

Memorandum

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To: DISTRICT DIRECTORS
DEPUTY DISTRICT DIRECTORS
Traffic Operations


Date: July 26, 2017

File: 600-Ground
Anchors
(Tiebacks)

From: 
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Subject: **TEMPORARY GROUND ANCHOR (TIEBACK) ENCROACHMENTS**

This memorandum provides guidance and processing requirements for non-highway-related temporary ground anchor (tieback) requests.

A temporary tieback is defined as a tieback that is de-tensioned when it is no longer needed for structural support and abandoned within the state highway right-of-way after project completion. A permanent tieback is defined as a tieback that remains in tension and is used for structural support after project completion. Permanent tiebacks that are not part of a state highway improvement project are prohibited on all state highway rights-of-way.

Temporary tieback encroachment requests must be authorized through the encroachment policy exception process. In addition, an executed Right of Way/Airspace Use Agreement (UA) is required between the applicant/developer and Caltrans to compensate for use of airspace and/or property.

Request for an Encroachment Policy Exception

The applicant must justify the need and character of the encroachment policy exception, as described in PDPM Chapter 17, Section 3. In addition, the applicant must provide the District Encroachment Permits (EP) Office the following documents:

1. Documentation demonstrating that there are no other feasible, alternative designs that do not encroach into state highway right-of-way.
2. A minimum of six complete sets of plans. A 3-D computer model with all dimensions identified (X, Y and Z) and the model can be in any format (.dgn etc). The plans must include all construction details including those of the temporary shoring wall. The visual 3-D computer model must identify all existing subsurface highway infrastructure and

utilities within state highway right-of-way, relative to all objects proposed to be placed. The plans must delineate all proposed objects relative to the state highway right-of-way and roadway features.

3. A geotechnical report and recommendations, which must include applicable elements similar to those in the Foundation Reports for Earth Retaining Systems. For access to Caltrans guidance on Foundation Reports for Earth Retaining Systems, refer to: http://www.dot.ca.gov/hq/esc/geotech/geo_manual/page/FR_ERS_June2017.pdf
4. Structural plans and design calculations. Tiebacks must be installed in compliance with current Caltrans practices for temporary tiebacks.
5. Drainage plans showing existing and proposed drainage facilities within the vicinity of the tiebacks and existing Caltrans facilities.
6. Assessment of potential impacts and risks of all proposed objects to the existing highway infrastructure (including utilities) within state highway right-of-way.

Processing Requirements

The District EP Office must not issue an encroachment permit for temporary tiebacks without an approved encroachment policy exception, executed UA, and recommendation from all reviewers.

Unlike most encroachment permits involving a UA, the District EP Office will lead the review of temporary tieback permit requests. The District EP Office will circulate the application package to functional units including but not limited to the District Division of Design, District Division of Right of Way, Division of Engineering Services (Structure Policy and Innovation and Geotechnical Services) and Division of Maintenance - Structure Maintenance and Investigations, for their review, processing, and recommendation. Tieback installations must be placed in such a manner as to avoid affecting highway traffic operations, maintenance, or obstructing removal of the tieback for any future transportation improvements in the state highway right-of-way.

After obtaining electronic and paper as-built plans from the Division of Engineering Services-Structure Construction (with locations of de-tensioned tiebacks provided by permittee and authorized by the Structure Construction), the District EP Office will forward a copy of the electronic as-built plans to the District Utility Engineering Work Group.

The District Right of Way units understand the maximum 60-day time constraints of issuing an encroachment permit, and are responsible for preparing, coordinating, and expeditiously executing a UA. For temporary tieback requests, the Right of Way Program will develop a UA for temporary site use and will charge the Fair Market lease rate. Entering into a UA and the payment of the Fair Market lease rate addresses the private use of state highway right-of-way. It also addresses the Federal Highway Administration (FHWA) regulations relating to

management of airspace on interstate highways for non-highway purposes, which are included in title 23 Code of Federal Regulations sections 710.403 and 710.405.

For encroachments on interstate highways, the Headquarters Division of Design, Office of Project Support, will facilitate the FHWA review and consideration for approval.

The attached Temporary Ground Anchors (Tiebacks) Special Provisions must be included with all encroachment permits to install temporary tiebacks within the state highway right-of-way.

The Office of Structure Construction will perform inspections of installation and management of temporary tiebacks. The Structure Representative will: confirm ground anchors are de-tensioned and physically detached from the shoring wall; confirm there are no impacts to state structures, utilities, drainage, or other features as a result of installation of the temporary excavation support and grouting; verify the as-built plans represent the actual locations of ground anchor and appurtenance installations that will remain in the state highway right-of-way.

For questions regarding this memorandum or the attachment, you may contact:

1. Yin-Ping Li, Chief, Office of Encroachment Permits and Engineering Support, Division of Traffic Operations at (916) 654-5548, or by e-mail at Yin-Ping.Li@dot.ca.gov
2. Carol Hanson, Chief, Office of Real Property Services, Division of Right of Way at (916) 654-3536, or by e-mail at Carol.Hanson@dot.ca.gov
3. Linda Fong, Chief, Office of Project Support, Division of Design at (916) 653-8559, or by e-mail at Linda.Fong@dot.ca.gov
4. Susan Hida, Chief, Office of State Bridge Engineer Support, Division of Engineering Services at (916) 227-8738, or by e-mail at Susan.Hida@dot.ca.gov

Attachment:

Temporary Ground Anchors (Tiebacks) Special Provisions

- c: Malcolm Dougherty, Director
Kome Ajise, Chief Deputy Director
Karla Sutliff, Deputy Director, Project Delivery
Steve Takigawa, Deputy Director, Maintenance and Operations
Rachel Falsetti, Chief, Division of Construction
Matthew Schmitz, Director, Project Delivery, Federal Highway Administration
Thomas A. Ostrom, Deputy Division Chief, Structure Policy and Innovation, Division of Engineering Services
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Traffic Operations

District Encroachment Permit Engineers

TEMPORARY GROUND ANCHORS (TIEBACKS) SPECIAL PROVISIONS

1. The tiebacks must be de-tensioned and physically detached from the shoring wall once the permittee's foundation construction is complete. No future access to the tiebacks will be allowed once they have been detached.
2. Tieback installations shall not be placed in such a manner to impact traffic operations, maintenance, or obstruct any future transportation improvements in the state right-of-way.
3. Permanent tiebacks are prohibited. Tiebacks shall not be used to support the completed structure.
4. The shoring wall shall not be located within the state highway right-of-way.
5. The shoring wall shall be monitored during construction to determine any lateral movement.
6. The temporary wall must not create perched ground water that affects the foundation strength of state structures and facilities.
7. Should any underground facilities or utilities be encountered during the installation of the tiebacks, work must stop and the Caltrans representative shall be immediately notified. Work will not continue until Caltrans agrees to an alternate strategy (including the possible need to redesign) or other mitigation.
8. Deformation impacting state structures, roadways, utilities, drainage, or other features as a result of installation of the temporary excavation support and grouting, is not permitted. Should unanticipated deformation or other impacts occur, the Caltrans representative shall be immediately notified, and work will cease until Caltrans agrees to an alternate strategy (including the possible need to redesign) or other mitigation.
9. Upon completion of the installation and subsequent de-tensioning of the tiebacks, the permittee must submit as-built plans, prepared in accordance with Caltrans' CADD Users Manual, of all objects installed and to be abandoned in state highway right-of-way and submit as-built plans to Structure Construction for their authorization.