

DECISION DOCUMENT

Approval and Documentation of Constructed Non-approved Non-standard Design Features

Executive Summary

Problem Statement. Current guidance does not address documentation of decisions to leave in place newly constructed features that do not comply with Highway Design Manual standards. By not addressing documentation, the application of engineering judgement to support the deviation from standard which considers cost, collisions, environment, and other factors, are not disclosed. This results in potential liability for the Department because the documentation is part of the process to establish design immunity or the reasonableness of the decision. The normal project development process is to document design standard exceptions prior to the start of construction.

Recommendation. Alternative D – Enhance guidance to require preparation and acceptance of a design standards decision document for nonstandard features constructed but not previously approved.

Fiscal Impact. Minor increase in support costs for those projects where the situation arises, which is anticipated to be a limited number of projects per year. Currently, analysis generally occurs but needs to be expanded to include other functional units and documented.

Organizational Impact. No change in organization is required.

Policy Impact. Changes to the Project Development Procedures Manual (PDPM) with the inclusion of a new template – the Design Standard Decision Document – Constructed Nonstandard Feature(s), and to the Construction Manual.

Risks. Reduction if implemented. Some resistance may occur from resident engineers who may encounter this situation.

Proposed Implementation Schedule. Process enhancements could be implemented within one-year dependent on circulation of a policy memorandum and manual update. Implementation can be done by memo once the final decision is made. Decision requires reviews by appropriate stakeholders including the Design Management Board and the Construction Management Board.

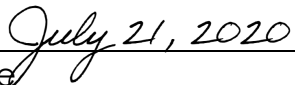
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DECISION DOCUMENT

Approval and Documentation of Constructed Non-approved Non-standard Design Features

1. Problem Statement

Current guidance generally requires documentation and approval of decisions to include nonstandard features into a final design prior to completion of that final design. In rare instances, nonstandard features are built without prior documentation or approval. Current guidance does not address the documentation of decisions to leave in place a newly constructed feature that does not comply with Highway Design Manual design standards. Additional guidance is necessary to address that not just contractor and construction contract impacts are considered but also that safety, collision history, and other factors are included in the decision to leave nonstandard constructed features in place. The guidance also needs to require documenting the aforementioned and all relevant factors leading to the engineering judgement to secure design immunity for the Department.

2. Recommendation

Alternative D – Enhance guidance to require preparation and acceptance of a Design Standard Decision Document (DSDD) for nonstandard features constructed but not previously approved, before construction contract or encroachment permit acceptance. Guidance changes to be made in the Project Development Procedures Manual (PDPM) and the Caltrans Construction Manual.

3. Background

Projects shall be designed, constructed, operated, and maintained in accordance with State laws, regulations, directives, safety standards, design standards, and construction standards. [23 USC 109, PDPM pg. 21-14.] During the construction phase of a project, it is the resident engineer's responsibility to make sure that proposed changes to the design meet design standards or have an approved DSDD for nonstandard features. It is the project engineer's responsibility to review proposed changes and prepare and secure approval of the DSDD for proposed nonstandard features. Nonstandard features discovered during construction must have an approved DSDD before the feature is constructed.

Currently, PDPM instructions do not address the approval process for nonstandard features after they are constructed. If nonstandard features are constructed based on the contract plans, the project engineer is responsible for resolving the issue so the features meet standards. If nonstandard features are constructed not based on the contract plans, the resident engineer is responsible for resolving the issue so the features meet standards. [PDPM, Chapter 21.]

Nonstandard features have been discovered after they have been constructed, either late in the construction contract or after the construction contract has been accepted. Examples include:

- Constructing a retaining wall then noting that a Caltrans survey error resulted in the wall being constructed closer to the centerline than originally designed resulting in a nonstandard shoulder width.
- Reconstructing a local road connection from an off-ramp and then discovering the sight distance does not satisfy standards due to the placement of a concrete barrier.
- Local agency permit project where the local agency implemented their design without an approved permit and with nonstandard features.

These and other nonstandard features have gone undocumented as the features were discovered after correction was no longer possible within the original contract or were considered too costly to correct.

The lack of documentation results in lack of information available for future projects, failure to secure quality products, lack of transparency, and increased potential for tort liability.

4. Alternatives

4.1 Alternative A (“No Action” Alternative)

If no action is taken, features that do not satisfy Highway Design Manual standards could be incorporated into the State highway system without documentation.

Risks: While minimal resources would be saved in construction support costs in not documenting as well as no impact to construction capital costs in the near term, potentially greater costs could be incurred in the future as a result of unfavorable tort action outcomes.

4.2 Alternative B - Implement the requirement for a DSDD-CNF absent signature for approval or acceptance.

4.2.1 Amend guidance to require a Design Standard Decision Document –Constructed Nonstandard Feature(s) (DSDD-CNF) absent action by the appropriate delegated authority (see district delegation agreements). Here, the signature page would only have the signature and seal of the registered engineer who performed the analysis and prepared the document.

4.2.2 This alternative is less desirable because it does not secure document preparation, nor does it secure an adequate analysis has been performed. Reviews may be limited to a design or construction senior or solely within one functional unit when multiple units should be involved.

4.2.3 Additionally, it is easier to defend tort actions when Caltrans applies same or similar processes to same or similar issues. Without an action, either approval or acceptance, Caltrans would apply differing processes to nonstandard features: a more rigorous one prior to construction and a less challenging or even nonexistent one, post construction. This decreases the ability to defend against challenges in tort actions.

- 4.2.4 There is uncertainty that the document would be filed in the project's permanent file nor in the Design Document Retrieval System (DRS), allowing for misinterpretations for the reasons the roadway was constructed in a condition differing from that detailed in the contract document and, therefore, increasing tort liability.
- 4.2.5 Some of the above may be mitigated with a quality management process that makes certain that nonstandard features in the as-built plans have the proper documentation, but it would not significantly negate the tort liability issues.
- 4.2.6 Fiscal Impact: Minor increase in support costs for those projects where the situation arises; anticipated to be a limited number of projects per year. Costs could impact construction support for Caltrans administered projects, local agencies for their sponsored projects, or Permits for encroachment permit projects. Potential delay to completion of projects due to analysis and documentation efforts.
- 4.2.7 Organizational Impact: No change in organization is required.
- 4.2.8 Policy Impact: Changes to the PDPM and the Construction Manual.
- 4.2.9 Risks: Reduction if implemented. The registered engineer signing and sealing the document will establish the engineering judgement for the reasonableness to allow the nonstandard features to remain in place. However, this documentation will not contain the analysis that is normally required for a DSDD before construction.

4.3 Alternative C Implement the requirement for a DSDD-CNF with approval(s) by delegated authority to leave the nonstandard feature in place

- 4.3.1 Amend guidance to require a DSDD-CNF with approval by the appropriate delegated authority (see district delegation agreements).
- 4.3.2 This alternative provides the necessary reviews to help ensure adequate analysis and document preparation. This tends to be a less desirable alternative as it requires the delegated authority to take an action when the question differs from an action prior to construction. Approval may not have been given if proposed prior to construction but the cost to remedy and other factors may make the nonstandard feature acceptable to remain in place.
- 4.3.3 As this provides a similar process to the pre-construction approval process, it would be more effective in defending tort actions.
- 4.3.4 Archiving in the DRS and the project history file would occur per the established processes for approvals for pre-constructed features. The ability to find the document enables improved decision making in future design and legal efforts.
- 4.3.5 Fiscal Impact: Minor increase in support costs for those projects where the situation arises; anticipated to be a limited number of projects per year. Costs could impact construction support for Caltrans administered projects, local agencies for their sponsored projects, or Permits for encroachment permit projects.
- 4.3.6 Organizational Impact: No change in organization is required.
- 4.3.7 Policy Impact: Changes to the PDPM and the Construction Manual.
- 4.3.8 Risks. Reduction to risk if implemented. This documentation will establish engineering judgement for the reasonableness to allow the nonstandard features to remain in place, although documented after its construction.

4.4 Alternative D Implement the requirement for a DSDD with acceptance by delegated authorities to leave the nonstandard feature in place.

- 4.4.1 Amend guidance to require a DSDD-CNF with acceptance by the appropriate delegated authority (see district delegation agreements).
- 4.4.2 This alternative provides the necessary reviews to help ensure analysis performance and documentation. Unlike approval prior to construction, leaving the constructed feature in place would be “accepted” but not “approved”. Acceptance recognizes a change in the question from “Should the feature be approved for construction?” to “Should the nonstandard feature be left in place as constructed?” The delegated authority’s signature signifies that the process has been followed, that the necessary analysis was performed, and that the nonstandard feature can remain as constructed.
- 4.4.3 As this provides a similar process to the pre-construction approval process, it would be easier to defend tort actions. For this post-construction process, an acceptance, not approval, would be documented.
- 4.4.4 Archiving in the DRS and the project history file would occur per the established processes for approvals for pre-constructed features. The ability to find the document enables improved decision making in future design and legal efforts.
- 4.4.5 Fiscal Impact: Minor increase in support costs for those projects where the situation arises; anticipated to be a limited number of projects per year. Costs could be to construction support for Caltrans administered projects, local agencies for their sponsored projects, or Permits for encroachment permit projects.
- 4.4.6 Organizational Impact: No change in organization is required.
- 4.4.7 Policy Impact: Changes to the PDPM and the Construction Manual.

- 4.4.8 Risks: Reduction to risks if implemented. This documentation will establish engineering judgement for the reasonableness to allow the nonstandard features to remain in place, although documented after its construction.

5. Performance Measures

5.1 Deliverable(s)

- 5.1.1 Revision of the PDPM, Chapter 21, to clarify that a DSDD-CNF is required.
- 5.1.2 Creation of a DSDD-CNF template to assist in analysis and preparation of the document.
- 5.1.3 Revision of the Construction Manual to ensure Resident Engineers recognize the enhanced efforts when nonstandard features are created as well as the process for analysis and documentation.

5.2 Change Measure(s)

- 5.2.1 Increased number of decision documents being processed.
- 5.2.2 Increase inquiries to the District Design Liaisons on if the documentation is required and how to process the documentation when required.

6. Contact Person

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Decision Document
Documenting Decisions for Constructed Nonstandard Features
July 24, 2020

Attachments:

1. Proposed Guidance Updates
2. Design Standard Decision Document– Constructed Nonstandard Feature Template