

**OPERATIONS AND MAINTENANCE AGREEMENT BETWEEN STATE OF
CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE SAN MATEO
COUNTY EXPRESS LANES JOINT POWERS AUTHORITY (SMCEL-JPA) FOR THE
FIBER OPTIC INFRASTRUCTURE IN SAN MATEO AND SANTA CLARA
COUNTIES**

THIS AGREEMENT (Agreement), ENTERED INTO, AND EFFECTIVE ON the _____ day of _____, 2022, is between the STATE OF CALIFORNIA, acting by and through its Department of Transportation, referred to herein as “CALTRANS,” and the San Mateo County Express Lanes Joint Powers Authority, referred to herein as “SMCEL-JPA” and collectively referred to herein as the PARTIES.

RECITALS

1. CALTRANS and SMCEL-JPA, pursuant to California Streets and Highways Code sections 114 and 130, are authorized to enter into this Agreement.
2. Under this Agreement, also referred to as the Backhaul O&M Agreement (a.k.a., Backhaul Operations and Maintenance Agreement), SMCEL-JPA and CALTRANS intend to define the terms and conditions under which specified fiber optic infrastructure (“FIBER FACILITY”) is to be owned, operated, and maintained.

AGREEMENT

LIST OF EXHIBITS

EXHIBIT A: Shall be the layout of the conduits, pull boxes, and shared fiber optic infrastructure that constitutes the SMCEL-JPA SUB-FACILITY and the SHARED SUB-FACILITY, including elements of the CALTRANS SUB-FACILITY. *EXHIBIT A currently displays the fiber optic infrastructure per the 100% plans and construction change orders as of 5/24/2022. EXHIBIT A will be updated when as-builts are available.*

EXHIBIT B: Shall be the then current FIBER FACILITY OPERATIONS AND MAINTENANCE PLAN (OMP) attached to this Agreement by reference.

EXHIBIT C: Shall be the Bay Area TMS Backhaul Network Map.

Changes to the EXHIBITS may be implemented by AUTHORIZED REPRESENTATIVES of both PARTIES mutually executing an update to the respective EXHIBIT or replacing the entire respective EXHIBIT. No amendment to this AGREEMENT is required.

DEFINITIONS

Unless the context otherwise specifies or requires an alternate meaning, for the purposes of this Agreement, the following acronyms or terms with capitalized words and words with all capital letters shall have the meaning as set forth in this Section:

ANNUAL BUDGET shall mean the document, as it may be amended from time to time, that constitutes the prospective expenditures for each successive fiscal year for the planned allocations and expenditures of the FIBER FACILITY, as well as other Express Lane items. For more details, reference San Mateo 101 Express Lanes Toll Facility Operations & Maintenance Agreement (TF O&M).

AUTHORIZED REPRESENTATIVE shall mean either the members of the Executive Council of the SMCEL-JPA or the Deputy District Directors of Traffic Operations and Maintenance of CALTRANS. See Appendix A in OMP for contact information.

BAY AREA INFRASTRUCTURE FINANCE AUTHORITY (BAIFA) shall mean the agency that is contracted by the SMCEL-JPA to provide maintenance services for the electronic toll collection system including the SMCEL-JPA SUB-FACILITY.

COORDINATOR shall mean the COORDINATOR for each PARTY who has a technical understanding of the PARTY's fiber optic infrastructure so as to facilitate the day-to-day operation and maintenance of the FIBER FACILITY. Each PARTY shall designate their COORDINATOR for purposes of implementing this Agreement including the OMP. The COORDINATOR may identify function-specific points of contact for specific tasks. Each PARTY's COORDINATOR is accountable to the respective PARTY AUTHORIZED REPRESENTATIVE(S). See Appendix A in OMP for contact information.

ENCROACHMENT PERMIT shall mean a permit issued pursuant to CALTRANS' authority as described in the Streets and Highways Code section 670 et. seq.

EXPRESS LANES shall mean the High Occupancy Vehicle (HOV) lanes that are converted and/or constructed and operated as High Occupancy Toll (HOT) lanes, including but not limited to, US 101, in San Mateo County, and shall include future HOT lanes operated by SMCEL-JPA.

FIBER FACILITY shall mean the concurrently installed and co-located fiber optic network infrastructure consisting of a set of four conduits, splice vaults, and pull boxes jointly owned by the PARTIES in the right-of-way of US 101 in San Mateo and Santa Clara Counties and along Millbrae Avenue to the northwest corner of Rollins Road and Millbrae Avenue. The FIBER FACILITY consists of three parts: the CALTRANS SUB-FACILITY, the SMCEL-JPA SUB-FACILITY, and the SHARED SUB-FACILITY as defined below.

CALTRANS SUB-FACILITY shall mean the communication infrastructure defined as three of the four FIBER FACILITY conduits, any fiber optic trunk line cables, pull boxes, cabinets, and splice vaults, marked "CALTRANS FIBER OPTIC". The splice vaults are specifically for splicing into the CALTRANS fiber optic cables. This SUB-FACILITY starts from US/101 Embarcadero Interchange in Palo Alto to the splice vault near Millbrae BART

Station (located at the northwest corner of Rollins Road and Millbrae Ave) and terminates at the US 101 NB on-off ramps/ S Airport Boulevard Intersection in South San Francisco. From the splice vault near the Millbrae BART Station, the fiber optic cable joins the Caltrans fiber optic cable from the splice vault at the corner of Rollins Road and Millbrae Avenue connecting to the Millbrae BART train control room.

SMCEL-JPA SUB-FACILITY shall mean the communication infrastructure defined as one of the four FIBER FACILITY conduits, any fiber optic trunk line cables within them, SMCEL-JPA pull boxes, cabinets, and splice vaults, marked “TOLL ETS COMMS”. The splice vaults are specifically for splicing into the SMCEL-JPA fiber optic cables. This SUB-FACILITY starts from the first Toll Backhaul Hub cabinet with the Heating Venting and Air Conditioning (HVAC) unit in the northeast quadrant of the US 101/Embarcadero Interchange in Palo Alto, runs to the second Toll Backhaul Hub cabinet with the HVAC unit at the US 101/SR 92 Interchange in San Mateo, then runs to the splice vault near the Millbrae BART Station (located at the northwest corner of Rollins Road and Millbrae Avenue), and then terminates at the US 101 NB on-off ramps/S Airport Boulevard Intersection in South San Francisco. From the splice vault near the Millbrae BART Station, the fiber optic cable joins BAIFA’s fiber optic cable from the splice vault at the corner of Rollins Road and Millbrae Avenue connecting to the Millbrae BART train control room.

SHARED SUB-FACILITY shall mean the shared FIBER FACILITY pull boxes and splice vaults, marked “CALTRANS/TOLL FIBER OPTIC”, in which fiber optic cables from the CALTRANS SUB-FACILITY and the SMCEL-JPA SUB-FACILITY are co-located.

FIBER FACILITY MAINTENANCE shall mean maintenance, protection, repair, rehabilitation, and periodic inspection of the fiber, cable, pull boxes, splice vaults, and conduit as defined in Exhibit B and required for ongoing operation of the FIBER FACILITY as detailed in EXHIBIT A.

FIBER FACILITY OPERATIONS AND MAINTENANCE PLAN (OMP, EXHIBIT B) shall mean the proposed plan to be prepared jointly by the PARTIES and approved by the AUTHORIZED REPRESENTATIVES, to define the coordinated, preplanned use of technology, processes, and procedures related to the FIBER FACILITY. The OMP will reference EXHIBIT A. Any reference to OMP shall be to the most recent version or amendment which has been approved in writing by the PARTIES.

TMS shall mean the Transportation Management System.

SMCEL-JPA AGREES

3. To maintain the SMCEL-JPA SUB-FACILITY, at no cost to CALTRANS, including operations and maintenance for any devices installed for the SMCEL-JPA SUB-FACILITY.
4. To be solely responsible, including all costs related thereto, to perform SMCEL-JPA SUB-FACILITY MAINTENANCE on the SMCEL-JPA SUB-FACILITY. Said work at all times shall be conducted to assure safety and convenience of State Highway users. Said work

shall be subject to random inspection by CALTRANS as to safety conditions affecting CALTRANS highway facilities and SMCEL-JPA shall, upon notice from CALTRANS that an unsafe condition exists, take immediate steps to correct such unsafe conditions. If SMCEL-JPA fails to perform after such notice from CALTRANS, CALTRANS may take necessary corrective action and SMCEL-JPA shall be billed and shall pay all costs for such corrective work performed by CALTRANS. Such inspection by CALTRANS, if performed at all, does not relieve SMCEL-JPA of its responsibilities under this Agreement.

5. At no cost to CALTRANS, SMCEL-JPA will install cable through the SHARED SUB-FACILITY and into the SMCEL-JPA SUB-FACILITY.
6. At no cost to CALTRANS, SMCEL-JPA will splice into the SMCEL-JPA SUB-FACILITY and use fiber from the SMCEL-JPA SUB-FACILITY. SMCEL-JPA will be responsible for the security of all SMCEL-JPA data transported on the SMCEL-JPA SUB-FACILITY and defend, indemnify and save harmless CALTRANS and all its officers and employees from all claims and suits arising due to a security breach of SMCEL-JPA data except to the extent such claims and suits are due to the negligence or willful misconduct of CALTRANS.
7. At SMCEL-JPA's sole expense to contract directly with Pacific Gas and Electric Company (PG&E) for electrical power of field elements specifically related to the SMCEL-JPA SUB-FACILITY including, but not limited to service connections, engineering fees, service, and energy costs.
8. SMCEL-JPA has also entered into a cooperative agreement with the Bay Area Infrastructure Financing Authority (BAIFA) in order to have BAIFA provide maintenance services for the FIBER FACILITY (BAIFA Agreement). To the extent BAIFA staff provides the maintenance of the FIBER FACILITY, BAIFA staff will not be required to apply for or procure an ENCROACHMENT PERMIT from CALTRANS before commencing work. To the extent BAIFA's authorized agent(s) provides the maintenance of the FIBER FACILITY, ENCROACHMENT PERMITS will be issued at no charge to unless an inspection is required, in which case, a fee at standard CALTRANS rates will be charged based on job type, length of work, traffic closure, and as may be required by State regulations.

Section 4, Article 18 of the BAIFA Agreement requires that SMCEL-JPA obtain approval from the designated CALTRANS point of contact for lane closure requests prior to closing any traffic lanes or shoulders and to obtain approval from the designated CALTRANS point of contact prior to conducting any activities that have the potential to affect traffic operations.

If there is any additional work not covered as part of the agreement within the State highway rights-of-way, an ENCROACHMENT PERMIT is required prior to the start of that work.

ENCROACHMENT PERMIT Application submittals for this additional work can be coordinated with the CALTRANS COORDINATOR and appropriate point of contact.

9. To be solely responsible for any future relocation or removal of the SMCEL-JPA SUB-FACILITY required by CALTRANS, including all costs related thereto. Such relocation

will require CALTRANS to relocate the CALTRANS SUB-FACILITY, for which they would be responsible. In such cases, the cost of relocation or removal of the SHARED SUB-FACILITY would be proportionally shared between the PARTIES. Funding for such activities is agreed to in this manner unless mutually agreed to otherwise by the PARTIES. Once SMCEL-JPA improvements have been removed or abandoned in place, SHARED SUB-FACILITY will be reclassified as CALTRANS SUB-FACILITY.

10. Should operations of the SMCEL-JPA SUB-FACILITY be terminated by SMCEL-JPA, SMCEL-JPA shall, at CALTRANS' sole option, remove all of, or designated portions of, SMCEL-JPA improvements within CALTRANS highway rights-of-way and will restore CALTRANS facility to a standard acceptable to CALTRANS at SMCEL-JPA's sole expense within a mutually agreed upon time period. SMCEL-JPA improvements, or specific elements thereof, may be left in place, upon written request from SMCEL-JPA and approval by CALTRANS. SMCEL-JPA improvements, or specific elements thereof, that will be left in place shall be abandoned in a manner consistent with the latest CALTRANS Standard Specifications.

CALTRANS AGREES

11. At no cost to SMCEL-JPA, to provide TMS Backhaul Operational oversight at CALTRANS expense.
12. To maintain the CALTRANS SUB-FACILITY, at no cost to the SMCEL-JPA including operations and maintenance for any devices installed for the CALTRANS SUB-FACILITY.
13. To be solely responsible, including all costs related thereto, to perform CALTRANS SUB-FACILITY MAINTENANCE on the CALTRANS SUB-FACILITY.
14. Should operations of the CALTRANS SUB-FACILITY be terminated by CALTRANS, CALTRANS shall, at SMCEL-JPA's sole option, remove all of, or designated portions of, CALTRANS improvements within SHARED SUB-FACILITY at CALTRANS' sole expense within a mutually agreed upon time period. CALTRANS improvements, or specific elements thereof, may be left in place, upon written request from CALTRANS, and approval by SMCEL-JPA. CALTRANS improvements, or specific elements thereof, that will be left in place shall be abandoned in a manner consistent with the latest CALTRANS Standard Specifications. Once CALTRANS improvements have been removed or abandoned in place, SHARED SUB-FACILITY will be reclassified as SMCEL-JPA SUB-FACILITY.
15. To provide a qualified CALTRANS COORDINATOR and associated points of contact who shall have the authority to accept or reject work and materials, or to order any actions needed for public safety or the preservation of property, and to assure compliance with all ENCROACHMENT PERMIT(S) issued to SMCEL-JPA and/or SMCEL-JPA's authorized agent(s).

IT IS MUTUALLY AGREED

16. SMCEL-JPA and CALTRANS are to jointly operate the FIBER FACILITY. Operational activities are outlined in the OMP. PARTIES shall jointly review and update, if necessary, the OMP annually.
17. SMCEL-JPA and CALTRANS are to be jointly responsible, including all costs related thereto, to maintain the SHARED SUB-FACILITY. Each PARTY's cost share will be the percentage of their conduit(s) within the total conduit(s) of the FIBER FACILITY. Said work at all times shall be conducted to assure safety and convenience of State Highway users. Said work shall be subject to random inspection by CALTRANS as to safety conditions affecting CALTRANS highway facilities. SMCEL-JPA shall, upon notice from CALTRANS that an unsafe condition exists, take immediate steps to correct such unsafe conditions, unless CALTRANS commits to performing the maintenance work with the costs shared proportionally.
18. Any fiber optic cable installation by either PARTY in the SHARED SUB-FACILITY must not preclude installation of the fiber optic cables and related equipment in the future by the other PARTY. Thirty or more working days prior to the start of work, the responsible PARTY shall notify the other PARTY of their plans to modify the SHARED SUB-FACILITY.
19. To provide on request to the other PARTY, the PARTY's SUB-FACILITY allocations or utilization.
20. To incorporate respective SUB-FACILITIES in each PARTIES' asset management plan.
21. Each PARTY shall keep the other PARTY informed of any change in the status or contact information of its COORDINATOR and associated points of contact.
22. All elements of a fiber optic connection within a PARTY's right of way or of the other PARTY's fiber optic cable located outside of that previously mentioned PARTY's right of way shall be conducted in accordance with all policies, procedures, practices, and standards of that PARTY with the ownership interest in the right of way or cable that would normally be followed and/or that such owning PARTY may in its sole and reasonable discretion deem necessary.
23. Any improvements or facilities placed or modified pursuant to this Agreement shall be designed, constructed and maintained in accordance with all applicable local, state, and federal requirements, standards and policies.
24. Each PARTY agrees to:
 - a. Work cooperatively with the other PARTY to facilitate the processing of ENCROACHMENT PERMITS;
 - b. Require that any consultants, agents and contractors' insurance conform, at a minimum, to the insurance requirements of CALTRANS;

- c. Minimize the review of ENCROACHMENT PERMIT issuance period to the maximum extent practicable;
 - d. Require all employees, agents, construction workers and construction managers attend specialized training and possess proper certification in order to perform work in or near access-controlled right-of-way (e.g., Roadway Worker Training) when working within or near access-controlled rights-of-way.
25. Except as otherwise provided for in this Agreement, each PARTY establishing or modifying one or more fiber optic access points shall be responsible for all costs associated with such establishment, as well as for obtaining any necessary permits required for such establishment.
26. Additional access point enclosures and equipment located in access-controlled right-of-way shall only be considered at locations where interface points in publicly accessible right-of-way are determined to be undesirable, impractical, or excessively expensive to implement. If SMCEL-JPA desires an additional access point, SMCEL-JPA shall submit a written request detailing why the additional access point is needed and why it is undesirable, impractical, or excessively expensive to construct the access point within publicly accessible right-of-way. CALTRANS may, in its sole discretion, refuse the request of SMCEL-JPA considering the following factors:
- a. Whether the proposed access point provides a significant benefit consistent with the overall intent of this Agreement;
 - b. Whether the proposed access point could create an unsafe condition;
 - c. Whether the proposed access point could create a significant adverse impact on an existing or future facility.
- Should CALTRANS refuse a request from SMCEL-JPA, then the PARTIES shall work cooperatively to develop an alternative interface solution that would be mutually agreeable to the PARTIES.
27. Each year, the SMCEL-JPA Operations COORDINATOR and the CALTRANS Operation and Maintenance COORDINATOR will recommend a budget for costs associated with operations and maintenance to be approved subsequently by SMCEL-JPA as part of SMCEL-JPA's ANNUAL BUDGET. Depending upon prior year expenditures, adjustments may be made to CALTRANS reimbursed budget for services in support of the SHARED SUB-FACILITY. Once agreed upon, the requested budget will be forwarded to the SMCEL-JPA Board for approval.
28. All obligations of CALTRANS under the terms of this Agreement are subject to the appropriation of resources by the Legislature, State Budget Act authority, and the collection of resources by the California Transportation Commission.
29. All obligations of SMCEL-JPA under the terms of this Agreement are subject to the appropriation and the allocation of resources by the SMCEL-JPA Board. Should operations

of the SMCEL-JPA SUB-FACILITY be terminated, all rights permitted to SMCEL-JPA under this Agreement shall revert back to CALTRANS.

30. PARTIES will take reasonable precautions to avoid disruptions to the FIBER FACILITY.
31. CALTRANS may impact the SMCEL-JPA SUB-FACILITY in consultation with SMCEL-JPA and will be responsible for relocating or restoring SMCEL-JPA SUB-FACILITY and the equivalent of the SHARED SUB-FACILITY used by SMCEL-JPA. In such event, CALTRANS shall notify SMCEL-JPA promptly of such occurrences in accordance with the approved OMP. No compensation will be paid to SMCEL-JPA for any revenue loss during such occurrences, except in cases of negligence or misconduct by CALTRANS representatives. In cases of planned impact, PARTIES shall collaborate to minimize if not avoid adverse impacts to the operation of the FIBER FACILITY.
32. SMCEL-JPA may impact the CALTRANS SUB-FACILITY with approval from CALTRANS through the ENCROACHMENT PERMIT process and will be responsible for relocating or restoring CALTRANS SUB-FACILITY and the equivalent of the SHARED SUB-FACILITY used by CALTRANS. In such event, SMCEL-JPA shall notify CALTRANS promptly of such occurrences in accordance with the approved OMP. No compensation will be paid to CALTRANS during planned or accidental occurrences, except in cases of negligence or misconduct by SMCEL-JPA representatives. In cases of planned impact, PARTIES shall collaborate to minimize if not avoid adverse impacts to the operation of the FIBER FACILITY.
33. In the event that there is a dispute between SMCEL-JPA and CALTRANS, the disputing PARTY shall endeavor to notify the other PARTY in writing and both PARTIES agree to seek to resolve disputes in the following manner:
 - a. The COORDINATOR for the disputing PARTY shall notify the other PARTY's COORDINATOR in writing, including a statement of the grounds for the dispute, pertinent dates and supporting documentation.
 - b. Upon receipt of a written dispute, the receiving PARTY COORDINATOR, and other appropriate agency staff, shall review the documentation in a timely manner and reply to the disputing PARTY within thirty (30) days.
 - c. Appeals shall be referred to SMCEL-JPA's Executive Council and CALTRANS District Director for District 4. SMCEL-JPA's Executive Council and the CALTRANS District Director for District 4 shall make every attempt to respond to the request for reconsideration and reach a resolution within thirty (30) days.
 - d. If an agreement cannot be reached between SMCEL-JPA's Executive Council and CALTRANS District Director for District 4, the dispute shall be referred by either PARTY to the CALTRANS Department of Transportation Director for final resolution after receiving written request to resolve the dispute.

- e. SMCEL-JPA and CALTRANS may pursue all available remedies under law or equity including alternatives or additional dispute resolution and litigation if the above process does not achieve resolution.
34. Nothing in the provisions of this Agreement is intended to create duties or obligations to or rights in third parties not parties to this Agreement or effect the legal liability of any party to the Agreement by imposing any standard of care with respect to the maintenance of State Highways different from the standard of care imposed by law.
35. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by SMCEL-JPA under or in connection with any work, authority or jurisdiction allocated to SMCEL-JPA under this Agreement. It is understood and agreed that, SMCEL-JPA will fully defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits or actions of every name, kind and description brought forth under, including, but not limited to, tort, contractual, inverse condemnation or other theories or assertions of liability occurring by reason of anything done or omitted to be done by SMCEL-JPA under this Agreement.
36. Neither SMCEL-JPA nor its member agencies, nor any officer, commissioner, employee or agent thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by CALTRANS under or in connection with any work, authority or jurisdiction allocated to CALTRANS under this Agreement. It is understood and agreed that, CALTRANS will fully defend, indemnify, and save harmless SMCEL-JPA and each of its member agencies, and respective officers, commissioners, and employees thereof, from all claims, suits or actions of every name, kind and description brought forth under, including, but not limited to, tort, contractual, inverse condemnation or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS under this Agreement.
37. In the event of damage to or destruction of SHARED SUB-FACILITY, PARTIES shall have responsibility for repair and replacement as delineated in the SHARED SUB-FACILITY inventory (EXHIBIT A).
- a. In the event of damage to or destruction of the SHARED SUB-FACILITY by one PARTY, the PARTY causing the damage shall be responsible for the cost of the repairs. CALTRANS, at its option, shall promptly repair the damage, or request SMCEL-JPA to promptly repair the damage.
 - b. In the event of damage to or destruction of CALTRANS SUB-FACILITY by the SMCEL-JPA or its designee, CALTRANS, at its option, shall promptly repair the damage and invoice SMCEL-JPA for the actual costs of the repair, or request SMCEL-JPA to promptly repair the damage.
 - c. In the event of damage to or destruction of SMCEL-JPA SUB-FACILITY by CALTRANS or its designee, CALTRANS, at its option, shall promptly repair the

damage or reimburse SMCEL-JPA for the actual costs of the repair performed by SMCEL-JPA.

- d. In the event that damage to or destruction of FIBER FACILITY is caused by a third party, the third party shall repair the damage. In the event the third party is unable to repair the damage, CALTRANS, at its option, shall promptly repair some or all of the damage or request SMCEL-JPA to promptly repair any remaining damage. CALTRANS agrees to seek compensation from the third party. Any third party compensation collected by CALTRANS for repair of the SMCEL-JPA SUB-FACILITY will be transferred to SMCEL-JPA or credited to SMCEL-JPA. Any compensation collected by CALTRANS for repair of the SHARED SUB-FACILITY shall be proportionally shared based on work performed by each PARTY. This does not preclude SMCEL-JPA from independently seeking compensation from the third party.
 - e. All repairs shall be made in consultation with SMCEL-JPA and completed to the satisfaction of the impacted PARTY or PARTIES in accordance with practices and standards of both PARTIES, with the least impact to the operation to the EXPRESS LANES and CALTRANS TMS.
 - f. Regardless of the cause of damage, each PARTY shall make their SUB-FACILITY including dark or unassigned strands of their fiber optic cable available for temporary use by the other PARTY. A written understanding shall be reached between both PARTIES before any work to utilize the other PARTY's SUB-FACILITY commences. No compensation shall be paid by the owning PARTY of the SUB-FACILITY in the event the SUB-FACILITY under the temporary use arrangement is damaged or underperforms. Any fiber optic cable and strands temporarily used shall be returned to its respective owner in an equivalent or better condition.
 - g. Force majeure. In the event a PARTY is unable to perform its obligations under the terms of this Agreement because of acts of God, strikes, equipment or transmission failure or damage reasonably beyond its control, or other causes reasonably beyond its control, such PARTY shall not be liable for damages to the other for any damages resulting from such failure to perform or otherwise from such causes.
38. This Agreement shall not terminate except by mutual agreement of the PARTIES.
39. SMCEL-JPA reserves the right to allow use of the SMCEL-JPA SUB-FACILITY by cities and regional agencies, including but not limited to the Bay Area Toll Authority, Metropolitan Transportation Commission, City/County Association of Governments of San Mateo County, Caltrain, SAMTRANS, and BART, for their respective statutorily-authorized purposes. PARTIES shall come to mutual agreement in writing prior to allowing use by others and additional negotiations may be required if the use is revenue generating.

IN WITNESS WHEREOF, the PARTIES hereto have set their hands and seals the day and year first above written.

SAN MATEO COUNTY EXPRESS LANES
JOINT POWERS AUTHORITY

STATE OF CALIFORNIA
Department of Transportation

By: _____
SEAN CHARPENTIER
SMCEL-JPA Executive Council

By: _____
DINA EL-TAWANSY
District Director

By: _____
CARTER MAU
SMCEL-JPA Executive Council

By: _____
SEAN NOZZARI
Deputy District Director of Operations




Approved as to form:

Approved as to form:

By: _____
TIMOTHY FOX
Legal Counsel

By: _____
GLENN B. MUELLER
Assistant Chief Counsel
California Department of
Transportation

EXHIBIT A: Southern Segment Fiber Optic Crossovers Exhibit (E-6 through E-33):

-  Fiber Optic Crossovers in the State Right of Way.
-  Fiber Optic Crossovers in the City Right of Way.
-  Fiber Optic Crossovers in the SFPUC Way.

For more details and notes, see the LEGEND sheets (E-1 through E-4).

2022-03-08

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED - DESIGNED BY	BESHOF DEMYAN/ALEXANDER HA	REVISED BY	-
<i>et Caltrans</i>	-	CHECKED BY	VIRGINIA SOLIMAN	DATE REVISED	-

NOTES:

1. VERIFY ALL EXISTING UNDERGROUND UTILITIES, WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. CONTACT USA NORTH 811(1-800-277-2600) AT LEAST 48 HOURS BEFORE BEGINNING WORK. WHERE MARKINGS ARE WITHIN 5 FT OF THE PROPOSED FOUNDATIONS, LOCATE UNDERGROUND UTILITIES BY POTHOLING PRIOR TO EXCAVATING.
 2. ALL EXISTING ELECTRICAL EQUIPMENT, INCLUDING SUBSTRUCTURES, FOUNDATIONS, CONDUITS AND PULL BOXES ARE TO REMAIN IN PLACE AND BE PROTECTED, UNLESS OTHERWISE NOTED.
 3. ALL ELECTRICAL EQUIPMENT, INCLUDING CONDUITS AND PULL BOXES, IS SHOWN IN APPROXIMATE LOCATIONS. PROPOSE FINAL LOCATIONS TO THE ENGINEER FOR AUTHORIZATION. PROVIDE MINIMUM 48 HOURS FOR AUTHORIZATION OF PROPOSED EQUIPMENT LOCATIONS.
 4. MINIMUM CONDUIT SIZE MUST BE 2" FOR ALL NEW INSTALLATIONS, UNLESS NOTED OTHERWISE.
 5. CONDUCTORS FOR ETS EQUIPMENT WILL BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR) UNLESS NOTED OTHERWISE.
 6. ALL PULL BOXES FOR ELECTRONIC TOLL SYSTEM MUST BE No. 5 UNLESS NOTED OTHERWISE.
 7. ALL PULL BOXES FOR LIGHTING TOLL SYSTEM MUST BE No. 5 UNLESS NOTED OTHERWISE.
 8. PRIOR TO ANY WORK ON PG&E SERVICE POINTS, NOTIFY PG&E THROUGH THE ENGINEER AT LEAST 72 HOURS IN ADVANCE.
 9. ALL No. 9 AND 9A PULL BOXES MUST BE PROVIDED WITH KNOCKOUTS THAT MATCH THE NUMBER AND SIZE OF THE CONDUITS ENTERING THE PULL BOX AS SHOWN.
 0. ALL CONDUITS MUST BE INSTALLED OUTSIDE OF THE TREE DRIP LINE. TRENCHING WITHIN THE DRIP LINE IS PROHIBITED. IF UNABLE TO TRENCH OUTSIDE OF TREE DRIP LINES, DIRECTIONAL DRILLING MUST BE USED.
 1. VERIFY EXISTING IRRIGATION LINES PRIOR TO TRENCHING. REPAIR ANY DAMAGE CAUSED BY YOUR OPERATION. REPLACE ANY LANDSCAPING DAMAGED BY YOUR OPERATION.
 2. SHOULD CONDUCTORS OF DIFFERENT VOLTAGE BE MIXED IN THE SAME PULL BOX, CONDUCTORS MUST BE LABELLED ACCORDINGLY.
 3. ALL CONDUITS FROM PULL BOXES TO THE NEAREST OVERHEAD SIGN STRUCTURES OR TOLL GANTRIES WITH TOLL EQUIPMENT OR VTMS INTO FOUNDATION MUST BE 3" MINIMUM, UNLESS NOTED OTHERWISE. SEE ED-17 FOR TYPICAL CONDUIT LAYOUT.
 4. ALL FIXED OBJECTS NOT PROTECTED BY MGS OR OTHER FORM OF PROTECTION MUST BE 30" MINIMUM FROM THE EDGE OF TRAVELED WAY, UNLESS NOTED OTHERWISE. THE ONLY EXCEPTION IS ELECTROLIERS WITH SLIP BASES. FIXED OBJECTS PROTECTED BY MGS MUST BE 4' MINIMUM FROM THE FACE TO THE GUARDRAIL.
 5. CONTRACTOR MUST COIL AND PROTECT 40 FT OF SMFO CABLE SLACK IN EACH EXISTING/PROPOSED FOPB AND FOPB(T), AND 60 FT OF SMFO CABLE SLACK IN EACH EXISTING/PROPOSED SPLICE VAULT WHERE THE CABLE PASSES OR ENDS.
 6. WELDING DETAILS REQUIREMENTS FOR TRAFFIC PULL BOXES ARE SHOWN ON ED-14.
 7. PROVIDE GROUNDING ELECTRODE, GROUNDING BUSHING AND BONDING JUMPER IN PROPOSED NON-TRAFFIC, TRAFFIC AND STRUCTURE PULL BOXES MARKED "TOLL ETS POWER", "TOLL ETS 480 V POWER" AND "TOLL LIGHTING". SEE ED-16 FOR TYPICAL GROUNDING DETAILS.
 8. LUMINAIRE MUST BE TYPE III MEDIUM LIGHTING DISTRIBUTION, UNLESS OTHERWISE SPECIFIED.
 9. FOR FIBER OPTIC REEL END SPLICE FOR CALTRANS SYSTEM AND TOLL SYSTEM, SEE ED-14 FOR DETAILS.
 0. EXISTING CALTRANS EQUIPMENT SHOWN ON E-SHEETS ARE INFORMATIONAL ONLY AND MAY NOT SHOW COMPLETE SYSTEMS. LOCATIONS ARE SHOWN APPROXIMATELY.
 1. THE FOLLOWING TOLL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY TSI:
CCTV ASSEMBLY, VTMS LED DISPLAY, TOLLING LATERAL FIBER, TOLLING SPLICE ENCLOSURE, TOLLING FIBER END EQUIPMENT,
TOLL SYSTEM POWER AND COMMUNICATIONS CONDUCTORS/CABLES,
TOLL ASSEMBLY INSIDE ETS AND UPS CABINETS,
VTMS ASSEMBLY INSIDE VTMS CABINET, AND TOLL READER ASSEMBLY.
 2. THE FOLLOWING TOLL EQUIPMENT WILL
BE FURNISHED BY TSI:
ETS AND UPS CABINETS, VTMS CABINET,
AND ETS HUB CABINET.
- ## **ELECTRICAL INDEX:**

E-1 NOTES, ELECTRICAL INDEX,

ELECTRICAL INDEX:

E-1	NOTES, ELECTRICAL INDEX, LEGEND AND ABBREVIATIONS	
E-2 TO E-5	LEGEND	VT
E-6 TO E-33	FIBER OPTIC CABLE SYSTEM	
E-34 TO E-60	ELECTRONIC TOLL SYSTEM	
E-61 TO E-77	LIGHTING TOLL SYSTEM	
E-78 TO E-106	MODIFYING EXISTING ELECTRICAL SYSTEM	
E-107 TO E-141	TOS FIBER OPTIC SYSTEM	
E-142	NOTES AND LEGEND (TEMPORARY)	
E-143 TO E-166	TEMPORARY TRAFFIC MONITORING STATION SYSTEM	
ED-1 TO ED-44	ELECTRICAL SYSTEM DETAILS	
EQ-1 TO EQ-5	ELECTRICAL SYSTEM QUANTITIES	

LEGEND:

	VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE AND TOLL READER
	VARIABLE TOLL MESSAGE SIGN WITH TWO LUMINAIRES AND TOLL READER
	VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE
	VARIABLE TOLL MESSAGE SIGN WITH TWO LUMINAIRES
	OVERHEAD STATIC SIGN WITH LUMINAIRE AND TOLL READER
	OVERHEAD STATIC SIGN WITH TWO LUMINAIRES AND TOLL READER
	OVERHEAD STATIC SIGN WITH LUMINAIRE
	OVERHEAD STATIC SIGN WITH TWO LUMINAIRES
	OVERHEAD STATIC SIGN WITH TOLL READER
	OVERHEAD STATIC SIGN
	ELECTRONIC TOLL SYSTEM GANTRY WITH TOLL READER
	DOUBLE OVERHEAD STATIC SIGNS WITH TOLL READERS (BUTTERFLY STRUCTURE)
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN AND STATIC SIGN WITH TOLL READER
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN AND VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN AND VARIABLE TOLL MESSAGE SIGN WITH TWO LUMINAIRES
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN WITH TOLL READER AND VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN WITH TOLL READER AND VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE AND TOLL READER
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) STATIC SIGN WITH TOLL READER AND VARIABLE TOLL MESSAGE SIGN WITH TWO LUMINAIRES AND TOLL READER
	DOUBLE OVERHEAD VARIABLE TOLL MESSAGE SIGNS WITH DOUBLE LUMINAIRES (BUTTERFLY STRUCTURE)
	DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE) VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE AND VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE AND TOLL READER
	STEP-UP/STEP-DOWN TRANSFORMER
	CONCRETE PAD FOUNDATION FOR FUTURE MODEL 332L CABINET
	BACKHAUL HUB CABINET ASSEMBLY MODEL 333
	CONCRETE PAD FOUNDATION FOR FUTURE ETS HUB CABINET
	FIBER OPTIC SPLICE VAULT (SEE SHEET ED-4)
	Exist FIBER OPTIC SPLICE VAULT

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	487	701

Beshoy 12-10-18

REGISTERED CIVIL ENGINEER DATE

12-10-18

PLANS APPROVAL DATE

*THE STATE OF CALIFORNIA OR ITS OFFICERS
OR AGENTS SHALL NOT BE RESPONSIBLE FOR
THE ACCURACY OR COMPLETENESS OF SCANNED
COPIES OF THIS PLAN SHEET.*

AECOM
100 W. SAN FERNANDO ST
SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

ABBREVIATIONS:

ADA	AMERICANS WITH DISABILITIES ACT
AT&T	AMERICAN TELEPHONE AND TELEGRAPH
CHP	CALIFORNIA HIGHWAY PATROL
CPA	CITY OF PALO ALTO
EIA	ELECTRONIC INDUSTRIES ALLIANCE
ETS	ELECTRONIC TOLL SYSTEM
FD	FOUNDATION DEPTH
FDU	FIBER OPTIC DISTRIBUTION UNIT
FOPB	FIBER OPTIC PULL BOX PULL BOX No. 6(E)(SEE SHEET ED-3)
FOPB(T)	TRAFFIC-RATED FIBER OPTIC PULL BOX PULL BOX No. 6(E)(T)(SEE SHEET ED-3)
LLLD	LONG LEAD-IN-CABLE LOOP DETECTOR SENSOR UNIT
NPS XS	NOMINAL POST SIZE EXTRA STRONG
PG&E	PACIFIC GAS AND ELECTRIC
SM	SAN MATEO
SMFO	SINGLE MODE FIBER OPTIC
TC	TELEPHONE CABLE (12#22)
TR	TOLL READER
TSI	TOLL SYSTEM INTEGRATOR
TVC	TELEVISION CONTROL CABLE
TVCP	TELEVISION CONTROL POWER CABLE
TVL	TELEVISION VIDEO CABLE
TVP	TELEVISION POWER CONDUCTOR
UPS	UNINTERRUPTIBLE POWER SUPPLY
VES	VEHICLE ENFORCEMENT SYSTEM
VSN	VEHICLE SENSOR NODE
VTA	VALLEY TRANSPORTATION AUTHORITY
VTMS	VARIABLE TOLL MESSAGE SIGN
WMVDS	WIRELESS MAGNETOMETER VEHICLE DETECTION STATION

**NOTES, ELECTRICAL INDEX,
LEGEND AND ABBREVIATIONS**
E - 1

LEGEND:

- 1

EXISTING 4-1½"C, PT.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).
- 2

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-6.
INSTALL 2 144-STRAND SMFO CABLE IN 2 OF 4-1½"C (CALTRANS SYSTEM).
- 3

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-6.
INSTALL 2 144-STRAND SMFO CABLE IN 2 OF 4-1½"C (TOLL SYSTEM).
- 4

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-6.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).
- 5

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-6.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).
- 6

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-6.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).
- 7

EXISTING 4"C WITH 4-1" INNERDUCTS, PT.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (TOLL SYSTEM).
- 8

EXISTING 4"C WITH 4-1" INNERDUCTS, 72-STRAND SMFO CABLE (SM SMART CORRIDOR) IN 1 OF 4-1" INNERDUCTS.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (TOLL SYSTEM).
- 9

INSTALL 4"C WITH 4-1" INNERDUCTS, USE TYPE A. SEE DETAIL A ON ED-6.
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (TOLL SYSTEM).
- 10

INSTALL 144-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH EXISTING FIBER OPTIC
SPLICE VAULT TO PROPOSED FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED
"CALTRANS" AND "FIBER OPTIC". SEE DETAIL 3 ON SHEET ED-8 FOR DETAILS.
- 11

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH EXISTING FIBER OPTIC
SPLICE VAULT TO PROPOSED FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED
"TOLL ETS COMMS". SEE DETAIL 3 ON SHEET ED-8 FOR DETAILS.
- 12

INSTALL 3"C, PT.
- 13

EXISTING 4-1½"C, 72-STRAND SMFO CABLE IN 1 OF 4-1½"C (SM SMART CORRIDOR).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).
- 14

COIL AND PROTECT 100 FT OF 144-STRAND SMFO CABLE SLACK (CALTRANS SYSTEM).
- 15

COIL AND PROTECT 100 FT OF 144-STRAND SMFO CABLE SLACK (TOLL SYSTEM).
- 16

EXISTING 4-1½"C, WITH TWO-FIBER TRUNKLINE CABLE (72 STRAND SMFO)
AND TWO-FIBER DROP CABLE (12 STRAND SMFO).
- 17

STRAP CONDUIT TO THE SIDE OF CONCRETE BARRIER, SEE SHEET ED-10 FOR DETAILS.
- 18

FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). SEE SHEET ED-4.
COVER MARKING MUST BE "TOLL ETS COMMS".
- 19

FURNISH AND INSTALL FIBER OPTIC PULL BOX (TOLL SYSTEM). SEE SHEET ED-3.
COVER MARKING MUST BE "TOLL ETS COMMS".
- 20

FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM). SEE SHEET ED-4.
COVER MARKING MUST BE "CALTRANS" AND "FIBER OPTIC".
- 21

INSTALL 2"C, PT.
- 22

FURNISH AND INSTALL FIBER OPTIC PULL BOX (JOINT SYSTEM). SEE SHEET ED-3.
COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".
- 23

INSTALL 144-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH PROPOSED
FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC"
TO PROPOSED FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED "CALTRANS" AND "FIBER OPTIC".
SEE DETAIL 3 ON SHEET ED-8 FOR DETAILS.
- 24

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH PROPOSED
FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC" TO PROPOSED
FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED "TOLL ETS COMMS". SEE DETAIL 3 ON
SHEET ED-8 FOR DETAILS.
- 25

INSTALL 144-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH EXISTING FIBER OPTIC
PULL BOX TO PROPOSED FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED
"CALTRANS" AND "FIBER OPTIC". SEE DETAIL 3 ON SHEET ED-8 FOR DETAILS.

- 26

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH EXISTING FIBER OPTIC
PULL BOX TO PROPOSED FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED
"TOLL ETS COMMS". SEE DETAIL 3 ON SHEET ED-8 FOR DETAILS.
- 27

EXISTING 4"C WITH 4-1" INNERDUCTS, 72-STRAND SMFO CABLE (SM SMART CORRIDOR)
IN 1 OF 4-1" INNERDUCTS.
- 28

INSTALL CONDUIT VIA HORIZONTAL DIRECTIONAL DRILLING METHOD UNDER THE
RAILROAD CROSSING.
- 29

INSTALL 4-2"C, PT THROUGH 6.5" DIAMETER SIGN BASE OPENING.
2-2"C FOR POWER AND 2-2"C FOR COMMUNICATION. SEE ED-17 FOR DETAILS.
- 30

INSTALL 5-2"C, PT THROUGH 6.5" DIAMETER SIGN BASE OPENING.
2-2"C FOR POWER, 2-2"C FOR COMMUNICATION AND 1-2"C FOR LIGHTING.
1-2"C FOR LIGHTING IS PART OF "TOLL LIGHTING SYSTEM" WORK.
SEE ED-17 FOR DETAILS.

1

31

INSTALL ADDITIONAL HANDHOLES, COUPLINGS, HOLES AND J HOOK ON SIGN POST.
SEE ED-29 *OR ED-29A AS APPLICABLE FOR DETAILS. PROVIDE AS PART OF THE MANUFACTURING OF THE POST.*

- 32

INSTALL 3"C, WITH 3-CELL INNERDUCT, 1 24-STRAND SMFO CABLE.
- 33

INSTALL 1-2"C AND 1-3"C, PT THROUGH TYPE 61-5-100 MOD BASE OPENING.
1-2"C FOR POWER AND 1-3"C FOR COMMUNICATION.
- 34

INSTALL CONCRETE FOUNDATION PAD TO ENSURE THE FUTURE FRONT DOOR OF CABINET MUST
FACE SOUTHEAST. CABINET(S) TO BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR).
- 35

INSTALL CONCRETE FOUNDATION PAD TO ENSURE THE FUTURE FRONT DOOR OF CABINET MUST
FACE NORTHWEST. CABINET(S) TO BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR).
- 36

INSTALL CONCRETE FOUNDATION PAD TO ENSURE THE FUTURE FRONT DOOR OF CABINET MUST
FACE WEST. CABINET(S) TO BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR).
- 37

INSTALL CONCRETE FOUNDATION PAD TO ENSURE THE FUTURE FRONT DOOR OF CABINET MUST
FACE EAST. CABINET(S) TO BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR).
- 38

CONDUIT DEPTH MUST BE MINIMUM 10 FT BELOW FINISH GRADE.
- 39

FIBER OPTIC CABLE END MUST BE PROTECTED AND SEALED TO PREVENT
THE INGRESS OF MOISTURE FOR FUTURE SPLICING.

1

41

*INSTALL EXPANSION-DEFLECTION FITTINGS AT THE BRIDGE STRUCTURE JOINTS.
SEE STANDARD PLANS ES-9B DETAIL XY FOR DETAILS.*

- 42

FURNISH AND INSTALL METERED TYPE III-OF SERVICE EQUIPMENT ENCLOSURE
(TOLL SYSTEM) WITH EXTERNAL 480 V-120 V/240 V STEP-DOWN TRANSFORMER
IN NEMA 3R CABINET WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR
ENCLOSURES, FOUNDATION AND BASE DIMENSIONS. FOR PRIMARY AND SECONDARY
VOLTAGES, TRANSFORMER SIZE AND WIRING, SEE SERVICE WIRING DIAGRAMS SHOWN
ON ELECTRICAL SYSTEM DETAILS SHEETS AS APPLICABLE FOR EACH CASE.
- 43

INSTALL 3"C, 2#2/O (480 V SUB-PANEL #1), 1#4 (G)(SUB-PANEL #1).
- 44

SEE DRAINAGE PLAN TO AVOID CONFLICT WITH PROPOSED DRAINAGE SYSTEM DURING
CONDUIT INSTALLATION.

- 45

INSTALL 3"C, 2#2/O (480 V SUB-PANEL #1), 1#4 (G)(SUB-PANEL #1).
- 46

PULL BOX LID MUST BE MARKED "TOLL ETS 480 V POWER".

1

47

INSTALL CPA PULL BOX PER UTILITY COMPANY REQUIREMENTS.
COORDINATE WITH CPA FOR PULL BOX DETAILS AND REQUIREMENTS.
CPA PULL BOX MUST BE TYPE CPA-3536.

- 48

INSTALL 3"C, 2#1/O (480 V SUB-PANEL #1), 1#6 (G)(SUB-PANEL #1).
- 49

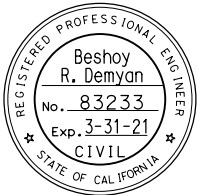
PULL BOX AND CONDUITS MUST BE INSTALLED AS SHOWN.

- 50

COORDINATE WITH PG&E THROUGH THE ENGINEER FOR REQUIREMENTS AND DETAILS
TO INSTALL PULL BOX IN EXISTING SERVICE CONDUIT RUNNING BETWEEN EXISTING
PAD-MOUNTED TRANSFORMER No. T5871 AND EXISTING CALTRANS SERVICE ENCLOSURE.
EXISTING TRANSFORMER MUST BE DE-ENERGIZED BEFORE THE WORK.
COORDINATE WITH PG&E FOR SERVICE CONNECTION.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	488	701
Beshoy			12-10-18		
REGISTERED CIVIL ENGINEER			DATE		
12-10-18			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
AECOM 100 W. SAN FERNANDO St SUITE 200 SAN JOSE, CA 95113-2254			SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070		

REGISTERED PROFESSIONAL ENGINEER
Beshoy
R. Demyan
No. 83233
Exp. 3-31-19
CIVIL
STATE OF CALIFORNIA



Beshoy 4-22-19
FOR REVISION ONLY

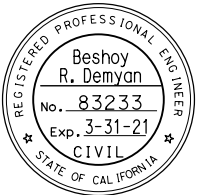
1	4-22-19	100% PSE REVISION	BD	VS	6
MARK	DATE	DESCRIPTION	REV	CHK	CCO No.
REVISIONS					

CONTRACT CHANGE ORDER NO. 6
SHEET 92 OF 119

LEGEND
E-2

LEGEND:

- 51
- INSTALL FOUNDATION PAD FOR FUTURE ETS HUB CABINET. SEE ED-7 FOR FOUNDATION PAD DETAILS AND CONDUIT ENTRY DETAILS.
- 52
- FURNISH AND INSTALL MODEL 333 BACKHAUL HUB CABINET AS SPECIFIED. SEE ED-12 FOR FOUNDATION DETAILS, PAD DIMENSIONS AND CONDUIT ENTRY AREA. SEE ED-11 AND ED-13 FOR CABINET DETAILS AND WIRING DIAGRAMS.
- 53
- INSTALL 3"C, PT.
- 54
- INSTALL CONDUIT BY DIRECTIONAL DRILLING METHOD.
- 55
- COORDINATE WITH CPA FOR SERVICE CONNECTION.
- 56
- INSTALL 3"C, 3#4/0 (480 V SERVICE) PER UTILITY COMPANY REQUIREMENTS. SERVICE CONNECTION TO BE PERFORMED BY CPA. COORDINATE WITH CPA FOR SERVICE CONNECTION, CONDUIT DEPTH AND TYPE DETAILS.
- 57
- FURNISH AND INSTALL UNMETERED TYPE III-DF SERVICE EQUIPMENT ENCLOSURE (TOLL SYSTEM) WITH EXTERNAL 480 V-120 V/240 V STEP-DOWN TRANSFORMER IN NEMA 3R CABINET WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES, FOUNDATION AND BASE DIMENSIONS. FOR PRIMARY AND SECONDARY VOLTAGES, TRANSFORMER SIZE AND WIRING, SEE SERVICE WIRING DIAGRAMS SHOWN ON ELECTRICAL SYSTEM DETAILS SHEETS AS APPLICABLE FOR EACH CASE.
- 58
- INSTALL 2"C, 2#2, 1#6 (G)(480 V TRANSFORMER PRIMARY), 2"C, 3#3/0 (120/240 V TRANSFORMER SECONDARY).
- 59
- FURNISH AND INSTALL 37.5 KVA 480 V-120/240 V STEP-DOWN TRANSFORMER INSIDE NEMA 3R ENCLOSURE WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES AND BASE DETAILS.
- 60
- INSTALL FOUNDATION PAD FOR MODEL 332L CABINET. SEE RSP ES-3C. WHERE MULTIPLE CABINETS ARE PROPOSED IN THE VICINITY, FOUNDATION PADS MUST BE INSTALLED SIDE-BY-SIDE. SEE DETAILS ON SHEET ED-2 FOR VTMS, ETS AND UPS CONDUIT LAYOUT. CABINET(S) TO BE INSTALLED BY OTHERS (TOLL SYSTEM INTEGRATOR).
- 61
- INSTALL 2-2"C, PT.
- 62
- FURNISH AND INSTALL TYPE CCTV 40 POLE FOR FUTURE CCTV CAMERA. SEE RSP ES-16B FOR DETAILS. CCTV CAMERA TO BE INSTALLED BY TSI.
- 63
- INSTALL 3"C, 2#3/0 (480 V SUB-PANEL #B), 1#4 (G)(SUB-PANEL #B).
- 64
- INSTALL 3"C, PT, PER UTILITY COMPANY REQUIREMENTS. SERVICE CONDUCTORS AND SERVICE CONNECTION TO BE INSTALLED BY PG&E. COORDINATE WITH PG&E THROUGH THE ENGINEER FOR SERVICE CONNECTION, CONDUIT DEPTH AND TYPE DETAILS.
- 65
- INSTALL PG&E PULL BOX TYPE 2 PER UTILITY COMPANY REQUIREMENTS. SERVICE CONDUCTORS AND SERVICE CONNECTION TO BE INSTALLED BY PG&E. COORDINATE WITH PG&E THROUGH THE ENGINEER FOR PULL BOX DETAILS.
- 66
- FURNISH AND INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TOLL SYSTEM). SEE ES-2C AND RSP ES-2D FOR NOTES AND FOUNDATION DETAILS. USE TESCO MODEL 27-100 METERED OR APPROVED EQUAL. TYPE III-AF SERVICE EQUIPMENT ENCLOSURE MUST INCLUDE A SEPARATE UTILITY RACEWAY AND BE ABLE TO ACCOMMODATE 200A/2P MAIN CIRCUIT BREAKER AND CIRCUIT BREAKERS SHOWN ON SERVICE WIRING DIAGRAMS.
- 67
- LIGHTING STANDARD IS PART OF "TOLL LIGHTING SYSTEM" WORK.
- 68
- FURNISH AND INSTALL METERED TYPE III-DF SERVICE EQUIPMENT ENCLOSURE (TOLL SYSTEM) WITH EXTERNAL 120 V/240 V- 480 V STEP-UP TRANSFORMER IN NEMA 3R CABINET WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES, FOUNDATION AND BASE DIMENSIONS. FOR PRIMARY AND SECONDARY VOLTAGES, TRANSFORMER SIZE AND WIRING, SEE SERVICE WIRING DIAGRAMS SHOWN ON ELECTRICAL SYSTEM DETAILS SHEETS AS APPLICABLE FOR EACH CASE.
- 69
- FURNISH AND INSTALL 25 KVA 240-480 V STEP-UP TRANSFORMER INSIDE NEMA 3R ENCLOSURE WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES AND BASE DETAILS.



Beshoy 4-22-19
FOR REVISION ONLY

- 70
- INSTALL 3"C, 2#4/0 (480 V SUB-PANEL #1), 1#2 (G)(SUB-PANEL #1), 2#1/0 (480 V SUB-PANEL #2), 1#6 (G)(SUB-PANEL #2).
- 71
- INSTALL 3"C, 2#4/0 (480 V SUB-PANEL #1), 1#2 (G)(SUB-PANEL #1).
- 72
- INSTALL 3"C, 2#1/0 (480 V SUB-PANEL #2), 1#6 (G)(SUB-PANEL #2).
- 73
- INSTALL 3"C, 3#1/0 (120/240 V SUB-PANEL #A).
- 74
- INSTALL 3"C, 3#1/0 (120/240 V SUB-PANEL #A), 2#8 (240 V Ltg), 1#8 (G), 3#14 (120 V PEU).
- 75
- FURNISH AND INSTALL UNMETERED TYPE III-DF SERVICE EQUIPMENT ENCLOSURE (TOLL SYSTEM) WITH EXTERNAL 120 V/240 V- 480 V STEP-UP TRANSFORMER IN NEMA 3R CABINET WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES, FOUNDATION AND BASE DIMENSIONS. FOR PRIMARY AND SECONDARY VOLTAGES, TRANSFORMER SIZE AND WIRING, SEE SERVICE WIRING DIAGRAMS SHOWN ON ELECTRICAL SYSTEM DETAILS SHEETS AS APPLICABLE FOR EACH CASE.
- 76
- FURNISH AND INSTALL TYPE 61-5-100 MOD SIGNAL STANDARD WITHOUT LMA AND WITH 65 FT SMA. CUT SMA AT 30 FT AND PROVIDE A RAIN TIGHT CAP. SEE ED-9 FOR SMA MOUNTING HEIGHT REQUIREMENTS AND SIGNAL POLE DETAILS. SEE CONSTRUCTION DETAILS FOR LOCATION AND INSTALLATION DETAILS.
- 77
- FOR US-101 MANAGED LANE PROJECT PRELIMINARY BACKHAUL COMMUNICATIONS SYSTEM DETAILS (TOLL SYSTEM), SEE ED-15 FOR DETAILS.
- 78
- INSTALL 3"C, 2#2/0 (120/240 V BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM), 1#2/0 (N)(BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM), 1#4 (G)(BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM).
- 79
- INSTALL 3"C, 2#2/0 (120/240 V BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM), 1#2/0 (N)(BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM), 1#4 (G)(BACKHAUL HUB ASSEMBLY)(TOLL SYSTEM), 2#8 (240 V Ltg), 1#8 (G), 3#14 (120 V PEU).
- 80
- INSTALL 3"C, PT. AT&T TO BE DETERMINED FOR BACKHAUL HUB CABINET (TOLL SYSTEM).
- 81
- FOR MOUNTING TOLL READER UNDERNEATH THE OVERHEAD SIGN STRUCTURE, INSTALL ADDITIONAL HANDHOLES, COUPLINGS, HOLES AND J HOOK. SEE ED-29 *OR ED-29A AS APPLICABLE FOR DETAILS. PROVIDE AS PART OF THE MANUFACTURING OF THE POST.*
- 82
- INSTALL 2"C, 2#2/0, 1#4 (G)(240 V TRANSFORMER PRIMARY), 2"C, 2#4 (480 V TRANSFORMER SECONDARY).
- 83
- FURNISH AND INSTALL 15 KVA 240-480 V STEP-UP TRANSFORMER INSIDE NEMA 3R ENCLOSURE WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES AND BASE DETAILS.
- 84
- INSTALL 2"C, 2#2, 1#8 (G)(240 V TRANSFORMER PRIMARY), 2"C, 2#4 (480 V TRANSFORMER SECONDARY).
- 85
- FURNISH AND INSTALL 15 KVA 480-120/240 V STEP-DOWN TRANSFORMER INSIDE NEMA 3R ENCLOSURE WITH SIDE LOUVERS. SEE ES-2C AND RSP ES-2G FOR ENCLOSURES AND BASE DETAILS.
- 86
- INSTALL 2"C, 2#4, 1#8 (G)(480 V TRANSFORMER PRIMARY), 2"C, 3#2 (120/240 V TRANSFORMER SECONDARY).
- 87
- INSTALL CONDUIT INSIDE BRIDGE MEDIAN CONCRETE BARRIER, SEE CONSTRUCTION DETAILS AND STRUCTURE PLANS FOR DETAILS.
- 88
- SERVICE CONDUCTORS AND SERVICE CONNECTION TO RECONNECT EXISTING CALTRANS SERVCIE ENCLOSURE TO BE INSTALLED BY PG&E. COORDINATE WITH PG&E THROUGH THE ENGINEER FOR SERVICE CONNECTION DETAILS AND REQUIREMENTS.

<div>1</div>	4-22-19	100% PSE REVISION	BD	VS	6
MARK	DATE	DESCRIPTION	REV	CHK	CCO No.
REVISIONS					

CONTRACT CHANGE ORDER NO. 6
SHEET 93 OF 119

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	489	701
12-10-18 REGISTERED CIVIL ENGINEER DATE					
12-10-18 PLANS APPROVAL DATE					
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- 89
- INSTALL 3"C, PT. AT&T TO BE DETERMINED FOR THE ETS HUB CABINET (TOLL SYSTEM).
- 90
- FURNISH AND INSTALL TYPE CCTV 25 POLE FOR FUTURE CCTV CAMERA. SEE RSP ES-16B FOR DETAILS. CCTV CAMERA TO BE INSTALLED BY TSI.
- 91
- INSTALL 3"C, 2#1/0 (480 V SUB-PANEL #1), 1#6 (G)(SUB-PANEL #1), 2#1/0 (480 V SUB-PANEL #2), 1#6 (G)(SUB-PANEL #2).
- 92
- INSTALL 3"C, 2#1/0 (480 V SUB-PANEL #1), 1#6 (G)(SUB-PANEL #1).
- 93
- INSTALL 3"C, 2#1/0 (480 V SUB-PANEL #2), 1#6 (G)(SUB-PANEL #2).
- 94
- INSTALL No. 6 NON-TRAFFIC PULL BOX IN CONCRETE BARRIER TOP INSTALLATION, SEE RSP ES-8A FOR PULL BOX DETAILS. SEE CONSTRUCTION DETAILS FOR INSTALLATION DETAILS.
- 95
- INSTALL 3"C, 2#3/0 (480 V SUB-PANEL #1), 1#4 (G)(SUB-PANEL #1).
- 96
- INSTALL 3"C, 3#1/0 (120/240 V SUB-PANEL #A).
- 97
- INSTALL 3"C, 3#1/0 (120/240 V SUB-PANEL #A), 2#8 (240 V Ltg), 1#8 (G), 3#14 (120 V PEU).
- 98
- INSTALL 3"C, 2#4/0 (480 V SUB-PANEL #B), 1#2 (G)(SUB-PANEL #B).
- 99
- EXISTING 4-1½"C, PT.
- 100
- EXISTING 4-1½"C, 72-STRAND SMFO CABLE IN 1 OF 4-1½"C (SM SMART CORRIDOR).

LEGEND

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR: DAVID WILLIAMS

CHECKED BY: JOE MCCONNELL

DESIGNED BY: BESHAY DEMYAN/ALEXANDER HA

REVISOR: BESHAY DEMYAN/ALEXANDER HA

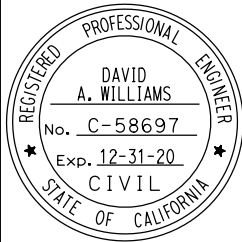
DATE: 12-10-18

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

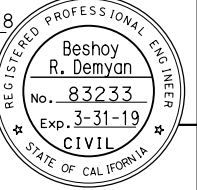
LEGEND (FOR SHEET E-6 ONLY):

- 123 INSTALL 4"C, PT. EACH CONDUIT BEND AND ELBOW MUST BE MINIMUM 3' SWEEPING RADIUS. INSTALL PULL TAPE.
- 124 INSTALL 3"C, WITH 3-CELL INNERDUCT, 144-STRAND SMFO CABLE (TOLL SYSTEM). INSTALL PULL TAPE IN EACH CELL. INSTALL 1#8 (TRACER WIRE).
- 137 COORDINATE WITH AT&T FOR SERVICE POINT CONNECTION AS SHOWN.
- 250 INSTALL 2"C, PT. EACH CONDUIT BEND AND ELBOW MUST BE MINIMUM 3' SWEEPING RADIUS. INSTALL PULL TAPE.
- 251 FURNISH AND INSTALL FIBER OPTIC PULL BOX. SEE SHEET ED-3 FOR DETAILS. COVER MARKING MUST DEVIATE FROM THE COVER MARKING SHOWN ON ED-3. COVER MARKING MUST BE "VTA" "FOC COMMUNICATIONS"
- 252 INSTALL 4-1/2"C, USE TYPE B. SEE DETAIL A ON ED-6. INSTALL PULL TAPE IN EACH 4-1/2"C.

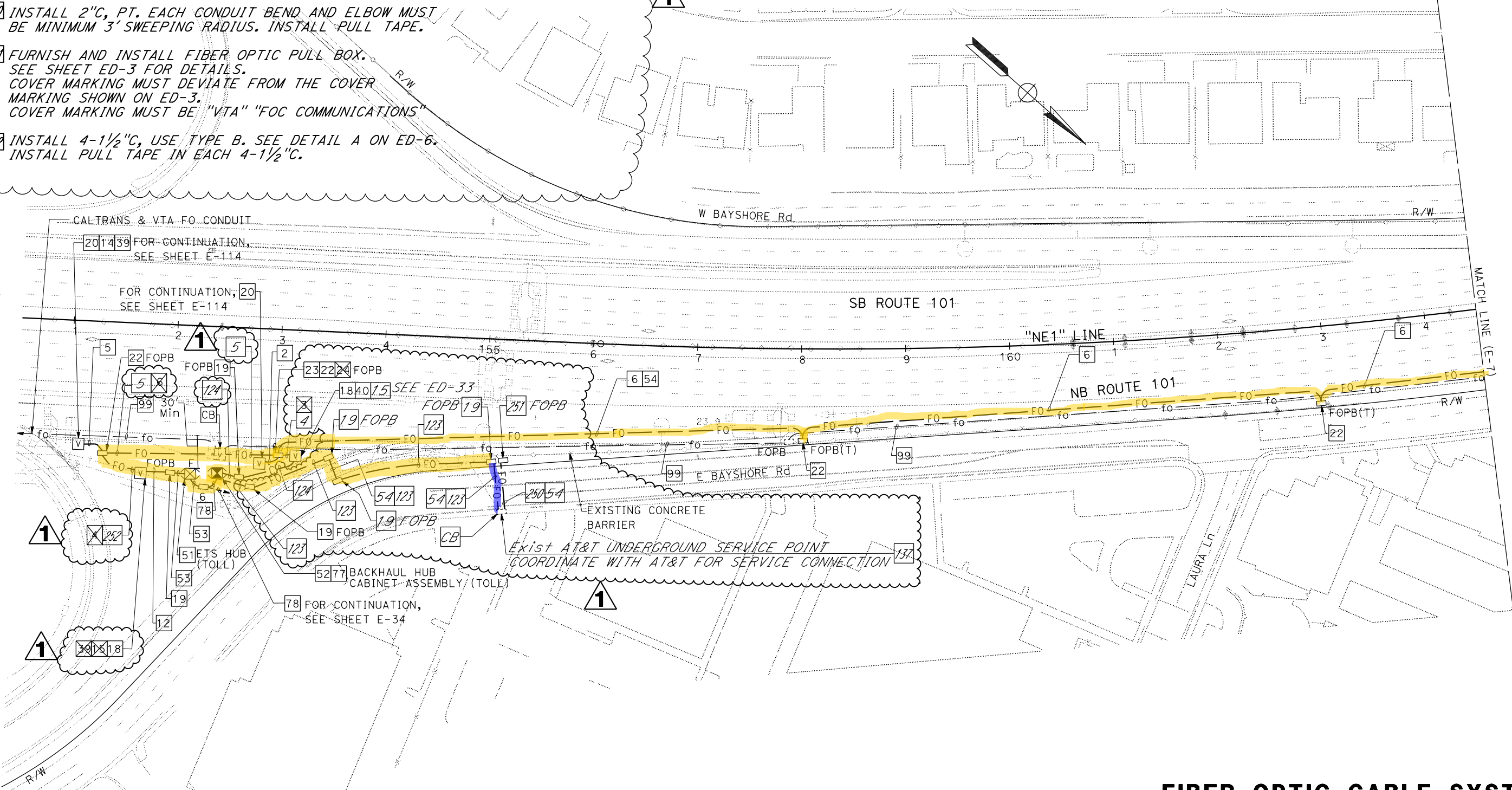


1	10-3-19	AT&T CONNECTION AT EMBARCADERO	BD	AH	23
1					
1					
1					
MARK	DATE	REVISION(S) DESCRIPTIONS	DES	CHK	DET
REGISTERED CIVIL ENGINEER: David Williams			DATE: 10-3-19		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	492	701
Beshay			12-10-18	DATE	
REGISTERED CIVIL ENGINEER			12-10-18	PLANS APPROVAL DATE	
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CONTRACT CHANGE ORDER NO. 23
SHEET ____ OF ____



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR
DAVID WILLIAMS

CALCULATED-DESIGNED BY
BESHOT DEMYAN/ALEXANDER HA

CHECKED BY
JOE MCCONNELL

REVISED BY
DATE

REVISED BY
DATE

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7		701

Beshoy

12-10-18

REGISTERED CIVIL ENGINEER

DATE

12-10-18

PLANS APPROVAL DATE

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

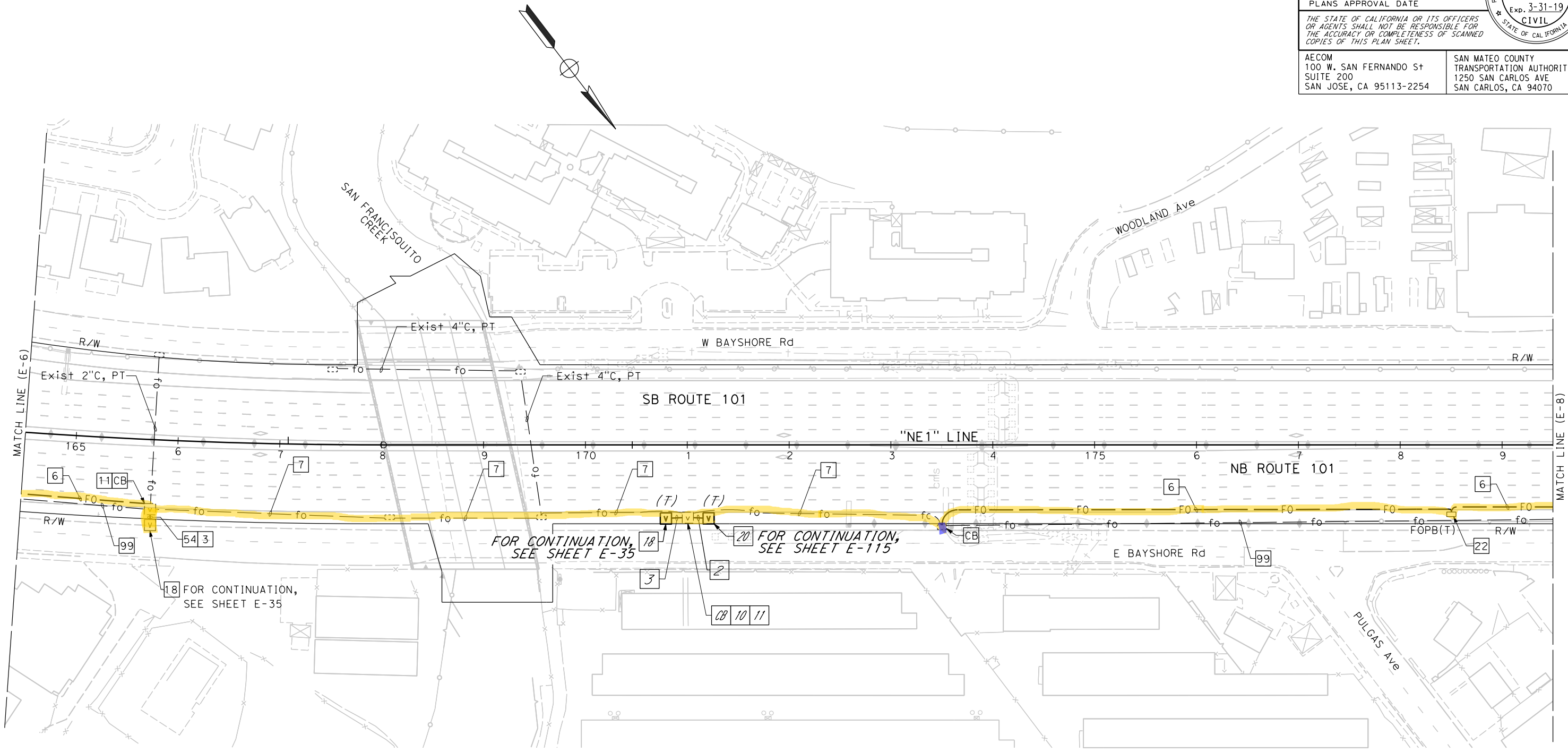
Beshoy
R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-7

DATE PLOTTED => 8/27/2019
TIME PLOTTED => 5:11:40 PM
LAST REVISION

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	494	701

Beshoy

12-10-18

REGISTERED CIVIL ENGINEER

DATE

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REGISTERED PROFESSIONAL ENGINEER

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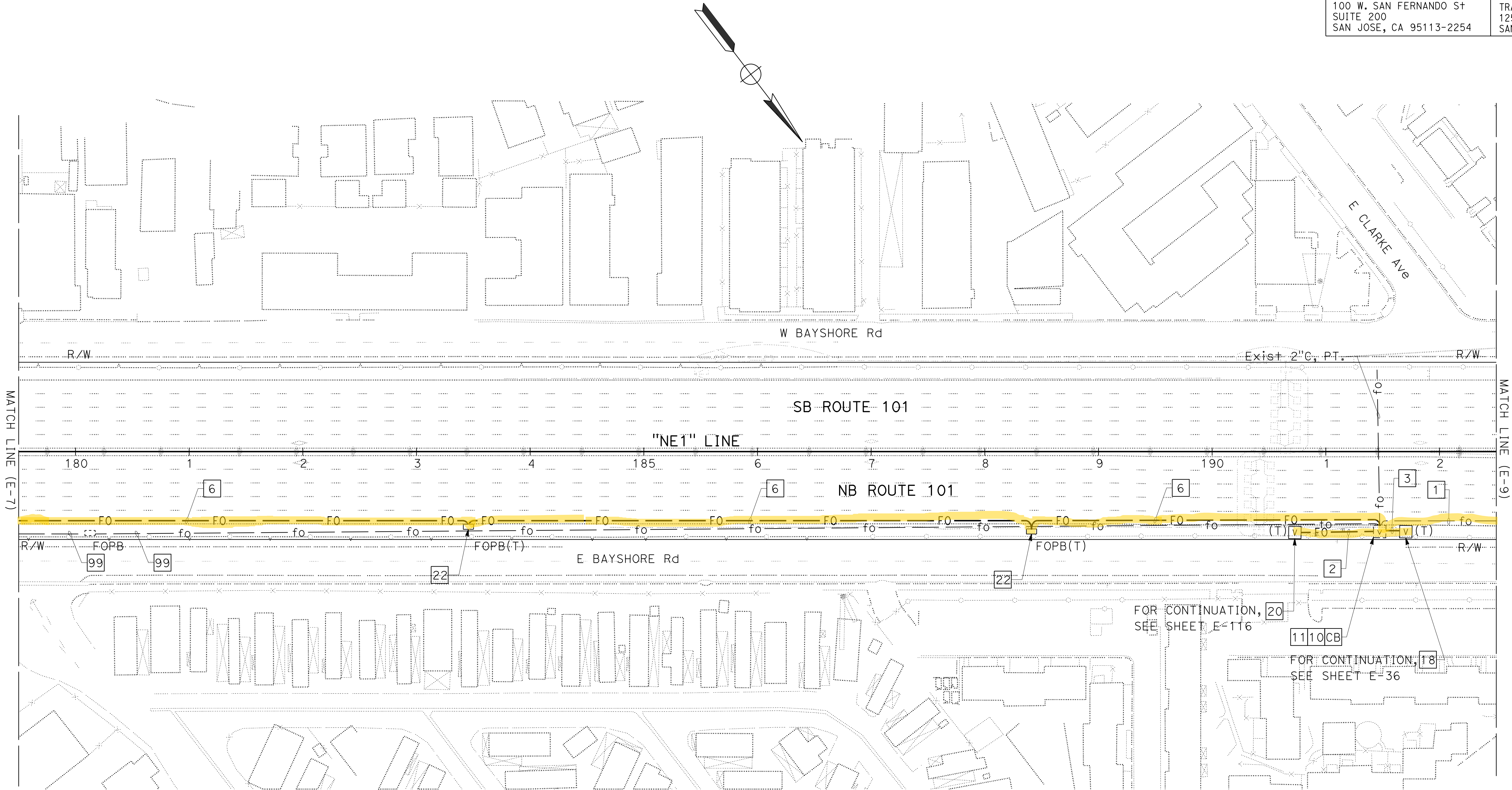
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FOR NOTES, ABBREVIATIONS AND
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FIBER OPTIC CABLE SYSTEM
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04	SCI, SM	101	52.2/52.6, 0.0/6.7	495	701

Beshoy

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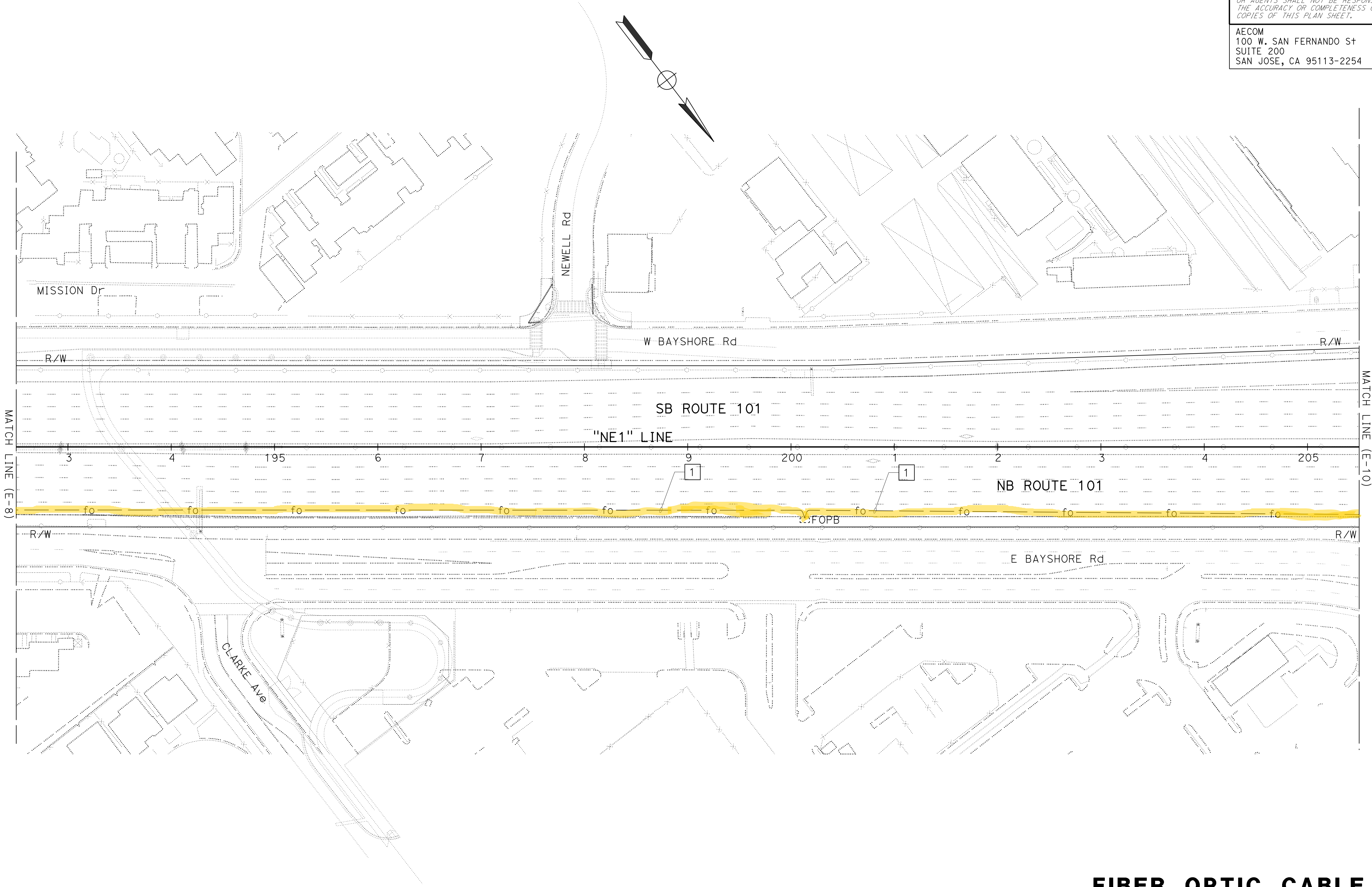
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SAN CARLOS, CA 94070



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	496	701

Beshoy

12-10-18

REGISTERED CIVIL ENGINEER

DATE

12-10-18

PLANS APPROVAL DATE

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

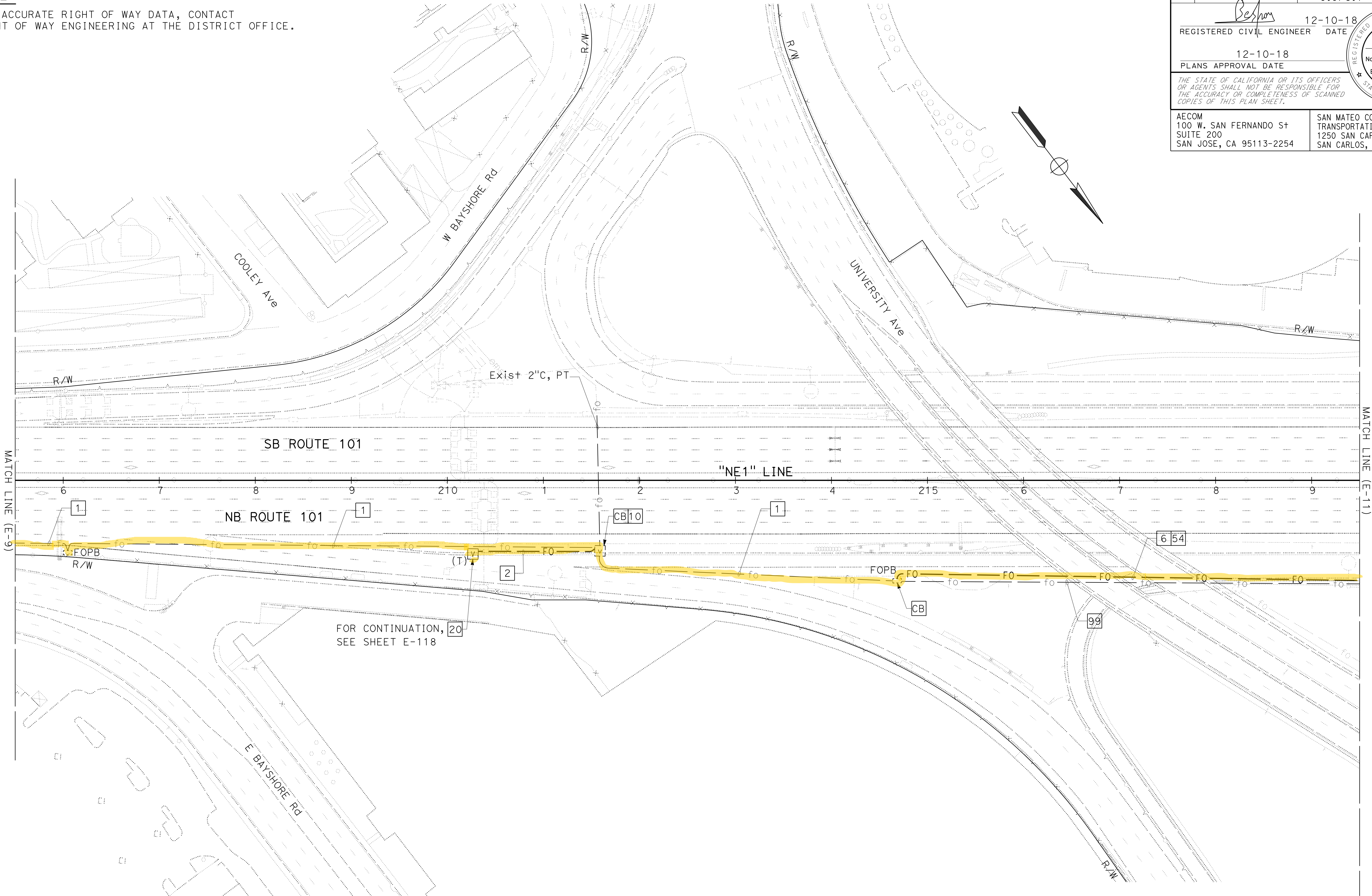
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R. Demyan

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Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

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STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOY DEMYAN/ALEXANDER HA

JOE MCCONNELL

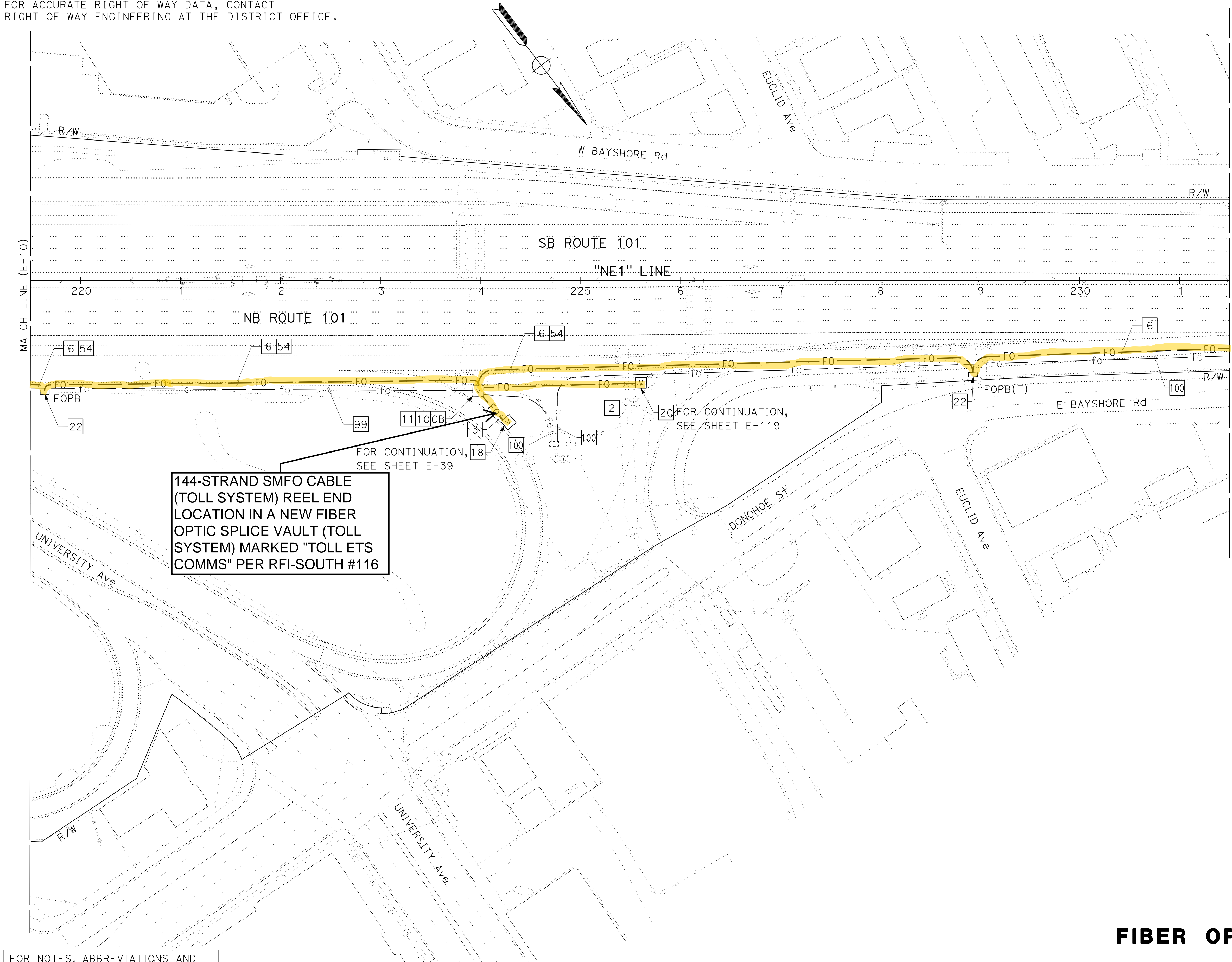
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DATE REVISED

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	497	701

12-10-18

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DATE

12-10-18

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

Beshoy
R. Demyan

No. 83233

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FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

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DATE PLOTTED => 01-MAR-2019
TIME PLOTTED => 16:14
LAST REVISION

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FUNCTIONAL SUPERVISOR

CALCULATED/DESIGNED BY

BESHOT DEMYAN/ALEXANDER HA

REVISOR

JOE MCCONNELL

DATE

REVISOR

DATE

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	498	701
REGISTERED CIVIL ENGINEER			DATE 12-10-18		
PLANS APPROVAL DATE			12-10-18		
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REGISTERED PROFESSIONAL ENGINEER

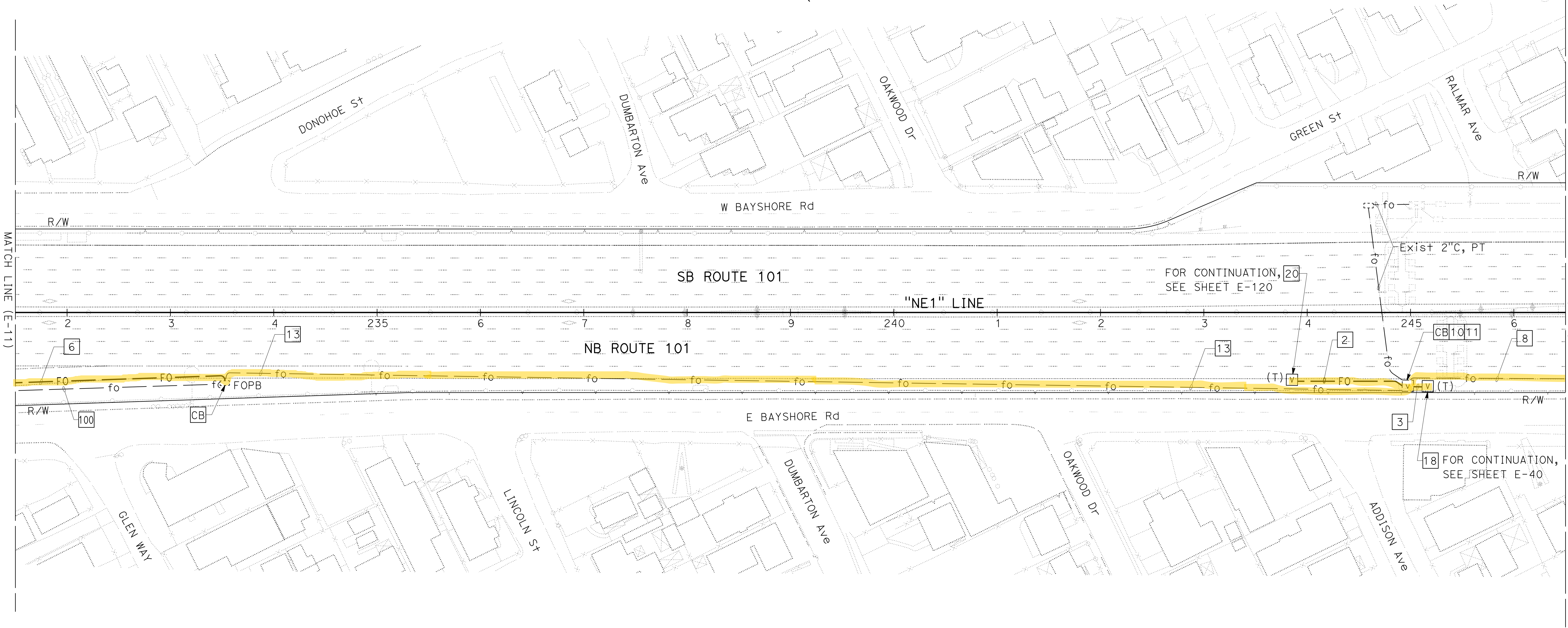
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FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED/DESIGNED BY

CHECKED BY

BESHOT DEMYAN/ALEXANDER HA

JOE MCCONNELL

REVISED BY

DATE REVISED

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-

NOTE:

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	499	701

Beshoy

12-10-18

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DATE

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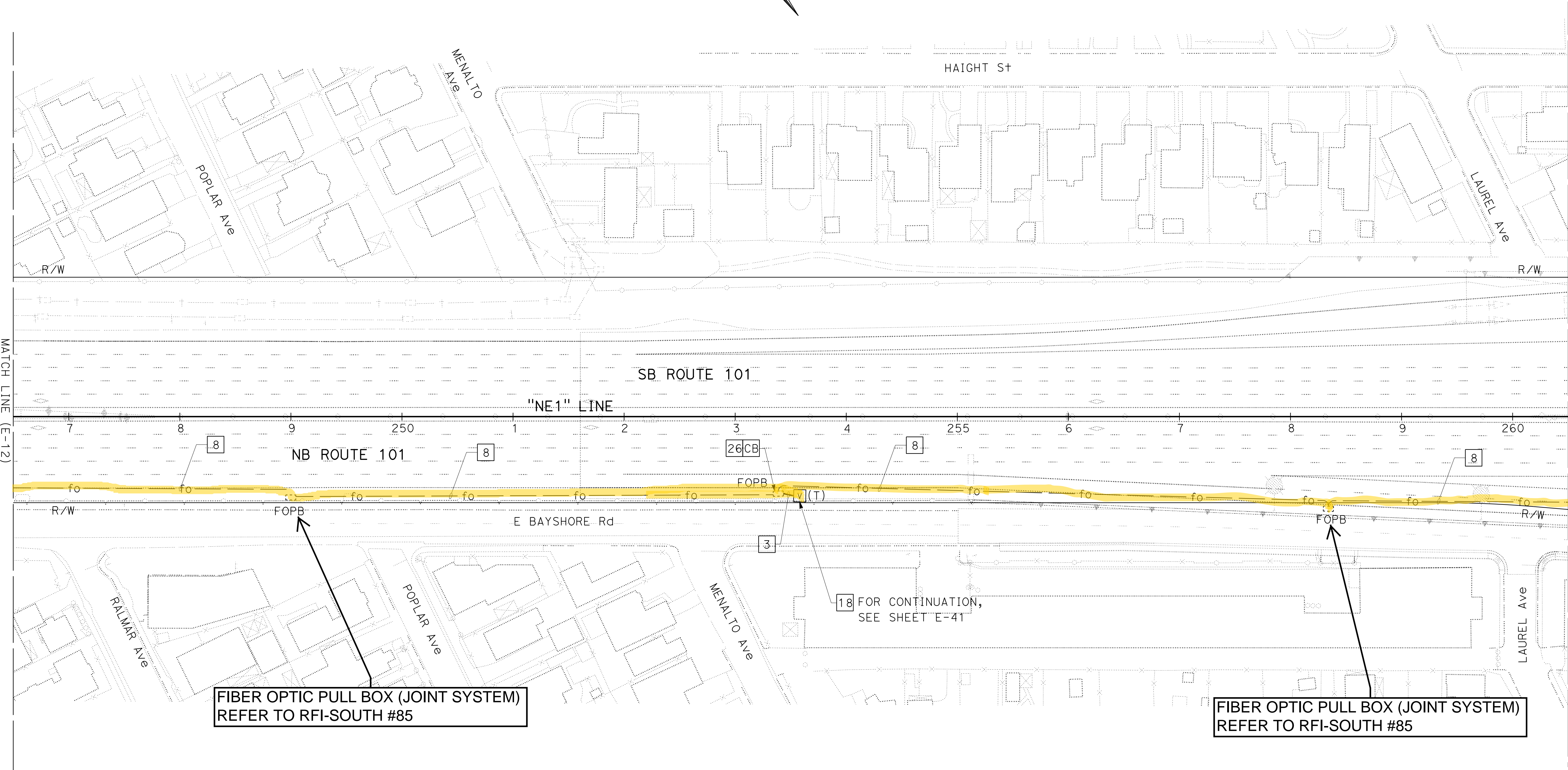
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STATE OF CALIFORNIA

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SAN JOSE, CA 95113-2254

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1250 SAN CARLOS AVE
SAN CARLOS, CA 94070



FOR NOTES, ABBREVIATIONS AND
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FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	500	701

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REGISTERED PROFESSIONAL ENGINEER

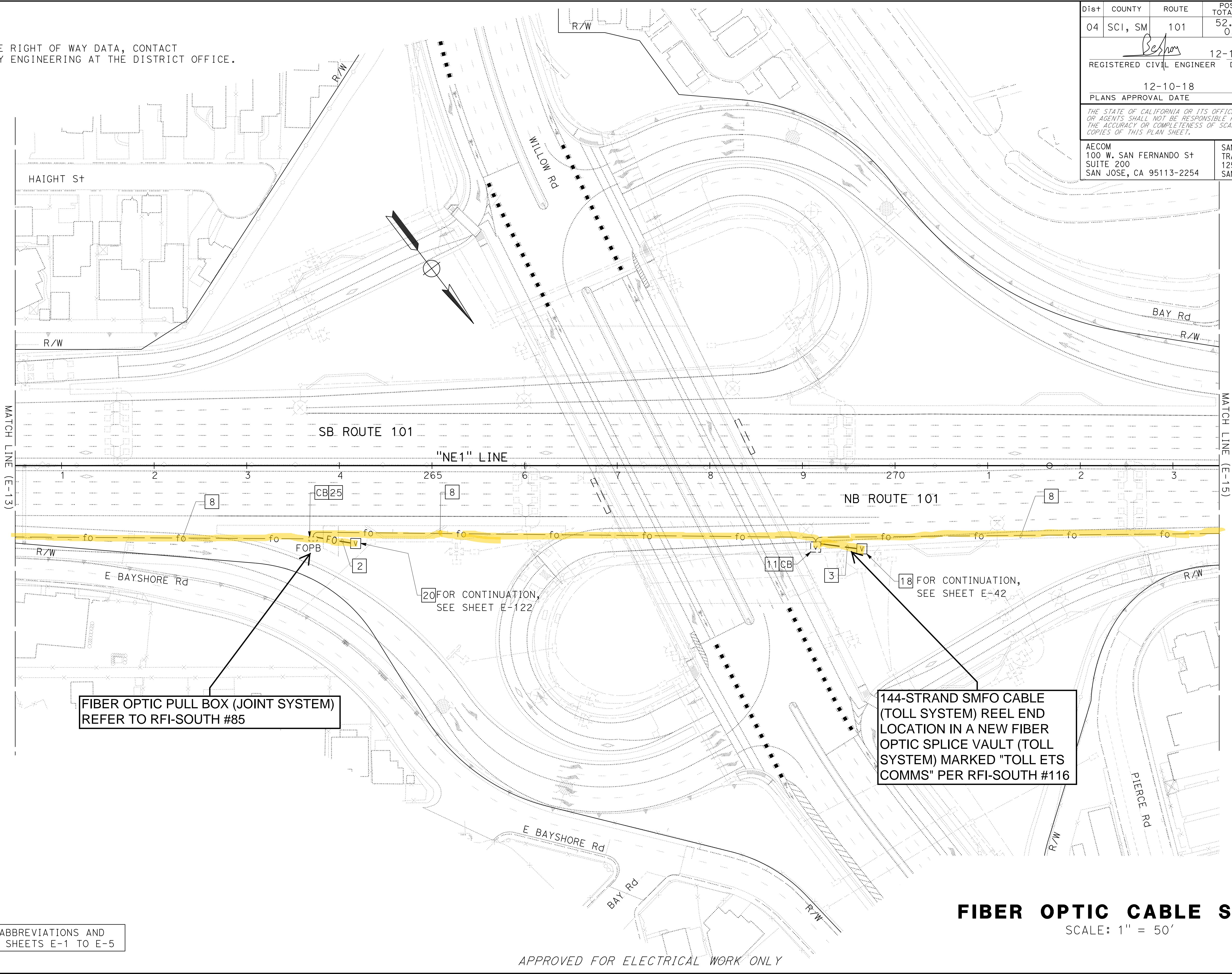
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R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA




FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA



DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED/DESIGNED BY

CHECKED BY

BESHOF DEMYAN/ALEXANDER HA

JOE MCCONNELL

REVISED BY

DATE REVISED

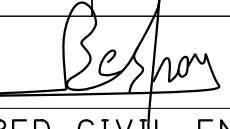
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	501	701



12-10-18

REGISTERED CIVIL ENGINEER

DATE

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REGISTERED PROFESSIONAL ENGINEER

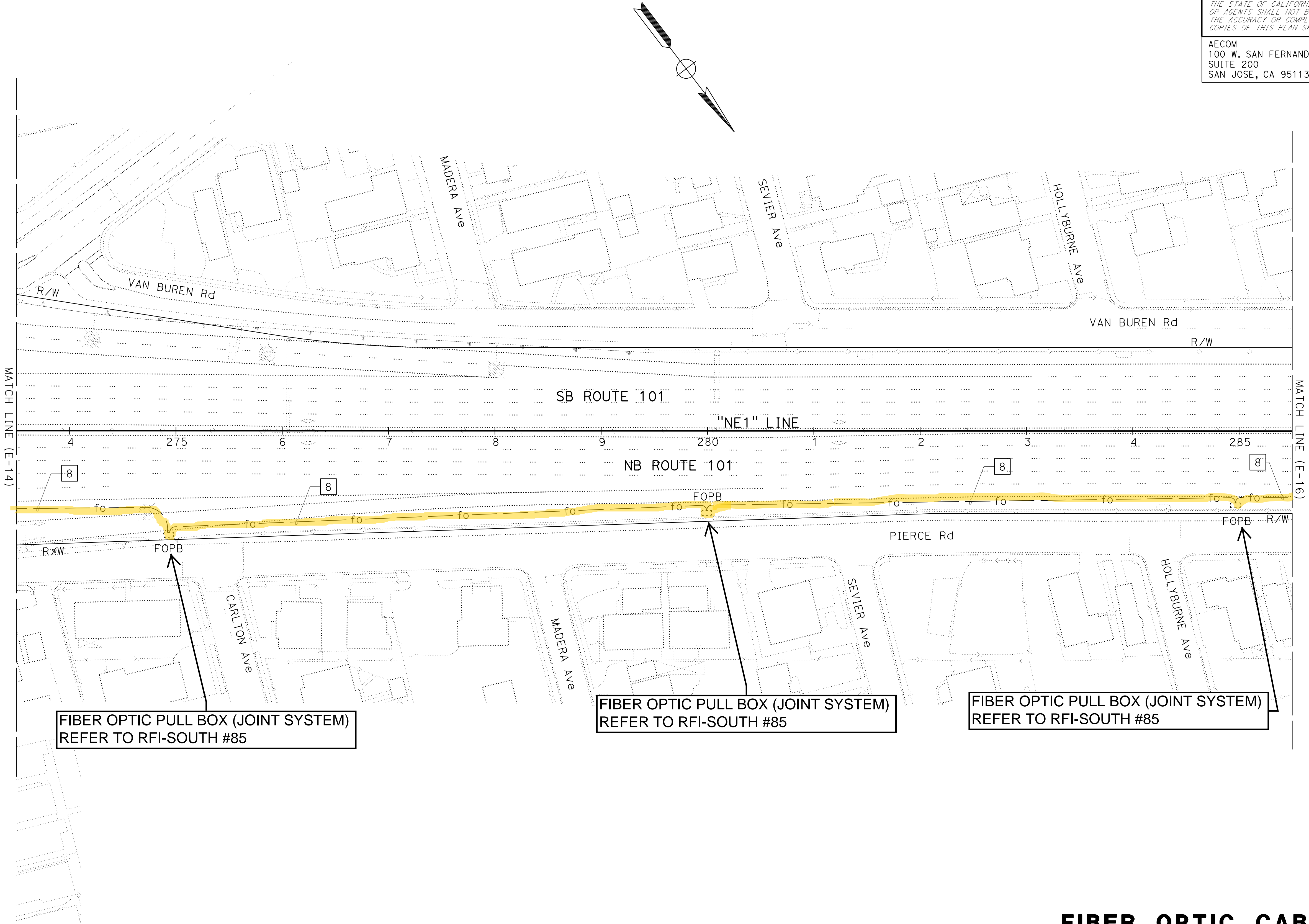
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R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	502	701

Beshoy

12-10-18

REGISTERED CIVIL ENGINEER

DATE

12-10-18

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TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

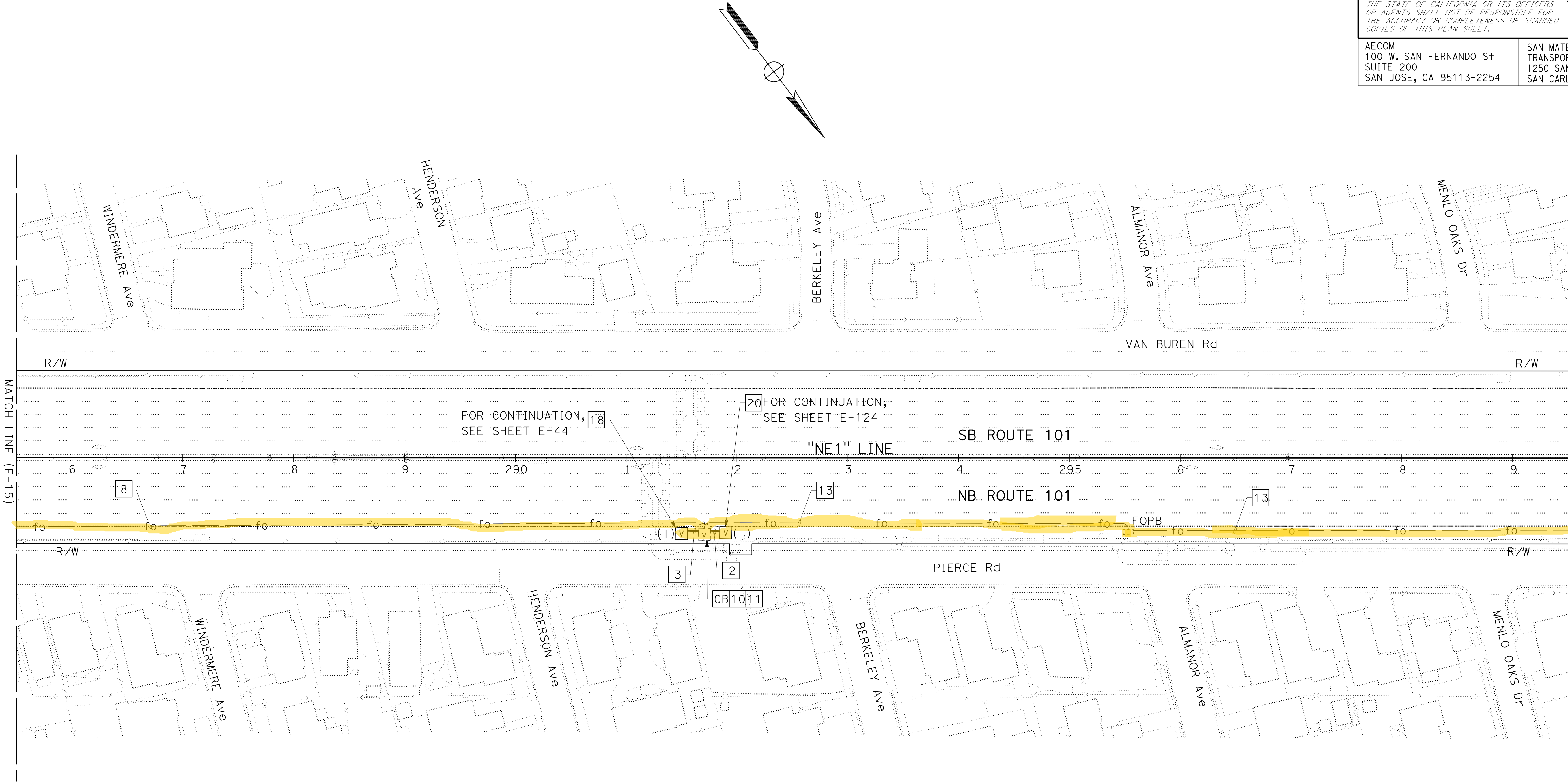
Beshoy
R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND (FOR SHEET E-17 ONLY):

- 300 FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (JOINT SYSTEM). SEE SHEET ED-4. COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".
- 301 PROVIDE 1 FEET MINIMUM VERTICAL AND HORIZONTAL CLEARANCE FROM EXISTING SAN FRANCISCO PUBLIC UTILITIES (SFPUC) WATER PIPELINES TO NEW INSTALLED CONDUITS. THE MINIMUM FIBER CONDUIT TRENCH DEPTH SHOWN ON ED-6 CAN BE MODIFIED TO MEET THE MINIMUM VERTICAL AND HORIZONTAL CLEARANCE REQUIRED.
- 302 REMOVE EXISTING FIBER OPTIC SPLICE VAULT. FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (JOINT SYSTEM). SEE SHEET ED-4. COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".
- 303 COIL AND PROTECT 80 FT OF SMFO CABLE SLACK PER FIBER OPTIC TRUNK CABLE SYSTEM FOR EACH CALTRANS AND TOLL FIBER OPTIC SYSTEMS.
- 304 PROVIDE MINIMUM SWEEP RADII OF 36" WITH 45 DEGREES CONDUIT BEND FOR EACH CONDUIT BEND REQUIRED. DO NOT PLACE MORE THAN 270 DEGREES OF TOTAL BENDS INCLUDING THE TERMINATION BENDS WITHOUT A PULL BOX.
- 305 FIBER PULLING STRENGTH MUST NOT EXCEED THE VALUE SPECIFIED BY THE CABLE MANUFACTURER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7		701

Beshay

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SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

Beshay

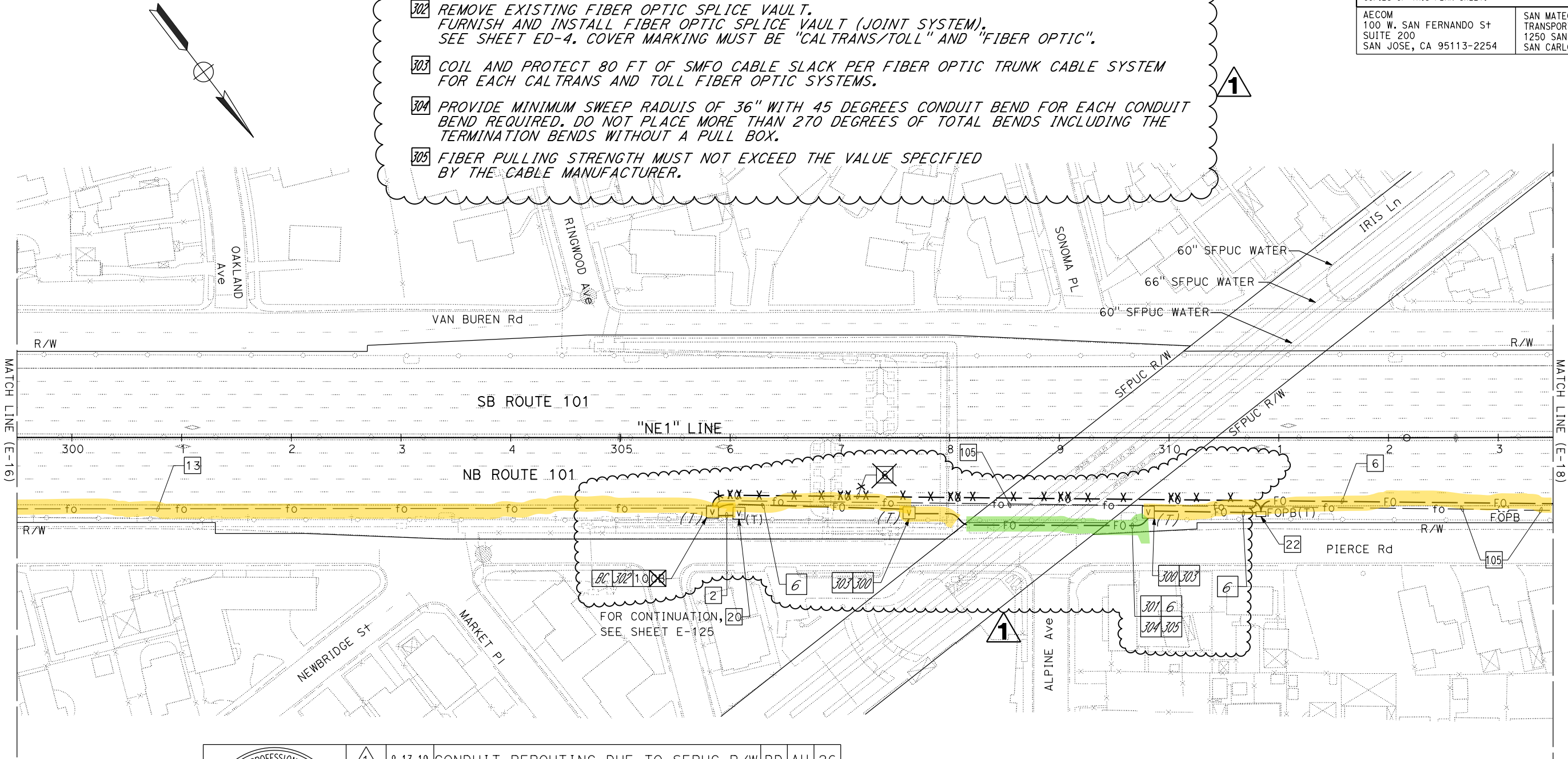
R. Demyan






No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



		8-13-19	CONDUIT REROUTING DUE TO SFPUC R/W	BD	AH	26	
							
							
							
	MARK	DATE	REVISION(S) DESCRIPTIONS			DES	CHK
REGISTERED CIVIL ENGINEER: <i>David Williams</i>				DATE: 8-13-2019			

CONTRACT CHANGE ORDER NO. 26
SHEET ____ OF ____

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOT DEMYAN/ALEXANDER HA

JOE MCCONNELL

REVISED BY

DATE REVISED

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	504	701

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

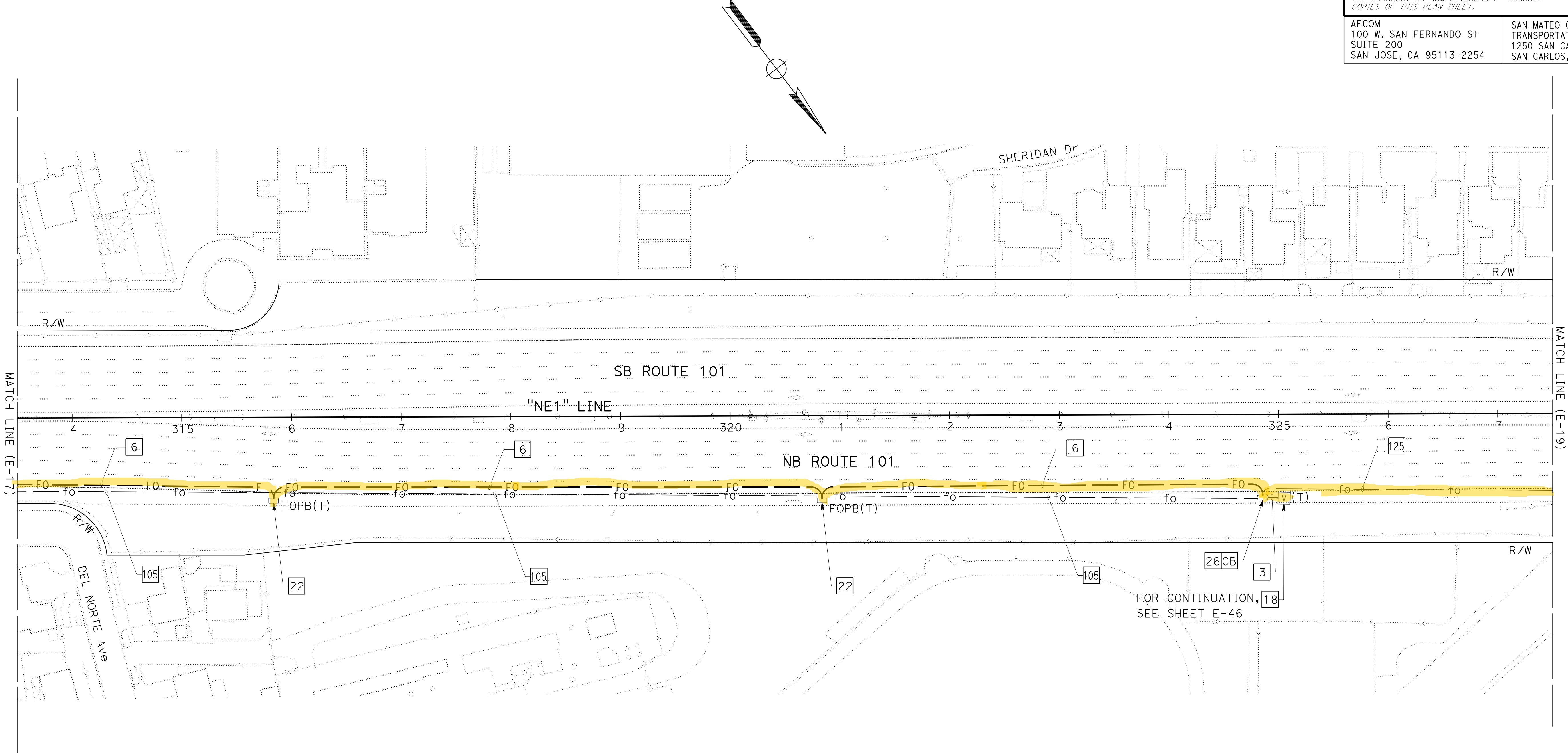
Beshoy
R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	505	701

Beshoy

12-10-18

REGISTERED CIVIL ENGINEER

DATE

12-10-18

PLANS APPROVAL DATE

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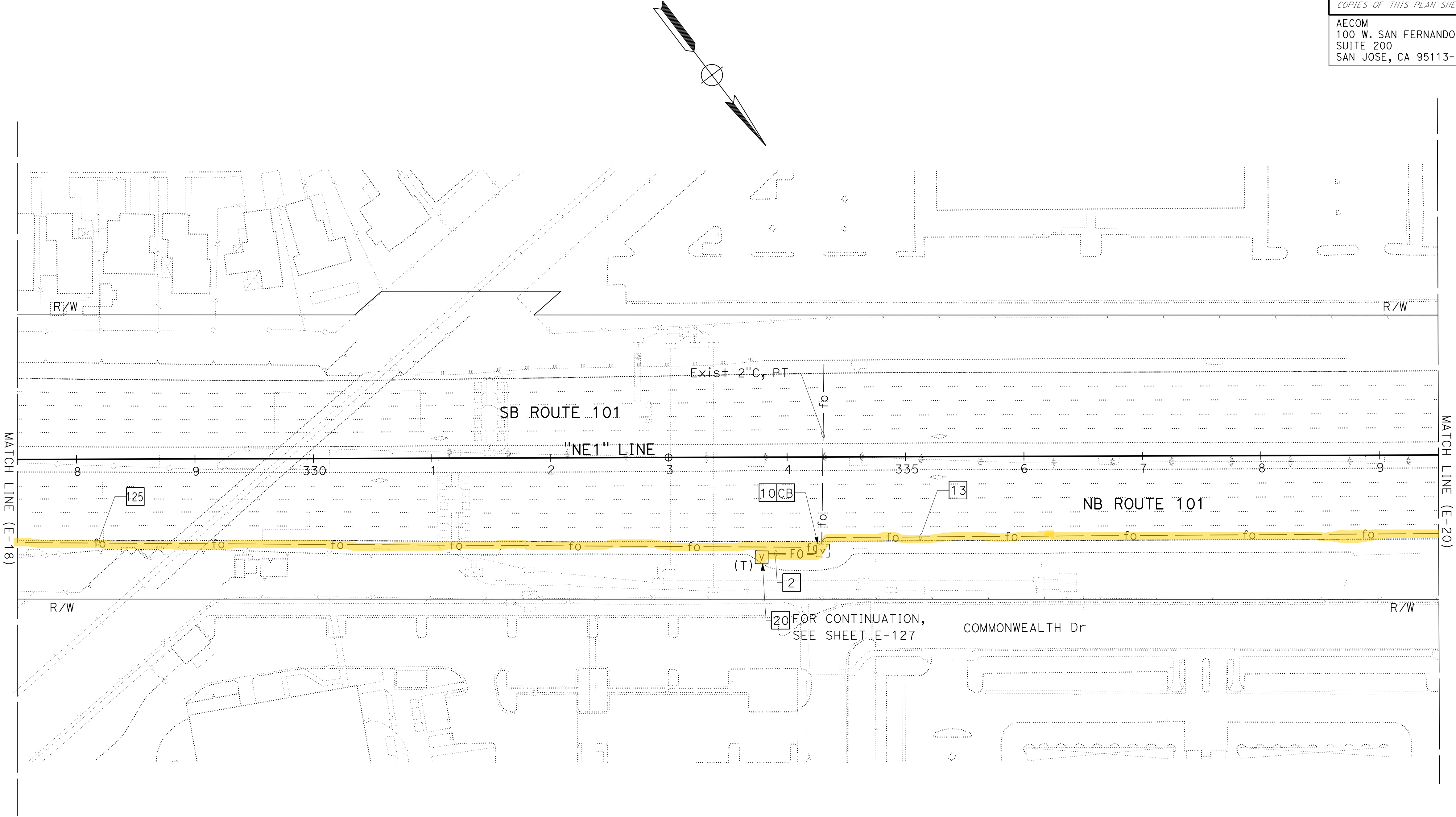
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STATE OF CALIFORNIA

AECOM
100 W. SAN FERNANDO ST
SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070



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SUITE 200

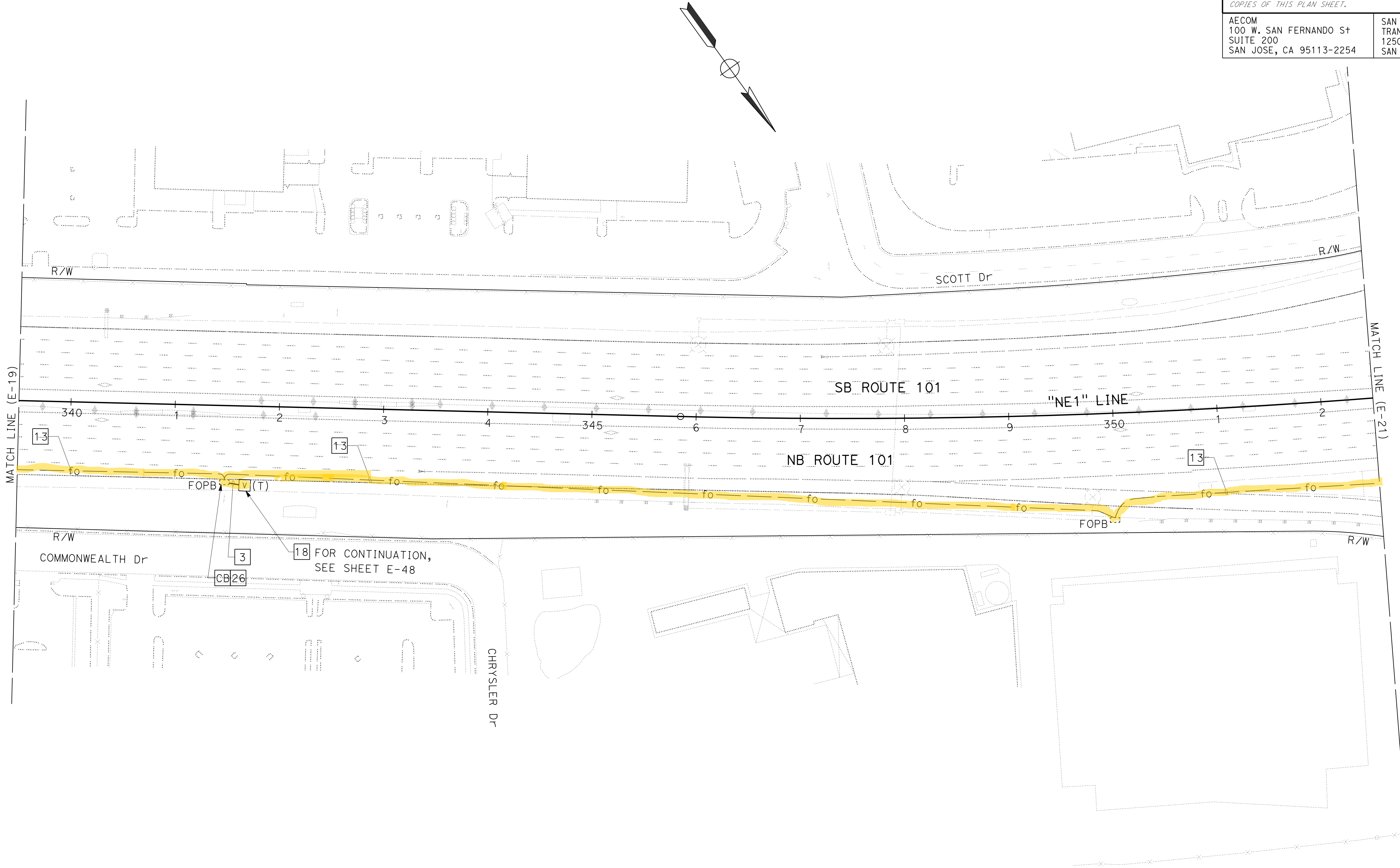
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070



FOR NOTES, ABBREVIATIONS AND
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APPROVED FOR ELECTRICAL WORK ONLY

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REGISTERED PROFESSIONAL ENGINEER

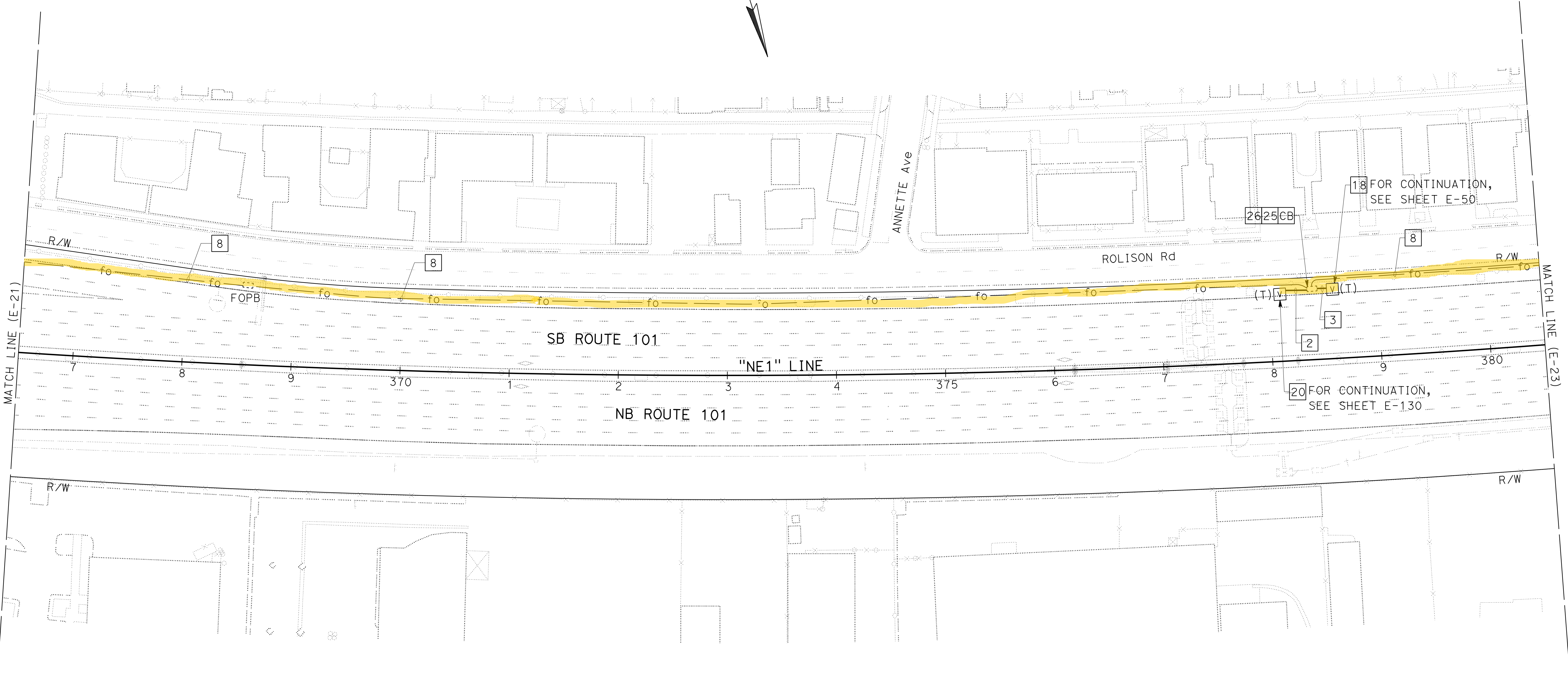
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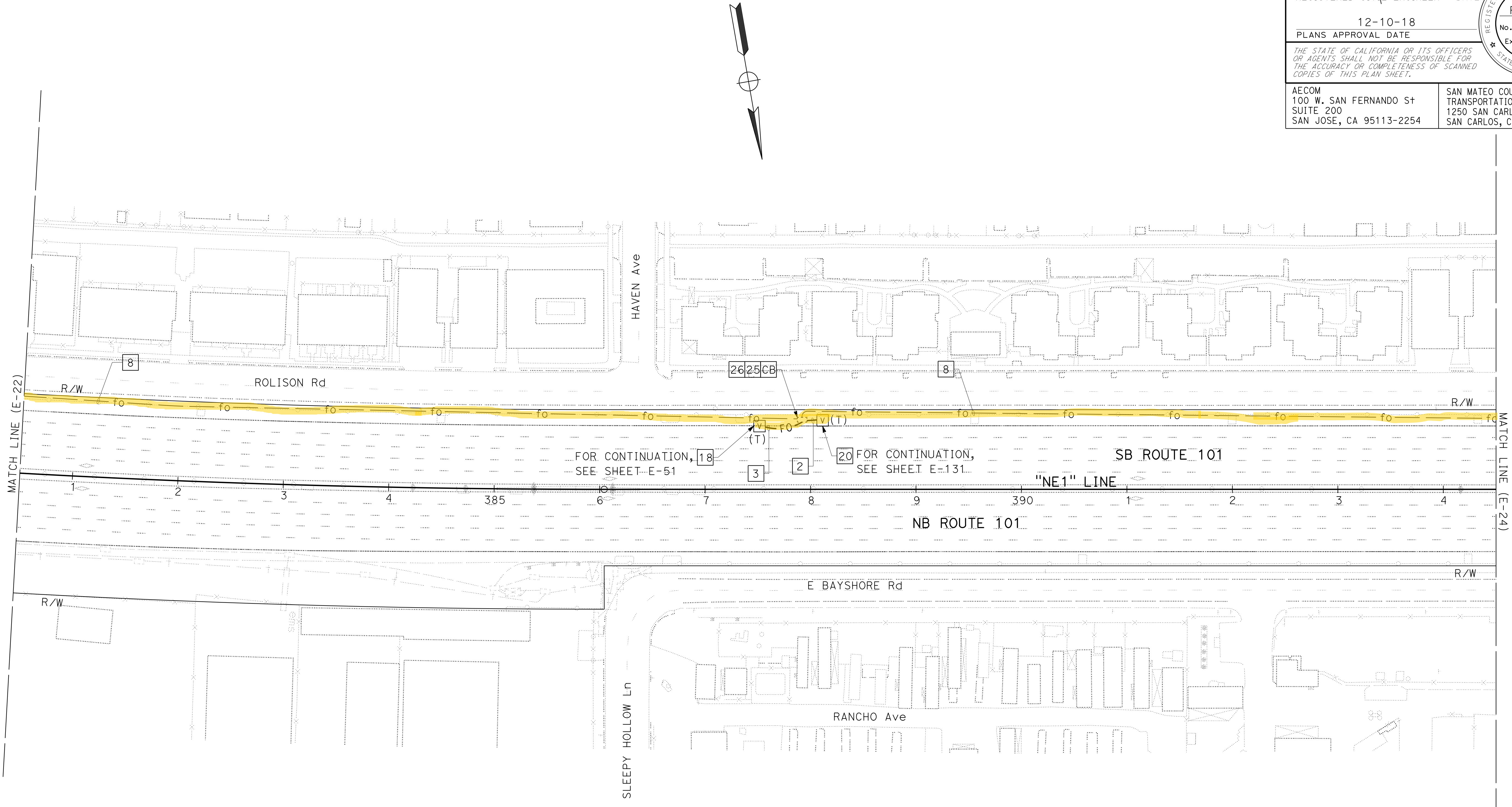
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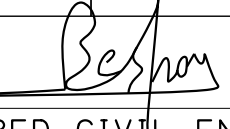


FOR NOTES, ABBREVIATIONS AND
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FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

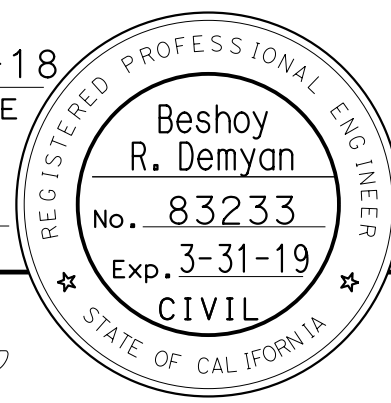
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	510	701


REGISTERED CIVIL ENGINEER

12-10-18
DATE

12-10-18
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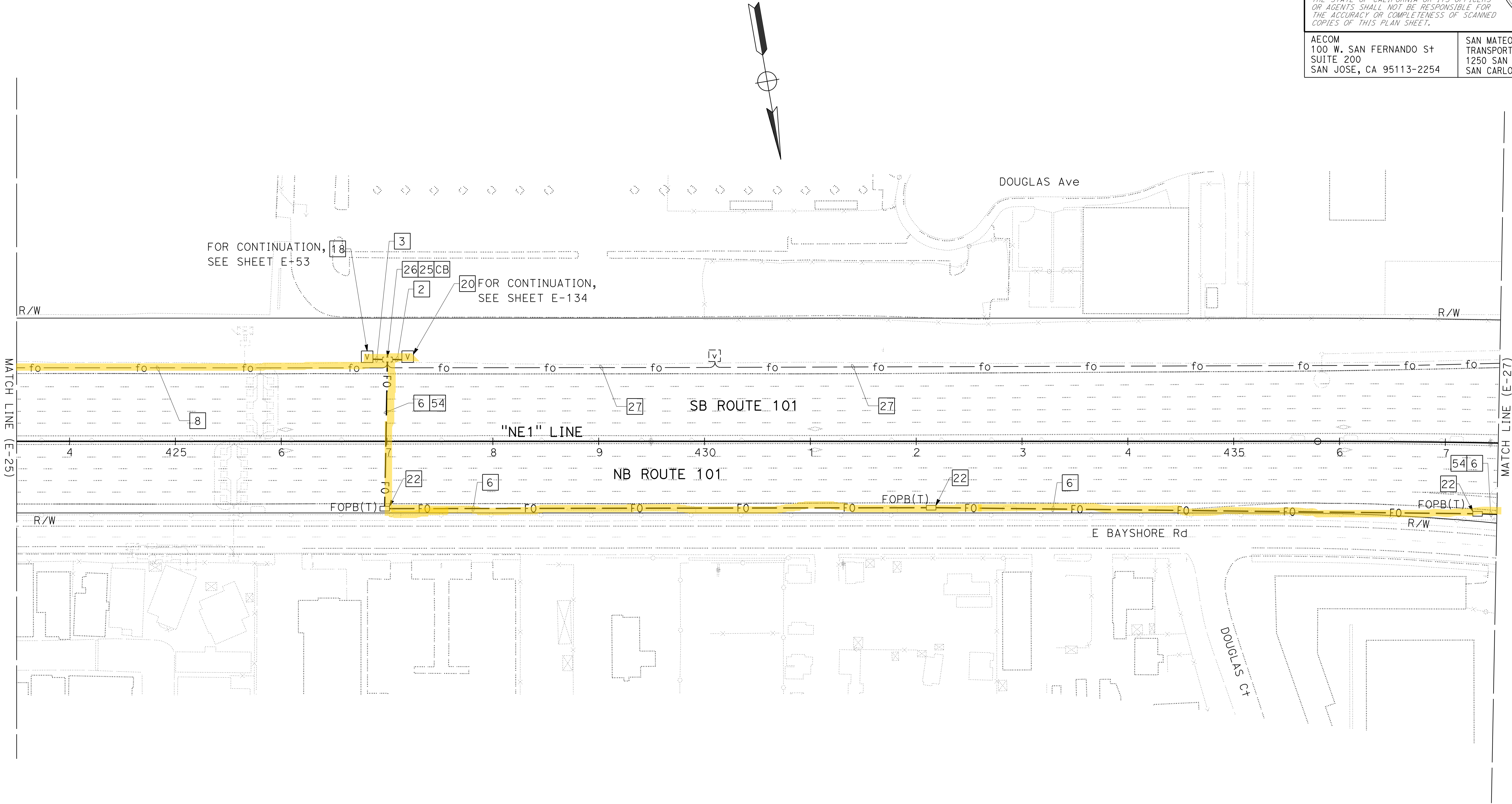
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FIBER OPTIC CABLE SYSTEM

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FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

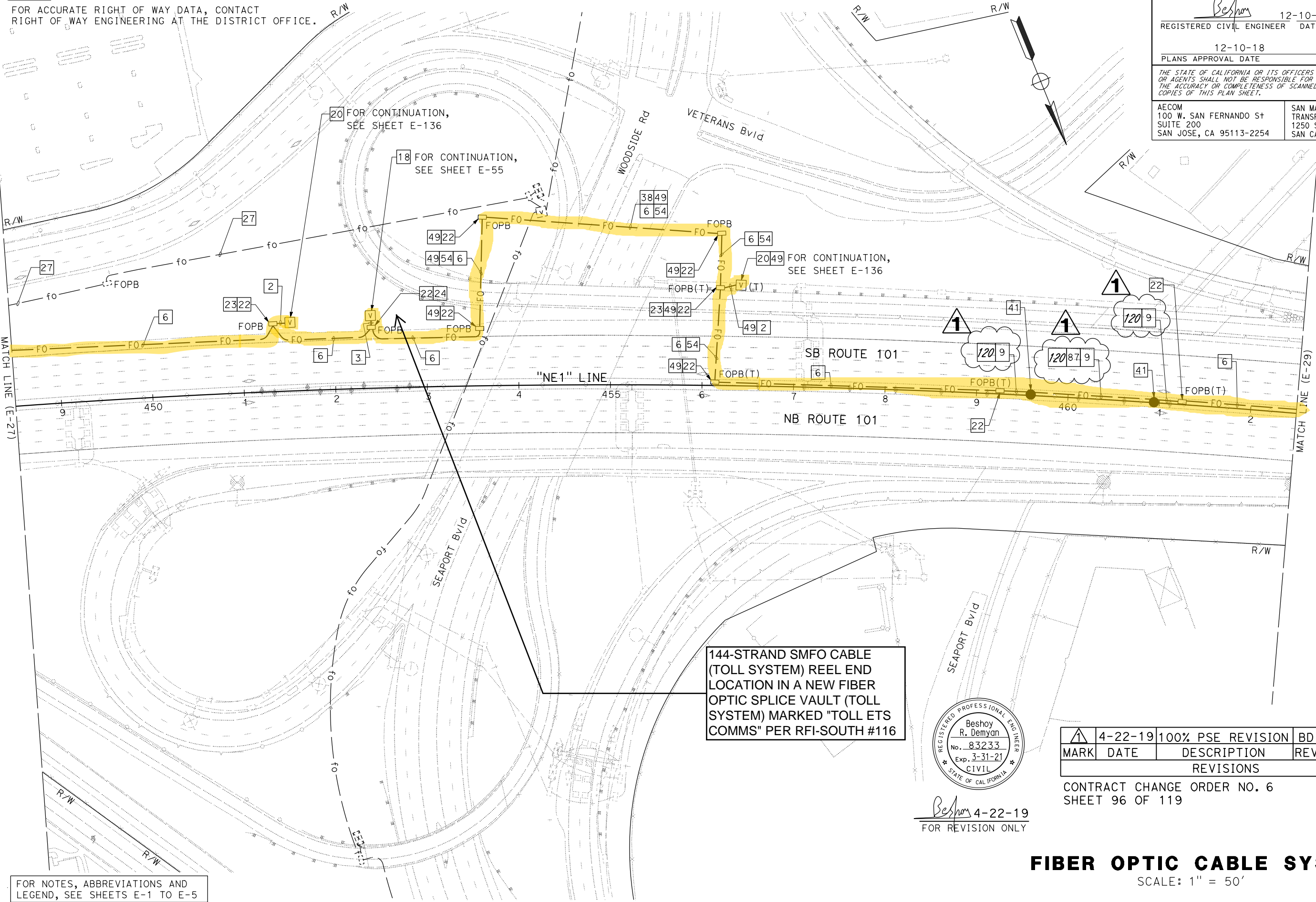
FUNCTIONAL SUPERVISOR
DAVID WILLIAMS

CALCULATED-DESIGNED BY
CHECKED BY

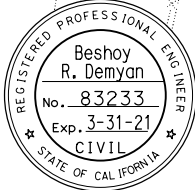
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JOE MCCONNELL

REVISED BY
DATE REVISED

NOTE:
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144-STRAND SMFO CABLE
(TOLL SYSTEM) REEL END
LOCATION IN A NEW FIBER
OPTIC SPLICE VAULT (TOLL
SYSTEM) MARKED "TOLL ETS
COMMS" PER RFI-SOUTH #116



Beshof 4-22-19
FOR REVISION ONLY

MARK	DATE	DESCRIPTION	REV	CHK	CCO No.
1	4-22-19	100% PSE REVISION	BD	VS	6
REVISIONS					

CONTRACT CHANGE ORDER NO. 6
SHEET 96 OF 119

FIBER OPTIC CABLE SYSTEM

SCALE: 1" = 50'

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED/DESIGNED BY

CHECKED BY

BESHOY DEMYAN/ALEXANDER HA

JOE MCCONNELL

REVISED BY

DATE REVISED

NOTE:

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

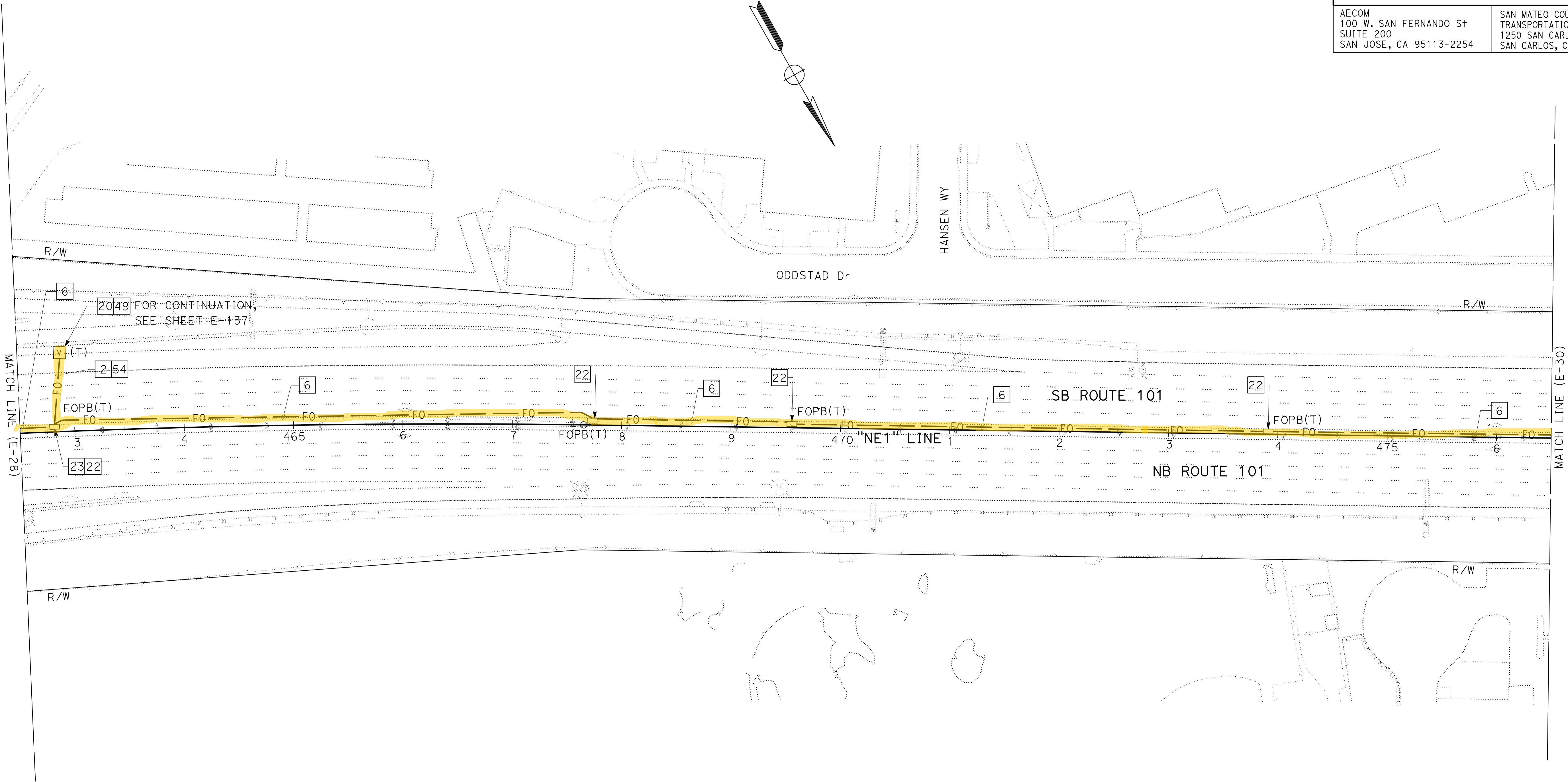
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R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
LEGEND, SEE SHEETS E-1 TO E-5

FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CALCULATED/DESIGNED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY	-	-	x
x	x	x	x	x	x	x	x	x	x

NOTE:
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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	52.2/52.6, 0.0/6.7	516	701
REGISTERED CIVIL ENGINEER			12-10-18 DATE		
PLANS APPROVAL DATE			12-10-18		
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AECOM 100 W. SAN FERNANDO ST SUITE 200 SAN JOSE, CA 95113-2254			SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070		

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1250 SAN CARLOS AVE
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REGISTERED PROFESSIONAL ENGINEER

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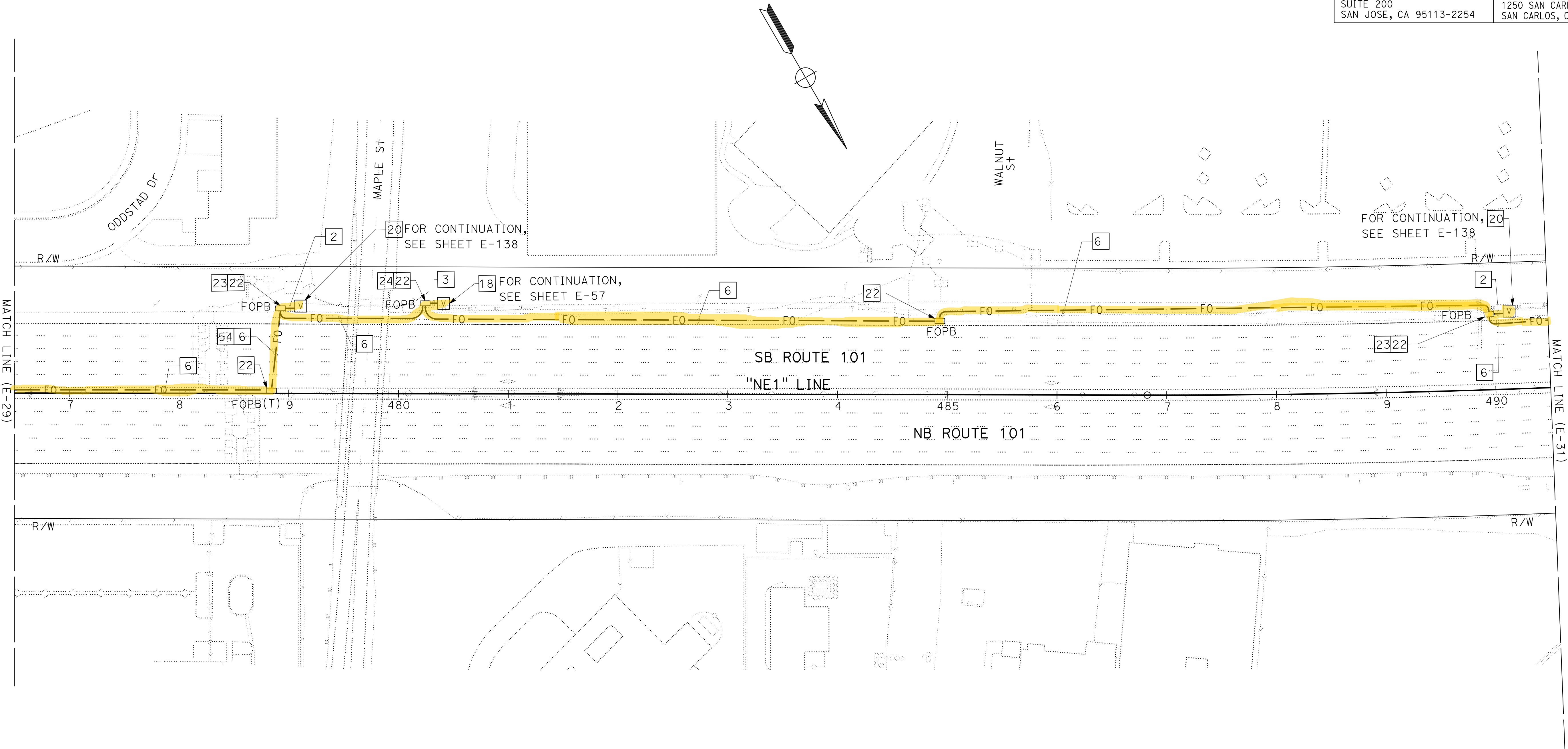
R. Demyan

No. 83233

Exp. 3-31-19

CIVIL

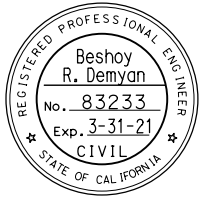
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND
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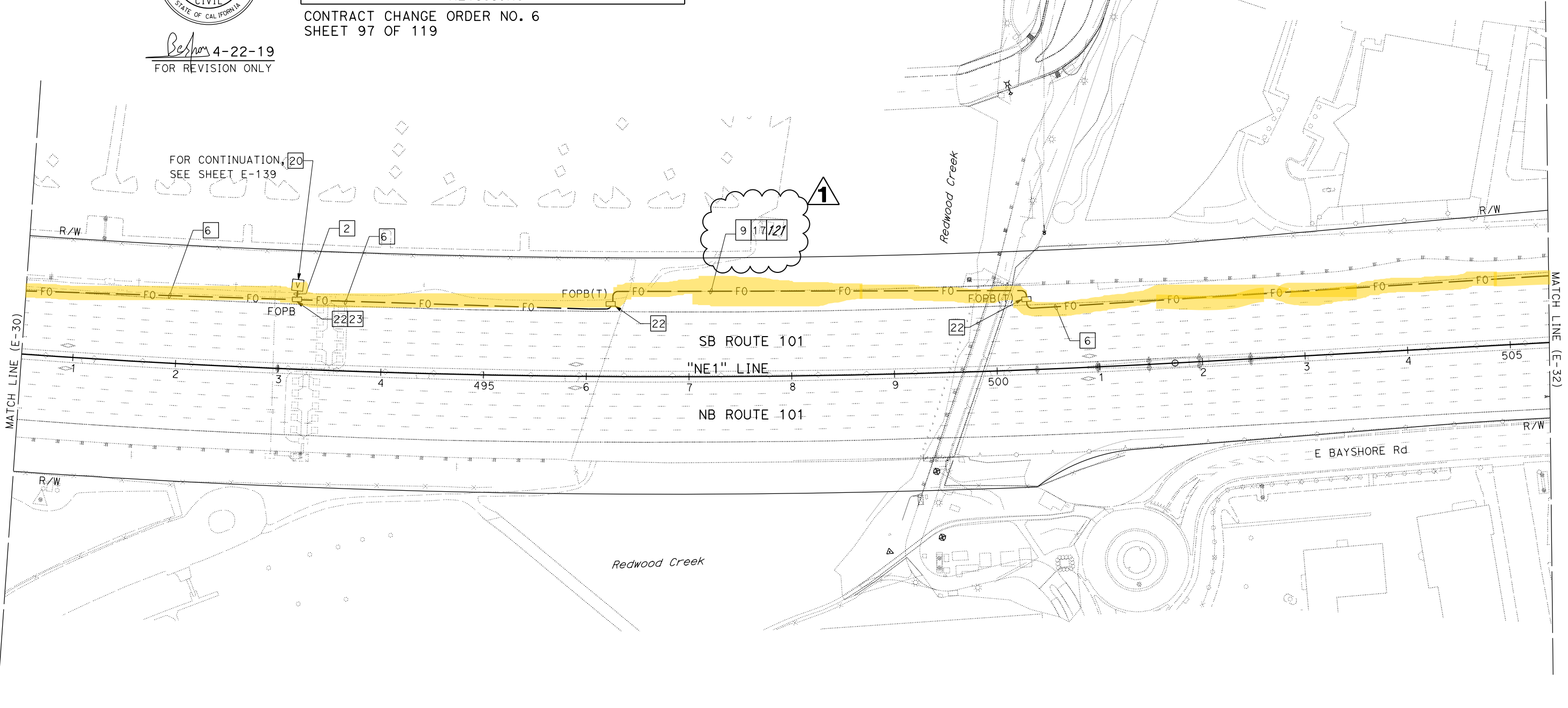
NOTE:
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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Beshoy 4-22-19
FOR REVISION ONLY

MARK	DATE	DESCRIPTION	REV	CHK	CCO No.
1	4-22-19	100% PSE REVISION	BD	VS	6
REVISIONS					

CONTRACT CHANGE ORDER NO. 6
SHEET 97 OF 119



FOR NOTES, ABBREVIATIONS AND
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FIBER OPTIC CABLE SYSTEM
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APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

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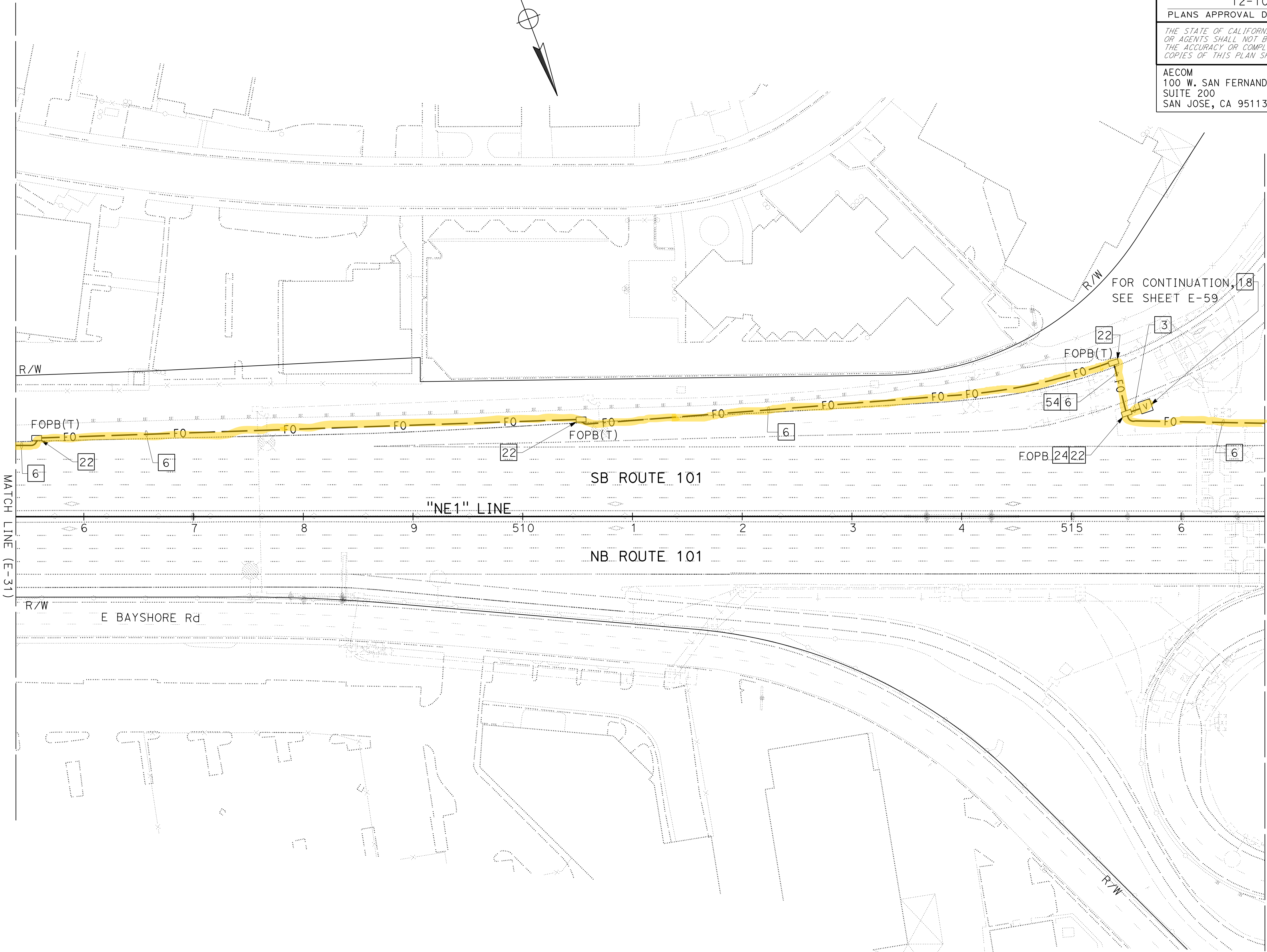
JOE MCCONNELL

REVISED BY

DATE REVISED

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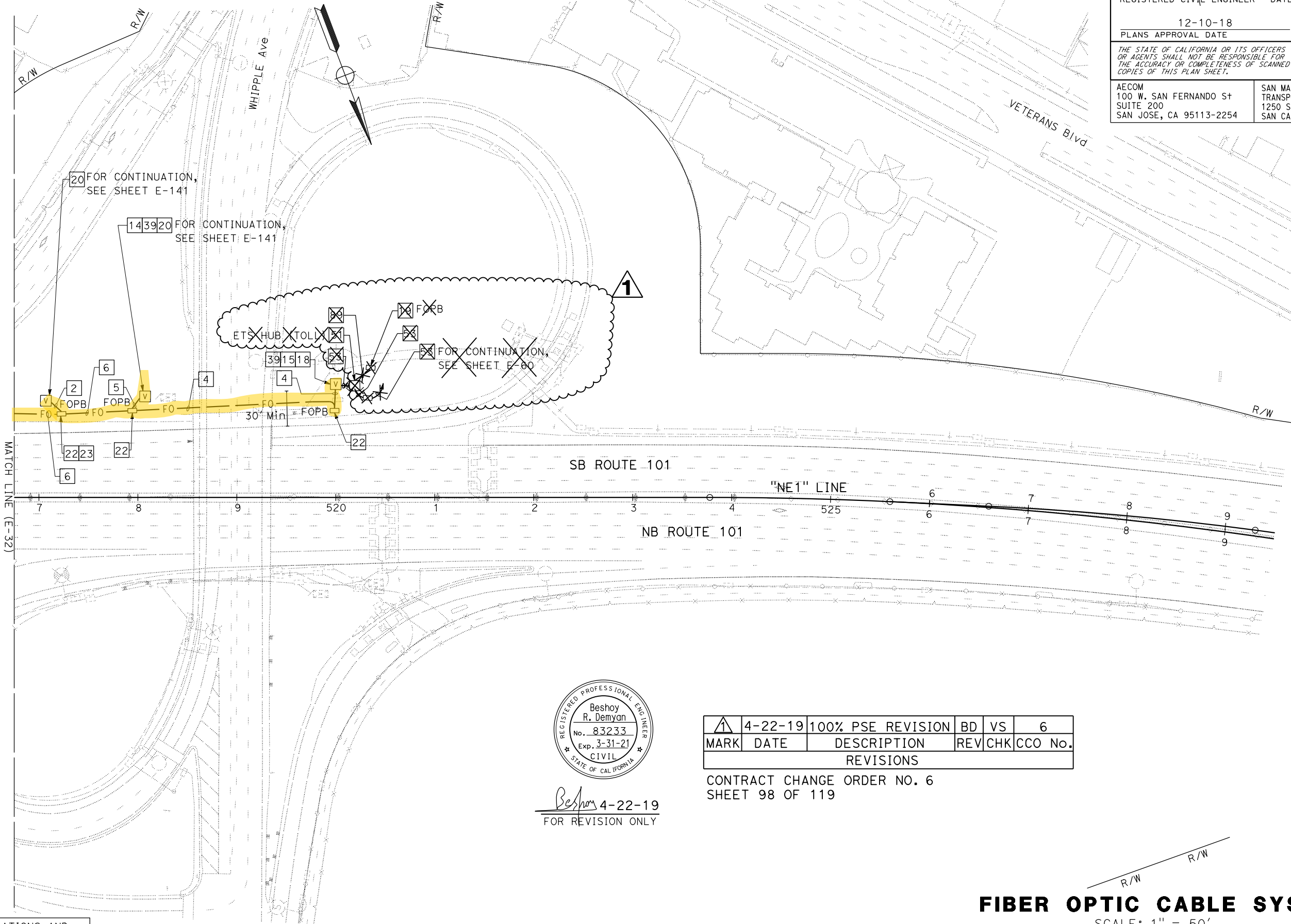
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STATE OF CALIFORNIA

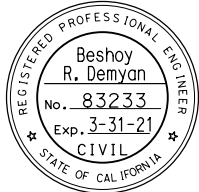
FIBER OPTIC CABLE SYSTEM
SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

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FOR REVISION ONLY

4-22-19	100% PSE REVISION	BD	VS	6
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CONTRACT CHANGE ORDER NO. 6
SHEET 98 OF 119

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Northern Segment Fiber Optic Crossovers Exhibit (E-5 through E-62):

 Fiber Optic Crossovers in the State Right of Way.

 Fiber Optic Crossovers in the City Right of Way.

For more details and notes, see the LEGEND sheets (E-1 and E-3).

2022-03-08

										Dist		County	Route	Post Miles Total Project		Sheet No.		Total Sheets	
										04		SCI, SM	101	50.3/52.6, 0.0/21.9		1632		2401	
										David Williams REGISTERED CIVIL ENGINEER		9-16-19 DATE		<div>REGISTERED PROFESSIONAL ENGINEER</div> <div>DAVID A. WILLIAMS</div> <div>No. C-58697</div> <div>Exp. 12-31-20</div> <div>CIVIL</div> <div>STATE OF CALIFORNIA</div>					
												November 22, 2019 PLANS APPROVAL DATE							
										AECOM 100 W. SAN FERNANDO ST SUITE 200 SAN JOSE, CA 95113-2254		SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070							

NOTES:

1. VERIFY ALL EXISTING UNDERGROUND UTILITIES, WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. CONTACT USA NORTH 811(1-800-277-2600) AT LEAST 48 HOURS BEFORE BEGINNING WORK. WHERE MARKINGS ARE WITHIN 10 FT OF THE NEW FOUNDATIONS, LOCATE UNDERGROUND UTILITIES BY POTHOLING PRIOR TO EXCAVATING.

2. ALL ELECTRICAL EQUIPMENT, INCLUDING CONDUITS AND PULL BOXES, IS SHOWN IN APPROXIMATE LOCATIONS. PROPOSE FINAL LOCATIONS TO THE ENGINEER FOR AUTHORIZATION. PROVIDE MINIMUM 48 HOURS FOR AUTHORIZATION OF NEW EQUIPMENT LOCATIONS.

3. ALL CONDUITS MUST BE INSTALLED OUTSIDE OF THE TREE DRIP LINE. TRENCHING WITHIN THE DRIP LINE IS PROHIBITED. IF UNABLE TO TRENCH OUTSIDE OF TREE DRIP LINES, DIRECTIONAL DRILLING MUST BE USED.

4. SHOULD CONDUCTORS OF DIFFERENT VOLTAGE BE MIXED IN THE SAME PULL BOX, CONDUCTORS MUST BE LABELLED ACCORDINGLY.

5. ALL FIXED OBJECTS NOT PROTECTED BY MGS OR OTHER FORM OF PROTECTION MUST BE 30’ MINIMUM FROM THE EDGE OF TRAVELED WAY, UNLESS NOTED OTHERWISE. THE ONLY EXCEPTION IS ELECTROLIERS WITH SLIP BASES. FIXED OBJECTS PROTECTED BY MGS MUST BE 4’ MINIMUM FROM THE FACE TO THE GUARDRAIL.

6. EXISTING CALTRANS EQUIPMENT SHOWN ON E-SHEETS ARE INFORMATIONAL ONLY AND MAY NOT SHOW COMPLETE SYSTEMS. LOCATIONS ARE SHOWN APPROXIMATELY.

7. THE FOLLOWING TOLL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY TSI: CCTV ASSEMBLY, VTMS LED DISPLAY, TOLLING LATERAL FIBER, TOLLING SPLICE ENCLOSURE, TOLLING FIBER END EQUIPMENT, TOLL SYSTEM POWER AND COMMUNICATIONS CONDUCTORS/CABLES, TOLL ASSEMBLY INSIDE ETS AND UPS CABINETS, VTMS ASSEMBLY INSIDE VTMS CABINET, AND TOLL READER ASSEMBLY.

8. THE FOLLOWING TOLL EQUIPMENT WILL BE FURNISHED BY TSI: ETS AND UPS CABINETS, VTMS CABINET, AND ETS HUB CABINET.

REVISED BY

DATE

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CALCULATED-
DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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LEGEND:

TR

VTMS

VARIABLE TOLL MESSAGE SIGN
WITH LUMINAIRE AND TOLL READER

TR

VTMS

VARIABLE TOLL MESSAGE SIGN
WITH TWO LUMINAIRES AND TOLL READER

VTMS

VARIABLE TOLL MESSAGE SIGN
WITH LUMINAIRE

VTMS

VARIABLE TOLL MESSAGE SIGN
WITH TWO LUMINAIRES

TR

OVERHEAD STATIC SIGN
WITH LUMINAIRE AND TOLL READER

FR

OVERHEAD STATIC SIGN
WITH FUTURE TOLL READER

OVERHEAD STATIC SIGN
WITH LUMINAIRE

OVERHEAD STATIC SIGN
WITH TWO LUMINAIRES

TR

OVERHEAD STATIC SIGN
WITH TOLL READER

OVERHEAD STATIC SIGN

TR

ELECTRONIC TOLL GANTRY
WITH TOLL READER

DOUBLE OVERHEAD STATIC SIGNS
(BUTTERFLY STRUCTURE)

TR

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN AND STATIC SIGN WITH TOLL READER

VTMS

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN AND VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE

VTMS

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN AND VARIABLE TOLL MESSAGE SIGN
WITH TWO LUMINAIRES

TR

VTMS

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN WITH TOLL READER AND
VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE

TR

VTMS

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN WITH TOLL READER AND
VARIABLE TOLL MESSAGE SIGN WITH LUMINAIRE AND TOLL READER

TR

VTMS

DOUBLE OVERHEAD SIGNS (BUTTERFLY STRUCTURE)
STATIC SIGN WITH TOLL READER AND
VARIABLE TOLL MESSAGE SIGN WITH TWO LUMINAIRES

VTMS

VTMS

DOUBLE OVERHEAD VARIABLE TOLL MESSAGE SIGNS
WITH DOUBLE LUMINAIRES (BUTTERFLY STRUCTURE)

STEP-UP/STEP-DOWN TRANSFORMER

F

CONCRETE PAD FOUNDATION FOR
FUTURE MODEL 332L CABINET

BACKHAUL HUB CABINET ASSEMBLY
MODEL 333L MODIFIED

Exist BACKHAUL HUB CABINET ASSEMBLY
MODEL 333L MODIFIED

F

CONCRETE PAD FOUNDATION FOR
FUTURE ETS HUB CABINET

f

Exist CONCRETE PAD FOUNDATION FOR
FUTURE ETS HUB CABINET

V

FIBER OPTIC SPLICE VAULT
(SEE SHEET ED-32)

V

Exist FIBER OPTIC SPLICE VAULT

V

(T)

TRAFFIC-RATED FIBER OPTIC SPLICE VAULT
(SEE SHEET ED-32)

V

(T)

Exist TRAFFIC-RATED FIBER OPTIC SPLICE VAULT

ABBREVIATIONS:

ADA

AMERICANS WITH DISABILITIES ACT

AT&T

AMERICAN TELEPHONE AND TELEGRAPH

CHP

CALIFORNIA HIGHWAY PATROL

EIA

ELECTRONIC INDUSTRIES ALLIANCE

ETS

ELECTRONIC TOLL SYSTEM

FD

FOUNDATION DEPTH

FDU

FIBER OPTIC DISTRIBUTION UNIT

FOPB

FIBER OPTIC PULL BOX
PULL BOX No. 6(E)(SEE SHEET ED-31)

fopb

EXISTING FIBER OPTIC PULL BOX

FOPB(T)

TRAFFIC-RATED FIBER OPTIC PULL BOX
PULL BOX No. 6(E)(T)(SEE SHEET ED-31)

fopb(+)

EXISTING TRAFFIC-RATED FIBER OPTIC
PULL BOX

HCC

HYBRID CAMERA CABLE

LLLD

LONG LEAD-IN-CABLE LOOP DETECTOR
SENSOR UNIT

NPS XS

NOMINAL POST SIZE EXTRA STRONG

PG&E

PACIFIC GAS AND ELECTRIC

SM

SAN MATEO

SMFO

SINGLE MODE FIBER OPTIC

TC

TELEPHONE CABLE (12#22)

TR

TOLL READER

TSI

TOLL SYSTEM INTEGRATOR

TVC

TELEVISION CONTROL CABLE

TVCP

TELEVISION CONTROL POWER CABLE

TVL

TELEVISION VIDEO CABLE

TVP

TELEVISION POWER CONDUCTOR

UPS

UNINTERRUPTIBLE POWER SUPPLY

VES

VEHICLE ENFORCEMENT SYSTEM

VSN

VEHICLE SENSOR NODE

VTM

VALLEY TRANSPORTATION AUTHORITY

VTMS

VARIABLE TOLL MESSAGE SIGN

WMVDS

WIRELESS MAGNETOMETER VEHICLE
DETECTION STATION

NOTES, ELECTRICAL INDEX,
LEGEND AND ABBREVIATIONS

E-1

BORDER LAST REVISED 7/2/2010

USERNAME => s147339
DGN FILE => 0419000313u0001.dgn

RELATIVE BORDER SCALE
IS IN INCHES

0123

UNIT 0703

PROJECT NUMBER & PHASE

04190003131

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOF DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

-

-

NOTES:

1. MINIMUM CONDUIT SIZE MUST BE 2" FOR ALL NEW INSTALLATIONS, UNLESS NOTED OTHERWISE.

2. COIL AND PROTECT 40 FT OF SMFO CABLE SLACK IN EACH EXISTING/NEW FOPB AND FOPB(T) PER FIBER OPTIC TRUNK CABLE SYSTEM FOR BOTH CALTRANS AND TOLL FIBER OPTIC SYSTEMS, WHERE THE CABLE PASSES OR ENDS, UNLESS NOTED OTHERWISE.

3. COIL AND PROTECT 80 FT OF SMFO CABLE SLACK IN EACH EXISTING/NEW FIBER OPTIC SPLICE VAULT PER FIBER OPTIC TRUNK CABLE SYSTEM FOR BOTH CALTRANS AND TOLL FIBER OPTIC SYSTEMS WHERE THE CABLE PASSES OR ENDS, UNLESS NOTED OTHERWISE.

4. WELDING DETAILS REQUIREMENTS FOR TRAFFIC PULL BOXES ARE SHOWN ON ED-35.

5. FOR FIBER OPTIC REEL END SPLICE FOR CALTRANS SYSTEM AND TOLL SYSTEM, SEE ED-24 FOR DETAILS.

6. PRIOR TO ANY WORK ON AT&T SERVICE POINT, NOTIFY AT&T THROUGH THE ENGINEER AT LEAST 72 HOURS IN ADVANCE.

LEGEND (FOR SHEET E-4 TO E-62):

1

FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM). SEE SHEET ED-32. COVER MARKING MUST BE "CALTRANS" AND "FIBER OPTIC".

2

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-34. INSTALL 2 288-STRAND SMFO CABLE IN 2 OF 4-1½"C (CALTRANS SYSTEM).

3

INSTALL 288-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH NEW FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC" TO NEW FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED "CALTRANS" AND "FIBER OPTIC". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

4

INSTALL 288-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH EXISTING FIBER OPTIC SPLICE VAULT TO NEW FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED "CALTRANS" AND "FIBER OPTIC". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

5

EXISTING TOLL BACKHAUL HUB CABINET. INSTALL TOLL NETWORK EQUIPMENT AS SPECIFIED. SEE ED-19 AND ED-23 FOR TOLL EQUIPMENT DETAILS.

6

EXISTING PAD FOR FUTURE ETS HUB CABINET. SEE ED-23 FOR CONNECTION DETAILS WITH EXISTING TOLL BACKHAUL HUB CABINET.

7

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-34. INSTALL 1 288-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).

8

FURNISH AND INSTALL FIBER OPTIC PULL BOX (CALTRANS SYSTEM). SEE SHEET ED-31. COVER MARKING MUST BE "CALTRANS" AND "FIBER OPTIC".

9

FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (JOINT SYSTEM). SEE SHEET ED-32. COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".

10

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-34. INSTALL 288-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM). INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).

11

FURNISH AND INSTALL FIBER OPTIC PULL BOX (JOINT SYSTEM). SEE SHEET ED-31. COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".

12

INSTALL 4-1½"C, USE TYPE B. SEE DETAIL A ON ED-34. INSTALL 2 144-STRAND SMFO CABLE IN 2 OF 4-1½"C (TOLL SYSTEM).

13

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH NEW FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC" TO NEW FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED "TOLL ETS COMMS". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

14

FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). SEE SHEET ED-32. COVER MARKING MUST BE "TOLL ETS COMMS".

15

INSTALL 4"C WITH 4-1" INNERDUCTS, USE TYPE A. SEE DETAIL A ON ED-34. INSTALL 288-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (CALTRANS SYSTEM). INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1" INNERDUCTS (TOLL SYSTEM).

16

EXISTING FOUR 1"C, PT. INSTALL 288-STRAND SMFO CABLE IN 1 OF 4-1"C (CALTRANS SYSTEM). INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1"C (TOLL SYSTEM).

17

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH EXISTING FIBER OPTIC SPLICE VAULT TO NEW FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED "TOLL ETS COMMS". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

18

EXISTING 4-1½"C, 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM). INSTALL 288-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM).

19

COIL AND PROTECT 100 FT OF 288-STRAND SMFO CABLE SLACK (CALTRANS SYSTEM) INSIDE EXISTING FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) ADJACENT TO THE EXISTING CALTRANS HUB. FIBER OPTIC CABLE END MUST BE PROTECTED AND SEALED TO PREVENT THE INGRESS OF MOISTURE.

20

EXISTING 4-1½"C, 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (CALTRANS SYSTEM), 144-STRAND SMFO CABLE IN 1 OF 4-1½"C (TOLL SYSTEM).

NOTES AND LEGEND (FIBER OPTIC CABLE SYSTEMS) E-2

USERNAME => s147339

DGN FILE => 0419000313ud002.dgn

RELATIVE BORDER SCALE IS IN INCHES

0

1

2

3

UNIT 0703

PROJECT NUMBER & PHASE

04190003131

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1633	2401
David Williams			9-16-19		
REGISTERED CIVIL ENGINEER			DATE		
November 22, 2019					
PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
AECOM 100 W. SAN FERNANDO ST SUITE 200 SAN JOSE, CA 95113-2254			SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070		

REGISTERED PROFESSIONAL ENGINEER

DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA

LAST REVISION

9-16-19

DATE PLOTTED => 27-NOV-2019

TIME PLOTTED => 10:22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

RAMSEY HISSEN

CALCULATED-DESIGNED BY

CHECKED BY

BESHOO DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE

REVISOR

DATE

AH/BD

4-24-20

LEGEND (FOR SHEET E-4 TO E-62):

21

EXISTING 4-1/2"C, 144-STRAND SMFO CABLE IN 1 OF 4-1/2"C (TOLL SYSTEM).
INSTALL 288-STRAND SMFO CABLE IN 1 OF 4-1/2"C (CALTRANS SYSTEM).

22

PROVIDE REEL END SPLICE FOR 144-STRAND SMFO CABLE (TOLL SYSTEM) INSIDE EXISTING FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). COIL AND PROTECT 100 FT OF 144-STRAND SMFO CABLE SLACK (TOLL SYSTEM) INSIDE EXISTING FIBER OPTIC SPLICE VAULT.

23

EXISTING 4-1/2"C, 144-STRAND SMFO CABLE IN 1 OF 4-1/2"C (TOLL SYSTEM).
INSTALL 144-STRAND SMFO CABLE IN 1 OF 4-1/2"C (TOLL SYSTEM).

24

INSTALL CONDUIT INSIDE CONCRETE BARRIER, SEE CONSTRUCTION DETAILS AND STRUCTURE PLANS FOR DETAILS.

25

INSTALL 4-1/2"C, USE TYPE B. SEE DETAIL A ON ED-34.
INSTALL 2 24-STRAND SMFO CABLE IN 2 OF 4-1/2"C (TOLL SYSTEM).

26

INSTALL CONDUIT BY DIRECTIONAL DRILLING METHOD.

27

INSTALL 4-1/2"C, USE TYPE B. SEE DETAIL A ON ED-34.
INSTALL 1 72-STRAND SMFO CABLE (CALTRANS SYSTEM) IN 1 OF 4-1/2"C,
1 24-STRAND SMFO CABLE (TOLL SYSTEM) IN 1 OF 4-1/2"C.

28

INSTALL 3-1/2"C, 1 72-STRAND SMFO CABLE (CALTRANS SYSTEM) IN 1 OF 3-1/2"C.

29

INSTALL 1/2"C, 1 24-STRAND SMFO CABLE (TOLL SYSTEM).

30

INSTALL 4-1/2"C, USE TYPE B. SEE DETAIL A ON ED-34.
INSTALL 1 144-STRAND SMFO CABLE IN 1 OF 4-1/2"C (TOLL SYSTEM).

31

INSTALL 3"C, PT.

32

INSTALL 3"C, WITH 3-CELL INNERDUCT.
INSTALL 2 144-STRAND SMFO CABLE (TOLL SYSTEM) IN 2 OF THE 3-CELL INNERDUCT.
INSTALL 1#8 TRACER WIRE. INSTALL PULL TAPE IN EACH CELL.

33

INSTALL FOUNDATION PAD FOR FUTURE ETS HUB CABINET. SEE ED-47 FOR FOUNDATION PAD DETAILS AND CONDUIT ENTRY DETAILS.

34

FURNISH AND INSTALL TOLL BACKHAUL HUB CABINET TYPE 333L MODIFIED AS SPECIFIED. SEE ED-21 FOR FOUNDATION DETAILS, PAD DIMENSIONS AND CONDUIT ENTRY AREA. SEE ED-19, ED-20, ED-22 AND ED-23 FOR CABINET DETAILS AND WIRING DIAGRAMS.

35

FURNISH AND INSTALL FIBER OPTIC PULL BOX (TOLL SYSTEM). SEE SHEET ED-31. COVER MARKING MUST BE "TOLL ETS COMMS".

36

INSTALL FIBER OPTIC SPLICE ENCLOSURE IN FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). SEE ED-26 FOR DETAILS.

37

INSTALL FIBER OPTIC SPLICE ENCLOSURE IN FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). SEE ED-27 FOR DETAILS.

38

INSTALL FIBER OPTIC SPLICE ENCLOSURE IN FIBER OPTIC SPLICE VAULT (TOLL SYSTEM). SEE ED-28 FOR DETAILS.

39

CONDUIT AND FITTING LAYOUT PER DETAIL ON SHEET ED-45. CONDUIT AND FITTING REQUIREMENTS MUST BE TYPE 1.

40

~~NOT USED.~~ CONDUIT AND FITTING REQUIREMENTS MUST BE TYPE 2.

41

~~NOT USED.~~ CONSTRUCTION WORK MUST NOT OBSTRUCT OR INTERRUPT THE BAY TRAIL PUBLIC ACCESS AT ANY TIME. STORING EQUIPMENT OR MATERIAL ON OR NEAR THE BAY TRAIL IS PROHIBITED.

42

INSTALL TRAFFIC-RATED FIBER OPTIC PULL BOX BETWEEN COVER PLATES PER DETAIL ON SHEET ED-45. SEE CONSTRUCTION DETAILS SHEETS FOR COVER PLATES EXACT LOCATION.

43

REMOVE EXISTING FIBER OPTIC SPLICE VAULT.
FURNISH AND INSTALL FIBER OPTIC SPLICE VAULT (JOINT SYSTEM).
SEE SHEET ED-32. COVER MARKING MUST BE "CALTRANS/TOLL" AND "FIBER OPTIC".

REGISTERED PROFESSIONAL ENGINEER

ALEXANDER HA

No. 83290

Exp. 3-31-21

CIVIL

STATE OF CALIFORNIA

1

4-24-20

CHANGES TO ACCOMMODATE CORDILLERAS CREEK BRIDGE PROJECT

AH

BD

28

MARK

DATE

REVISION(S)

DESCRIPTIONS

DES

CHK

CCO

REGISTERED CIVIL ENGINEER:

DATE: 4-24-2020

44

INSTALL 288-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH PROPOSED FIBER OPTIC SPLICE VAULT (JOINT SYSTEM) TO PROPOSED FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED "CALTRANS" AND "FIBER OPTIC". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

45

INSTALL 144-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH PROPOSED FIBER OPTIC SPLICE VAULT (JOINT SYSTEM) TO PROPOSED FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED "TOLL ETS COMMS". SEE DETAIL 1 ON SHEET ED-36 FOR DETAILS.

46

INSTALL 4-1/2"C, USE TYPE B. SEE DETAIL A ON ED-34.
INSTALL 2 72-STRAND SMFO CABLE IN 2 OF 4-1/2"C (CALTRANS SYSTEM).

47

INSTALL 72-STRAND SMFO CABLE (CALTRANS SYSTEM) THROUGH PROPOSED FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC" TO PROPOSED FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM) MARKED "CALTRANS" AND "FIBER OPTIC". SEE DETAIL 1 ON SHEET ED-29 FOR DETAILS.

48

INSTALL 4"C, PT. EACH CONDUIT BEND, ELBOW AND JOINT MUST BE MINIMUM 3' SWEEPING RADIUS.

49

INSTALL 24-STRAND SMFO CABLE (TOLL SYSTEM) THROUGH PROPOSED FIBER OPTIC PULL BOX (JOINT SYSTEM) MARKED "CALTRANS/TOLL" AND "FIBER OPTIC" TO PROPOSED FIBER OPTIC SPLICE VAULT (TOLL SYSTEM) MARKED "TOLL ETS COMMS". SEE DETAIL 1 ON SHEET ED-46 FOR DETAILS.

50

TO 175 SEE E-63 AND E-64

176

INSTALL 3"C, WITH 3-CELL INNERDUCT.
INSTALL 1 144-STRAND SMFO CABLE (TOLL SYSTEM) IN 1 OF THE 3-CELL INNERDUCT. INSTALL 1#8 TRACER WIRE. INSTALL PULL TAPE IN EACH CELL.

177

INSTALL FDU WITH 144 PORT. SEE ED-26 FOR DETAILS.

178

INSTALL FDU WITH 288 PORT. SEE ED-28 FOR DETAILS.

179

EXISTING FDU WITH 144 PORT INSIDE EXISTING TOLL BACKHAUL HUB CABINET. SEE ED-26 FOR DETAILS.

180

FURNISH AND INSTALL TWO RACK MOUNTED 3 KVA, 120 V(ac) UPS AND TWO RACK MOUNTED 2.88 KVA, 120 V(ac) PDU AS SPECIFIED. SEE ED-22, ED-19 FOR WIRING DIAGRAM AND CABINET LAYOUT.

181

COIL AND PROTECT 100 FT OF 72-STRAND SMFO CABLE SLACK (CALTRANS SYSTEM) AND 100 FT OF 24-STRAND SMFO CABLE SLACK (TOLL SYSTEM) INSIDE EXISTING FIBER OPTIC SPLICE VAULT (CALTRANS SYSTEM). FIBER OPTIC CABLE END MUST BE PROTECTED AND SEALED TO PREVENT THE INGRESS OF MOISTURE FOR FUTURE SPLICING.

182

COORDINATE WITH AT&T AND MTC (BAIFA) FOR ESTABLISHING SERVICE AS SPECIFIED AND AS SHOWN ON ED-18.

183

INSTALL EQUIPMENT 30 FEET MINIMUM FROM EDGE OF TRAVEL WAY.

184

CONDUIT AND FITTING REQUIREMENTS MUST BE TYPE 1.

185

INSTALL EXPANSION-DEFLECTION FITTINGS AT THE BRIDGE STRUCTURE JOINTS. SEE STANDARD PLANS ES-9B DETAIL XY FOR DETAILS.

186

STRAP CONDUIT TO THE SIDE OF THE CONCRETE BARRIER. SEE ED-17 FOR DETAILS.

187

INSTALL 2"C WITH 3-CELL INNERDUCT.
INSTALL 288-STRAND SMFO CABLE (CALTRANS SYSTEM) IN 1 OF THE 3-CELL INNERDUCT. INSTALL PULL TAPE IN EACH CELL. INSTALL 1#8 TRACER WIRE. CONDUIT AND FITTING REQUIREMENTS MUST BE TYPE 2.

188

COIL AND PROTECT 100 FT OF 24-STRAND SMFO CABLE SLACK (TOLL SYSTEM).

189

COIL AND PROTECT 100 FT OF 144-STRAND SMFO CABLE SLACK (TOLL SYSTEM).

190

COIL AND PROTECT 100 FT OF 288-STRAND SMFO CABLE SLACK (CALTRANS SYSTEM).

191

COORDINATE WITH AT&T AS SPECIFIED. AT&T SERVICE PROVIDER FIBER DROP CABLE MUST BE INSTALLED BY SERVICE PROVIDER (AT&T).

CONTRACT CHANGE ORDER NO. 28

SHEET ____ OF ____

LEGEND

(FIBER OPTIC CABLE SYSTEMS)

E-3

BORDER LAST REVISED 7/2/2010

USERNAME =>ernie.garnica
DGN FILE => 0413000206uag003CC028.dgn

RELATIVE BORDER SCALE
IS IN INCHES

0

1

2

3

UNIT 0703

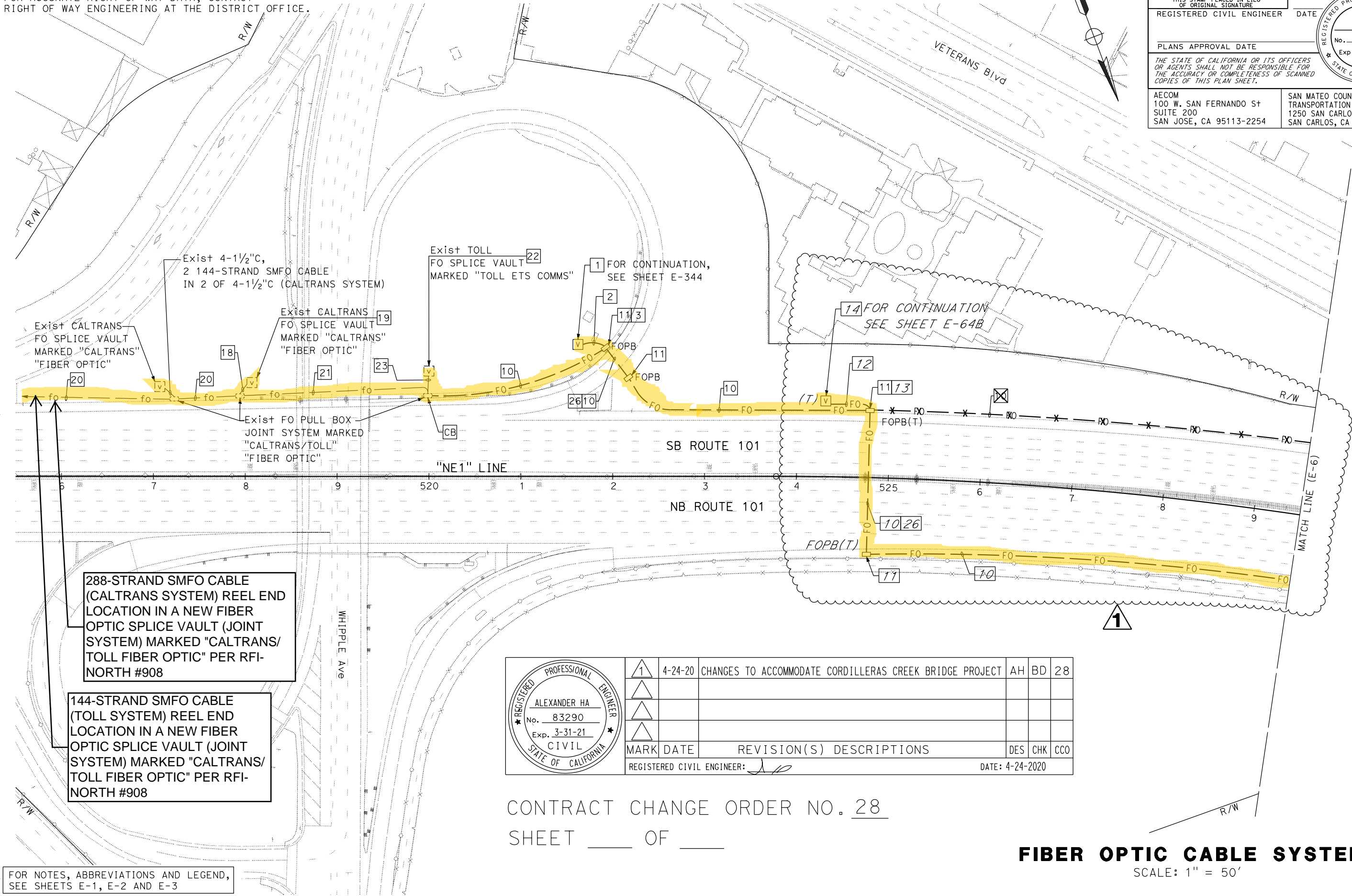
PROJECT NUMBER & PHASE

04190003131

DATE PLOTTED => 14-MAY-2020
TIME PLOTTED => 10:10

LAST REVISION

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9		

AS-AWARDED CONTRACT PLANS
THIS STAMP PLACED IN LIEU
OF ORIGINAL SIGNATURE

REGISTERED CIVIL ENGINEER DATE

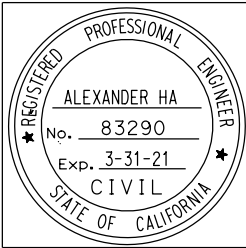
PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER
No. _____
Exp. _____
STATE OF CALIFORNIA



1	4-24-20	CHANGES TO ACCOMMODATE CORDILLERAS CREEK BRIDGE PROJECT	AH	BD	28
MARK	DATE	REVISION(S) DESCRIPTIONS	DES	CHK	CCO
REGISTERED CIVIL ENGINEER: [Signature]		DATE: 4-24-2020			

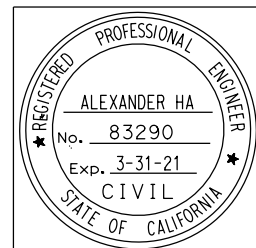
CONTRACT CHANGE ORDER NO. 28
SHEET ____ OF ____


FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

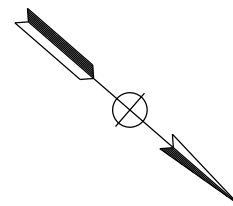
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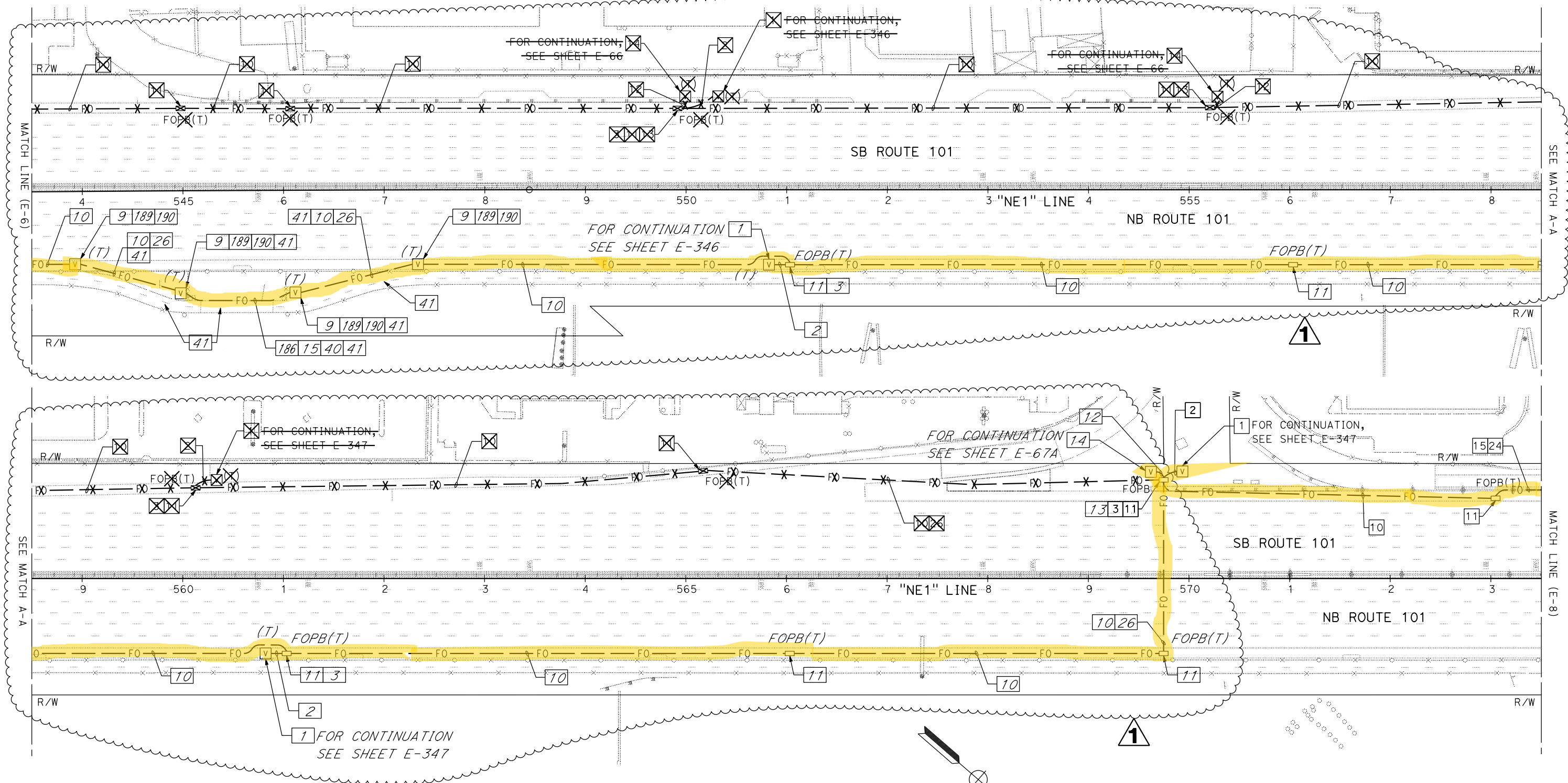
CONTRACT CHANGE ORDER NO. 28
SHEET OF



1	4-24-20	CHANGES TO ACCOMMODATE CORDILLERAS CREEK BRIDGE PROJECT	AH	BD	28
MARK	DATE	REVISION(S) DESCRIPTIONS	DES	CHK	CCO
REGISTERED CIVIL ENGINEER: 			DATE: 4-24-20		



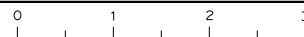
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9		
AS-AWARDED CONTRACT PLANS THIS STAMP PLACED IN LIEU OF ORIGINAL SIGNATURE					
REGISTERED CIVIL ENGINEER			DATE _____		
PLANS APPROVAL DATE _____					
<i>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i>					
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SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

APPROVED FOR ELECTRICAL WORK ONLY



UNIT 0703

PROJECT NUMBER & PHASE

04190003131

E-7

LAST REVISION	DATE PLOTTED => 14-MAY-2020
9-16-19	TIME PLOTTED => 13:04

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1639	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

DAVID
A. WILLIAMS

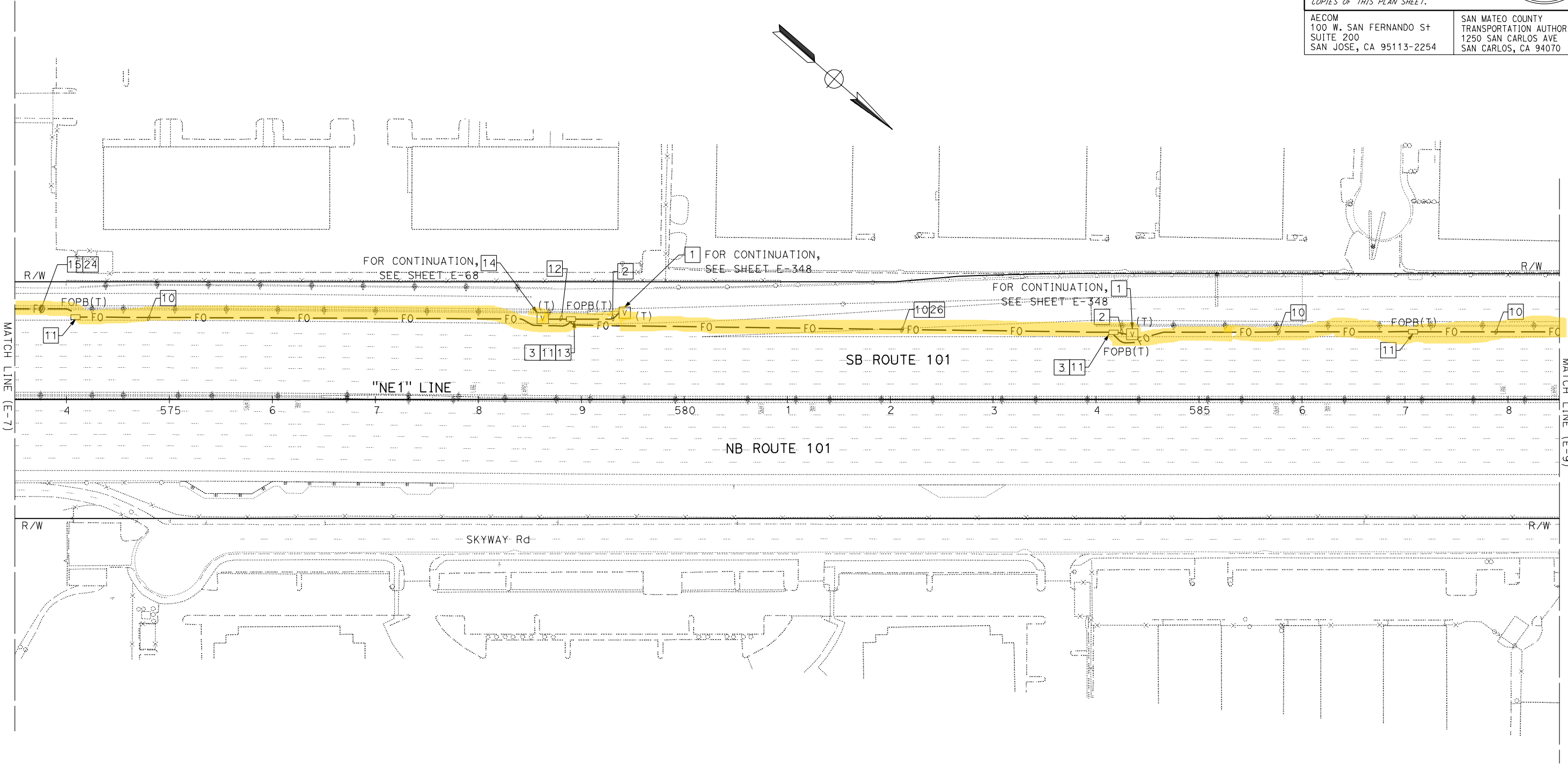
No. C-58697

Exp. 12-31-20

CIVIL

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1640	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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100 W. SAN FERNANDO ST

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SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

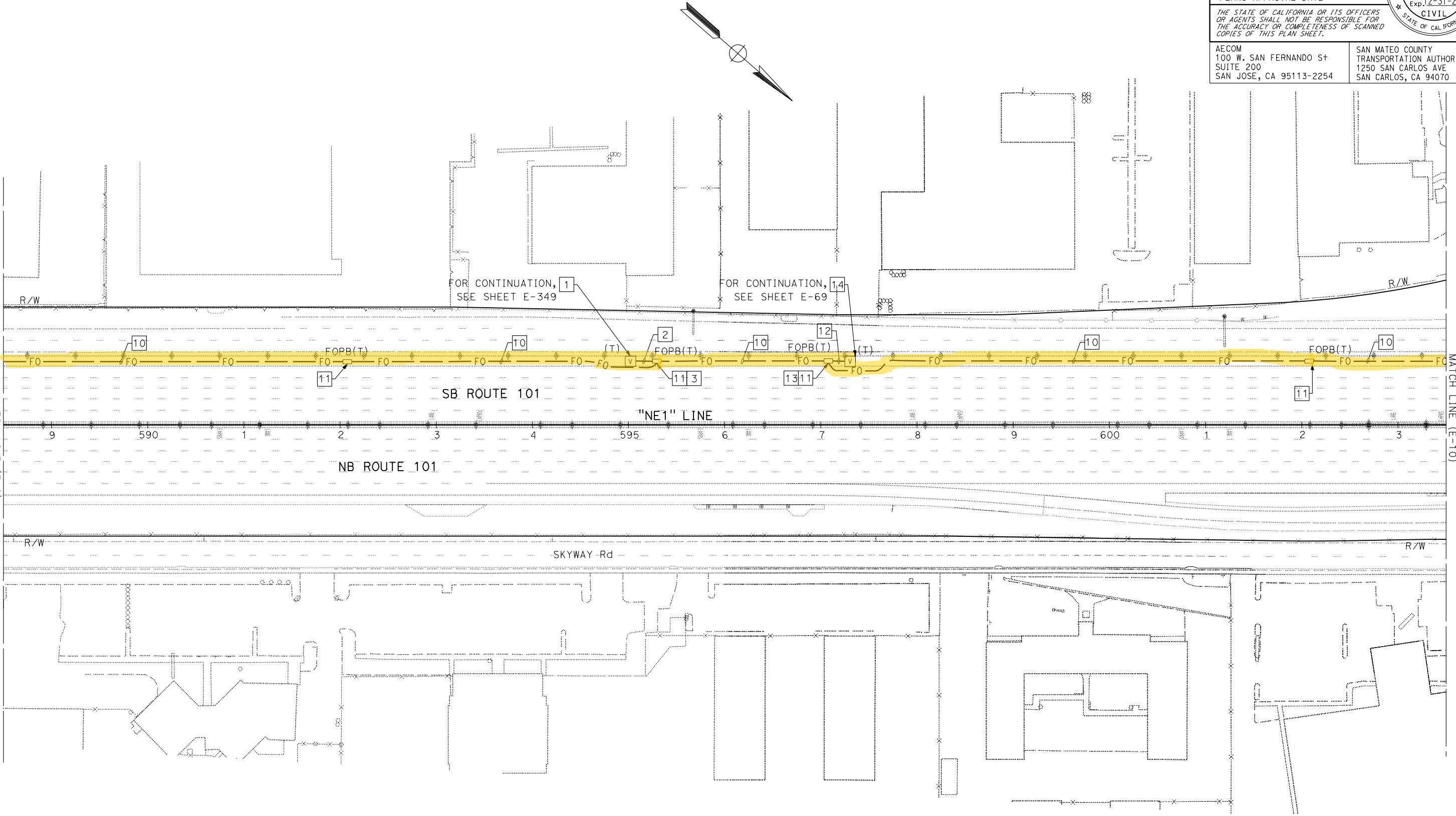
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

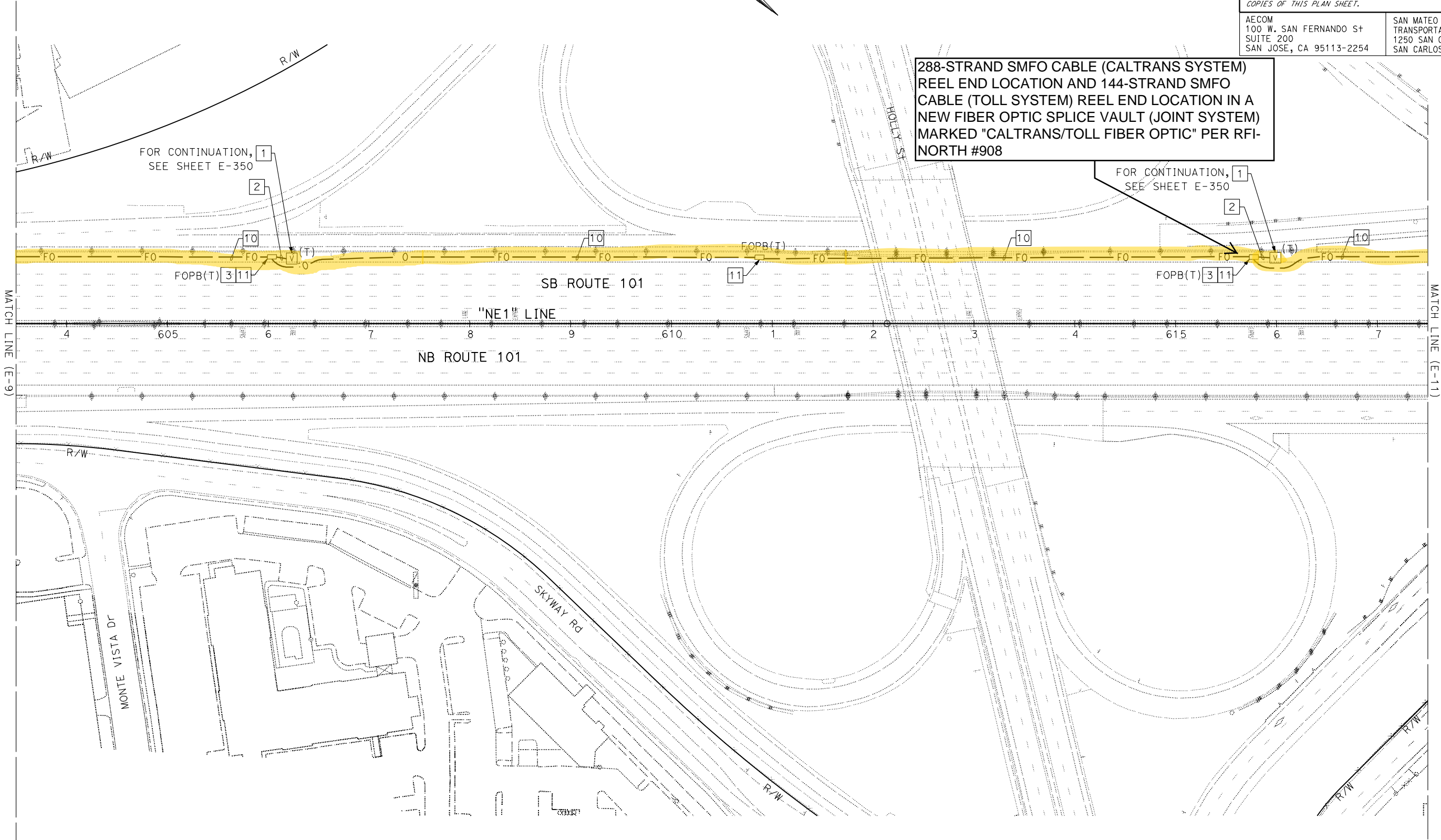
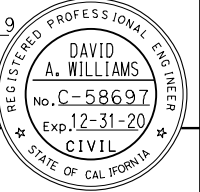
APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CALCULATED-DESIGNED BY	CHECKED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY	-	-	x

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1641	2401
David Williams			9-16-19	DATE	
REGISTERED CIVIL ENGINEER			DATE		
November 22, 2019			DATE		
PLANS APPROVAL DATE			DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
AECOM 100 W. SAN FERNANDO ST SUITE 200 SAN JOSE, CA 95113-2254			SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070		



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

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JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1643	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

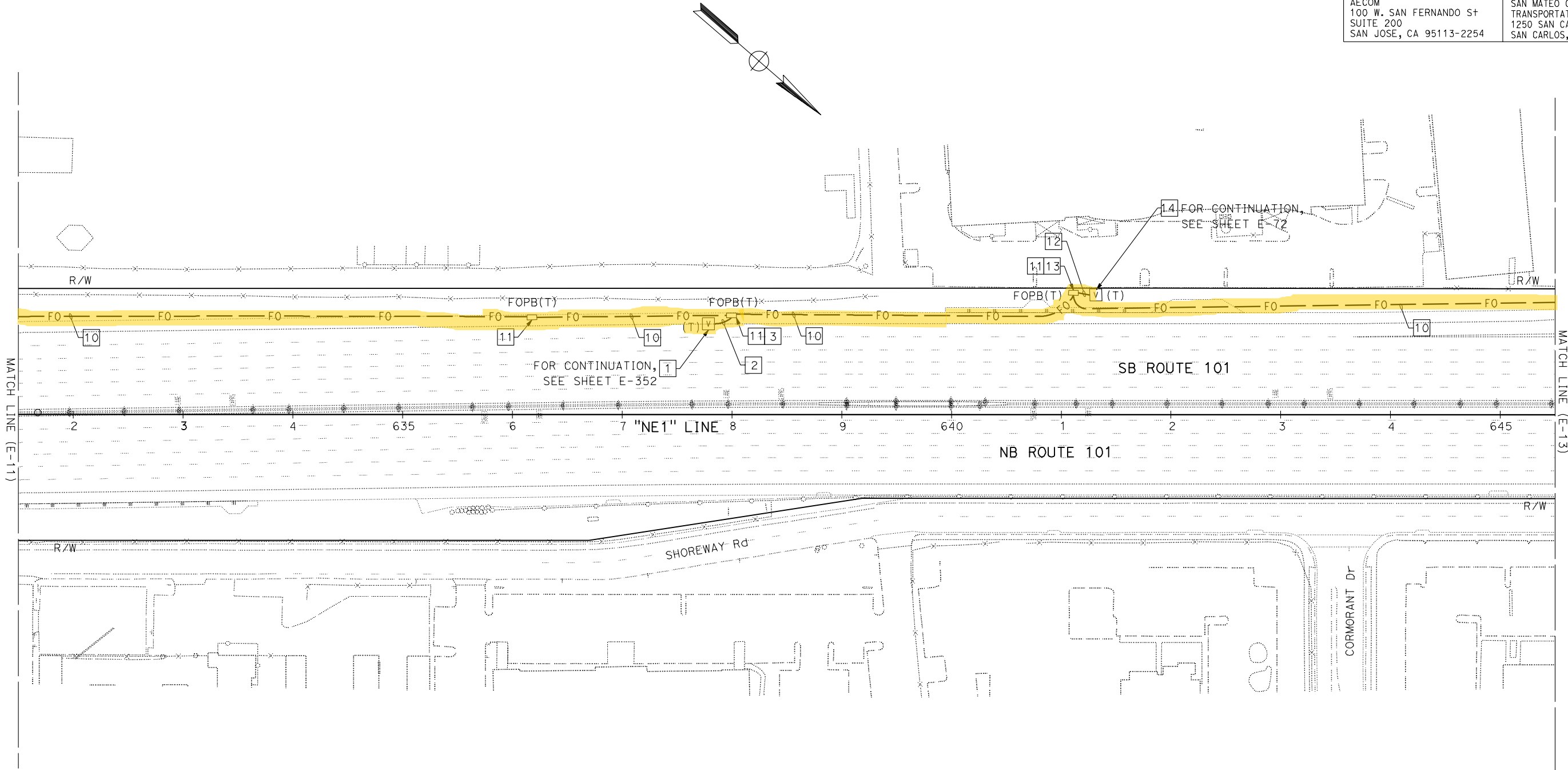
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-12

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9		

AS-AWARDED CONTRACT PLANS
THIS STAMP PLACED IN LIEU
OF ORIGINAL SIGNATURE

REGISTERED CIVIL ENGINEER DATE

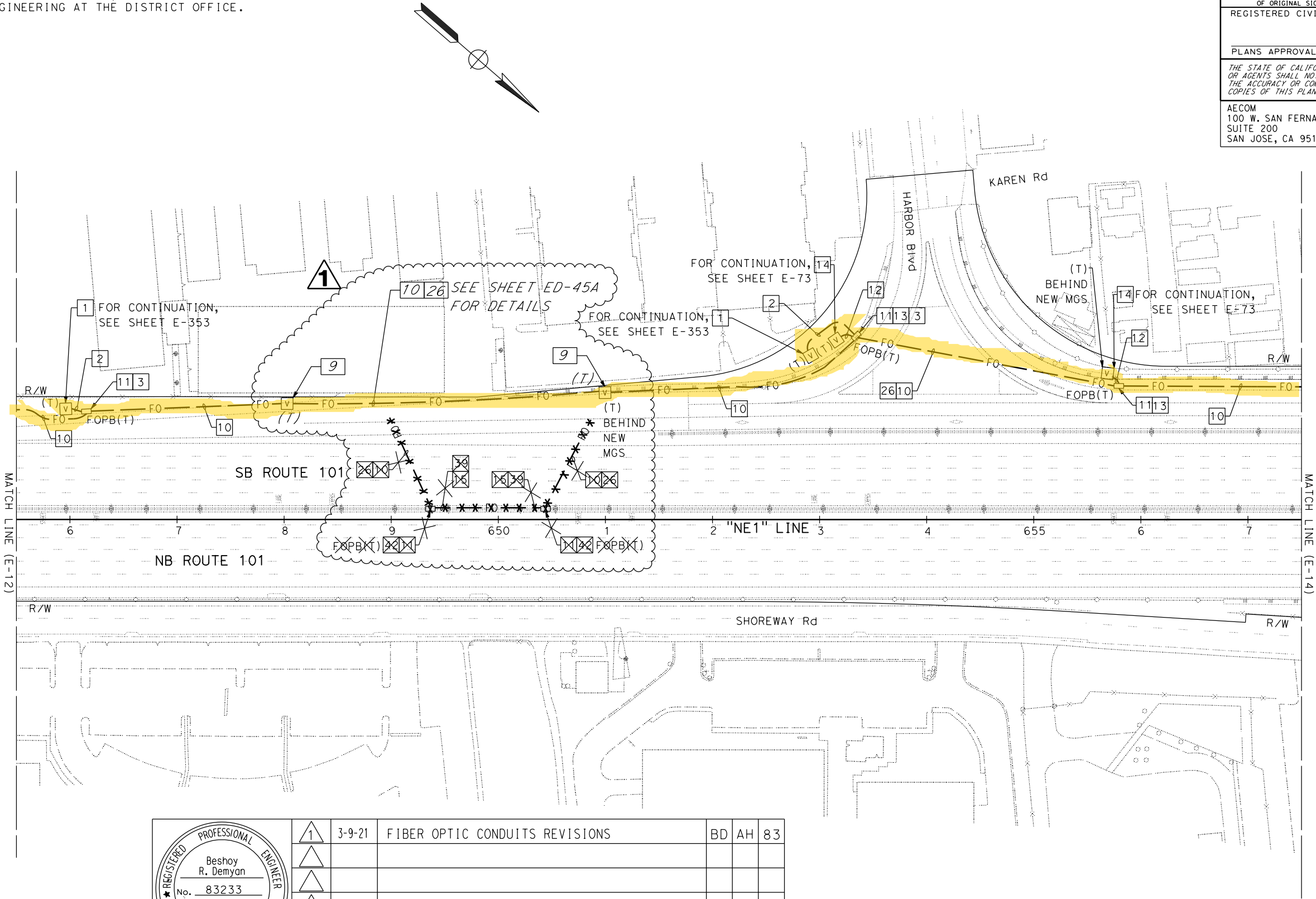
PLANS APPROVAL DATE

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SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER
No. _____
Exp. _____
CIVIL
STATE OF CALIFORNIA



REGISTERED PROFESSIONAL ENGINEER
Beshay R. Demyan
No. 83233
Exp. 3-31-23
CIVIL
STATE OF CALIFORNIA

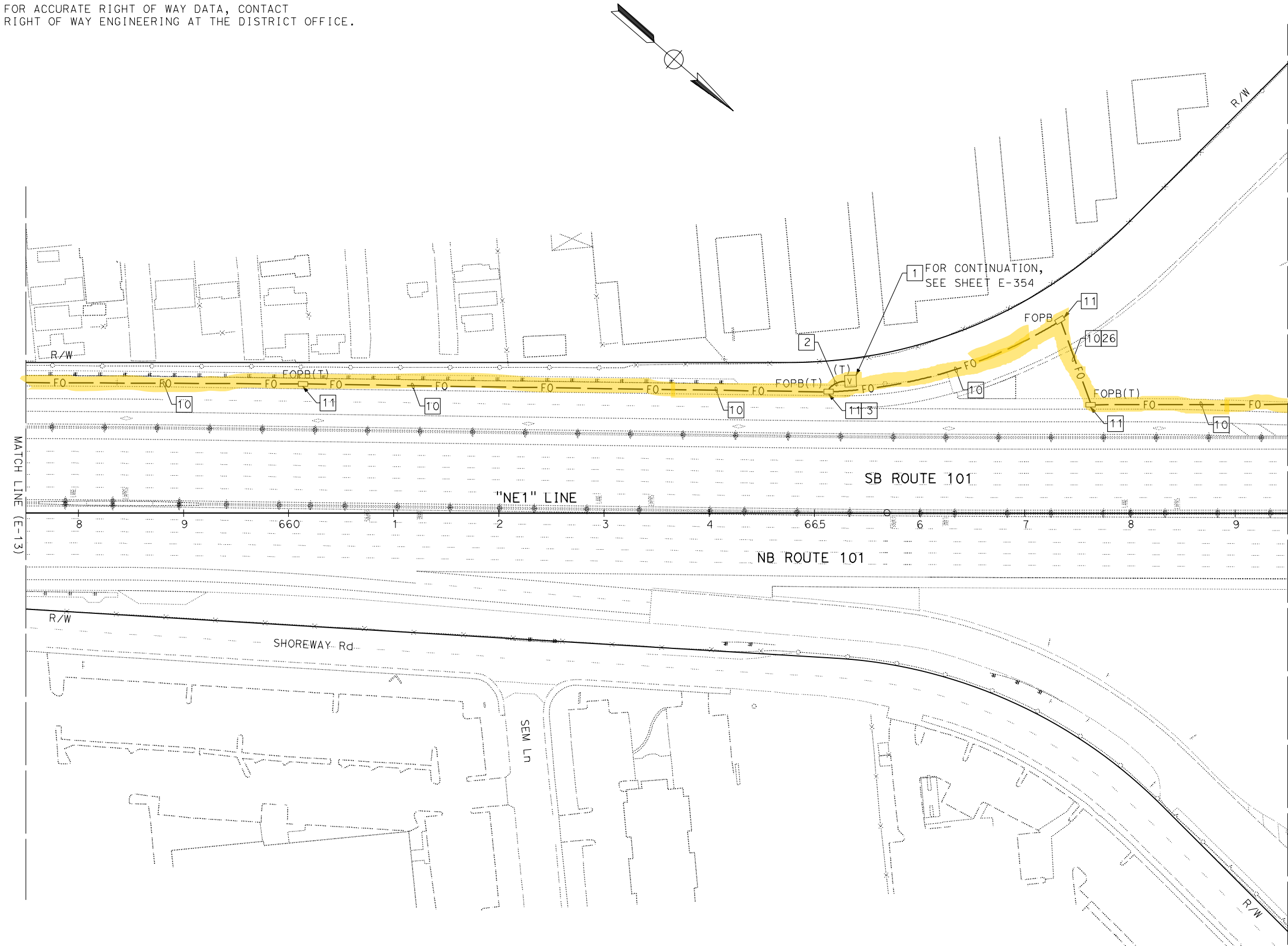
1	3-9-21	FIBER OPTIC CONDUITS REVISIONS	BD	AH	83
MARK	DATE	REVISION(S) DESCRIPTIONS	DES	CHK	DET
REGISTERED CIVIL ENGINEER: Beshay		DATE: 03-09-2021			

CONTRACT CHANGE ORDER NO. 83
SHEET ____ OF ____

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CALCULATED-DESIGNED BY	CHECKED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY	-	-	x

NOTE:
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FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1645	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

November 22, 2019
PLANS APPROVAL DATE

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SAN CARLOS, CA 94070

DAVID
A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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LAST REVISION
9-16-19
DATE PLOTTED => 27-NOV-2019
TIME PLOTTED => 10:23

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOF DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

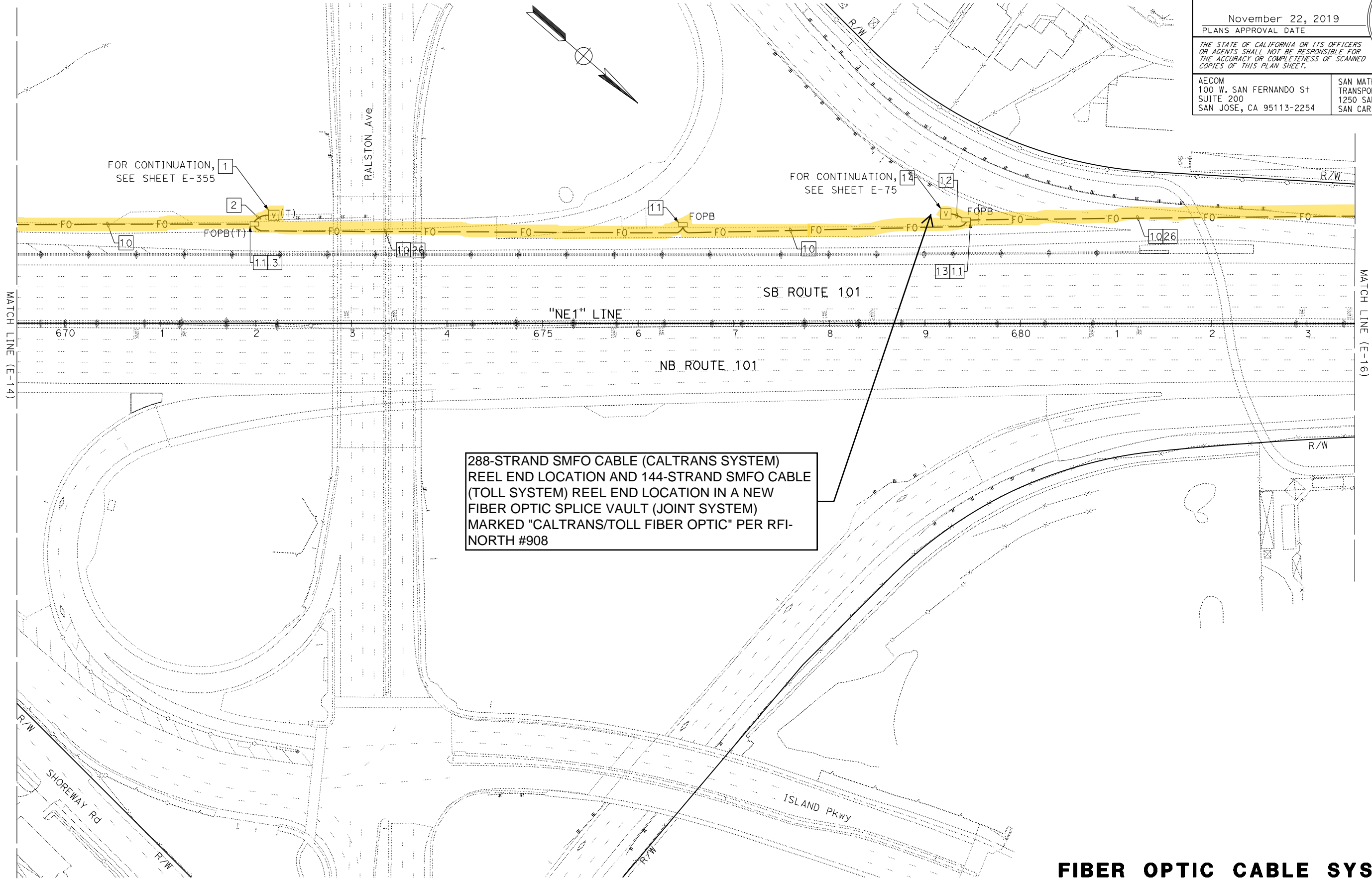
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DATE REVISED

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NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1646	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION
9-16-19
DATE PLOTTED => 27-NOV-2019
TIME PLOTTED => 10:23

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1647	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

DAVID
A. WILLIAMS

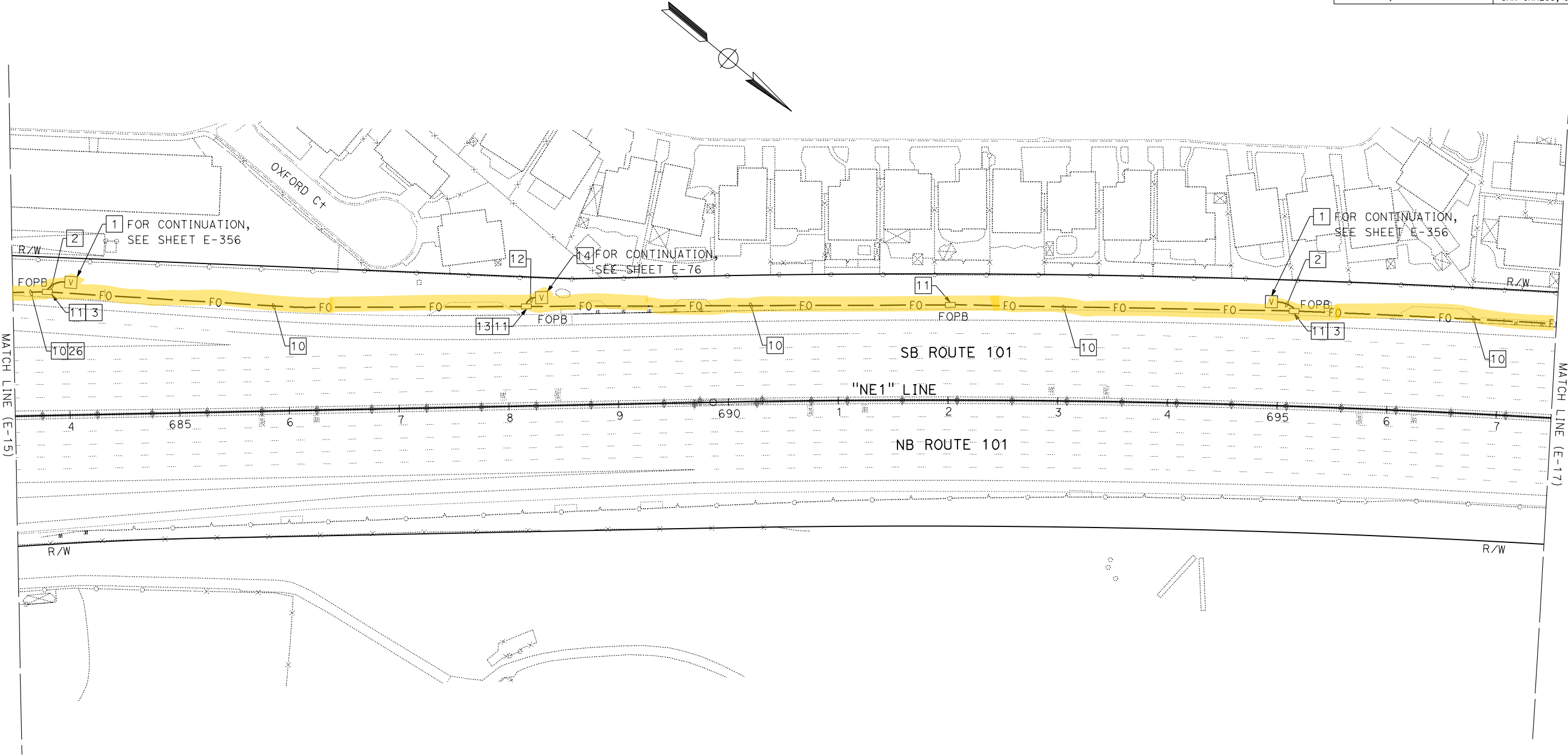
No. C-58697

Exp. 12-31-20

CIVIL

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9		

AS-AWARDED CONTRACT PLANS
THIS STAMP PLACED IN LIEU
OF ORIGINAL SIGNATURE

REGISTERED CIVIL ENGINEER DATE

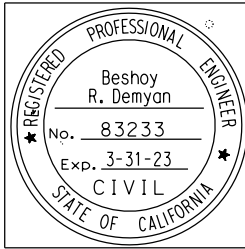
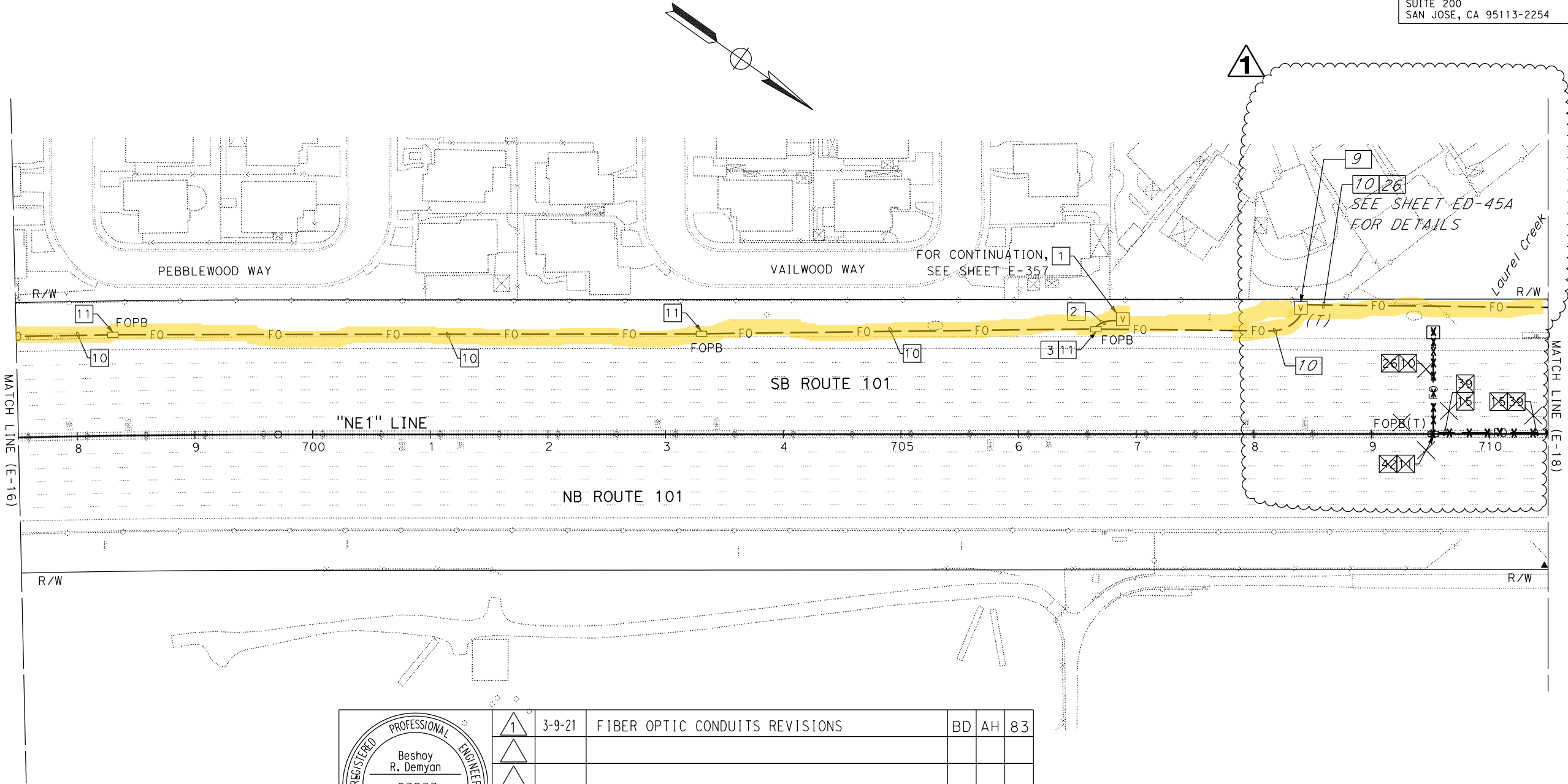
PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER
No. Exp. CIVIL
STATE OF CALIFORNIA



1	3-9-21	FIBER OPTIC CONDUITS REVISIONS	BD	AH	83
MARK	DATE	REVISION(S) DESCRIPTIONS	DES	CHK	DET
REGISTERED CIVIL ENGINEER: Beshoy			DATE: 03-09-2021		

CONTRACT CHANGE ORDER NO. 83
SHEET ____ OF ____

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1650	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

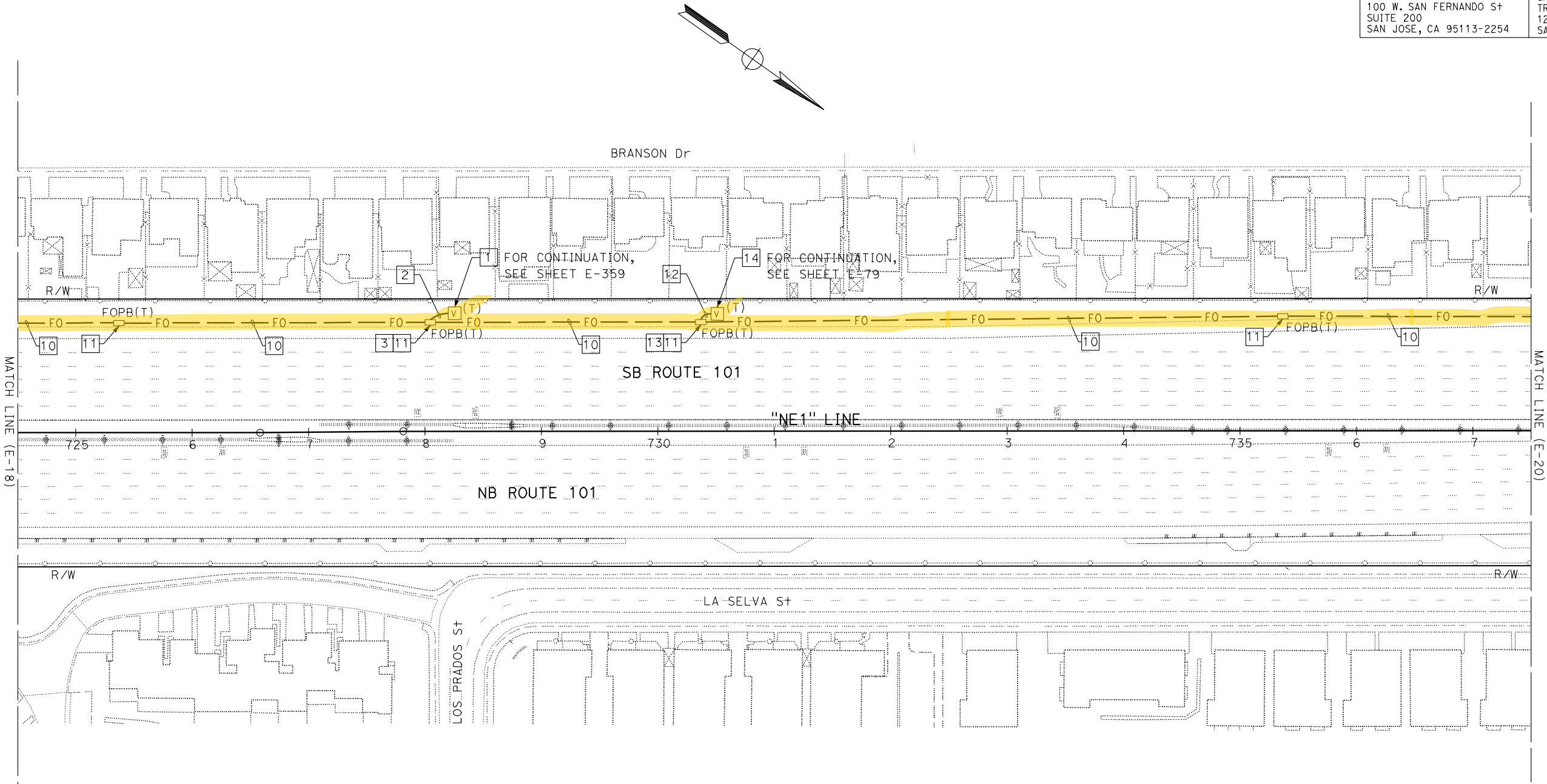
DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1651	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

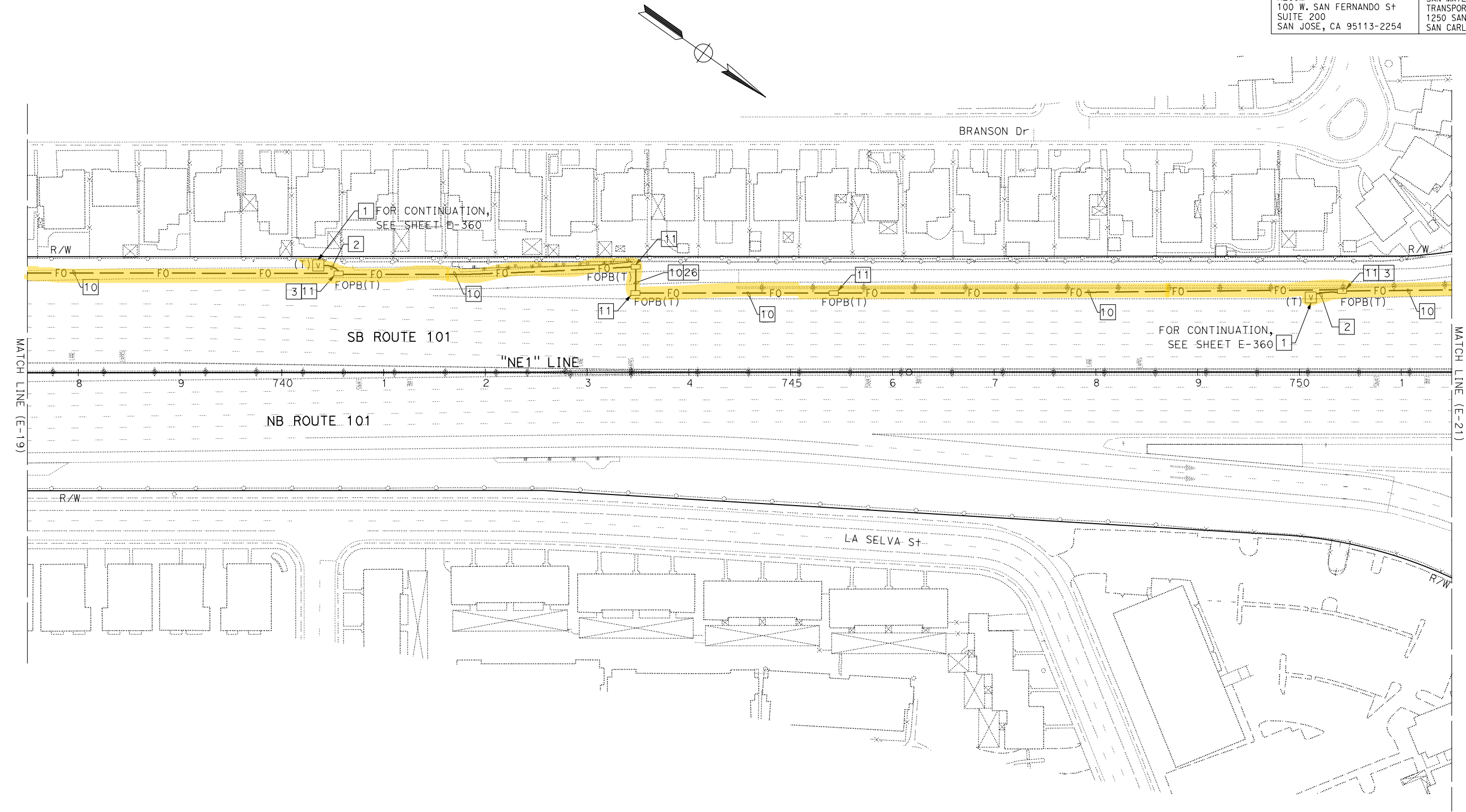
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOY DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

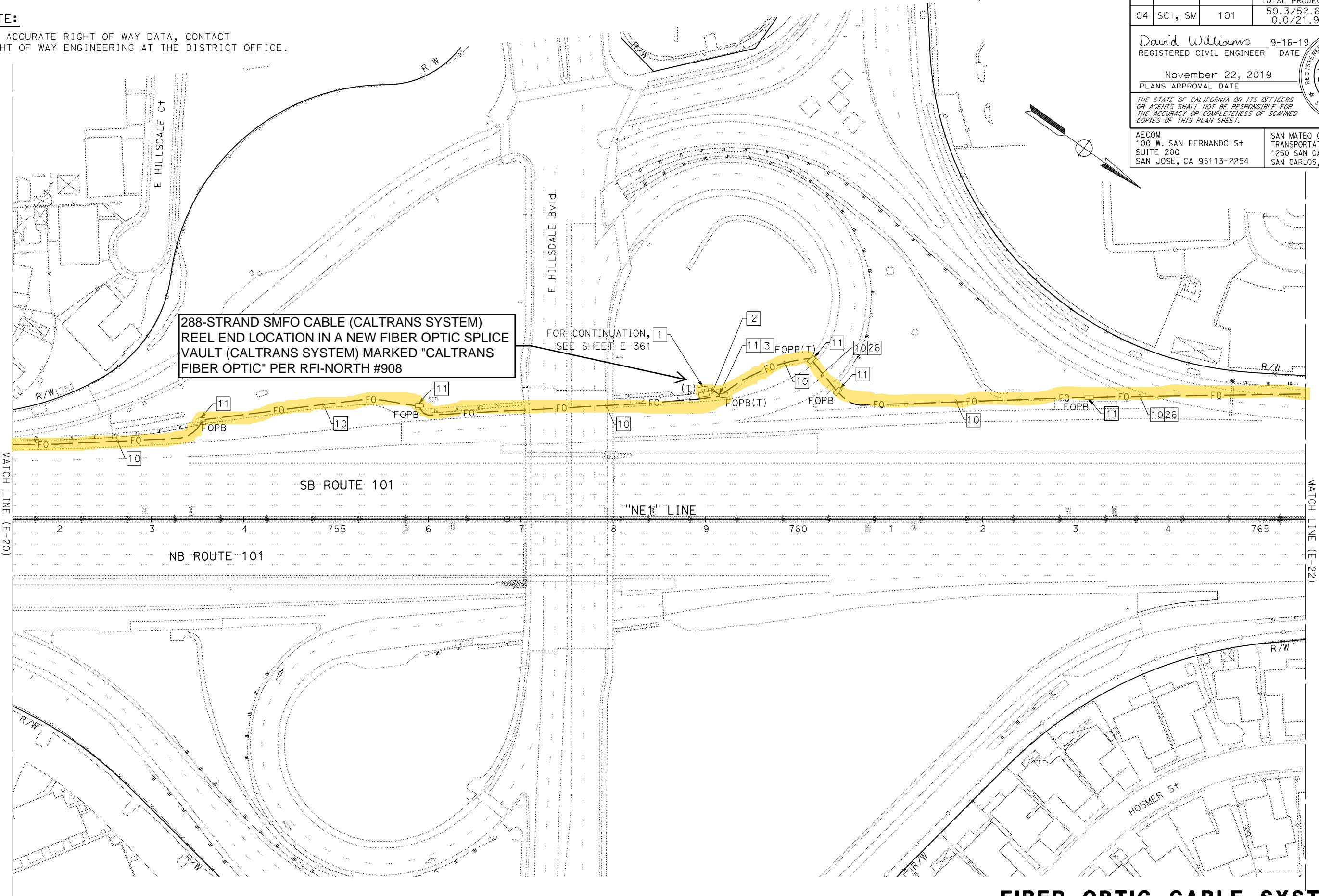
REVISED BY

DATE REVISED

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-

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1652	2401

David Williams

9-16-19

REGISTERED CIVIL ENGINEER

DATE

November 22, 2019

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL


STATE OF CALIFORNIA

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

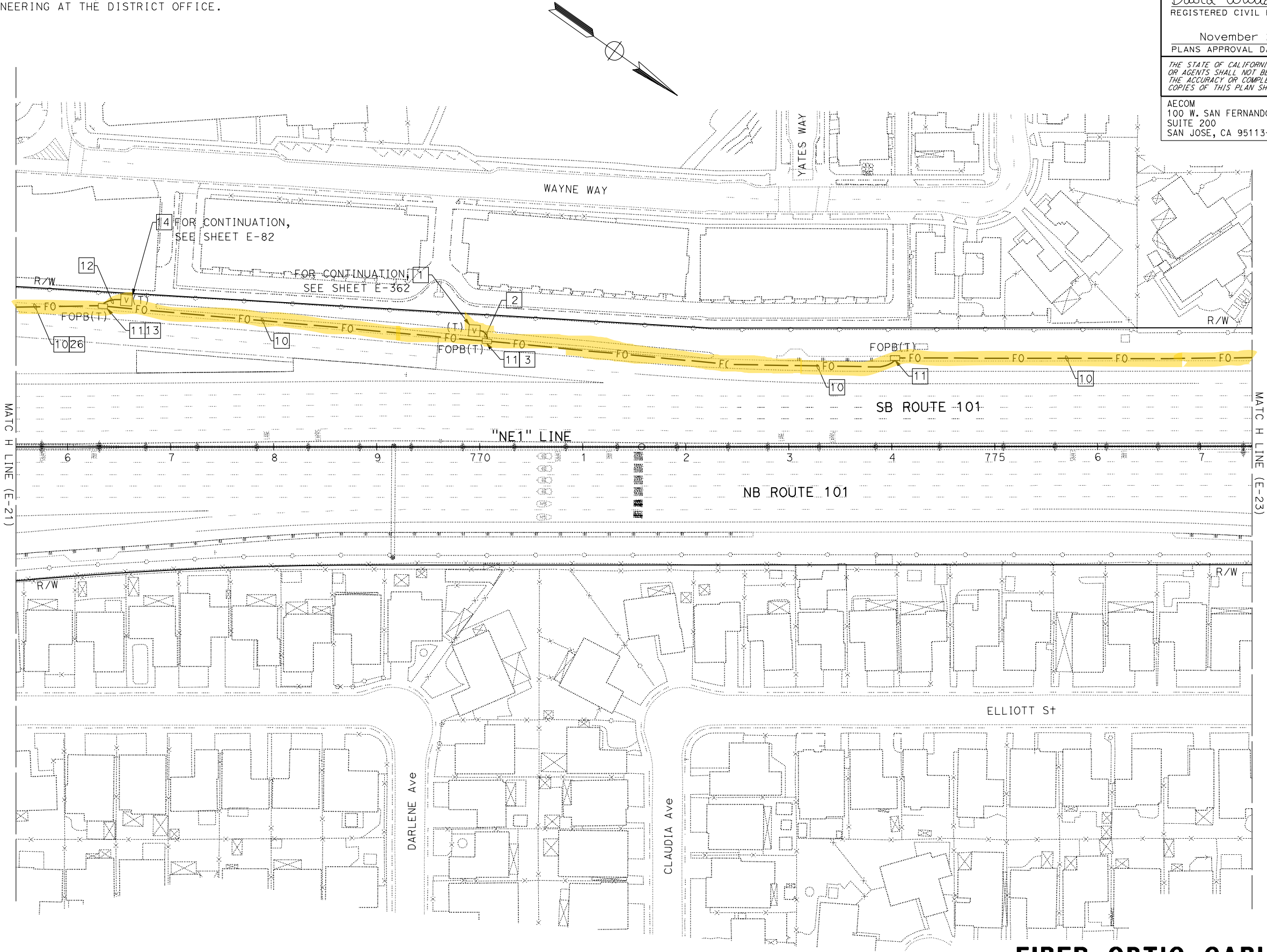
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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION 	FUNCTIONAL SUPERVISOR DAVID WILLIAMS	CALCULATED- DESIGNED BY CHECKED BY	BESHOY DEMYAN/ALEXANDER HA JOE MCCONNELL/ROBERT MURPHY	REVISED BY DATE REVISED	-	-

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1653	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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A. WILLIAMS

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CIVIL

STATE OF CALIFORNIA

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SUITE 200
SAN JOSE, CA 95113-2254

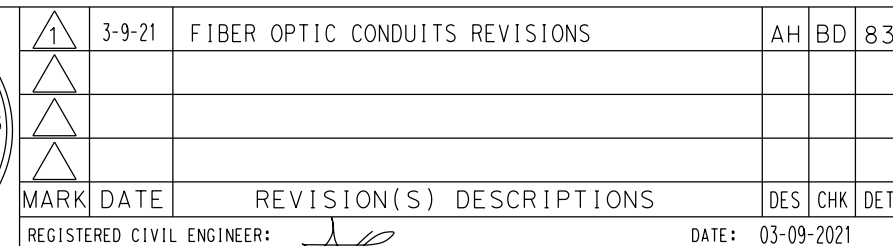
SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

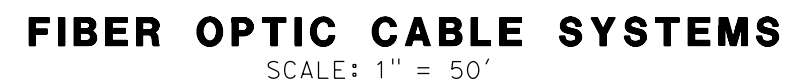
FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CONTRACT CHANGE ORDER NO. 83
SHEET OF



E - 23

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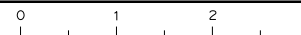
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RELATIVE BORDER SCALE
IS IN INCHES



UNIT 0703

PROJECT NUMBER & PHASE

04190003131

LAST REVISION
 9-16-19
 DATE PLOTTED => 09-MAR-2021
 TIME PLOTTED => 15:46

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHAY DEMYAN/ALEXANDER HA

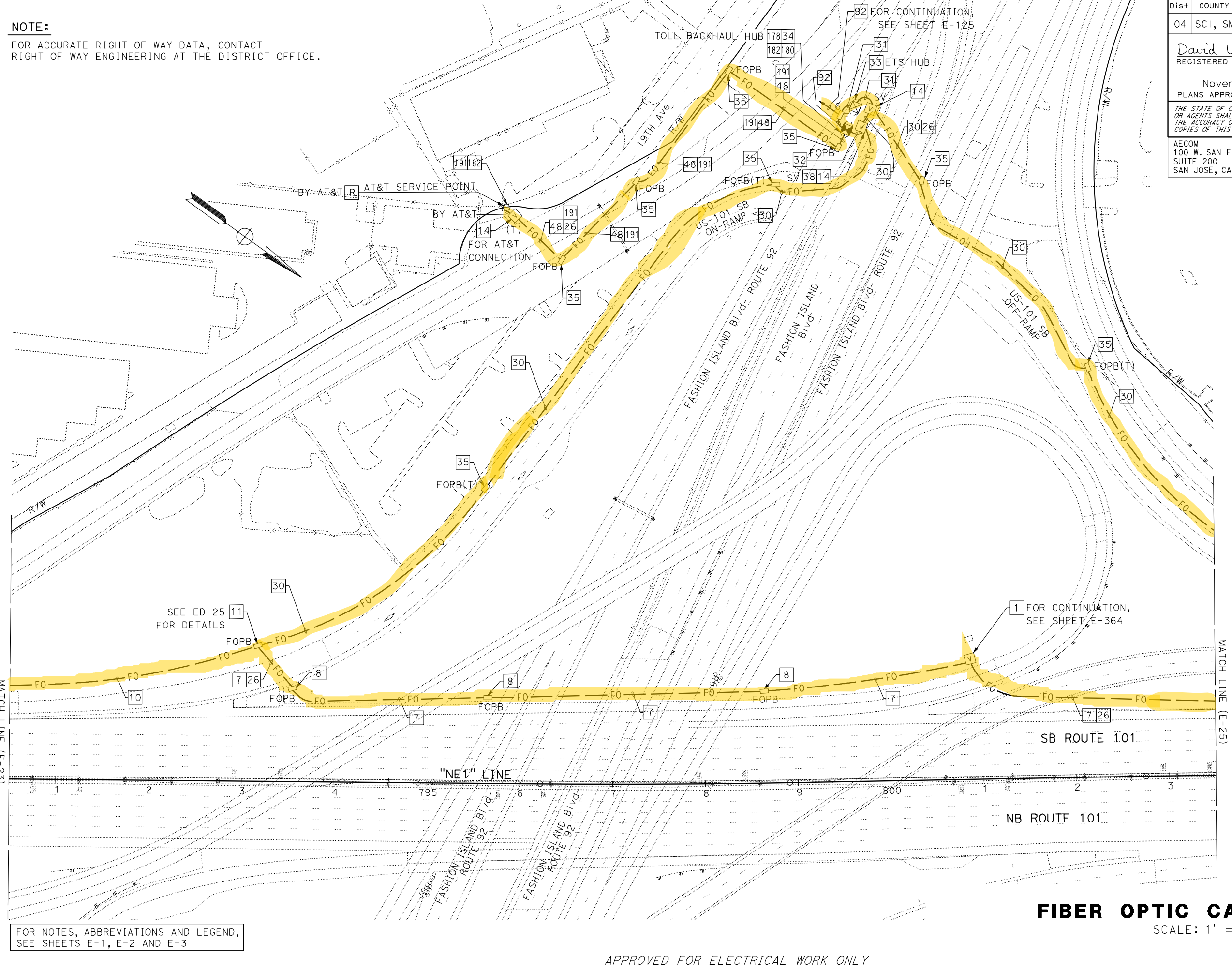
JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

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NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1655	2401

David Williams

9-16-19

REGISTERED CIVIL ENGINEER

DATE

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA

FOR NOTES, ABBREVIATIONS AND LEGEND,
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APPROVED FOR ELECTRICAL WORK ONLY

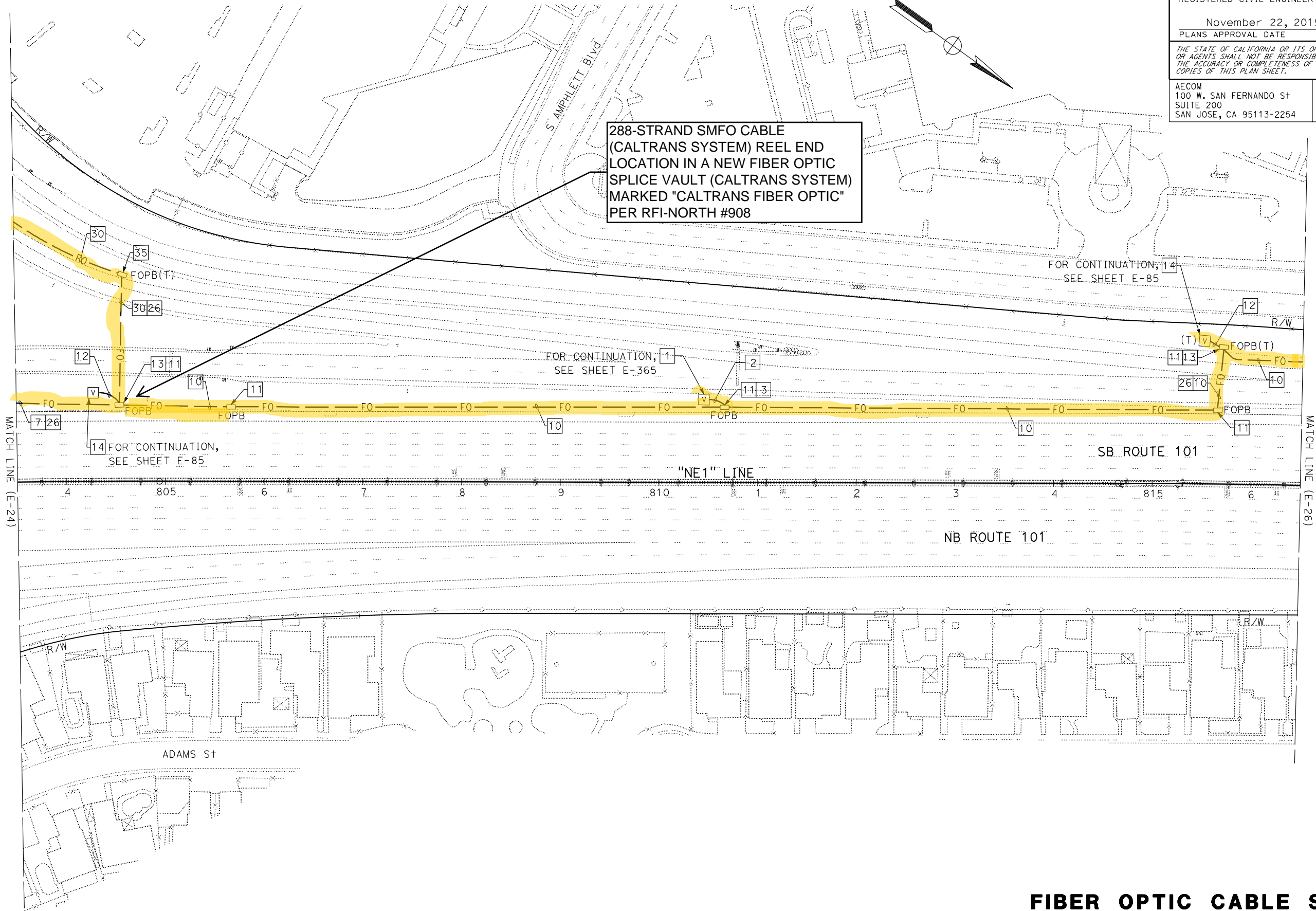
FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-24

LAST REVISION
9-16-19
DATE PLOTTED => 27-NOV-2019
TIME PLOTTED => 10:23

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1656	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

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1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1657	2401

David Williams

REGISTERED CIVIL ENGINEER

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TRANSPORTATION AUTHORITY
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SAN CARLOS, CA 94070

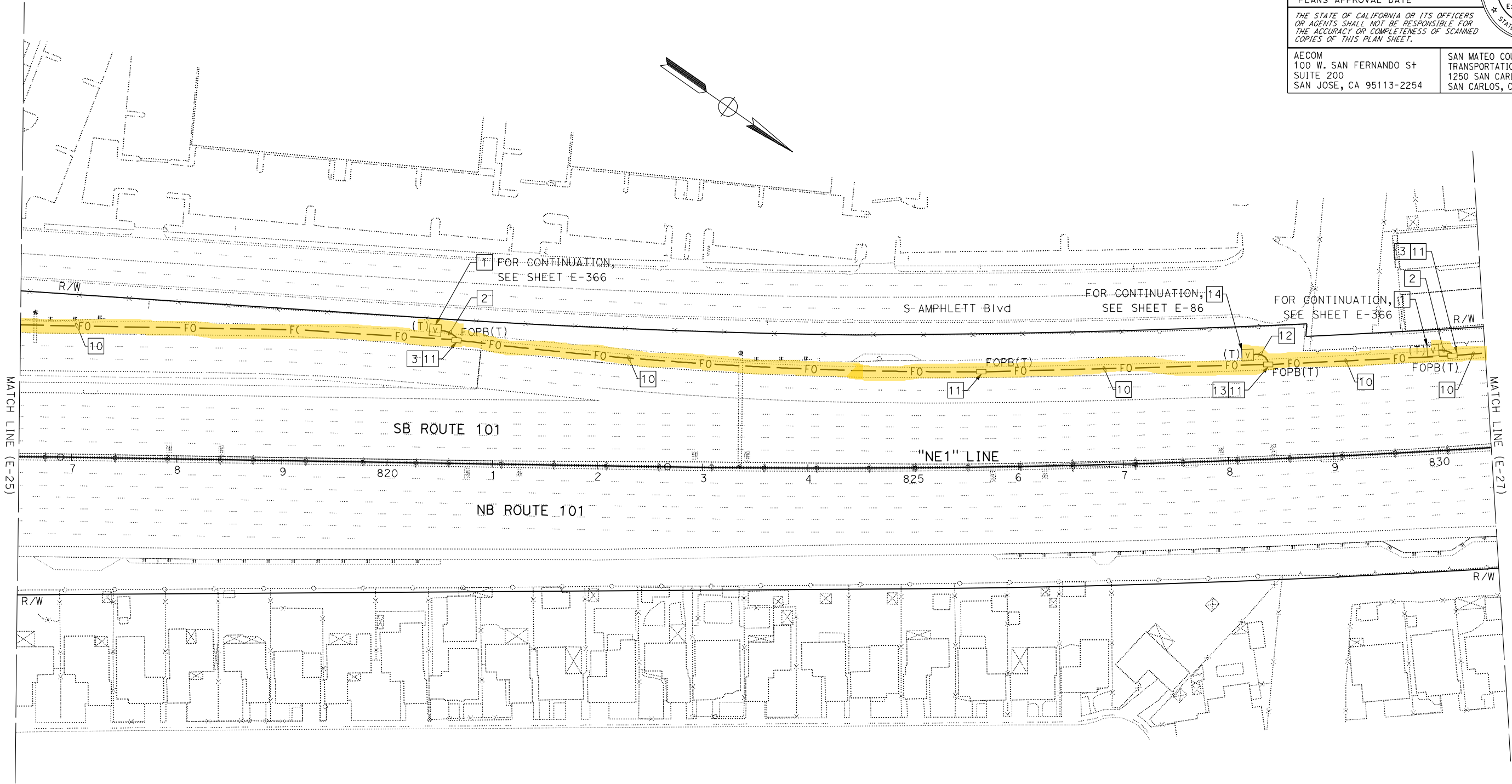
DAVID
A. WILLIAMS

No. C-58697

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REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CALCULATED-DESIGNED BY	CHECKED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1658	2401

David Williams

REGISTERED CIVIL ENGINEER

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AECOM

100 W. SAN FERNANDO ST

SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

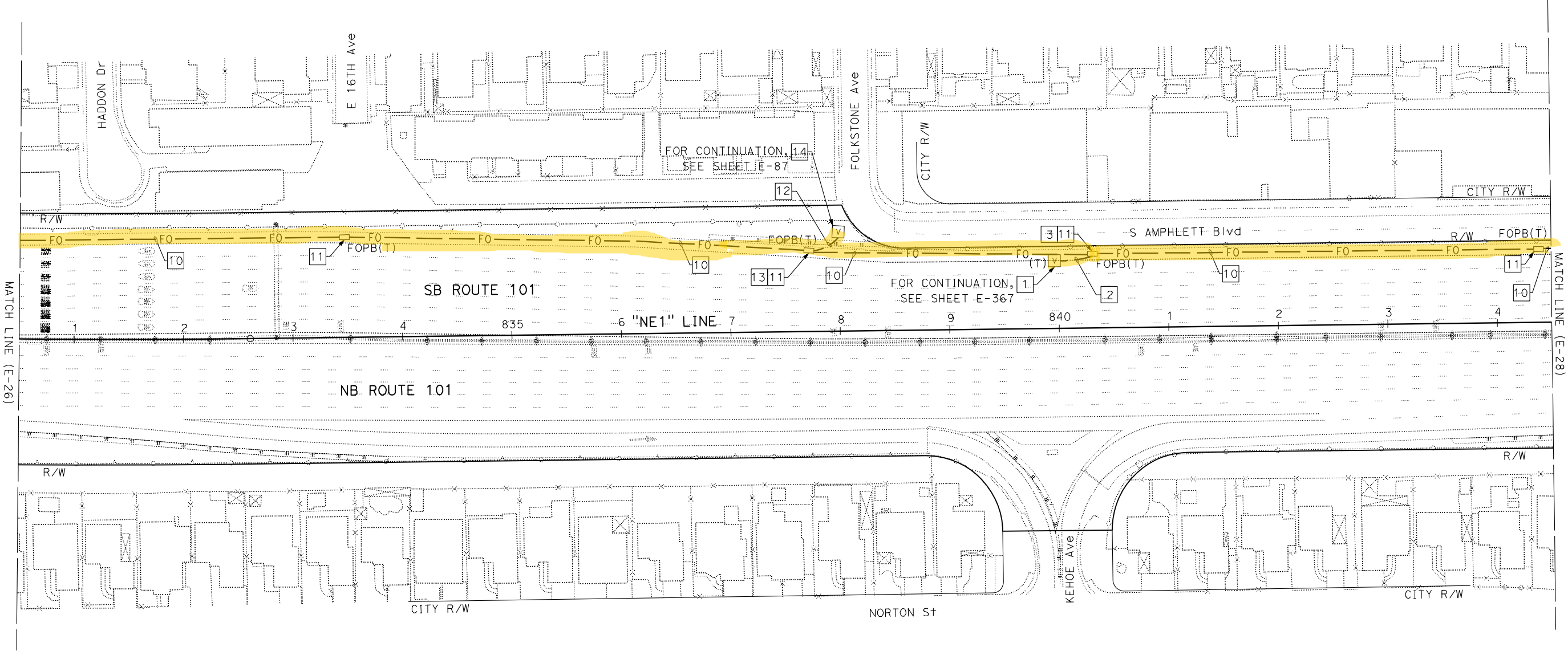
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-27

APPROVED FOR ELECTRICAL WORK ONLY

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1659	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

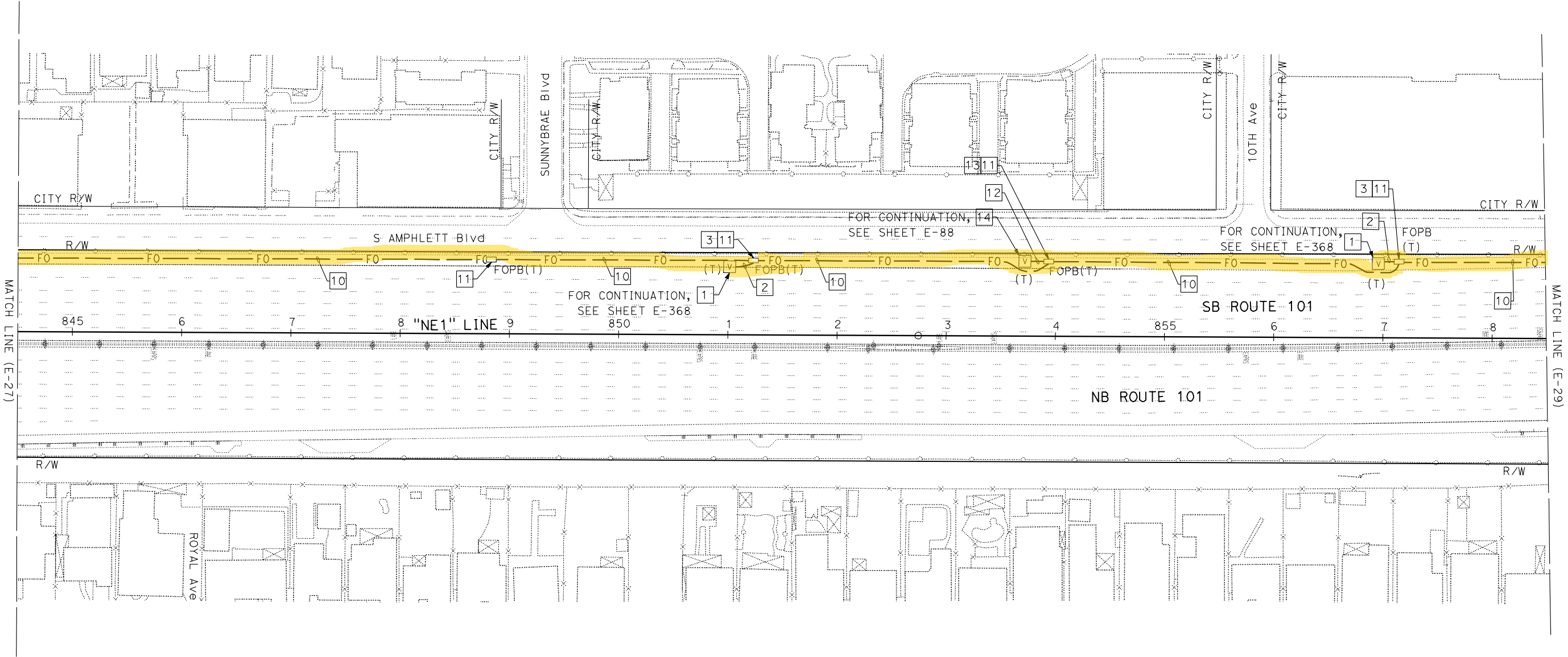
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

APPROVED FOR ELECTRICAL WORK ONLY

FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1660	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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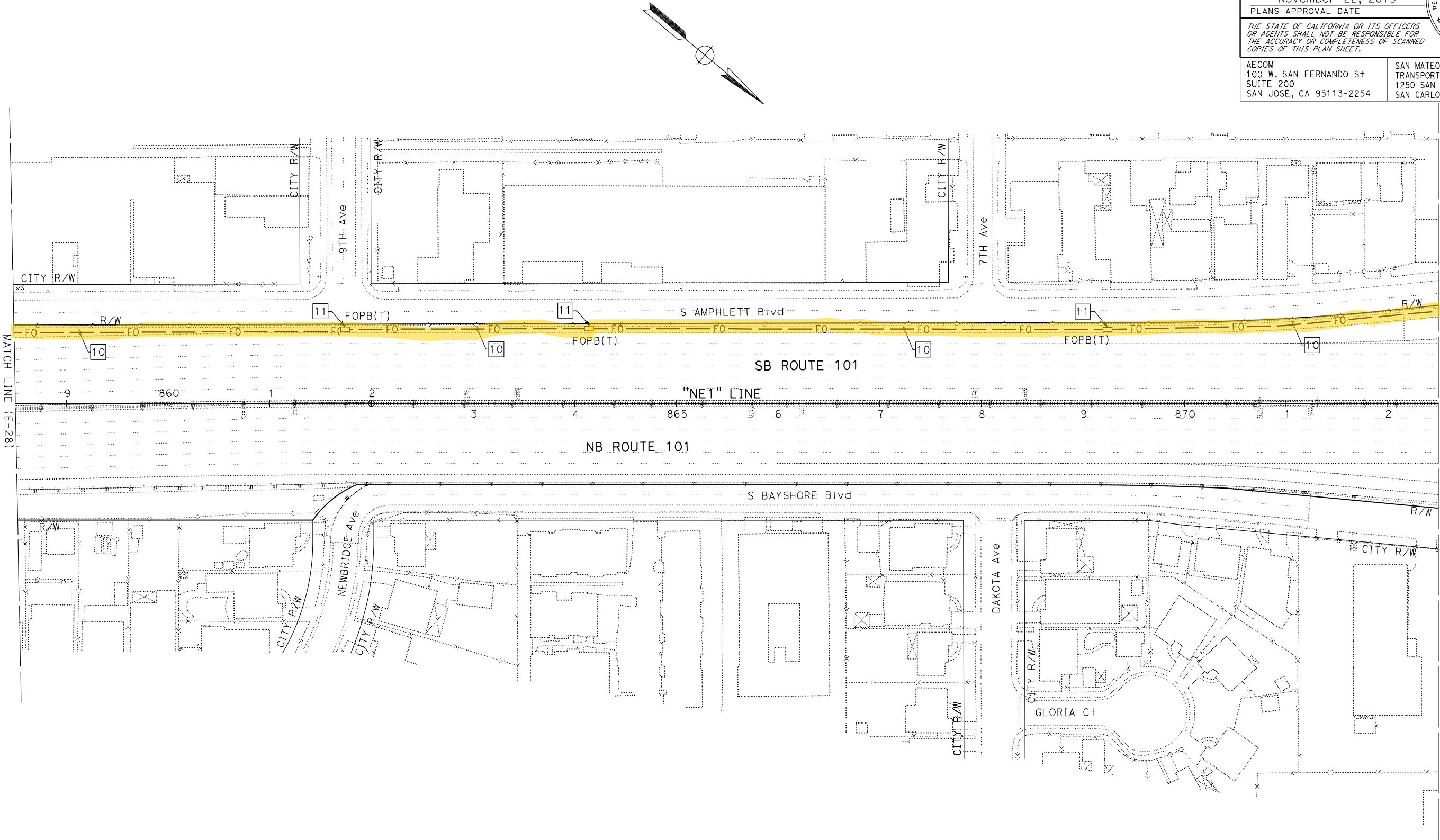
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SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1661	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

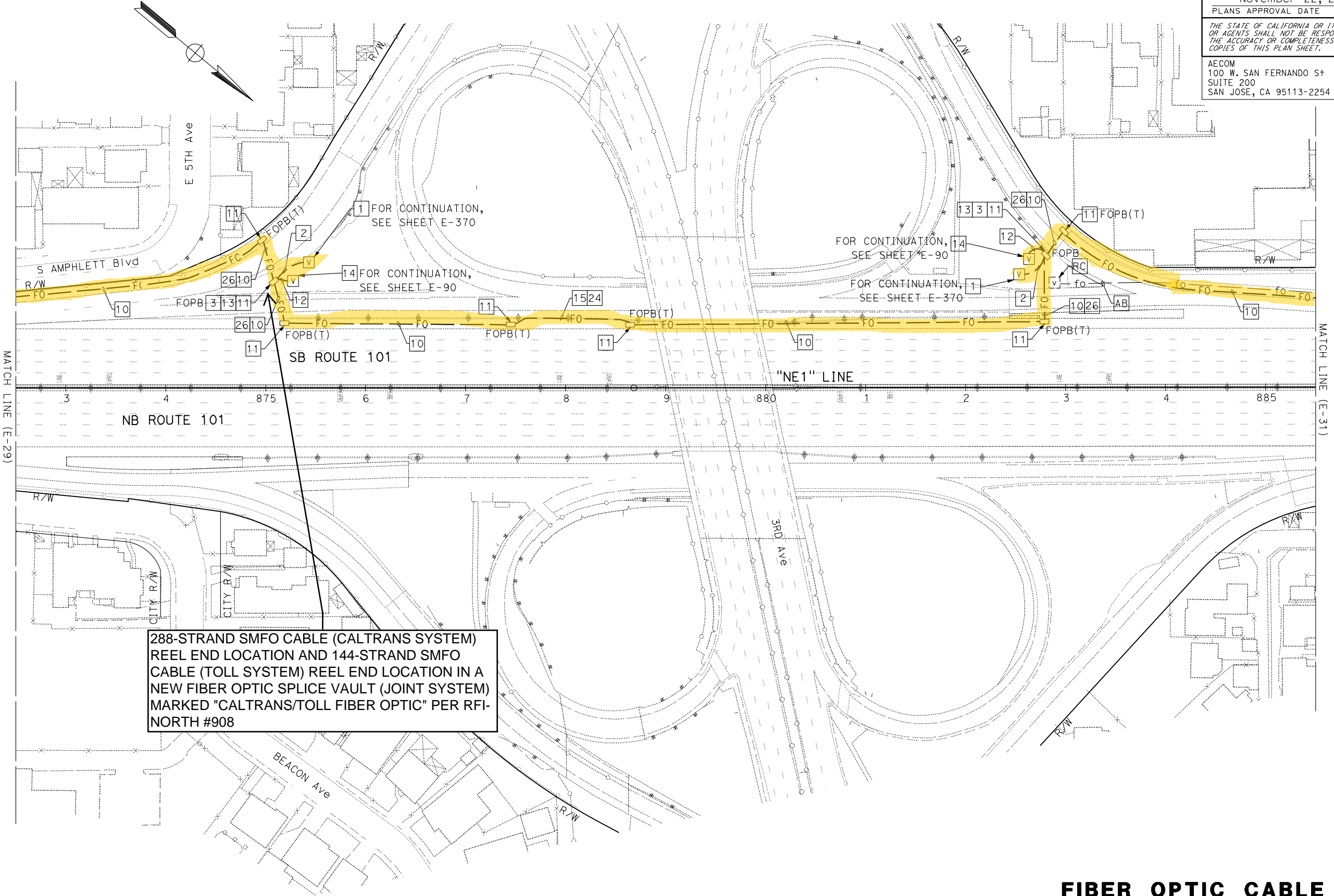
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REGISTERED PROFESSIONAL ENGINEER
DAVID A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-30

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1662	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

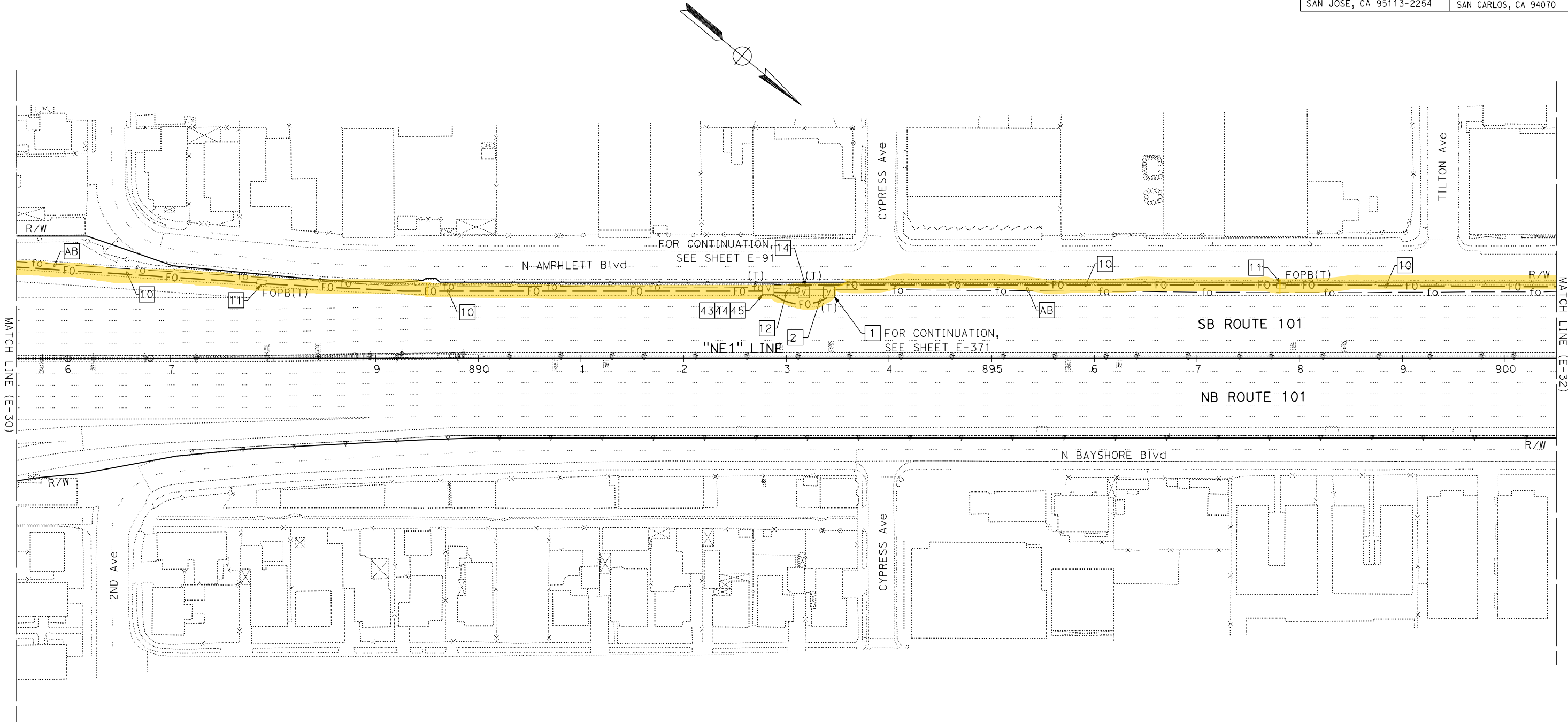
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TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-31

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CHECKED BY

JOE MCCONNELL/ROBERT MURPHY

DESIGNED BY

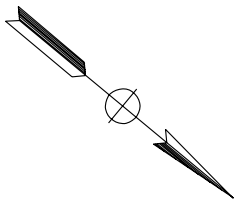
BESHOY DEMYAN/ALEXANDER HA

REVISOR

DATE

REVISION

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1663	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

DAVID
A. WILLIAMS

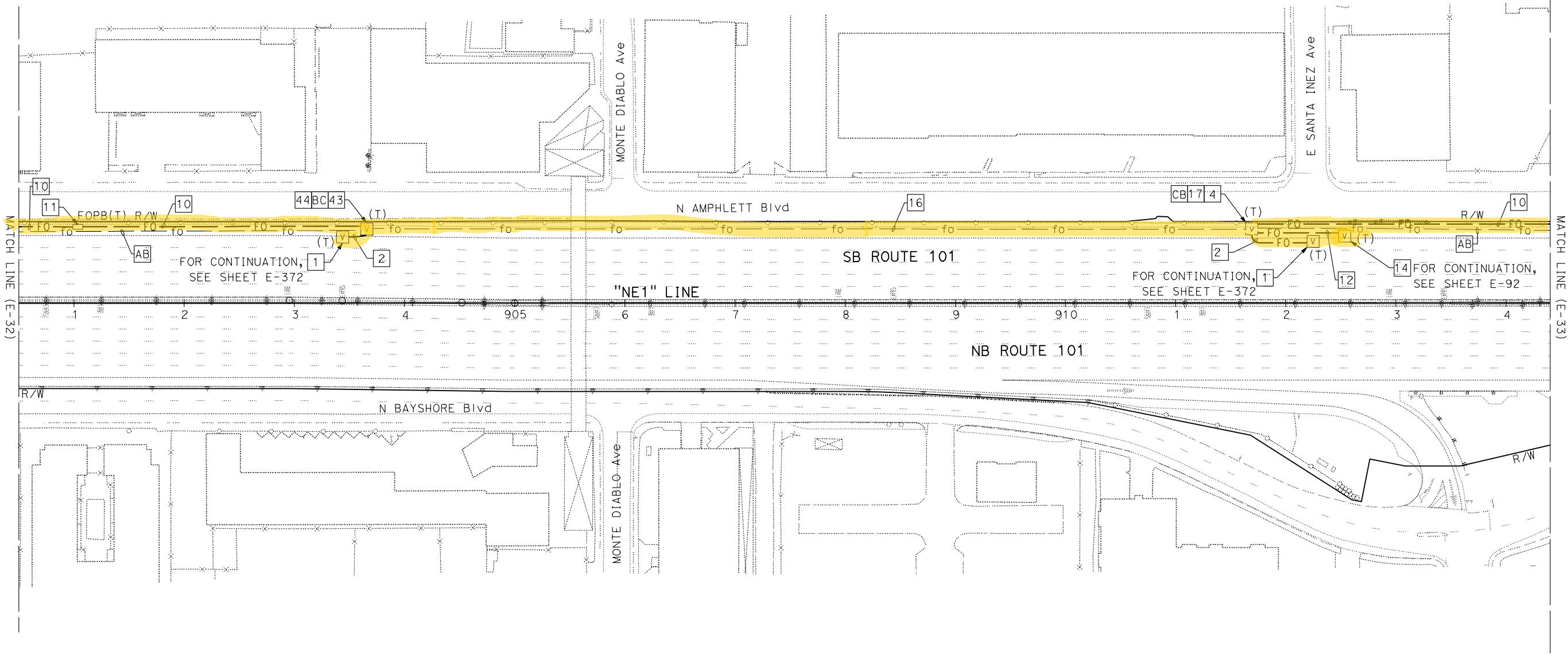
No. C-58697

Exp. 12-31-20

CIVIL

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-32

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR
DAVID WILLIAMS

CALCULATED-DESIGNED BY
CHECKED BY

BESHOY DEMYAN/ALEXANDER HA
JOE MCCONNELL/ROBERT MURPHY

REVISED BY
DATE REVISED

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1664	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

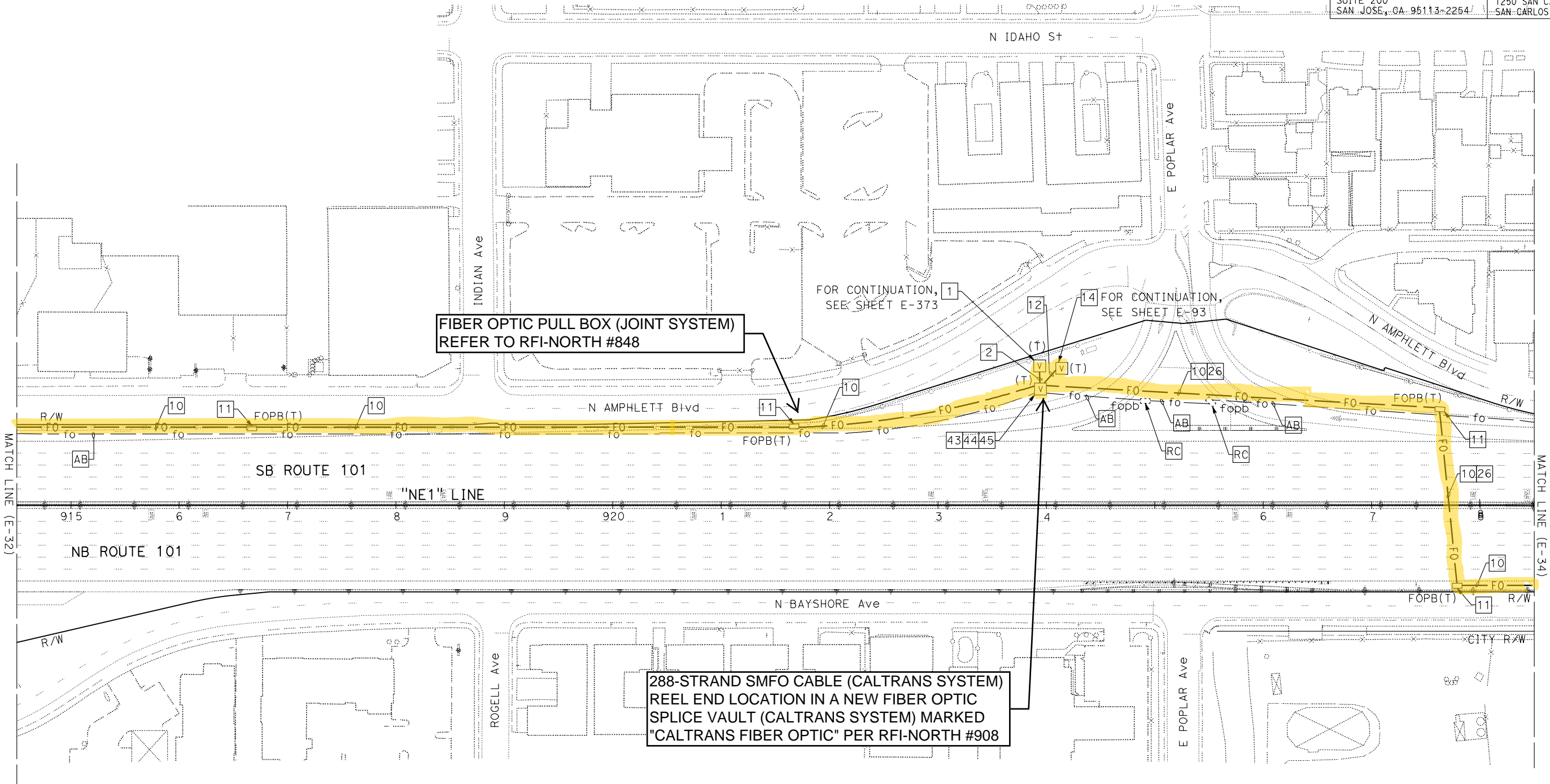
November 22, 2019
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SAN JOSE, CA 95113-2254

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TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER
DAVID
A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

APPROVED FOR ELECTRICAL WORK ONLY

FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-33

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1666	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

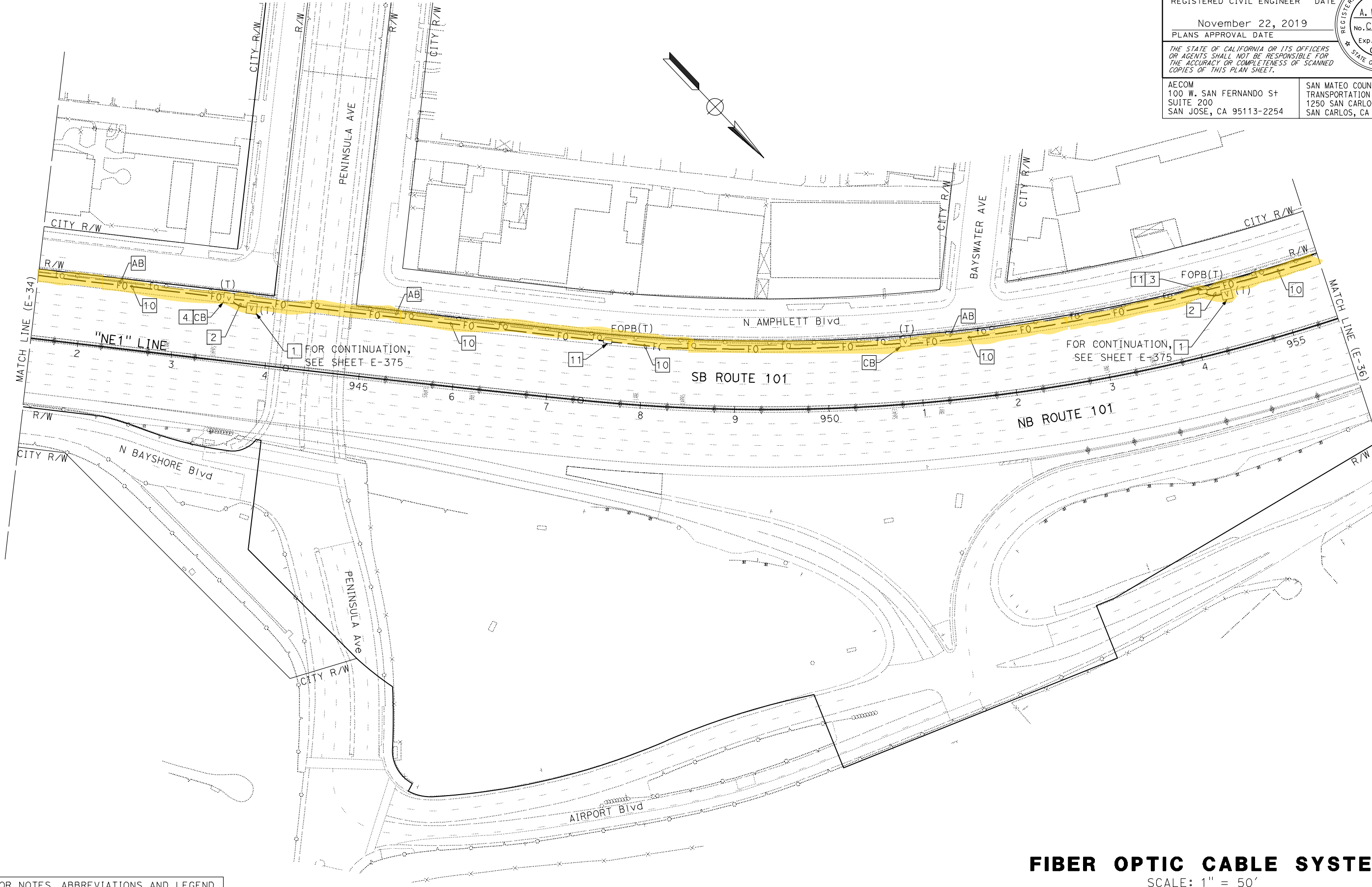
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SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER
DAVID
A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-35

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CALTRANS	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CHECKED BY	JOE MCCONNELL/ROBERT MURPHY	REVISOR	BESHOY DEMYAN/ALEXANDER HA	DATE	REVISED BY	DATE	REVISED

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1667	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

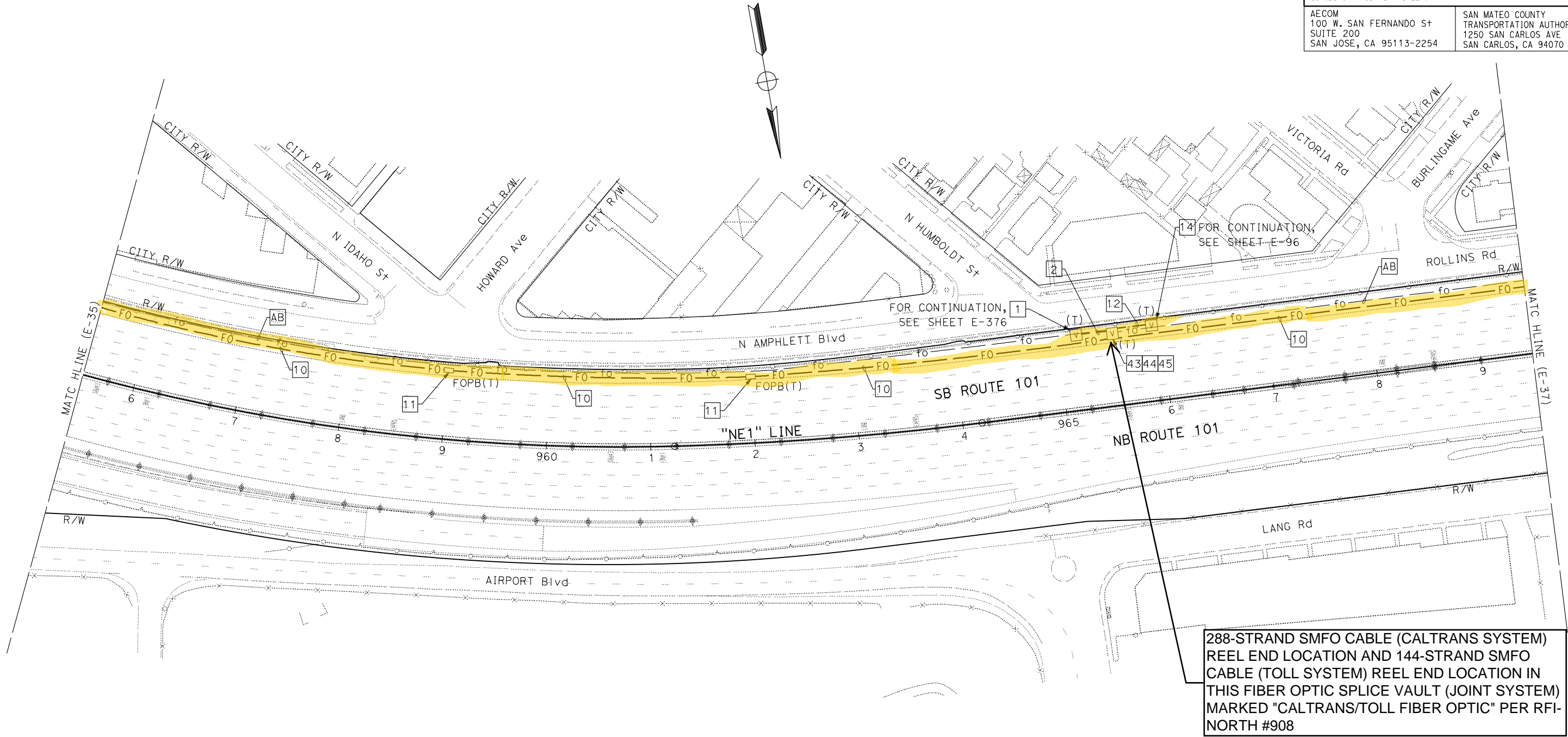
DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

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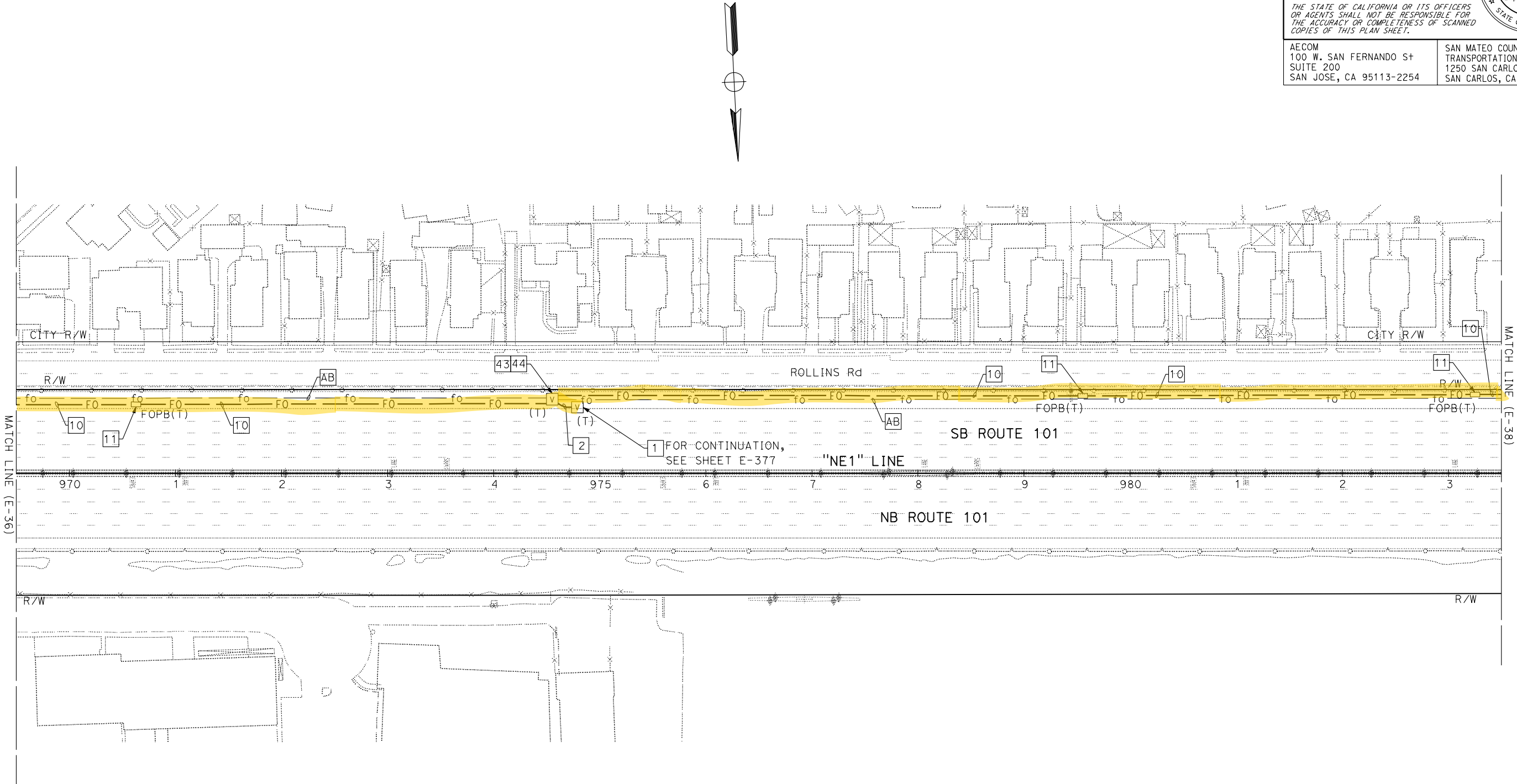
FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-36

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	Caltrans	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS	CALCULATED-DESIGNED BY	CHECKED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY	-	-	x

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1668	2401
David Williams			9-16-19	<div>REGISTERED PROFESSIONAL ENGINEER DAVID A. WILLIAMS No. C-58697 Exp. 12-31-20 CIVIL STATE OF CALIFORNIA</div>	
REGISTERED CIVIL ENGINEER			DATE		
November 22, 2019			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
AECOM 100 W. SAN FERNANDO ST SUITE 200 SAN JOSE, CA 95113-2254			SAN MATEO COUNTY TRANSPORTATION AUTHORITY 1250 SAN CARLOS AVE SAN CARLOS, CA 94070		



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHAY DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

-

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NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1669	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200
SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

DAVID
A. WILLIAMS

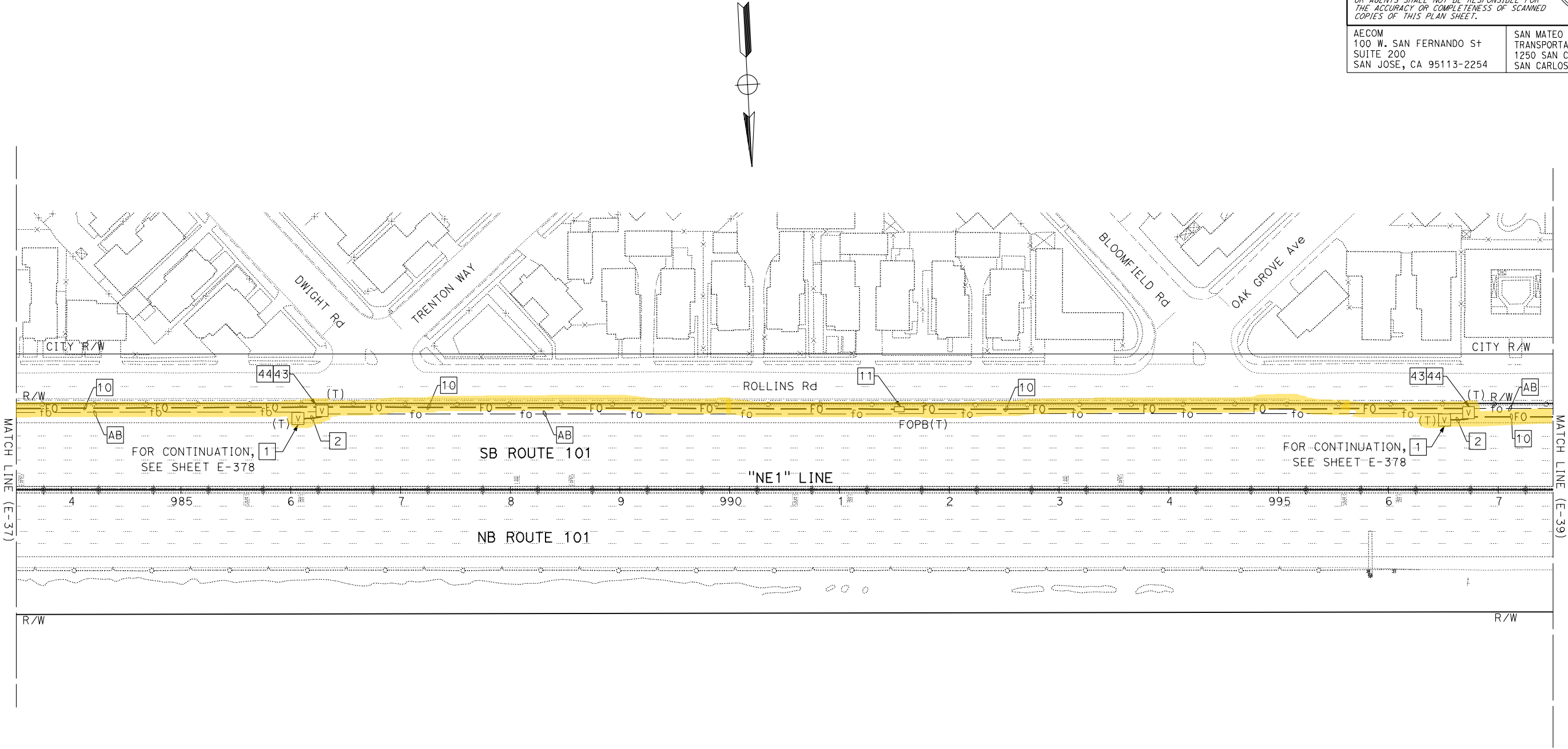
No. C-58697

Exp. 12-31-20

CIVIL

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-38

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED-DESIGNED BY

CHECKED BY

BESHOY DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

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NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1670	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

DAVID
A. WILLIAMS

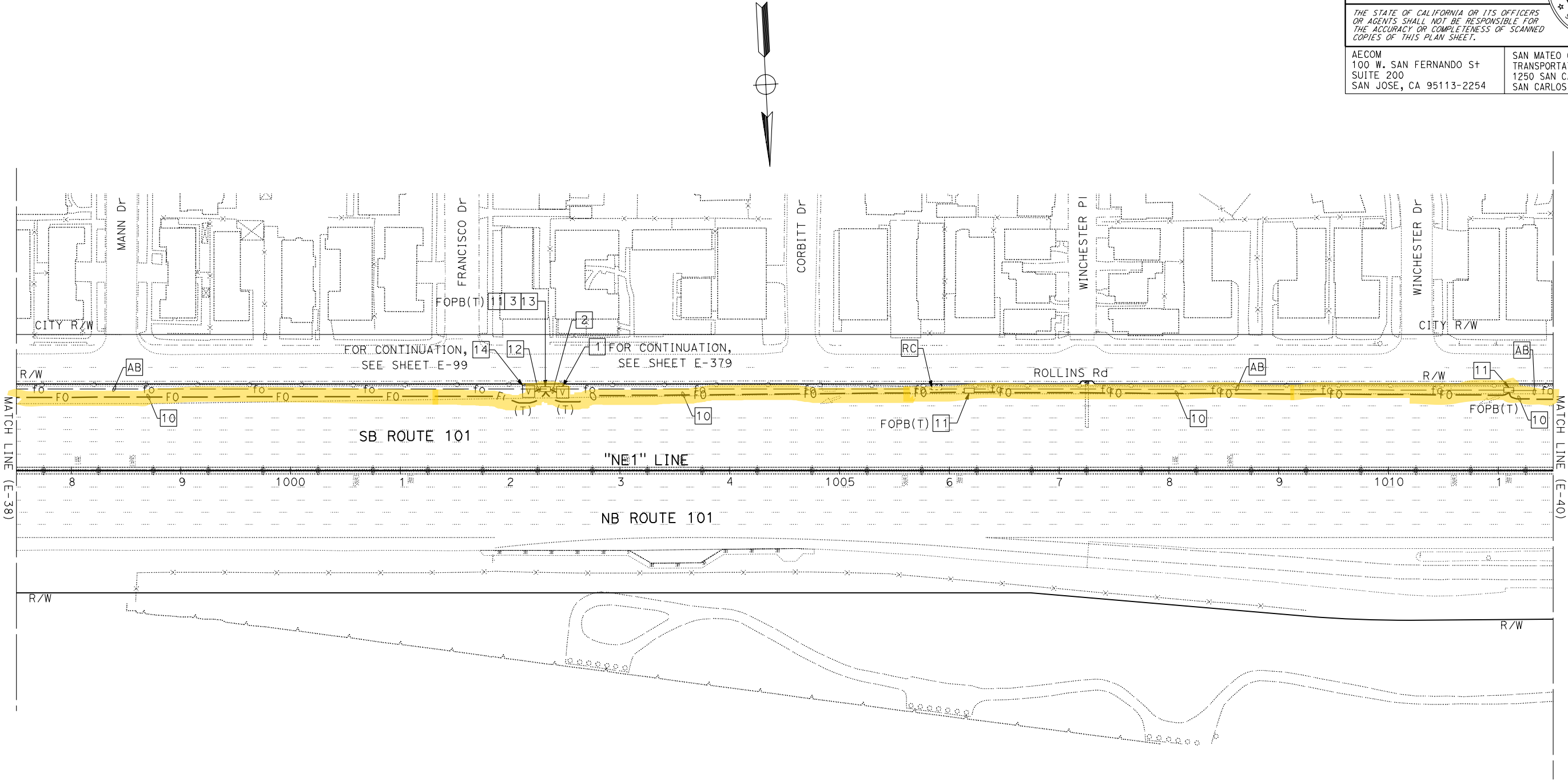
No. C-58697

Exp. 12-31-20

CIVIL

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-39

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1671	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

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SAN MATEO COUNTY
TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

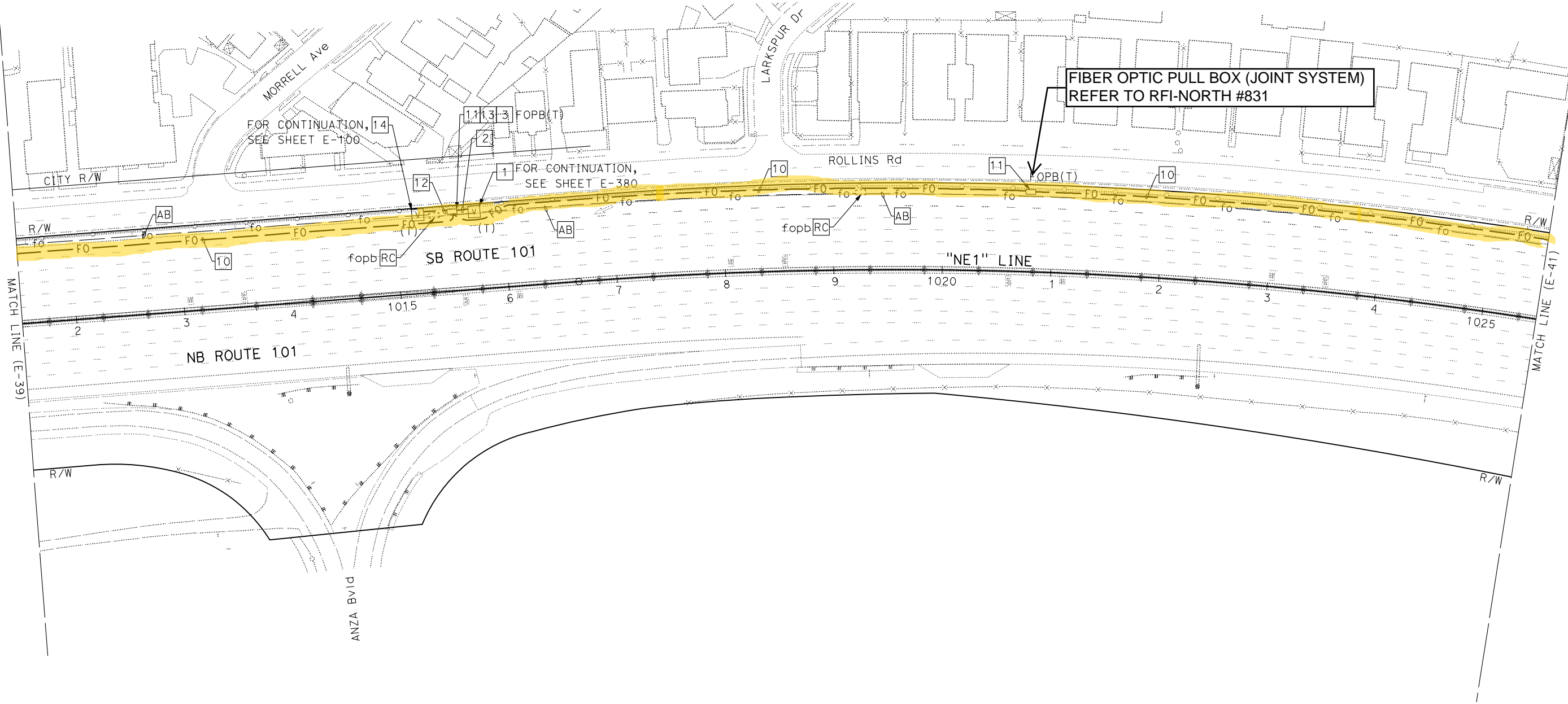
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-40

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVIEWED BY	
Caltrans	DAVID WILLIAMS	JOE MCCONNELL/ROBERT MURPHY	BESHOY DEMYAN/ALEXANDER HA		

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1672	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

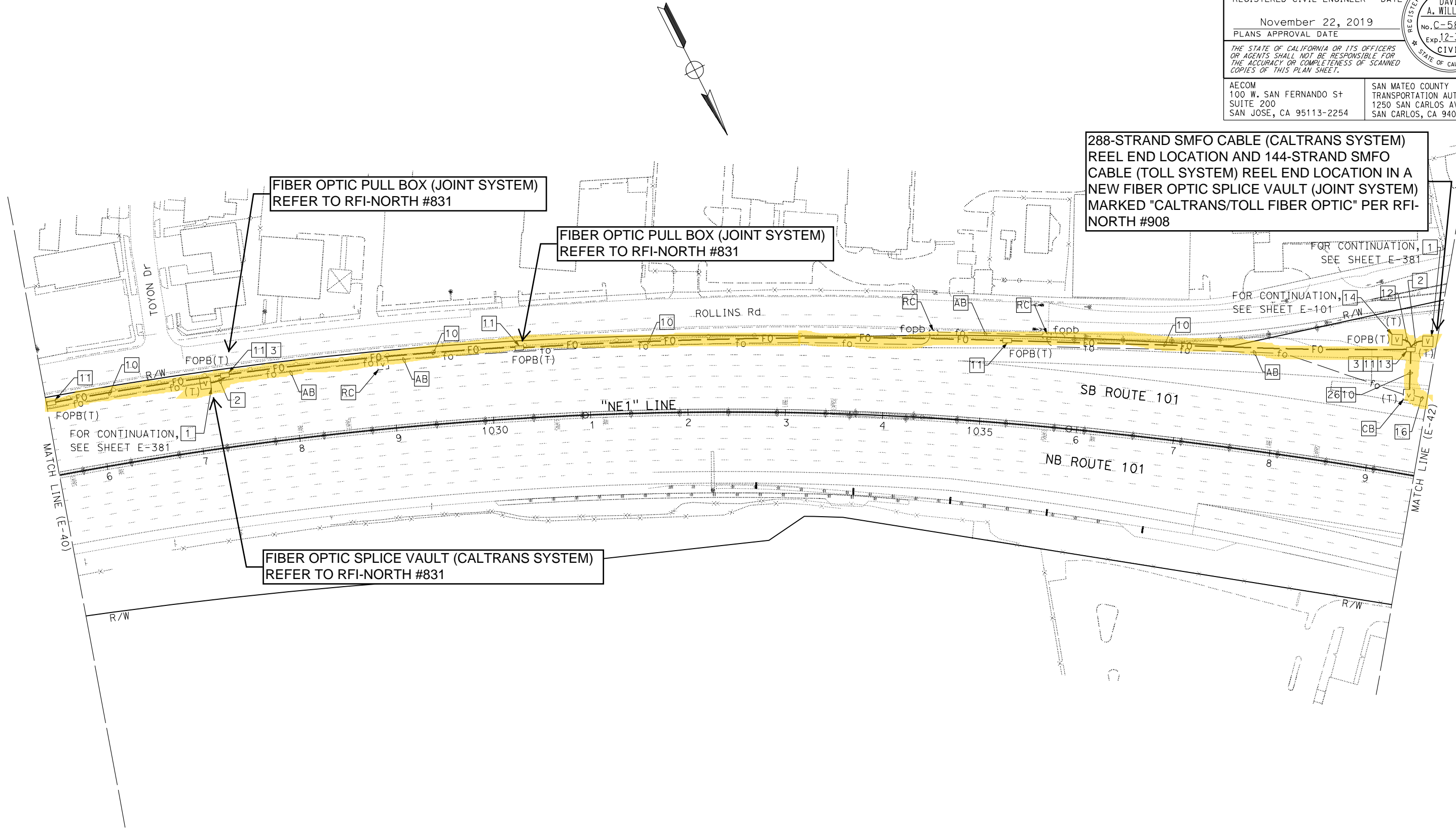
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TRANSPORTATION AUTHORITY
1250 SAN CARLOS AVE
SAN CARLOS, CA 94070

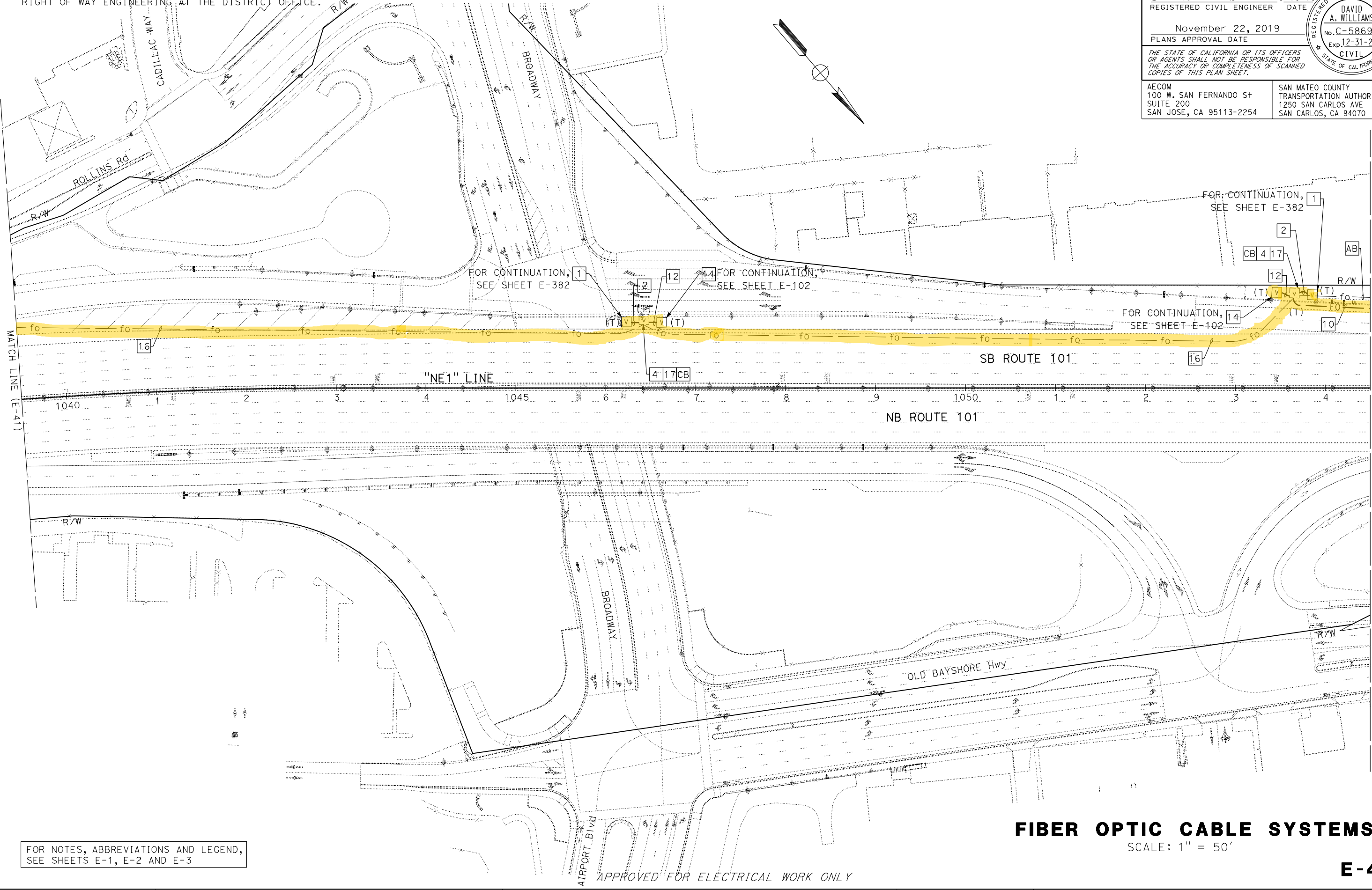
DAVID
A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1673	2401

David Williams

REGISTERED CIVIL ENGINEER

DATE

9-16-19

November 22, 2019

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

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SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED/DESIGNED BY

CHECKED BY

BESHOY DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1675	2401

David Williams

REGISTERED CIVIL ENGINEER

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9-16-19

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SUITE 200

SAN JOSE, CA 95113-2254

SAN MATEO COUNTY
TRANSPORTATION AUTHORITY

1250 SAN CARLOS AVE

SAN CARLOS, CA 94070

REGISTERED PROFESSIONAL ENGINEER

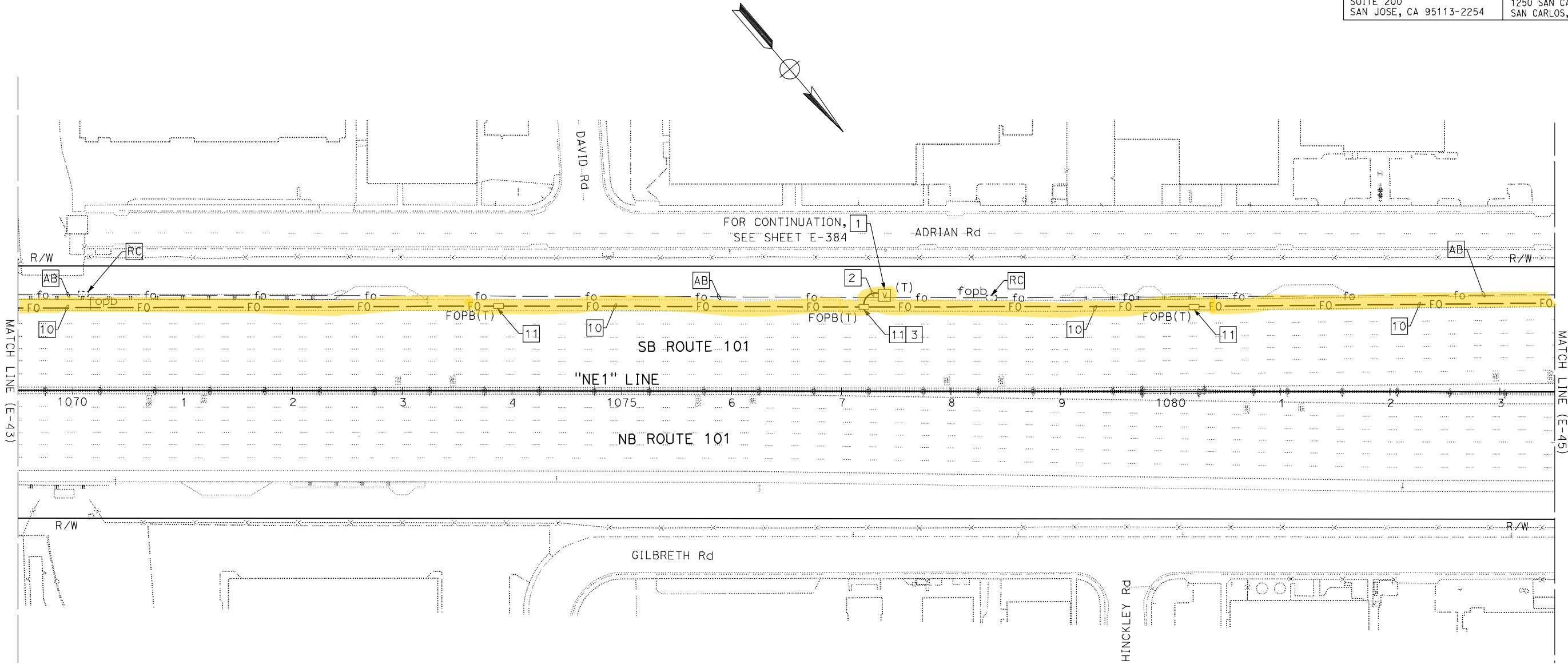
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

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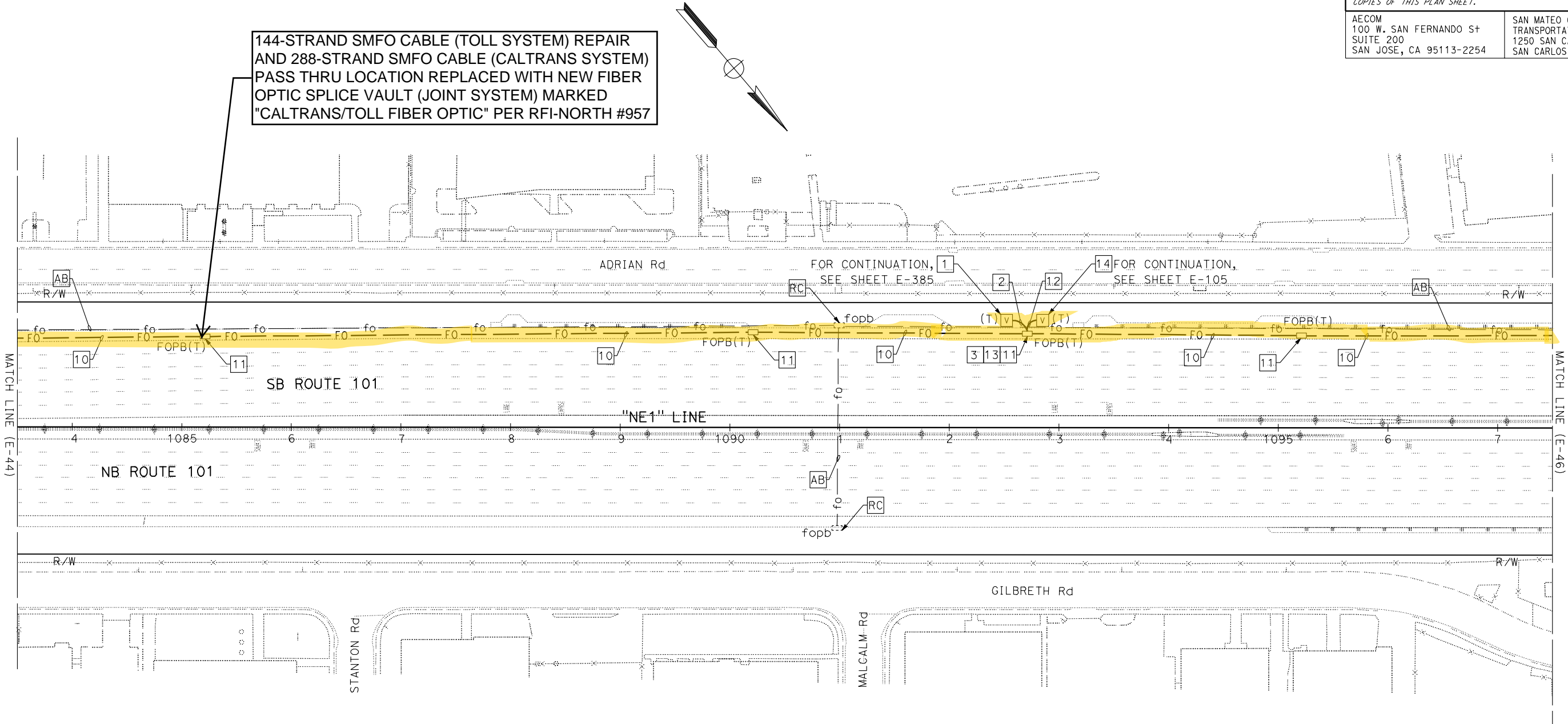
JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

144-STRAND SMFO CABLE (TOLL SYSTEM) REPAIR
AND 288-STRAND SMFO CABLE (CALTRANS SYSTEM)
PASS THRU LOCATION REPLACED WITH NEW FIBER
OPTIC SPLICE VAULT (JOINT SYSTEM) MARKED
"CALTRANS/TOLL FIBER OPTIC" PER RFI-NORTH #957



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1676	2401

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

November 22, 2019

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER

DAVID A. WILLIAMS

No. C-58697

Exp. 12-31-20

CIVIL

STATE OF CALIFORNIA

FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

STATE OF CALIFORNIA	DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	BESHOY DEMYAN/ALEXANDER HA	REVISED BY		
E-46	-	DAVID WILLIAMS	CHECKED BY	JOE MCCONNELL/ROBERT MURPHY	DATE	REVISED	

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1677	2401

David Williams

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DATE

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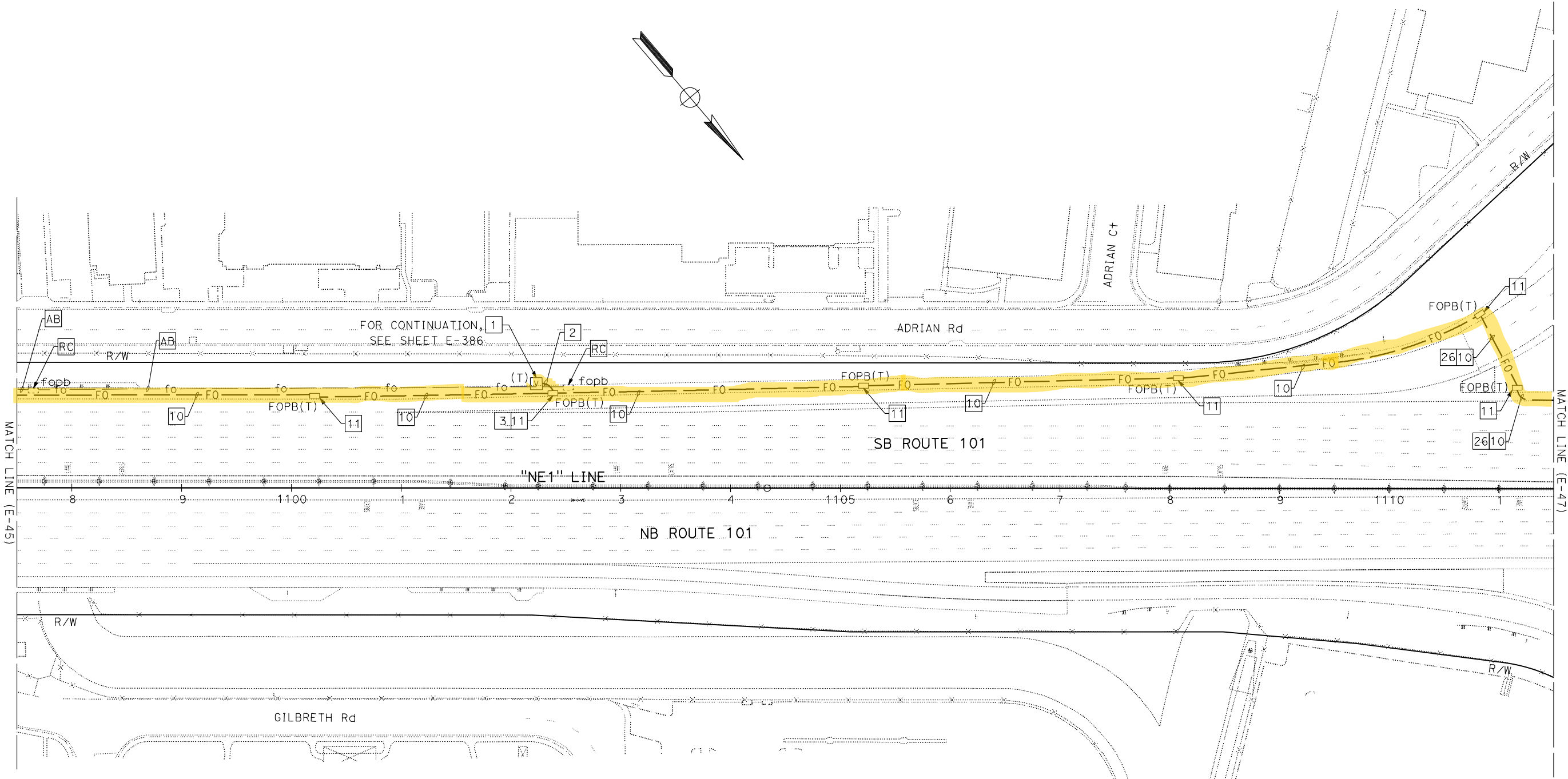
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FIBER OPTIC CABLE SYSTEMS

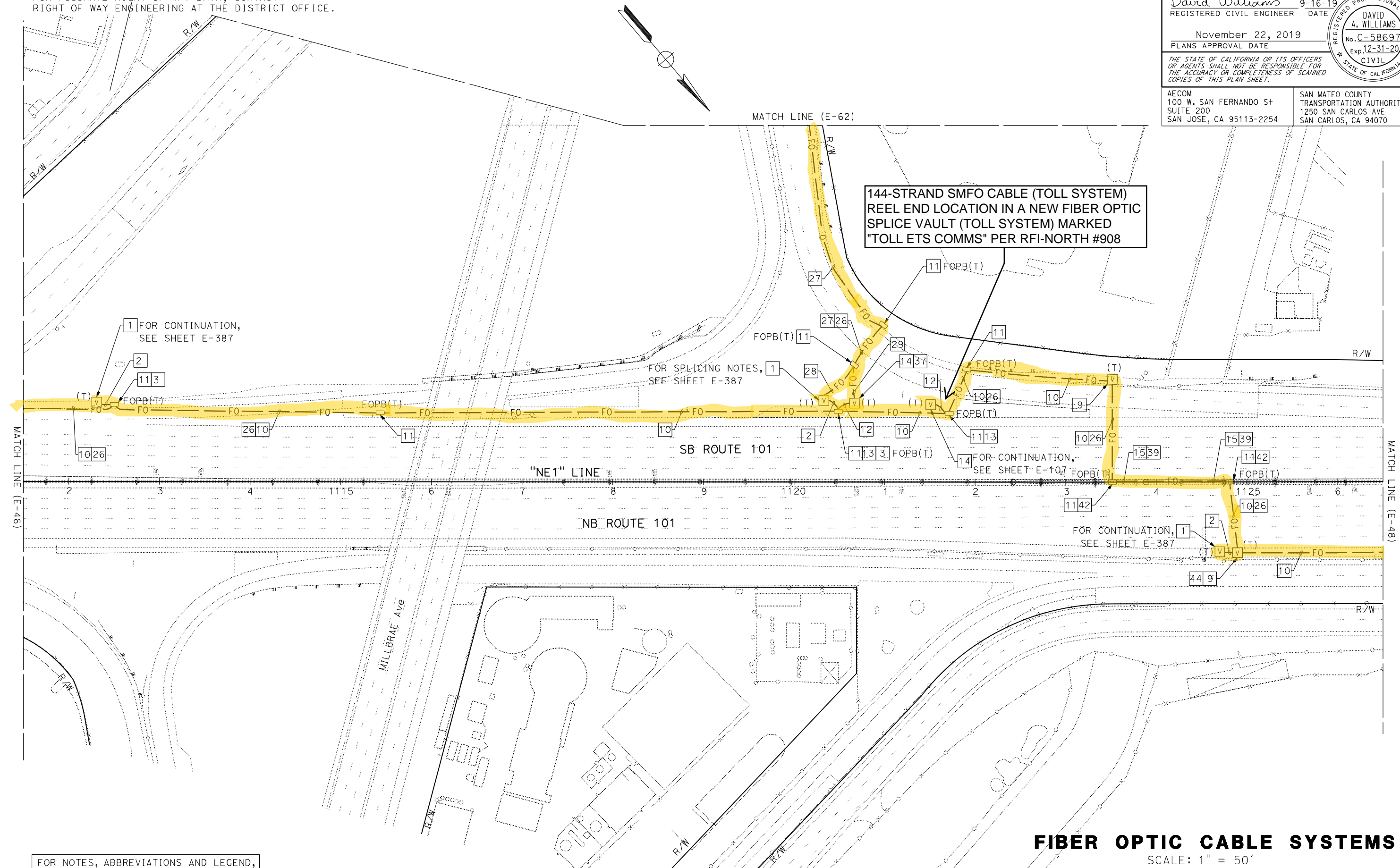
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1678	2401
<u>David Williams</u> REGISTERED CIVIL ENGINEER			9-16-19 DATE		
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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David Williams

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9-16-19

DATE

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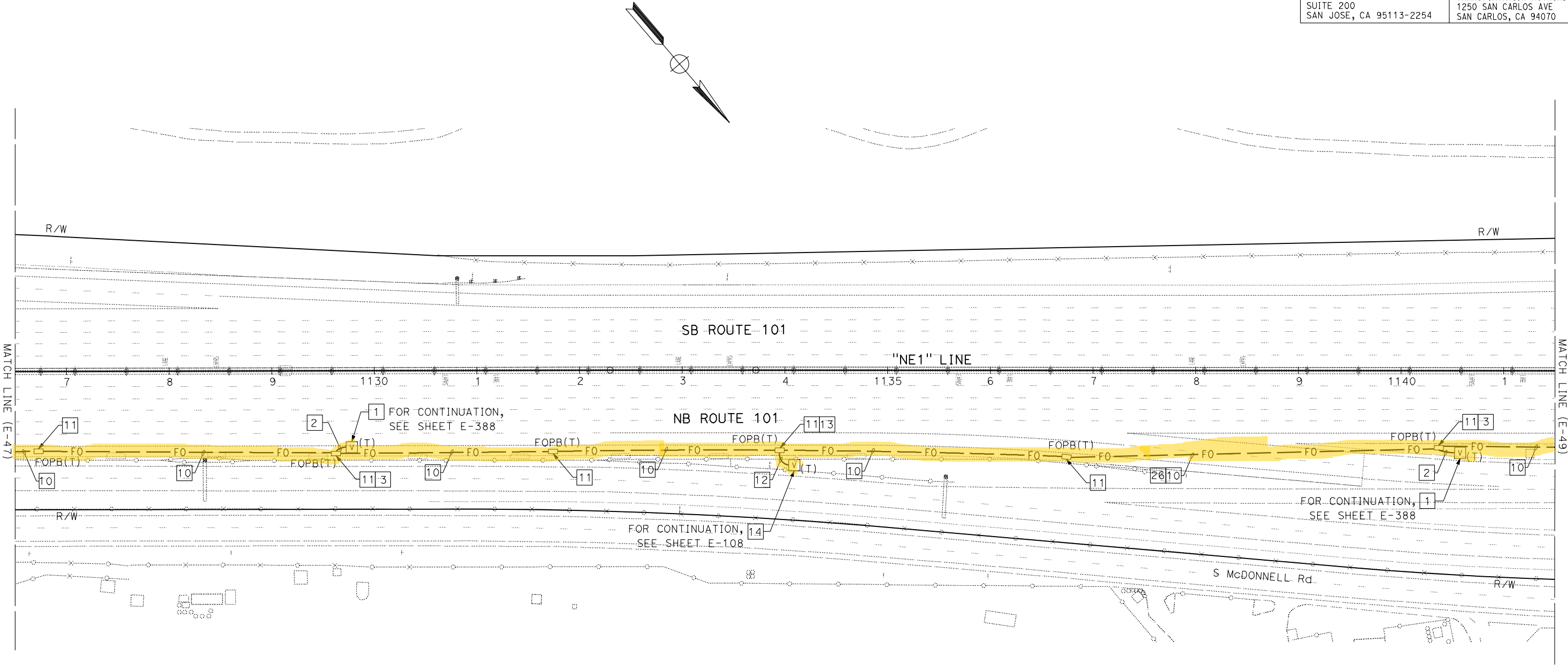
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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-48

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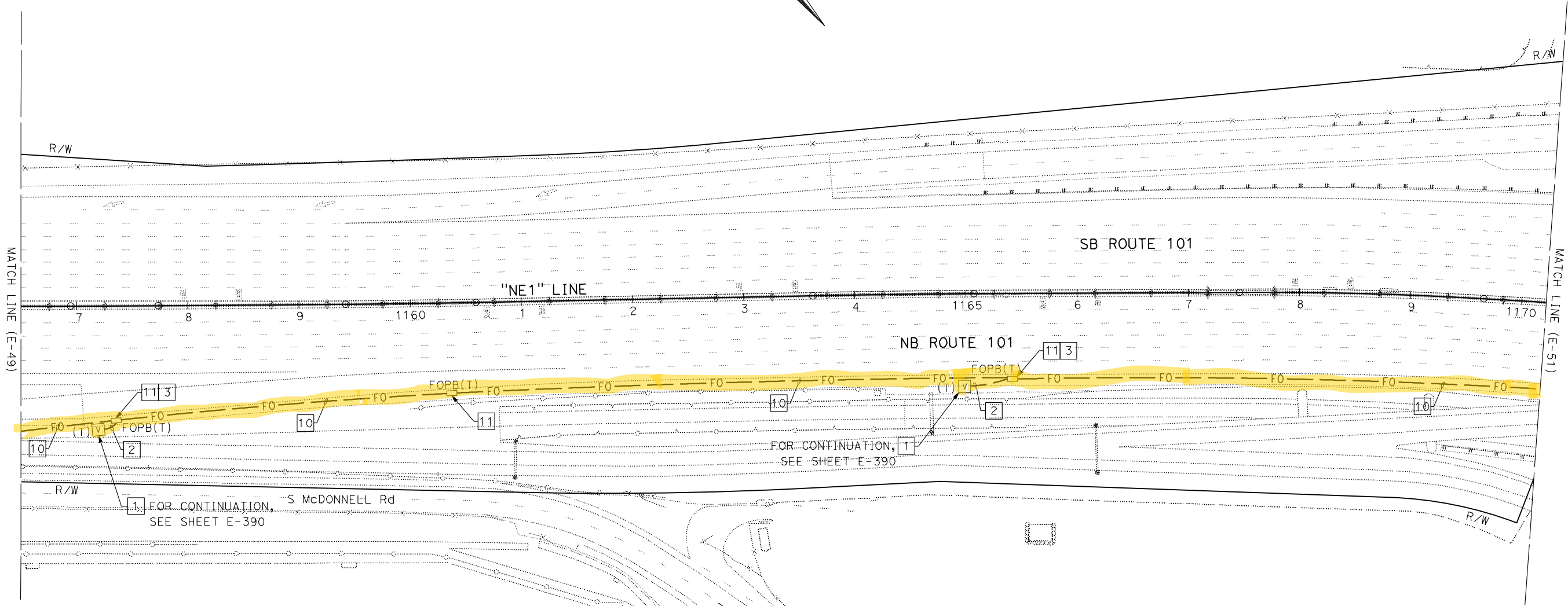
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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-50

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR

DAVID WILLIAMS

CALCULATED/DESIGNED BY

CHECKED BY

BESHAY DEMYAN/ALEXANDER HA

JOE MCCONNELL/ROBERT MURPHY

REVISED BY

DATE REVISED

-

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NOTE:
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1682	2401

David Williams

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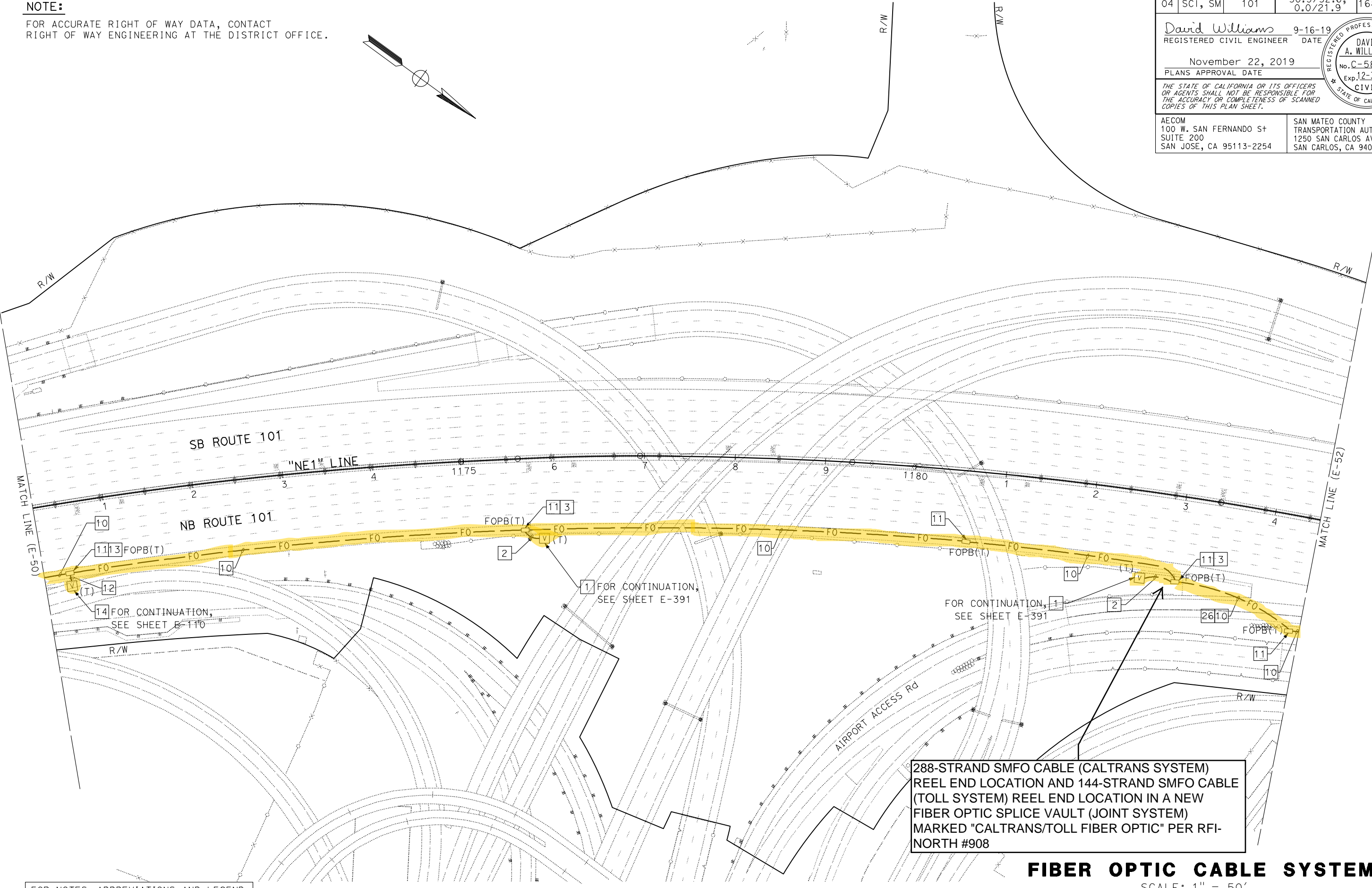
DAVID
A. WILLIAMS

No. C-58697

Exp. 12-31-20

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FOR NOTES, ABBREVIATIONS AND LEGEND,
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288-STRAND SMFO CABLE (CALTRANS SYSTEM)
REEL END LOCATION AND 144-STRAND SMFO CABLE
(TOLL SYSTEM) REEL END LOCATION IN A NEW
FIBER OPTIC SPLICE VAULT (JOINT SYSTEM)
MARKED "CALTRANS/TOLL FIBER OPTIC" PER RFI-
NORTH #908

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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04	SCI, SM	101	50.3/52.6, 0.0/21.9	1683	2401

David Williams 9-16-19
REGISTERED CIVIL ENGINEER DATE

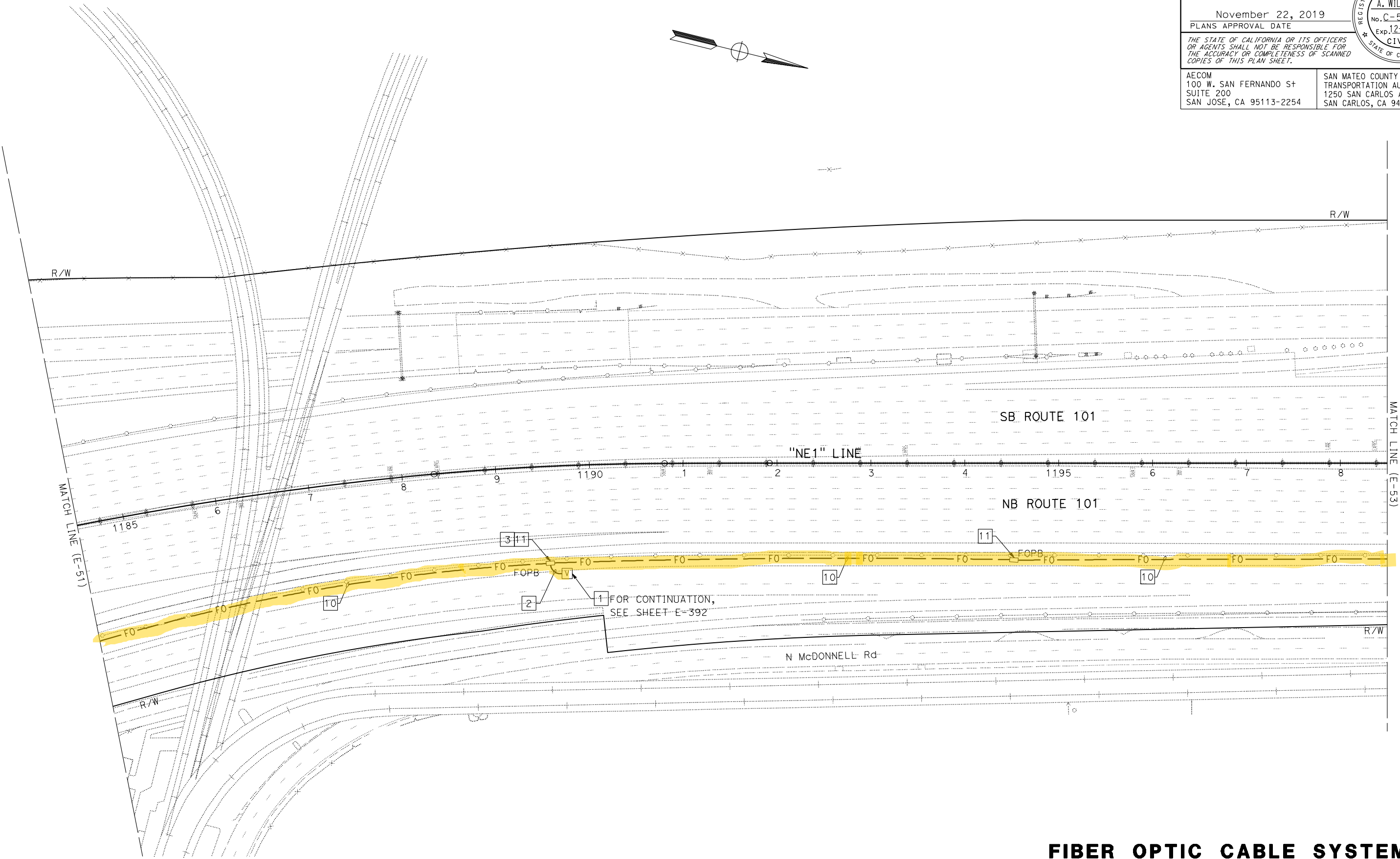
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DAVID A. WILLIAMS
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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-52

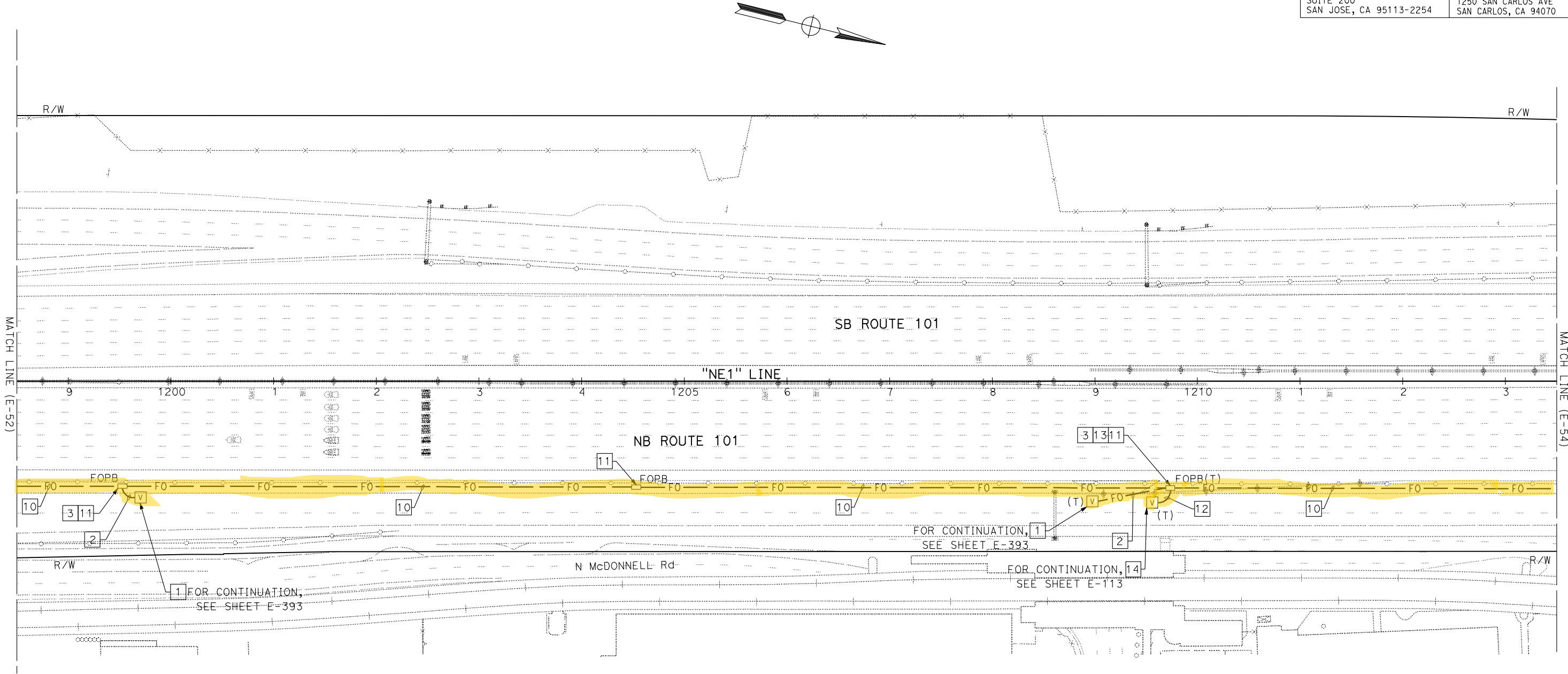
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FUNCTIONAL SUPERVISOR	CHECKED BY	JOE MCCONNELL/ROBERT MURPHY	DAVID WILLIAMS			
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DAVID WILLIAMS				



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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1684	2401
David Williams			9-16-19		
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DAVID A. WILLIAMS
No. C-58697
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA



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FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

E-53

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California						JOE MCCONNELL/ROBERT MURPHY	DATE	REVISED	

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1685	2401
David Williams			9-16-19		
REGISTERED CIVIL ENGINEER			DATE		
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REGISTERED PROFESSIONAL ENGINEER

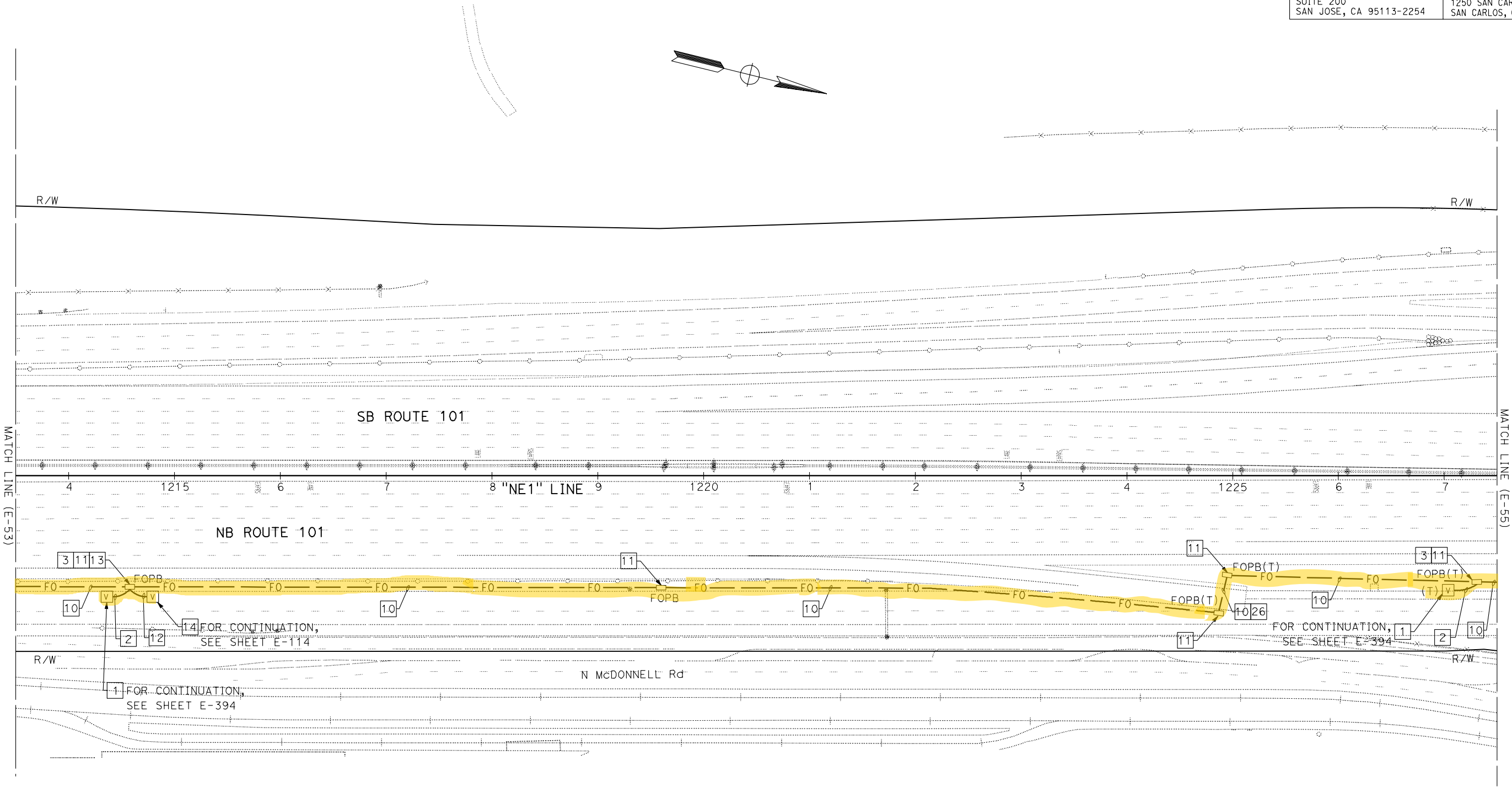
DAVID A. WILLIAMS

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STATE OF CALIFORNIA



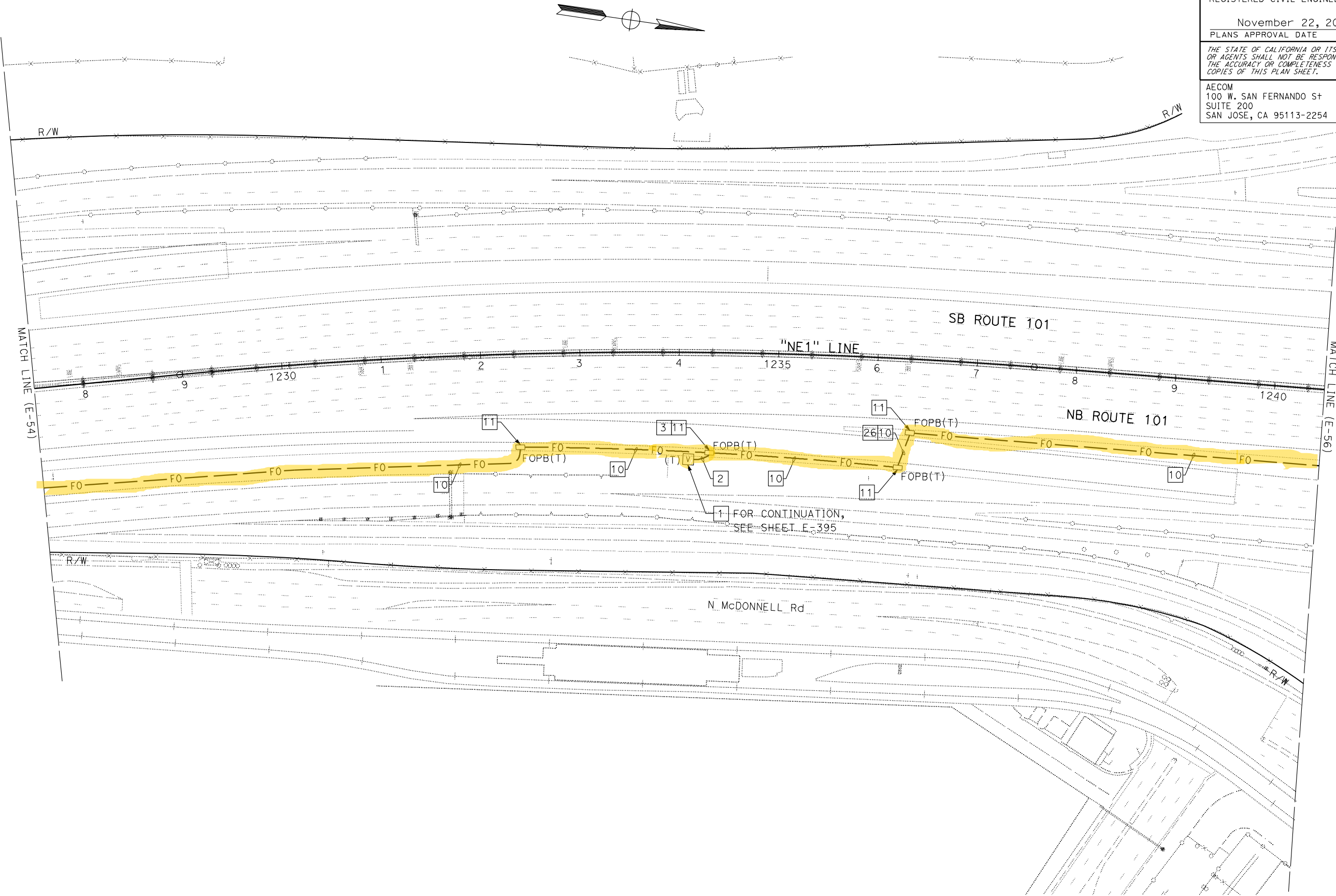
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FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-54

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1686	2401

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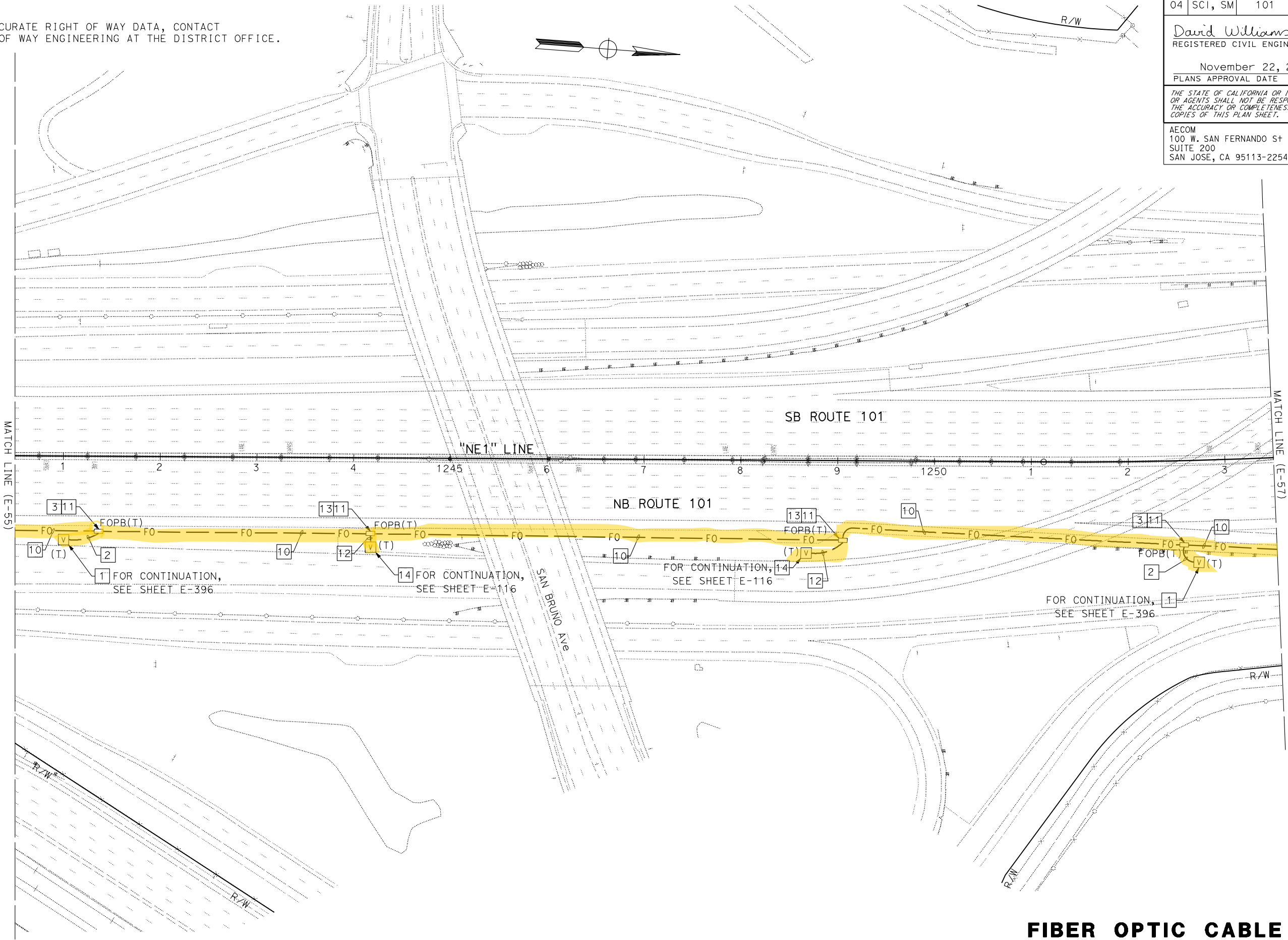
FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

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Caltrans	DAVID WILLIAMS	JOE MCCONNELL/ROBERT MURPHY	BESHOY DEMYAN/ALEXANDER HA	-	-

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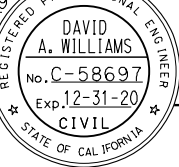
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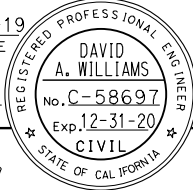
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FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-56

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1687	2401
David Williams			9-16-19	DATE	
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FUNCTIONAL SUPERVISOR	DAVID WILLIAMS						
REVISION	DATE	BY					

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1689	2401

David Williams

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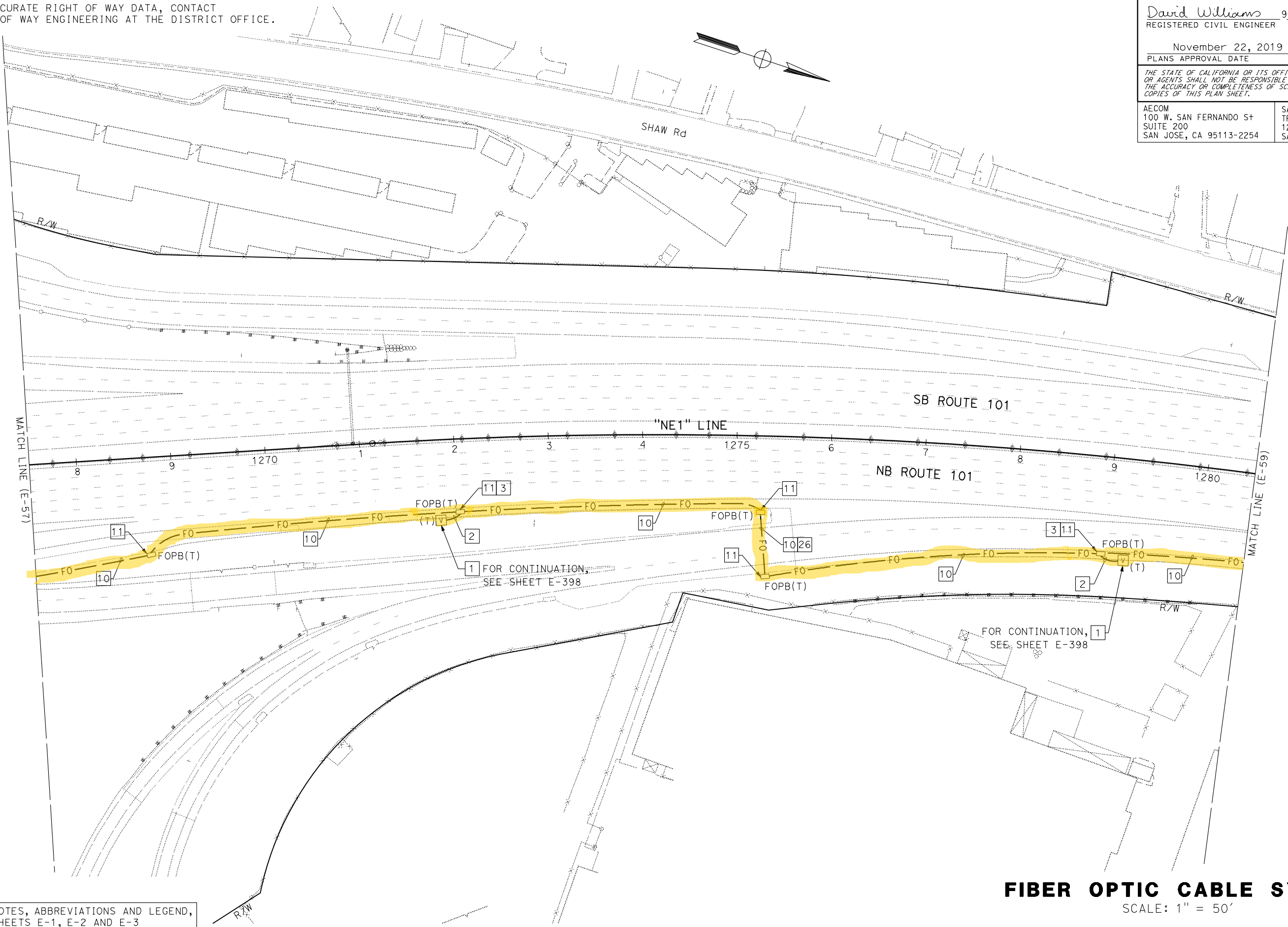
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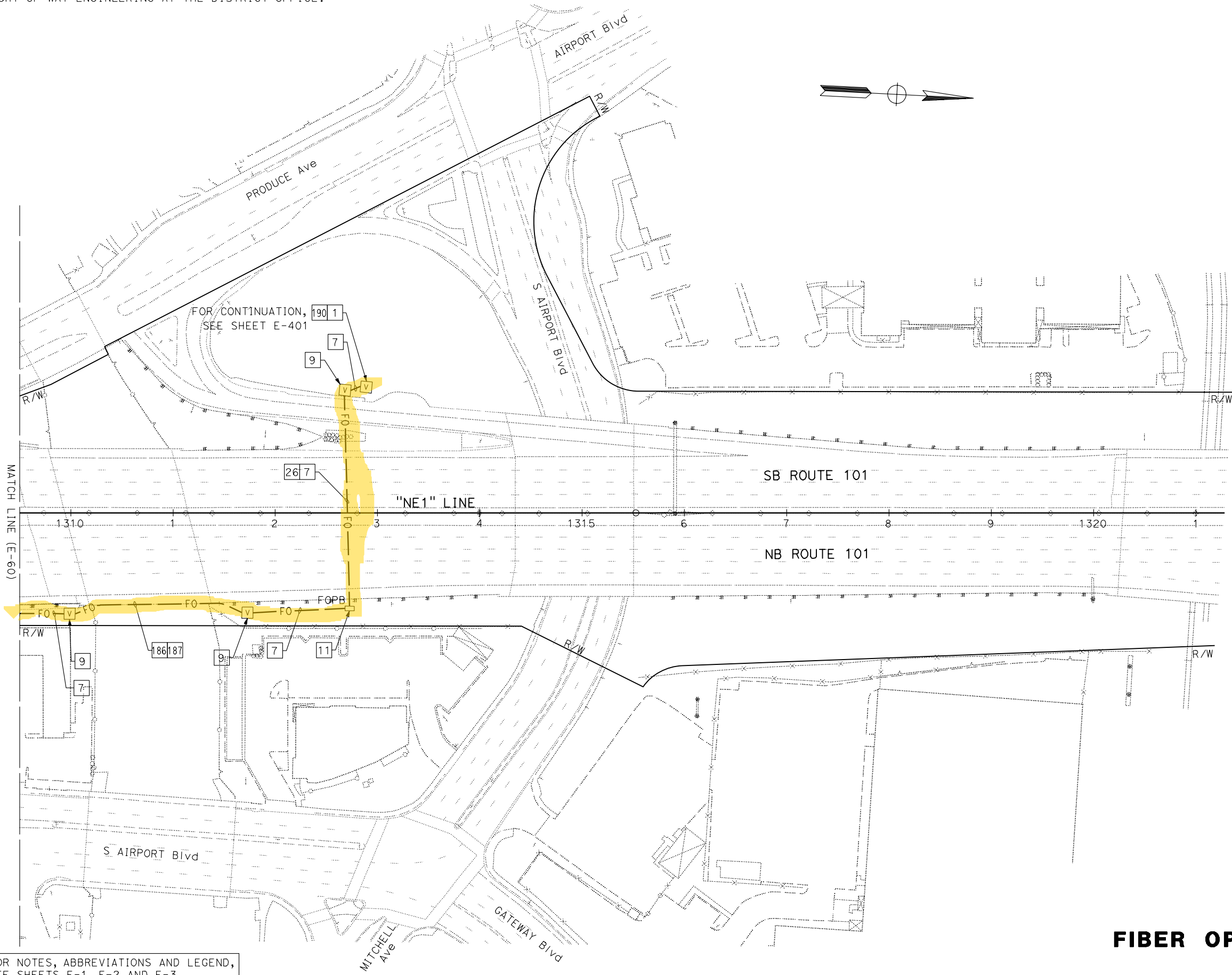
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FIBER OPTIC CABLE SYSTEMS

SCALE: 1" = 50'

E-58

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI, SM	101	50.3/52.6, 0.0/21.9	1692	2401

David Williams

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9-16-19

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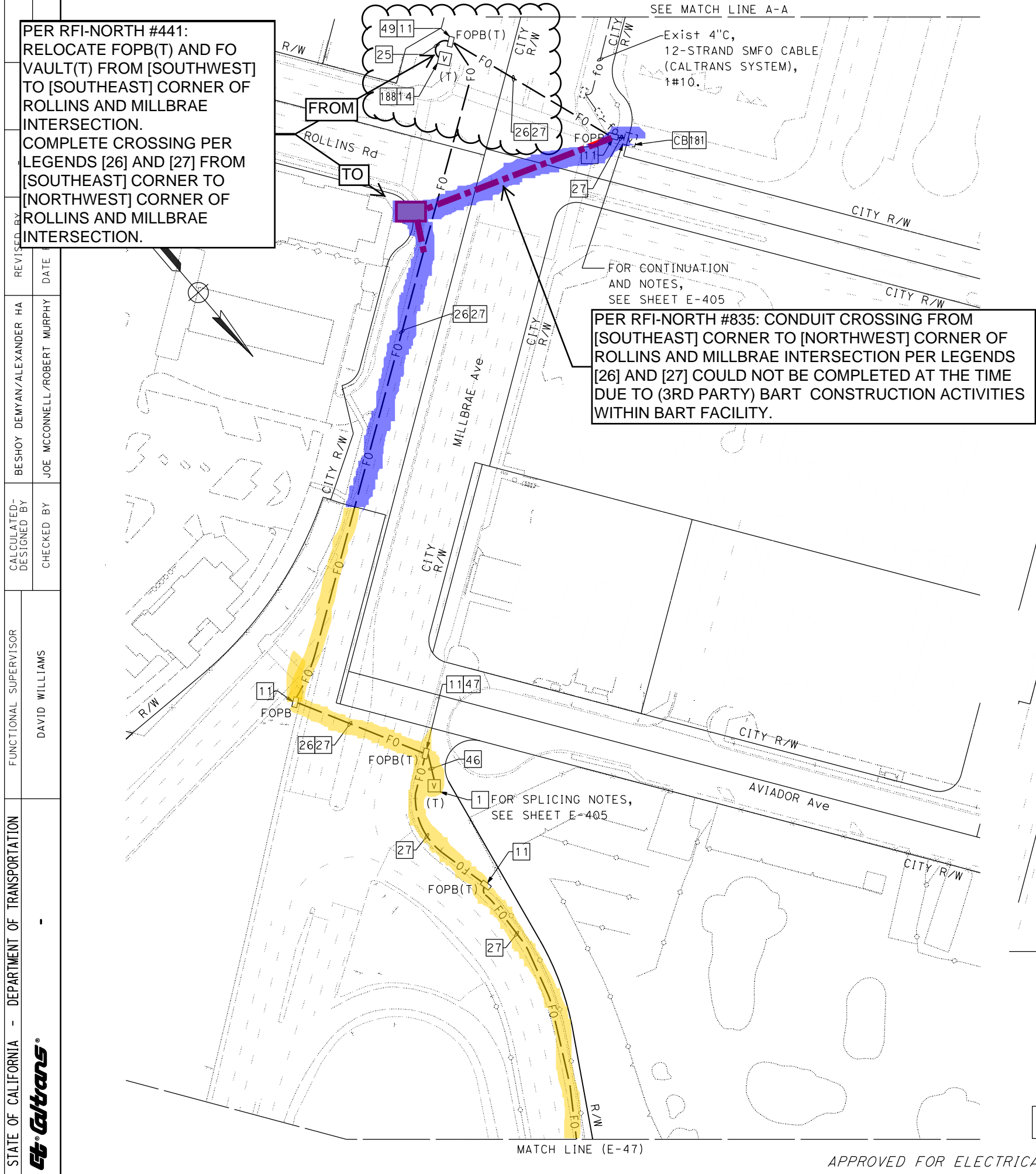
SAN MATEO COUNTY

TRANSPORTATION AUTHORITY

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SAN CARLOS, CA 94070

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'
E-61



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04	SCI, SM	101	50.3/52.6, 0.0/21.9		ZYX

David Williams

REGISTERED CIVIL ENGINEER

9-16-19

DATE

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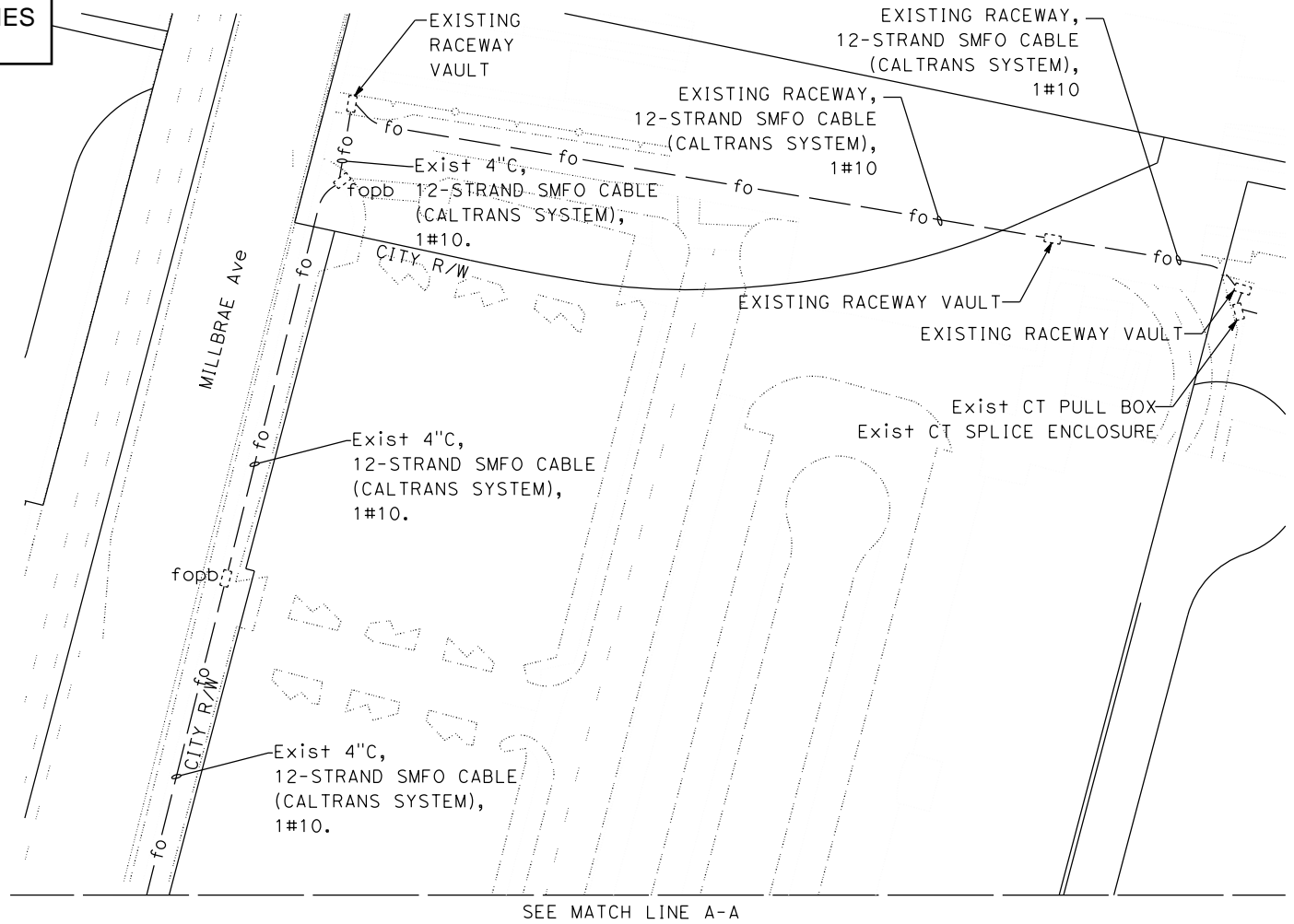
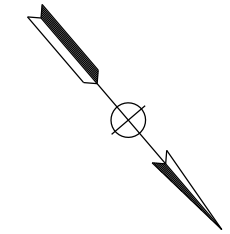
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No. C-58697
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STATE OF CALIFORNIA



FOR NOTES, ABBREVIATIONS AND LEGEND,
SEE SHEETS E-1, E-2 AND E-3

FIBER OPTIC CABLE SYSTEMS
SCALE: 1" = 50'

EXHIBIT B - San Mateo 101 Express Lanes Fiber Facility Operations and Maintenance Plan

Approved by:

Sean Charpentier
SMCEL-JPA Executive Council

Date

Carter Mau
SMCEL-JPA Executive Council

Date

Sean Nozzari
CALTRANS District Deputy Director of Operations

Date

1 Introduction to Plan

1.1 Operations & Maintenance Agreement for the Operation of Fiber Optic Infrastructure in San Mateo and Santa Clara Counties

The Fiber Optic Infrastructure Operations and Maintenance Agreement in San Mateo and Santa Clara Counties (Backhaul O&M Agreement) between the San Mateo County Express Lanes Joint Powers Authority (SMCEL-JPA) and the California Department of Transportation (CALTRANS) (“PARTIES”) calls for this Fiber Facility Operations and Maintenance Plan (OMP) to guide the operational activities within and/or involving the San Mateo (SM) 101 FIBER FACILITY (FIBER FACILITY), as defined in Section 2.3 below, operated by SMCEL-JPA, which includes the SHARED SUB-FACILITY.

1.2 Fiber Facility Operations and Maintenance Plan (OMP)

The OMP defines the roles and responsibilities, sets forth guidelines for fiber optic infrastructure operations, and defines communication channels involved in managing operational activities.

This OMP does not supersede the requirements of the Backhaul O&M Agreement. Changes to the OMP may be implemented by the AUTHORIZED REPRESENTATIVES of the PARTIES mutually executing an amendment or replacing the entire OMP formally. Provided that changes to the OMP do not conflict with any provisions of the Backhaul O&M Agreement, no amendment to the Backhaul O&M Agreement is required when changes to the OMP are implemented. It is intended to define how the fiber optic infrastructure of the FIBER FACILITY can be operated given the varying situations presented by incidents on the freeway. The Backhaul O&M Agreement more specifically defines the various sub-facilities within the FIBER FACILITY and describes the responsibilities of CALTRANS and SMCEL-JPA for these sub-facilities.

2 Assumptions and Key Definitions

2.1 Assumptions

This OMP assumes that the current processes in place for the maintenance of fiber optic infrastructure will continue. The SMCEL-JPA will contract with a fiber optic qualified service contractor through BAIFA to service the SMCEL-JPA SUB-FACILITY and SHARED SUB-FACILITY, including field inspection and maintenance. CALTRANS will provide its own inspection and maintenance for the CALTRANS SUB-FACILITY and SHARED SUB-FACILITY.

2.2 Frequently Used Acronyms

Additional definitions for terms in all capital letters can be found in articles below and Appendix A.

BAIFA – the Bay Area Infrastructure Finance Authority who serves as the SMCEL-JPA’s toll system and fiber optic network service provider

ETS – Electronic Toll System

FIBER FACILITY – see Section 2.3.1

HOV – High Occupancy Vehicle

TMS – Transportation Management System

VTMS – Variable Toll Message Sign

2.3 Definitions

2.3.1 FIBER FACILITY

FIBER FACILITY shall mean the concurrently installed and co-located fiber optic network infrastructure consisting of a set of four conduits, splice vaults, and pull boxes jointly owned by Caltrans and SMCEL-JPA in the right-of-way of US 101 in San Mateo and Santa Clara Counties and along Millbrae Avenue to the northwest corner of Rollins Road and Millbrae Avenue, as more specifically defined in the Backhaul O&M Agreement. The FIBER FACILITY consists of the CALTRANS SUB-FACILITY, the SMCEL-JPA SUB-FACILITY, and the SHARED SUB-FACILITY as defined in the Backhaul O&M Agreement.

2.3.2 Other Definitions

Definitions of capitalized terms are provided in the Backhaul O&M Agreement.

3 Intended Audience for OMP

This OMP is written for the staff, consultants, and contractors of CALTRANS and SMCEL-JPA who are actively engaged in managing operational activities on the FIBER FACILITY.

4 Roles and Responsibilities

4.1 Planning Operational Activities

Appropriate procedures for operations and maintenance of the FIBER FACILITY will be developed through coordination and collaboration amongst the COORDINATORS of the PARTIES, the SMCEL-JPA Express Lane Program Managers or designees and the CALTRANS Fiber Optic Program Manager or designees. This OMP is for documenting these agreed upon procedures. The CHP Incident Commander in conjunction with the District Traffic Manager (DTM) or designee will have the final say in all matters regarding freeway operations, including the FIBER FACILITY. The PARTY COORDINATORS will meet and confer on a regularly scheduled basis, initially quarterly.

4.2 SMCEL-JPA

4.2.1 SMCEL-JPA Executive Council, Operations or Designee

SMCEL-JPA is the tolling agency of the SMCEL-JPA SUB-FACILITY within the State's Right of Way consistent with the terms and conditions provided in the Backhaul O&M Agreement and follow-on ENCROACHMENT PERMITS. In the context of SMCEL-JPA SUB-FACILITY, the SMCEL-JPA Executive Council, COORDINATOR or designee is the individual in charge of operations for SMCEL-JPA with all responsibility for the SMCEL-JPA SUB-FACILITY tolling operations and customer service.

Currently, the SMCEL-JPA COORDINATOR or designee is the designee for toll infrastructure maintenance planning, policies and procedures. The SMCEL-JPA Fiber Optic Maintenance PM (provided by BAIFA) is the designee for day-to-day operations in accordance with those plans, policies and procedures.

4.3 CALTRANS

CALTRANS is the owner and operator of the State Highway System. CALTRANS operates and maintains TMS and the CALTRANS SUB-FACILITY.

The CALTRANS Fiber Optic Program Manager is the CALTRANS COORDINATOR and designee (point of contact) for day-to-day operations and general planning of the CALTRANS SUB-FACILITY.

The CALTRANS Field Electrical Maintenance Region Manager and Fiber Optic Maintenance Engineer are the designees (point of contact) for repair or restoration of the CALTRANS SUB-FACILITY.

5 SHARED SUB-FACILITIES Maintenance – Routine and Corrective

The SHARED SUB-FACILITY must be accessed by both SMCEL-JPA and CALTRANS staff.

Once each year prior to the formation to the next fiscal year's budget, a thorough site visit will be conducted jointly by CALTRANS and SMCEL-JPA to observe the condition of the cables and equipment.

Any observed damage or potential concerns will be investigated, and a course of action determined. If corrective maintenance is required to the SHARED SUB-FACILITY, the work will be coordinated between the PARTY COORDINATORS and appropriate CALTRANS staff. Whichever organization takes responsibility to perform the work will track their costs in order to invoice the other agency for their proportion of the costs of the repairs. The ANNUAL BUDGET (as defined in the Backhaul O&M Agreement) will incorporate any necessary funding required for resolution of the most recent annual site visit issues.

6 SMCEL-JPA SUB-FACILITY Maintenance – Routine and Corrective

The SMCEL-JPA SUB-FACILITY shall be monitored regularly for damage and quality of performance.

If lane closures are required to perform planned work, SMCEL-JPA shall request lane closure approvals from the DTM or designees at least ten (10) business days in advance.

Any observed damage or potential concerns will be investigated, and a course of action including the responsible party for the work, shall be determined.

Prior to the performance of any work by SMCEL-JPA, the SMCEL-JPA designated contacts will contact the appropriate CALTRANS Operation and Maintenance staff to make them aware of the work to be performed and its timing.

Operations of the SMCEL-JPA SUB-FACILITY may be interrupted as SMCEL-JPA may deem necessary or advisable for reasons of among other things: construction, repair, maintenance, improvement, modification, security, emergency, and public safety related to the SMCEL-JPA SUB-FACILITY. SMCEL-JPA shall notify CALTRANS at least ten (10) business days in advance of any planned interruption of the SMCEL-JPA SUB-FACILITY.

Prior to any digging, the SMCEL-JPA COORDINATOR will ensure that existing utilities and CALTRANS underground infrastructure are located and marked.

7 CALTRANS SUB-FACILITY Maintenance – Routine and Corrective

The CALTRANS SUB-FACILITY shall be maintained by CALTRANS.

Any observed damage or potential concerns identified by CALTRANS as part of its routine maintenance activities will be shared with SMCEL-JPA for further investigation.

Prior to the performance of any work, CALTRANS will contact the appropriate SMCEL-JPA designated contact to make them aware of the work to be performed and its timing.

Operations of the CALTRANS SUB-FACILITY may be interrupted as CALTRANS may deem necessary or advisable for reasons of among other things: construction, repair, maintenance, improvement, modification, security, emergency, and public safety related to the CALTRANS SUB-FACILITY. CALTRANS shall notify SMCEL-JPA at least ten (10) business days in advance of any planned interruption of the CALTRANS SUB-FACILITY.

Prior to any digging, CALTRANS will verify that utilities, FIBER FACILITY and TOLL FACILITY (see San Mateo 101 Express Lanes Toll Facility Operations & Maintenance Agreement for definition) underground infrastructure are located and marked.

8 Future Project Conflicts

8.1 Planning to avoid conflicts

As each agency continues development within the corridor, the FIBER FACILITY must be accounted for and planned around. To make sure this occurs, each agency will furnish its plans for future projects starting in the PID phase, for the other PARTY to review. As conflicts are identified, both PARTIES are expected to meet as needed to address them with the expectation that each PARTY's project managers help facilitate the meetings with the appropriate staff. In general, relocation or modification of the FIBER FACILITY should be avoided by either PARTY. If relocation or modifications cannot be avoided, the order of work should be developed to minimize the duration and severity of the impact to the greatest extent possible. The final design of the project should incorporate specifications and installation methods to maintain the existing optical performance of the fiber optic cable. Any additional relevant information should also be included.

Based on EXHIBIT A in the Backhaul O&M, CALTRANS will notify SMCEL-JPA of any potential conflicts due to ENCROACHMENT PERMIT or maintenance activities and will endeavor to obtain feedback from SMCEL-JPA before ENCROACHMENT PERMITS are issued to third parties. If relocation or modifications cannot be avoided, the staging of work should be developed to minimize the duration and severity of the impact. The final design of the permitted work should incorporate specifications and installation methods to maintain the optical performance of the installed fiber optic cables.

Prior to construction activities by CALTRANS, its designees or third parties under ENCROACHMENT PERMIT with the potential of conflicts or damage to the FIBER FACILITY, CALTRANS shall notify SMCEL-JPA, preferably thirty (30) days in advance. During construction, SMCEL-JPA representatives shall be available to assist CALTRANS field personnel to mark the location of elements of the SMCEL-JPA SUB-FACILITY and TOLL FACILITY.

Prior to construction or maintenance activities by SMCEL-JPA or its designees with the potential of conflicts or damage, SMCEL-JPA shall notify CALTRANS, preferably thirty (30) days in advance. During construction, CALTRANS representatives shall be available to assist SMCEL-JPA field personnel to mark the location of elements of the CALTRANS SUB-FACILITY.

8.2 In the Event of Unanticipated Conflict With or Without Damage

In spite of the best intention to review plans to identify and resolve conflicts between the FIBER FACILITY and future infrastructure, work crews are likely to damage the FIBER FACILITY unintentionally. In the event of unplanned damage to the FIBER FACILITY due to a planned project, each agency agrees to jointly determine the appropriate actions and responsible party that minimizes operational and traffic impacts and in accordance with the provisions to the Backhaul O&M Agreement. If either PARTY detects or identifies damage or destruction of the FIBER FACILITY, the other PARTY should be notified immediately. A coordination meeting should be scheduled by PARTY COORDINATORS or their designees to gather information on the location, cause, and impact of the damage. After assessing the available information and consulting with the CALTRANS Encroachment Permit Office, CALTRANS or its designees may repair the damage or request SMCEL-JPA to repair the damage. Such determination should be made expeditiously with input from both PARTIES to minimize impacts to either PARTY's operation of their respective systems. Consultation with CALTRANS Maintenance and Construction is recommended depending on the likely cause of damage. Each PARTY's COORDINATOR should be available to confirm the repair work is completed satisfactorily and review fiber optic cable performance test results. Reimbursements of repair costs if required shall be made in accordance with the Backhaul O&M Agreement.

8.3 In the Event of Vandalism or Damage by the Public

Vandalism or damage by the public is also likely to occur during the FIBER FACILITY's operation. In these situations, the damage will be reviewed concurrently by each PARTY's COORDINATOR. Based upon the observed conditions and input from additional personnel and the CHP report, if available, the PARTIES will make the determination as to the financial responsibility and CALTRANS or its designees may repair the damage or request SMCEL-JPA to repair the damage. Such determination should be made expeditiously with input from the CALTRANS Encroachment Permit Office to minimize impacts to both PARTIES' operations of their respective systems. Each PARTY's COORDINATOR should be available to confirm the repair work is completed satisfactorily and review fiber optic cable performance test results. Reimbursements of repair costs if required shall be made in accordance with the Backhaul O&M Agreement.

8.4 Temporary Use of Fiber

Regardless of the cause of damage, the PARTIES shall make available their SUB-FACILITY for temporary use by the other PARTY. All infrastructure components of the SUB-FACILITY shall be considered for use to minimize the downtime and risks to operations of the EXPRESS LANES or TMS. Each PARTY's COORDINATOR should be available to negotiate the terms and conditions of the temporary use. At minimum the terms and conditions shall include the estimated duration of the temporary use, each PARTY's installation and maintenance responsibilities, and the location, number of fiber optic strands, existing pull boxes and conduits to be temporarily used. The arrangement shall be documented in writing with concurrence from each PARTY's authorized representative time permitting.

The temporary use should be done in a manner to not have detrimental impact to the long-term performance and lifecycle of the SUB-FACILITY of each PARTY. Efforts should be made to minimize the number of fiber optic splices and relocation of the existing fiber optic cables. Labeling of cables and patch panels is required.

When temporary use is no longer needed, removal of infrastructure required for temporary use shall be considered on a case by case basis and is not required. Determination should be made jointly with the interests of both PARTIES considered.

If added SUB-FACILITY infrastructure remains after the temporary use period is over, the PARTIES should update their respective as-builts and diagrams (i.e., EXHIBIT A) and potentially the EXHIBITS to reflect the added infrastructure.

9 Documentation of FIBER FACILITY

Each PARTY shall maintain an inventory, fiber optic cable test results, and current as-built records of its respective components of the FIBER FACILITY available to the other PARTY upon request.

Upon request, each party is required to provide to the other PARTY its allocation and usage of conduits and fiber optic cable(s) in their respective SUB-FACILITY.

10 OMP Document Review

To make sure that the OMP is up to date, as part of the ANNUAL BUDGET process, the PARTY COORDINATORS and support staff will conduct an annual review of OMP and propose any modifications that seem appropriate and/or necessary. The OMP Appendix A shall be updated immediately when staffing changes occur. Each PARTY's AUTHORIZED REPRESENTATIVE shall approve any updates in accordance with the Backhaul O&M Agreement.

Appendix A – SMCEL-JPA / CALTRANS 2022 Contact List

Title	Name	Phone: Mobile Office	Email
SMCEL-JPA AUTHORIZED REPRESENTATIVES			
1a. SMCEL-JPA Executive Council	Sean Charpentier	M: 415-370-2174	scharpentier@cityofepa.org
1b. SMCEL-JPA Executive Council	Carter Mau	M: 650-622-7874	MauC@samtrans.com
SMCEL-JPA COORDINATORS			
2a & b. Express Lanes Program Managers	Joe Hurley	M: 650-740-5866 O: 650-508-7942	hurleyj@samtrans.com
	Van Dominic Ocampo	M: 650-599-1460	vocampo@smcgov.org
SMCEL-JPA Designated Points of Contact			
3a. Fiber Optic Maintenance PM	Mark Dinh	M: 415-336-4706 O: 415-778-5264	mdinh@bayareametro.gov
3b. Fiber Optic Maintenance Manager	Angela Louie	M: 510-517-8308 O: 415-778-5203	alouie@bayareametro.gov
CALTRANS AUTHORIZED REPRESENTATIVES			
4. Deputy Director, Traffic Operations	Sean Nozzari	M: 510-715-9558 O: 510-286-6345	sean.nozzari@dot.ca.gov
5. Deputy Director, Maintenance	Leah Budu	M: 510-508-7623	Leah.budu@dot.ca.gov
CALTRANS COORDINATOR			
6. Fiber Optic Program Manager	Hector Garcia	M: 510-715-8602	hector.garcia@dot.ca.gov
CALTRANS Designated Points of Contact			
7. Fiber Optic Maintenance Engineer	Nasrin Gharib	M: 510-579-2637	nasrin.gharib@dot.ca.gov
8. Field Electrical Maintenance Region Manager (Specialty Region)	Arthur Ochoa	M: 510-715-9128	arthur.ochoa@dot.ca.gov
9. Field Maintenance Contracts	Earl Sherman III	M: 510-590-4611	earl.sherman.III@dot.ca.gov
10. TMC Office Chief / District Traffic Manager (DTM)	Raoul Maltez	M: 510-714-5474	raoul.maltez@dot.ca.gov
11. District Encroachment Permit Engineer	Amjad Nasser	M: 510-385-6989	Amjad.naseer@dot.ca.gov
12. TMC	TMC Operators	O: 510-286-6914	D4.TMC@dot.ca.gov
13. District Division Chief, Traffic Operations	David Man	M: 510-314-5335	David.Man@dot.ca.gov
14. Chief Deputy District Director	David Ambuehl	M: 925-250-5593 O: 510-286-5893	david.ambuehl@dot.ca.gov

EXHIBIT C

Bay Area TMS Backhaul Network Map



“BART CFH Facility” is BART’s Commercial Fiber Hub Facility located at 418 Clay Street in Oakland, California. “MTC Oakland Hub” is collocated at 418 Clay Street and interconnects the BART FIBER lines going to Embarcadero BART Station, I-680 North Hub, I-680 South Hub and the Fremont BART Station.