLURRY TRUCK DRIVER WORK ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB].....$ 42.09 35.69

TRUCK DRIVER GROUP 4 DRIVER OF TRANSIT MIX TRUCK,

UNDER 3 YDS.; DUMPCRETE TRUCK, LESS THAN 6-1/2 YDS.
WATER LEVEL WORK ON ALL MILITARY BASES: PREMIUM
PAY: $3.00 PER HOUR ADDITIONAL. [29 PALMS MARINE
BASE, CAMP ROBERTS, CHINA LAKE, EDWARDS AFB, EL
CENTRO NAVAL FACILITY, FORT IRWIN, MARINE CORPS
LOGISTICS BASE AT NEBO & YERMO, MOUNTAIN WARFARE
TRAINING CENTER, BRIDGEPORT, POINT ARGUELLO,
POINT CONCEPTION, VANDENBERG AFB].....$ 42.06 35.69
TRUCK DRIVER GROUP 3 DRIVER OF VEHICLE OR
COMBINATION OF VEHICLES - 3 AXLES; BOOT PERSON;
CEMENT MASON DISTRIBUTION TRUCK; FUEL TRUCK
DRIVER; WATER TRUCK - 2 AXLE; DUMP TRUCK, LESS THAN
16 YDS. WATER LEVEL; EROSION CONTROL DRIVER WORK
ON ALL MILITARY BASES: PREMIUM PAY: $3.00 PER
HOUR ADDITIONAL. [29 PALMS MARINE BASE, CAMP
ROBERTS, CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL
FACILITY, FORT IRWIN, MARINE CORPS LOGISTICS BASE
AT NEBO & YERMO, MOUNTAIN WARFARE TRAINING CENTER,
BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION,
VANDENBERG AFB].....$ 41.87 35.69
TRUCK DRIVER GROUP 2 DRIVER OF VEHICLE OR
COMBINATION OF VEHICLES - 2 AXLES; TRAFFIC CONTROL
PILOT CAR EXCLUDING MOVING HEAVY EQUIPMENT PERMIT
LOAD; TRUCK MOUNTED BROOM WORK ON ALL MILITARY
BASES: PREMIUM PAY: $3.00 PER HOUR ADDITIONAL.
[29 PALMS MARINE BASE, CAMP ROBERTS, CHINA LAKE,
EDWARDS AFB, EL CENTRO NAVAL FACILITY, FORT IRWIN,
MARINE CORPS LOGISTICS BASE AT NEBO & YERMO,
MOUNTAIN WARFARE TRAINING CENTER, BRIDGEPORT,
POINT ARGUELLO, POINT CONCEPTION, VANDENBERG AFB]...$ 41.74 35.69
TRUCK DRIVER GROUP 1 TRUCK DRIVER WORK ON ALL
MILITARY BASES: PREMIUM PAY: $3.00 PER HOUR
ADDITIONAL. [29 PALMS MARINE BASE, CAMP ROBERTS,
CHINA LAKE, EDWARDS AFB, EL CENTRO NAVAL FACILITY,
FORT IRWIN, MARINE CORPS LOGISTICS BASE AT NEBO &
YERMO, MOUNTAIN WARFARE TRAINING CENTER,
BRIDGEPORT, POINT ARGUELLO, POINT CONCEPTION,
VANDENBERG AFB].....$ 41.59 35.69

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide

employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than SU , UAVG , SA , or SC denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for

this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The SU identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

SU wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The SA identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the SA identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via

email to dba.reconsideration@dol.gov or by mail to:
Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210
The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:
Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"