California High-Speed Train Project

TECHNICAL MEMORANDUM

Proposed Methodology for Demarcation of Territorial Subdivisions and Milepost Numerics
TM 1.1.8

Prepared by: _*Signed document on file*_____ _16 Sept 09_
James Campbell Date

Checked by: _*Signed document on file*_____ _16 Sept 09_
Paul J. Mosier Date

Approved by: _*Signed document on file*_____ _16 Sept 09_
Ken Jong, PE, Engineering Manager Date

Released by: __*Signed document on file*_____ _29 Sept 09_
Anthony Daniels, Program Director Date

Revision	Date	Description
0	16 Sept 09	Initial Release

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

Prepared by 

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:	*Signed document on file*	07 Aug 09
	John Chirco	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.

1.0 OVERVIEW

It is important that the users of any rail system be able to identify, with the greatest degree of precision possible, their exact location on the system. This is necessary not only for daily train operations and maintenance but especially in times of emergency when there is need to dispatch response units to a specific location within the 800 mile track area that will make up the CHSTP. The safety and security of all of the users depends on the effectiveness of the designation process and the specificity of the Mile Post numbering system.

2.0 PURPOSE AND OBJECTIVE

The purpose of this technical memorandum is to provide the basis and rationale for defining discrete sections of the California High Speed Train Project (CHSTP) as "subdivisions" and for further refining of these "subdivisions" into mile posts with designations that will be prefaced with an alphabetic identifier to better enable the precise location of system resources and assets.

3.0 METHODOLOGY

It is standard practice for US. railroads that large track systems are traditionally divided into manageable sections called branches or subdivisions. This is vital in enabling the location of trains, physical plant and assets, and to define right-of-way maintenance sections. It is proposed that the CHSTP be apportioned into seven "subdivisions" approximately equivalent to several of the current "Regional Manager" section territories. They are:

- Bay Subdivision (B)- Extends from CP Divide to San Francisco
- Capital Subdivision (C) – Extends from CP Divide to Sacramento
- Desert Subdivision (D) – Extends from Los Angeles to Bakersfield
- San Jacinto Subdivision (J) – Extends from CP Inland Junction to San Diego
- Pacheco Subdivision (P) – Extends from CP Merced to CP San Joaquin.
- Sierra Subdivision (S) – Extends from Bakersfield to CP Divide
- Tongva Subdivision (T) – Extends from CP Inland Junction to Anaheim (Irvine)

The naming conventions were crafted to avoid repetition of existing railroad subdivision or branch names in California to lessen confusion. While the specific name designations are not necessarily important (they were chosen to describe the geography or the geographic areas they encompass-except for Tongva (which was the name of a local Native American Tribe native to the Orange County region), providing separate letter designations is integral in establishing the individual subdivision identities. The lettering scheme will be presented in the CHSTP System Operating Rules and Special Instructions (or equivalent) and provide correspondence with the subdivisions for the purposes of reckoning location and use in mandatory directives. In order to provide accurate locations throughout the system, letter prefixes will be "attached" to the mile posts located at prescribed distances throughout each subdivision.

3.1 MILE POSTS

In accordance with the majority of US railroads, the "initial" mile post (MP) on the system is designated 0.0 beginning at the initial or final terminals in the system. The CHSTP mile post designations must satisfy three criteria. The system must be a) sequential, because operating and

maintenance crews must be able to determine distances and locations within the system accurately; b) specific, because the mile posts should also indicate the specific subdivision; and c) mnemonic, because CHST personnel must be able to use the numbering system intuitively and with facility for clear and concise communication. Several alternatives were examined to determine mile post nomenclature for the CHSTP that would satisfy these criteria:

- Mile Post Numbering North to South - Sacramento to San Diego
- Mile Post Numbering South to North – San Diego to Sacramento
- Mile Post Numbering from San Francisco
- Mile Post Numbering from Los Angeles

Mile Post Numbering North to South - Sacramento to San Diego

In this scenario, MP 0.0 would be designated at Sacramento station and continue south to San Diego, branching off at Merced to cover the route to San Francisco and branching off again at Los Angeles to cover the route to Anaheim. This option was discarded for two reasons, 1) the numbering system would not be sequential because of the San Francisco and Anaheim route segments; and 2) both the Sacramento and San Diego extensions of the CHST route will not be constructed under Phase 1 of the project.

Mile Post Numbering South to North- San Diego to Sacramento

MP 0.0 would be designated at the San Diego Station. This option was discarded for the reasons described in the preceding paragraph for North to South – Sacramento to San Diego.

Mile Post Numbering from San Francisco

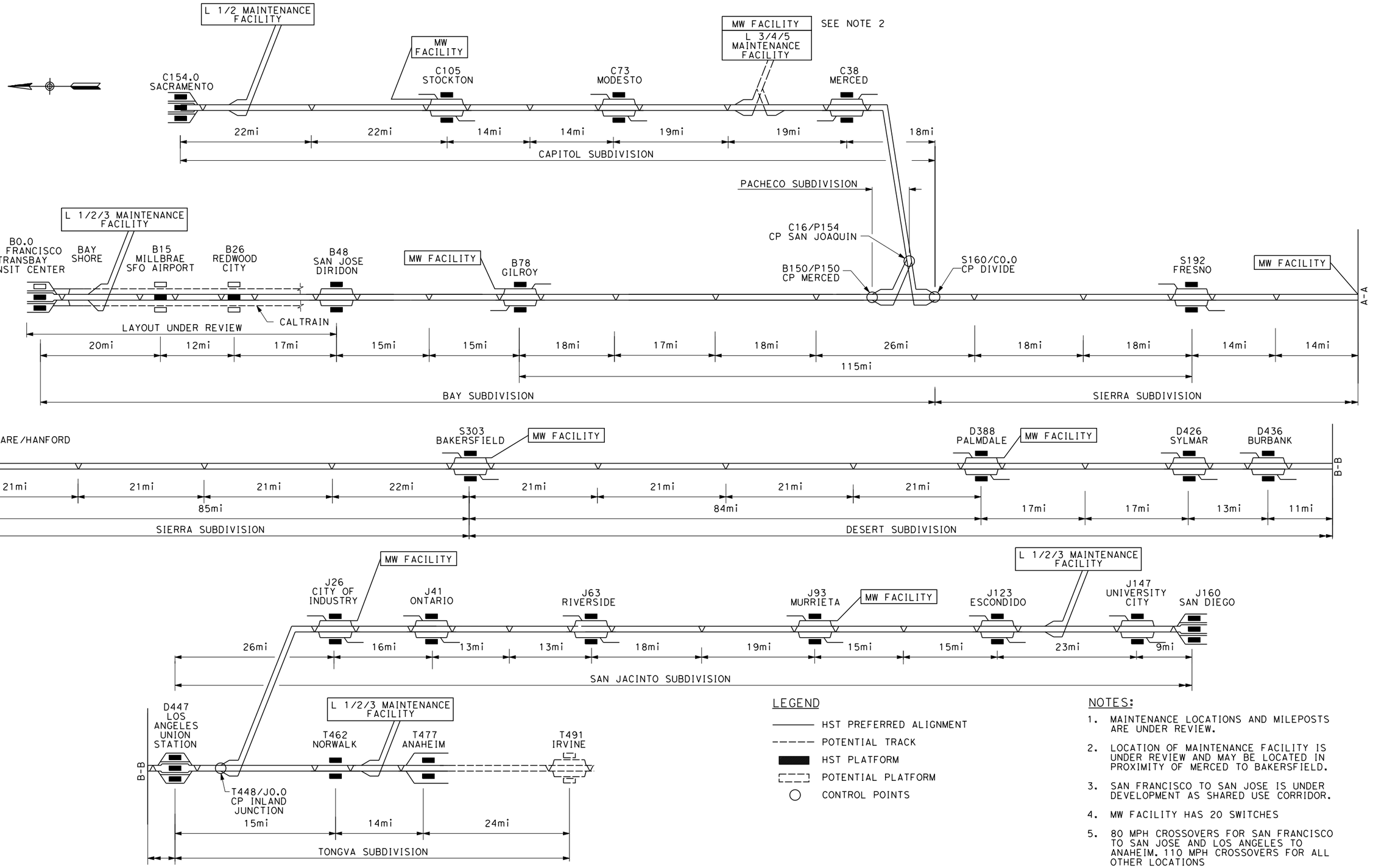
In this scenario, MP 0.0 would be designated at the Transbay Terminal in San Francisco. The numbering scheme would, for the most part, be sequential and the San Francisco segment is part of the Phase 1 build- out. To account for the extensions to San Diego and Sacramento, the numbering would begin again at MP 0.0 for example at CP LAD and again at CP Divide. This method of numbering mileposts assumes that any additional “extensions” from the original San Francisco-Los Angeles-Anaheim corridor (Phase 1) would initiate with a new mile post 0.0 at the junction with the original Phase 1 CHSTP system “spine”.

Mile Post Numbering from Los Angeles

MP 0.0 would be designated at Los Angeles Union Station. Los Angeles conforms to the criteria because of its identification as a major terminal central to the initial Phase 1 Service Plan that can easily allow for subsequent mile posts to radiate out and extend south to Anaheim and San Diego and north to San Francisco and Sacramento in an easily comprehensible sequential scheme. The numbering scheme compliments the Subdivision alpha tags creating a system mnemonic that accurately depicts the CHSTP for users in a practical, recognizable,configuration.

4.0 SUMMARY

It is proposed that the CHSTP system be described with seven subdivisions designated as BAY, CAPITOL, DESERT, SAN JACINTO, PACHECO, SIERRA and TONGVA and that these subdivisions be further divided into Mile Posts with a numbering sequence beginning from 0.0 in San Francisco prefixed with the initial letter designation of the subdivision where the mile post is located. It is further proposed that all subsequent high-speed corridor extensions (links to Sacramento and San Diego) begin at Mile Post 0.0 to be located at the junction where the extensions connect to the primary corridor “spine” of San Francisco-Los Angeles-Anaheim.



LEGEND

- HST PREFERRED ALIGNMENT
- POTENTIAL TRACK
- HST PLATFORM
- POTENTIAL PLATFORM
- CONTROL POINTS

NOTES:

1. MAINTENANCE LOCATIONS AND MILEPOSTS ARE UNDER REVIEW.
2. LOCATION OF MAINTENANCE FACILITY IS UNDER REVIEW AND MAY BE LOCATED IN PROXIMITY OF MERCED TO BAKERSFIELD.
3. SAN FRANCISCO TO SAN JOSE IS UNDER DEVELOPMENT AS SHARED USE CORRIDOR.
4. MW FACILITY HAS 20 SWITCHES
5. 80 MPH CROSSOVERS FOR SAN FRANCISCO TO SAN JOSE AND LOS ANGELES TO ANAHEIM. 110 MPH CROSSOVERS FOR ALL OTHER LOCATIONS

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY G. HARRIS
DRAWN BY D. SOLTERO
CHECKED BY J. CHIRCO
IN CHARGE K. JONG
DATE 02-25-10

PB PARSONS BRINCKERHOFF

CALIFORNIA HIGH-SPEED RAIL AUTHORITY
FLY CALIFORNIA
Without ever leaving the ground.

CALIFORNIA HIGH-SPEED TRAIN PROJECT

SYSTEM WIDE SCHEMATIC

CONTRACT NO. 13259
DRAWING NO. TM 1.1.8-A
SCALE NO SCALE
SHEET NO.

Sacramento
C154.0

San Francisco
Transbay
Terminal
B0.0

Stockton
C104.8

Oakland

Downtown
Modesto
C73.0

Millbrae-SFO
B14.7

Downtown
Merced
C37.5

CP San Joaquin
C16.0
P154.4

Redwood City
or Palo Alto
B26.4

Henry Coe
State Park

CP Divide
C0.0
S160.1

San Jose Diridon
B48.1

CP Merced
B150.0
P150.0

Fresno
S191.5

Gilroy
B77.7

Visalia/Tulare/Hanford

Bakersfield
S302.8

Palmdale Airport
D387.5

CP Inland Jct.
T 448.2
J0.0

Sylmar
D425.8

Burbank
D436.3

Industry
J25.5

Ontario Airport
J141.1

Riverside
J62.7

Los Angeles
D446.6

Norwalk
T461.9

Murrieta
J92.7

Anaheim
T476.9

Irvine
T491.0

Escondido
J123.4

University City
J146.9

San Diego
J159.5

Pacific
Ocean

20 10 0 Miles

20 10 0 20 40 60 80 Kilometers

Legend

- Bay Subdivision ("B")
- Capitol Subdivision ("C")
- Desert Subdivision ("D")
- San Jacinto Subdivision ("J")
- Pacheco Subdivision ("P")
- Sierra Subdivision ("S")
- Tongva Subdivision ("T")
- Altamont Regional Connections

Map based on 2005 Statewide Programmatic EIR/S preferred route, and staff recommendation to Authority Board December 19, 2007
Mapping Sources: US Census 2000; CA Dept. of Conservation, Farmland Mapping and Monitoring Program 2000;
California Resources Agency Legacy Project 2002; CA Dept. of Fish and Game 1999