California High-Speed Train Project

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TECHNICAL MEMORANDUM

Design Submittal and Review Protocol
In-progress and Draft 15% Design Submittals
TM 0.7

Prepared by: *Signed document on file_____* 4 Jun 2009
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Approved by: *Signed document on file_____* 08 July 2009
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Released by: *Signed document on file_____* 14 July 2009
            Anthony Daniels, Program Director   Date

Revision	Date	Description
0	26 Aug 08	Initial Release
1	08 Jul 09	Add comment/response matrix; distribute submittal hardcopies via overnight mail service; combine Integration and Draft 15% Design Submittal; ProjectSolve update.

Note: Signatures apply for the latest technical memorandum revision as noted above.

Prepared by **PB** *100 YEARS*
for the California High-Speed Rail Authority

System Level Technical and Integration Reviews

The purpose of the review is to ensure:
- Technical consistency and appropriateness
- Check for integration issues and conflicts

System level reviews are required for all technical memorandums. Technical Leads for each subsystem are responsible for completing the reviews in a timely manner and identifying appropriate senior staff to perform the review. Exemption to the system level technical and integration review by any subsystem must be approved by the Engineering Manager.

System Level Technical Reviews by Subsystem:

Systems: _NOT REQUIRED_____   _____
                  Print Name: Date

Infrastructure: _NOT REQUIRED_____   _____
                  Print Name: Date

Operations: _NOT REQUIRED_____   _____
                  Print Name: Date

Maintenance: _NOT REQUIRED_____   _____
                  Print Name: Date

Rolling Stock: _NOT REQUIRED_____   _____
                  Print Name: Date

Note: Signatures apply for the technical memorandum revision corresponding to revision number in header and as noted on cover.

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ABSTRACT

The process outlined in this technical memorandum creates an auditable trail for the In-progress and Draft 15% Design Submittals prepared by the Regional Consultant and reviews performed by the Program Management Team (PMT). The process is defined by an established protocol for: transmitting submittals, review comments, and responses; verifying action taken; resolving issues; and maintaining document control. The protocol also identifies where the In-progress, Draft, and Final 15% Design Submittals will be posted for review. The process is accomplished through the use of a database on the California High-Speed Train Project (CHSTP) ProjectSolve website.

Prior to the development of the Final 15% Design Submittal, the PMT will conduct six (6) submittal reviews, including:

- Five (5) In-progress Design Submittal Reviews
- One (1) Draft 15% Design Submittal Review

The PMT In-progress Design Submittal Reviews will correspond to In-progress Design Submittals at major stages of completion by design element. The Draft 15% Design Submittal Review will be performed on a Draft 15% Design Submittal, which will include all design elements and incorporate and/or address all comments received from the In-progress Design Submittal Reviews. This review will also consider system integration, including both boundary interface conditions and design integration within the segment. A Final 15% Design Submittal will represent the final product and will not be subject to review and comment by the PMT.

1.0 INTRODUCTION

1.1 PURPOSE OF TECHNICAL MEMORANDUM

The process outlined in this technical memorandum creates an auditable trail for the In-progress and Draft 15% Design Submittals prepared by the Regional Consultant and reviews performed by the Program Management Team (PMT). The process is defined by an established protocol for: transmitting submittals, review comments, and responses; verifying action taken; resolving issues; and maintaining document control. The process is accomplished through the use of a database on the California High-Speed Train Project (CHSTP) ProjectSolve website.

Prior to the development of the Final 15% Design Submittal, the PMT will conduct six (6) submittal reviews, including:

- Five (5) In-progress Design Submittal Reviews
- One (1) Draft 15% Design Submittal Review

The intent of the In-progress and Draft 15% Design Submittal Reviews is to verify compliance with the 15% Design Scope Guidelines Technical Memorandum, TM 0.1, and corresponding CHSTP design criteria and system requirements.

The In-progress Design Submittal Reviews will correspond to In-progress Design Submittals at major stages of completion by design element, as identified in Table 1. In-progress Design Submittals may be combined as appropriate. The Draft 15% Design Submittal Review will be performed on a Draft 15% Design Submittal, which will include all design elements and incorporate and/or address all comments received from the In-progress Design Submittal Reviews. This review will also consider system integration, including both boundary interface conditions and design integration within the segment. A Final 15% Design Submittal will represent the final product and will not be subject to review and comment by the PMT.

Table 1: *In-progress and Draft 15% Design Submittals for Review*

Submittal	Design Element
1	Alignment and Typical Sections
2	Structures, Viaducts, Tunnels
3	Stations, Maintenance Facilities including Storage
4	Traction Power
5	Utility Relocations, Maintenance of Way Facilities & Trackside Access, Other (to be determined)
6	Draft 15% Design

The In-progress, Draft, and Final 15% Design Submittals will be posted on the CHSTP ProjectSolve website within the appropriate alignment section site. All submittals and corresponding submittal review comments and responses will be located in the Design Submittals and Reviews folder within the Preliminary Engineering folder. The folder hierarchy is illustrated in Figures 1 and 2 of Appendix A.

The purpose of this document is to define the process for transmitting submittals, review comments, and responses, such that:

- An auditable trail for submittals transmitted by the Regional Consultant is established.
- An auditable trail for submittal reviews performed by the PMT is established.
- An auditable trail for verification of action taken by the Regional Consultant in response to PMT review is established.
- An auditable trail for the resolution of issues identified in the design review process is established.

1.2   GENERAL INFORMATION

1.2.1 Definition of Terms

Authority	California High-Speed Rail Authority
CHSTP	California High-Speed Train Project
EMT	Engineering Management Team
PMT	Project Management Team

2.0   DEFINITION OF TECHNICAL TOPIC

Not used

3.0   ASSESSMENT / ANALYSIS

Not used

4.0 SUMMARY AND RECOMMENDATIONS

4.1 PROCEDURE

The procedure for transmitting design submittals, review comments, and responses is illustrated in the Design Submittal and Review Protocol Flowchart included as Appendix A. The flow chart identifies the related activities and responsibilities assigned to the Regional Consultant, the PMT Regional Manager, and the PMT Engineering Management Team (EMT) for each step of the protocol.

Each activity is numbered on the flow chart, and a corresponding written description follows.

The EMT comment/response matrix, identified in the Design Submittal and Review Protocol Flowchart, illustrates the process used to record EMT comments and subsequent Regional Consultant responses. The matrix is included as Appendix B.

5.0   SOURCE INFORMATION AND REFERENCES

The specific scope of work for each In-progress and Draft 15% Design Submittal is to be consistent with the most recent issue of the 15% Design Scope Guidelines Technical Memorandum, TM 0.1.

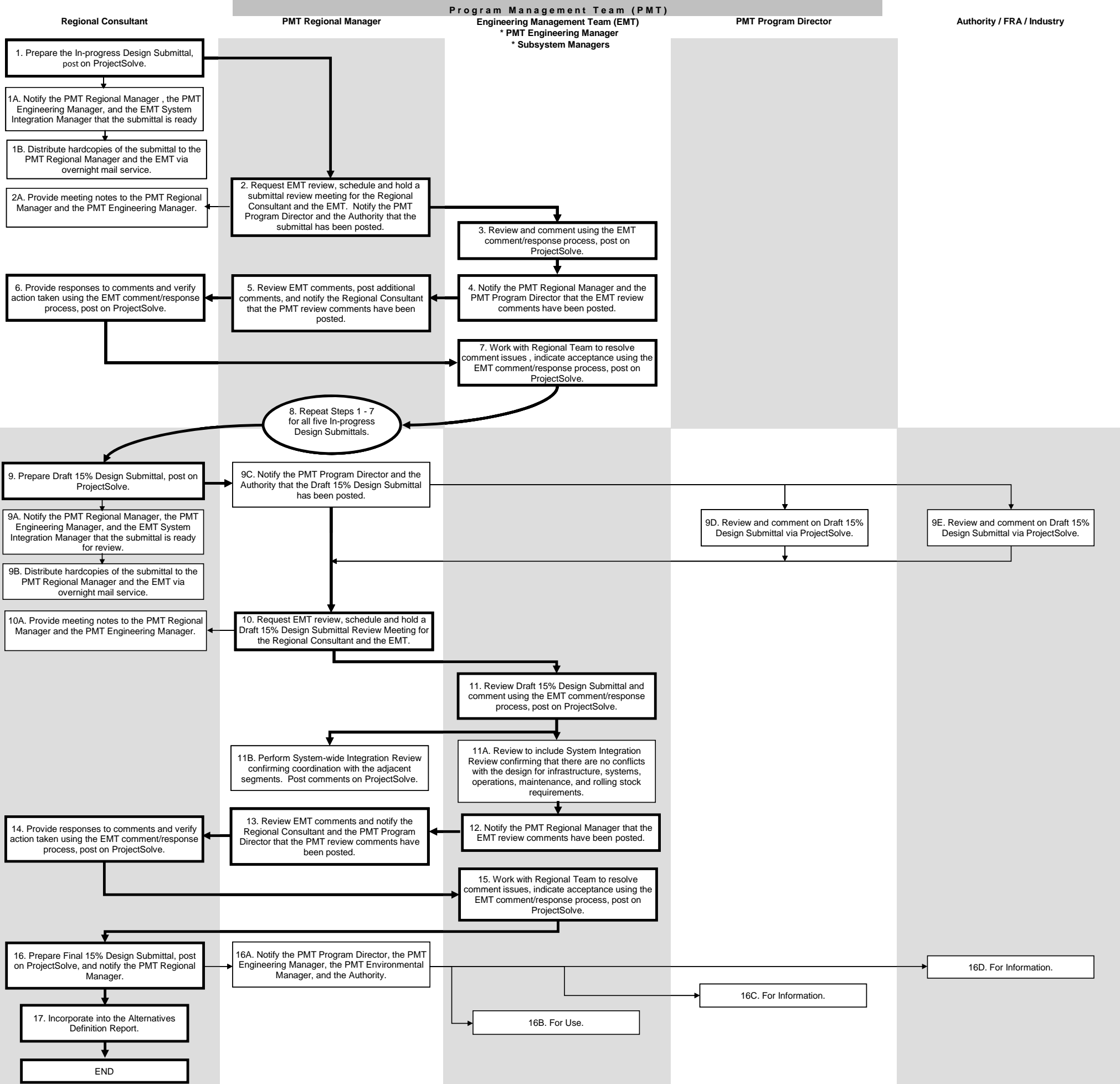## 6.0 DESIGN MANUAL CRITERIA

Not used

APPENDICES

A. Design Submittal and Review Protocol Flowchart and Activity Descriptions
B. EMT Comment/Response Matrix

Appendix A

Design Submittal and Review Protocol

Appendix A: Design Submittal and Review Protocol

In-progress Design Submittal Reviews

Draft 15% Design Submittal Review

Regional Consultant	**Program Management Team (PMT)**			
	PMT Regional Manager	**Engineering Management Team (EMT)** * **PMT Engineering Manager** * **Subsystem Managers**	**PMT Program Director**	**Authority / FRA / Industry**

1. Prepare the In-progress Design Submittal, post on ProjectSolve.

1A. Notify the PMT Regional Manager , the PMT Engineering Manager, and the EMT System Integration Manager that the submittal is ready

1B. Distribute hardcopies of the submittal to the PMT Regional Manager and the EMT via overnight mail service.

2A. Provide meeting notes to the PMT Regional Manager and the PMT Engineering Manager.

2. Request EMT review, schedule and hold a submittal review meeting for the Regional Consultant and the EMT. Notify the PMT Program Director and the Authority that the submittal has been posted.

3. Review and comment using the EMT comment/response process, post on ProjectSolve.

4. Notify the PMT Regional Manager and the PMT Program Director that the EMT review comments have been posted.

5. Review EMT comments, post additional comments, and notify the Regional Consultant that the PMT review comments have been posted.

6. Provide responses to comments and verify action taken using the EMT comment/response process, post on ProjectSolve.

7. Work with Regional Team to resolve comment issues , indicate acceptance using the EMT comment/response process, post on ProjectSolve.

8. Repeat Steps 1 - 7 for all five In-progress Design Submittals.

9. Prepare Draft 15% Design Submittal, post on ProjectSolve.

9A. Notify the PMT Regional Manager, the PMT Engineering Manager, and the EMT System Integration Manager that the submittal is ready for review.

9B. Distribute hardcopies of the submittal to the PMT Regional Manager and the EMT via overnight mail service.

9C. Notify the PMT Program Director and the Authority that the Draft 15% Design Submittal has been posted.

9D. Review and comment on Draft 15% Design Submittal via ProjectSolve.

9E. Review and comment on Draft 15% Design Submittal via ProjectSolve.

10A. Provide meeting notes to the PMT Regional Manager and the PMT Engineering Manager.

10. Request EMT review, schedule and hold a Draft 15% Design Submittal Review Meeting for the Regional Consultant and the EMT.

11. Review Draft 15% Design Submittal and comment using the EMT comment/response process, post on ProjectSolve.

11B. Perform System-wide Integration Review confirming coordination with the adjacent segments. Post comments on ProjectSolve.

11A. Review to include System Integration Review confirming that there are no conflicts with the design for infrastructure, systems, operations, maintenance, and rolling stock requirements.

14. Provide responses to comments and verify action taken using the EMT comment/response process, post on ProjectSolve.

13. Review EMT comments and notify the Regional Consultant and the PMT Program Director that the PMT review comments have been posted.

12. Notify the PMT Regional Manager that the EMT review comments have been posted.

15. Work with Regional Team to resolve comment issues, indicate acceptance using the EMT comment/response process, post on ProjectSolve.

16. Prepare Final 15% Design Submittal, post on ProjectSolve, and notify the PMT Regional Manager.

16A. Notify the PMT Program Director, the PMT Engineering Manager, the PMT Environmental Manager, and the Authority.

16B. For Use.

16C. For Information.

16D. For Information.

17. Incorporate into the Alternatives Definition Report.

END

Design Submittal and Review Protocol
Activity Descriptions

1. Regional Consultant to prepare the In-progress Design Submittal and post on ProjectSolve in the In-progress Design Submittals and Reviews folder (see Figures 1 and 2).

    Create a new submittal and review folder identifying the contents of the In-progress Design Submittal. Add the submittal file to the folder (upload onto ProjectSolve) by selecting the "Add File" field or by dragging and dropping the file into the window.

1A. Regional Consultant to notify the PMT Regional Manager, the PMT Engineering Manager, and the EMT System Integration Manager that the submittal is ready for review.

    Use the ProjectSolve "Send an Alert" email notification feature (click on the "Paper Airplane" icon). This feature transmits a hyperlink to the location of the document. The subject/header line in the email transmittal must include the title of the In-progress Design Submittal.

1B. Regional Consultant to provide hardcopies of the In-progress Design Submittal to the PMT Regional Manager (one copy) and the EMT (two copies) via overnight mail service.

2. PMT Regional Manager to request EMT review, and schedule and hold a submittal review meeting for the Regional Consultant and the EMT. The purpose of the review meeting is to provide the EMT an overview and understanding of the Regional Consultant intent and application of the design criteria. PMT Regional Manager to notify the PMT Program Director and the Authority that the submittal has been posted.

2A. Regional Consultant to provide draft meeting notes to the PMT Regional Manager and the PMT Engineering Manager within five (5) working days. Meeting notes will be posted on ProjectSolve in the corresponding submittal and review folder (see Figures 1 and 2) and serve as a record of the meeting, identifying attendees and main points of discussion.

3. All formal EMT comments on the submittal will be made via ProjectSolve. EMT to review the In-progress Design Submittal and provide comments posted on ProjectSolve in the corresponding submittal and review folder (see Figures 1 and 2) within ten (10) working days of the review meeting.

    Use the EMT comment/response process (see Appendix B). Indicate priority using coded field: "1"=Mandatory, "2"=Recommended, "3"=Information (no response required) and complete fields for date, reviewer subsystem, and reviewer initials.

4. EMT to notify the PMT Regional Manager and Program Director that EMT review comments have been posted.

    Use the ProjectSolve "Send an Alert" email notification feature.

5. PMT Regional Manager to post comments from his or her review, review EMT comments, and notify the Regional Consultant that PMT review comments have been posted.

    Use the ProjectSolve "Send an Alert" email notification feature.

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6.   Regional Consultant to provide responses to comments posted on ProjectSolve within ten (10) working days of notification by the PMT Regional Manager that comments are ready for response.

        Complete response field using the EMT comment/response process (see Appendix B).
        a. Regional Consultant response in the "Action Taken" field should address how the comment is to be incorporated into the next submittal or justify why the comment does not apply.
        b. Regional Consultant to code each response "A" (agree, will revise) or "D" (disagree, see explanation/action taken) and date.
        c. Regional Consultant to verify and document completion of action item with initials and date in the "RC Verified" field. Verification will be subject to audit.

7.   EMT and Regional Consultant to resolve any response issues coded "D" within ten (10) working days. EMT to document acceptance of response issue with Subsystem Manager initials and date in the "EMT Sign-Off" field using the EMT comment/response process (included as Appendix B).

8.   Repeat Steps 1 to 7 for all In-progress Design Submittals.

9.   Regional Consultant to prepare and post the Draft 15% Design Submittal on ProjectSolve in the Draft 15% Design Submittal and Review folder (see Figures 1 and 2).

9A.   Regional Consultant to notify the PMT Regional Manager, the PMT Engineering Manager, and the EMT System Integration Manager that the Draft 15% Design Submittal is ready for review.

        Use the ProjectSolve "Send an Alert" email notification feature.

9B.   Regional Consultant to distribute hardcopies of the Draft 15% Design Submittal to the PMT Regional Manager (one copy) and the EMT (two copies) via overnight mail service.

9C/D/E. PMT Regional Manager to notify the PMT Program Director and the Authority that the Draft 15% Design Submittal has been posted.

        Use the ProjectSolve "Send an Alert" email notification feature.

10.   PMT Regional Manager to request EMT review, and schedule and hold a Draft 15% Design Submittal Review Meeting for the Regional Consultant and the EMT. The purpose of the review meeting is to provide the EMT an overview and understanding of the Regional Consultant intent and application of the Design Criteria.

10A.   Regional Consultant to provide draft meeting notes to the PMT Regional Manager and the PMT Engineering Manager within five (5) working days. Meeting notes will be posted on ProjectSolve in the corresponding submittal and review folder and serve as a record of the meeting, identifying attendees and main points of discussion.

11.   EMT to review Draft 15% Design Submittal and provide comments on ProjectSolve in the corresponding submittal and review folder within twenty (20) working days of the review meeting.

        Use the EMT comment/response process. (see Appendix B) Indicate priority using coded field: "1"=Mandatory, "2"=Recommended, "3"=Information (no response required) and complete fields for date, reviewer subsystem and reviewer initials.

11A.   EMT's review of the Draft 15% Design Submittal to include a system integration review, confirming that the system elements to be included in the Draft 15% Design Submittal are consistent with system design requirements.

11B.   PMT Regional Manager to perform system-wide integration review on boundary interface conditions and confirm design integration with adjacent segments, post comments from his or her review.

12.   EMT to notify the PMT Regional Manager that EMT review comments have been posted.

        Use the ProjectSolve "Send an Alert" email notification feature.

13.   PMT Regional Manager to review EMT comments and notify the Regional Consultant and the PMT Program Director that PMT review comments have been posted.

        Use the ProjectSolve "Send an Alert" email notification feature.

14.   Regional Consultant to provide responses to comments via ProjectSolve within twenty (20) working days of notification by PMT Regional Manager that comments are ready for response.

        Complete response field using the EMT comment/response process. (Included as Appendix B)
        a.   Regional Consultant response in the "Action Taken" field should address how the comment is to be incorporated into the next submittal or justify why the comment does not apply.
        b.   Regional Consultant to code each response "A" (agree, will revise) or "D" (disagree, see explanation/action taken) and dated.
        c.   Regional Consultant to verify and document completion of action item with initials and date in the "Verified" field. Verification is subject to audit.

15.   EMT and Regional Consultant to resolve any comment/response issues coded "D" within twenty (20) working days. EMT to document acceptance of each response issue with Subsystem Manager initials and date in the "EMT Sign-Off" field using the EMT comment/response process.

16.   Regional Consultant to prepare the Final 15% Design Submittal and post on ProjectSolve in the Final 15% Design Submittal folder (see Figures 1 and 2). Two hardcopies are to be provided to the PMT, one hardcopy for the Regional Manager and one hardcopy for the EMT.

16A.   PMT Regional Manager to notify the PMT Program Director, the PMT Engineering Manager, the PMT Environmental Manager, and the Authority that the Final 15% Design Submittal has been posted to ProjectSolve.

16B.   PMT Regional Manager to alert the PMT Engineering and Environmental Managers via ProjectSolve that 15% Design Submittal is available for use.

16C/D. PMT Regional Manager to alert the PMT Program Director and the Authority via ProjectSolve that 15% Design Submittal is available for information.

17.   Regional Consultant to incorporate the Final 15% Design Submittal into the Alternatives Definition Report.

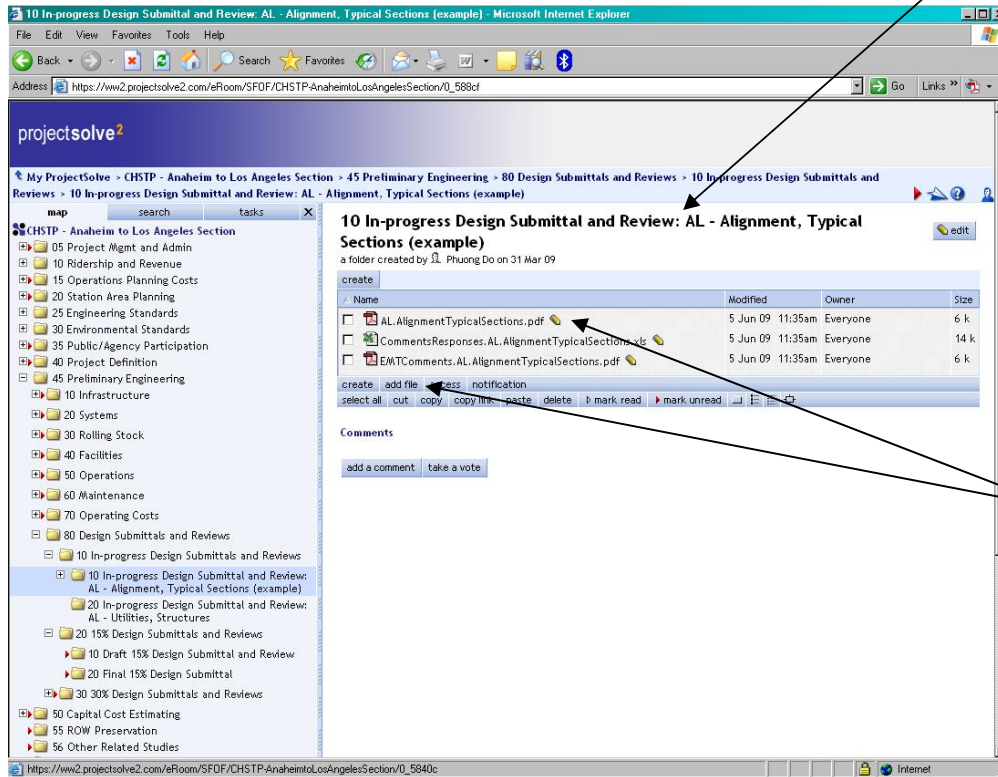END

Figure 1: Design Submittal and Review Folder Hierarchy
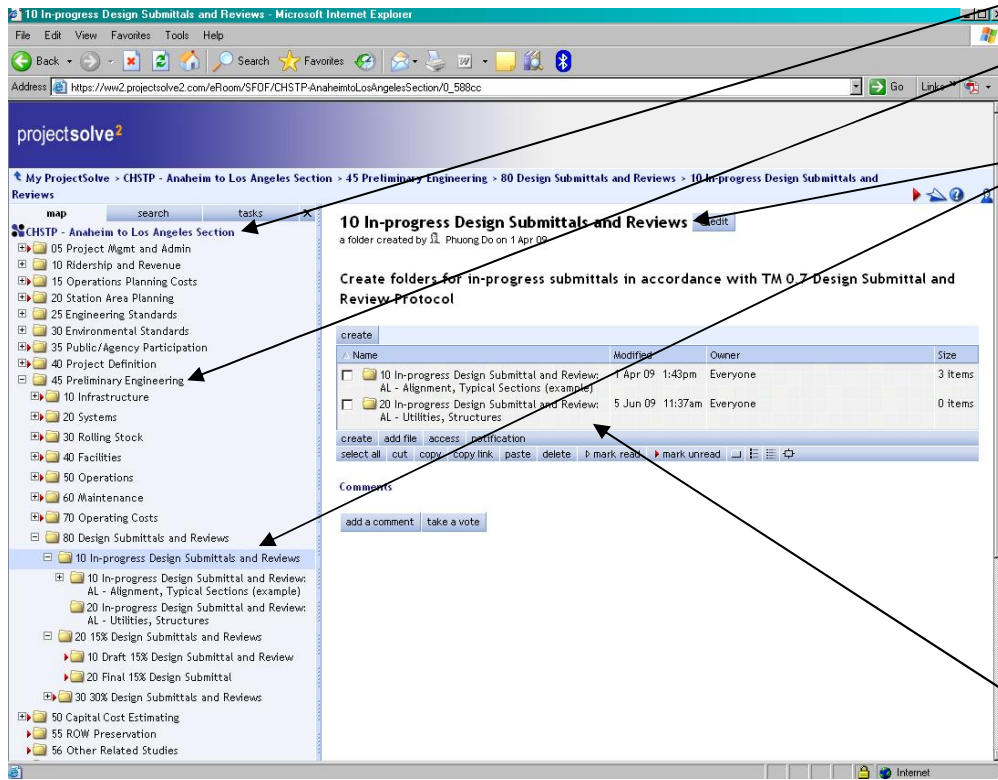
Alignment Section

Preliminary Engineering folder

In-progress Design Submittals and Reviews folder

For In-progress Design Submittals, create a new folder for each submittal that identifies submittal contents.

Figure 2: Submittal File Screen

Post submittal by selecting the "add file" field or by dragging and dropping into the window. Meeting minutes and EMT comments will also be posted in the corresponding submittal and review folder.

Appendix B

Comment/Response Matrix

Submittal Reviewer: **CHSTP ENGINEERING MANAGEMENT TEAM**

Regional Consultant:

Alignment Section:

Submittal Review Document:

Date Comments Posted:

Date of Regional Consultant
Submittal Meeting:

Date Submittal Posted:

Submittal Folder:

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REFERENCE				COMMENT PRIORITY LEVEL Comment Codes: **1**=Mandatory; **2**=Recommended; **3**=Information (no response required) Subsystem Codes: **INF**=Infrastructure; **SYS**=Systems; **MNT**=Maintenance; **OPS**=Operations; **RST**=Rolling Stock						RESPONSE Response Codes: **A**=Agree, will revise; **D**=Disagree, see explanation/action taken					
Mstr No.	Cmnt No.	Dwg/Sec or Doc	Page/Sht	Sht Type	Comment Code	Description	Subsystem Code	EMT Reviewer	Date	Response Code	Action Taken		Date	RC Verified by/date	EMT Sign-off ("D"s only) by/date
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EMT Comment/Response Template.xlsx