

**MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE
CALDECOTT TUNNEL BORES 1, 2, AND 3 REHABILITATION PROJECT
IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA**

WHEREAS, the Federal Highway Administration (FHWA) has assigned and California Department of Transportation (Caltrans) has assumed FHWA responsibility for environmental review, consultation, and coordination under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 U.S.C. 327*, which became effective on May 27, 2022, and applies to this undertaking; and

WHEREAS, pursuant to the 2024 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California (Section 106 PA)*, Caltrans is deemed to be a federal agency for all highway-aid projects it has assumed, and in that capacity Caltrans has assigned the role of "agency official" to the Caltrans Division of Environmental Analysis (DEA) Chief for the purpose of compliance with Title 36 Code of Federal Regulations Part 800 (36 CFR § 800), the regulation that implements Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. 470f), as amended and is responsible for oversight of District environmental responsibilities. To provide for effective compliance, day-to-day responsibilities, and coordination of the Section 106 process are further delegated to the DEA Cultural Studies Office (CSO) Chief; and

WHEREAS, Caltrans proposes to implement the federally-funded Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project (Undertaking) in the City of Oakland, in Alameda County, California, and in an unincorporated section of Contra Costa County, California, to preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life, as described in Attachment A; and

WHEREAS, Caltrans has consulted with the State Historic Preservation Officer (SHPO) regarding the Undertaking's potential to affect historic properties and is preparing this memorandum of agreement (MOA) pursuant to Stipulation XI of the Section 106 PA and 36 CFR Section 800.5(b) and 800.6, and will file a copy of

this MOA with the Advisory Council on Historic Preservation (ACHP) pursuant to Stipulation X.C.3 of the Section 106 PA; and

WHEREAS, the Undertaking's Area of Potential Effects (APE) includes all areas where work is proposed and the entirety of the Caldecott Tunnel (Bores 1, 2, and 3), staging areas, construction access easements, and areas where visual or audible changes could occur outside the required right-of-way as a result of the Undertaking, as depicted in Attachment B; and

WHEREAS, Caltrans has determined that the Undertaking will have an adverse effect on the Caldecott Tunnel, Bores 1 and 2, a property determined eligible for inclusion in the National Register of Historic Places (NRHP) under Criterion A for its role as an essential transportation facility connecting San Francisco Bay with inland Contra Costa County and the Central Valley, and under Criterion C for its distinctive characteristics as the work of master civil engineer George A. Posey and architect Henry H. Meyers, and therefore the structure is a historic property as defined at 36 CFR § 800.16(1)(1); and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking and has determined, in consultation with the SHPO, that the Undertaking's adverse effects cannot be avoided, and that implementation of the treatments set forth in the Stipulations of this MOA will take into account the Undertaking's adverse effects on the historic property; and

WHEREAS, Caltrans has consulted with the Oakland Heritage Alliance; County of Alameda Parks, Recreation and Historical Commission; City of Oakland Landmarks Preservation Advisory Board; Contra Costa County Historical Landmarks Advisory Committee; City of Orinda Historic Landmarks Committee; Alameda County Historical Society; California Preservation Foundation; Contra Costa County Historical Society; Orinda Historical Society; and Lafayette Historical Society, regarding the Undertaking and its effects on historic properties; and will continue to consult with them and afford them, should they so desire, the opportunity to actively participate in the implementation of the Undertaking itself and this MOA; and

WHEREAS, Caltrans has consulted with representatives from the Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band regarding the effects of the Undertaking. The Muwekma Ohlone Indian Tribe requested to be notified in the future should any ancestral remains or significant subsurface features be uncovered, and the Confederated Villages of Lisjan Nation requested

to be notified of any changes to the Undertaking; and

WHEREAS, the Costanoan Rumsen Carmel Tribe has requested consultation and is participating as a concurring party to this MOA; and

WHEREAS, Oakland Heritage Alliance has participated in the consultation and is participating as a concurring party to this MOA; and

WHEREAS, the California Preservation Foundation has participated in the consultation and is participating as a concurring party to this MOA; and

WHEREAS, Caltrans, District 4, has participated in the consultation, has a responsibility to fulfill the terms of this MOA, and is participating as an invited signatory; and

NOW, THEREFORE, Caltrans and the SHPO agree that if the Undertaking proceeds, the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties, and further agrees that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following stipulations are carried out:

I. AREA OF POTENTIAL EFFECTS

- A. The Undertaking's APE was designed in accordance with Stipulation VIII.A of the Section 106 PA and is depicted in Attachment B of this MOA. The APE was delineated to include the maximum proposed right-of-way, current tunnel alignment, staging areas, construction access easements, and areas where visual or audible changes could occur.
- B. If modifications to the Undertaking subsequent to the execution of this MOA necessitate revision of the APE, District 4 will notify the MOA parties of the subject revisions as soon as is feasible and request comment within thirty (30) days. District 4 will take all comments into account and submit a final map of the revisions, consistent with the requirements of Stipulation VIII.A and Appendix 3 of the Section 106 PA, no later than 30 days following the end of the comment period. District 4 will not conduct any additional studies necessitated by the revisions prior to distribution of the revised APE Map. Amendment of the APE will not require an amendment to the MOA unless the change alters the terms of this agreement. Any amendments to the APE that necessitate amendments to the MOA shall follow Stipulation V.D of this MOA.
- C. Any additional required identification and evaluation efforts necessitated due to changes to the APE will be undertaken consistent with the requirements of Stipulation VIII.B and VIII.C of the Section 106 PA. The revised APE and supporting documentation shall be incorporated into Attachment B to this MOA. Any amendment to Attachment B will be distributed to the MOA parties.

II. TREATMENT OF HISTORIC PROPERTIES

Caltrans shall ensure that avoidance and minimization conditions are completed and adverse effects of the Undertaking on the Caldecott Tunnel Bores 1 and 2 are resolved through the implementation of the following measures:

A. BUILT ENVIRONMENT TREATMENT PLAN

Caltrans District 4 will ensure that the protocols outlined in the Built Environment Treatment Plan (BETP) (Attachment C), will be adhered to until this MOA is terminated.

- 1. The BETP addresses the process by which the Undertaking's activities at the Caldecott Tunnel Bores 1 and 2 will conform with the Secretary of

the Interior's Standards for the Rehabilitation of Historic Properties, where possible; and identifies the approval process for the Undertaking's Plans, Specifications, and Estimates (PS&E) Package, prior to construction. The BETP outlines the review process for any project changes during construction.

2. The BETP includes a process of review and comment of the project's PS&E packet at 65%, 95% and 100% completion. The 100% PS&E will be submitted to all parties including the Signatories to this MOA.
 - a. Caltrans will submit 65% PS&E packet to the Concurring Parties for a 30-day review and comment period. Caltrans will provide a comments resolution meeting, if requested, to address any Concurring Party comments. If the Concurring Parties have not responded within 30 days, Caltrans will proceed with the design with the assumption that the Concurring Parties have no comments and are in agreement.
 - b. Caltrans will submit the 95% PS&E packet to the Signatories and Concurring Parties for a 30-day review and comment period. Included with the package will be a summary of any comments received from the Concurring Parties during the review of the 65% PS&E packet and how they were resolved. The MOA parties will have 30 days to review and may request a comments resolution meeting, if necessary. If the MOA parties have not responded within 30 days, Caltrans will proceed with the design with the assumption that the MOA parties have no comments and are in agreement.
 - c. Caltrans will submit 100% PS&E packet to all MOA parties. The submittal will include a summary of any comments that were received from the 95% PS&E packet review and how they were resolved.
 - d. Caltrans will follow the process outlined in the BETP in response to comments or a lack of comments.

B. HISTORIC AMERICAN ENGINEERING RECORD DOCUMENTATION

Caltrans District 4 shall record and document the Caldecott Tunnel Bores 1 and 2 to the standards of the Historic American Engineering Record (HAER). This recordation and documentation will be conducted as follows:

1. Prior to the commencement of construction activities for the Undertaking, Caltrans will contact the regional Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) coordinator at the National Park Service (NPS) Interior Regions 8, 9, 10, and 12 Regional Office to request that NPS stipulate the level of and procedures for completing the

documentation. Within ten (10) calendar days of receiving the NPS stipulation letter, Caltrans will send a copy of the letter to all parties to this MOA for their information. If no response is received within ninety (90) calendar days of submittal to NPS, Caltrans shall confer with SHPO on how to move forward with HAER documentation.

2. Caltrans shall ensure that all recordation documentation activities are performed or directly supervised by architects, architectural historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A).
3. Upon receipt of the NPS written acceptance letter, Caltrans will make archival, digital, and if requested bound library-quality copies of the documentation and provide them to the Caltrans Transportation Library; the California Office of Historic Preservation; and the Caltrans Cultural Studies Office. Additional copies will be offered to the Oakland Heritage Alliance; County of Alameda Parks, Recreation and Historical Commission; City of Oakland Landmarks Preservation Advisory Board; Contra Costa County Historical Landmarks Advisory Committee; City of Orinda Historic Landmarks Committee; Alameda County Historical Society; California Preservation Foundation; Contra Costa County Historical Society; Orinda Historical Society; and Lafayette Historical Society.
4. Caltrans will notify SHPO that the documentation is completed, and all copies are distributed as outlined in II.B.3 of this MOA. Completion of the documentation will be included in the annual report outlined in V.F. All surveys shall be completed prior to the commencement of the project's construction activities.

C. EVALUATION AND NOMINATION OF THE CALDECOTT TUNNEL TO THE NATIONAL REGISTER OF HISTORIC PLACES

Following the completion of project construction, Caltrans District 4 shall evaluate the Caldecott Tunnel, to determine if the property remains eligible for the NRHP. Caltrans shall submit the evaluation to the SHPO for concurrence pursuant to the Section 106 PA review Stipulation VIII.C.6. If Caltrans determines that the Caldecott Tunnel retains eligibility, and the SHPO concurs, Caltrans shall nominate the property for listing on the NRHP.

1. Caltrans District 4 will ensure the preparation of the NRHP Nomination form meets current NRHP substantive and technical standards.

2. Caltrans District 4 will submit the NRHP forms to the Concurring Parties for a 30-day review. District 4 will take any comments into account in revising the NRHP form and will advise the commenting parties whether and how the NRHP forms will be revised in accordance with any comments received. Objections will be resolved using the process outlined in Stipulation V.C.
3. Caltrans District 4 will submit the NRHP Nomination form to the SHPO for review by the State Historical Resources Commission (SHRC) and notify the MOA parties upon their submittal.

D. INTERPRETIVE PANELS

Caltrans District 4 will fund and ensure the installation of up to two (2) interpretative panels within Caltrans Right of Way (ROW) in locations with suitable public access documenting the history of the area and the Caldecott Tunnel.

1. Caltrans District 4 will consult with the Concurring Parties to develop contextual information for the panel(s). Caltrans will fund, design, fabricate, install, and maintain panel(s). The contextual information will be based on data presented in the HAER outlined in II.B.
2. Caltrans District 4 will submit the draft copy of the panels' design and text to the MOA signatories. The signatories will have thirty (30) days to review and comment on the design. Caltrans District 4 will take any comments into account in revising the draft panel design and content and will provide the MOA parties with written documentation indicating whether and how the panels will be modified in accordance with any comments received. Objections will be resolved using the process outlined in V.C.
3. Caltrans shall identify locations for the interpretive panels and ensure their installation prior to the termination of this MOA. Caltrans District 4 will notify the Signatories upon completion of the installation per Stipulation V.F.

E. PUBLIC PRESENTATION

Caltrans District 4 will develop a public webinar, in consultation with the California Preservation Foundation, Oakland Heritage Alliance, and the Costanoan Rumsen Carmel Tribe, focusing on the Caldecott Tunnel's history and the purposes of the project. The webinar will include a virtual tour of the Caldecott Tunnel.

1. Caltrans will consult with the Concurring Parties to determine a suitable

digital archive to archive the webinar for future public viewing.

2. The webinar will be delivered prior to the termination of this MOA.
3. Caltrans District 4 will inform the Signatories of the status of the webinar per Stipulation V.F.

F. TOUR OF THE CALDECOTT TUNNEL BORES 1 AND 2

1. Caltrans District 4 in coordination with Oakland Heritage Alliance and the Concurring Parties shall provide access to the Caldecott Tunnel West Portal buildings for at least one (1) up to two (2) days of walking tours per calendar year, up to and including 2027, for attendance by the public prior to the start of project construction.
 - a. Tours will be limited to 20 people.
 - b. The tours will be free of charge.
 - c. The Caldecott Tunnel portal building is not Americans with Disabilities (ADA) accessible and in-person tours will not be available to individuals needing special accommodation. A virtual tour of the building will be available, as per II.E.
2. Notification of the tours will be via the websites, list serves and/or other methods of communication available to Oakland Heritage Alliance, prior to the commencement of construction. Notification material will clearly state the tour is not ADA accessible.
3. Caltrans will coordinate with Oakland Heritage Alliance to determine appropriate tour dates for at least one (1), up to two (2) walking tours within a calendar year, up to and including 2027, prior to the start of construction.
4. Oakland Heritage Alliance will be responsible for the registration of tour attendees, and all communication with tour attendees including completion of a liability waiver, which Caltrans will provide. Oakland Heritage Alliance will provide documentation of tour attendance to Caltrans District 4 and ensure that attendees are aware of the time, location, access, and safety needs of the tours.
5. Oakland Heritage Alliance will provide any safety equipment deemed necessary by Caltrans to attendees at the commencement of the tour.
6. Oakland Heritage Alliance will not be responsible for any safety liability of attendees and attendees will sign waivers for any liability.

7. Caltrans District 4 will be responsible for providing access to the Caldecott Tunnel portal buildings as needed and in coordination with Oakland Heritage Alliance.
8. Caltrans District 4 will inform the Signatories of the status of the tours per Stipulation V.F.

III. NATIVE AMERICAN CONSULTATION

Caltrans has consulted with representatives from the Amah Mutsun Tribal Band of Mission San Juan Bautista, Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Costanoan Rumsen Carmel Tribe, Guidiville Rancheria of California, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, The Ohlone Indian Tribe, Wilton Rancheria, and the Wuksachi Indian Tribe / Eshom Valley Band regarding the proposed Undertaking and its effects on historic properties, will continue to consult with them, and will afford them, should they so desire, the opportunity to participate in the implementation of this MOA and the Undertaking. If other tribes or Native American groups who attach religious or cultural significance to historic properties that may be affected by this Undertaking are identified, Caltrans will invite them to participate as consulting parties as the Section 106 process moves forward.

IV. DISCOVERIES AND UNANTICIPATED EFFECTS

1. As legally mandated, human remains and related items discovered during the implementation of the terms of this Agreement and the Undertaking will be treated in accordance with the requirements of Health and Safety Code Section 7050.5(b). If pursuant to of Health and Safety Code Section 7050.5(c) the coroner determines that the human remains are or may be those of a Native American, then the discovery shall be treated in accordance with the provisions of Public Resources Code Sections 5097.98 (a)- (d). Caltrans shall ensure, to the extent possible, that the views of the Most Likely Descendent(s), as determined by the California Native American Heritage Commission, are taken into consideration when decisions are made about the disposition of Native American human remains and associated objects.
2. If Caltrans determines, during implementation of the terms of this MOA or after construction of the Undertaking has commenced, that the Undertaking will affect a previously unidentified property that may be eligible for listing in the NRHP or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with 36 CFR §800.13(b)(3). Caltrans at its discretion may hereunder assume any discovered property to be eligible for the NRHP

in accordance with 36 CFR §800.13.

V. ADMINSTRATIVE PROVISIONS

A. STANDARDS

1. **Definitions.** The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.
2. Parties to this agreement are defined as follows:
 - a. **Signatory parties** have the sole authority to execute, amend, or terminate the MOA.
 - b. **Invited Signatories** have the authority to amend or terminate the MOA.
 - c. **Concurring Parties**, signing the MOA do so to acknowledge their agreement or concurrence with the MOA, but have no legal authority under the MOA to terminate or amend this MOA. Concurring with the terms of this MOA does not constitute their agreement with the Undertaking.
3. **Professional Qualifications.** Caltrans will ensure that only individuals meeting the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44738-39) (PQS) as defined in Attachment 1 of the Section 106 PA, in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations I, II, III, IV, and V in this MOA. However, nothing in this stipulation may be interpreted to preclude Caltrans or any agent or contractor thereof from using persons who do not meet the PQS as long as they are directly supervised by professionals who meet the standards.
4. **Documentation Standards.** Written documentation of activities prescribed by Stipulations I, II, III, IV, and V of this MOA shall conform to *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716- 44740) as well as to applicable standards and guidelines established by the SHPO.

B. CONFIDENTIALITY

The MOA parties acknowledge that the historic properties covered by this MOA are subject to the provisions of § 304 of the NHPA and § 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this MOA are consistent with said sections.

C. RESOLVING OBJECTIONS

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this MOA, Caltrans shall immediately notify the other MOA parties of the objection, request their comments on the objection within fifteen (15) days following receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than thirty (30) days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.
2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.
3. If, at the end of the 30-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection. The ACHP shall provide Caltrans with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, Caltrans shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, and concurring parties, and provide them with a copy of this written response. Caltrans will then proceed according to its final decision.
4. If the ACHP does not provide its advice regarding the dispute within the 30-day time period, Caltrans may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, Caltrans shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA and provide them to the ACHP with a copy of such written response.
5. Caltrans responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.
6. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

D. AMENDMENTS

1. Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult for no more than thirty (30) days to consider such amendment. Caltrans may extend this consultation period, if necessary. This MOA may be amended only upon written agreement of the Signatories and Invited Signatories. The amendment will be effective on the date a copy signed by all of the original signatories is filed by Caltrans with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation V.E, below.
2. No party shall alter any attachment to this MOA, or other document that has been reviewed and commented on pursuant to this MOA, without first affording the parties to this MOA the opportunity to review the proposed change and determine whether it shall require that this MOA be amended. If one or more party determines that an amendment is needed, the parties to this MOA shall consult in accordance with Stipulation V.D.1 to consider such an amendment. Within thirty (30) days of revising any Attachment, Caltrans shall append any revised document to this MOA and share the final revised document with parties to this MOA.

E. TERMINATION

1. If this MOA is not amended as provided for Section IV.D, or if a Signatory or Invited Signatory proposes termination of this MOA for other reasons, the party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other consulting parties for at least thirty (30) calendar days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition in 36 CFR 800.16(y).
2. Should such consultation result in an agreement on an alternative to termination, the Signatory Parties shall proceed in accordance with the terms of that agreement.
3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other MOA parties in writing. Termination hereunder shall render this MOA without further force or effect.
4. If this MOA is terminated hereunder, and if Caltrans determines that the

Undertaking will nonetheless proceed, Caltrans shall comply with the requirements of Stipulations III through XI of the Section 106 PA, or request the comments of the ACHP, pursuant to 36 CFR 800.

F. REPORTING REQUIREMENTS AND RELATED REVIEWS

1. Caltrans shall prepare an Annual Report documenting actions carried out pursuant to this MOA. The reporting period shall commence one year from the date of execution and is due annually on the anniversary of the date of execution. The Annual Report shall be distributed to all parties to this MOA.
2. The Annual Report shall address the following: any scheduling changes proposed, amendments to the MOA, status of treatment and mitigation activities, ongoing and completed activities, any uses that are affecting or may affect the ability of Caltrans to continue to meet the terms of the MOA, any disputes and objections received, and how they were resolved, and any additional parties who have become signatory or concurring parties to this MOA in the past year.
3. Caltrans shall coordinate a meeting of the Signatories and Consulting Parties to be scheduled within ninety (90) calendar days of distribution of the Annual Report or another mutually agree upon date, to discuss activities carried out pursuant to this MOA during the preceding year and activities scheduled for the upcoming year. This meeting, should it be deemed unnecessary, may be cancelled by mutual consent of the Signatory Parties.

G. DURATION OF THE MOA

The duration of this MOA shall be no more than 5 (five) years following the date of the execution by the SHPO and Caltrans, or upon completion of the Undertaking (whichever comes first). If the terms are not satisfactorily fulfilled at that time, Caltrans shall consult with the signatories and concurring parties to extend it or reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment of the MOA, or termination. In the event of termination, Caltrans will comply with Stipulations III through XI of Section 106 PA if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

H. EFFECTIVE DATE

This MOA will take effect on the date that it has been executed by Caltrans and the SHPO.

EXECUTION of this MOA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR §800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36CFR§800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(l) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

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CALDECOTT TUNNEL BORES 1, 2, AND 3 REHABILITATION PROJECT
IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA**

SIGNATORY:

CALIFORNIA DEPARTMENT OF TRANSPORTATION

By *Jeremy Ketchum* Date 05/08/2025
Jeremy Ketchum, Division Chief
Division of Environmental Analysis

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SIGNATORY:

CALIFORNIA OFFICE OF HISTORIC PRESERVATION

By  _____ Date 05/12/25 _____
Julianne Polanco
State Historic Preservation Officer

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INVITED SIGNATORY:

CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 4

David Ambuehl Date 05/27/2025
David Ambuehl (May 27, 2025 12:02 PDT)
FOR Dina El-Tawansy, District Director
District 4

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CONCURRING PARTIES:

OAKLAND HERITAGE ALLIANCE



President Daniel Levy
Date May 22, 2025

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CONCURRING PARTIES:

COSTANOAN RUMSEN CARMEL TRIBE

 Date 5/13/26
Chairman Tony Cerda

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CONCURRING PARTIES:

CALIFORNIA PRESERVATION FOUNDATION

Executive Director Cindy Heitzman

Date

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Attachment A

Project Description

DESCRIPTION OF UNDERTAKING

Caltrans proposes to rehabilitate Bores 1, 2, and 3 of the Caldecott Tunnel at postmile R0.10 on SR-24 in Alameda and Contra Costa Counties (Figures 1, 2, and 3). SR-24 is an east-west route connecting Alameda and Contra Costa Counties. The Alameda County portion of the route is approximately 6.24 miles long and initiates at Interstate (I) 580/I-980 in Oakland and runs eastward through the Caldecott Tunnel before terminating at the Alameda-Contra Costa County line. The Contra Costa portion of SR-24 is approximately 9.14 miles long, initiating at the Alameda-Contra Costa County line and terminating at I-680 in Walnut Creek.

This project was initiated in response to Structure Maintenance and Investigations (SM&I) routine inspections, latest inspection dated May 2020. In accordance with the report recommendations, the following items were included in the project:

- repairing concrete spalls (fragmentation).
- removing lead contaminants.
- upgrading barriers.
- blast cleaning and spot preparing steel hanger and floor system.
- placing high visibility delineation, placing high friction surface treatment, and placing station markers.

Subsequently, based on District 4 Maintenance, Construction, and Operations field investigations completed during the preparation of the Project Initiation Document (PID), additional scope items were identified.

PROJECT DESCRIPTION

The proposed scope of work for this project includes one build alternative. All work will be the same across Bores 1, 2, and 3, with the exception of two design options for ventilation improvements:

Caldecott Tunnel – Bores 1, 2 and 3 (Rehabilitation, Fire System and Electrical Upgrade)

1. Repair and patch spalls; clean out weepholes; remove and repair unsound concrete, delamination, rust, and efflorescence along the tunnel liner, the exhaust and supply plenums, and the advertisements. The total area will be approximately 8,500 square feet for Bore 1, 8,800 square feet for Bore 2, and 5,500 square feet for Bore 3.
2. Prepare the floor of the upper and lower plenum slabs.
3. Install sacrificial anodes on the floor of the upper and lower plenum slabs.
4. Apply methacrylate treatment on the entire floor of the upper and lower plenum slabs.
5. Remove existing slab on grade and replace it with a 1-foot to 1.75-foot thick Rapid Strength Concrete Slab (RSC) along the entire length of the tunnels.
6. Rehabilitate existing adits (tunnel cross passages). The existing adits do not have adequate lighting and ventilation systems (ceiling fans).

7. Install Fixed Fire Fighting System (Deluge Sprinkler System).
8. Upgrade electrical power system:
 - a) West Portal: A new transformer and motor control center (MCC) will be placed in the existing Bore 3 portal vent structure. The two pads for the new electrical equipment will measure approximately 31 feet by 3 feet- 10 inches and 31' by 6 feet-6 inches. A 4-inch conduit will be placed along the existing roadway or existing conduit pathway to connect the transformer and MCC to the West Bore 1 and 2 ventilation room. Any trenching required will be a combination of horizontal directional drilling (HDD) and open trenching.
 - b) East Portal: A new transformer and motor control center (MCC) will be placed adjacent to the existing electrical equipment pad east of the portal entrance. This equipment will require two concrete pads, one measuring approximately 31 feet by 3 feet-10 inches and 31' by 6 feet- 6 inches. A 4-inch conduit will be placed using open trenching along the existing roadway or existing conduit pathway to connect the transformer and MCC to Substation 2 near the east entrance of Bores 1 and 2. All trenching will be completed by hand or using a mini excavator. All trenches will be backfilled and placed to avoid existing trees and other vegetation.
9. At the west end of the eastbound driving direction and the approach to Bore #1 tunnel entry along the right-side retaining wall, upgrade the existing concrete barrier to Type 60M, safety shape barrier.
10. Remove existing curb island between Bores #1 and #2 at west end of the tunnel and replace with Type 60 concrete barrier.
11. At Bore #1 and #2 tunnels, reconstruct to upgrade concrete curb and include placement of Type G or Type H one-way retro-reflective pavement markers to delineate the top of curb line, both sides of tunnel travelled way, or as deemed applicable.
12. Resurface tunnel pavements with High Friction Surface Treatment (HFST).
13. Use wet night-enhanced high visibility pavement striping.
14. Install markers on concrete barriers and delineators on metal beam barriers.
15. Install object markers on the approach ends of the tunnel walls.
16. Replace or upgrade existing curbs and dikes.
17. At the west end of the westbound driving direction in Bore #3, near both sides of the tunnel exit: replace to upgrade the existing metal beam guardrail (MBGR) at the left and right of travelled way with either Midwest Guardrail System (MGS) or with Type 60 concrete barrier.
18. At the east end of the westbound driving direction in Bore #3, near both sides of the tunnel exit: replace to upgrade the existing Metal Beam Guardrail (MBGR).

Build Alternative Option 2 (Jet Fans)

Bore 1 and Bore 2

- Install jet fan ventilation system to improve smoke management for egress and firefighting. Project would include approximately four rows of fans placed throughout the tunnel. There will be two fans per row, with eight fans total. Construction will be

required in the exhaust air plenum. The jet fans are designed to provide air flow in a single direction of traffic flow, but can provide reversible directional ventilation depending on design to meet State Fire Marshall requirements. Reverse direction of ventilation in downhill would require additional rows of jet fans. This scope of work includes but not limited to the following modifications inside each tunnel and portal building:

1. Cut openings in tunnel ceiling to construct jet fan niches in exhaust air plenum.
2. Close all supply air openings in tunnel wall.
3. Close all exhaust air openings in tunnel ceiling.
4. Install new motorized dampers in fresh air and exhaust air plenums floors to ventilate the plenums.
5. If existing supply and exhaust fans at west and east portals are removed, additional modifications would be required.
6. If existing supply and exhaust fans at west and east portals are removed, new smaller fans would be added to ventilate plenums.

Bore 3

- Install jet fans to improve smoke management for egress and firefighting. Project would include approximately 16 fans in eight rows of two throughout the longitudinal length of the tunnel. This scope of work includes but not limited to the following modifications inside each tunnel and portal building:
 1. Cut openings in tunnel ceiling to construct jet fan niches.
 2. Remove center wall between fresh and exhaust air plenums at jet fan niche locations.
 3. Close all supply and exhaust air openings in tunnel ceiling.
 4. Install new motorized dampers in fresh air and exhaust air plenums floors to ventilate the plenums.
 5. If existing supply and exhaust fans at west and east portals are removed, additional modifications would be required.
 6. If existing supply and exhaust fans at west and east portals are removed, new smaller fans would be added to ventilate plenums.

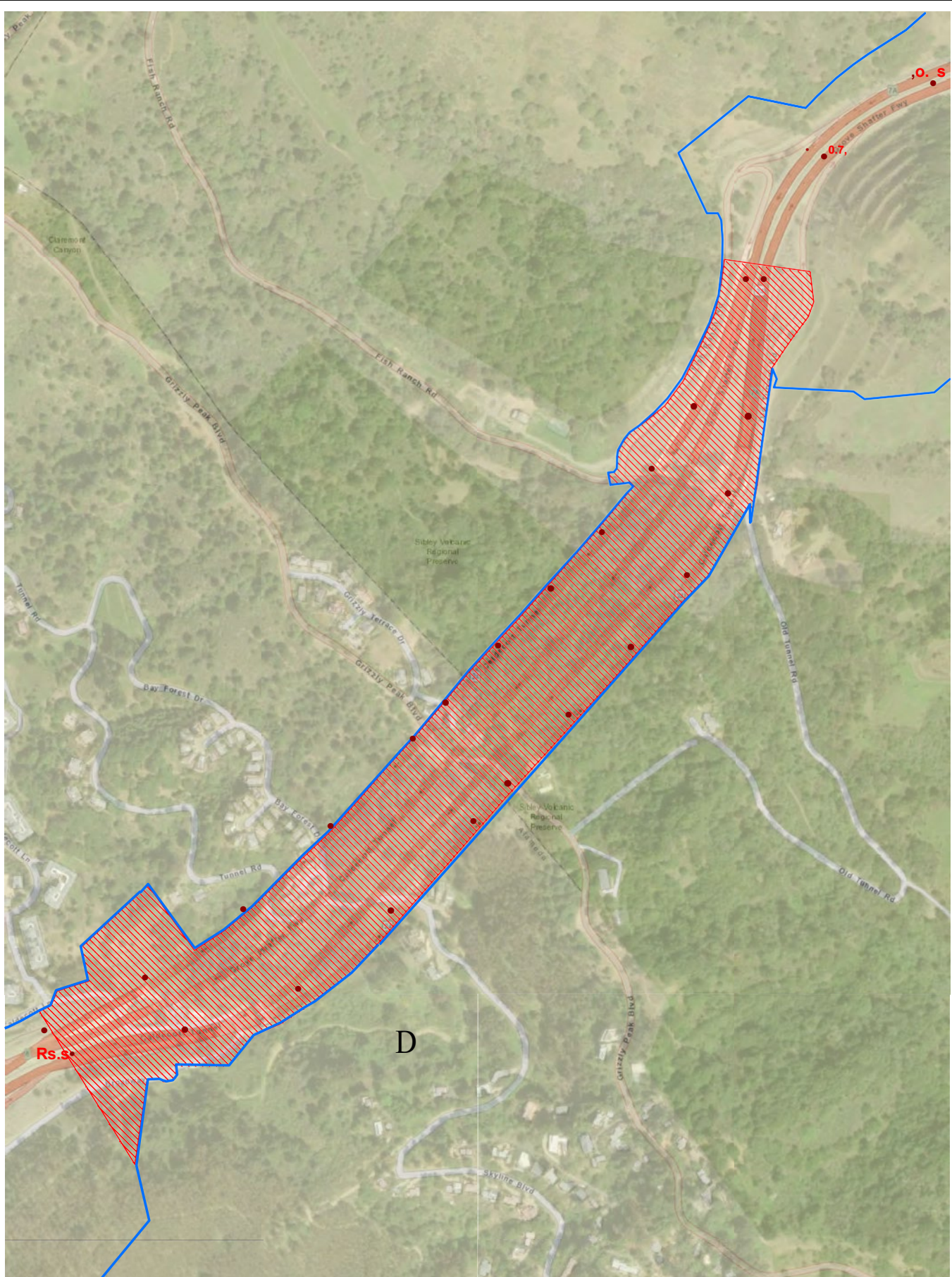
No Build Alternative

Under the No Build Alternative, there would be no rehabilitation of the existing tunnel. If the project is not constructed, continued and accelerated deterioration of the concrete pavement, drainage and delineation in Bores #1, #2, and #3 will occur. If not addressed, the deficiencies of this aging tunnel would trigger more frequent maintenance and lead to more extensive repairs in the future. This alternative does not satisfy the purpose and need of the project.

**MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE
CALDECOTT TUNNEL BORES 1, 2, AND 3 REHABILITATION PROJECT
IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA**

Attachment B

Area of Potential Effects Map



Project Location

Caldecott Tunnel Bores 1, 2, and 3
Rehabilitation Project
CC-24 PM R0.1
EA 0J540 / EFIS 0414000011

APE

Caltrans Right of Way

0 0.05 0.1 0.2
Kilometers

0 0.05 0.1 0.2
Miles

N
A

1:5,921

Lindsay Busse

Lindsay Busse, PQS Archaeology

8/8/2024

Date

Charles Palmer

Charles Palmer, PQS Architectural History

8/8/2024

Date

Kenneth Puth

Kenneth Puth, Caltrans Project Manager

8/8/2024

USGS

Date



**MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE
CALDECOTT TUNNEL BORES 1, 2, AND 3 REHABILITATION PROJECT
IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA**

Attachment C

Built Environment Treatment Plan

BUILT ENVIRONMENT TREATMENT PLAN

for the

Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project Alameda and Contra Costa Counties

**CC-24 PM R0.1
EA 0J540 / EFIS 0414000011**

Prepared by:



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Approved By:



Helen Blackmore, Branch Chief
Office of Cultural Resources Studies
California Department of Transportation, District 4

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Appendices

Appendix 1: Preliminary Design

1. INTRODUCTION

The California Department of Transportation (Caltrans) proposes to rehabilitate the Caldecott Tunnel Bores 1, 2, and 3 (Tunnels 28-0015R, 28-0015, and 28-0015L). The project will preserve the structural integrity of the tunnel, improve ventilation performance and fire-fighting operational response, and extend its service life (Undertaking). The Caldecott Tunnel is located on State Route 24, between Postmile R5.8 in the City of Oakland, in Alameda County, and PM R0.5 in an unincorporated section of Contra Costa County, California.

Caltrans determined that the Undertaking will have an adverse effect on the Caldecott Tunnel, a resource that is eligible for listing in the National Register of Historic Places (NRHP). Bore 3 was previously determined not eligible for the NRHP as an individual resource. The analysis of the effects to the Caldecott Tunnel can be found in the *Finding of Adverse Effect for the Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project* (FOE)¹. The State Historic Preservation Officer (SHPO) concurred with Caltrans' finding of adverse effect for this Undertaking on January 14, 2025 (reference FHWA_2024_1220_001).

This Built Environment Treatment Plan (BETP) for the Caldecott Tunnel has been prepared as stipulated in Section II.A of the Project's Memorandum of Agreement (MOA) between the California Department of Transportation and the SHPO regarding the Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project. The BETP assists with project compliance under Section 106 of the National Historic Preservation Act (NHPA) of 1966 and the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and Los Angeles District, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California* (2024) (Section 106 PA).

This plan establishes the tasks and procedures for the application of the Secretary of the Interior's Standards (SOIS) for the Treatment of Historic Properties in order to minimize adverse effects to the Caldecott Tunnel and identifies the responsible parties and timeframes for each task.

¹ *Finding of Adverse Effect for the Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project*, CC-24 PM R0.1, EA 0J540 / EFIS 0414000011 (Caltrans District 4, December 2024)

2. DESCRIPTION OF UNDERTAKING

Caldecott Tunnel – Bores 1, 2 and 3 (Rehabilitation, Fire System and Electrical Upgrade)

- Repair and patch spalls; clean out weepholes; remove and repair unsound concrete, delamination, rust, and efflorescence along the tunnel liner, the exhaust and supply plenums, and the advertisements. The total area will be approximately 8,500 square feet for Bore 1, 8,800 square feet for Bore 2, and 5,500 square feet for Bore 3.
- Install sacrificial anodes on the floor of the upper and lower plenum slabs.
- Apply methacrylate treatment on the entire floor of the upper and lower plenum slabs.
- Remove existing slab on grade and replace it with a 1-foot to 1.75-foot thick Rapid Strength Concrete Slab (RSC) along the entire length of the tunnels.
- Rehabilitate existing tunnel cross passages. The existing cross passages do not have adequate lighting and ventilation systems (ceiling fans).
- Install Fixed Fire Fighting System (Deluge Sprinkler System).
- Upgrade electrical power system (Figures 1 -3):
 - a. West Portal: A new transformer and motor control center (MCC) will be placed in the existing Bore 3 portal vent structure. The two pads for the new electrical equipment will measure approximately 31 feet by 3 feet-10 inches and 31 feet by 6 feet-6 inches. A 4-inch conduit will be placed along the existing roadway or existing conduit pathway to connect the transformer and MCC to the West Bore 1 and 2 ventilation room. Any trenching required will be a combination of horizontal directional drilling (HDD) and open trenching.
 - b. East Portal: A new transformer and motor control center (MCC) will be placed adjacent to the existing electrical equipment pad east of the portal entrance. This equipment will require two concrete pads, one measuring approximately 31 feet by 3 feet-10 inches and 31 feet by 6 feet-6 inches. A 4-inch conduit will be placed using open trenching along the existing roadway or existing conduit pathway to connect the transformer and MCC to Substation 2 near the east entrance of Bores 1 and 2. All trenching will be completed by hand or using a mini excavator. All trenches will be backfilled and placed to avoid existing trees and other vegetation.

Ventilation Improvements Bore 1 and Bore 2

- Install jet fan ventilation system to improve smoke management for egress and firefighting. The project would include approximately four rows of fans placed throughout each tunnel. There will be two fans per row, with eight fans total. Construction will be required in the exhaust air plenum. The jet fans are

designed to provide air flow in a single direction of traffic flow, but can provide reversible directional ventilation depending on design to meet State Fire Marshall requirements. This scope of work includes but is not limited to the following modifications inside each tunnel and portal building:

- a. Cut openings in tunnel ceiling to construct jet fan niches in exhaust air plenum.
- b. Close all supply air openings in tunnel wall.
- c. Close all exhaust air openings in tunnel ceiling.
- d. Install new motorized dampers in fresh air and exhaust air plenums floors to ventilate the plenums.
- e. If existing supply and exhaust fans at west and east portals are removed, additional modifications would be required.

Preliminary designs are included in Appendix 1 to this document.

3. REGULATORY FRAMEWORK

The purpose of this BETP is to comply with Section 106, its implementing regulations in Title 36 Code of Federal Regulations Part 800 (36 CFR 800), and the Section 106 PA.

A Finding of Adverse Effect (FAE) report was prepared to determine the effects of the project on identified historic properties. On January 14, 2025, the SHPO concurred that the Undertaking would cause an adverse effect on historic Caldecott Tunnel Bores 1 and 2, which is also a State-owned historical resource pursuant to Public Resource Code 5024 and on the Master List. During the Section 106 process, Caltrans has and continues to consult with the Oakland Heritage Alliance (OHA), the Costanoan Rumsen Carmel Tribe, and the California Preservation Foundations (CPF).

SHPO and Caltrans have executed the MOA to which this BETP is attached for purposes of resolving the Undertaking's adverse effect, as per 36 CFR 800.6 and Stipulation XI of the Section 106 PA.

4. HISTORIC PROPERTY DESCRIPTION

Caldecott Tunnel

The Caldecott Tunnel consists of four bores built to carry State Route 24 through the Oakland-Berkeley Hills between Alameda and Contra Costa Counties. Completed in 1937 utilizing a combination of local, state, and federal Public Works Administration funding, Caldecott Tunnel Bores 1 and 2 are two lanes each and were originally known as the Broadway Low Level Tunnel. Bore 1 measures 3,615 feet, and Bore 2 measures 3,609 feet. A portal building sits atop each end of Bores 1 and 2 to accommodate ventilation equipment. Bore 3 was constructed in 1965 and is 3,371 feet long with ventilation systems in a building above the west portal. The Caldecott Tunnel also includes Bore 4, which opened in 2013, is not a historic resource, and is not part of this Undertaking's scope of work.

Bores 1 and 2 are eligible for listing in the National Register of Historic Places, while Bore 3 has been determined not eligible for listing in the National Register. Bores 1 and 2 are eligible for listing in the National Register on the state level under Criterion A for Transportation and Criterion C for Engineering. The period of significance is 1937. Bores 1, 2, and 3 were also listed as a City of Oakland Landmark in 1980.

Contributing and Character Defining Features

- West Portal Building
 - Two level, rectangular, building that house large exhaust air fans, fresh air fans and offices, storage rooms, and electrical equipment; characterized by reinforced concrete construction, flat roof and Art Deco-style façade features and elements.
- West Portal Approach
 - Reinforced concrete retaining walls and pylons framing the entrance, and aluminum light transition structure; characterized by Art Deco-style façade and pilasters with inset metal lights, and builder plaque.
- East Portal Building
 - Two level, rectangular, reinforced concrete building that houses large exhaust air fans, fresh air fans and offices, storage rooms, and electrical equipment; characterized by flat roof and Art-Deco style façade features and elements.

- East Portal Approach
Reinforced concrete retaining walls, railings, streetlights, aluminum light transition structure, and two-lane Fish Ranch Road Overpass; characterized by Art Deco-style façade and features.
- Tunnels
Thick horseshoe shaped arched reinforced concrete tunnels that frame a 22-foot wide roadway with a 3.5-foot sidewalk; characterized by construction materials, design, and massing (width, height and length).

5. CONFORMANCE WITH THE SECRETARY OF THE INTERIOR'S STANDARDS

Caltrans will ensure that the treatments prescribed herein are implemented for the Caldecott Rehabilitation Project. The rehabilitation of concrete and roadways, electrical system upgrades, installation of the Fixed Fire Fighting System in Bores 1 and 2, and rehabilitation of the tunnel liners and roadway will comply with the SOIS and be subject to design review and construction monitoring to avoid and minimize impacts to the historic property. Application of the SOIS project elements is being implemented to help minimize the effect the project on the historic property. The SOIS treatment of rehabilitation is appropriate for this project.

As presented in the FOE, the project will have an adverse effect on the Caldecott Tunnel Bores 1 and 2 due to removal of original tunnel ceiling sections, and the installation of a new Jet Fan Ventilation System. This ventilation work does not comply with the SOIS, however, any project changes will be subject to the design review procedures outlined in this BETP.

Secretary of the Interior's Standards for Rehabilitation Analysis

This section presents the SOIS for Rehabilitation and describes how they apply to the project design.² The following presents applicable SOIS, and explains how the Undertaking will meet the standards to minimize the adverse effect on the historic property.

- 1) *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.*

The Caldecott Tunnel Bores 1 and 2 will continue to be used for its historic purpose and all rehabilitation work including, concrete repair, repair and repaving of the roadway, updates to the lighting in the cross tunnels, and upgrades to electrical systems will minimally change the distinctive materials, features, spaces and spatial relationships. The installation of the Jet Fans will alter the massing (spaces and spatial relationships) through construction of niches in the ceiling, which will alter the massing at those points through the tunnel. The removal of the ceiling sections in those areas will be as minimal as possible to account for the jet fans and appropriate air flow to and from them.

- 2) *The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.*

The concrete repairs and roadway replacement in Bores 1 and 2 will be achieved using in-kind materials. The installation of the Jet Fans will

² United States Department of the Interior, SOIS, The Secretary of the Interior's Standards for the Treatment of Historic Properties (Washington, D.C.: 1995, revised 2017).

remove some distinctive materials through construction of niches in the ceiling, which will alter the character of the tunnel only in the areas adjacent to the Jet Fans.

- 3) *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.*

No conjectural features will be added to the property. The only new elements such as the Fixed Fire Fighting System and the installation of Jet Fans will be strictly functional in character, and clearly distinguishable.

- 4) *Changes to a property that have acquired historic significance in their own right will be retained and preserved.*

There are no changes to the Caldecott Tunnel that have acquired historic significance in their own right.

- 5) *Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

Distinctive materials and craftsmanship will be preserved, except where replacement must be carried out to achieve the project's purpose of improved safety. Removed materials will be replaced in-kind, where possible.

- 6) *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

The concrete repairs and roadway replacement in Bores 1 and 2 will be achieved using in-kind materials.

- 7) *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

Repairs and cleaning of the tunnel liner will be undertaken in a manner to ensure that historic materials are not damaged.

- 8) *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.*

There are no known archaeological resources within the Area of Potential Effects. If previously unidentified cultural resources are discovered during construction, a qualified archaeologist will assess the

significance of the discovery and develop an appropriate response.

- 9) *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.*

Installation of the Jet Fans will remove historic materials from the tunnel ceilings. All other project work that will replace existing materials will do so in-kind, while new work will be largely not visible from the exterior of the property, and will be compatible with the integrity of the property as a whole.

- 10) *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

New additions, such as the upgraded electrical power system and the Fixed Fire Fighting System could be removed without impairing the essential form and integrity of the Caldecott Tunnels. The Jet Fan installation will result in a permanent change to the property that would affect its essential form even if removed.

As discussed, the project will have an adverse effect on the Caldecott Tunnel due to removal of portions of the ceiling in Bores 1 and 2, and replacement of the ventilation systems. The SOIS standards will inform the design and construction of project features as they relate to the remaining historic components in Bores 1 and 2.

6. DESIGN REVIEW PROCESS

This section provides processes and timelines on built environment treatments for the Caldecott Tunnel, as well as specific requirements for implementation. In accordance with procedures established in the MOA for ongoing consultation, changes to the project will continue to be coordinated with the SHPO and concurring parties throughout the design, pre-construction, construction, and post-construction phases of the project.

All reports resulting from the implementation of this BETP will be consistent with the MOA and will meet the professional standards of the SOIS (36 CFR Part 68) as published in the July 12, 1995 Federal Register (Vol. 60, No. 133), revised 2017, and will be prepared by persons who meet or exceed the *Secretary of the Interior's Professional Qualification Standards*, as stipulated in Section VI.A.3 of the MOA.

6.1 Measures During Plans, Specifications, and Estimates Phase

The treatment measures discussed in this subsection will be completed during the PS&E phase of the project. Table 2 in Section 7.3 provides a summary of the responsible parties and tasks during this phase.

There will be a review process of the project plans at the 65%, 95%, and 100% stages of the PS&E phase of the project by invited signatories and concurring parties. The Caltrans Project Engineer will consult with the Caltrans PQS Principal Architectural Historian during preparation of the 65% design to ensure compliance with the SOIS as discussed in Section 5. If changes in project design occur that are not in conformance with the FAE Report and this BETP, additional historic resources compliance documentation may be necessary under Section 106.

Upon completion of the 65% design plans, the Caltrans PQS Principal Architectural Historian will provide the 65% PS&E packet to the Concurring Parties of the MOA, and they will have 30 days to review the plan followed by a comments resolution meeting, if needed. If the Concurring Parties have not responded within 30 days, Caltrans will proceed with the design with the assumption that the Concurring Parties have no comments and are in agreement with the 65% design.

The Caltrans Project Engineer will work with the Caltrans PQS Principal Architectural Historian to incorporate input received from the concurring parties, ensuring that the design of the project elements at Bores 1 and 2 complies with the SOIS as much as possible, when considering the project's safety requirements and the undertaking's purpose and need. When project designs for the Caldecott Tunnel reach 95% completion, Caltrans will notify Signatories and Concurring Parties with a written summary of the 95% design progress, along with project plans for the design and a summary of any comments received from the concurring parties during the review of 65% design and how they were resolved. The Signatories and Concurring parties will have 30 days to review and may request a comments resolution meeting, if necessary. If the Signatories and Concurring Parties have not

responded within 30 days, Caltrans will proceed with the design with the assumption that the concurring parties have no comments and are in agreement with the 95%.

At 100% design, the Caltrans Project Manager and the Caltrans PQS Principal Architectural Historian will propose to make an informational presentation regarding the 100% design of the Caldecott project components to the City of Oakland or the Oakland Landmarks Preservation Advisory Board. The 100% design will be submitted to the Signatories and Concurring Parties and include a summary of any comments that were received during 95% design review and how they were resolved. At this time the design review of the project plans will be complete.

Pre-construction Meeting and Notification Regarding Construction Commencement

A meeting will be held with all responsible parties prior to all project construction activities at the Caldecott Tunnel Bores 1 and 2, to discuss the requirements of this BETP. The importance of compliance with the SOIS will be reviewed with construction personnel and it will be stressed that the requirements of the SOIS will be field reviewed during construction by an Architectural Historian as part of the project's Worker Environmental Awareness Training (WEAT). Additionally, personnel will be informed of historic preservation laws and regulations that protect historic properties from inadvertent damage or destruction. The protocols to be adhered to in case of an unanticipated effect (Stipulation V of the MOA) will be discussed as part of the pre-construction meeting. Contact information of responsible parties will be shared with relevant supervisory personnel.

The Caltrans Resident Engineer will notify the Caltrans PQS Principal Architectural Historian in writing at least three weeks before the commencement of any construction activity at the Caldecott Tunnel.

6.2 Measures During Construction

The treatment measures discussed in this subsection will be completed during the Construction phase of the project. Table 3 in Section 7.2 provides a summary of the responsible parties and tasks during this phase.

Field Checks and Continued Section 106 Compliance Assistance

For the duration of project construction activities at the Caldecott Tunnel, the Caltrans Architectural Historian will conduct field checks monthly, or more frequently as needed, to ensure that the project components at Bores 1 and 2 are being constructed in conformance with the PS&E, as it relates to SOIS and provide continued Section 106 compliance assistance. In addition to periodic field checks during construction, field checks will be conducted when the aesthetic elements and finishes are being applied. The Caltrans PQS Principal Architectural Historian will also assist the Caltrans Resident Engineer with continued Section 106 compliance via email, telephone, and tele/video conference meetings.

Review Project Changes

To ensure continued compliance with this BETP, the Caltrans Resident Engineer will consult with the Caltrans PQS Principal Architectural Historian regarding project changes related to Bores 1 and 2, and other components of the project at the Caldecott Tunnel during construction. If the changes are outside the scope of work studies in the FAE Report and this BETP additional Section 106 studies may be needed.

7. ROLES, RESPONSIBILITIES, AND QUALIFICATIONS

Caltrans PQS Principal Architectural Historian will oversee the implementation of this BETP and have the primary responsibility to ensure compliance with the terms of the MOA and this BETP. Tasks and actions of the parties responsible for implementing this BETP are presented in the tables below. The Caltrans Project Manager will provide oversight and management of the Undertaking's Plans, Specifications, and Estimates (PS&E), and will select the Contractor(s) for the construction phase. The Caltrans Engineer will prepare the PS&E. The Caltrans Resident Engineer will have oversight and management of the project's construction. A list of responsible parties and their general role is shown in Table 1.

7.1 Qualifications of Staff Implementing BETP

Pursuant to Stipulation VI.A.3 of the MOA, all aspects of the BETP will be conducted by, or under the direct supervision of, persons who meet or exceed the SOIS Standards (48 CFR 44738-9) as appropriate.

Table 1. BETP Responsible Parties Roles

Title	General Role
Caltrans Project Manager	Oversight and management of PS&E phase; selection of Contractor(s)
Caltrans Project Engineer	Prepare PS&E
Caltrans Resident Engineer	Oversight and management of construction phase
Caltrans PQS Principal Architectural Historian	• Guide implementation of BETP • Review and approve incorporation of SOIS in PS&E • Coordinate with consulting parties regarding project designs for the Caldecott Tunnel
Contractor	Conduct construction work as outlined in the 100% PS&E

7.2 Summary Tables of Tasks

The following are summary tables of tasks and the responsible parties for the PS&E and Construction phases of the project, as they relate to project work at the Caldecott Tunnel Bores 1 and 2.

Table 2. BETP Responsible Parties and Tasks During PS&E Phase

Responsible Parties (Primary responsible party is denoted with an asterix*)	Task
Caltrans PQS Principal Architectural Historian* Caltrans Project Manager Caltrans Project Engineer	Caltrans PQS Principal Architectural Historian will work with the Caltrans Project Engineer to ensure Secretary of the Interior's Standards for the Treatment of Historic Properties (SOIS) are clearly described and illustrated in the 65% Plans Specifications & Estimates (PS&E) and will comment on the 65% PS&E for compliance with the Built Environment Treatment Plan (BETP).
Caltrans Project Manager* Caltrans PQS Principal Architectural Historian	The Caltrans Project Manager and the Caltrans PQS Principal Architectural Historian will provide the 65% design plans to the Concurring Parties, and they will have 30 days to review the plans. If the consulting parties have not responded within 30 days, the Caltrans Project Manager will proceed with the design with the assumption that the consulting parties have no comments and are in agreement with the 65% design.
Caltrans PQS Principal Architectural Historian* Caltrans Project Manager Caltrans Project Engineer	Caltrans Project Manager and Caltrans Project Engineer will provide Caltrans PQS Principal Architectural Historian an opportunity to review and comment on 95% PS&E. Caltrans PQS Principal Architectural Historian will work with the Caltrans Project Engineer to ensure that measures in the BETP are clearly described and illustrated in the 95% PS&E and will comment on BETP compliance of designs for Caldecott Tunnel.
Caltrans Project Manager* Caltrans PQS Principal Architectural Historian	The Caltrans Project Manager and the Caltrans PQS Principal Architectural Historian will provide the 95% design plans and comments and response for the 65% review to the MOA Parties, and they will have 30 days to review the plans. If the MOA Parties have not responded within 30 days, the Caltrans Project Manager will proceed with the design with the assumption that the consulting parties have no comments and are in agreement with the 95% design.
Caltrans Project Engineer* Caltrans PQS Principal Architectural Historian	The Caltrans Project Engineer will provide the Caltrans PQS Principal Architectural Historian the 100% PS&E package for review and approval.
Caltrans PQS Principal Architectural Historian*	The 100% design will be submitted to the MOA Parties and include a summary of any comments that were received during 95% design review and how they were resolved. At this time the design review of the project plans will be complete.

Caltrans Resident Engineer* Caltrans PQS Principal Architectural Historian Contractor	The Caltrans Resident Engineer will notify the Caltrans PQS Principal Architectural Historian at least three weeks in advance of project construction commencing.
Caltrans PQS Principal Architectural Historian* Caltrans Resident Engineer Contractor	The Caltrans PQS Principal Architectural Historian will ensure that the BETP requirements are discussed at the pre-construction meeting and Worker Environmental Awareness Training (WEAT).

Table 3. BETP Responsible Parties and Tasks During Construction Phase

Responsible Parties (Primary responsible party is denoted with an Asterix*)	Task
Caltrans PQS Principal Architectural Historian* Caltrans Resident Engineer Contractor	Caltrans PQS Principal Architectural Historian will consult with the Caltrans Resident Engineer and Contractor to confirm the PS&E specifications are being followed per the BETP.
Caltrans PQS Principal Architectural Historian* Caltrans Resident Engineer Contractor	Caltrans PQS Principal Architectural Historian will conduct field checks of Bores 1 and 2 during construction to ensure compliance with the BETP.
Caltrans Resident Engineer* Caltrans PQS Principal Architectural Historian	Caltrans Resident Engineer will notify Caltrans PQS Principal Architectural Historian of any design changes to project activities for Bores 1 and 2.
Caltrans PQS Principal Architectural Historian* Caltrans Resident Engineer	Caltrans PQS Principal Architectural Historian will review and approve any project changes to Bores 1 and 2, to ensure compliance with the BETP. In the event of noncompliance with the BETP, Caltrans PQS Principal Architectural Historian will notify all MOA parties and consult on the assessment of effects as needed.
Caltrans Resident Engineer* Contractor Caltrans PQS Principal Architectural Historian	Caltrans Resident Engineer will inform Caltrans PQS Principal Architectural Historian when the project is complete.
Caltrans PQS Principal Architectural Historian*	Caltrans PQS Principal Architectural Historian will conduct a post-project review of the Caldecott Tunnel to ensure that the BETP was followed.

Table 4. BETP Responsible Parties Contact Information (as of January 2025)

Title	Name/Affiliation	Phone Number
Caltrans Project Manager	Kenneth Puth	(510) 290-7943 kenneth.puth@dot.ca.gov
Caltrans Project Engineer	Jay Fong	(510) 926-0454 jay.fong@dot.ca.gov
Caltrans Resident Engineer	TBD	
Contractor Representative	TBD	
Caltrans PQS Principal Architectural Historian	Charles Palmer	(510) 847-2654 charles.palmer@dot.ca.gov

**BUILT ENVIRONMENT TREATMENT PLAN
for the
Caldecott Tunnel Bores 1, 2, and 3 Rehabilitation Project
Alameda and Contra Costa Counties**

Appendix 1:
Preliminary Design

INDEX TO PLANS

SHEET No. TITLE

GP-1	BORE 1, 2 AND 3 GENERAL PLAN
M-1	BORE 1 AND 2 PLENUM VENTILATION SCHEMATIC
M-3	BORE 1 AND 2 VENTILATION PLAN 1 OF 4
M-4	BORE 1 AND 2 VENTILATION PLAN 2 OF 4
M-5	BORE 1 AND 2 VENTILATION PLAN 3 OF 4
M-6	BORE 1 AND 2 VENTILATION PLAN 4 OF 4
M-7	BORE 1 AND 2 REMOVAL DETAILS
M-8	BORE 1 AND 2 STRUCTURE DETAILS NO. 1
M-9	BORE 1 AND 2 STRUCTURE DETAILS NO. 2
M-10	BORE 1 AND 2 FRESH AIR PLENUM PLAN
FP-1	BORE 1 AND 2 FIRE PROTECTION SCHEMATIC
FP-2	FIRE SUPPRESION RETROFIT LAYOUT
FP-4	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 1 OF 6
FP-5	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 2 OF 6
FP-6	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 3 OF 6
FP-7	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 4 OF 6
FP-8	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 5 OF 6
FP-9	BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 6 OF 6
M-101	BORE 3 PLENUM VENTILATION SCHEMATIC
M-102	BORE 3 GENERAL PLAN
M-103	BORE 3 VENTILATION PLAN 1 OF 3
M-104	BORE 3 VENTILATION PLAN 2 OF 3
M-105	BORE 3 VENTILATION PLAN 3 OF 3
M-106	BORE 3 PLENUM DETAILS NO. 1
M-107	BORE 3 PLENUM DETAILS NO. 2
M-108	BORE 3 PLENUM DETAILS NO. 3
M-109	BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 1
M-110	BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 2
M-111	BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 3
FP-100	BORE 3 FIRE PROTECTION SCHEMATIC
FP-102	BORE 3 FIRE PROTECTION PLENUM PLAN 1 OF 3
FP-103	BORE 3 FIRE PROTECTION PLENUM PLAN 2 OF 3
FP-104	BORE 3 FIRE PROTECTION PLENUM PLAN 3 OF 3

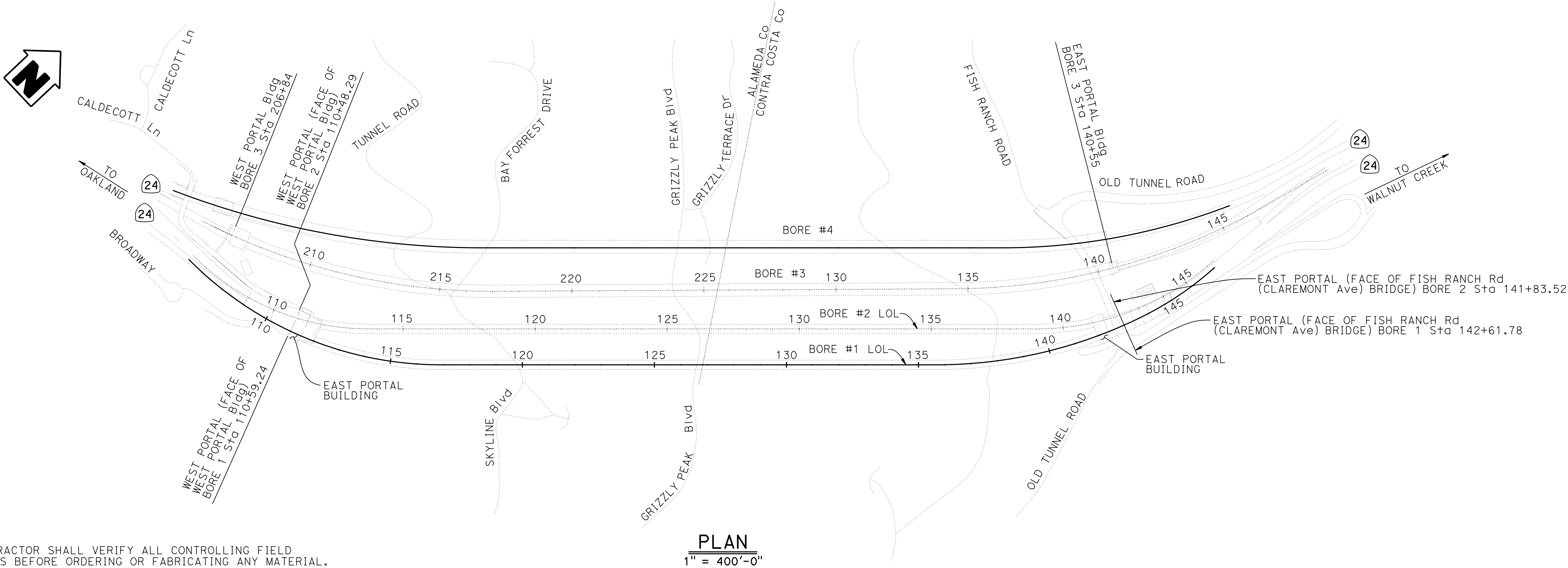
INDEX TO PLANS (Cont)

SHEET No. TITLE

EE-1	ELECTRICAL DRAWING LIST
EE-2	ELECTRICAL LEGEND AND SYMBOLS
EE-3	ELECTRICAL ABBREVIATIONS
EE-4	SINGLE LINE DIAGRAM DEMO PLAN
EE-5	MODIFIED SINGLE LINE DIAGRAM
EE-6	PARTIAL SINGLE LINE DIAGRAM No. 1
EE-7	PARTIAL SINGLE LINE DIAGRAM No. 2
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EE-9	EXISTING EAST PORTALS SITE PLAN
EE-10	MODIFIED WEST PORTALS SITE PLAN
EE-11	MODIFIED EAST PORTALS SITE PLAN
EE-12	WEST POWER BLOCK DIAGRAM
EE-13	EAST POWER BLOCK DIAGRAM
EE-14	BORE 3 WEST PORTAL ELECTRICAL EQUIPMENT PLAN
EE-15	BORE 1 & 2 WEST PORTAL ELECTRICAL EQUIPMENT PLAN
EE-16	EAST ELECTRICAL OUTDOOR EQUIPMENTS PLAN
EE-17	CONTROL AND MONITORING BLOCK DIAGRAM
EE-18	LOCAL CONTROL PANEL COMMUNICATION AND CONTROL DIAGRAM
EE-19	BORE 1, 2 & 3FACP SIGNALLING LINE CIRCUIT LOOP
EE-20	TYPICAL DELUGE SYSTEM DIAGRAM
EE-21	BORE 1, 2 & 3 LINEAR HEAT DETECTION SYSTEM (LHDS)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
			X REGISTERED ELECTRICAL ENGINEER DATE		
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
ELECTRICAL
STATE OF CALIFORNIA



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

GP-1

X DESIGN OVERSIGHT X SIGN OFF DATE	DESIGN	BY D. SHAH	CHECKED	SEISMIC ANALYSIS	BY	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1, 2 AND 3 GENERAL PLAN									
	DETAILS	BY A. SANCHEZ	CHECKED	LAYOUT	BY	CHECKED			POST MILE										
	QUANTITIES	BY D. SHAH	CHECKED	SPECIFICATIONS	BY	PLANS AND SPECS COMPARED													
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REVISION 2/8/2022)				DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg001.dgn		TIME PLOTTED => 13:35 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 11/30/24		SHEET X	OF X

- NOTES:
1. Operate Blower 1 or 2 and Exhaust Fan 1 or 2 at 25-50% capacity to ventilate West part of the Plenums for Bore 1.
 2. Operate Blower 5 or 6 and Exhaust Fan 5 or 6 at 25-50% capacity to ventilate East part of the Plenums for Bore 1.
 3. Operate Blower 3 or 4 and Exhaust Fan 3 or 4 at 25-50% capacity to ventilate West part of the Plenums for Bore 2.
 4. Operate Blower 7 or 8 and Exhaust Fan 7 or 8 at 25-50% capacity to ventilate East part of the Plenums for Bore 2.
 5. Do not operate Blower alone or Exhaust Fan alone for plenum ventilation.
 6. Interlock Plenum Damper for respective part of Plenums with respective Blowers such that Damper open prior to start of the blower.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

DATE

X

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.

REGISTERED PROFESSIONAL ENGINEER

No.

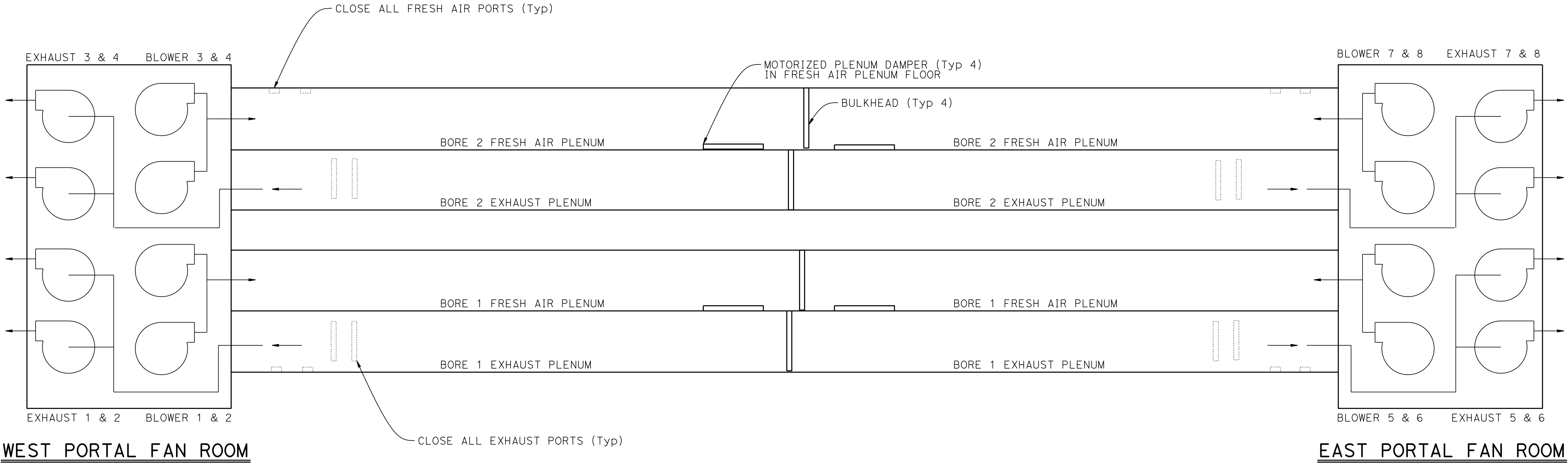
Exp.

ELECTRICAL

STATE OF CALIFORNIA

AECOM
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

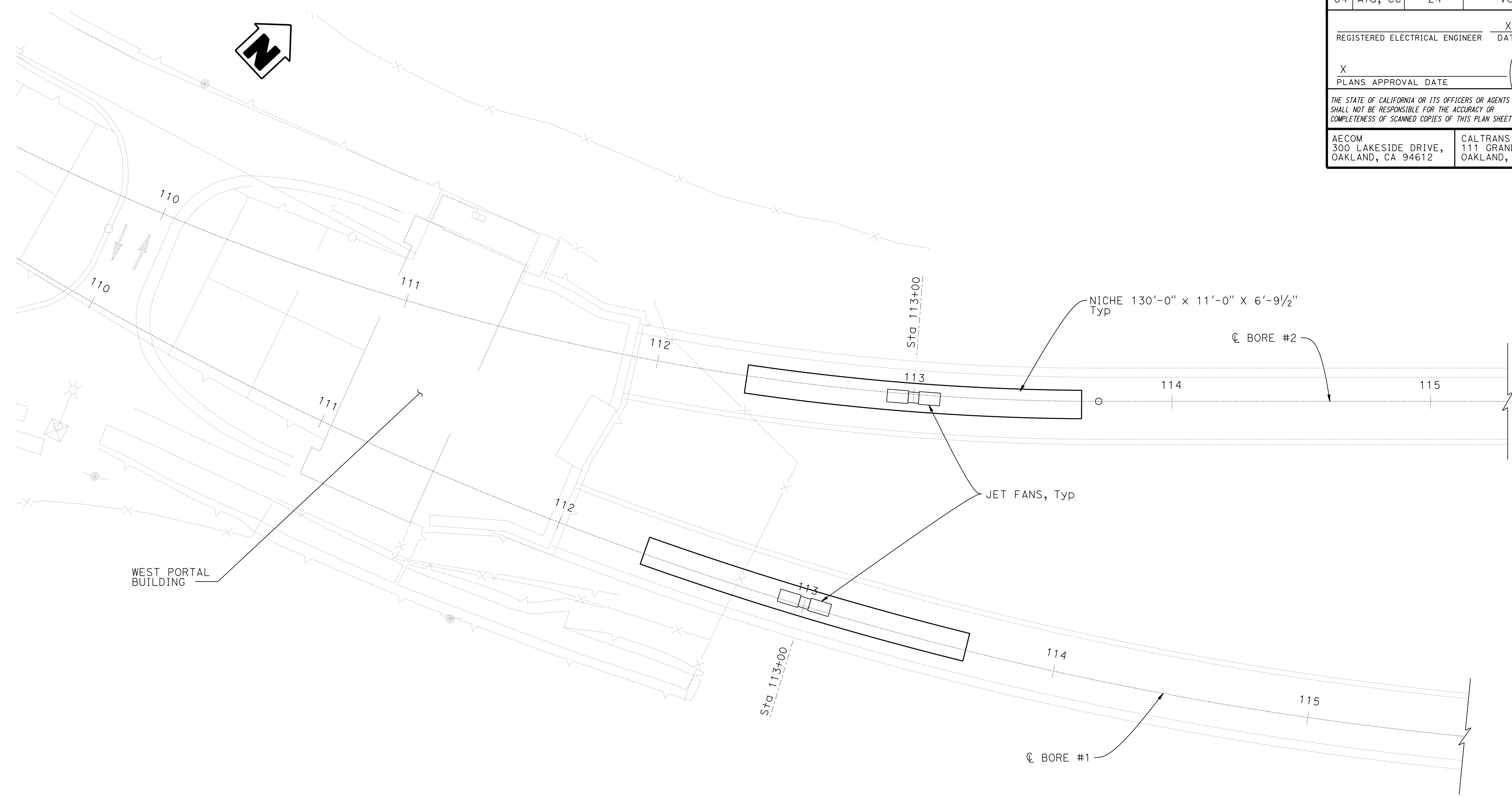


BORE 1 AND 2 PLENUM VENTILATION SCHEMATIC
NO SCALE

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-1

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No.	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 PLENUM VENTILATION SCHEMATIC		
		DETAILS	BY A. SANCHEZ	CHECKED			28-0015R, 28-0015, 28-0015L			
		QUANTITIES	BY D. SHAH	CHECKED			POST MILE X.X			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg002.dgn		TIME PLOTTED => 08:45 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



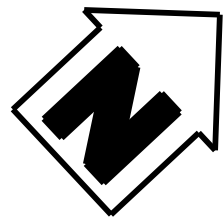
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 20'

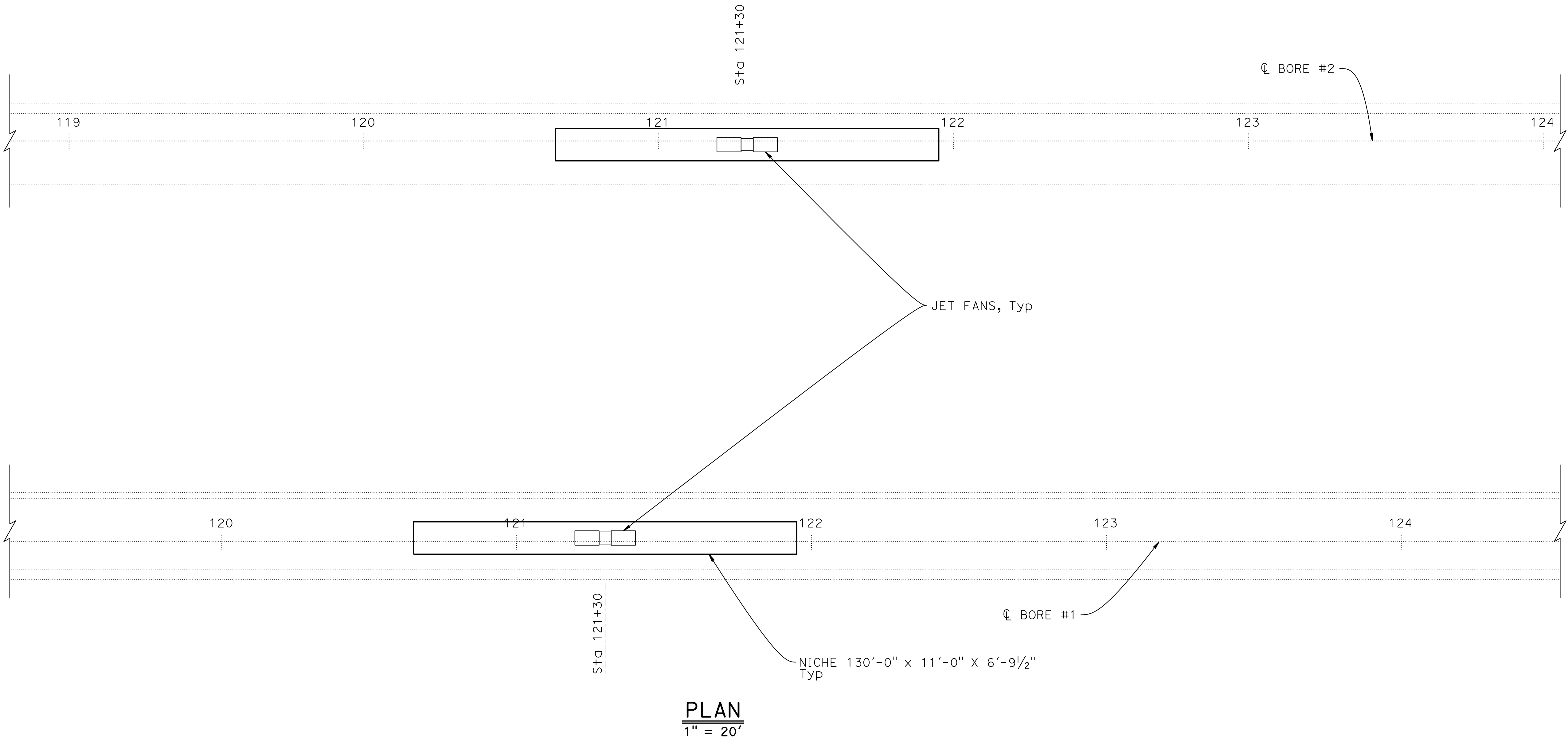
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

M-3

DESIGN OVERSIGHT	DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 VENTILATION PLAN 1 OF 4				
	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
	QUANTITIES	BY D. SHAH	CHECKED								
SIGN OFF DATE	DATE PLOTTED => 3-DEC-2024		TIME PLOTTED => 13:27	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11/30/24	REVISION DATES	SHEET OF



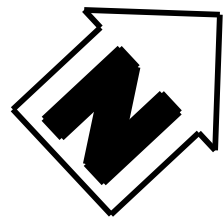
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



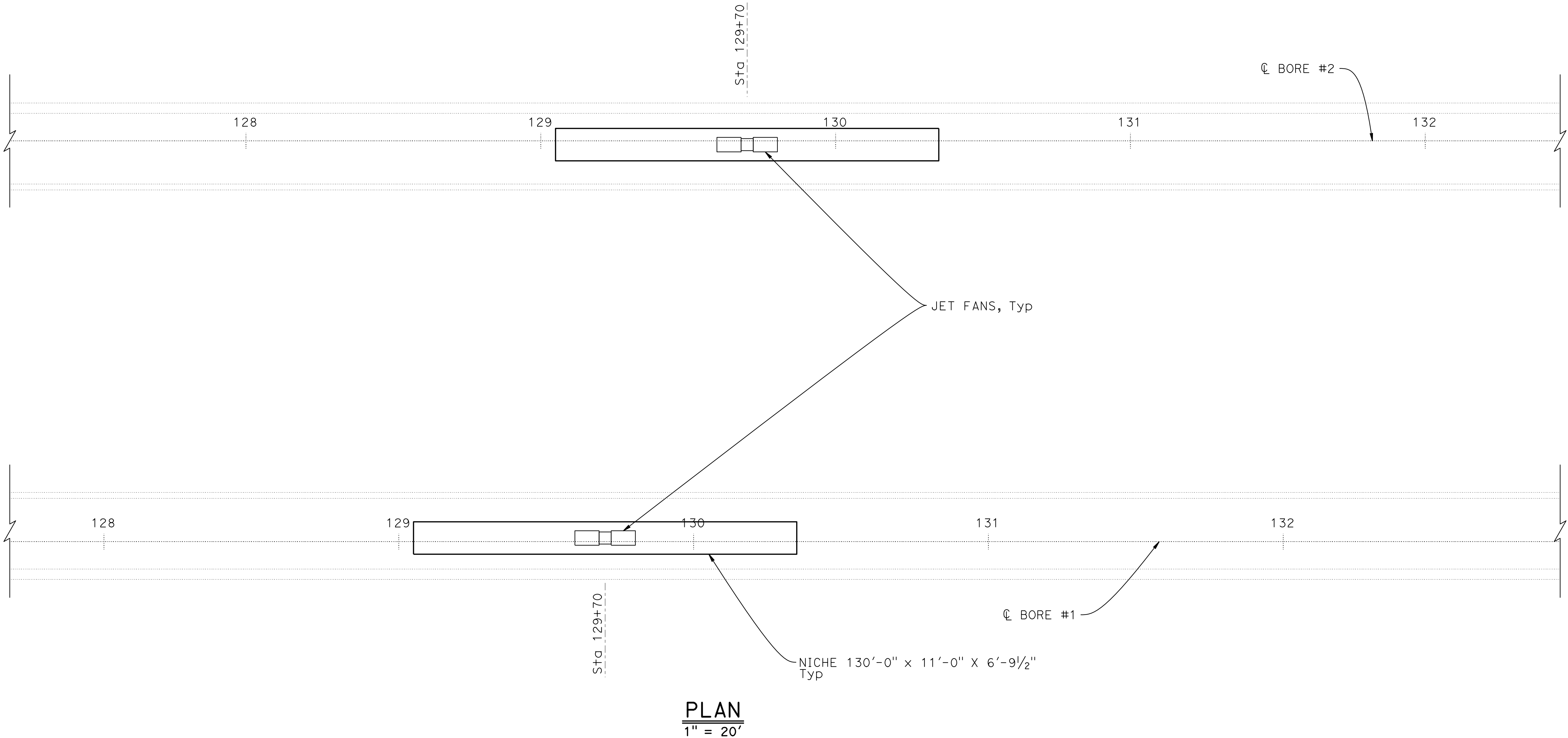
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-4

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 VENTILATION PLAN 2 OF 4				
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY D. SHAH	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg005.dgn		TIME PLOTTED => 13:27 USERNAME => Car1		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



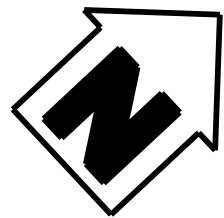
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04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



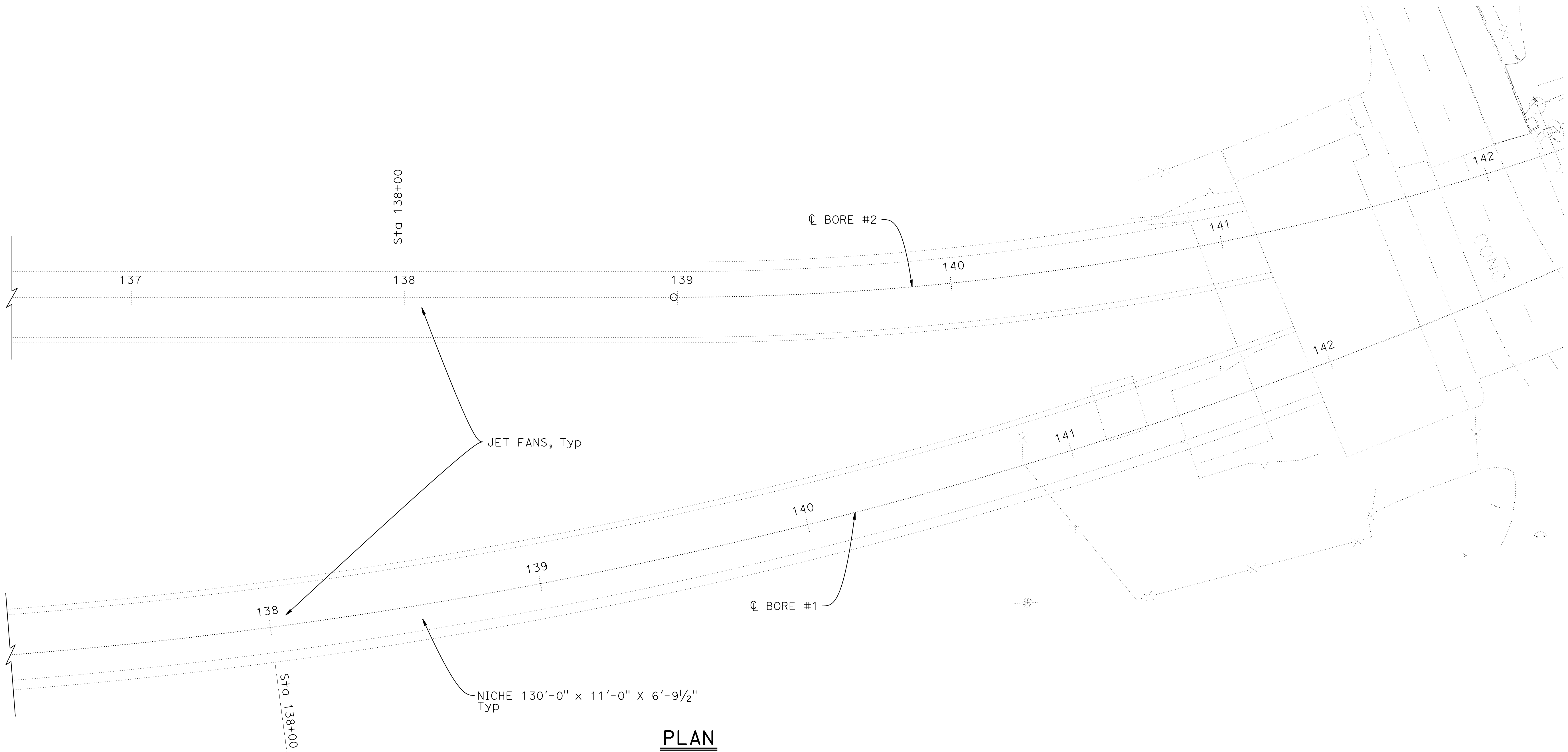
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-5

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 VENTILATION PLAN 3 OF 4				
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY D. SHAH	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg006.dgn		TIME PLOTTED => 13:27 USERNAME => Car1		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			DATE		
X			X		
PLANS APPROVAL DATE			X		
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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-6

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 VENTILATION PLAN 4 OF 4				
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY D. SHAH	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg007.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

Dist

COUNTY

ROUTE

POST MILES
TOTAL PROJECT

SHEET
No.

TOTAL
SHEETS

04

Ala, CC

24

Var

X

X

REGISTERED ELECTRICAL ENGINEER

DATE

X

X

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.

REGISTERED PROFESSIONAL ENGINEER

No.

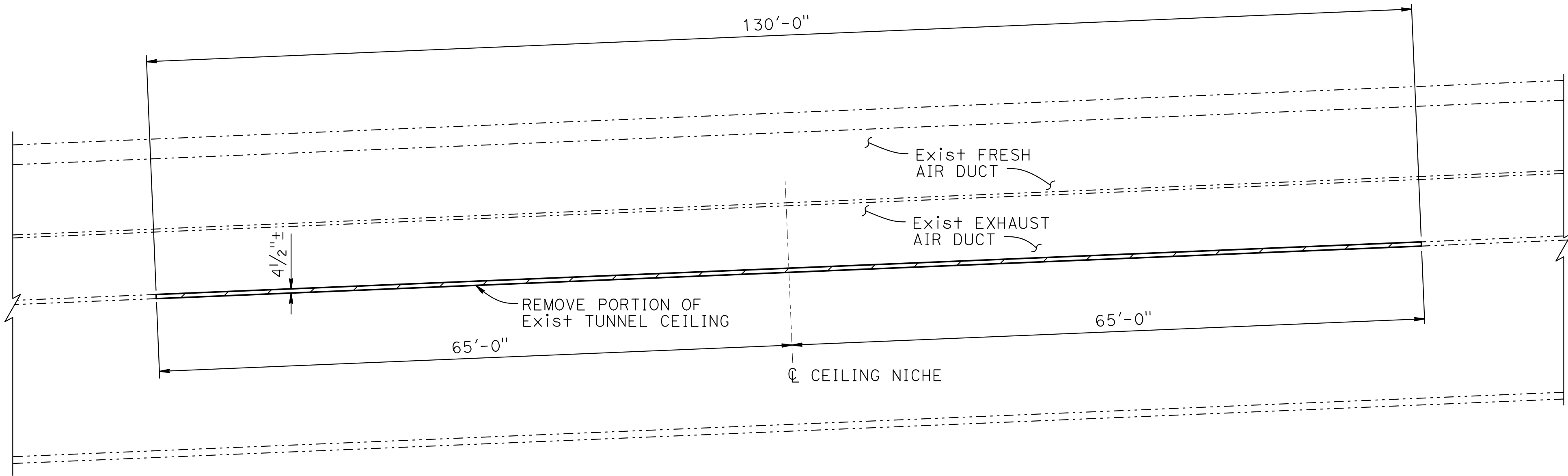
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ELECTRICAL

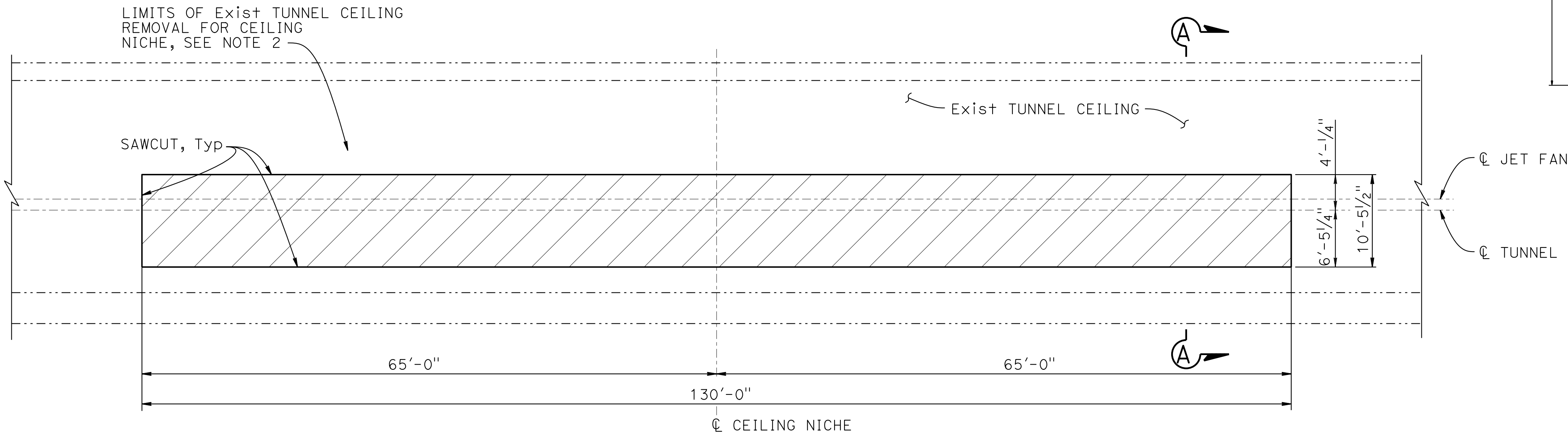
STATE OF CALIFORNIA

AECOM
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612



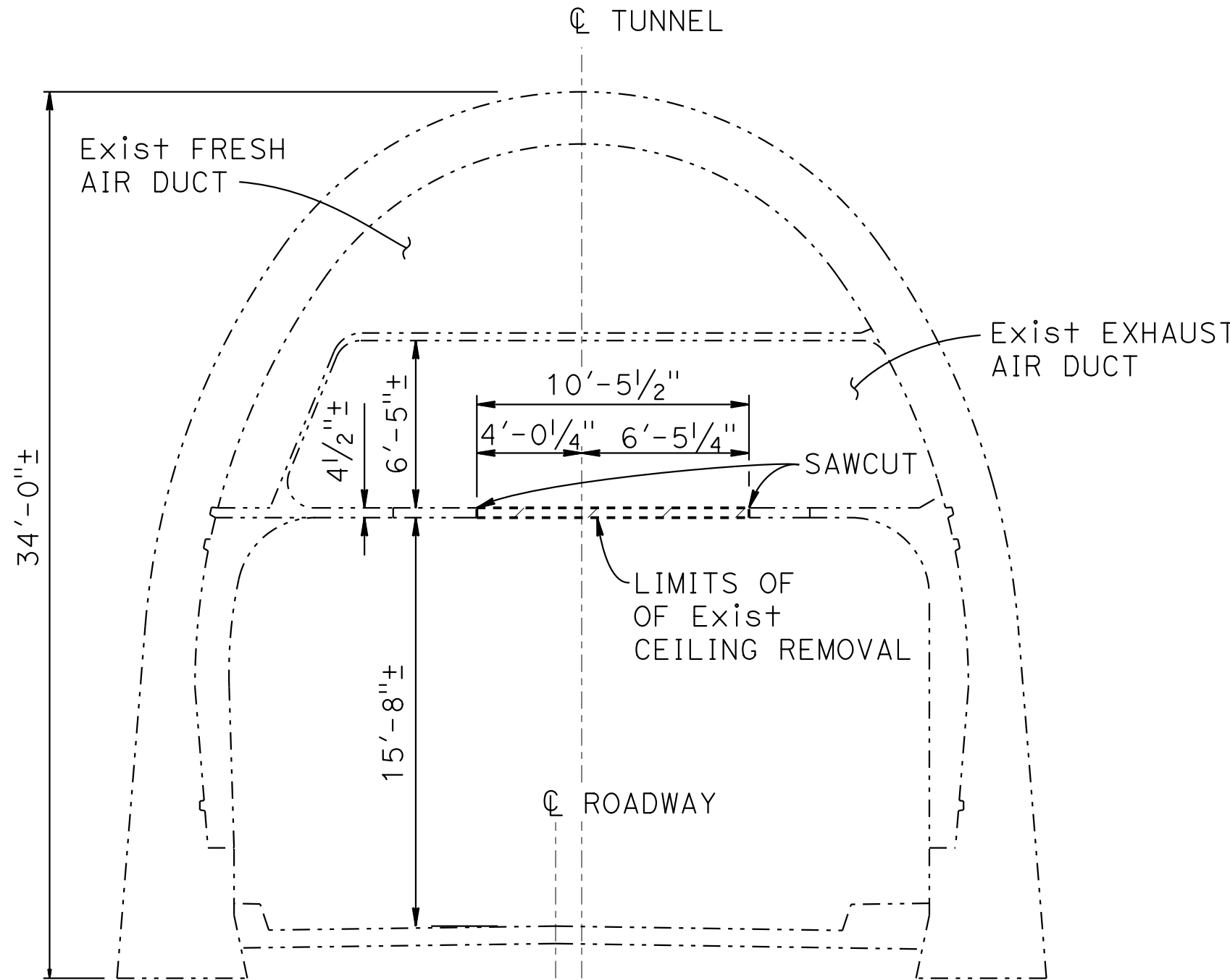
LONGITUDINAL SECTION
1/8" = 1'-0"



PLAN
LIMITS OF REMOVAL - BORE 1 AND 2
1/8" = 1'-0"

NOTE: BORE 1 SHOWN, BORE 2 SIMILAR.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



SECTION A-A
3/16" = 1'-0"

- NOTES:
- Jet fan 4'-1 1/2"Ø (1.25 m Ø)
1600 N thrust (Typ per bore)
4'-10 1/2" OD, 4'-1 1/2" ID
 - Sawcut existing concrete
to limits shown.

LEGEND:

Indicates Limits of Removal

M-7

		DESIGN		BY J. CALIXTO DE SILVA	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		D. SHAH PROJECT ENGINEER		BRIDGE No. 28-0015R, 28-0015, 28-0015L		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 REMOVAL DETAILS																			
DESIGN OVERSIGHT		DETAILS		BY A. SANCHEZ	CHECKED					POST MILE																					
SIGN OFF DATE		QUANTITIES		BY J. CALIXTO DE SILVA	CHECKED					X.X																					
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																						11/30/24									

Dist COUNTY ROUTE POST MILES TOTAL PROJECT SHEET No. TOTAL SHEETS

04 Alameda CC 24 Var X X

REGISTERED ELECTRICAL ENGINEER X DATE

X 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 300 LAKESIDE DRIVE, OAKLAND, CA 94612

CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612

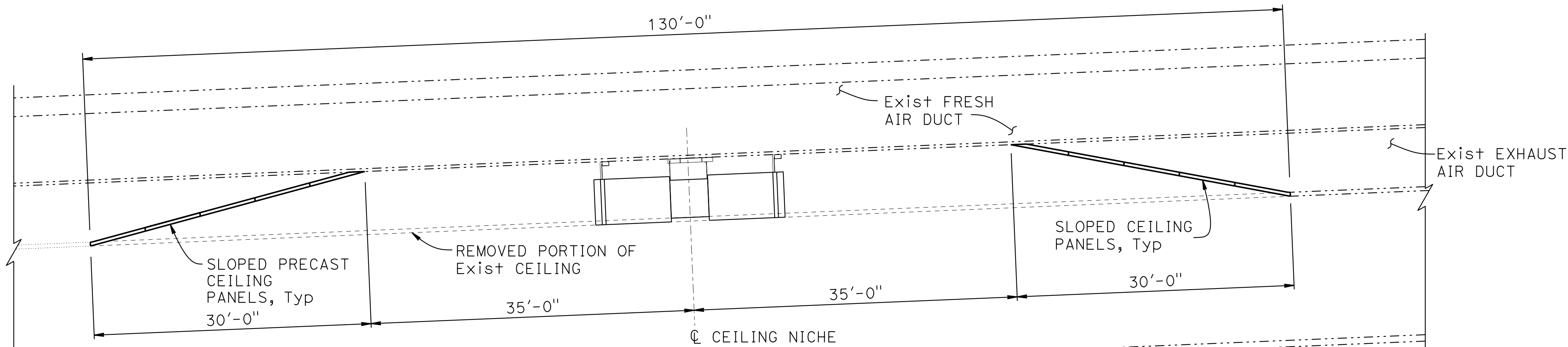
REGISTERED PROFESSIONAL ENGINEER

No. X

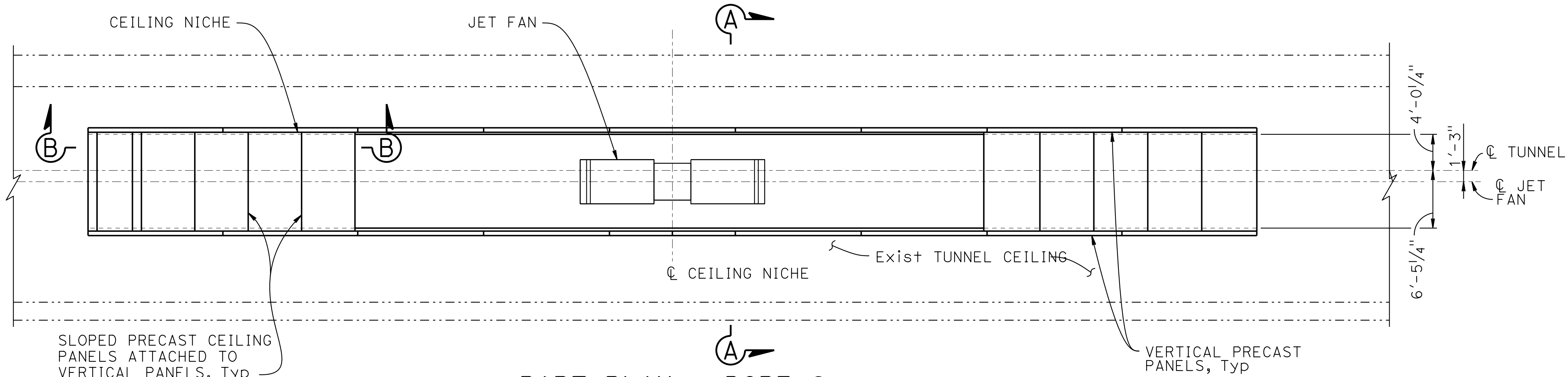
Exp. X

ELECTRICAL

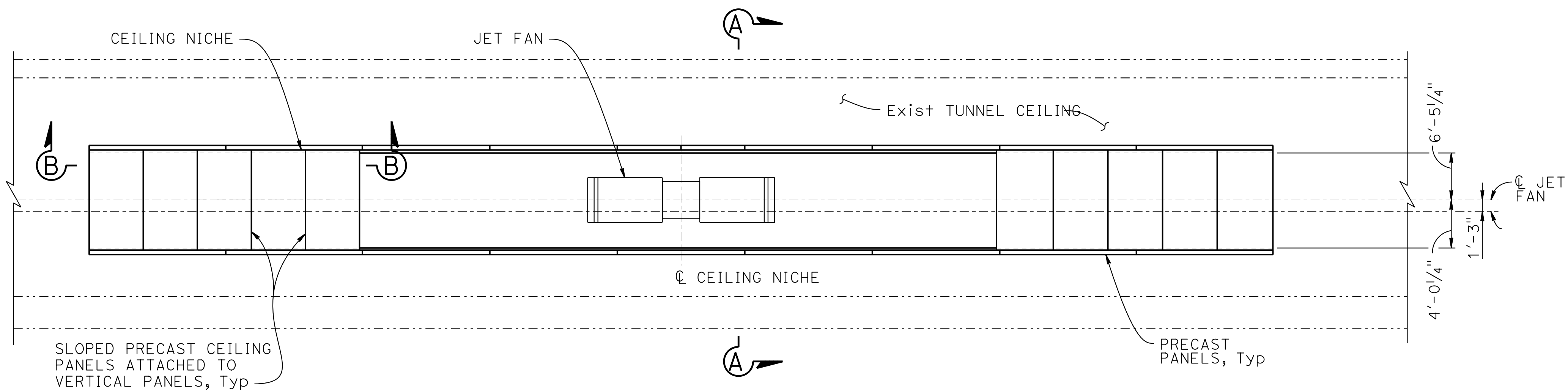
STATE OF CALIFORNIA



LONGITUDINAL SECTION
1/8" = 1'-0"



PART PLAN - BORE 2
1/8" = 1'-0"



PART PLAN - BORE 1
1/8" = 1'-0"

- NOTES:
1. Jet fan 4'-11#2"Ø (1.25 m Ø) 1600 N thrust (Typ per bore) 4'-101#2" OD, 4'-11#2" ID
 2. Sawcut existing concrete to limits shown.
 3. For Section A-A and Section B-B, see "BORE 1 AND 2 STRUCTURE DETAILS NO. 2" sheet.

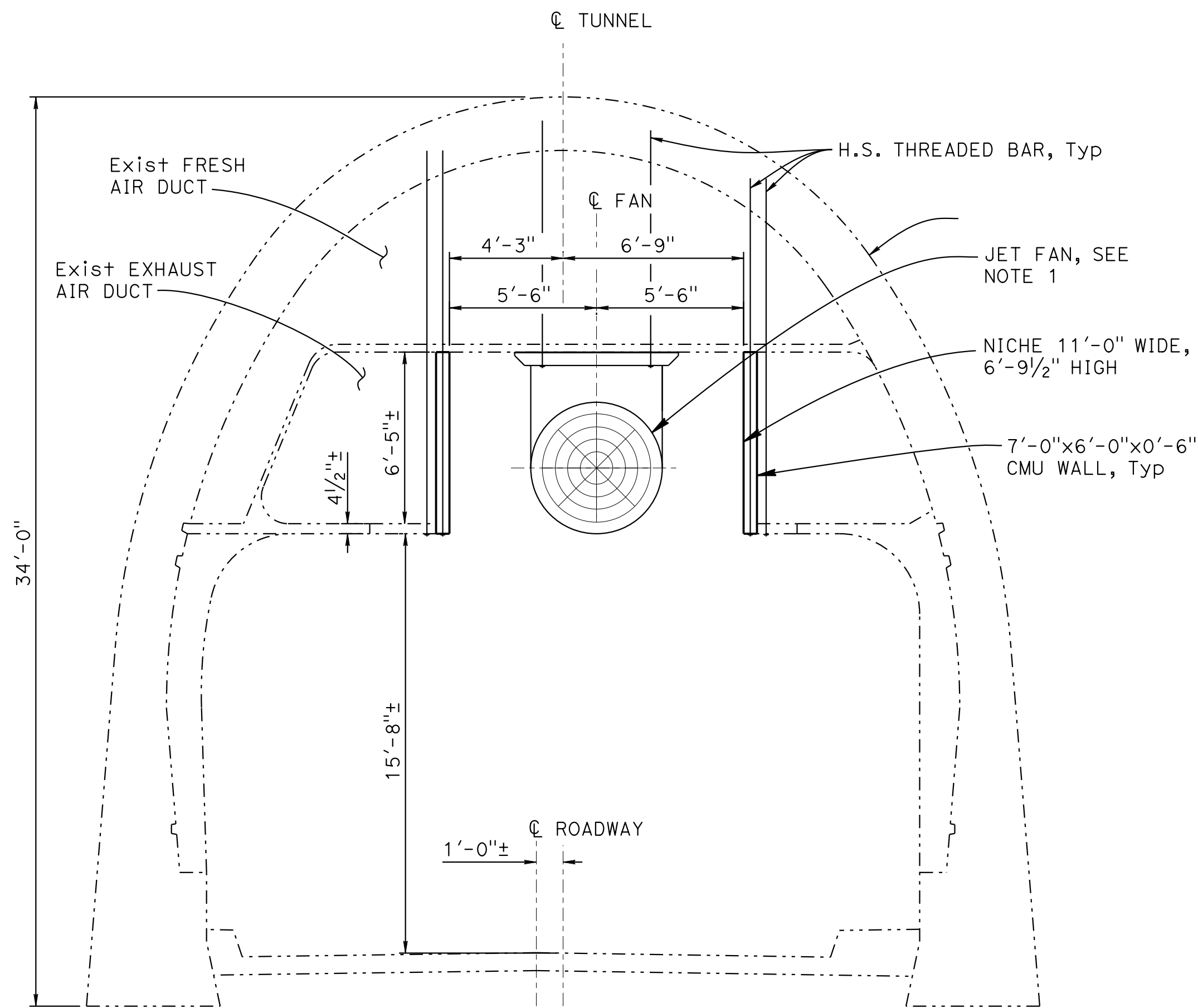
LEGEND:

 Indicates Limits of Removal

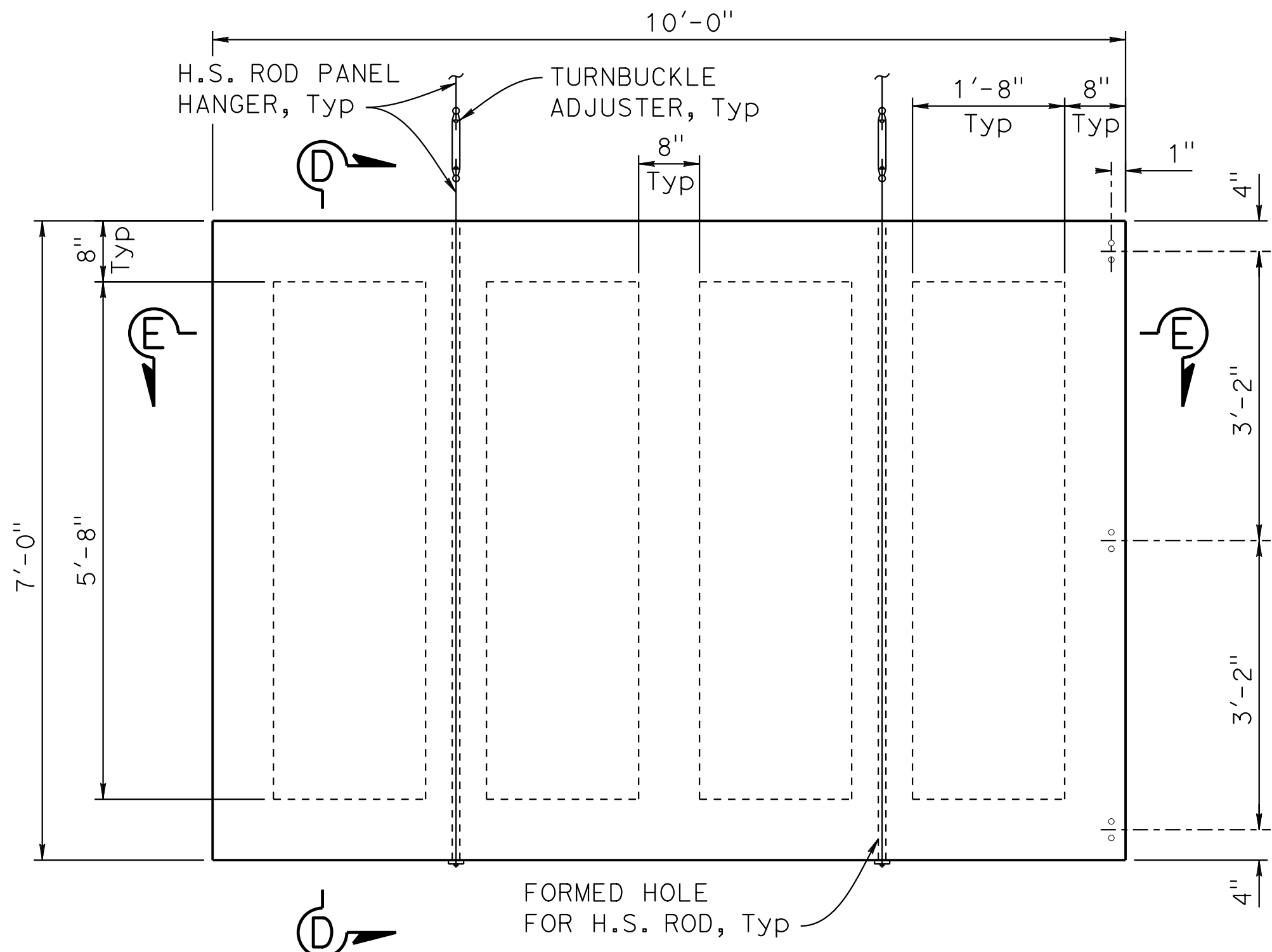
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-8

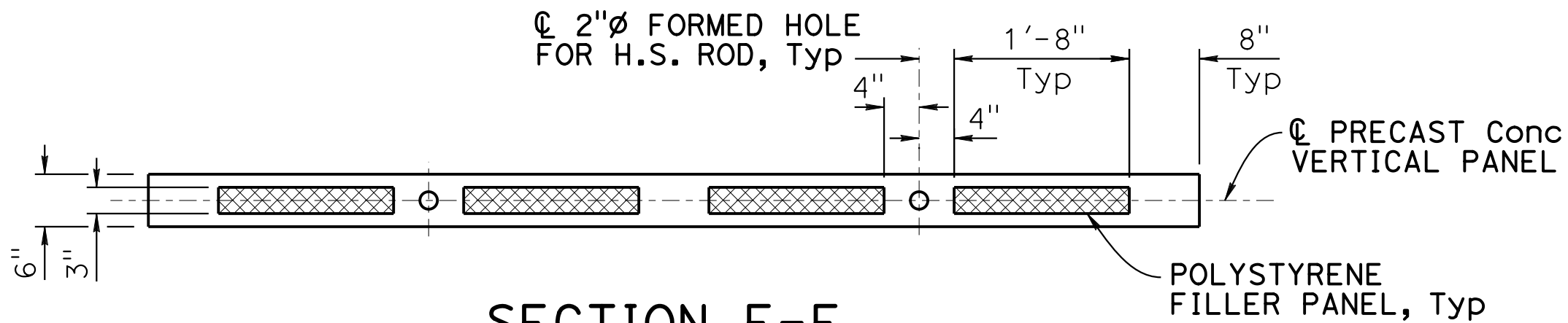
DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No.	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 STRUCTURE DETAILS NO. 1													
		DETAILS	BY A. SANCHEZ	CHECKED			28-0015R, 28-0015, 28-0015L														
		QUANTITIES	BY D. SHAH	CHECKED			POST MILE X.X														
SIGN OFF DATE		DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg009.dgn				TIME PLOTTED => 12:59 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alameda/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11/30/24				REVISION DATES	SHEET	OF
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)																					



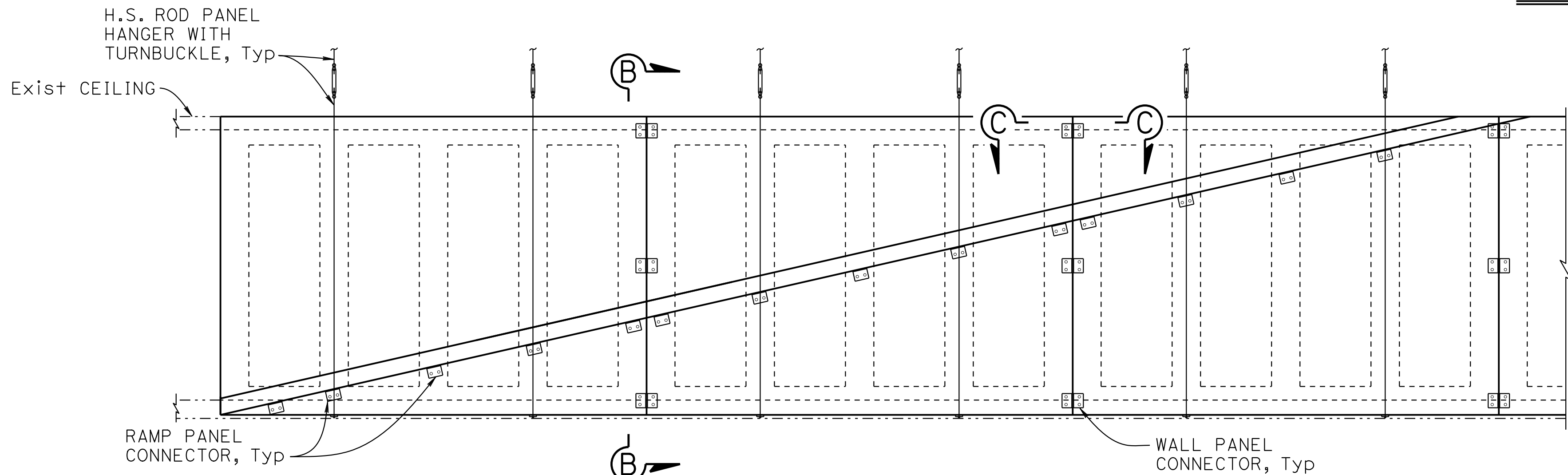
SECTION A-A
1/4" = 1'-0"



TYPICAL WALL PANEL
3/4" = 1'-0"



SECTION E-E
3/4" = 1'-0"



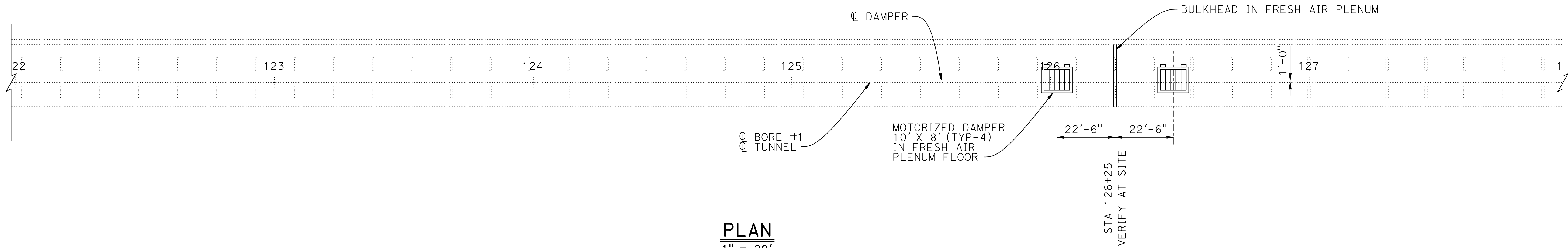
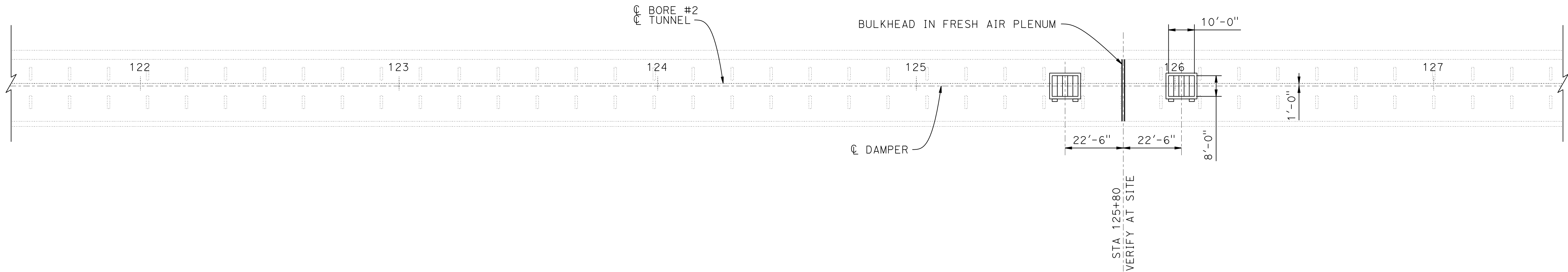
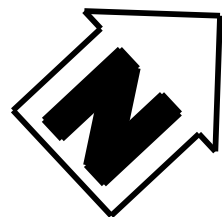
SECTION B-B
1/2" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X	DATE	
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

DESIGN OVERSIGHT	DESIGN	BY J. CALIXTO DE SILVA	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L POST MILE X.X	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 STRUCTURE DETAILS NO. 2					
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED	QUANTITIES	BY J. CALIXTO DE SILVA	CHECKED	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg009g.dgn	TIME PLOTTED => 16:25 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3			11/30/24		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



PLAN
1" = 20'

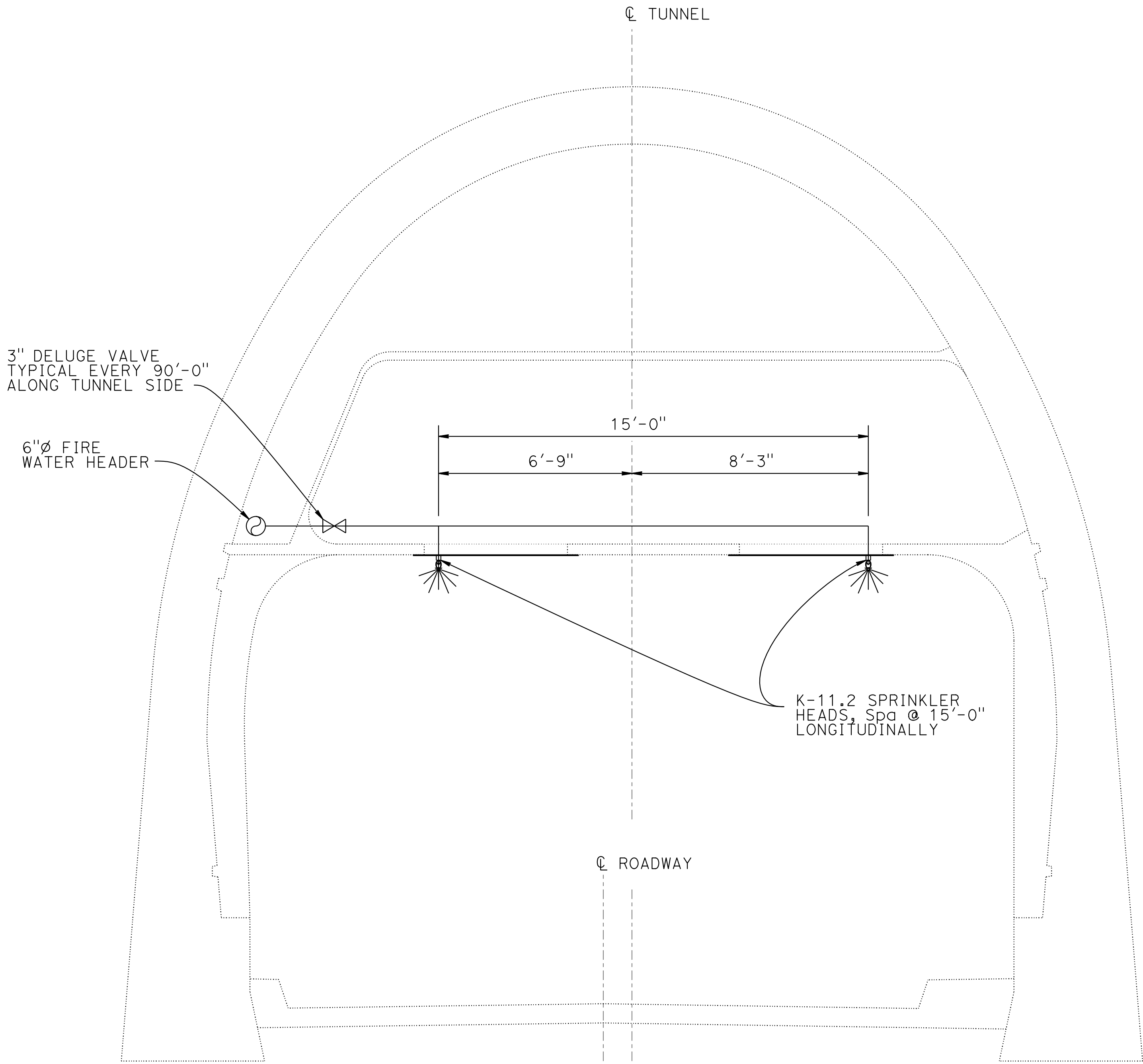
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-10

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FRESH AIR PLENUM PLAN	
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X		
		QUANTITIES	BY D. SHAH	CHECKED					
		SIGN OFF DATE							
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg010.dgn	TIME PLOTTED => 08:47 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

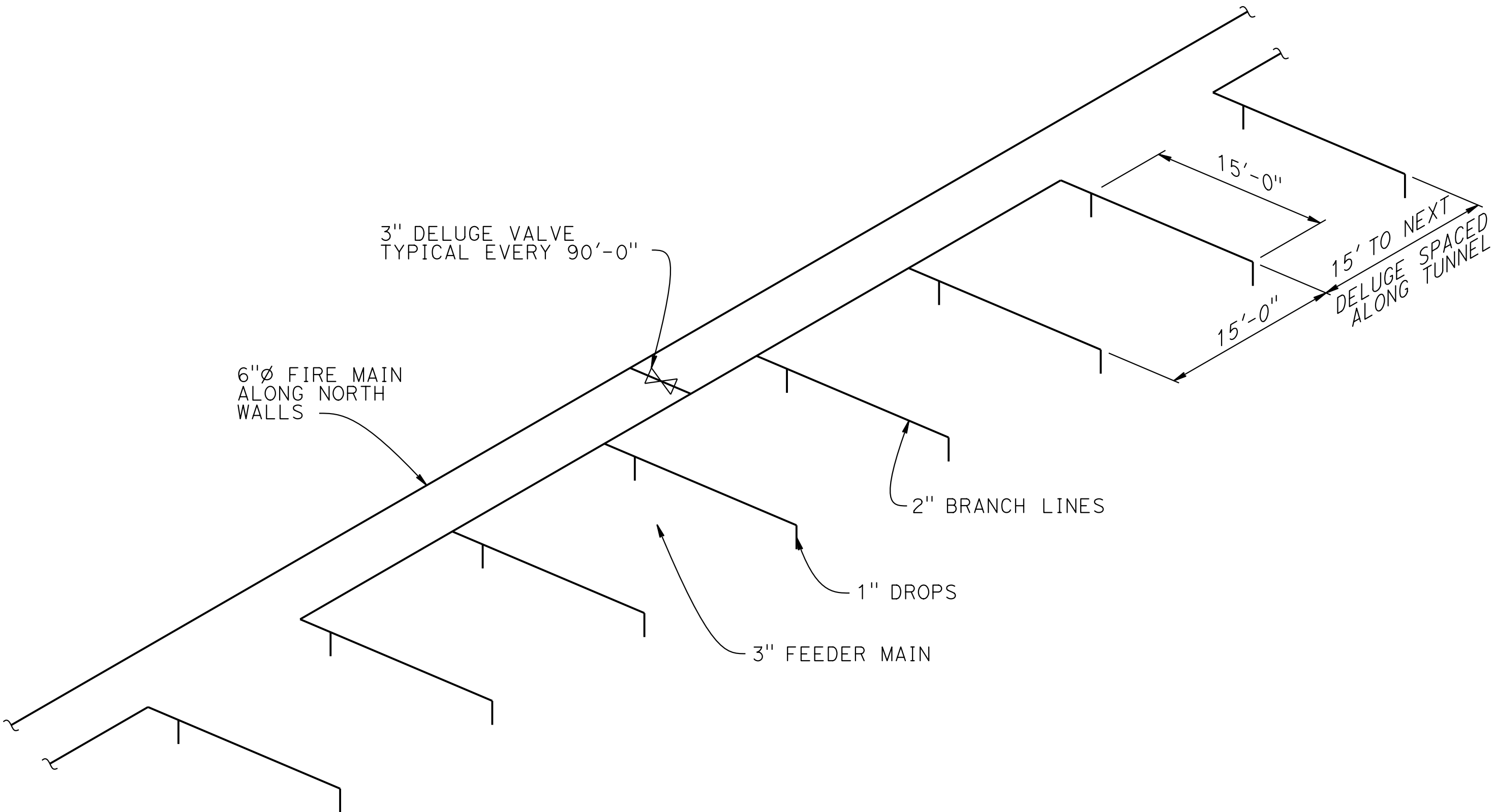
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTE:
Deluge Valve and piping locations can be adjusted to
accommodate the Jet Fan locations.



TYPICAL SECTION
3/8" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIRE CODE 2 SHOWN, BORE 1 SIMILAR
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



DELUGE ISOMETRIC TYPICAL
NO SCALE

FP-1

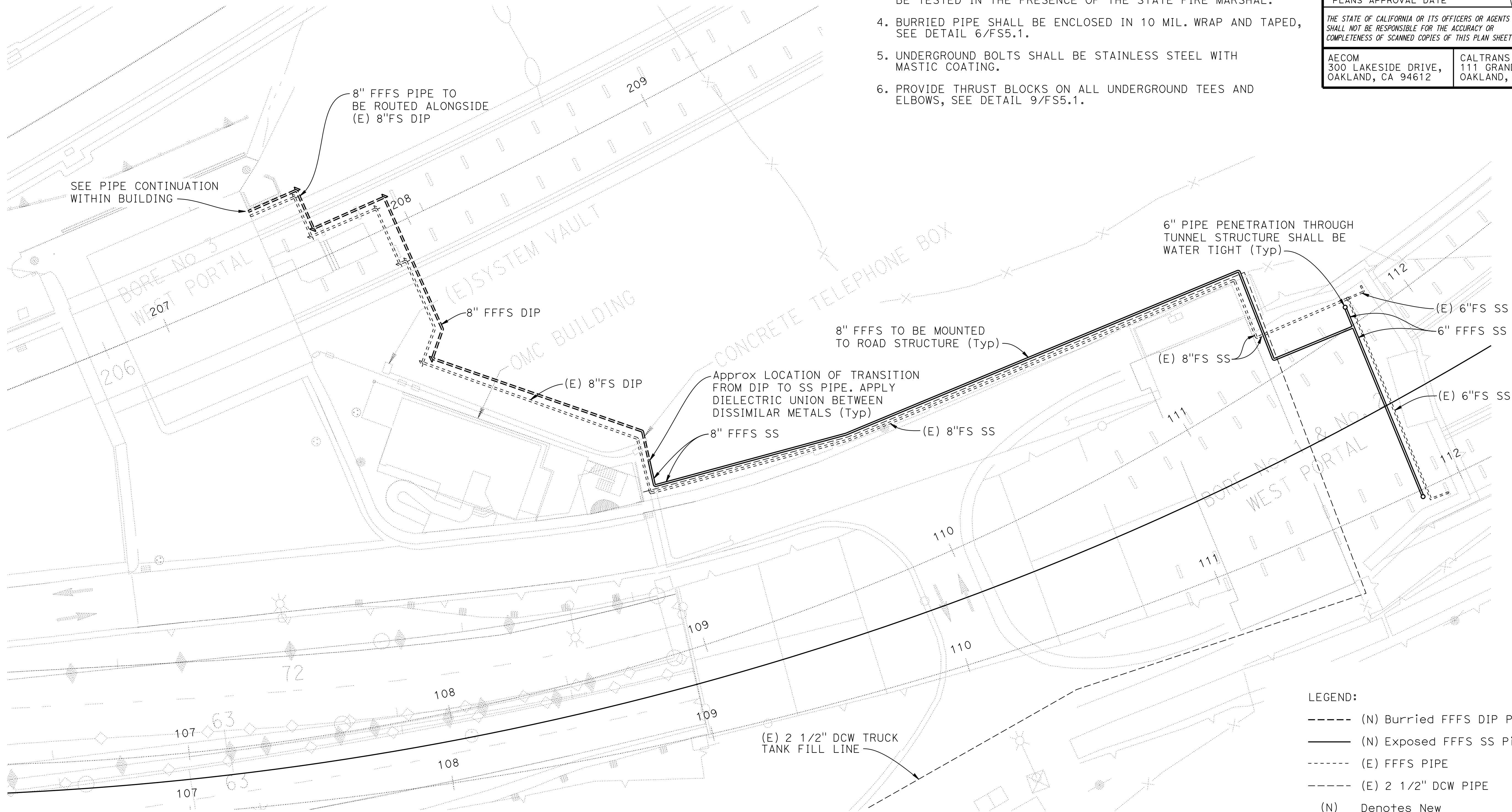
DESIGN OVERSIGHT		DESIGN BY J. LECHNER		CHECKED		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		D. SHAH PROJECT ENGINEER		BRIDGE No. 28-0015R, 28-0015, 28-0015L POST MILE X.X		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION SCHEMATIC			
SIGN OFF DATE		DETAILS BY A. SANCHEZ		CHECKED								REVISION DATES		SHEET OF	
		QUANTITIES BY J. LECHNER		CHECKED								11/30/24			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg020.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES			



GENERAL NOTES:

- DUCTILE IRON PIPE (DIP) TO BE INSTALLED UNDERGROUND AND SCH. 10 STAINLESS STEEL (SS) PIPE ABOVE GROUND.
- ROUTING SHALL FOLLOW ORIGINALROUTE AS CLOSE AS POSSIBLE.
- AT VARIOUS STAGES AND UPON COMPLETION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF THE STATE FIRE MARSHAL.
- BURRIED PIPE SHALL BE ENCLOSED IN 10 MIL. WRAP AND TAPED, SEE DETAIL 6/FS5.1.
- UNDERGROUND BOLTS SHALL BE STAINLESS STEEL WITH MASTIC COATING.
- PROVIDE THRUST BLOCKS ON ALL UNDERGROUND TEES AND ELBOWS, SEE DETAIL 9/FS5.1.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X	DATE	
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

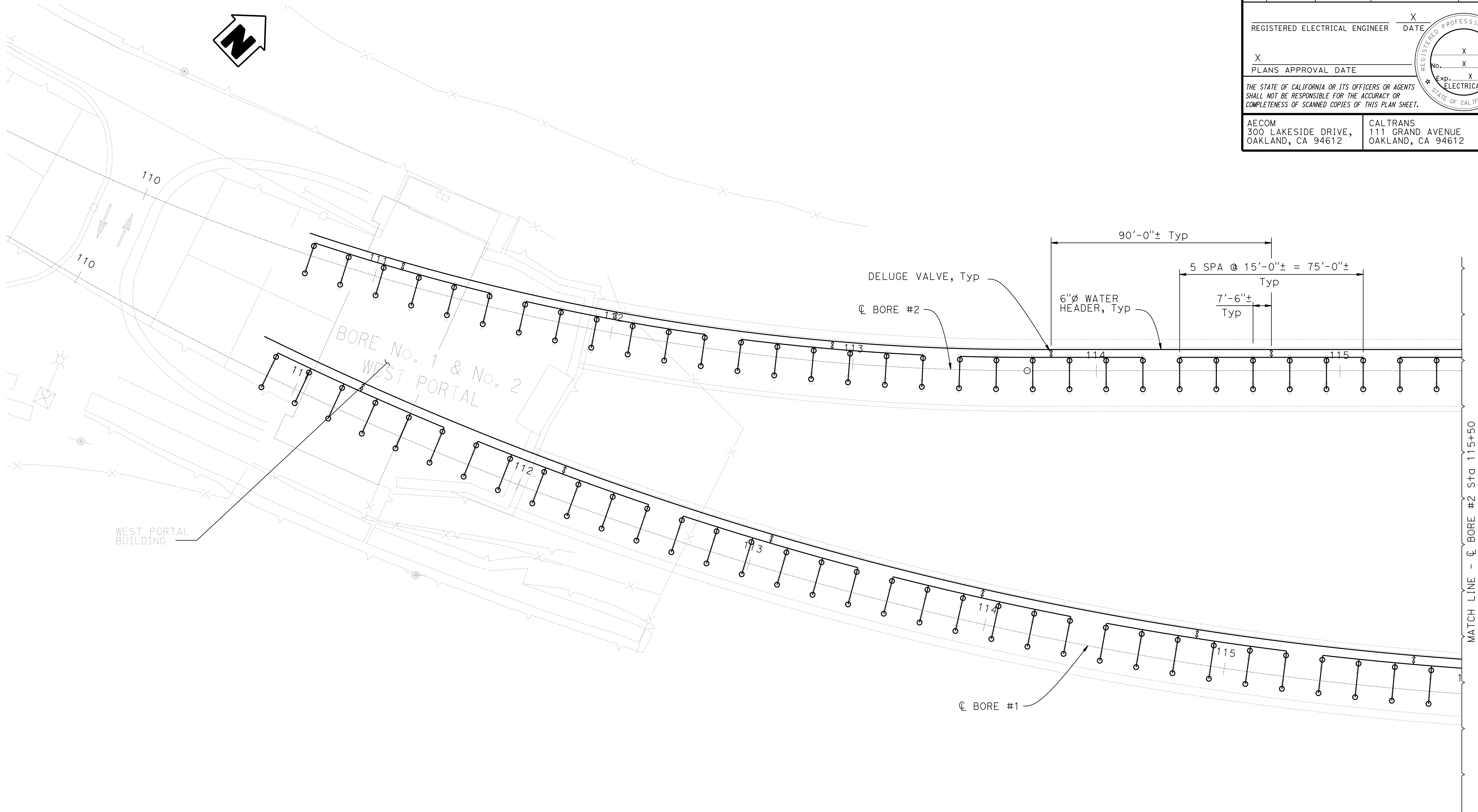
PLAN
1" = 20'-0"

- LEGEND:
- (N) Burried FFFS DIP Pipe
 - (N) Exposed FFFS SS Pipe
 - (E) FFFS PIPE
 - (E) 2 1/2" DCW PIPE
 - (N) Denotes New
 - (E) Denotes Existing
 - ⊕ (N) Concrete Thrust Block
 - ⊕ (e) Concrete Thrust Block

FP-2

DESIGN OVERSIGHT	DESIGN	BY R. GALLARDO	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) FIRE SUPPRESION RETROFIT LAYOUT	
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED				POST MILE X.X		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	QUANTITIES	BY J. LECHNER	CHECKED			PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg121.dgn		TIME PLOTTED => 08:51 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0	1	2	3
								REVISION DATES	
								11/30/24	
								SHEET OF	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE	REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA	
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

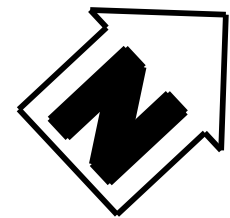


PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-4

DESIGN OVERSIGHT	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 1 OF 6		
	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X			
SIGN OFF DATE	QUANTITIES	BY J. LECHNER	CHECKED			PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg024.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

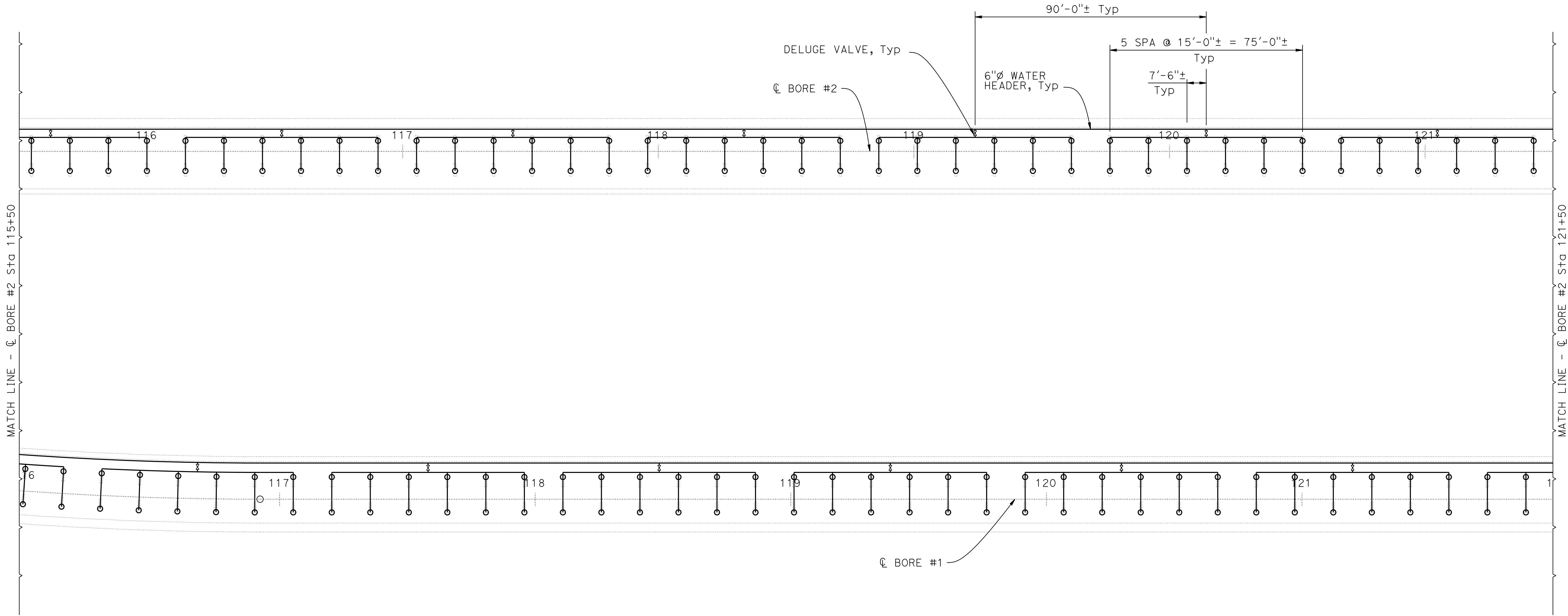
REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

ELECTRICAL

STATE OF CALIFORNIA

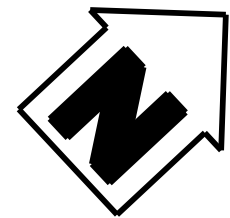


PLAN
1" = 20'

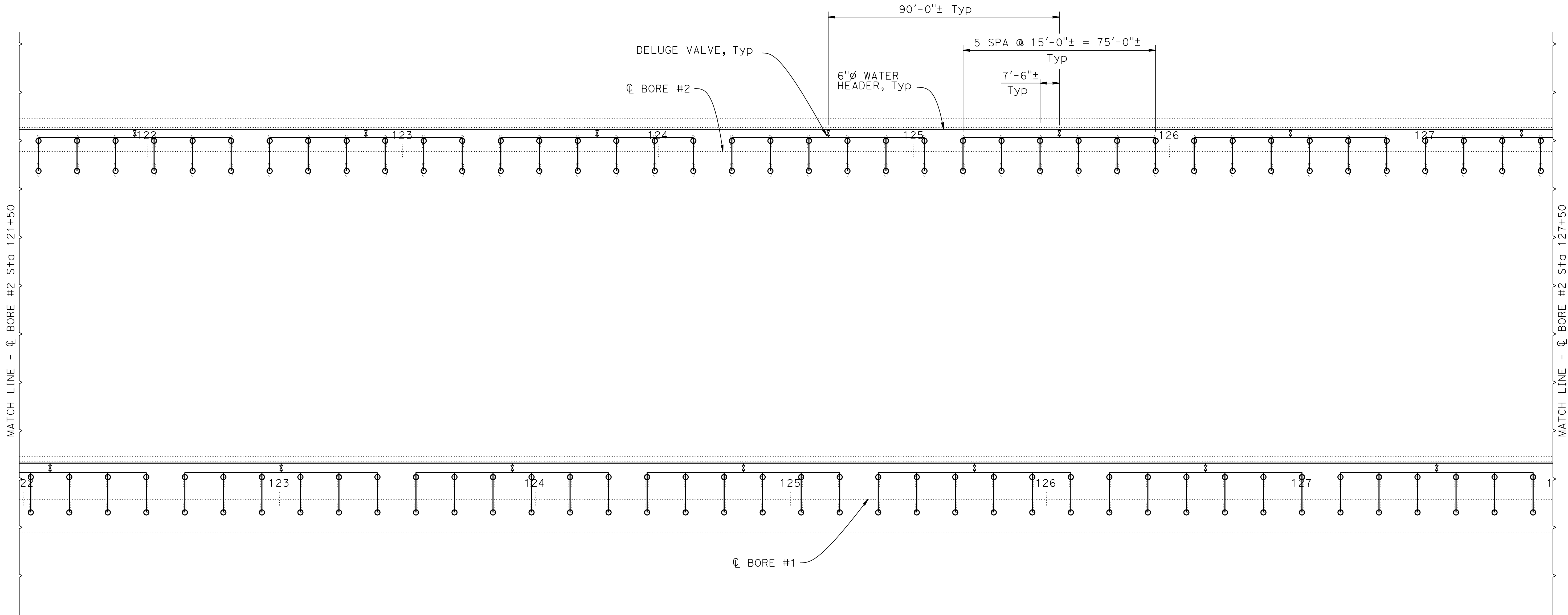
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-5

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 2 OF 6			
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X				
		QUANTITIES	BY J. LECHNER	CHECKED							
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg025.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

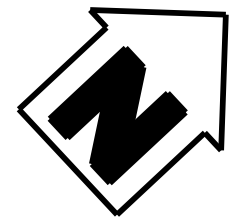


PLAN
1" = 20'

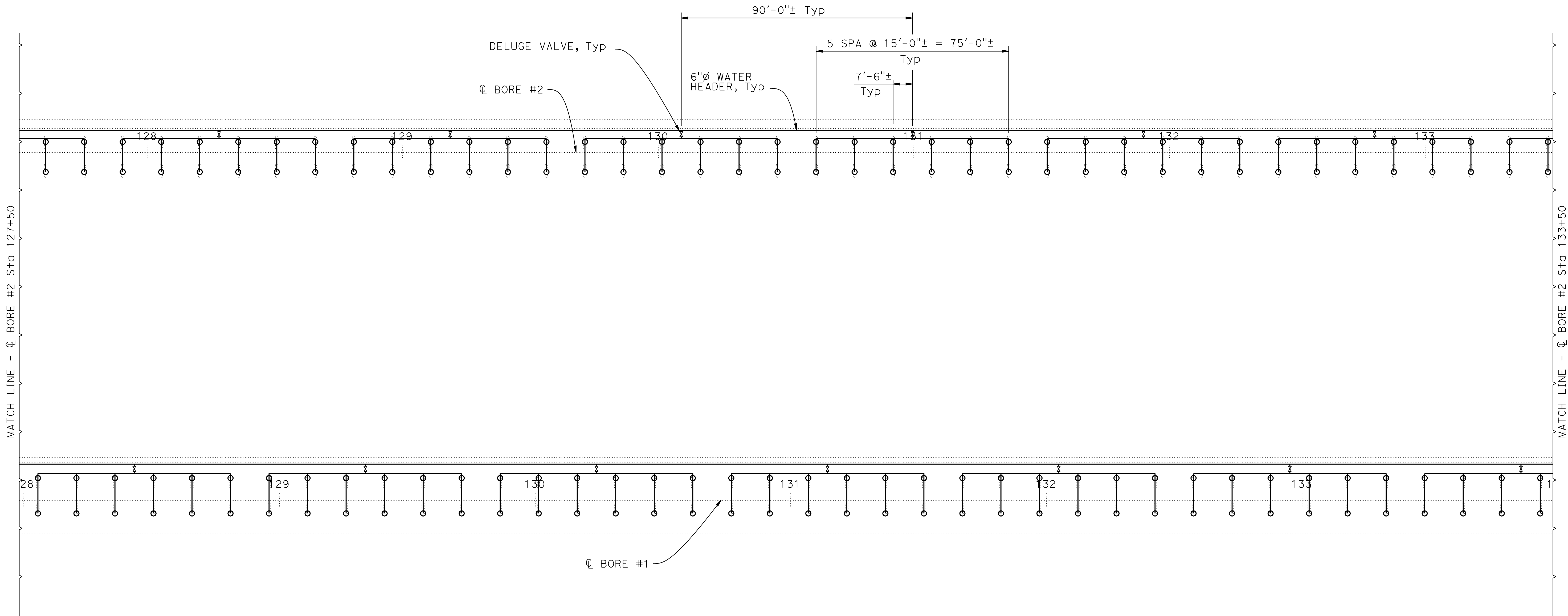
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-6

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 3 OF 6				
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY J. LECHNER	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg026.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE	REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA	
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

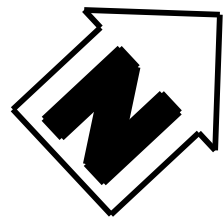


PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-7

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 4 OF 6			
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X				
		QUANTITIES	BY J. LECHNER	CHECKED							
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg027.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

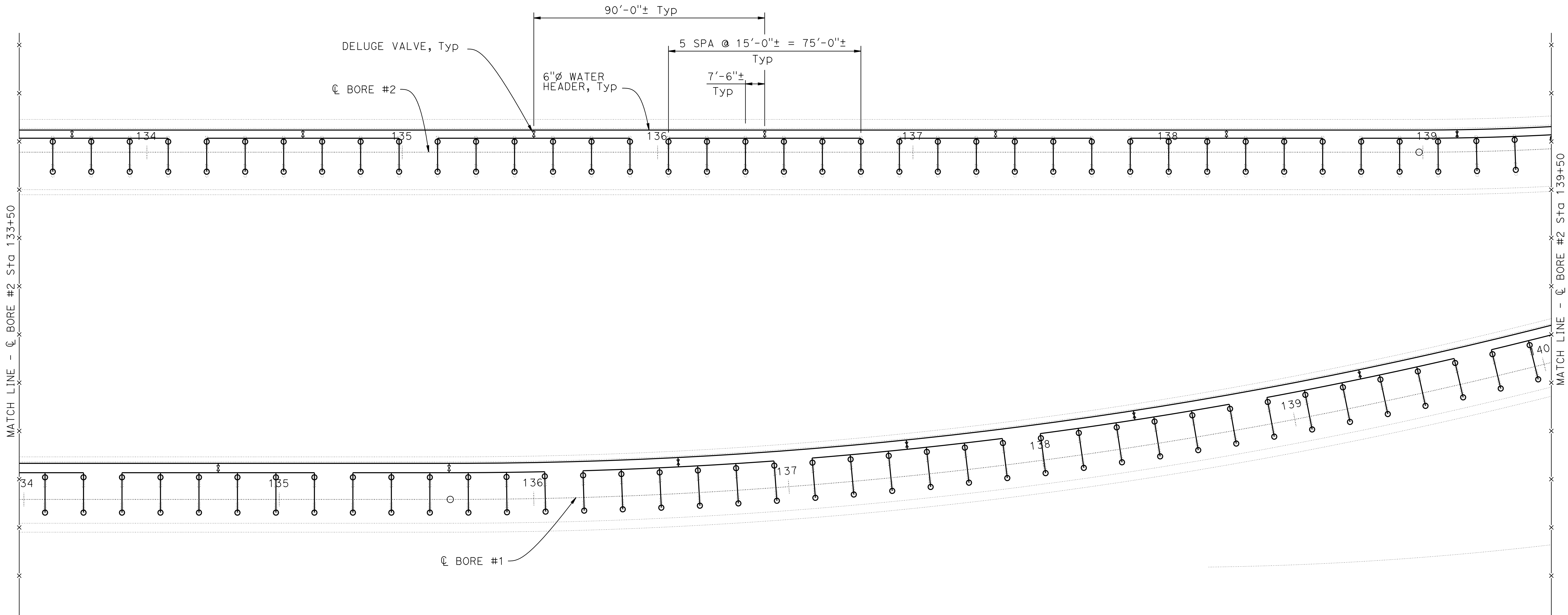
REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

ELECTRICAL

STATE OF CALIFORNIA



PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-8

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 5 OF 6				
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY J. LECHNER	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg028.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

X

PLANS APPROVAL DATE

DATE

REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

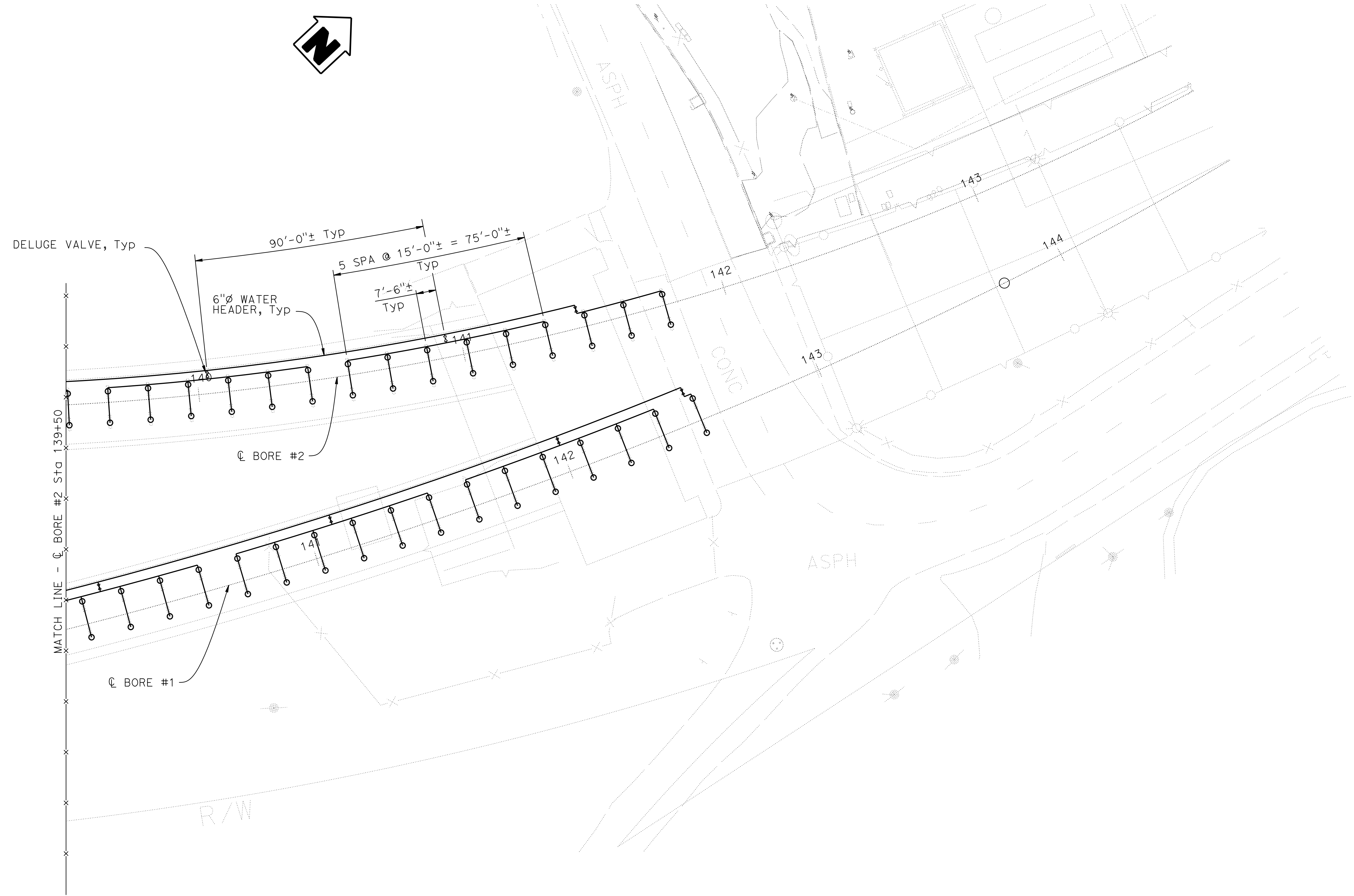
ELECTRICAL

STATE OF CALIFORNIA

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
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612



PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-9

DESIGN OVERSIGHT	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 AND 2 FIRE PROTECTION PLENUM PLAN 6 OF 6
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X	
	QUANTITIES	BY J. LECHNER	CHECKED				

STRUCTURES DESIGN DETAIL SHEET
(ENGLISH) (REVISION 8/16/2021)

DATE PLOTTED => 3-DEC-2024
FILE => 04A6797wg029.dgn

TIME PLOTTED => 13:27
USERNAME => Carl

ORIGINAL SCALE
IN INCHES FOR
REDUCED PLANS
0 1 2 3

PROJECT NUMBER & PHASE: 0414000011

COUNTY/ROUTE: Ala,CC/24
CONTRACT No.: 04-0J5401

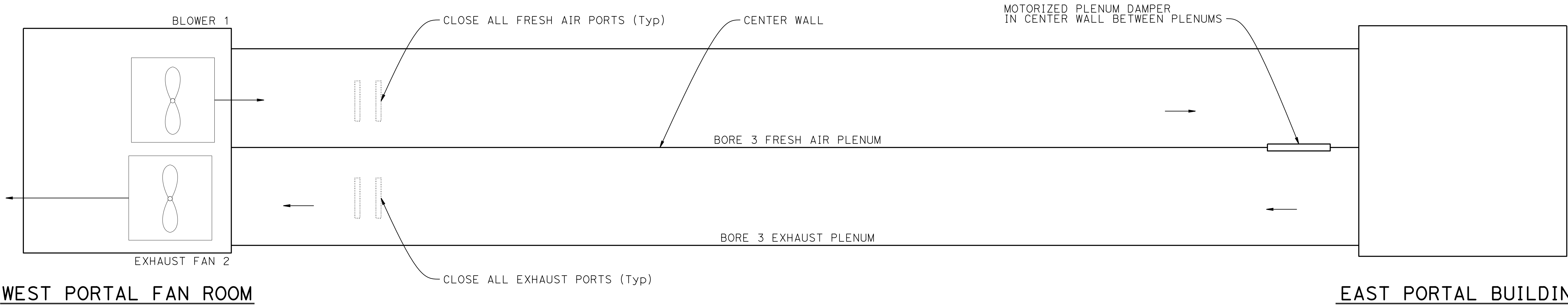
DISREGARD PRINTS BEARING
EARLIER REVISION DATES

REVISION DATES

SHEET OF

- NOTES:
- 1. Operate Blower 1 and Exhaust Fan 2 at 25-50% capacity to Ventilate Plenums.
 - 2. Do not operate Blower alone or Exhaust Fan alone.
 - 3. Interlock Plenum Damper with Blower such that Damper open prior to start of the Blower.
 - 4. Blower #2 (not shown) and Exhaust Fan 1 (not shown) from West Portal Fan Room will be removed to make room for electrical equipment.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

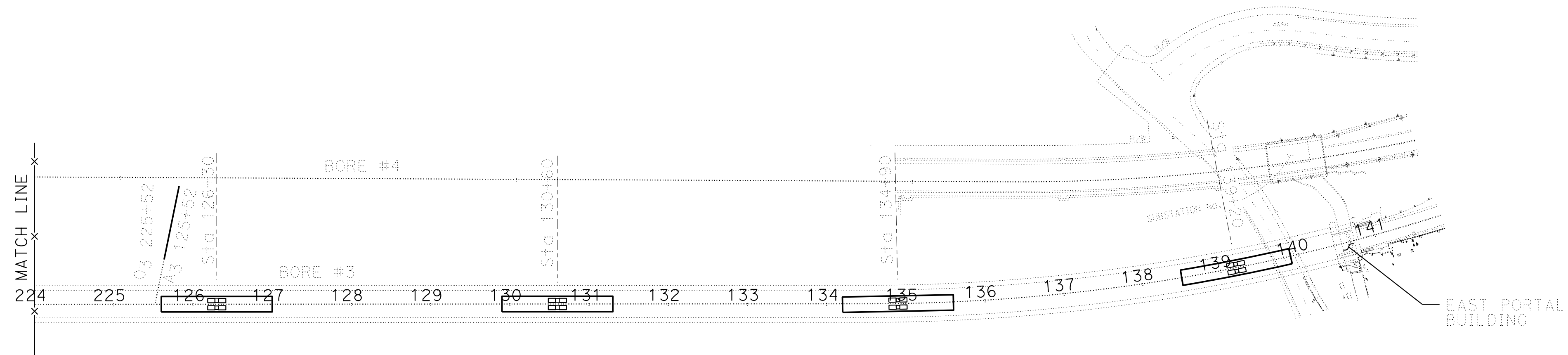
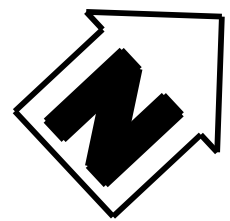
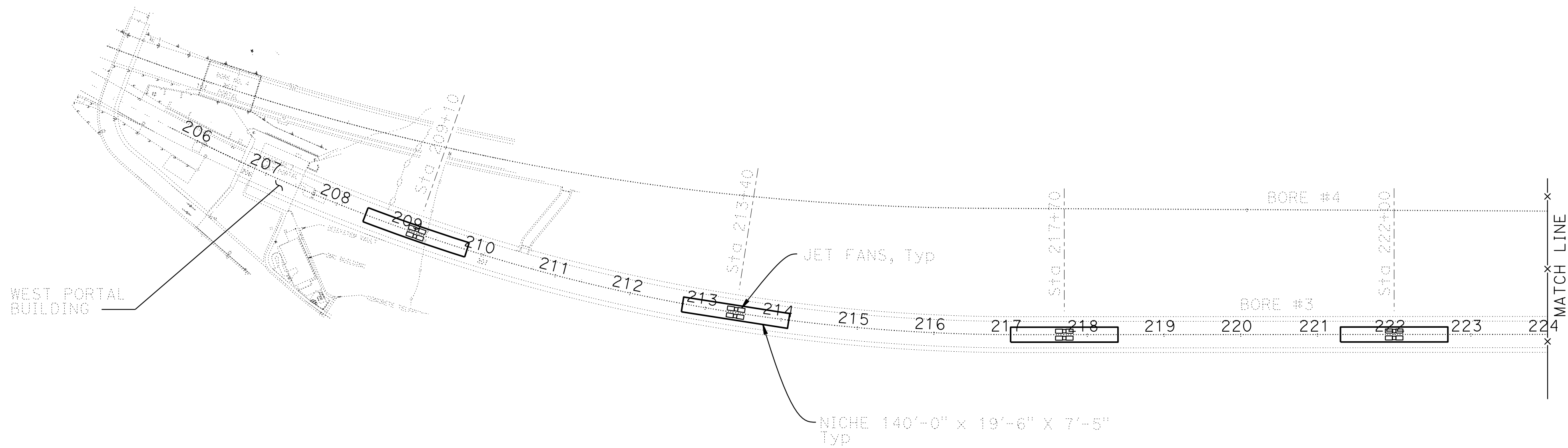
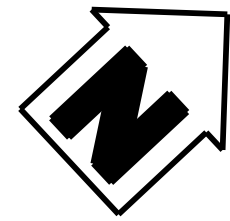


BORE 3 PLENUM VENTILATION SCHEMATIC
NO SCALE

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-101

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 PLENUM VENTILATION SCHEMATIC								
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE									
		QUANTITIES	BY D. SHAH	CHECKED			X.X									
		SIGN OFF DATE														
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg101.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 11/30/24		SHEET OF



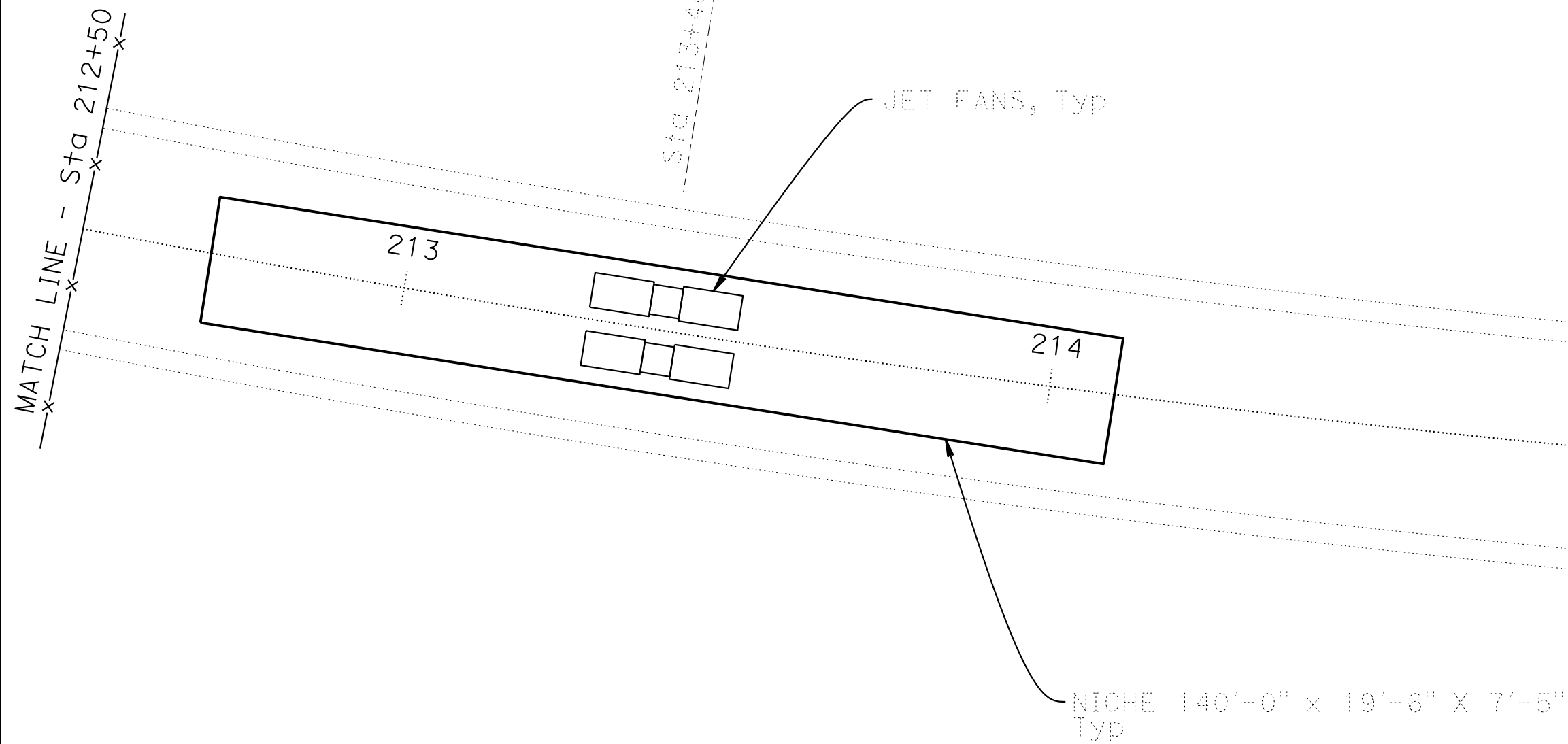
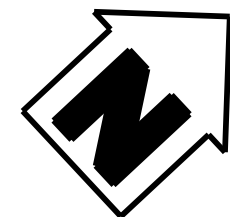
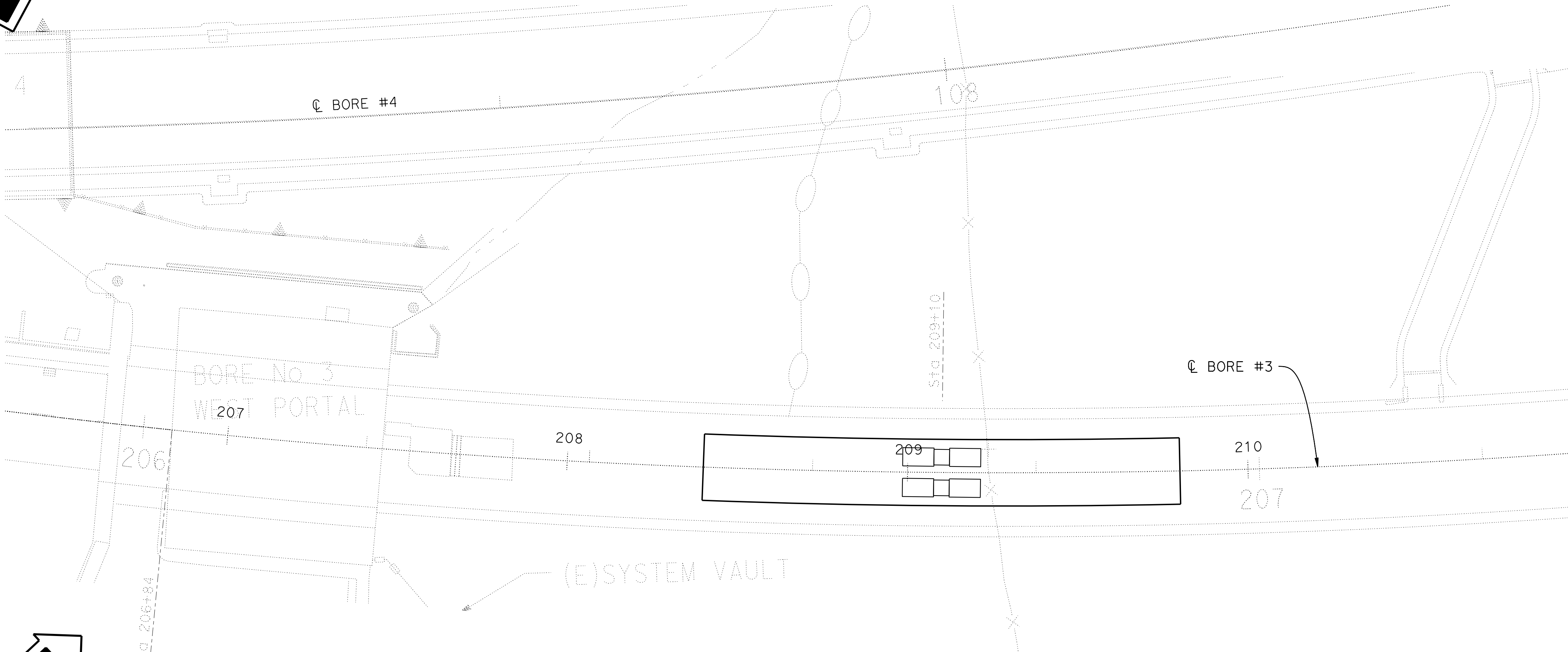
PLAN
1" = 100'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER ELECTRICAL No. X Exp. X STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

M-102

DESIGN OVERSIGHT	DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 GENERAL PLAN			
	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X				
	QUANTITIES	BY D. SHAH	CHECKED							
SIGN OFF DATE	DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg102.dgn		TIME PLOTTED => 13:27 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



PLAN
1" = 20'

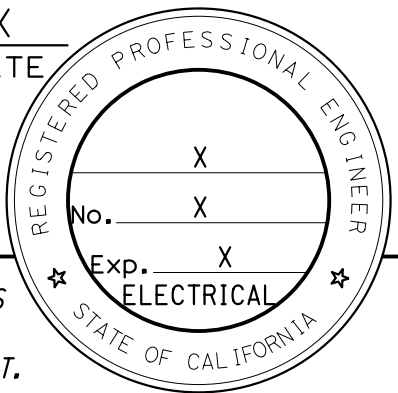
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER	X DATE
X	
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612	CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612
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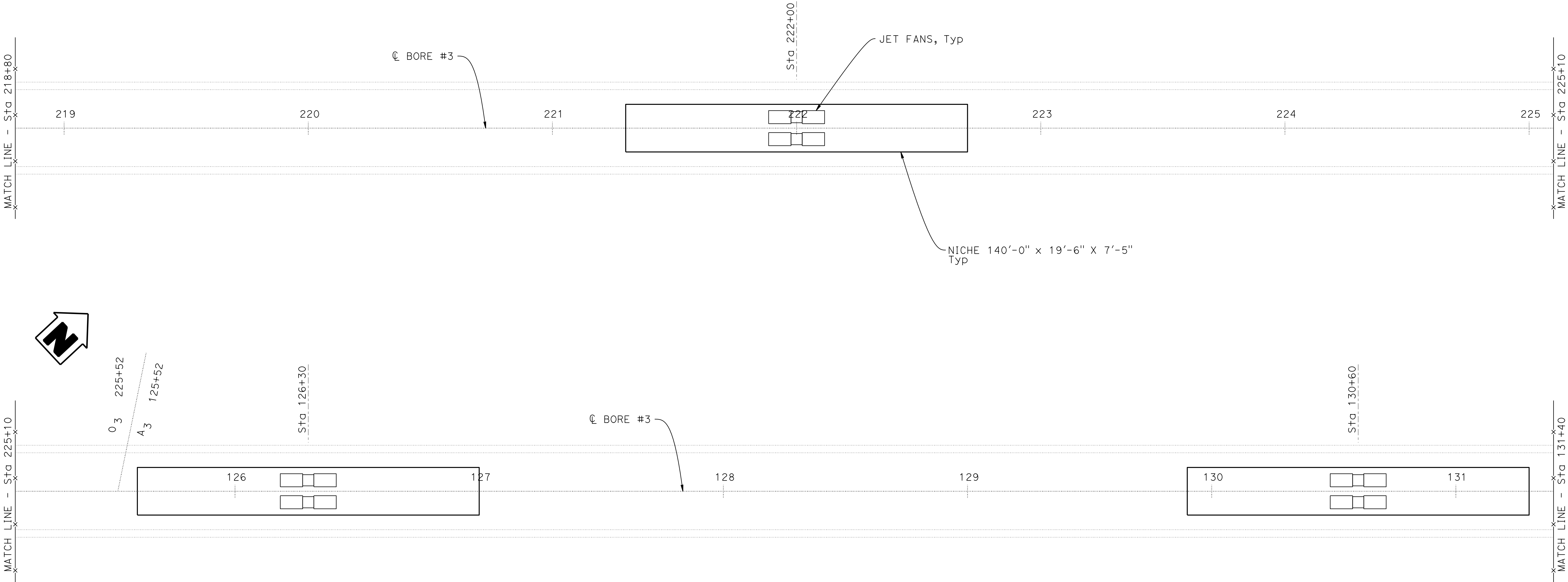
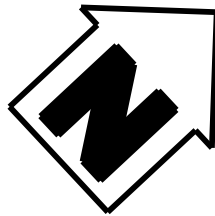
MATCH LINE - Sta 212+50

MATCH LINE - Sta 218+80

M-103

DESIGN OVERSIGHT	DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 VENTILATION PLAN 1 OF 3	
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	QUANTITIES	BY D. SHAH	CHECKED		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg103.dgn	TIME PLOTTED => 13:28 USERNAME => Carl	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3			REVISION DATES	SHEET	OF
						11/30/24		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

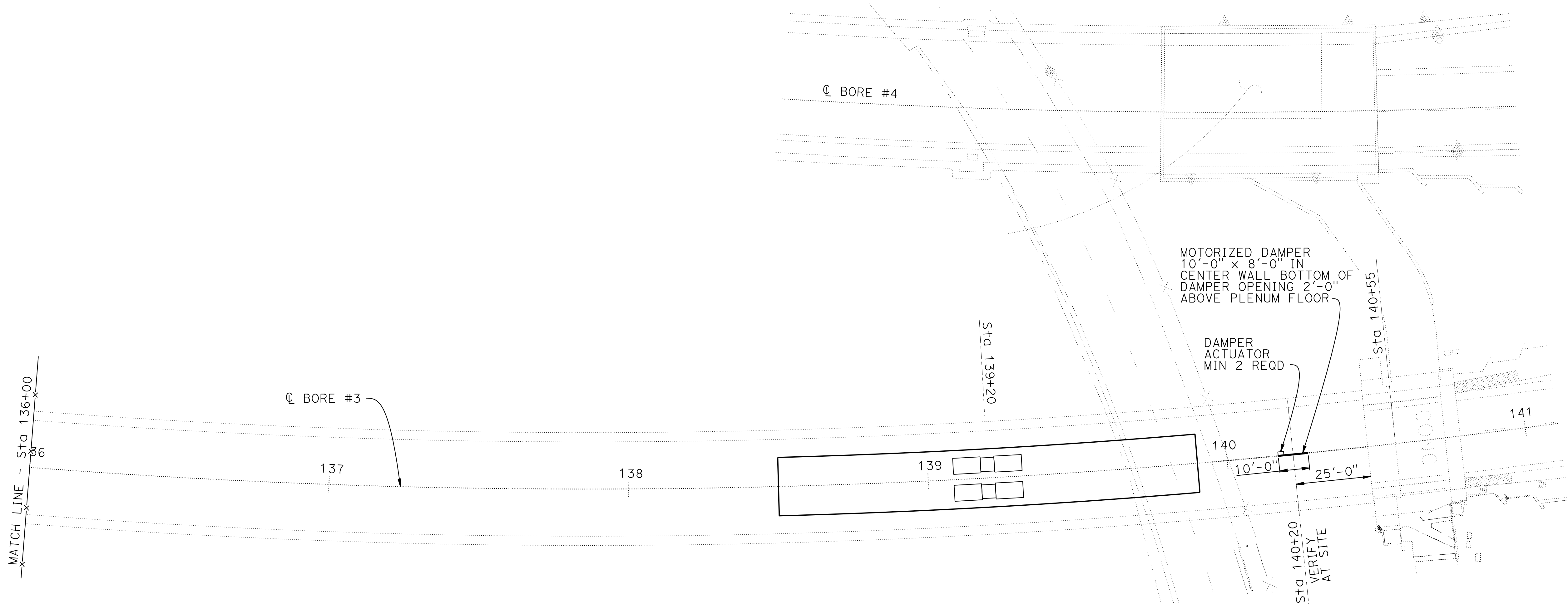
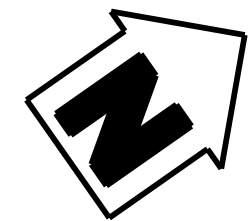
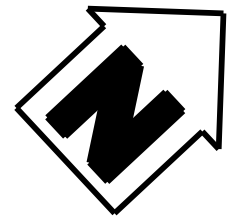


PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-104

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 VENTILATION PLAN 2 OF 3				
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE					
		QUANTITIES	BY D. SHAH	CHECKED			X.X					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg104.dgn		TIME PLOTTED => 13:28 USERNAME => Car1		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



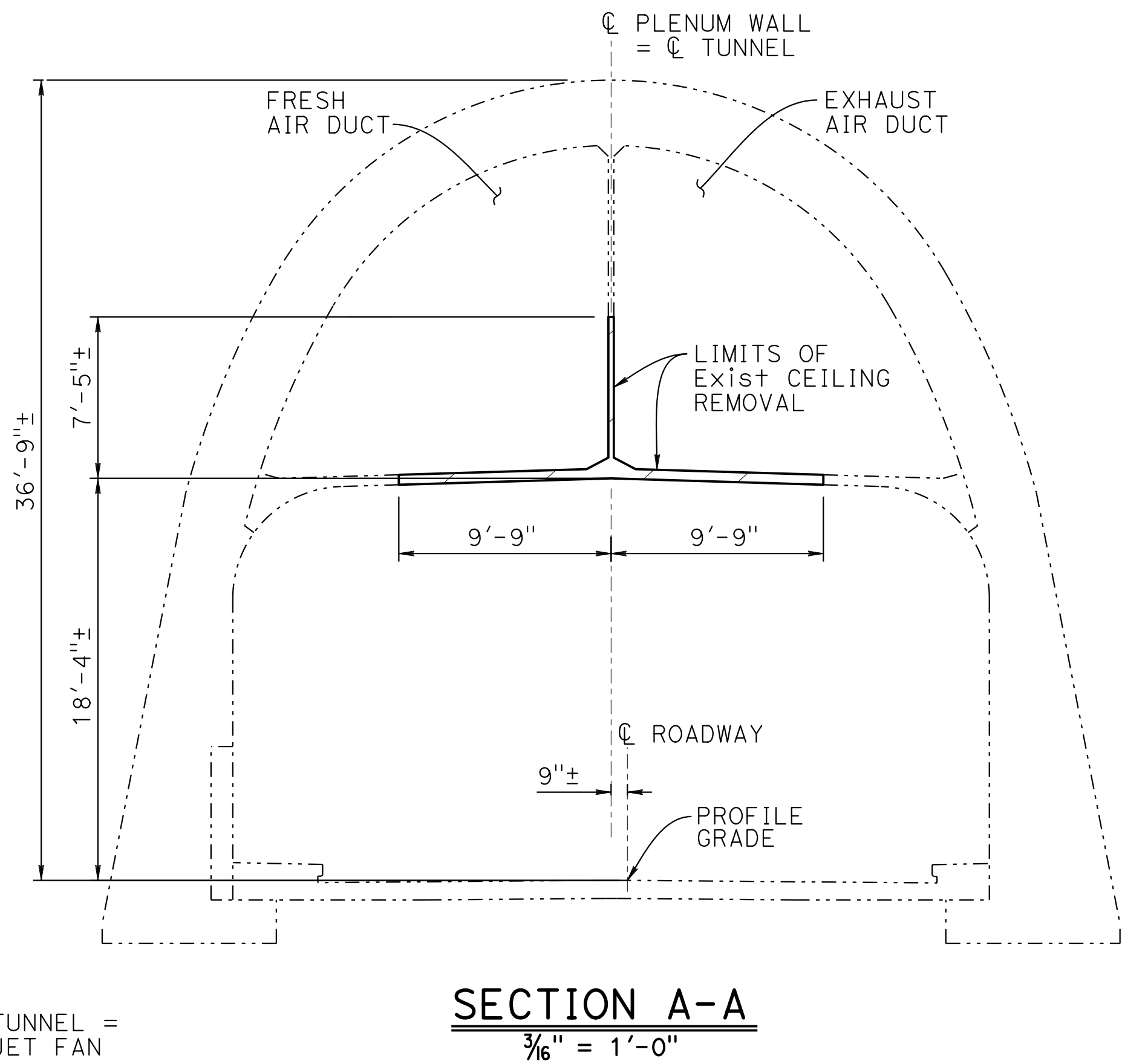
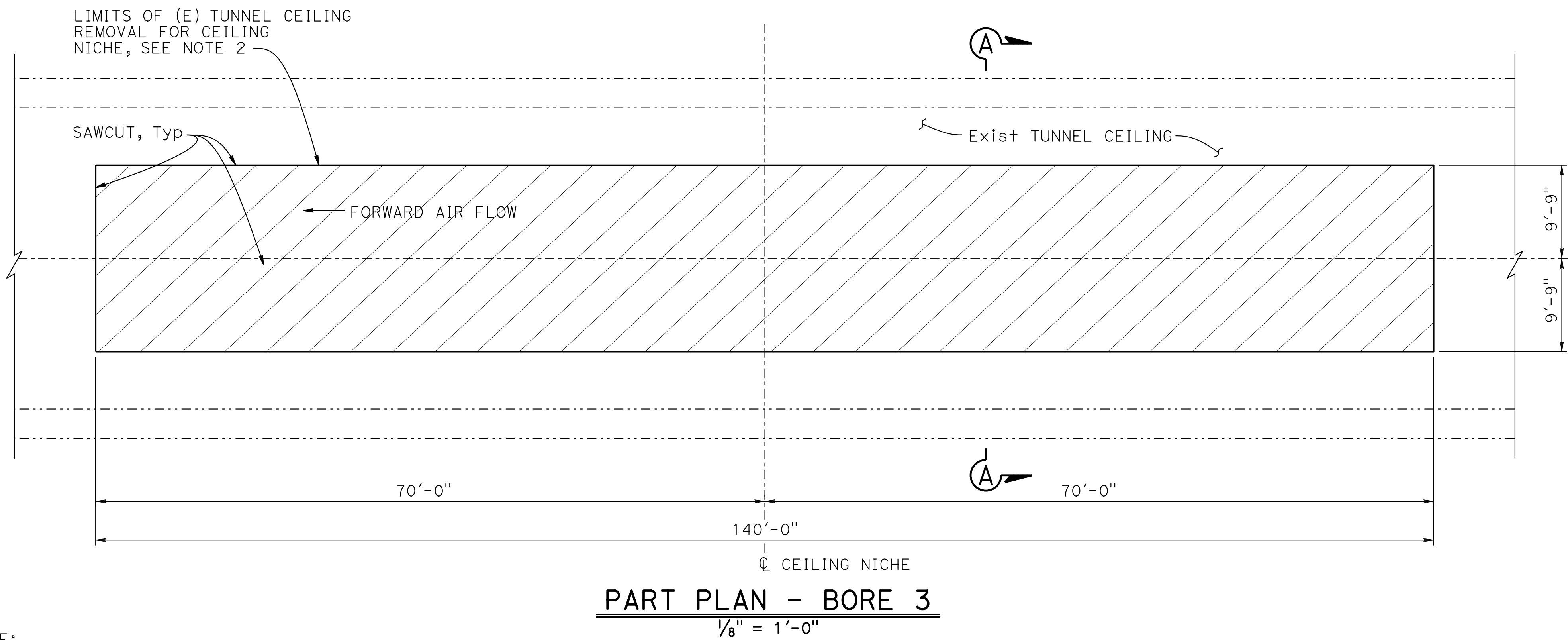
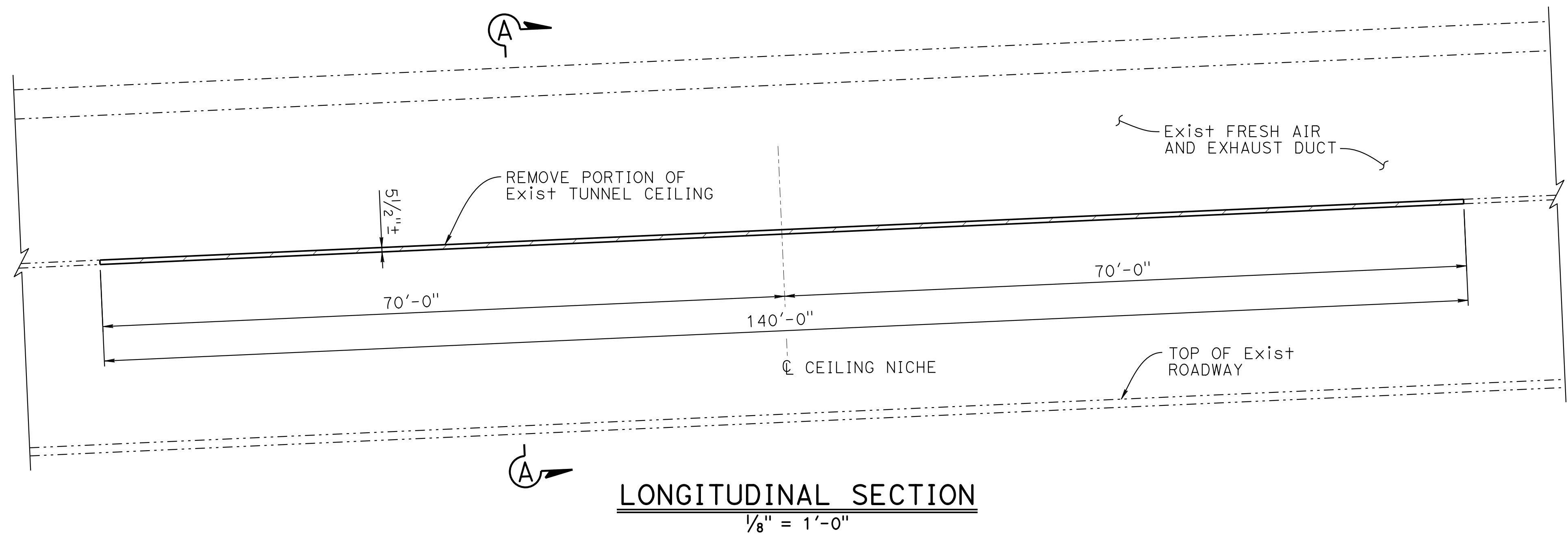
PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-105

DESIGN OVERSIGHT SIGN OFF DATE		DESIGN		BY	D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION				D. SHAH PROJECT ENGINEER		BRIDGE No.		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 VENTILATION PLAN 3 OF 3																				
		DETAILS		BY	A. SANCHEZ	CHECKED							28-0015R, 28-0015, 28-0015L																						
		QUANTITIES		BY	D. SHAH	CHECKED							POST MILE X.X																						
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg105.dgn				TIME PLOTTED => 13:28 USERNAME => Carl				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0		1		2		3		PROJECT NUMBER & PHASE: 0414000011				COUNTY/ROUTE: Alameda/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET		OF	
														11/30/24																					

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X	DATE	
X			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.			No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



- NOTES:
- Jet fan 4'-1 1/2"ø (1.25 m ø)
1600 N thrust (Typ per bore)
4'-10 1/2" OD, 4'-1 1/2" ID
 - Sawcut existing concrete to limits shown.

LEGEND:

Indicates Limits of Removal

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-106

DESIGN OVERSIGHT	DESIGN	BY J. CALIXTO DE SILVA	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L POST MILE X.X	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 REMOVAL DETAILS			
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED	QUANTITIES	BY J. CALIXTO DE SILVA	CHECKED	PROJECT NUMBER & PHASE: 0414000011			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wg106.dgn		TIME PLOTTED => 16:24 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

X

PLANS APPROVAL DATE

DATE

REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

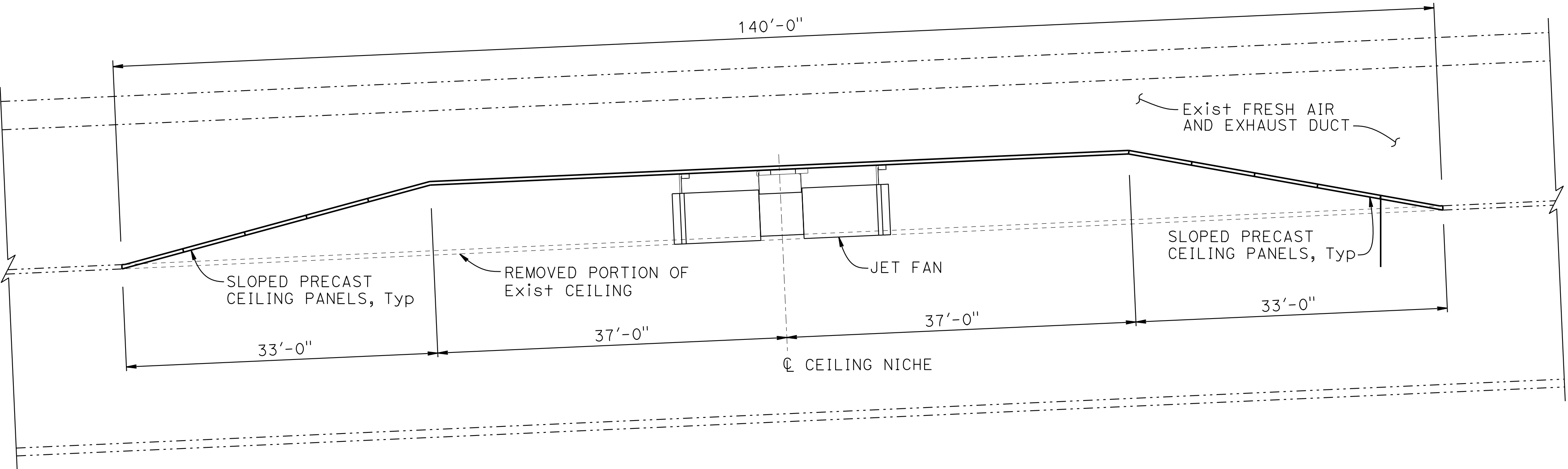
ELECTRICAL

STATE OF CALIFORNIA

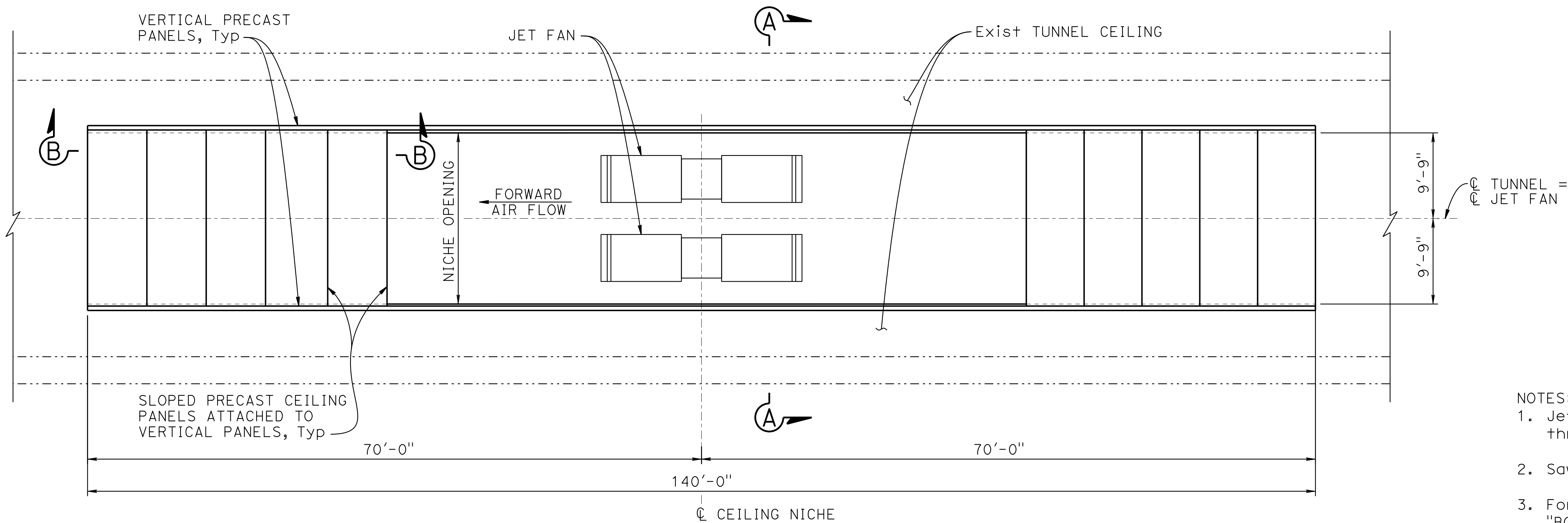
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

AECOM
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612



LONGITUDINAL SECTION
1/8" = 1'-0"



PART PLAN - BORE 3
1/8" = 1'-0"

- NOTES:
1. Jet fan 4'-11#2"Ø (1.25 m Ø) 1600 N thrust (Typ per bore) 4'-101#2" OD, 4'-11#2" ID
 2. Sawcut existing concrete to limits shown.
 3. For Section A-A and Section B-B, see "BORE 3 STRUCTURE DETAILS No. 2" sheet.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

M-107

DESIGN OVERSIGHT		DESIGN	BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 PLENUM DETAILS NO. 1						
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE							
		QUANTITIES	BY D. SHAH	CHECKED			X.X							
SIGN OFF DATE					PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES		SHEET	OF		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED ==> 04-DEC-2024 FILE ==> 04A6797wg107.dgn		TIME PLOTTED ==> 13:04 USERNAME ==> AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0		1	2	3		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER
X
PLANS APPROVAL DATE

X
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
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

SECTION A-A
1/4" = 1'-0"

SECTION B-B
1/2" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NOTES:

- For Section B-B and Section C-C, see "BORE 1 AND 2 STRUCTURE DETAILS" sheet.
-
-
- For vertical panel details, see "BORE 1 AND 2 STRUCTURE DETAILS" sheet.

M-108

DESIGN OVERSIGHT	DESIGN	BY J. CALIXTO DE SILVA	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 PLENUM DETAILS NO. 3	
		DETAILS A. SANCHEZ	CHECKED			POST MILE X.X		
SIGN OFF DATE	QUANTITIES	BY J. CALIXTO DE SILVA	CHECKED	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET OF

STRUCTURES DESIGN DETAIL SHEET
(ENGLISH) (REVISION 8/16/2021)

DATE PLOTTED => 04-DEC-2024
FILE => 04A6797wg108.dgn

TIME PLOTTED => 16:24
USERNAME => AI

ORIGINAL SCALE
IN INCHES FOR
REDUCED PLANS

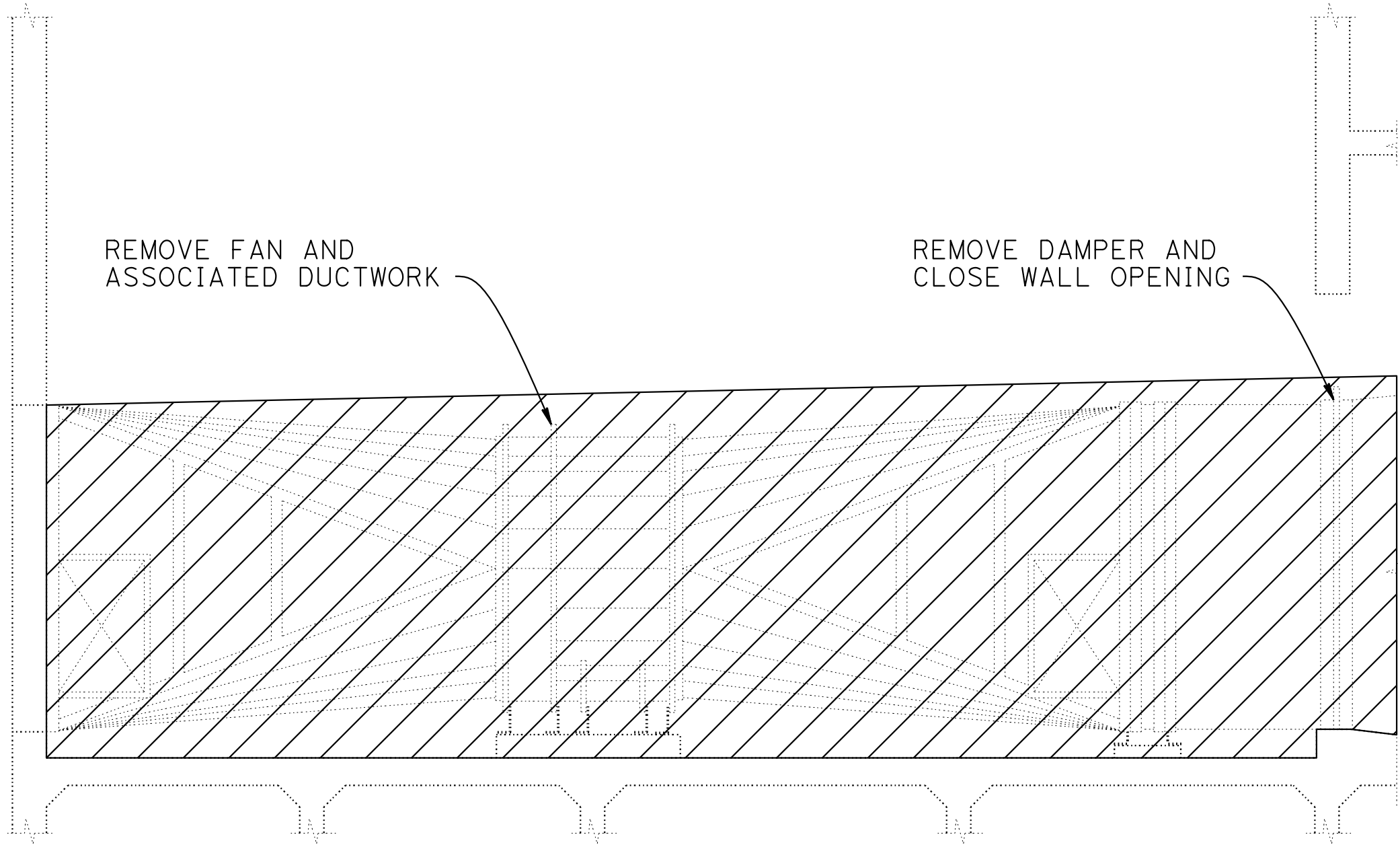
0123



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN - FAN ROOM AND CONTROL ROOM

1/4" = 1'-0"



ELEVATION - INTAKE DUCT AND FAN 2 REMOVAL

1/4" = 1'-0"

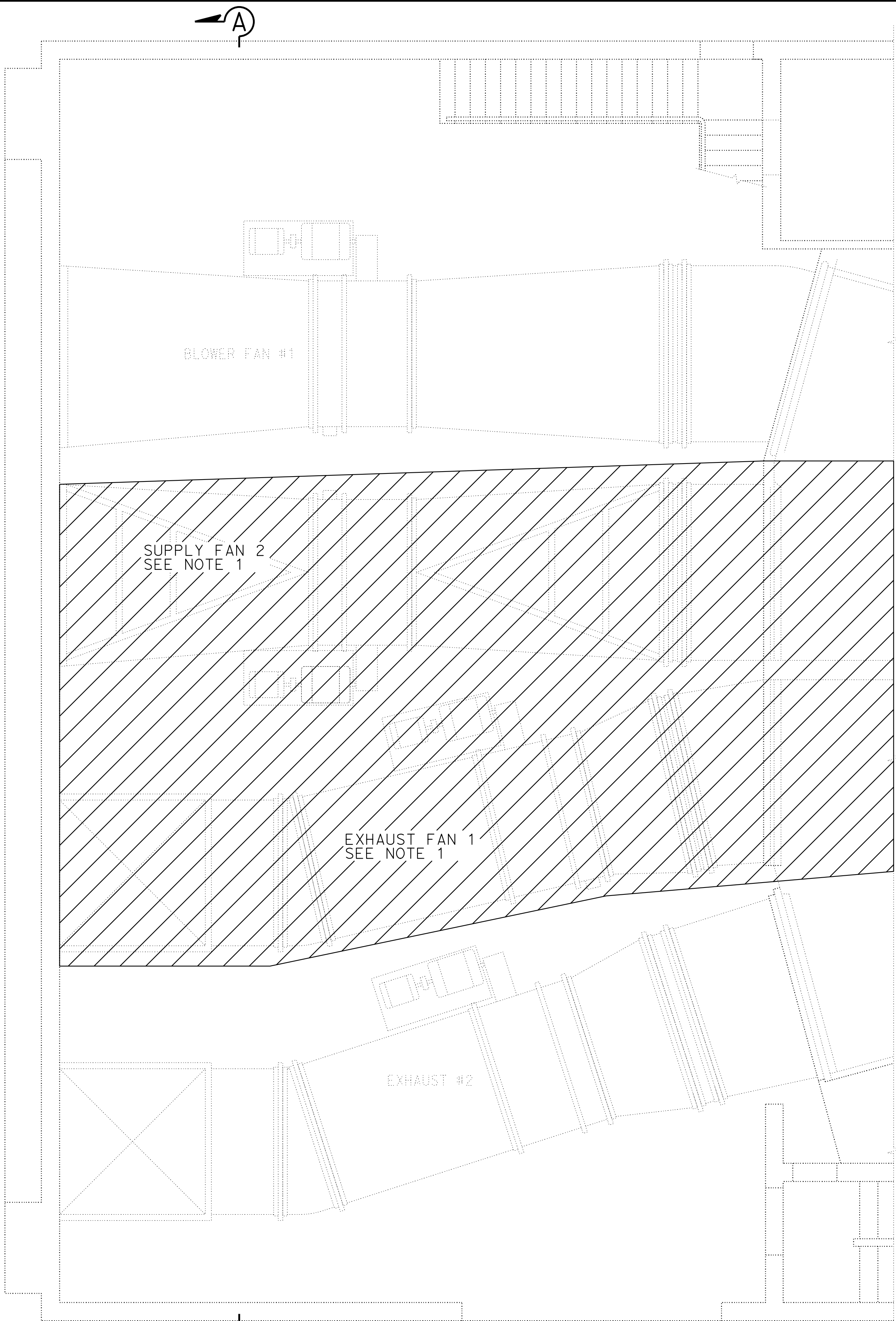
M-108

NOTES:

1. Remove Existing Supply Fan 2 and Exhaust Fan 1 with associated ductwork, supports, dampers and electrical equipment and wiring.

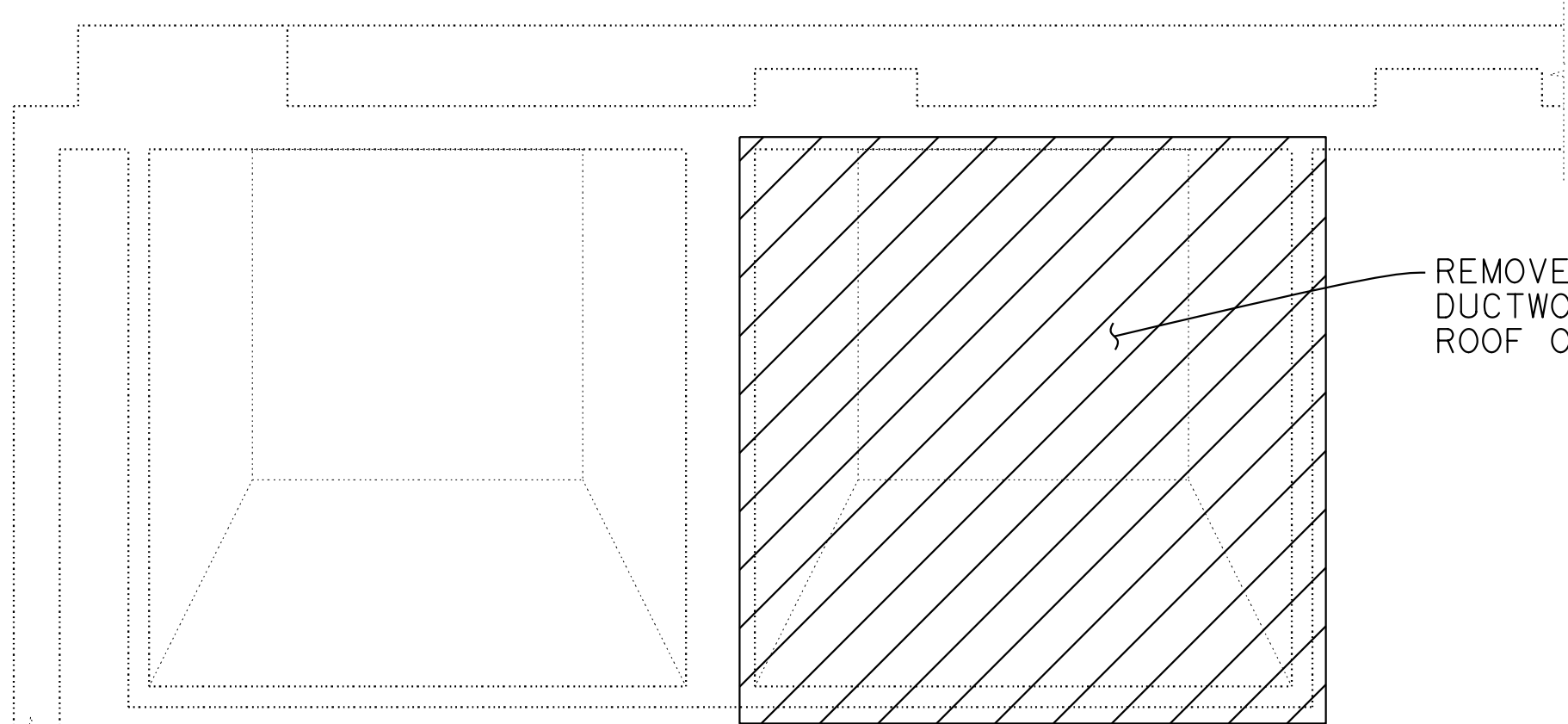
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER ELECTRICAL No. X Exp. X STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

DESIGN OVERSIGHT	DESIGN BY D. SHAH	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 1				
SIGN OFF DATE	DETAILS BY A. SANCHEZ	CHECKED			POST MILE X.X					
	QUANTITIES BY D. SHAH	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg110.dgn	TIME PLOTTED => 13:28 USERNAME => Carl	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 11/30/24	OF

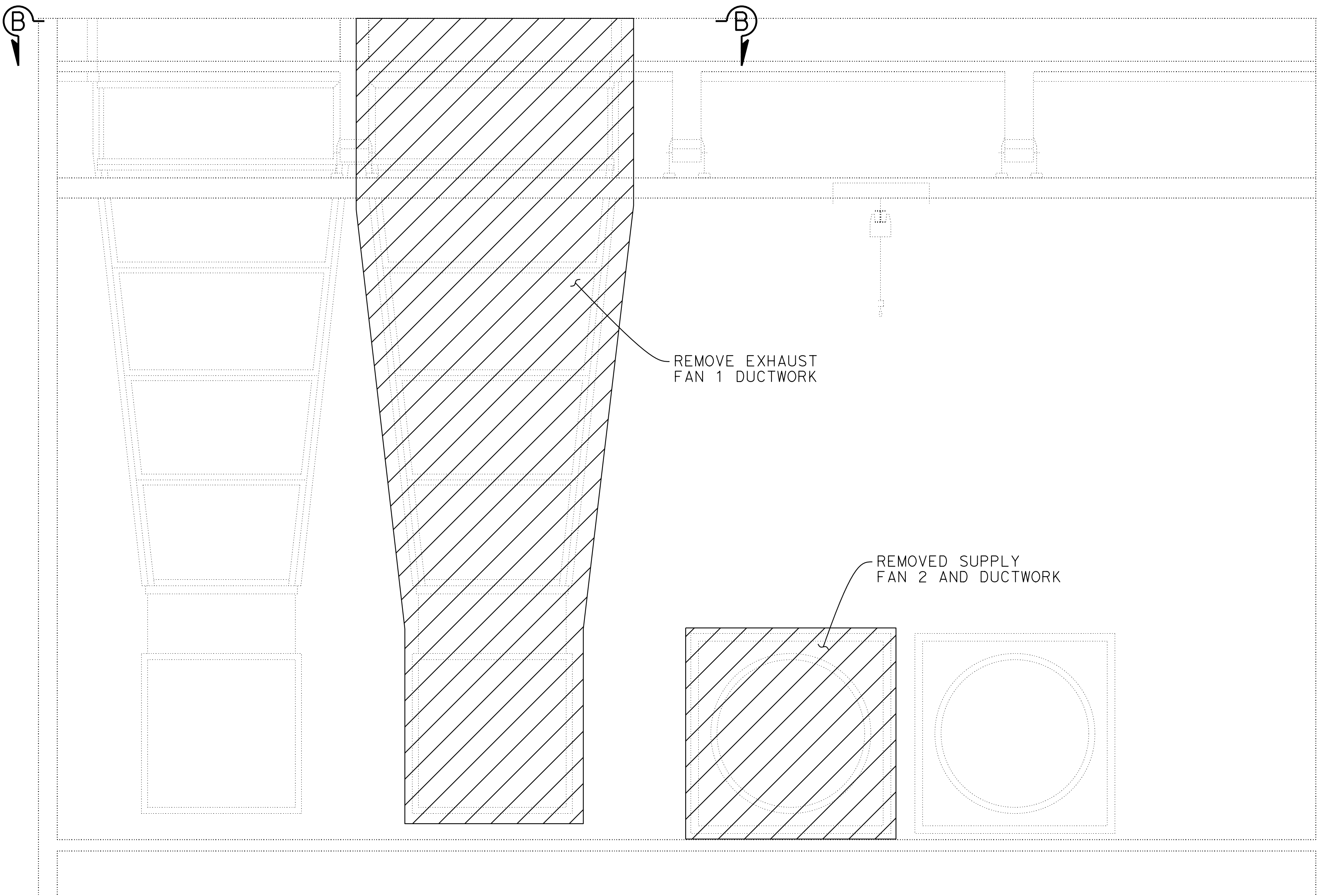


NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN - FAN ROOM
1/4" = 1'-0"



SECTION B-B
1/4" = 1'-0"



SECTION A-A
1/4" = 1'-0"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

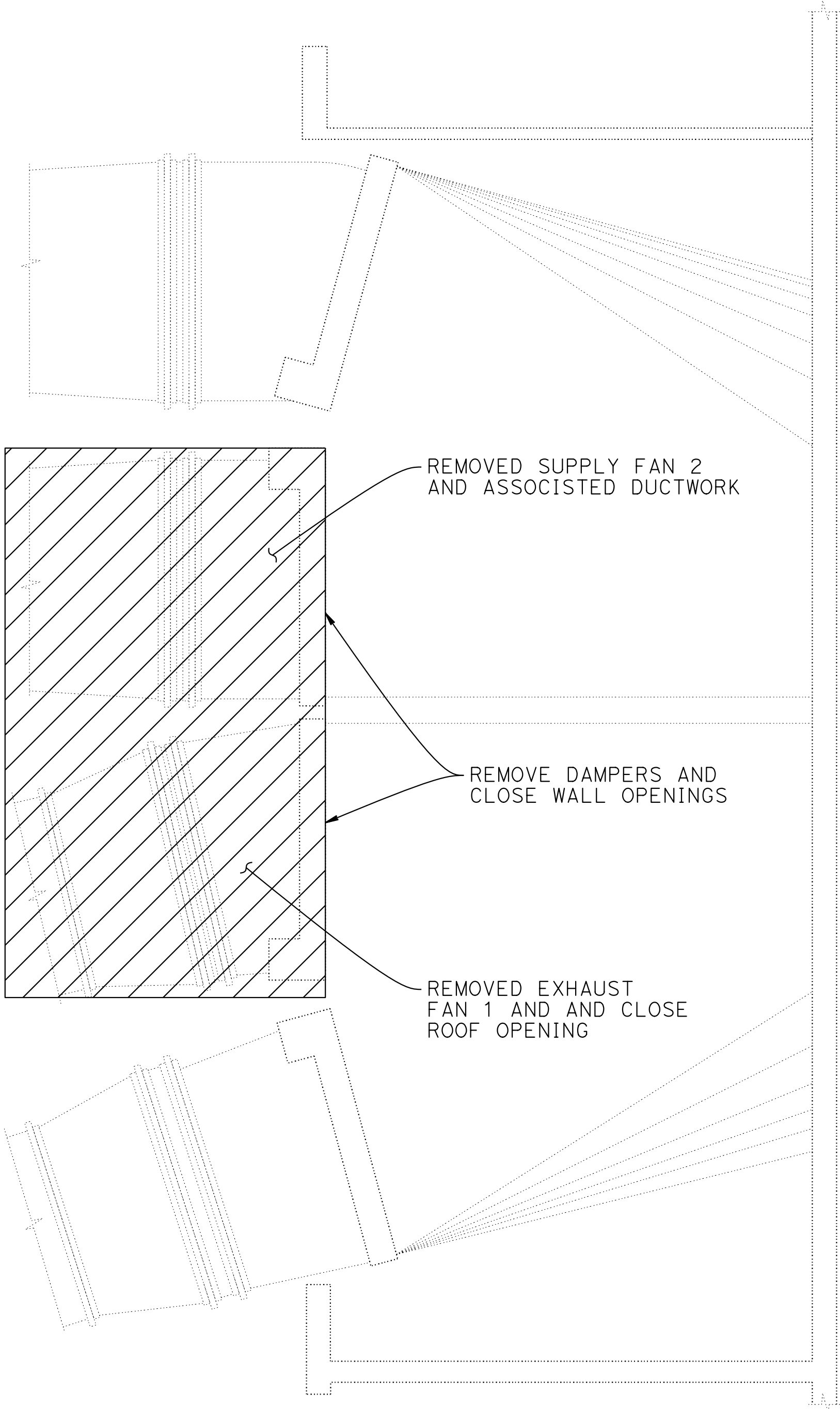
REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
ELECTRICAL
STATE OF CALIFORNIA

- NOTES:
1. Remove Existing Supply Fan 2 and Exhaust Fan 1 with associated ductwork, supports, dampers and electrical equipment and wiring.

M-109

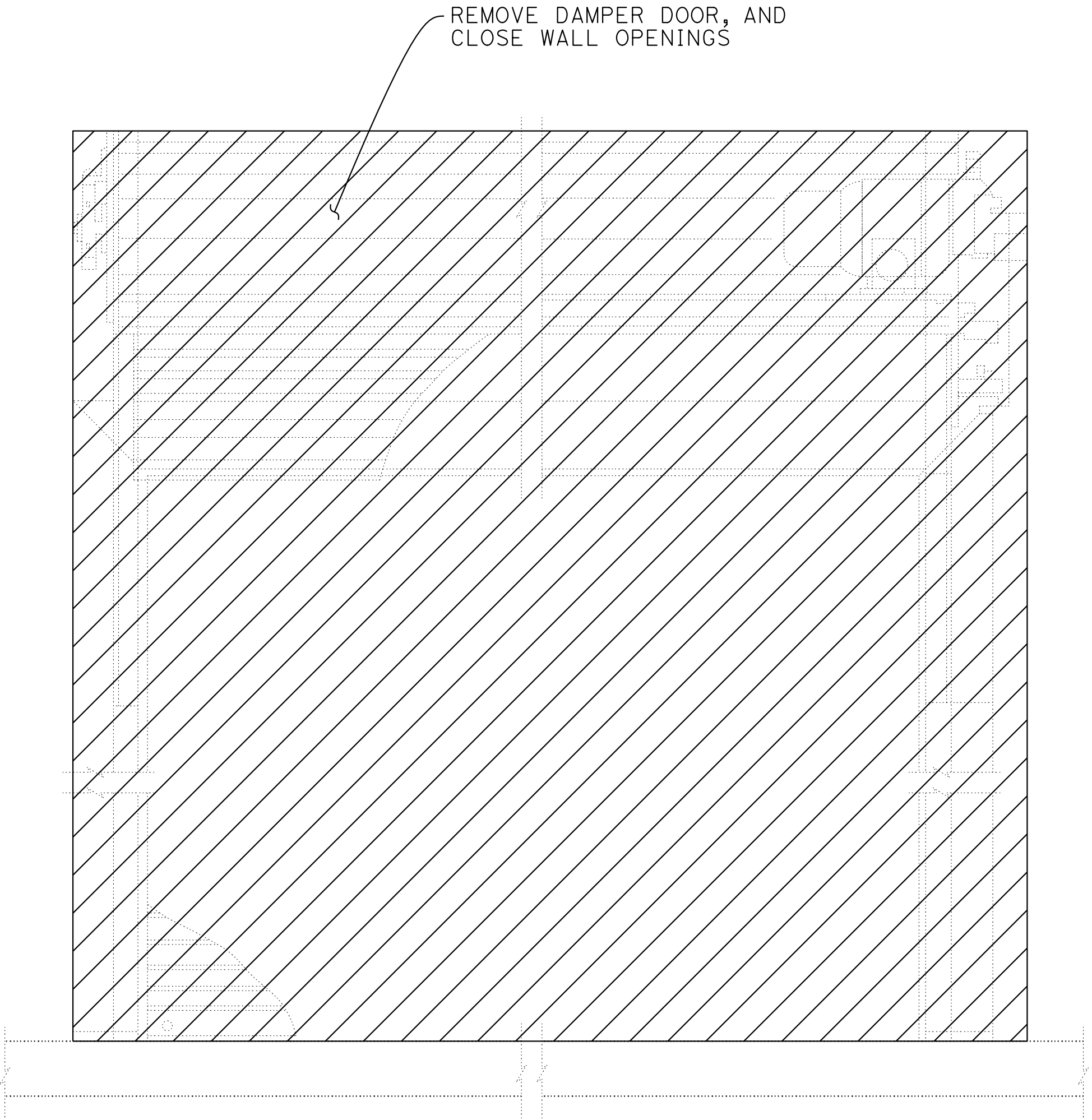
DESIGN OVERSIGHT		DESIGN BY D. SHAH		CHECKED		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		D. SHAH PROJECT ENGINEER		BRIDGE No. 28-0015R, 28-0015, 28-0015L		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 2							
SIGN OFF DATE		DETAILS BY A. SANCHEZ		CHECKED						POST MILE X.X									
		QUANTITIES BY D. SHAH		CHECKED															
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg111.dgn		TIME PLOTTED => 13:28 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET OF	
														11/30/24					

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



PLAN - DAMPER DOORS
1/4" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



ELEVATION - DAMPER DOOR
1/4" = 1'-0"

M-110

DESIGN OVERSIGHT		DESIGN		BY D. SHAH		CHECKED		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		D. SHAH PROJECT ENGINEER		BRIDGE No. 28-0015R, 28-0015, 28-0015L		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 WEST PORTAL FAN ROOM DEMOLITION PLAN NO. 3					
SIGN OFF DATE		DETAILS		BY A. SANCHEZ		CHECKED						POST MILE							
		QUANTITIES		BY D. SHAH		CHECKED						X.X							
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg112.dgn		TIME PLOTTED => 13:28 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET OF	
														11/30/24					

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

X

PLANS APPROVAL DATE

DATE

Exp. ELECTRICAL

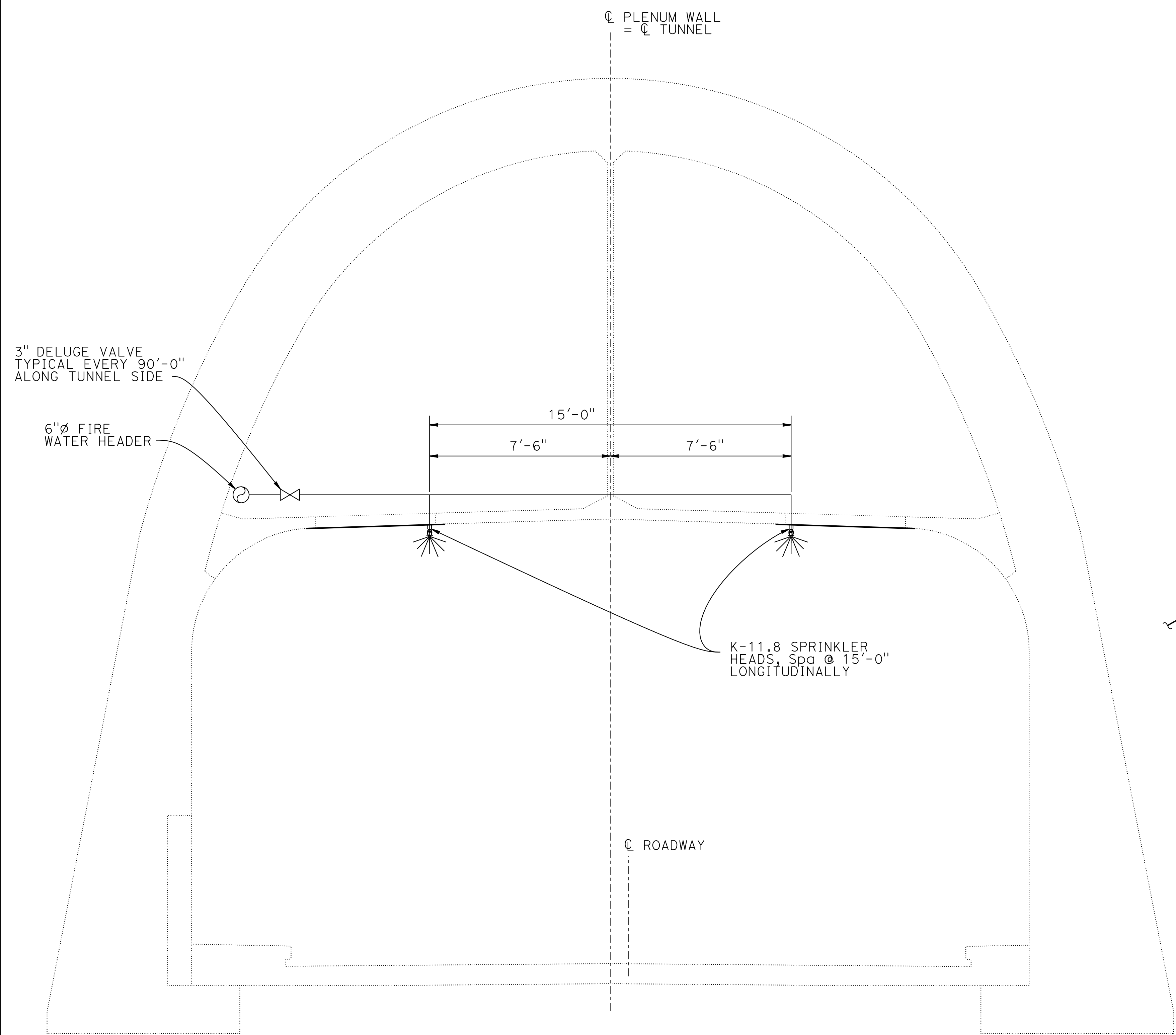
STATE OF CALIFORNIA

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
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

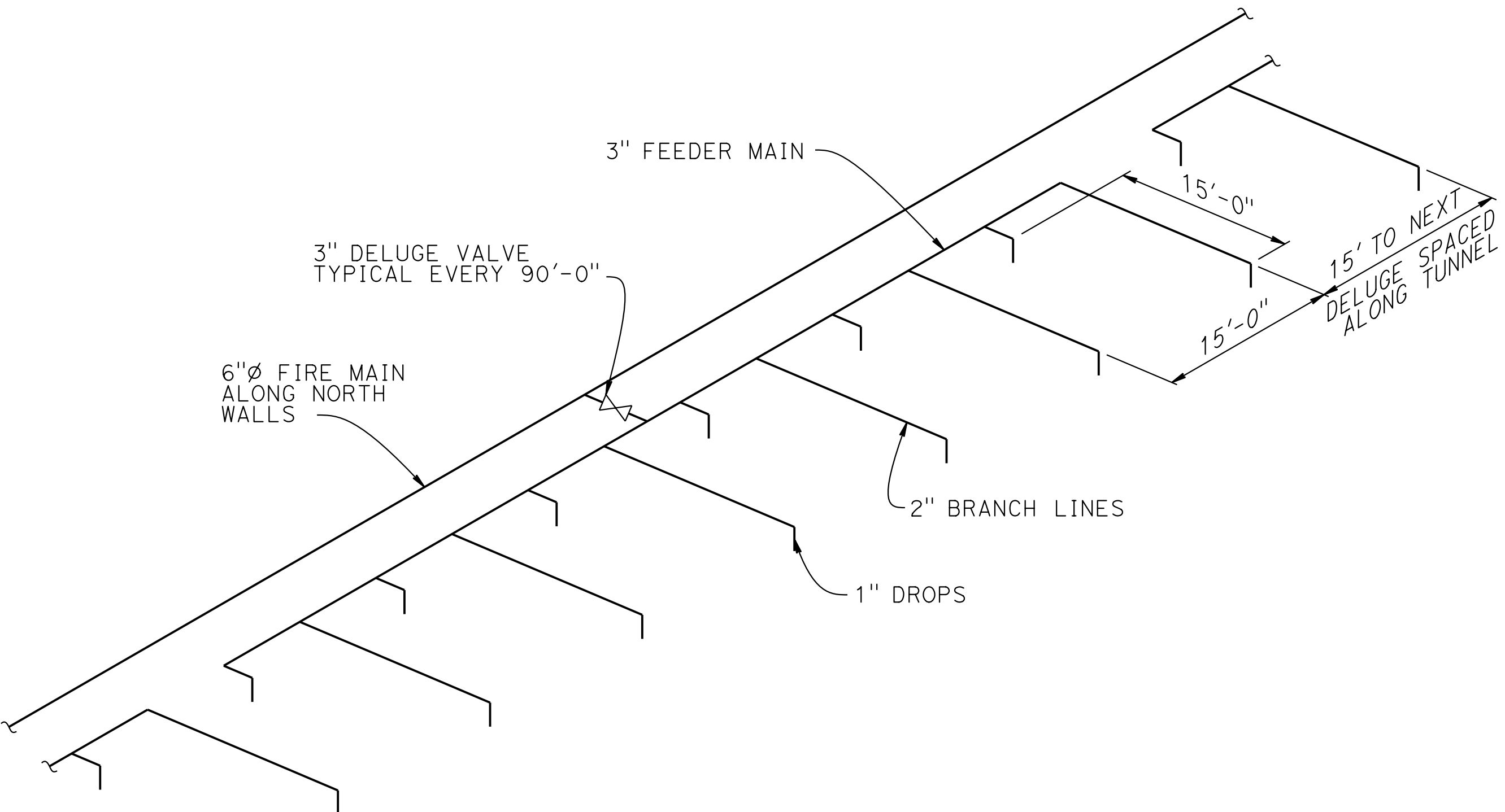
CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

NOTE:
Deluge Valve and piping locations can be adjusted to accommodate the Jet Fan locations.



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

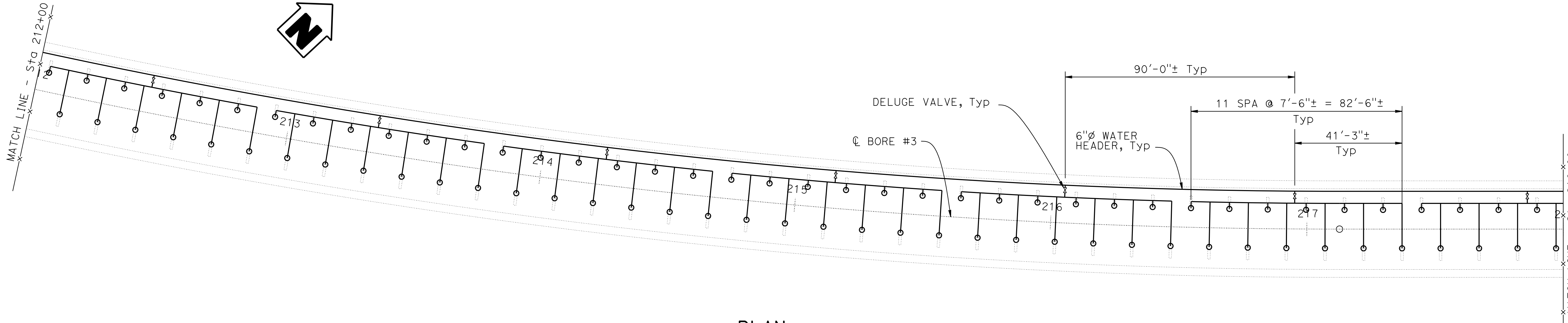
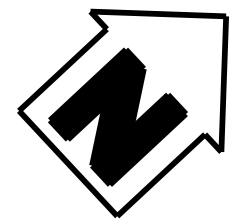
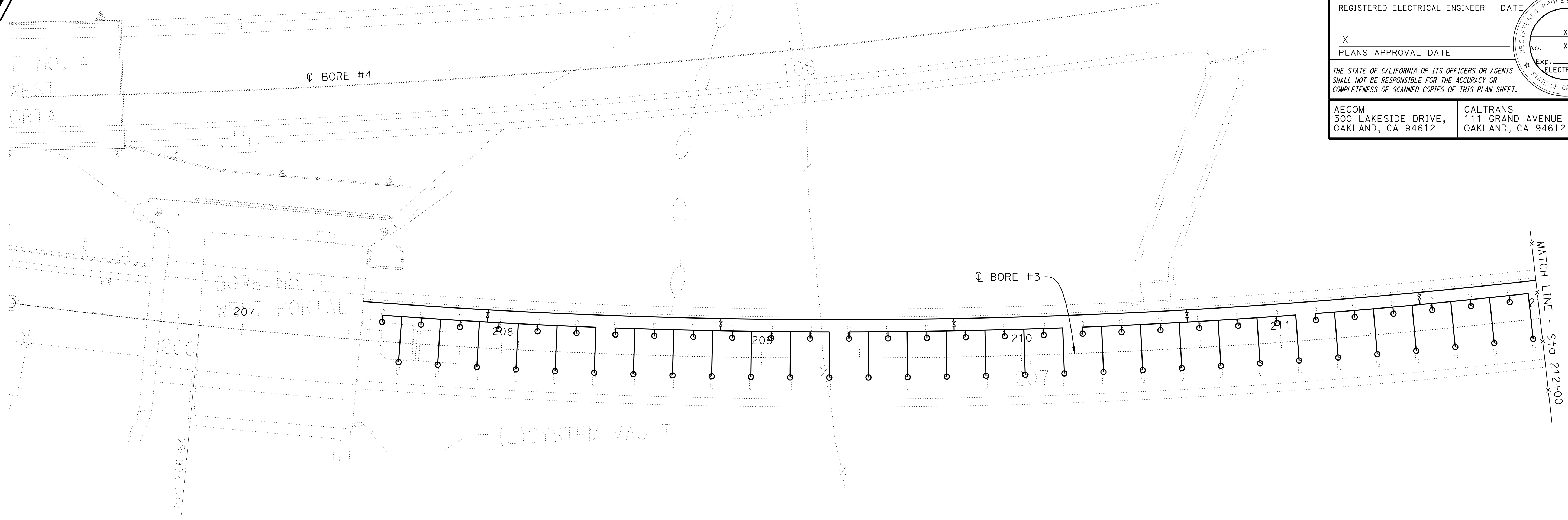
TYPICAL SECTION
3/8" = 1'-0"



DELUGE ISOMETRIC TYPICAL
NO SCALE

FP-100

DESIGN OVERSIGHT		DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 FIRE PROTECTION SCHEMATIC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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		SIGN OFF DATE		DATE PLOTTED ==> 04-DEC-2024			TIME PLOTTED ==> 08:49		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11/30/24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			



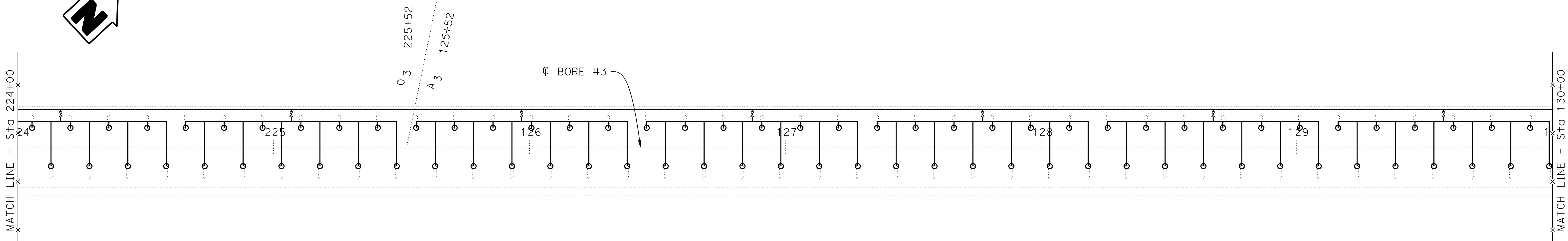
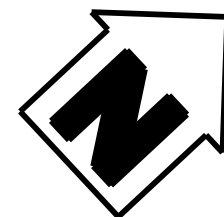
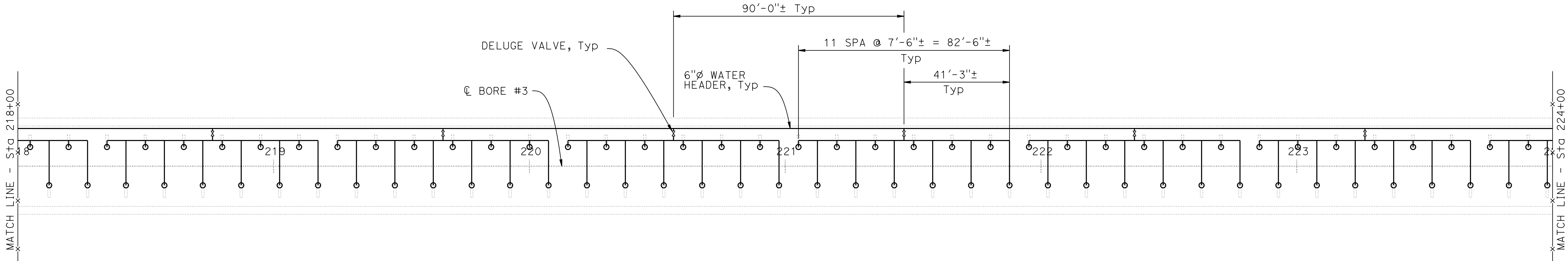
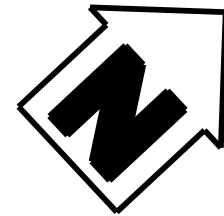
PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-102

DESIGN OVERSIGHT		DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 FIRE PROTECTION PLENUM PLAN 1 OF 3									
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE										
		QUANTITIES	BY J. LECHNER	CHECKED			X.X										
SIGN OFF DATE																	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg122.dgn		TIME PLOTTED => 13:28 USERNAME => Carl	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alameda/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11/30/24			SHEET	OF

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

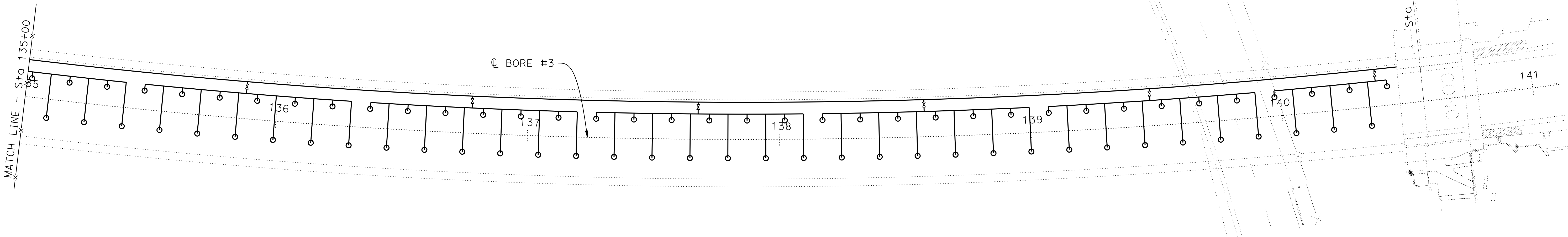
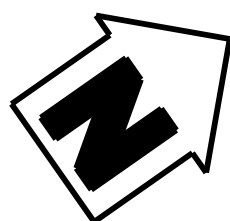
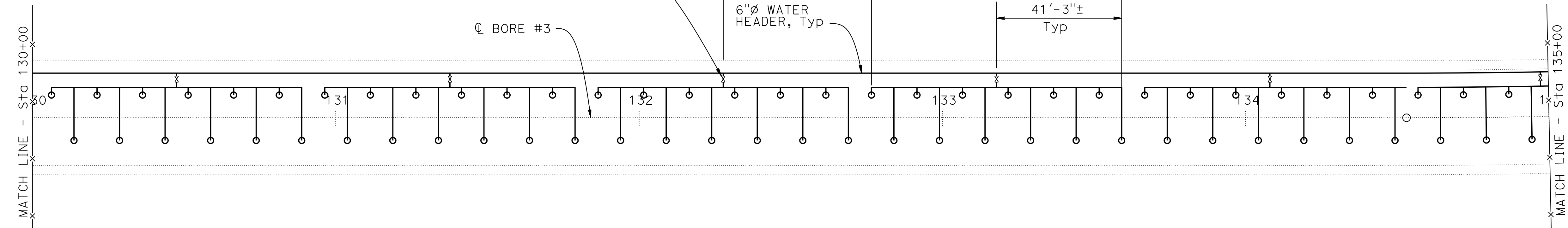
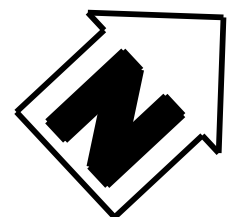


PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FP-103

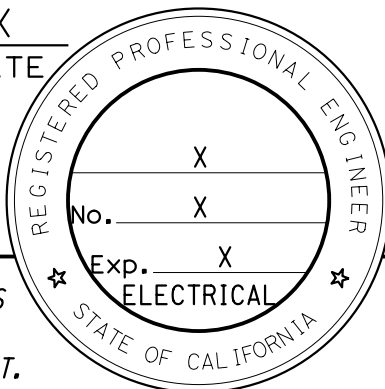
DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. LECHNER	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	D. SHAH PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 FIRE PROTECTION PLENUM PLAN 2 OF 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
		DETAILS	BY A. SANCHEZ	CHECKED			11/30/24						
		QUANTITIES	BY J. LECHNER	CHECKED									
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg123.dgn		TIME PLOTTED => 13:28 USERNAME => Carl		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		PROJECT NUMBER & PHASE: 0414000011			



PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



FP-104

DESIGN OVERSIGHT		DESIGN	BY J. LECHNER	CHECKED		BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3)					
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED		POST MILE X.X	BORE 3 FIRE PROTECTION PLENUM PLAN 3 OF 3					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 3-DEC-2024 FILE => 04A6797wg124.dgn		TIME PLOTTED => 13:28 USERNAME => Car1		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

INDEX TO PLANS

SHEET No.	TITLE
EE-1	ELECTRICAL DRAWING LIST
EE-2	ELECTRICAL LEGEND AND SYMBOLS
EE-3	ELECTRICAL ABBREVIATIONS
EE-4	SINGLE LINE DIAGRAM DEMO PLAN
EE-5	MODIFIED SINGLE LINE DIAGRAM
EE-6	PARTIAL SINGLE LINE DIAGRAM No. 1
EE-7	PARTIAL SINGLE LINE DIAGRAM No. 2
EE-8	EXISTING WEST PORTALS SITE PLAN
EE-9	EXISTING EAST PORTALS SITE PLAN
EE-10	MODIFIED WEST PORTALS SITE PLAN
EE-11	MODIFIED EAST PORTALS SITE PLAN
EE-12	WEST POWER BLOCK DIAGRAM
EE-13	EAST POWER BLOCK DIAGRAM
EE-14	BORE 3 WEST PORTAL ELECTRICAL EQUIPMENT PLAN
EE-15	BORE 1 & 2 WEST PORTAL ELECTRICAL EQUIPMENT PLAN
EE-16	EAST ELECTRICAL OUTDOOR EQUIPMENTS PLAN
EE-17	CONTROL AND MONITORING BLOCK DIAGRAM
EE-18	LOCAL CONTROL PANEL COMMUNICATION AND CONTROL DIAGRAM
EE-19	BORE 1, 2 & 3FACP SIGNALLING LINE CIRCUIT LOOP
EE-20	TYPICAL DELUGE SYSTEM DIAGRAM
EE-21	BORE 1, 2 & 3 LINEAR HEAT DETECTION SYSTEM (LHDS)

GENERAL NOTES
LOAD AND DESIGN CRITERIA

DESIGN:
National Electric Code (NEC) 2023 NFPA 502 - Road
Tunnels, Bridges California Standard Plans and
Specifications

VOLTAGE:
Medium Voltage: 12.4kV
3-phase Low Voltage: 480V
3-phase, 60Hz Control Voltage: 120V, 1-phase to 24V DC

LOAD CRITERIA:
Equipment sizing based on:
-Maximum ventilation load during emergency
-Continuous operation rating at 125%
Voltage drop limit: 3% for feeders, 5% total

ENVIRONMENTAL:
Equipment rated for:
-Ambient Temperture: 23°F to 104°F
-Humidity: Up to 95% non-condensing
-NEMA 12 minimum for indoor
-NEMA 4X for outdoor installations

COMMUNICATIONS:
Fiber Optic Network: Ring topology for redundancy
Maximum Attenuation: 0.4 dB/1000ft at 1310nm

CONTROL SYSTEM:
PLC-based control with:
-Redundant processors
-Hot-standby configuration
-UPS backup for critical controls

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTE:
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DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

EE-1

DESIGN OVERSIGHT		DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) ELECTRICAL DRAWING LIST							
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE								
		QUANTITIES	BY	CHECKED			X.X								
SIGN OFF DATE		DATE PLOTTED => 03-DEC-2024		TIME PLOTTED => 17:06		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET	OF
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		FILE => 04A6797wj001.dgn		USERNAME => AI		0		PROJECT NUMBER & PHASE: 0414000011				11/30/24			

— C — E —	CONDUIT: UP, DOWN, CAPPED
-----	CONDUIT CONCEALED
—————	CONDUIT, EXPOSED
-----E-----	CONDUIT EMBEDDED (LINETYPE SCALE IS REDUCED IN PLACES FOR CLARITY)
-----DB-----	UNDERGROUND DUCT BANK, ENCASED (LINETYPE SCALE IS REDUCED IN PLACES FOR CLARITY)
-X-X-X-	DEMOLITION LINE: INDICATE AREA SCHEDULED FOR DEMOLITION
—— BG ——	GROUND, BURIED
—— G ——	GROUND, EXPOSED
■ ———	BOLTED CONNECTION
● ———	EXOTHERMIC WELD CONNECTION
	NEUTRAL CONDUCTORS HOT CONDUCTORS HOMERUN CALLOUT INDICATING PANEL AND CIRCUIT NUMBERS WHERE CONDUIT IDENTIFIERS ARE NOT USED, CONDUITS SHALL HAVE 2#12 WIRES PLUS 1#12 GND IN 21mm CONDUIT, UNO BY NOTES OR HATCHES, HATCHES (IF USED) INDICATE NUMBER OF CONDUCTORS.
	DUPLEX RECEPTACLES, 457 AFF
	JUNCTION BOX ON STRUT
	JUNCTION BOX, WALL MOUNTED
	JUNCTION BOX, EMBEDDED
	J-BOX TYPE
	LIGHTING J-BOX, EMBEDDED (SEE LIGHTING J-BOX SCHEDULE)
	DISCONNECT SWITCH
	COMBINATION MOTOR STARTER
	THREE PHASE MOTOR EQUIPMENT ID AND HP AS NOTED
	GROUND ROD
	GROUND WELL
	2-32W T8 CEILING MOUNTED
	4" INDUSTRIAL FLUORESCENT, PENDANT MOUNTED OR STRUT MOUNTED.
	ON EMERGENCY SOURCE
	SINGLE FACE EXIT SIGN- WALL MOUNTED
	DOUBLE FACE EXIT SIGN- STRUT MOUNTED
	DOUBLE FACE EXIT SIGN WALL MOUNTED
●	GUARD POST
	NO MONITOR
	CO MONITOR
	FIRE EXTINGUISHER
	MANUAL PULL STATION (FIRE ALARM)
	CALL BOX

	MV-WP1	MV = MEDIUM VOLTAGE VAULT W = WEST PORTAL P = PG&E 1 = MANHOLE #1 SIZE = 2591(L) X 1372(W) X 1954(H)
	SYS	SYS = SYSTEMS VAULT 1 = NUMBER SIZE = 1219(L) X 1981(W) X 1676(H)
	MV-W3X	MV = MEDIUM VOLTAGE VAULT W = WEST PORTAL 3 = NUMBER X = OUTSIDE TUNNEL SIZE = 1750(L) X 1143(W) X 1954(H)
	LV-E2Y	LV = LOW VOLTAGE VAULT E = EAST PORTAL 2 = NUMBER Y = INSIDE TUNNEL SIZE = 1750(L) X 1143(W) X 1676(H)
		PANELBOARD
		150W TUNNEL LIGHT FIXTURE "TYPE H2"
		400W TUNNEL LIGHT FIXTURE "TYPE H1"
		HID LIGHTING FIXTURE, 150W, HPS WALL MOUNTED TYPE
		LIGHT SWITCH
		3-WAY LIGHT SWITCH
		MOTION SENSING LIGHT SWITCH
		MOTOR SPACE HEATER
		CONDUIT IDENTIFIER: NUMBER IN BUBBLE INDICATES CONDUIT NUMBER LX = LIGHTING P W 4 S1-1 - SEQUENTIAL NO. - S1, SWITCHGEAR 1 (SOURCE) - 123, MV UNIT SUBSTATION - G1, GENERATOR 1 - 4, BORE 4 - W, PORTAL 1 (WEST) - E, PORTAL 2 (EAST) - P, POWER - C, CONTROL
		CABLE PATH IDENTIFIER: NUMBER INSIDE DIAMOND INDICATES PATH NUMBER
	$\frac{152}{a}$	CIRCUIT BREAKER NORMALLY OPEN CONTACT
	$\frac{152}{b}$	CIRCUIT BREAKER NORMALLY CLOSED CONTACT
DEVICE NUMBER ID		
27M, 27-1	-	UNDERVOLTAGE RELAY
27-1X	-	AUXILIARY UNDERVOLTAGE RELAY
46	-	PHASE CURRENT UNBALANCE RELAY
49, 49T	-	THERMAL RELAY, MOTOR/TRANSFORMER WINDING OVERTEMPERATURE PROTECTION
48/51LR	-	EXCESSIVE STARTING TIME/LOCKED ROTOR
50	-	INSTANTANEOUS OVERCURRENT RELAY
50G	-	ZERO SEQUENCE GROUND FAULT PROTECTION
51	-	AC TIME OVERCURRENT RELAY

	FUSE
	SURGE ARRESTOR
	GROUND CONNECTION
	LIMIT SWITCH
	TRANSFORMER
	NORMALLY OPEN CONTACT F - FORWARD R - REVERSE
	NORMALLY CLOSED CONTACT
	BUS STAB OR LOAD BREAK ELBOW
	AUTOMATIC TRANSFER SWITCH
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	CABLE TERMINATION
	MOTOR HEATER
	MULTI METER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	DRAW-OUT TYPE VACUUM CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	POWER DISTRIBUTION PANEL (DP) /LIGHTING PANEL (LP)
	CABLE REEL
	MULTI PROTECTION RELAY
	LOW VOLTAGE POWER CIRCUIT BREAKER
	DRAW-OUT TYPE
	800A FRAME ABOVE LINE
	800A TRIP BELOW LINE
	WITH (3) CURRENT SENSORS
	CIRCUIT BREAKER
	SOLID STATE PROTECTION: "L" - LONG TIME PICK-UP & DELAY "S" - SHORT TIME PICK-UP & DELAY "I" - INSTANTANEOUS PICK-UP "G" - GROUND FAULT PICK-UP & DELAY "Z" - ZONE INTERLOCK

NOTE:
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FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING
ANY MATERIAL.

Diagram illustrating callout symbols for Project Note and Standard Plan Sheet:

- PROJECT NOTE CALLOUT:** A square symbol containing an 'X'.
- STANDARD PLAN SHEET NO. CALLOUT:** A large circle symbol divided horizontally. The top half contains an 'X' and the bottom half contains 'XXX'. Arrows point from the text labels to the top and bottom halves of the circle.
- DETAIL NO.:** Label for the top half of the Standard Plan Sheet No. callout.
- DETAIL NUMBER:** Label for the top half of the Project Detail/Plan Reference callout.
- PROJECT DETAIL/PLAN REFERENCE (SMALL BUBBLE):** A small circle symbol divided horizontally. The top half contains an 'X' and the bottom half contains 'XXX'. Arrows point from the text labels to the top and bottom halves of the circle.
- SHEET NUMBER:** Label for the bottom half of the Project Detail/Plan Reference callout.

S1 - MV SWGR PORTAL 1
S2 - MV SWGR PORTAL 2
W4 - UNIT SUBSTA. 12KV-4.16KV PORTAL 1
E4 - UNIT SUBSTA. 12KV-4.16KV PORTAL 2
W123 - UNIT SUBSTA. 12KV-480V PORTAL 1
E1234 - UNIT SUBSTA. 12KV-480V PORTAL 2

W 4 DP E X

- SEQUENTIAL NO.
- FED FROM EMERGENCY BUS (OPTIONAL)
- DP, POWER DISTRIBUTION PANEL
- LP, LIGHTING PANEL
- IN, INTERIOR LIGHTING PANEL
- TH, THRESHOLD LIGHTING PANEL
- SWB, SWITCHBOARD
- MCC, MOTOR CONTROL CENTER
- LIS LOAD INTERRUPT SWITCH
- BORE #4
- O, OUTDOOR
- W. PORTAL 1 (WEST)
- E. PORTAL 2 (EAST)

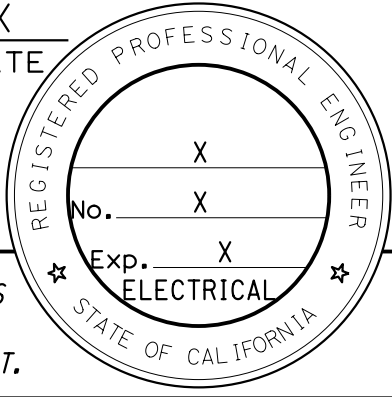
CPX D 1 N

- N, NORTH
- S, SOUTH
- SEQUENTIAL NO.
- D, DAMPER ACTUATOR
- F, FAN
- CP, CROSS PASSAGE
- ZSC, POSITION SWITCH CLOSE
- ZSO, POSITION SWITCH OPEN

ABBREVIATIONS

A	AMPERE, AMMETER	FDR	FEEDER	N	NEUTRAL	UG	UNDERGROUND
AC	AIR CONDITIONING	FIP	FIELD INTERFACE PANEL	(N)	NEW	UH	UNIT HEATER
AF	AMPERE FRAME	FLA	FULL LOAD AMPERES	NC	MORMALLY CLOSED	UL	UNDERWRITER’S LABORATORY
AH	AMPERE-HOUR	FLEX	FLEXIBLE	NEC	NATIONAL ELECTRIC CODE	UNO	UNLESS NOTED OTHERWISE
AFF	ABOVE FINISHING FLOOR	FLUOR	FLOURESCENT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	UPS	UNINTERRUPTIBLE POWER SUPPLY
AIC	AMPERE INTERRUPTING CAPACITY	FO	FIBER OPTIC				
ALT	ALTERNATE	FP	FIRE PUMP	NF	NON-FUSED	UV	UNDER-VOLTAGE
AMP	AMPERE	FTC	FIRE TELEPHONE CABINET	NF	NATIONAL FIRE PROTECTION ASSOCIATION		
AT	AMP TRIP	FVNR	FULL VOLTAGE NON-REVERSING	NFPA	NOT IN CONTRACT - TO BE INSTALLED	V	VOLT, VOLTMETER
ATS	AUTOMATIC TRANSFER SWITCH	FVR	FULL VOLTAGE REVERSING	NIC	BY OTHERS	VA	VOLT-AMPERE
AS	AMMETER SWITCH			NO	NORMALLY OPEN	VAC	VOLT, ALTERNATING CURRENT
AUTO	AUTOMATIC	GA	GAGE			VIDS	VIDEO IMAGE DETECTION SYSTEM
AWG	AMERICAN WIRE GAUGE	GB	GROUND BAR	OC	ON CENTER		
		GEN	GENERATOR	OL	OVERLOAD	VMS	VARIABLE MESSAGE SIGN
BAT	BATTERY	GFI	GROUND FAULT CIRCUIT INTERRUPTER	OMC	OPERATION AND MAINTENANCE CENTER	VT	VOLTAGE TRANSFORMER
BCW	BARE COPPER WIRE	GFP	GROUND FAULT PROTECTION	OV	OVER-VOLTAGE	VS	VOLTMETER SWITCH
BKR	BREAKER	G, GND	GROUND				
BLDG	BUILDING			PA	PUBLIC ADDRESS	W	WIRE
BS	BYPASS SWITCH	HH	HANDHOLE	P	POLE	W/	WITH
		HID	HIGH INTENSITY DISCHARGE	PE	PHOTO-ELECTRIC CELL	WB	WEST BOUND
C	CONDUIT, CLOSE	HPS	HIGH PRESSURE SODIUM	PF	POWER FACTOR	WP	WEATHERPROOF
CB	CIRCUIT BREAKER	HR	HOME RUN	PH	PHASE	XFMR	TRANSFORMER
CCTV	CLOSED CIRCUIT TELEVISION	HTR	HEATER	PLC	PROGRAMMABLE LOGIC CONTROLLER		
CHGR	CHARGER	HV	HIGH VOLTAGE				
CKT	CIRCUIT	HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	PNL	PANEL		
Ⓢ	CENTERLINE			PRI	PRIMARY		
CMS	CHANGEABLE MESSAGE SIGN	HZ	HERTZ	PROT	PROTECTION		
CO	CONDUIT ONLY			PVC	POLYVINYL CHLORIDE		
COMM	COMMUNICATIONS	ID	IDENTIFICATION	PWR	POWER		
CONN	CONNECTED	IDF	INTERMEDIATE DISTRIBUTION FRAME				
CONT'D	CONTINUED	IG	ISOLATED GROUND	QTY	QUANTITY		
CONV	CONVENIENCE						
CP	CONTACTOR PANEL	JB	JUNCTION BOX	RECEPT	RECEPTACLE		
CPP	CROSS PASSAGE FOR PEDESTRIAN	JF	JET FAN	RGS	RIGID GALVANIZED STEEL		
CPT	CONTROL POWER TRANSFORMER			RM	ROOM		
CS	CONTROL SWITCH	KCMIL	THOUSAND CIRCULAR MILS	RMS	ROOT MEAN SQUARE		
CT	CURRENT TRANSFORMER	KV	KILOVOLT	RPM	ROTATIONS PER MINUTE		
CU	COPPER	KVA	KILOVOLT-AMPERE	RRBA	RADIO REBROADCAST AMPLIFIER		
		KW	KILOWATT	RTD	RESISTANCE TEMP. DETECTOR		
DB	DIRECT BURIAL	KWD	KILOWATT DEMAND				
DC	DIRECT CURRENT	KWH	KILOWATT-HOUR	SCA	SHORT CIRCUIT AMPS		
DH	DUCT HEATER			SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION		
DIA, ∅	DIAMETER, NOMINAL DIAMETER	LHDP	LINEAR HEAT DETECTOR PANEL				
DISC	DISCONNECT	LED	LIGHT EMITTING DIODE	SCH	SCHEDULE		
DIV	DIVISION	LP	LIGHTING PANEL	SEC	SECONDARY		
		LTG	LIGHTING	SEL	SELECTOR		
EB	EAST BOUND			SGB	SYSTEM GROUND BUS		
EGB	EQUIPMENT GROUND BUS	M/E	MECHANICAL/ELECTRICAL	SN, S/N	SOLID NEUTRAL		
ELECT	ELECTRICAL	MAX	MAXIMUM	SP	SUMP PUMP		
ELEV	ELEVATION	MCB	MAIN CIRCUIT BREAKER	SPD	SPEED		
EMERG	EMERGENCY	MCP	MOTOR CIRCUIT PROTECTOR	SS	STAINLESS STEEL		
EMS	EXTINGUISHABLE MESSAGE SIGN	MDF	MAIN DISTRIBUTION FRAME	SSCB	SOLID STATE CIRUIT BREAKER		
EMT	ELECTRICAL METALLIC TUBING	MECH	MECHANICAL	ST	SHUNT TRIP		
EQUIP	EQUIPMENT	MFR	MANUFACTURER	SW	SWITCH		
ETM	ELASPED TIME METER			SWBD	SWITCHBOARD		
EXH	EXHAUST	MIN	MINIMUM	SWGR	SWITCHGEAR		
(E),	EXISTING	MLO	MAIN LUGS ONLY				
EXIST		MTD	MOUNTED	T	TRIP		
		MTS	MANUAL TRANSFER SWITCH	TB	TERMINAL BOX, TERMINAL BLOCK		
FA	FIRE ALARM	MV	MEDIUM VOLTAGE	TDR	TIME DELAY RELAY		
FACP	FIRE ALARM CONTROL PANEL	MVA	MEGA VOLT AMPERE	TEL	TELEPHONE		
FC	FOOT CANDLES	MVS	MEDIUM VOLTAGE STARTER	TOS	TRAFFIC OPERATIONS SYSTEM		
				TS	TEST SWITCH		
				TUN	TUNNEL		
				TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR		

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

GENERAL NOTES

1.

ALL CLAMPS, BOXES, FITTINGS, AND DEVICES SHALL BE BOLTED TO THE STRUCTURE UNLESS OTHERWISE SPECIFIED OR AS SHOWN ON PLAN.
2.

ALL EXPOSED CIRCUIT OR CONDUCTOR CONNECTIONS SHALL BE PROTECTED WITH A CORROSION-INHIBITING COATING.
3.

CONDUIT ROUTING IS DIAGRAMMATIC. PULL BOX LOCATIONS SHALL BE LOCATED AS SHOWN ON PLAN DRAWINGS. CONTRACTOR SHALL PROVIDE ADDITIONAL PULL BOXES AS REQUIRED. EXACT LOCATIONS OF EQUIPMENT AND DEVICES MAY BE ADJUSTED DEPENDING ON FIELD CONDITIONS OR BY THE ENGINEER.
4.

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSION AND CONDITIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
5.

ALL HOLES IN CABINETS, CONDUIT BODIES, OR JUNCTION BOXES SHALL BE COVERED WITH THE APPROPRIATE TYPE PLUG FOR THE APPLICATION AFTER ANY CONDUIT, CABLE, OR DEVICE IS REMOVED.
6.

ANY ELECTRICAL ITEM OR WORK NOT SHOWN ON THE PLANS BUT MENTIONED IN THE SPECIAL PROVISIONS, OR VICE VERSA OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED, DELIVERED, AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE STATE.
7.

ALL CONNECTIONS OF CONDUITS TO JUNCTION OR PULL BOXES AND ANY METALLIC ITEM SHALL BE DONE USING THREADED INSULATED BONDING BUSHING (PRESSURE TYPE LUG) WITH GASKETED SEALING LOCKNUT AND MOISTURE PROOF HUB WITH "O" RING.
8.

BEFORE COMPLETION OF ALL ELECTRICAL WORK THE CONTRACTOR SHALL LABEL CIRCUIT NUMBER AND/OR CALL BOX NUMBER IN EACH PULL BOX, JUNCTION BOX AND WIRING TROUGH.
9.

IN ADDITION TO THE 2004 EDITION OF CALIFORNIA ELECTRICAL CODE (CEC) THE CONTRACTOR SHALL ADHERE TO THE LATEST EDITION OF NATIONAL ELECTRICAL SAFETY (NESC), AND IF THE CODES ARE IN CONFLICT THEN THE ENGINEER SHALL DETERMINE WHICH CODE IS APPLICABLE AND THE CONTRACTOR SHALL BEAR THE COST FOR THE CORRECTION.
10.

ALL CONDUITS, INCLUDING SPARES, SHALL BE PROVIDED WITH PULL WIRES PRIOR TO CABLE INSTALLATIONS.
11.

ALL EQUIPMENT AND DEVICES SHALL BE PROVIDED WITH NAMEPLATE TAGS PER DRAWINGS.
12.

ALL 480V FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH GROUND WIRE.
13.

CONTRACTOR SHALL LABEL ALL CONDUCTORS AND CABLES PER WIRING DIAGRAMS.
14.

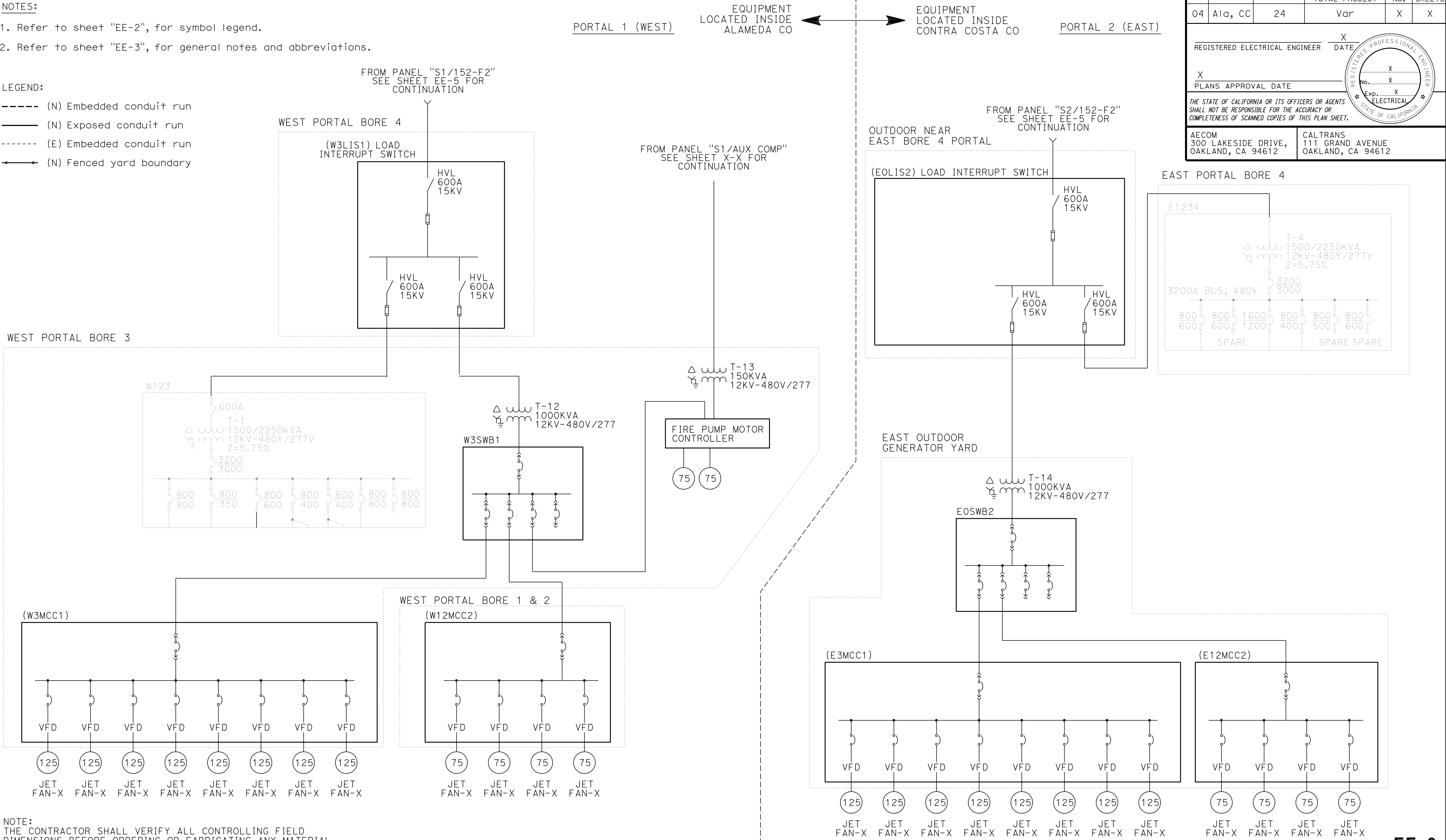
ALL ELECTRICAL SHEETS ARE ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN OVERSIGHT		DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) ELECTRICAL ABBREVIATIONS											
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE												
		QUANTITIES	BY	CHECKED			X.X												
SIGN OFF DATE		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj003.dgn		TIME PLOTTED => 17:07 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES		SHEET	OF		
														11/30/24					

- NOTES:
1. Refer to sheet "EE-2", for symbol legend.
 2. Refer to sheet "EE-3", for general notes and abbreviations.

LEGEND:

- (N) Embedded conduit run
——— (N) Exposed conduit run
----- (E) Embedded conduit run
- (N) Fenced yard boundary



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X	DATE	
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

REGISTERED PROFESSIONAL ENGINEER

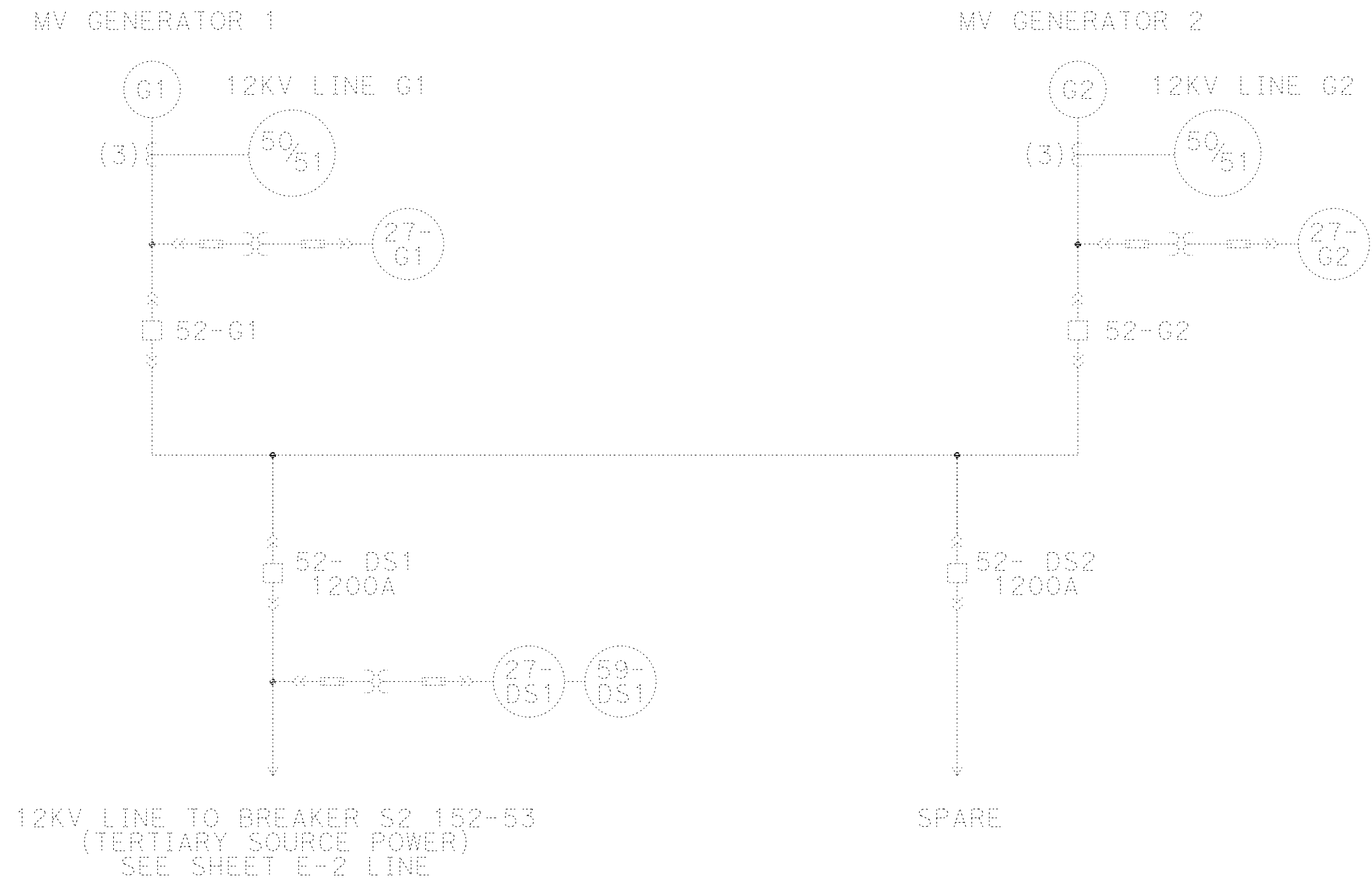
No. X

Exp. X

ELECTRICAL

STATE OF CALIFORNIA

DESIGN OVERSIGHT	DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) PARTIAL SINGLE LINE DIAGRAM NO. 1			
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED				POST MILE X.X				
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	QUANTITIES	BY	CHECKED			PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wj012.dgn		TIME PLOTTED => 13:16 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0	1	2	3	11/30/24	



NOTES:

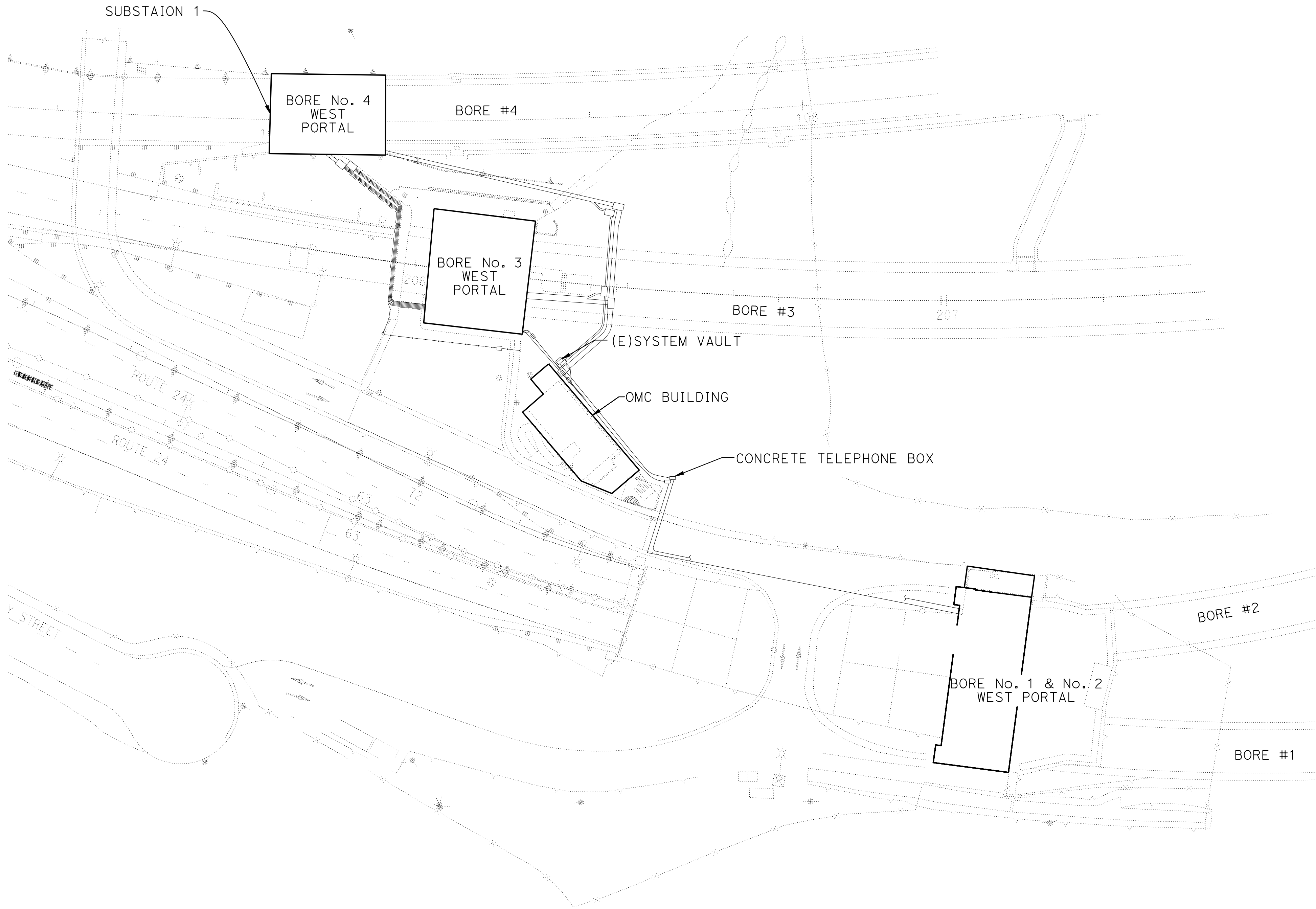
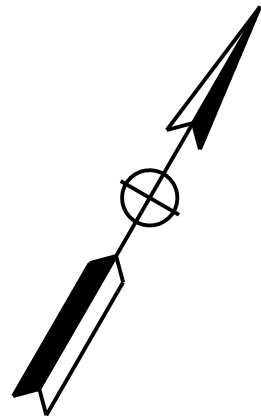
- The MV power is provided by two generators G1 and G2.
- G1 is a MV generator, It provides power 12kV, 3 phase, 2.5MW.
- G2 is a MV generator, It provides power 12kV, 3 phase, 2.5MW.
- Switchgear 52-G1 and 52-G2 synchronize and combine power from sources G1 and G1.
- The total power from G1 and G2 is 5MW.
- SSPDC, switchgear system is built on 25x25 feet. The medium voltage cabinets, 125 VDC battery system will come prefabricated and assembled. ASCO will deliver this equipment.
- The GC will terminate all connections between SSPDC and generator enclosure as per manufacturer drawings.
- The parallel power from both sources G1 and G2 is fed by switchgear 52-DS1 and 52-DS2.
- 52-DS1 and 52-DS2 are tertiary source power distribution circuit breakers.
- Switch 52-DS1 feeds power to substation S2.
- Switchgear 52-DS2 is a spare breaker, available for future scope.
- Refer to sheet "EE-2", for symbol legend.
- Refer to sheet "EE-3", for general notes and abbreviations.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

EE-7

DESIGN OVERSIGHT		DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) PARTIAL EXISTING SINGLE LINE DIAGRAM NO. 2				
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X					
		QUANTITIES	BY	CHECKED								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj013.dgn		TIME PLOTTED => 17:10 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



- NOTES:
- 1. Refer to sheet EE-2 for Symbol Legend.
 - 2. Refer to sheet EE-3 for General Notes and Abbreviations.

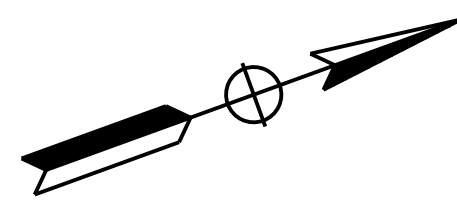
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 40'-0"

EE-8

DESIGN OVERSIGHT		DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) EXISTING WEST PORTAL SITE PLAN				
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE					
SIGN OFF DATE		QUANTITIES	BY	CHECKED			X.X					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj014.dgn		TIME PLOTTED => 17:11 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		014000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET OF



NOTES:

- 1. Refer to sheet EE-2 for Symbol Legend.
- 2. Refer to sheet EE-3 for General Notes and Abbreviations.
- 3. Relocate the (E) CCTV pole located outside the current outdoor equipment yard. Coordinate with Caltrans to determine the new location.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

X

PLANS APPROVAL DATE

DATE

X

Exp. X

REGISTERED PROFESSIONAL ENGINEER

No. X

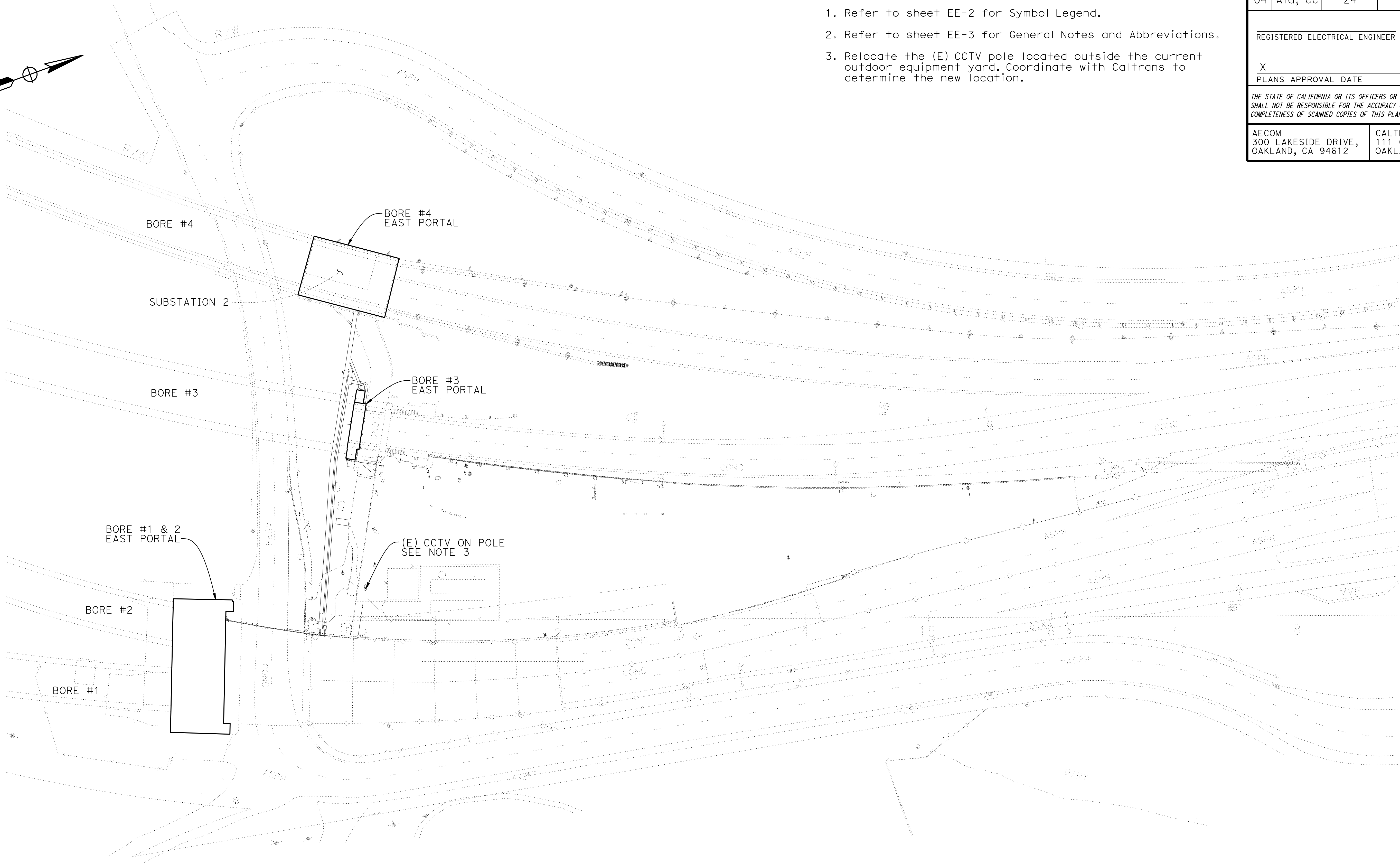
Electrical

STATE OF CALIFORNIA

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
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

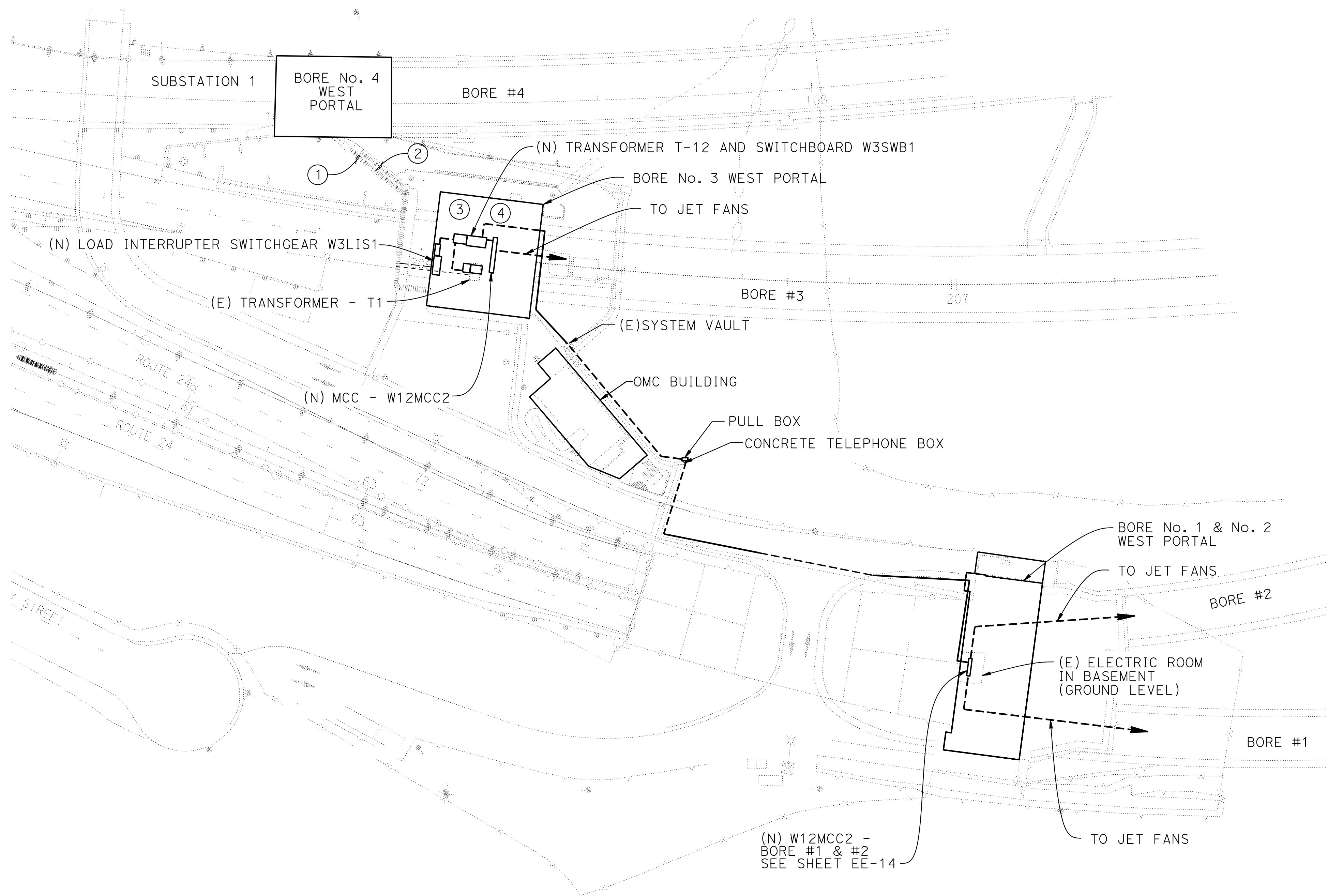
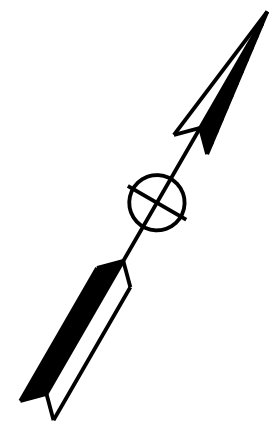


NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 40'-0"

EE-9

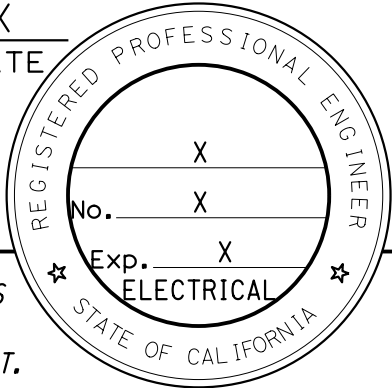
		DESIGN		BY	M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		H. KEREMO PROJECT ENGINEER		BRIDGE No.		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) EXISTING EAST PORTALS SITE PLAN																												
DESIGN OVERSIGHT		DETAILS		BY	A. SANCHEZ	CHECKED					28-0015R, 28-0015, 28-0015L																														
SIGN OFF DATE		QUANTITIES		BY		CHECKED					POST MILE																														
											X.X																														
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)						DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wj015.dgn				TIME PLOTTED => 12:26 USERNAME => AI				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0	1	2	3	PROJECT NUMBER & PHASE: 0414000011				COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401				DISREGARD PRINTS BEARING EARLIER REVISION DATES				REVISION DATES				SHEET		OF	
																										11/30/24															



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 40'-0"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			No. X		
PLANS APPROVAL DATE			Exp. X		
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



GENERAL NOTES:

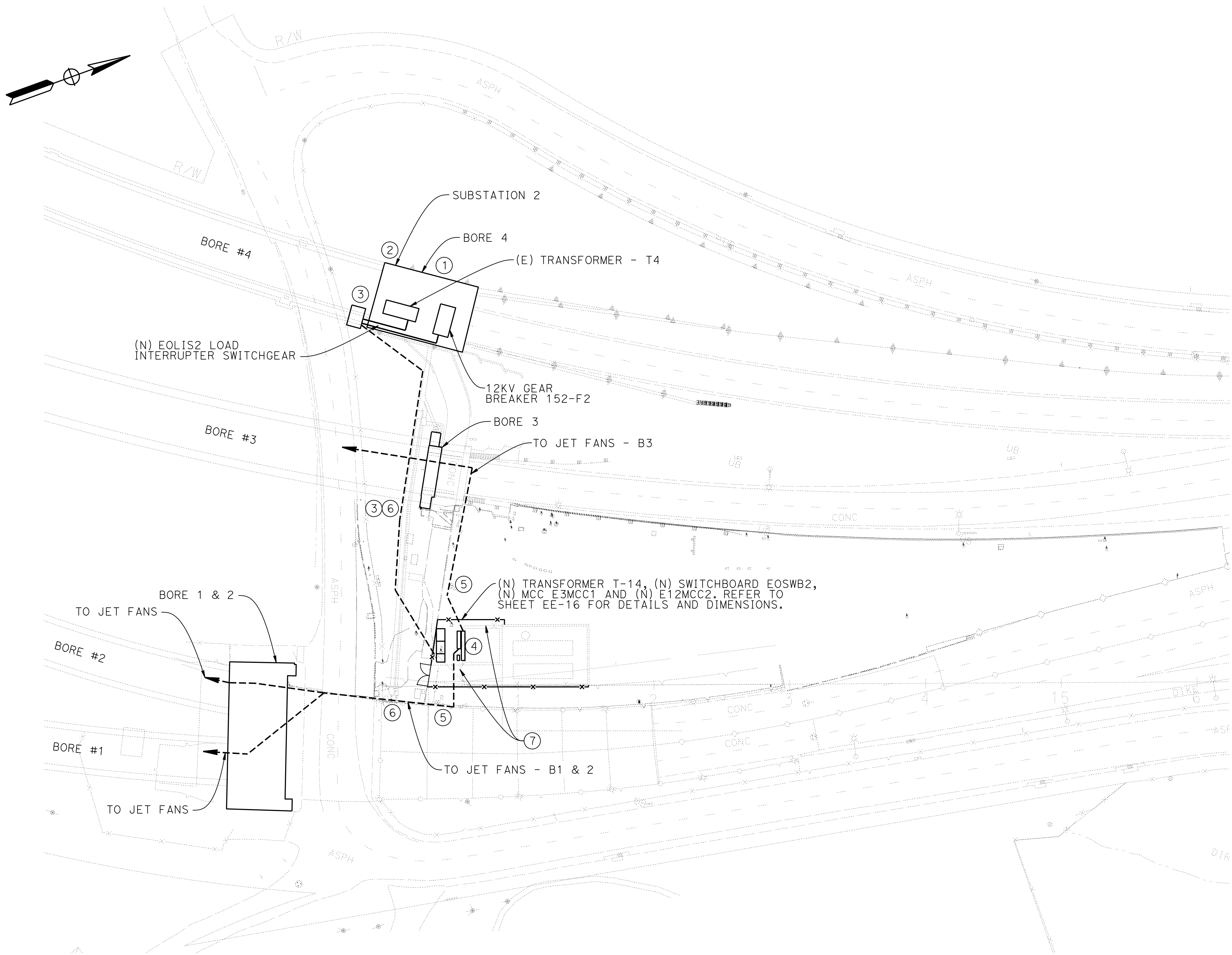
1. Refer to sheet EE-2 for Symbol Legend.
2. Refer to sheet EE-3 for General Notes and Abbreviations.
3. The location of existing conduits and pull boxes shown are approximate and must be field verified.
4. Not all pull boxes shown.

KEY NOTES:

- ① Remove (E) incoming feeder from switchgear breaker 152-F2 in Bore #4 to transformer T1 in Bore #3
- ② Provide (N) feeder from switchgear breaker 152-F2 in substation 1 to:
A. (N) load interrupter switch W3LIS1 and in Bore #3.
B. (N) 150KVA transformer T-13, serving fire pump motor controller.
- ③ One (N) feed from the load interrupter switchgear W3LIS1 will serve the (E) transformer T1, in Bore #3. A second feed from W3LIS1 will supply the new switchboard W3SWB1 via transformer T-12.
- ④ Provide a (N) feeder from (N) switchboard W3SWB1 to each of the following loads for power supply:
A. MCC - W3MCC1 in Bore #3.
B. MCC - W12MCC2 in Bore #1 & #2.
C. Fire pump motor controller
- ⑤ Follow the (E) routing path for conduits on-site and run (N) conduit parallel to the (E) conduit runs from switchboard W3SWB1 to W12MCC2 in Bore #1 & #2. Maintain all (E) electrical work in place where trenching is required to run (N) conduit.

EE-10

DESIGN OVERSIGHT	DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) MODIFIED WEST PORTALS SITE PLAN		
	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X			
SIGN OFF DATE	QUANTITIES	BY	CHECKED			PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj016.dgn		TIME PLOTTED => 17:12 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
1" = 40'-0"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
ELECTRICAL
STATE OF CALIFORNIA

NOTES:

1. Refer to sheet EE-2 for Symbol Legend.
2. Refer to sheet EE-3 for General Notes and Abbreviations.

GENERAL NOTES:

- 1 Refer to sheet EE-2 for Symbol Legend.
- 2 Refer to sheet EE-3 for General Notes and Abbreviations.
- 3 The location of existing conduits and pull boxes shown are approximate and must be field verified.
- 4 Not all pull boxes shown.

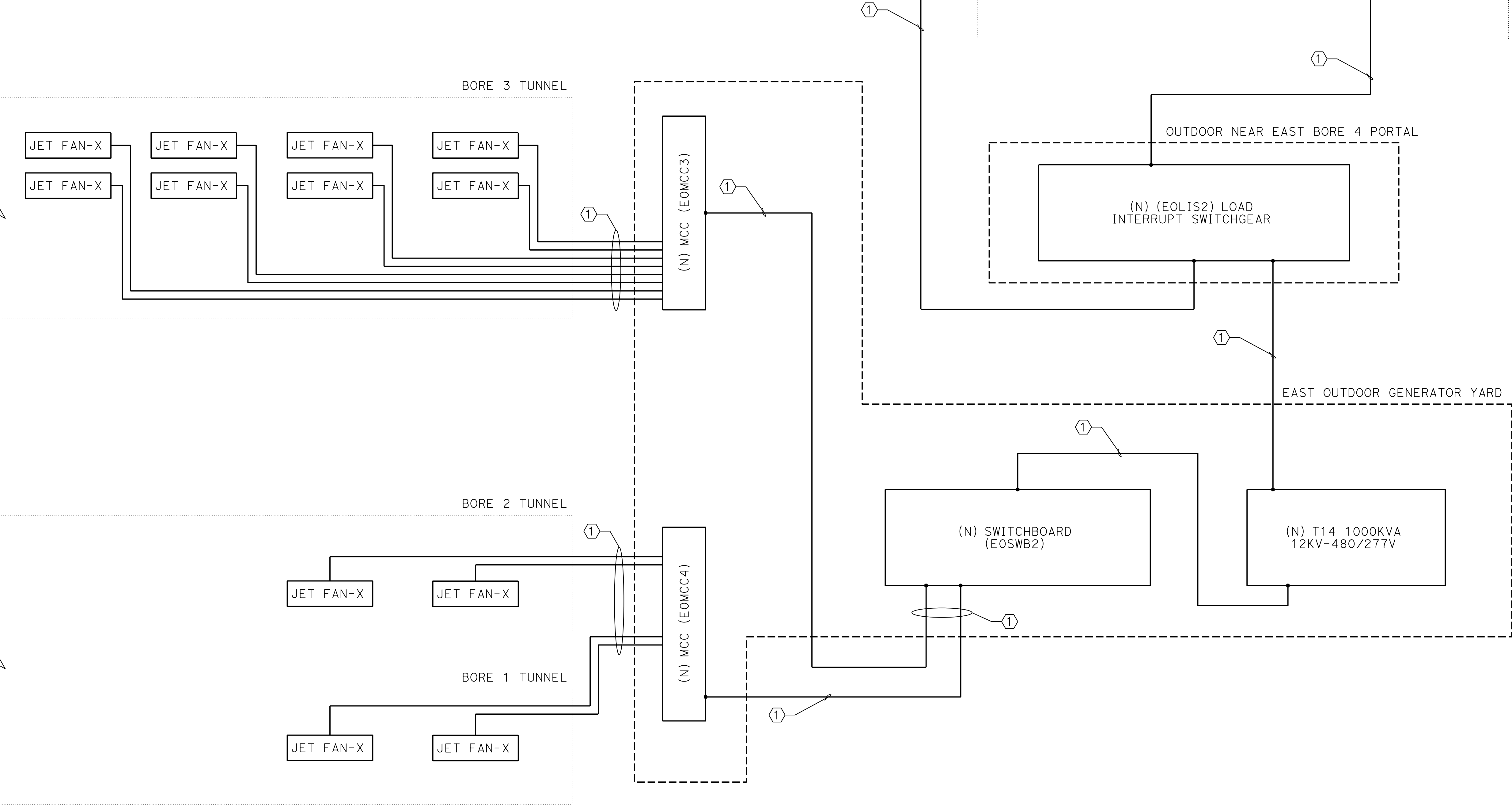
KEY NOTES:

- ① Demolish (E) incoming feeder from switchgear breaker 152-F2 in Bore 4, Substation 2 to transformer 4.
- ② Provide (N) feeder run and conduit run from switchgear breaker 152-F2 in Substation 2 to (N) load interrupter switchgear EOLIS2 in Bore 4, Substation 2.
- ③ One (1) feed from load interrupter switch EOLIS2 will serve one (E) transformer T4 in Bore 4. A second feed from the EOLIS2 will serve (N) switchboard EOSWB2 in (N) outdoor equipment yard.
- ④ (N) switchboard EOSWB2 will serve:
A. MCC-E3MCC1 in outdoor equipment yard.
B. MCC-E12MCC2 in outdoor equipment yard.
- ⑤ Provide new feeders and conduits running from respective MCC's to jets fans in bore 1 & 2 and bore 3.
- ⑥ Follow (E) routing path and run (N) conduit parallel to the (E) conduit runs from EOLIS2 to Bore 1 & 2. Maintain all (E) electrical work in place where trenching is required to run (N) conduit.
- ⑦ The (E) fence and gate, as indicated, will be removed. The (N) equipment will be integrated with the (E) generator facility. The (E) fence will then be extended to enclose the (N) equipment.

EE-11

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) MODIFIED EAST PORTALS SITE PLAN
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X	
		QUANTITIES	BY	CHECKED				
		DATE PLOTTED => 04-DEC-2024 TIME PLOTTED => 12:39 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3					PROJECT NUMBER & PHASE: 0414000011	

- NOTES:
- ① New feeder
 - ② Existing feeder
 - 3. Refer to sheet EE-2 for Symbol Legend.
 - 4. Refer to sheet EE-3 for General Notes and Abbreviations.



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq, CC	24	Var	X	X

REGISTERED ELECTRICAL ENGINEER

X

PLANS APPROVAL DATE

DATE

X

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AECOM
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

ELECTRICAL

STATE OF CALIFORNIA

EE-13

DESIGN OVERSIGHT		DESIGN	BY M. AHMAD	CHECKED		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) EAST POWER BLOCK DIAGRAM		
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED				POST MILE X.X			
		QUANTITIES	BY	CHECKED							
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj019.dgn		TIME PLOTTED => 17:15 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X

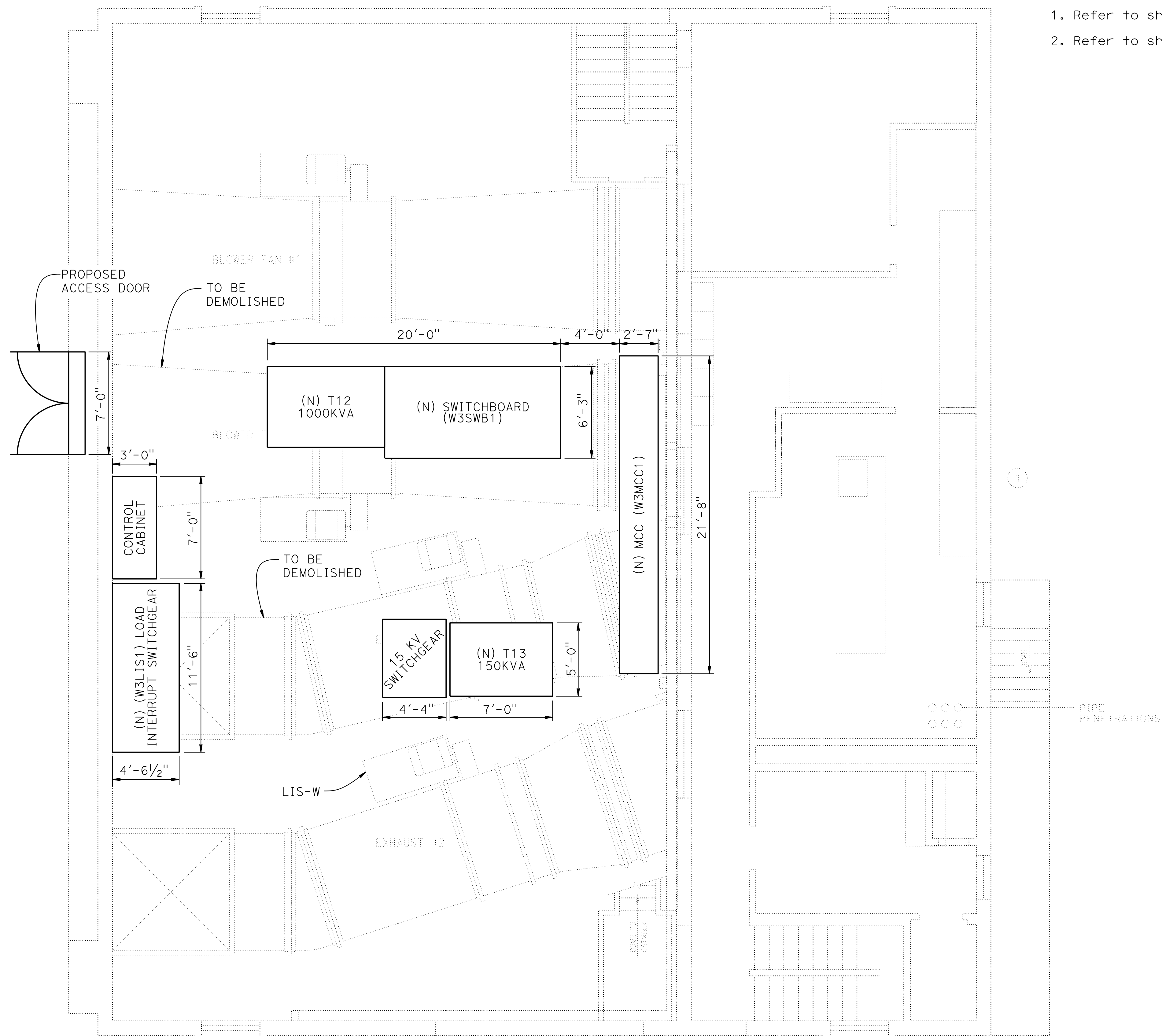
REGISTERED ELECTRICAL ENGINEER	X DATE
X PLANS APPROVAL DATE	

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SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR
COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612	CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612
---	---

NOTES:

1. Refer to sheet EE-2 for Symbol Legend.
2. Refer to sheet EE-3 for General Notes and Abbreviations.



NOTE:
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DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BORE 3 PORTAL VENTILATION STRUCTURE

$$\frac{1}{4}'' = 1'-0''$$

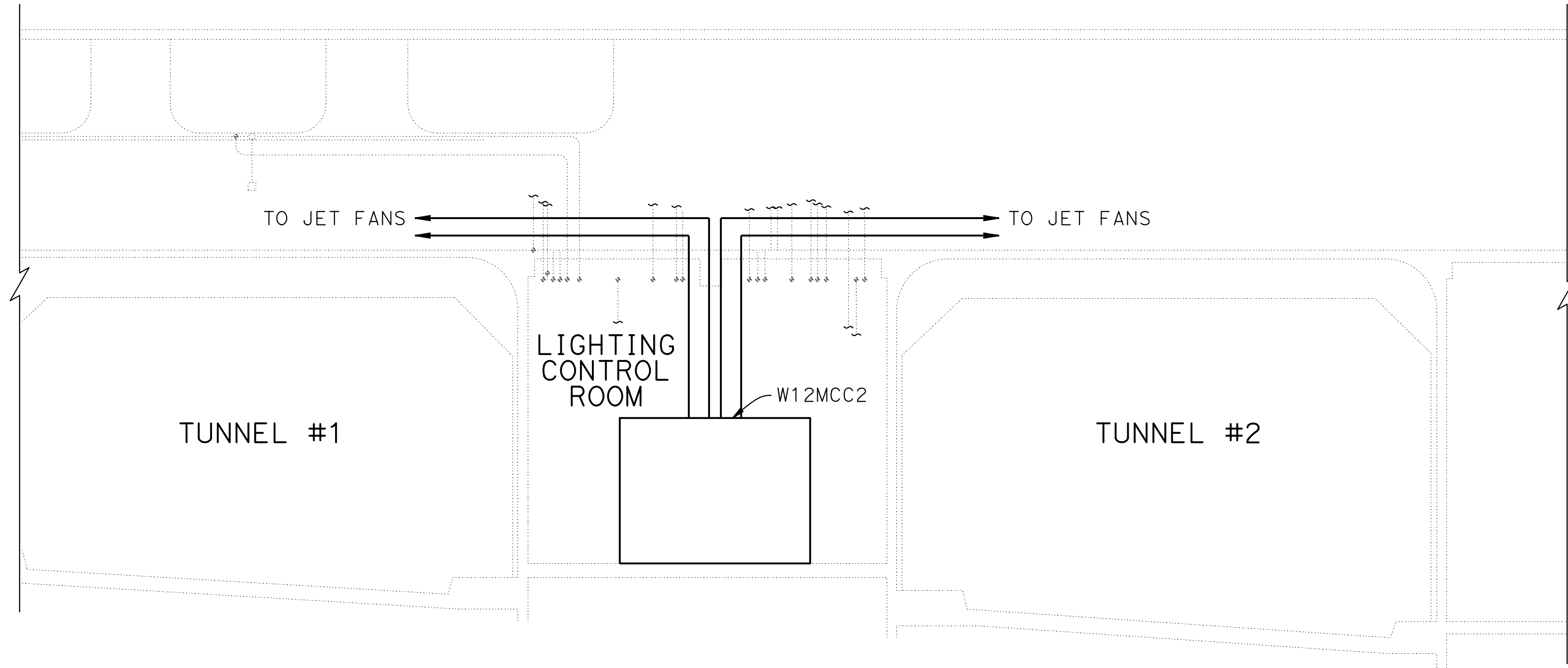
DESIGN OVERSIGHT		DESIGN		BY	M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION				H. KEREMO PROJECT ENGINEER		BRIDGE No.		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 3 WEST PORTAL ELECTRICAL EQUIPMENTS PLAN												
		DETAILS		BY	A. SANCHEZ	CHECKED							28-0015R, 28-0015, 28-0015L														
SIGN OFF DATE		QUANTITIES		BY		CHECKED							POST MILE														
													X.X														
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wj020.dgn		TIME PLOTTED => 06:04 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0		1		2		3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: AIG,CC/24 CONTRACT NO.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET		OF	
																		11/30/24									

NOTES:

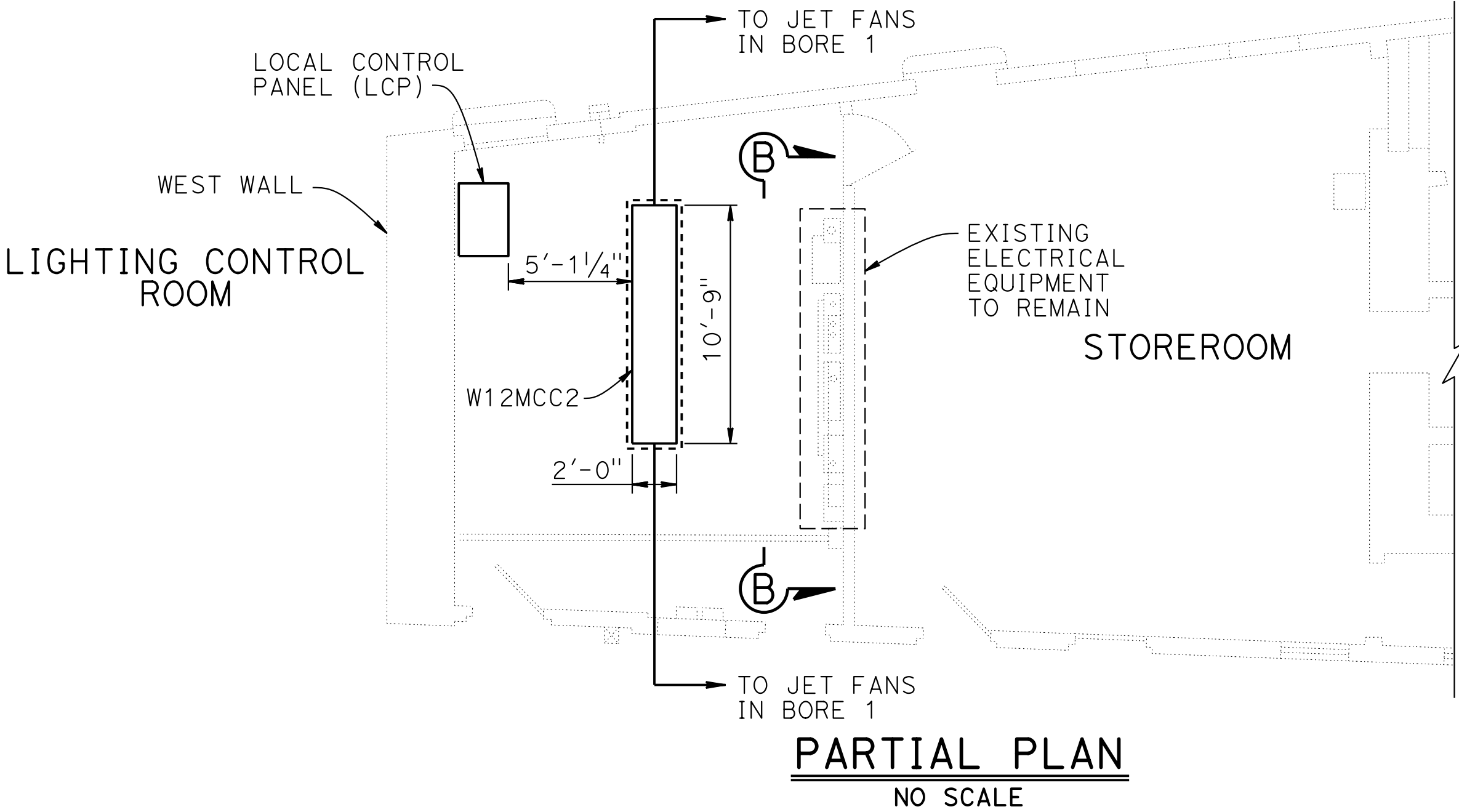
1. Refer to sheet EE-2 for Symbol Legend.

2. Refer to sheet EE-3 for General Notes and Abbreviations.

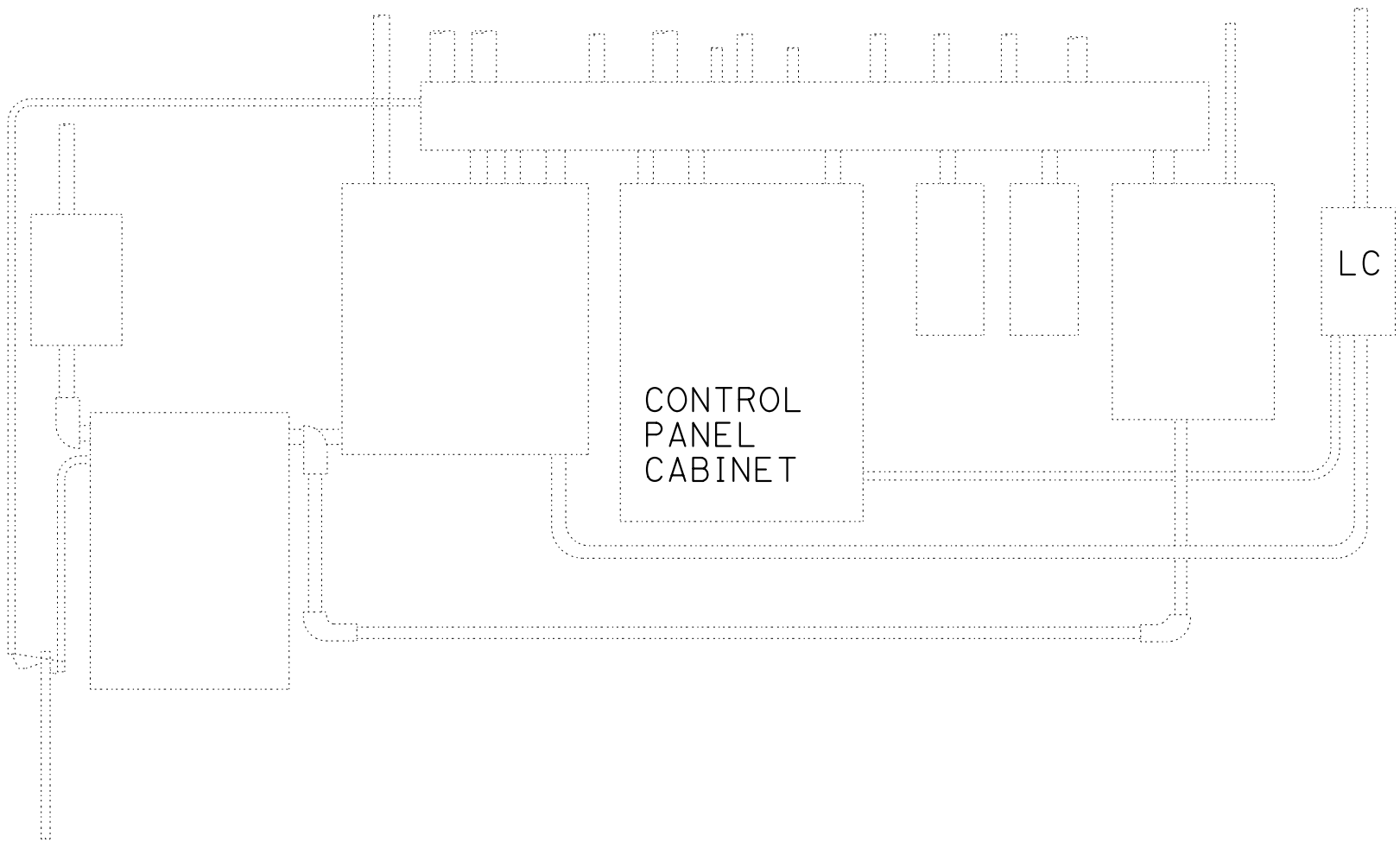
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE	REGISTERED PROFESSIONAL ENGINEER X No. X Exp. X ELECTRICAL STATE OF CALIFORNIA	
X					
PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



WEST WALL LOOKING FROM INSIDE
WEST PORTAL BUILDING
NO SCALE



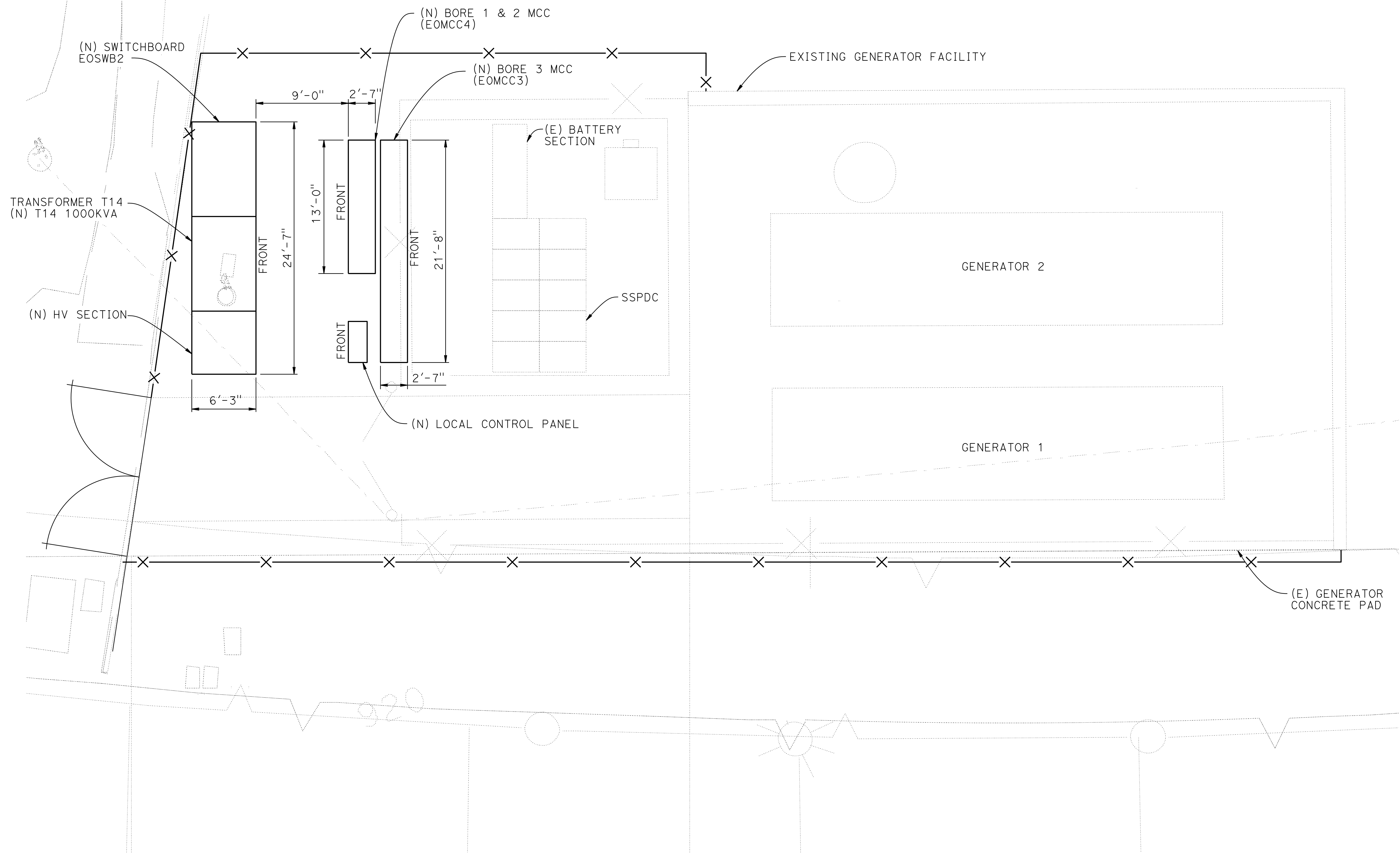
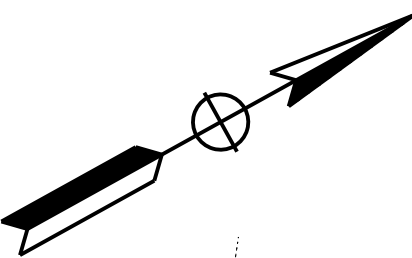
PARTIAL PLAN
NO SCALE



VIEW B-B
NO SCALE
EXISTING ELECTRICAL EQUIPMENT

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT	DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1 & 2 BASEMENT WEST PORTAL ELECTRICAL EQUIPMENT PLAN	
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X		
	QUANTITIES	BY	CHECKED					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj021.dgn	TIME PLOTTED => 17:16 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF



- NOTES:
1. Refer to sheet EE-2 for Symbol Legend.
 2. Refer to sheet EE-3 for General Notes and Abbreviations.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
ELECTRICAL
STATE OF CALIFORNIA

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PLAN
3/16" = 1'-0"

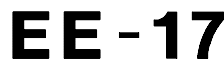
EE -16

DESIGN OVERSIGHT	DESIGN	BY M. AHMAD	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) EAST ELECTRICAL OUTDOOR EQUIPMENT PLAN	
SIGN OFF DATE	DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X		
	QUANTITIES	BY	CHECKED					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)	DATE PLOTTED => 04-DEC-2024 FILE => 04A6797wj022.dgn	TIME PLOTTED => 12:48 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Alq,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

1. The option of utilizing existing fiber optic cables for remote IO in these Bores will be explored at later stage.
2. The local PLC will communicate with existing SCADA servers by software protocols through the existing network infrastructure.
3. Refer to sheet EE-2 for Symbol Legend.
4. Refer to sheet EE-3 for General Notes and Abbreviations.

— fo — — — fo — — —	EXISTING FIBER OPTIC
— F0 — — — F0 — — —	FIBER
_____	HARDWIRE COPPER CABLE
— -E — — — -E — — —	ETHERNET COPPER CABLE

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



DESIGN OVERSIGHT		DESIGN BY J. GUO		CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		H. KEREMO PROJECT ENGINEER		BRIDGE No. 28-0015R, 28-0015, 28-0015L POST MILE X.X		VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) CONTROL AND MOITORING BLOCK DIAGRAM											
SIGN OFF DATE		DETAILS BY A. SANCHEZ		CHECKED																		
		QUANTITIES BY		CHECKED																		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)					DATE PLOTTED => 04-DEC-2024 FILE => 04A6797WJ030.dgn		TIME PLOTTED => 06:19 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: AIQ,CC/24 CONTRACT NO.: 04-0J5401		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 11/30/24		SHEET OF	

Dist

COUNTY

ROUTE

POST MILES
TOTAL PROJECT

SHEET
No.

TOTAL
SHEETS

04

Ala, CC

24

Var

X

X

REGISTERED ELECTRICAL ENGINEER

X

DATE

X

X

PLANS APPROVAL DATE

No.

X

Exp.

X

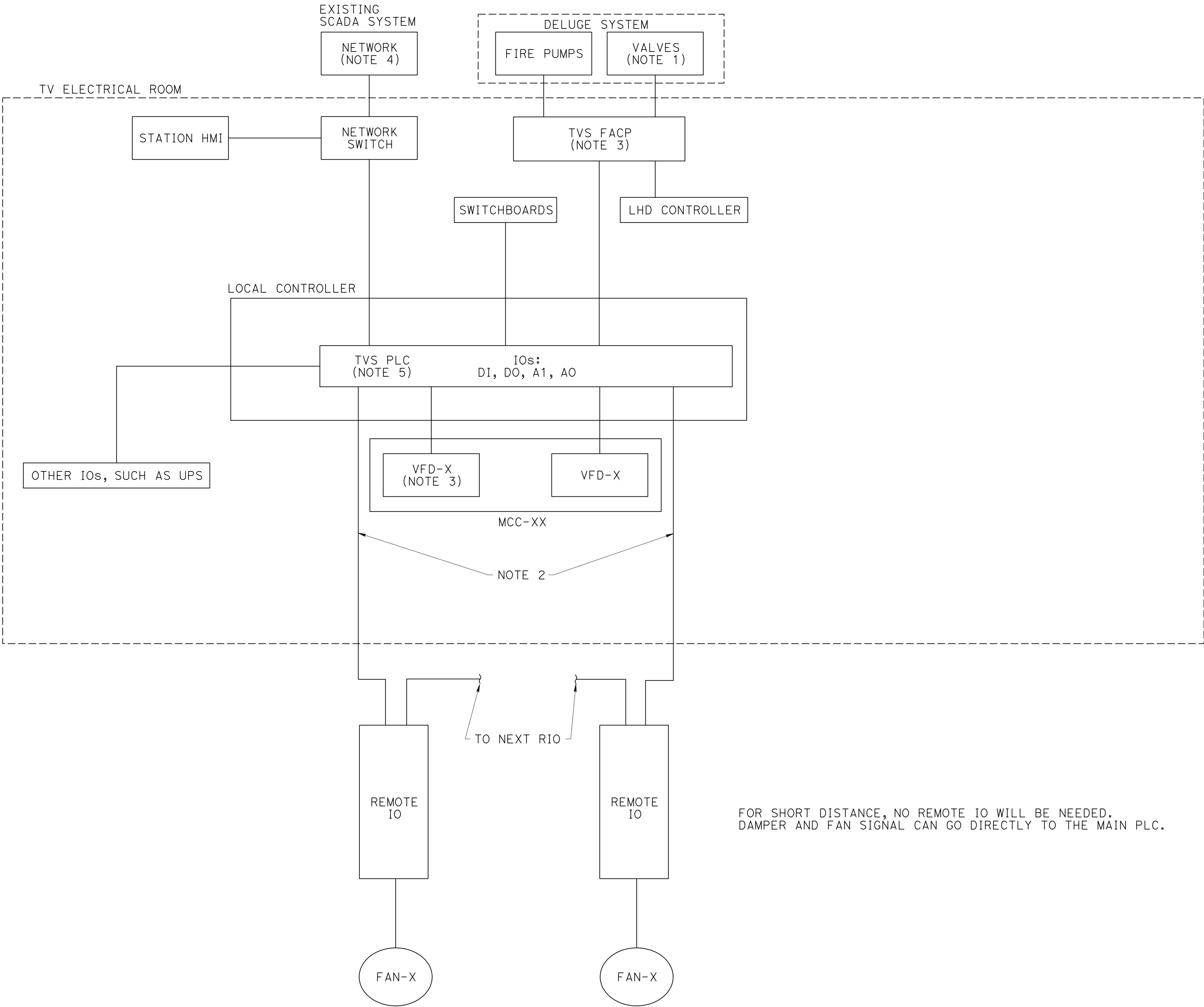
ELECTRICAL

STATE OF CALIFORNIA

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AECOM
300 LAKESIDE DRIVE,
OAKLAND, CA 94612

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

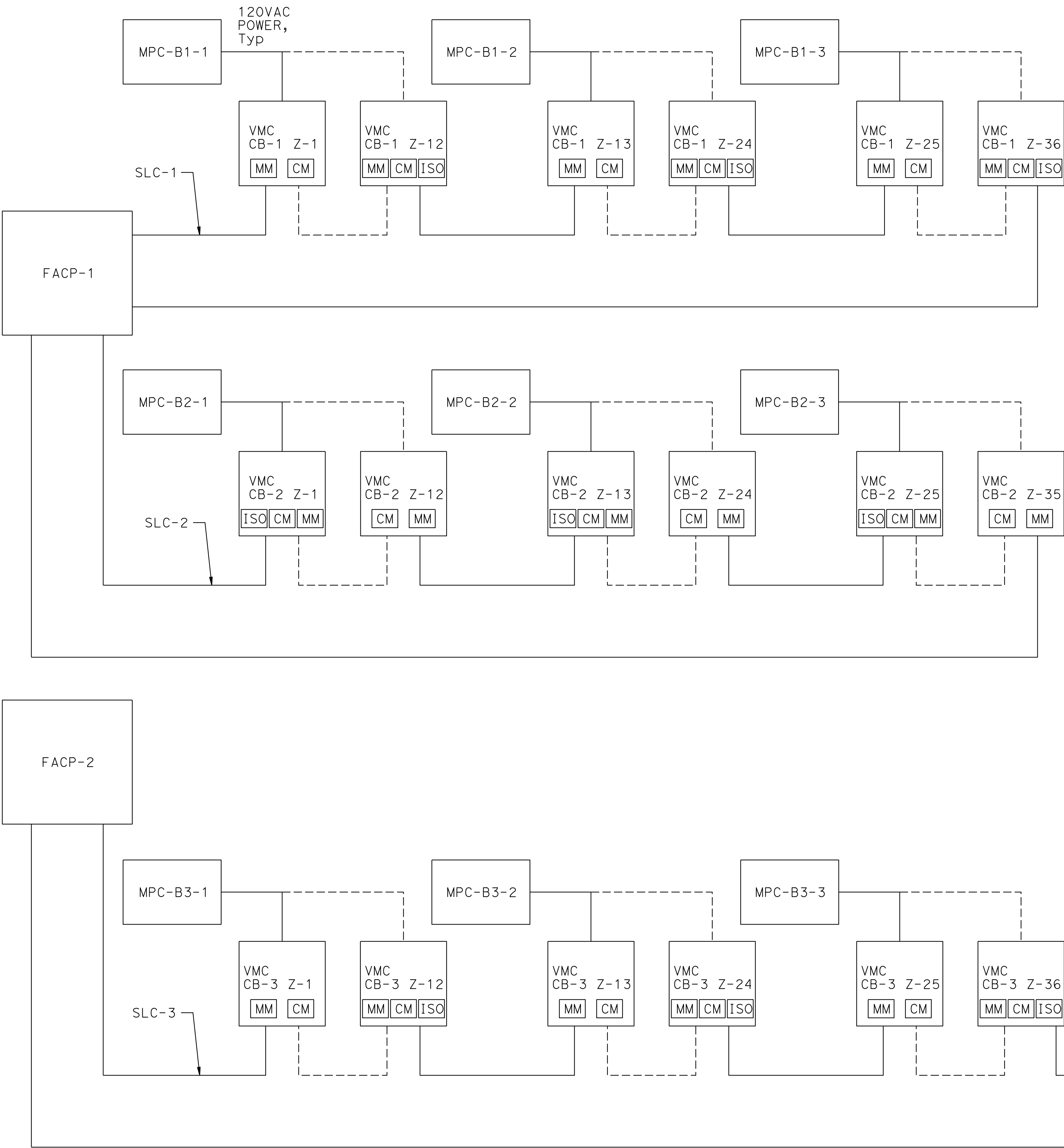


- NOTES:
- SLC class a loop to monitor and control the valves (fire pump valve and zone valves.)
 - Remote i/o modules use fiber or field bus to have a self healing daisy chained ring.
 - VFD, FACP, LHD, and etc shall use hard-wired for critical signals but can use soft points for non-critical signals.
 - Connecting to system networks of the existing system.
 - TVS PLC can use current PLC or an individual one if the current PLC does not have enough capacity.
 - Refer to sheet EE-2 for Symbol Legend.
 - Refer to sheet EE-3 for General Notes and Abbreviations.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

COMMUNICATION & CONTROL DIAGRAM
NO SCALE

EE-18



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X					
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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

REGISTERED PROFESSIONAL ENGINEER

No. X

Exp. X

ELECTRICAL

STATE OF CALIFORNIA

NOTES:

- Valve monitor & control to be installed each for zone of Bore 1, Bore 2 & Bore 3. for zone layouts, refer drawing No. EE-XX.
- Valve monitor & control enclosure consists of monitor module, control module and isolators to send alarm signals, refer drawing No. EE-XX.
- Refer to sheet EE-2 for Symbol Legend.
- Refer to sheet EE-3 for General Notes and Abbreviations.

LEGEND:

VMC
CB-X Z-Y

ENCLOSURE WITH MONITOR MODULE, CONTROL MODULE
AND ISOLATOR (OPTIONAL)

MM

MONITOR MODULE

CM

CONTROL MODULE

ISO

ISOLATOR

SLC:

SIGNALING LINE CIRCUIT

DASH LINE IS FOR CONTINUATION

CB-X Z-Y

DENOTES ZONE NUMBER

DENOTES ZONE

DENOTES BORE DETAILS

DENOTES CALDECOTT BORE

MPC-BX-Y

DENOTES MPC NUMBER

DENOTES BORE NUMBER

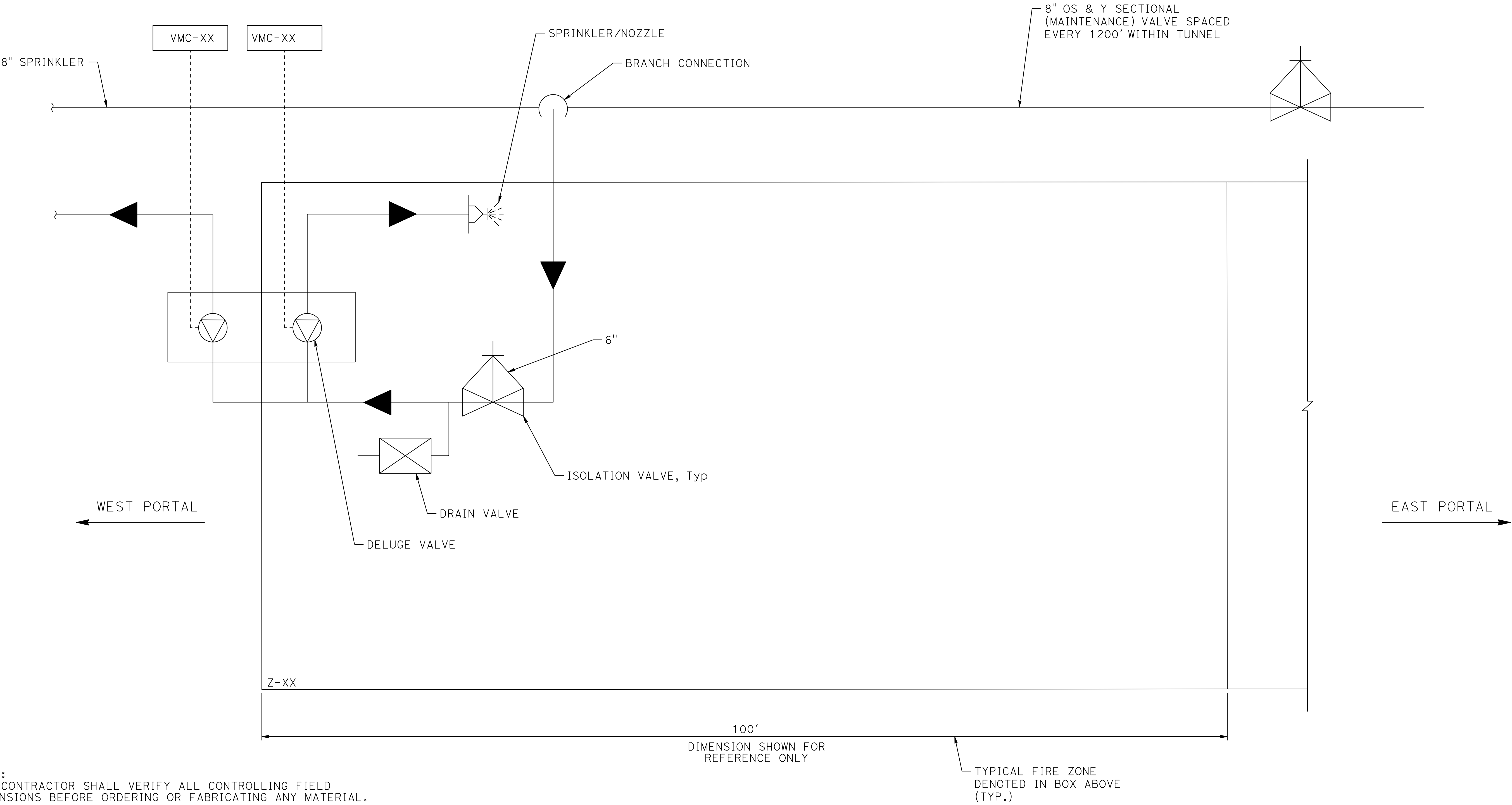
DENOTES MINI POWER CENTER

DESIGN OVERSIGHT		DESIGN	BY J. GUO	CHECKED		BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3)														
SIGN OFF DATE		DETAILS	BY A. SANCHEZ	CHECKED		POST MILE X.X	BORE 1, 2 & 3 FACP SIGNALLING LINE CIRCUIT LOOP														
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj040.dgn		TIME PLOTTED => 17:18 USERNAME => AI		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0	1	2	3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11/30/24					SHEET	OF

NOTES:

1. When fire is detected in the zone by LHD or CCTV. Operators will start the deluge system and open the the related zone deluge valve. FACP will monitor and control deluge valve status. At the same time deluge system will get energized.
2. When deluge system/valve is open, water flow will start in the system through sprinkler/nozzles.
3. To ensure water flow from deluge valve, pressure relief valve will be open position.
4. VMC module shall be located within 3 feet distance of the valve.
5. Refer to sheet EE-2 for Symbol Legend.
6. Refer to sheet EE-3 for General Notes and Abbreviations.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE		
X			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.			REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA		
AECOM 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		



NOTE:
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DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

EE-20

DESIGN OVERSIGHT		DESIGN	BY J. GUO	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) TYPICAL DELUGE SYSTEM DIAGRAM					
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X						
		QUANTITIES	BY	CHECKED									
SIGN OFF DATE		DATE PLOTTED => 03-DEC-2024		TIME PLOTTED => 17:18		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3	PROJECT NUMBER & PHASE: 0414000011	COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11/30/24	SHEET OF

LEGEND:

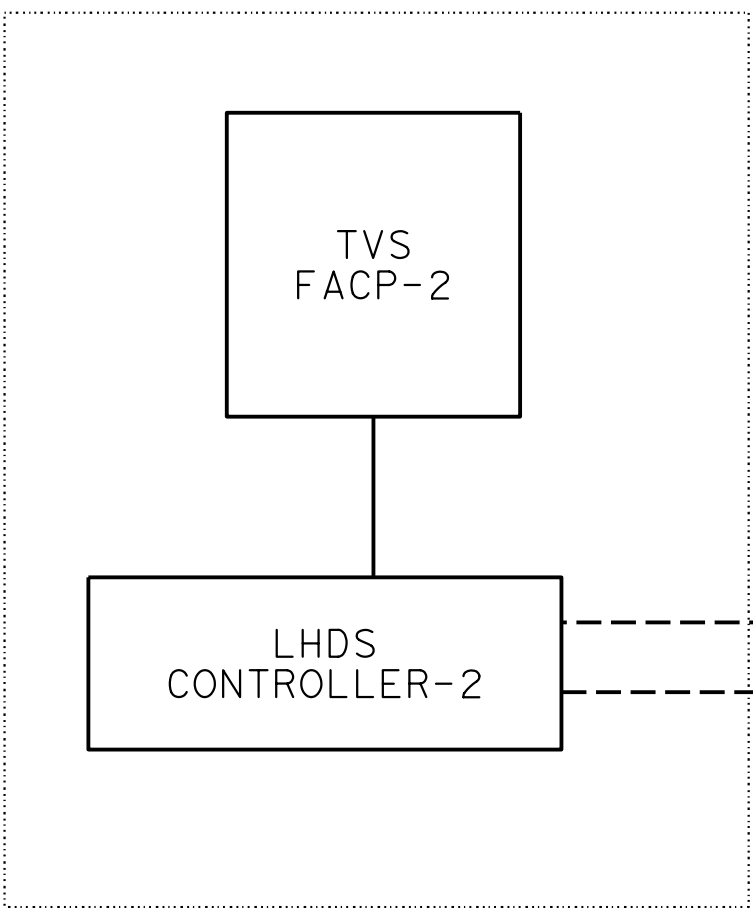
- Fiber optic heat sensing cable
- Hard wire signal cable

NOTES:

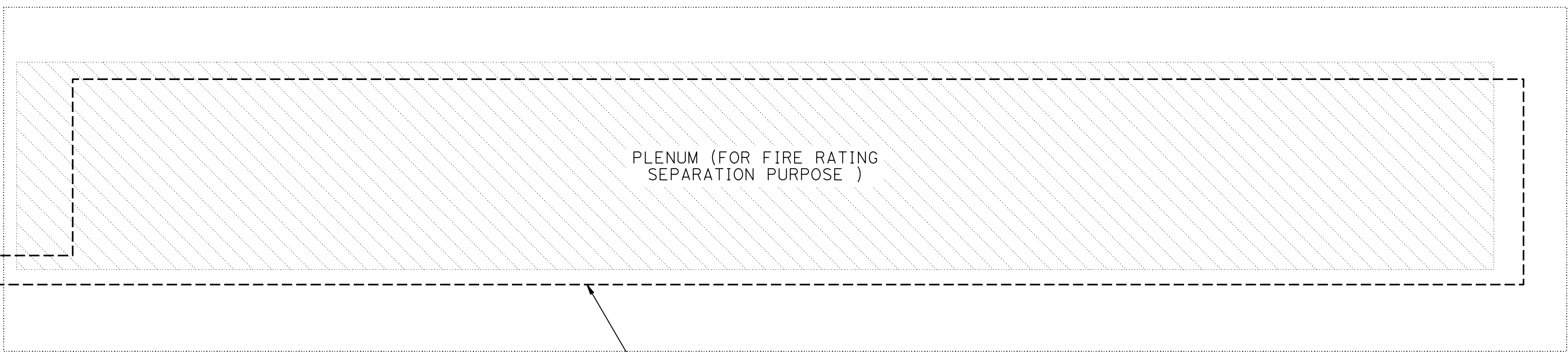
- Components and Obstacle Management Component Installation:
 - Identify and map all obstacles before beginning installation.
 - Route cables around obstacles using soft bends, ensuring a minimum bend radius of 3".
 - Install mounting points 8" on either side of obstacles.
 - Utilize flexible open seam tubing to protect cables when passing over sharp-edged obstacles.
 - Maintain an 8" clearance from other infrastructure whenever possible.
- Zoning and Integration.
 - Align Detection Zones: Ensure that the detection system zones are aligned with the Caldecott Systems fire suppression zones.
 - Coordinate Installation: Work closely with the fire suppression system installers to confirm that the zones are properly matched.
- Refer to sheet EE-2 for Symbol Legend.
- Refer to sheet EE-3 for General Notes and Abbreviations.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	24	Var	X	X
REGISTERED ELECTRICAL ENGINEER			X DATE	REGISTERED PROFESSIONAL ENGINEER No. X Exp. X ELECTRICAL STATE OF CALIFORNIA	
X			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 300 LAKESIDE DRIVE, OAKLAND, CA 94612			CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

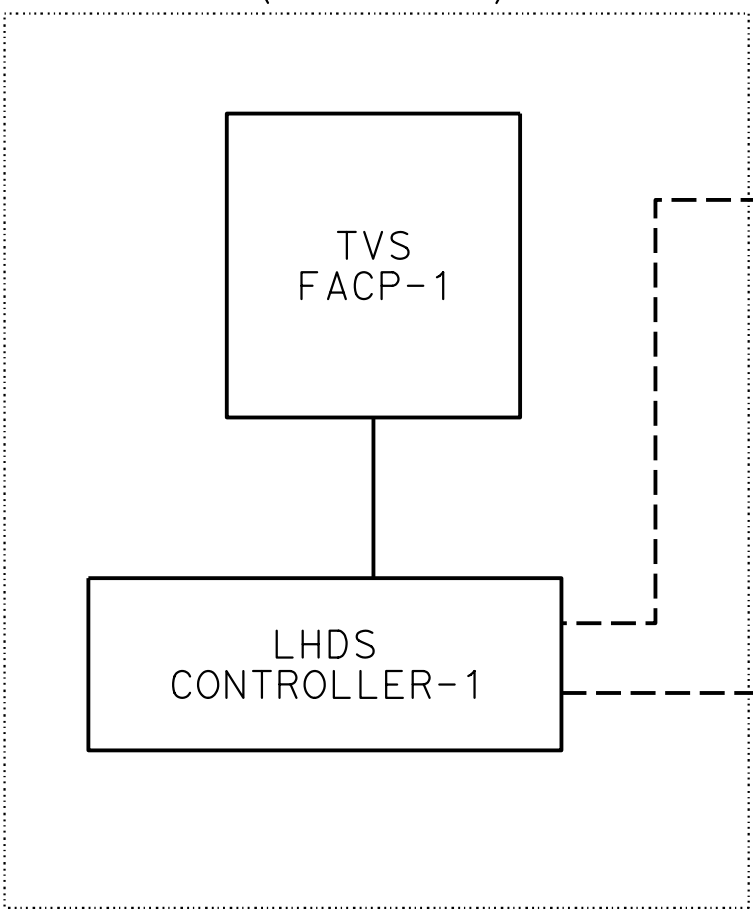
BORE 3 VENTILATION
FAN ROOM



BORE 3



BORES 1 & 2 VENTILATION
FAN ROOM (BASEMENT)



BORE 1 & 2



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD
DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

EE-21

DESIGN OVERSIGHT	SIGN OFF DATE	DESIGN	BY J. GUO	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	H. KEREMO PROJECT ENGINEER	BRIDGE No. 28-0015R, 28-0015, 28-0015L	VENTILATION UPGRADE AT CALDECOTT TUNNELS (BORE 1, 2 AND 3) BORE 1, 2 & 3 LINEAR HEAT DETECTION SYSTEM (LHDS)	
		DETAILS	BY A. SANCHEZ	CHECKED			POST MILE X.X		
		QUANTITIES	BY	CHECKED			PROJECT NUMBER & PHASE: 0414000011		COUNTY/ROUTE: Ala,CC/24 CONTRACT No.: 04-0J5401
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 8/16/2021)		DATE PLOTTED => 03-DEC-2024 FILE => 04A6797wj042.dgn		TIME PLOTTED => 17:19 USERNAME => AI	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3				

2025-04-10 MOA Caldecott Tunnel final

Final Audit Report

2025-05-08

Created:	2025-05-08
By:	Julia Prince-Buitenhuys (s152130@dot.ca.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAAcn1nT4XQnj8NDqSOipVvh0yETohKNLY_

"2025-04-10_MOA_Caldecott_Tunnel_final" History

-  Document created by Julia Prince-Buitenhuys (s152130@dot.ca.gov)
2025-05-08- 6:12:06 PM GMT- IP address: 149.136.17.253
-  Document emailed to Jeremy Ketchum Ueremy.ketchum@dot.ca.gov) for signature
2025-05-08 - 6:13:25 PM GMT
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2025-05-08- 6:13:43 PM GMT- IP address: 149.136.25.249
-  Document e-signed by Jeremy Ketchum Ueremy.ketchum@dot.ca.gov)
Signature Date: 2025-05-08- 6:14:15 PM GMT-Time Source: server- IP address: 149.136.25.249
-  Agreement completed.
2025-05-08 - 6:14:15 PM GMT



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