

California High-Speed Train Project



Request for Proposal for Design-Build Services

RFP No.: HSR 11-16
Book 3, Part C, Subpart 3

Plan Preparation Manual

Note:

This document contains an update to Page 2, 19, 28, and 34 of the document released in Addendum 1 titled *AD.1 B3 - Pt C.3 CHSTP Plan Preparation Manual*.

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Ready for Construction Drawings (RFC)	Construction drawings designed to 100% that are ready and used during construction. They are the basis for the as-built drawings
Regional Consultant	The consultant selected by the Authority to be responsible for the overall preliminary design of the project
As-Built Revised Drawings	Drawings generated during the as-built process for the purpose of providing clear and concise as-built correction information, but contain with no new or additional work added
Standard Drawings	Standard project elements for general use in the construction of the California High-Speed Train system, as determined applicable by the Contractor
Title Block	The title block in these guidelines is defined as the lower portion of the drawing containing information such as drawing title, signature blocks, project logos, etc.

1.4 USE OF COMPUTER AIDED DESIGN AND DRAFTING (CADD) SOFTWARE

CADD is an integral part of the project delivery process, from preliminary design through the completion of construction and as-built drawings. For drafting and sheet preparation, the CHSTP standard CADD production platform shall be Bentley's MicroStation V8i (Select Series 1 or higher). The CHSTP standard vertical design platform shall be Bentley's Inroads Suite V8i. For additional information regarding CADD software and subsequent computer systems requirements, see Section 1.2 of the CHSTP CADD Manual.

1.5 DEVELOPMENT OF ELECTRONIC FILES

Electronic files for all CHST Project design drawings must conform to the following information and developed with the following CADD best practices:

General

- Use only the "Default" model space. One model per DGN
- Use only CHSTP seed files to create master and sheet files

Master files

Master files typically contain proposed design information for the design elements of the project. This file can include, but is not limited to features, such as track/road alignments, alignment labels, right-of-way line, and construction features (retaining wall, guard rails, intrusion barriers, et al.). All master files must follow the guidelines below:

- For master files that need to be geo-referenced, use correct seed file from the corresponding State Plane Coordinates system.



ROADWAY STRUCTURES - ABUTMENT DETAILS	VARIES
ROADWAY STRUCTURES - PIER PLAN AND ELEVATION	-
<i>ELEVATION</i>	MATCH PLAN
<i>PLAN</i>	DETERMINED BY SIZE OF STRUCTURE
ROADWAY STRUCTURES - PIER DETAILS	VARIES
ROADWAY STRUCTURES - GIRDER FRAMING PLAN	DETERMINED BY SIZE OF STRUCTURE
ROADWAY STRUCTURES - BEARING DETAILS	VARIES
ROADWAY STRUCTURES - EXPANSION JOINT DETAILS	VARIES
ROADWAY STRUCTURES - DECK CONTOURS	DETERMINED BY SIZE OF STRUCTURE
ROADWAY STRUCTURES - DECK DRAINAGE DETAILS	VARIES
ROADWAY STRUCTURES - LOG OF TEST BORINGS	VARIES
UTILITIES	
UTILITIES - GENERAL NOTES	NO SCALE
UTILITIES - KEY MAP	VARIES
UTILITIES - UTILITY COMPOSITE PLAN - ALONG TRACK ALIGNMENT	1" =50'
<i>FOR EXISTING, PROPOSED AND RELOCATED UTILITIES</i>	
UTILITIES - UTILITY COMPOSITE PLAN - AT ROADWAYS	1" = 50'
<i>FOR EXISTING, PROPOSED AND RELOCATED UTILITIES</i>	-
UTILITIES - UTILITY PROTECTION & RELOCATION PLAN AND PROFILE	-
<i>FOR HIGH RISK UTILITIES AND AT CRITICAL AREAS, PINCH POINTS AS NEEDED</i>	-
<i>PLAN</i>	1" = 50'
<i>PROFILE</i>	H: 1" = 50' ; V: 1"=10'
UTILITY DETAILS	VARIES
TRACTION POWER	
TRACTION POWER - GENERAL NOTES	NO SCALE
TRACTION POWER - KEY MAP	VARIES
TRACTION POWER - UNDERTRACK DUCT BANK PLAN	-
<i>FOR UNDERTRACK DUCT BANKS AND MANHOLES LOCATIONS</i>	-
<i>PLAN</i>	1" = 20'
<i>PROFILE</i>	H: 1" = 20' ; V: 1"=10'
TRACTION POWER - GROUNDING AND BONDING TYPICAL SECTIONS	1" = 10'

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*** NOTE 1:**
PLANS VARY BY CONTRACT SUBMITTALS. CONTRACTOR SHALL MAINTAIN A CONSTRUCTION DRAWING LIST AND SHALL BE AVAILABLE UPON REQUEST.

**** NOTE 2:**
ROADWAY CIVIL AND STRUCTURAL PLANS UNDER STATE OR THIRD PARTY JURISDICTION SHALL FOLLOW CALTRANS OR THIRD PARTY STANDARDS



Platforms

- Identify HST Stations Side Platforms using the convention **X-[NAM]-[1]/[2]** where,

X: Subdivision name
[NAM] Three-character station designator assigned by PMT
[1]/[2] Denotes to which track platform is located along, 1 for NB and 2 for SB

Example:

Sierra Subdivision Fresno Station southbound side platform, **S-FRE-1**

- Identify HST Stations Center and Terminal Platforms using the convention **X-[NAM]-##** where,

X: Subdivision name
[NAM] Three-character station designator assigned by PMT
Denotes numbers of platforms (01-99)

Example:

Station along Sierra Subdivision with Center platform at **S-FRE**

Terminal Platforms at Transbay **B-TRA-04**

Grade Separated Structures

- Identify grade separated structures using the convention **X-{EL}-mp** where,

X: Subdivision name
{EL}: Two-character element designator
UP Underpass
OP Overpass
AS Aerial Structure
BR Bridge
SP Separation
mp: Denotes milepost **##.#**, identify northern milepost

- For multi or split structures, add a suffix to the above convention **X-{EL}-mp-[1]/[2]** where,

[1]/[2]: Denotes 1 for NB and 2 for SB, HST Structure

- For identifying HST Structure piers and bents, add a two-digit suffix to the above convention **X-{EL}-mp-##** or **X-{EL}-mp-[1]/[2]-##** where,

Denotes numbers of bents and piers, from north to south (01-99)

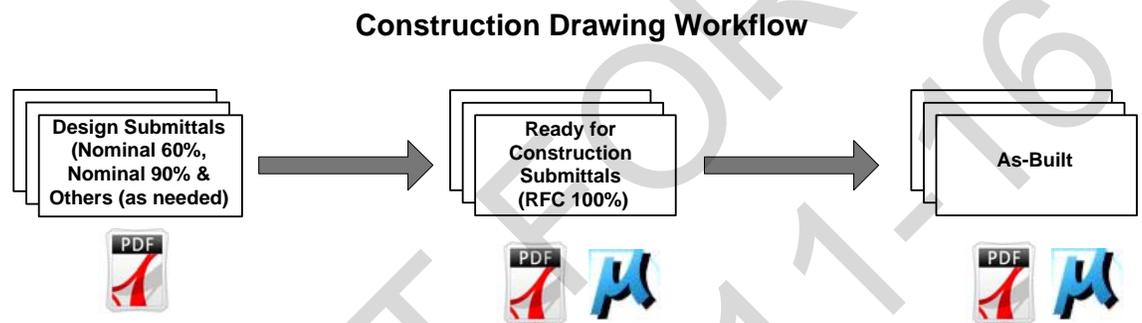
Note: A Grade Separated Structure may also have a BIN name given by the owner of the structure



4.0 CONSTRUCTION DRAWINGS

4.1 CONSTRUCTION DRAWING SUBMITTALS

Construction drawings furnished by the contractor represent the post-preliminary design project delivery, from proposed design through completion of construction. Construction drawings submittals can be categorized into three (3) types – Design Submittal drawings, Ready for Construction (RFC) and As-Built drawings. The below graphic indicates the construction drawing workflow:



4.1.1 CONSTRUCTION DRAWING SUBMITTAL REQUIREMENTS

The CHSTP management team has established SharePoint and ProjectWise as its primary electronic document managements system for construction drawings submittals. All drawings submitted to the Authority shall be in the following formats:

- Design Submittals (Nominal 60%, Nominal 90% and Others): PDF
- Ready for Construction (RFC) Drawings: PDF and DGN
- As-Built: PDF and DGN

For hard copy and electronic “soft” copy deliverables requirements, see Section 1.3.6 and 1.3.7 of the CHSTP CADD Manual.

4.1.2 SIGN AND SEAL REQUIREMENTS

Ready for Construction (RFC) drawings shall be signed and sealed by a licensed California professional engineer. Sign and seal information shall be placed in the stamp area of the titleblock, as indicated by Section 2.4.3 of this Manual.

4.2 AS-BUILT DRAWINGS

As-Built drawings are the original RFC drawings that have been updated showing changes that occurred during the course of construction. As-built drawings are mandatory for accurately recording the final field conditions at the completion of the contract.

