

## **APPENDIX D.2: TRACK SHIFTS WORKS REPORT AND EXHIBITS – ALTERNATIVE B**



**CALIFORNIA HIGH SPEED TRAIN PROJECT  
CONSTRUCTABILITY ANALYSIS**

**APPENDIX D.2. TRACK SHIFTS WORKS ALTERNATIVE B REPORT AND  
EXHIBITS**

**March 2019**



**APPENDIX D.2. TRACK SHIFTS WORKS ALTERNATIVE B REPORT AND EXHIBITS**

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**1. ACTIONS ON THE SAN FRANCISCO TO SCOTT BOULEVARD SECTION. .... 1**



## **1. ACTIONS ON THE SAN FRANCISCO TO SCOTT BOULEVARD SECTION.**

The actions on tracks in the San Francisco to Scott Boulevard section are practically identical in A and B alternatives. The difference between one alternative and another can be found in the vicinity of the Brisbane workshops and the stations of Hayward Park, Hillsdale, Belmont and San Carlos. In this stations, Alternative A maintains the current tracks in its position while Alternative B adds two additional tracks to existing ones to facilitate overtaking, this segment is analyzed in an independent appendix (Appendix 6).

The collection of construction drawings that accompanies this document shows graphically the different degrees of impact to main tracks in the San Francisco to San Jose railway corridor. In them, the scope of the adaptation work for horizontal and vertical layout, impact on the catenary, turnouts, stations and at-grade crossings is shown.

In the present analysis, the San Francisco station does not undergo any modification, so it is assumed that there is no impact of the elements previously indicated.

As it is shown on the plans, the **changes in the horizontal** are localized, but require a great number of actions, with the largest amount of work needed at the following locations:

- Brisbane workshop-Bayshore station - Project Brisbane -
- South San Francisco station
- I-380 crossing near San Bruno station
- Millbrae station - Project Millbrae -
- Atherton station
- Passing tracks area

These actions stand out either because of the length of their modification or because of the size of their lateral displacement.

There are other minor actions that can be resolved by using track machinery and without having to provide new catenary poles.

The actions in the **longitudinal profile** have been classified by whether the track is raised or lowered.

The number of sections where the track is raised, is greater than the ones where a descent occurs, and may be solved by the addition of ballast and the use of track machinery, so the impact on the railway traffic will be minimal.

For the case when the track is lowered, the importance of this will be given by the degree of impact on the existing railway grade.

The impact on the **electrification system** due to a change in position of the contact wire in elevation varies along the corridor and are of greater importance those associated with the lateral displacement.

Due to the large number of stations and diversions existing along the track, impacts to the existing **track turnouts** is significant. Changes to turnouts can be classified as those that will remain on the track but that will be adjusted in their horizontal and vertical position, those that will be dismantled and the installation of new turnouts.

All the adjustments that have to do with the turnouts will be carried out in parallel with the actions on the track where it is located. Generally, the actions in turnouts are made during the weekend, since these operations are complex and if any adversity occurs there is more time available to solve it.

There is a large number of turnouts where profile changes are required. The major changes in the horizontal plane are associated with the disassembly and assembly of new turnouts. All changes in the position of the turnouts have associated changes in the catenary.

The modification of the main layout and the remodeling of the track yard in stations, require corresponding modifications in the **platforms**, either in horizontal, vertical, or both.

These modifications affect every platform of all the stations in the San Francisco to Scott Boulevard corridor. The degree of impact varies, going from little adjustments in platforms to its complete rebuilding.












Regarding the at-grade crossings within the corridor, due to changes in the existing horizontal and vertical layout and the existing crossing characteristics that allow little tolerances to displacements, it is necessary to rebuild almost every at-grade crossings, except for Villa Terrace and Bellevue. The degree of modification can lead to adjustments in the corresponding road. This is especially true in profile, as is the case, at the 4th Avenue level crossing with vertical displacements close to 1 ft.







# EXHIBITS





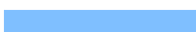

# LEGEND

-  CALTRAIN PLATFORM
-  HSR PLATFORM
-  MT-1
-  MT-2
-  SIDING TRACK
-  OVERHEAD BRIDGE
-  MAJOR UNDERPASS
-  CREEK UNDERPASS
-  TUNNEL
-  GRADE CROSSING
-  AREA OF ACTIVITY FOR LATERAL DISPLACEMENT





## LATERAL DISPLACEMENT

-  LESS THAN 1 ft.
-  MORE THAN 1 ft. AND LESS THAN 10 ft.
-  MORE THAN 10 ft. AND LESS THAN 21,34 ft.
-  MORE THAN 21,34 ft.

## PROFILE

-  INCREASE SUBGRADE
-  DECREASE SUBGRADE
-  INCREASE BALLAST THICKNESS
-  DECREASE BALLAST THICKNESS




## OCS

-  NEW OCS SYSTEM
-  DISPLACEMENT OF OCS POLE
-  DISPLACEMENT OF CONTACT WIRE
-  VERTICAL DISPLACEMENT OF CONTACT WIRE



## ACTIONS ON PLATFORMS

-  MODIFICATION OF EXISTING PLATFORM

## ANALYSIS OF SPECIAL EQUIPMENT

-  REMOVE
-  REMAIN VERTICAL ADAPTATION
-  NEW EQUIPMENT

## GRADE CROSSING TREATMENT

-  ADAPT
-  USABLE

\$USER\$ \$DATE\$ \$TIME\$ \$PENTBL\$ \$PLTDVRS\$ \$FILE\$

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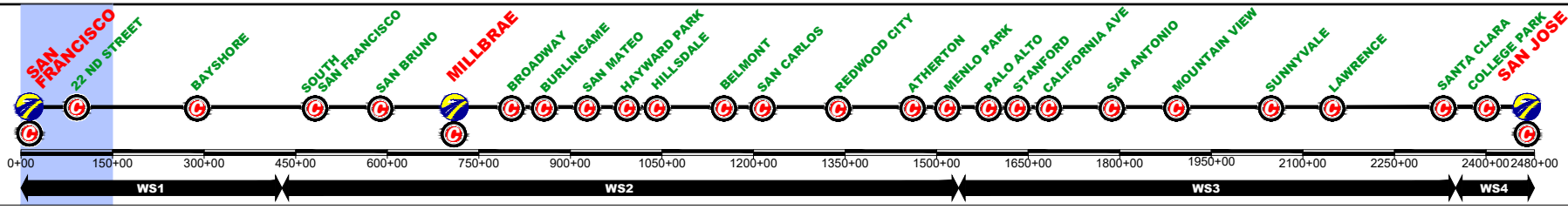
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CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
 SAN FRANCISCO TO SCOTT  
 TRACK SHIFTS WORKS  
 LEGEND  
 ALTERNATIVE B

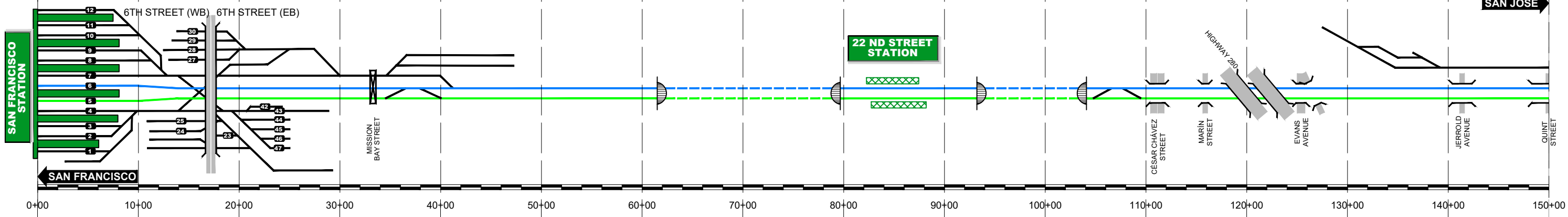
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  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

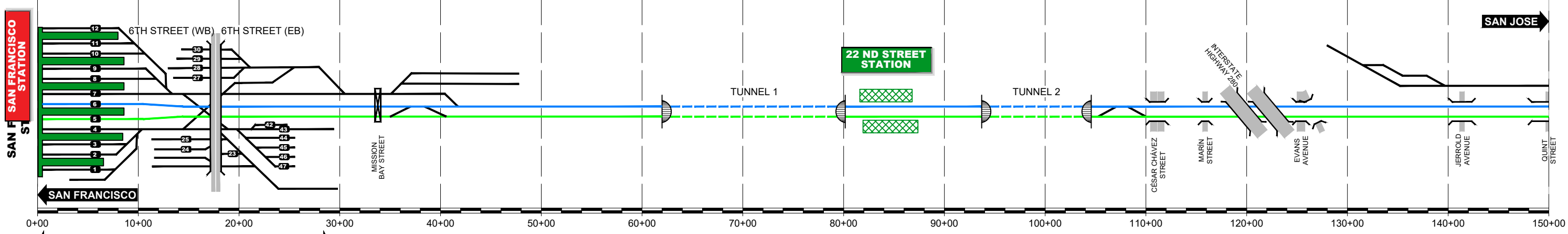
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- NEW OCS SYSTEM
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  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
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- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



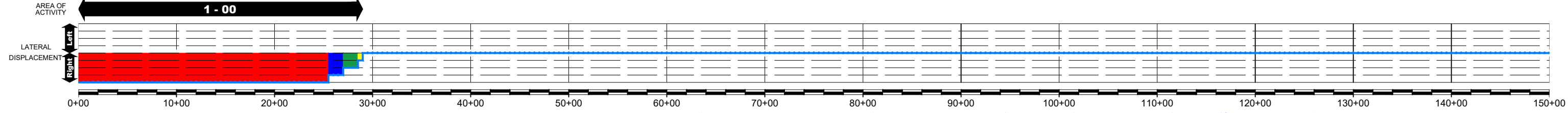
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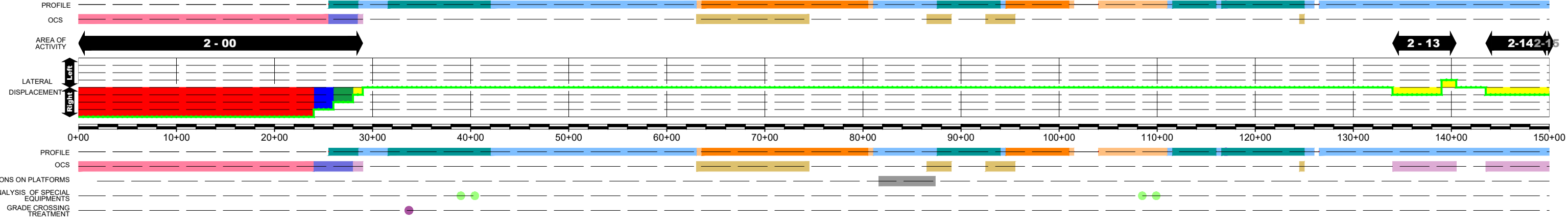
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MT-1



MT-2



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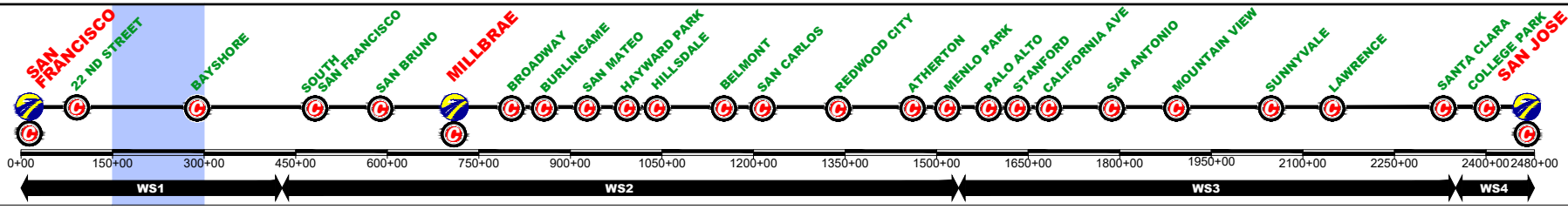


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SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
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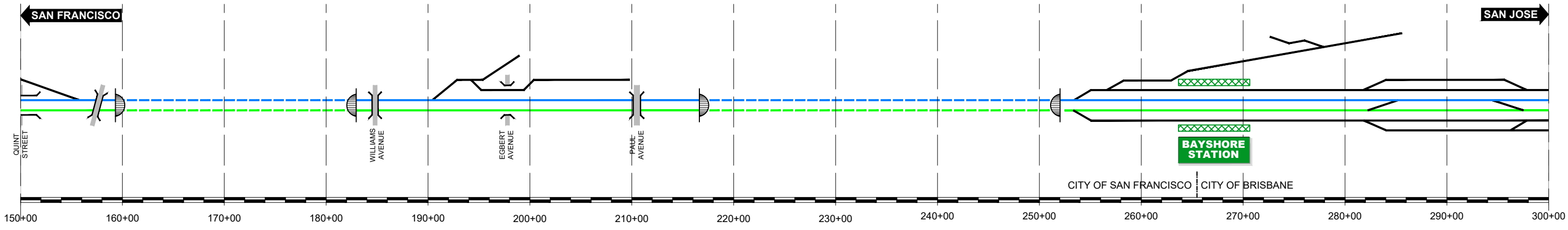
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- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

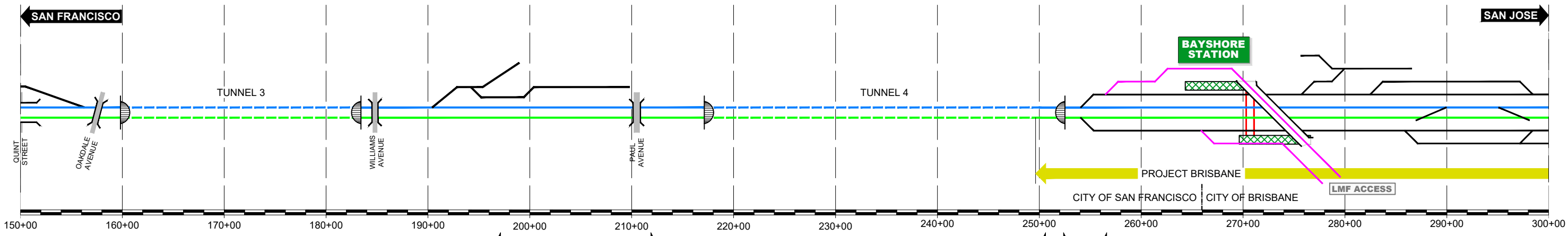
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- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



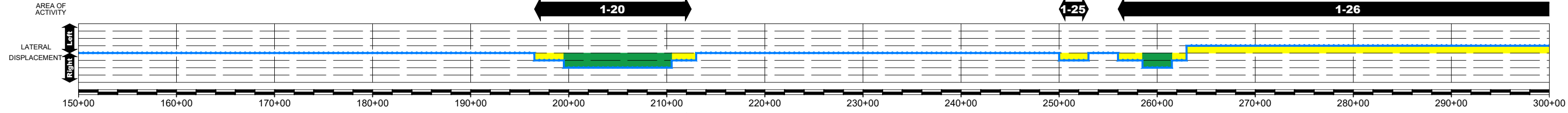
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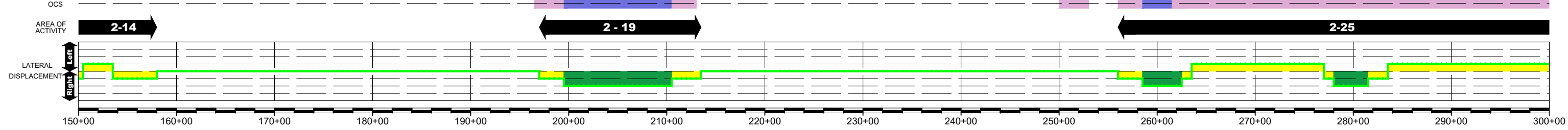
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**MT-1**



**MT-2**



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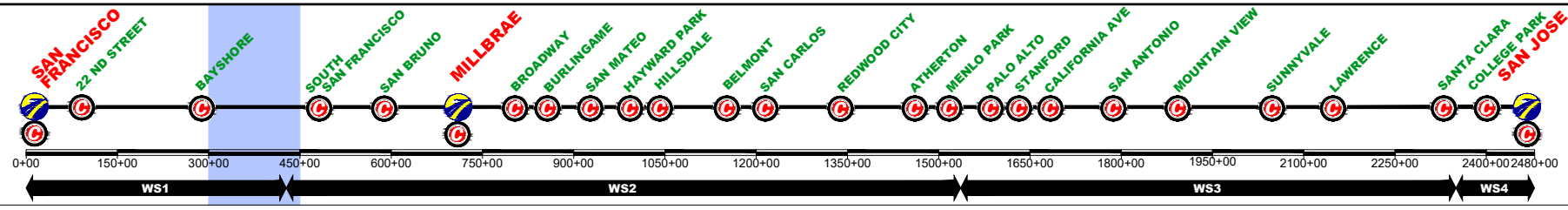


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**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

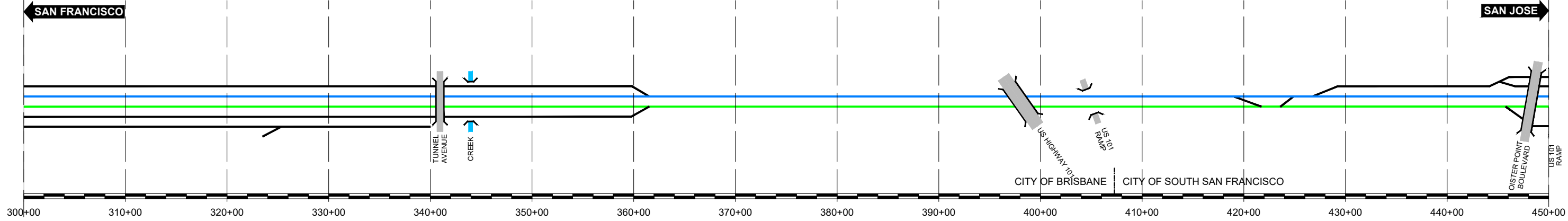
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- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

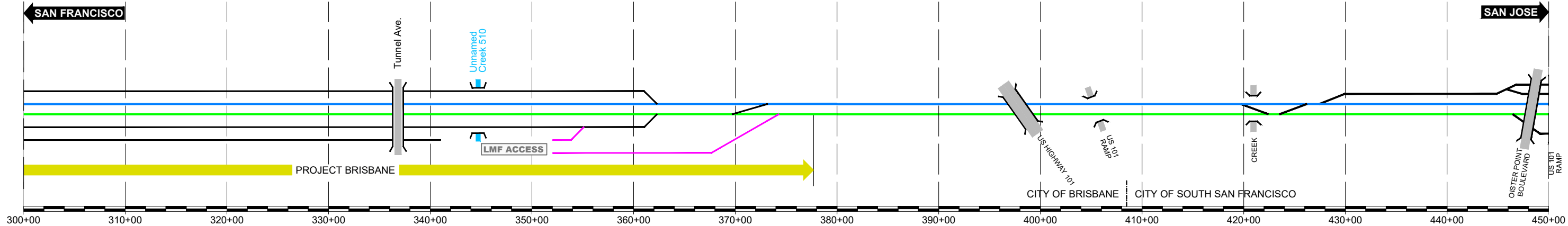
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  - VERTICAL DISPLACEMENT OF CONTACT WIRE
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  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



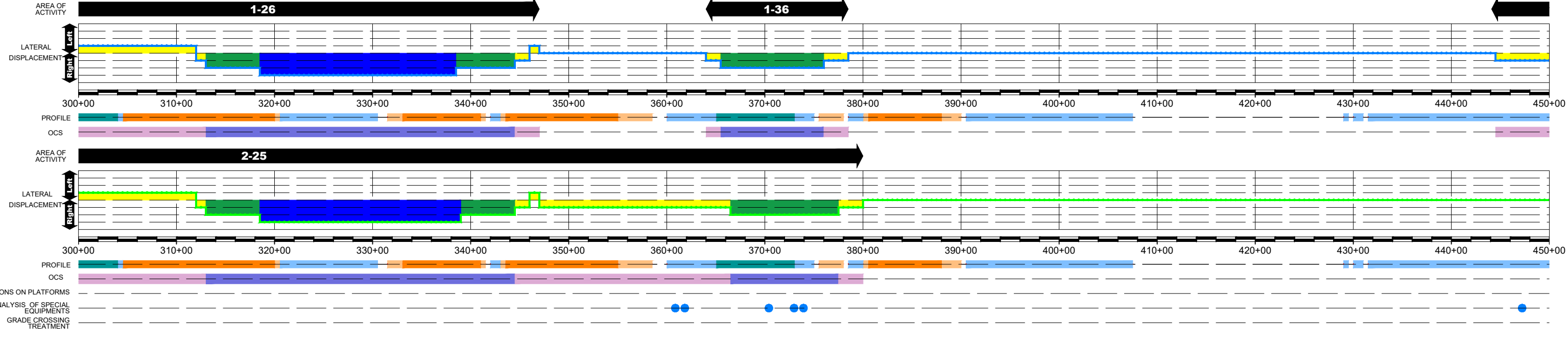
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**PROPOSED SF TO SJ SCHEME**



MT-1  
MT-2



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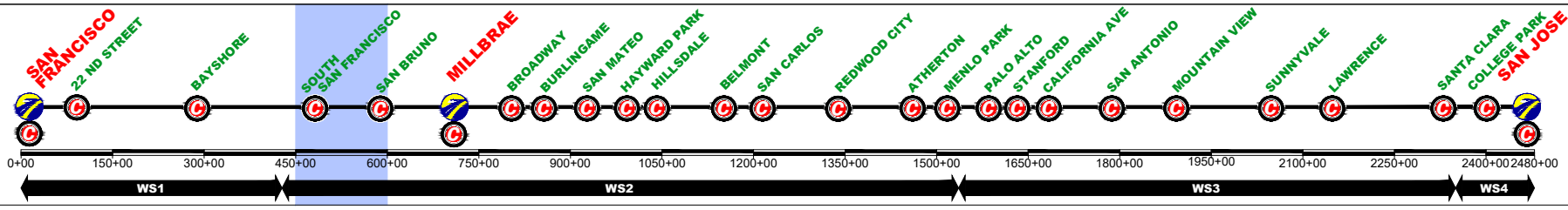
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**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
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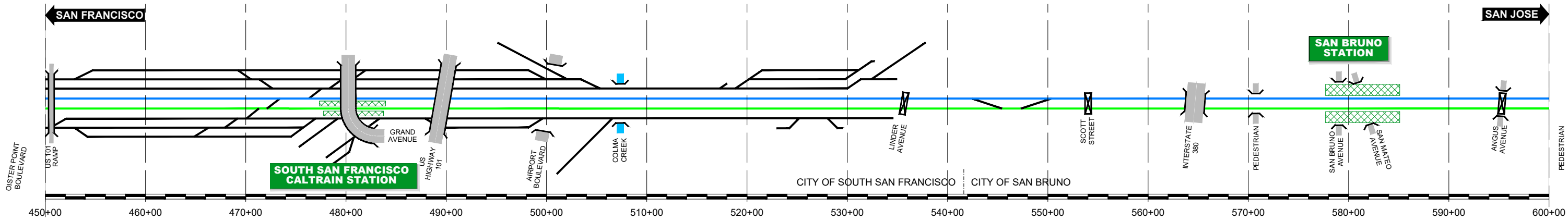
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- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

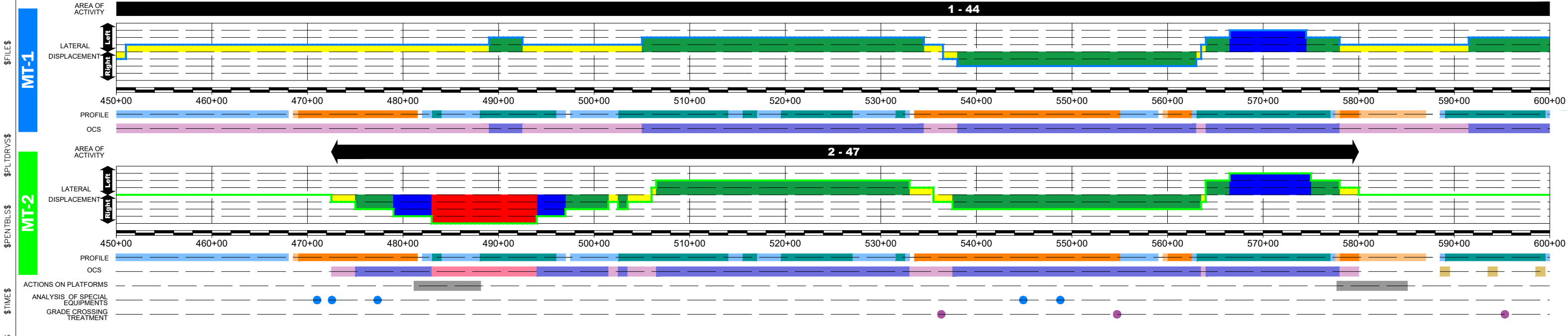
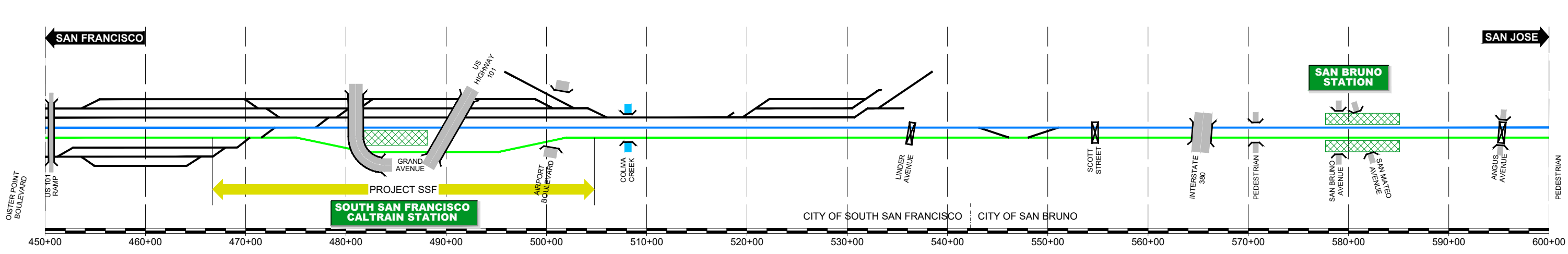
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
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- REMOVE
  - REMAIN VERTICAL ADAPTATION
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- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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**CALIFORNIA HIGH-SPEED TRAIN PROJECT**

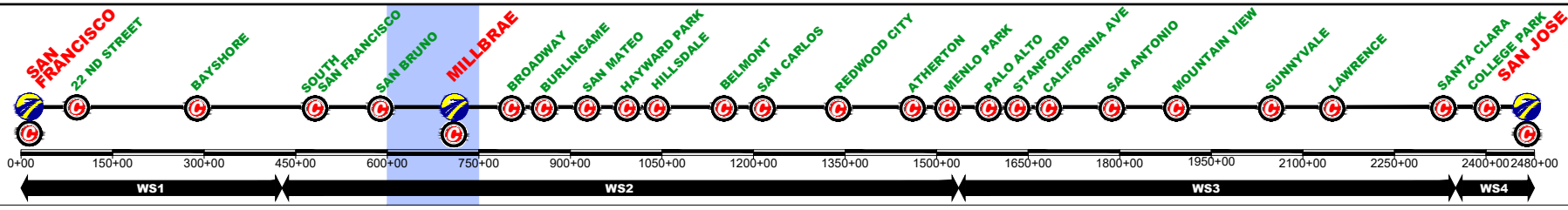
**SAN FRANCISCO TO SAN JOSE**

SAN FRANCISCO TO SCOTT TRACK SHIFTS WORKS ALTERNATIVE B

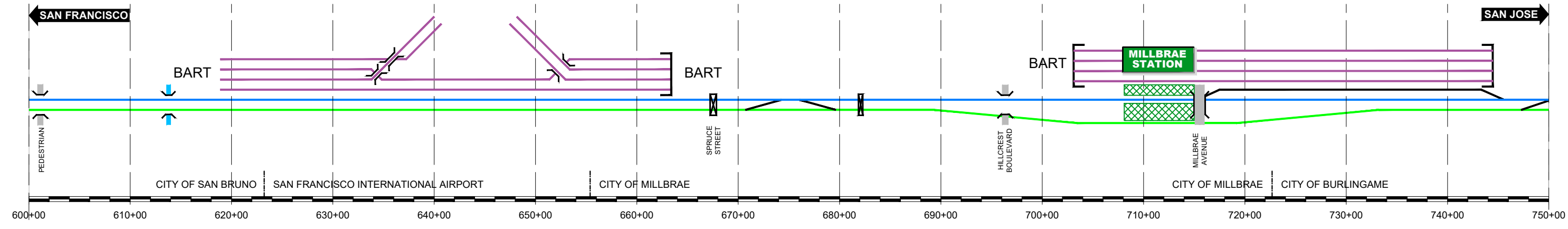
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- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

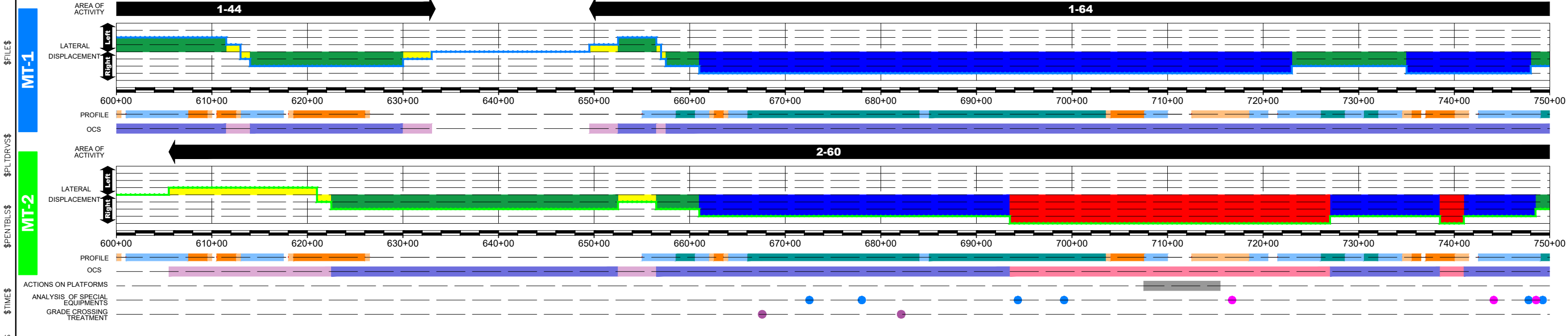
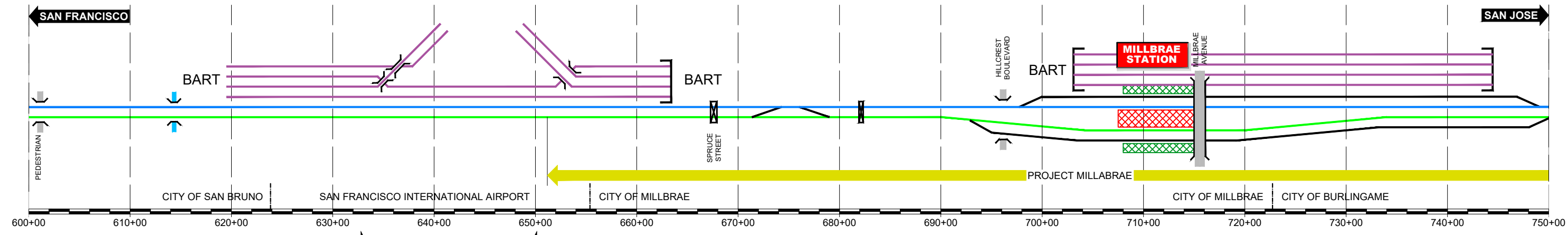
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**EXISTING SF TO SJ SCHEME**



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**SAN FRANCISCO TO SAN JOSE**

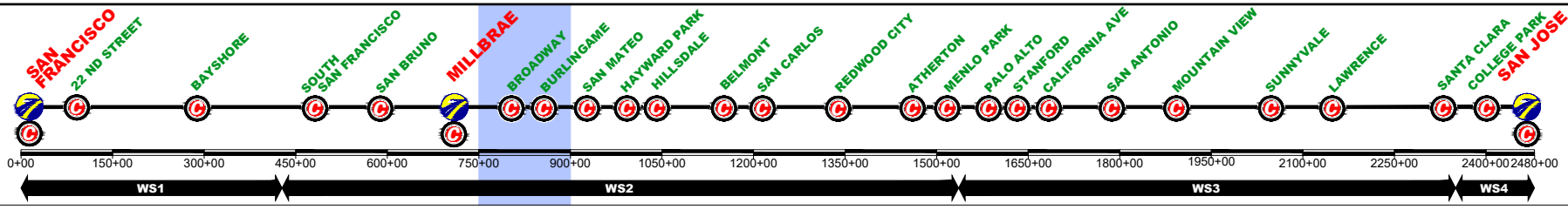
SAN FRANCISCO TO SCOTT TRACK SHIFTS WORKS ALTERNATIVE B

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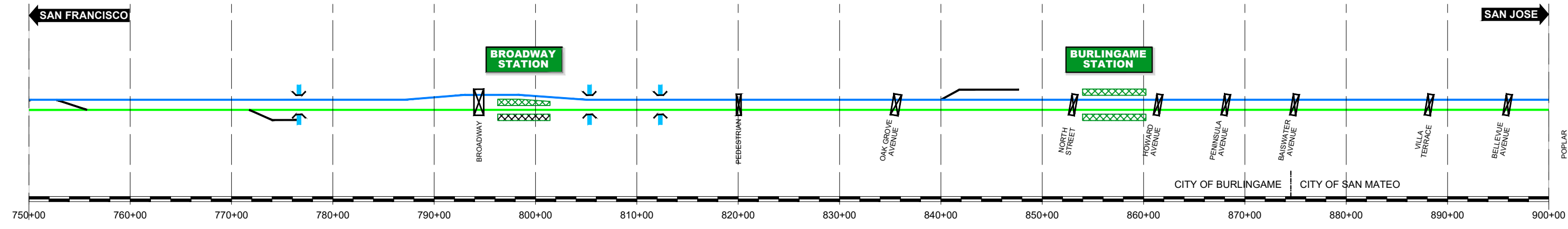


- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
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  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

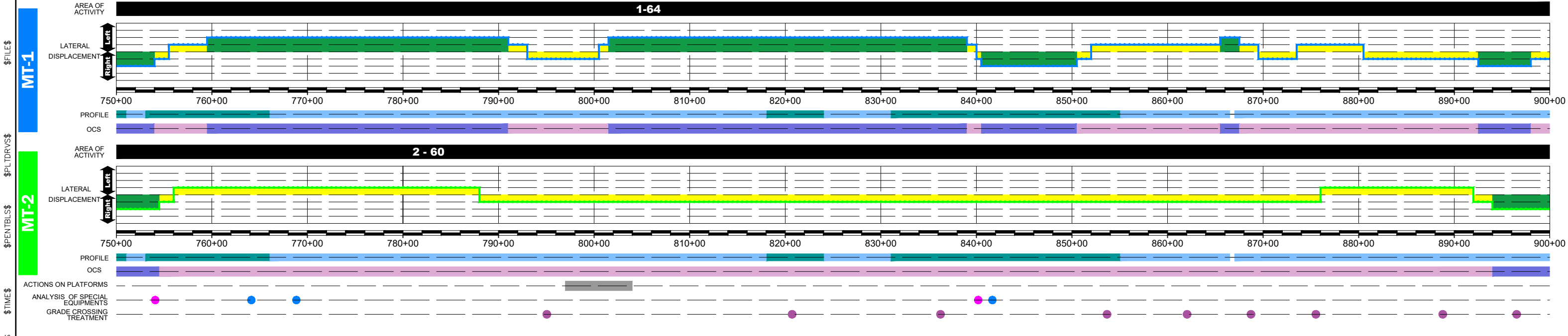
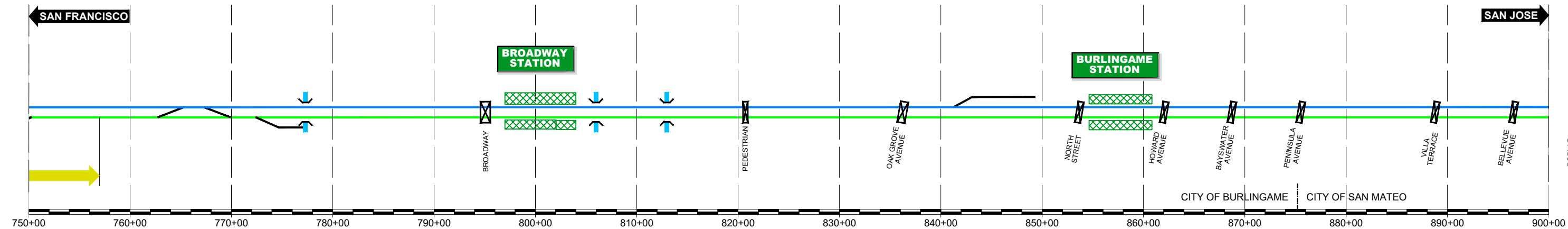
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- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



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CALIFORNIA HIGH-SPEED TRAIN PROJECT

**SAN FRANCISCO TO SAN JOSE**

SAN FRANCISCO TO SCOTT

TRACK SHIFTS WORKS

ALTERNATIVE B

CONTRACT NO.	
DRAWING NO.	FJ-CV-16FS-TSB-07
SCALE	NOT TO SCALE
SHEET NO.	7 OF 17

**LATERAL DISPLACEMENT**

- LESS THAN 1 ft.
- MORE THAN 1 ft. AND LESS THAN 10 ft.
- MORE THAN 10 ft. AND LESS THAN 21,34 ft.
- MORE THAN 21,34 ft.

**PROFILE**

- INCREASE SUBGRADE
- DECREASE SUBGRADE
- INCREASE BALLAST THICKNESS
- DECREASE BALLAST THICKNESS

**OCS**

- NEW OCS SYSTEM
- DISPLACEMENT OF OCS POLE
- DISPLACEMENT OF CONTACT WIRE
- VERTICAL DISPLACEMENT OF CONTACT WIRE

**ACTIONS ON PLATFORMS**

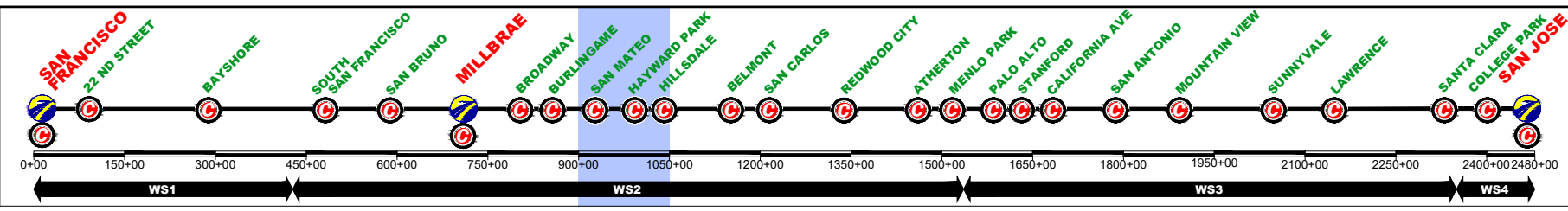
- MODIFICATION OF EXISTING PLATFORM

**ANALYSIS OF SPECIAL EQUIPMENT**

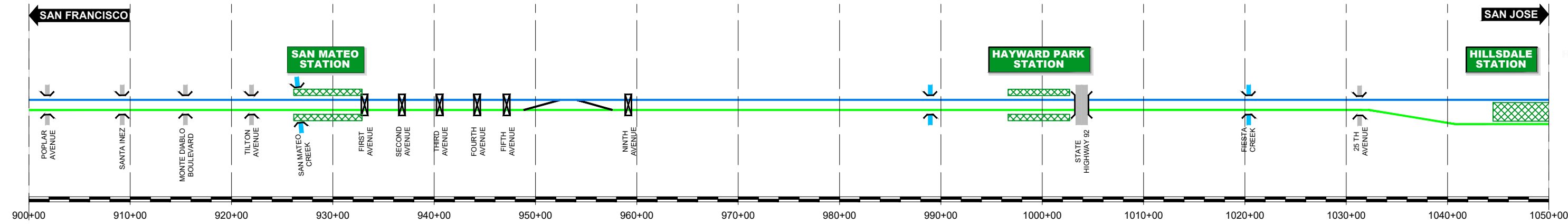
- REMOVE
- REMAIN VERTICAL ADAPTATION
- NEW EQUIPMENT

**GRADE CROSSING TREATMENT**

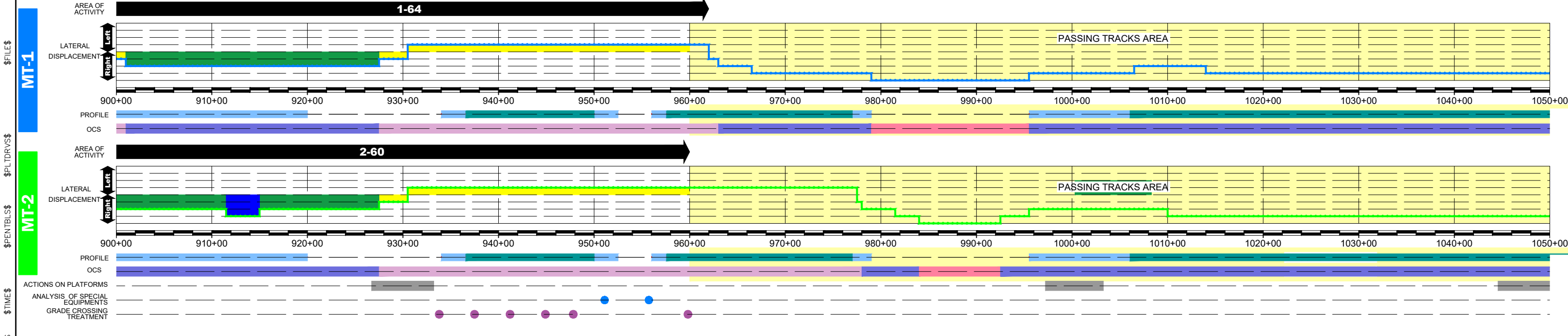
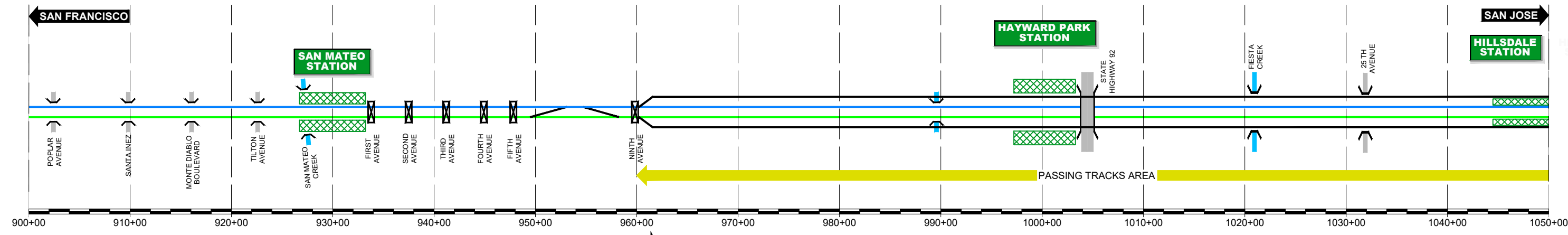
- ADAPT
- USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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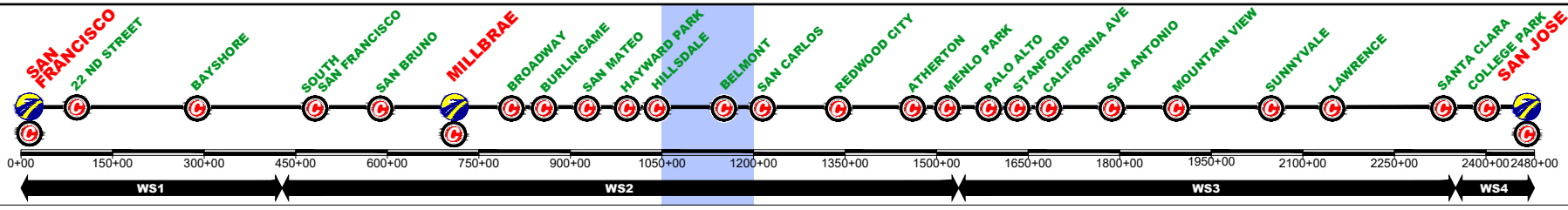
**SAN FRANCISCO TO SAN JOSE**

SAN FRANCISCO TO SCOTT TRACK SHIFTS WORKS ALTERNATIVE B

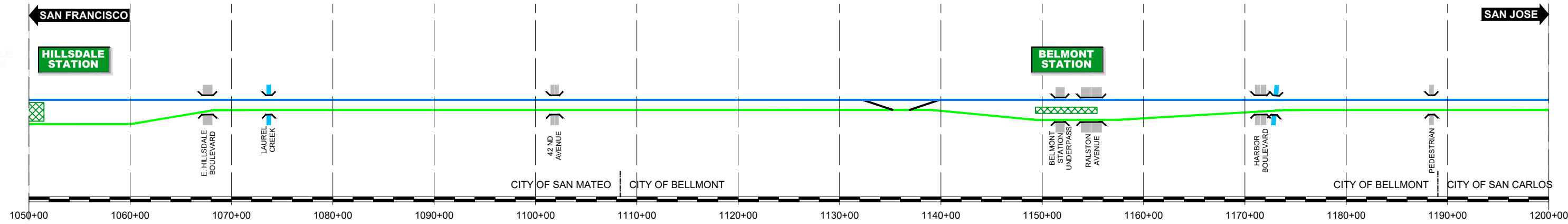
CONTRACT NO.	
DRAWING NO.	FJ-CV-16FS-TSB-01
SCALE	NOT TO SCALE
SHEET NO.	8 OF 17

- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

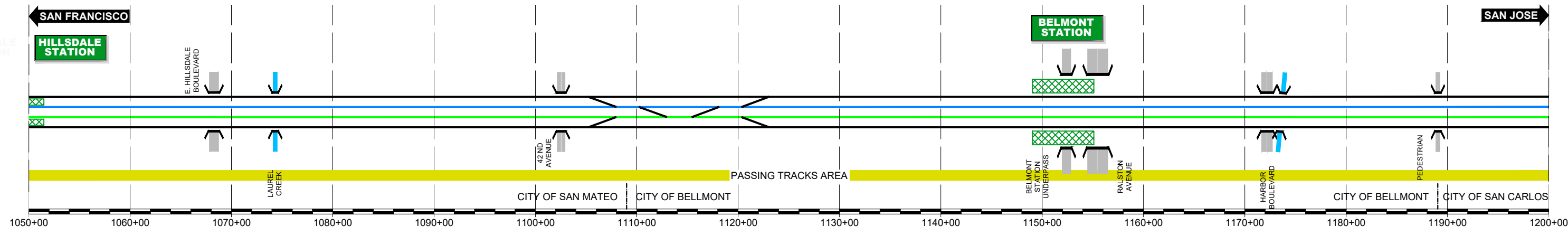
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



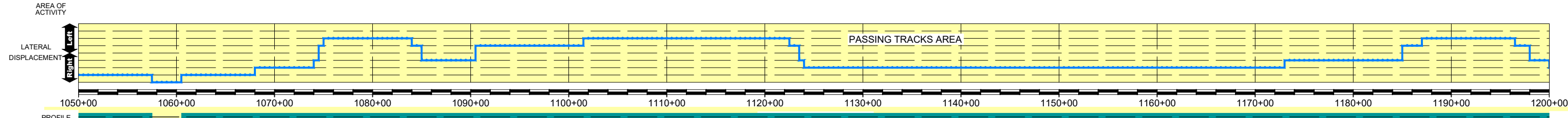
**EXISTING SF TO SJ SCHEME**



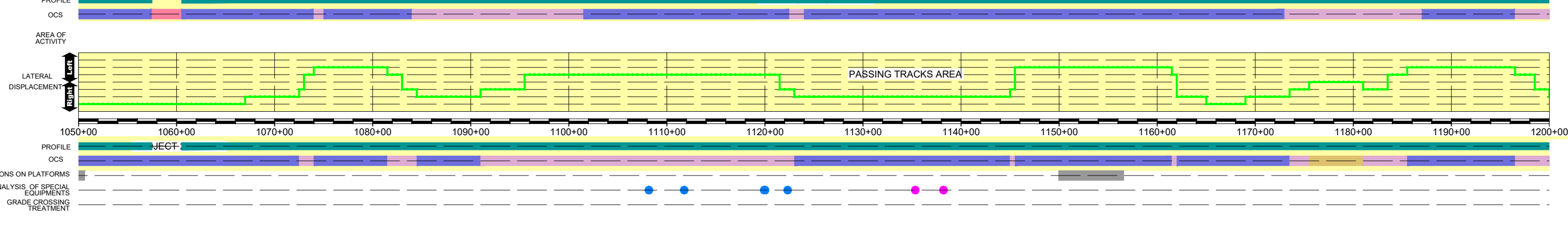
**PROPOSED SF TO SJ SCHEME**



**MT-1**



**MT-2**



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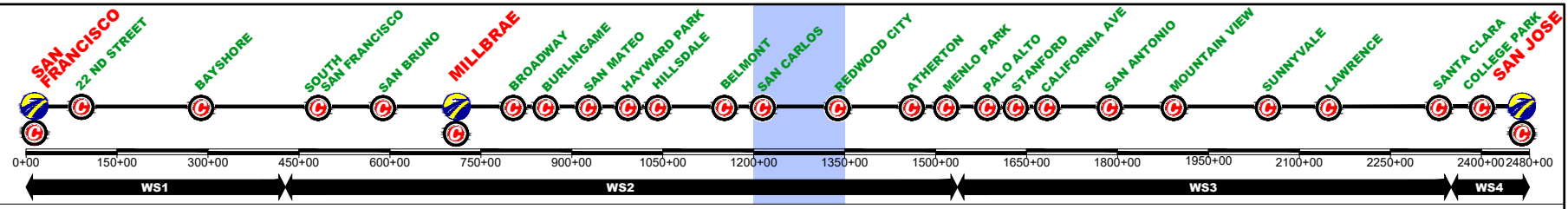
**CALIFORNIA**  
High-Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

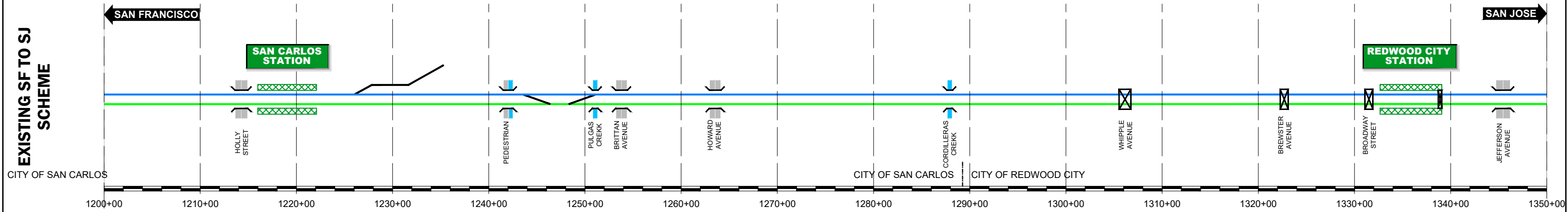
CONTRACT NO.	
DRAWING NO.	FJ-CV-16FS-TSB-09
SCALE	NOT TO SCALE
SHEET NO.	9 OF 17

- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

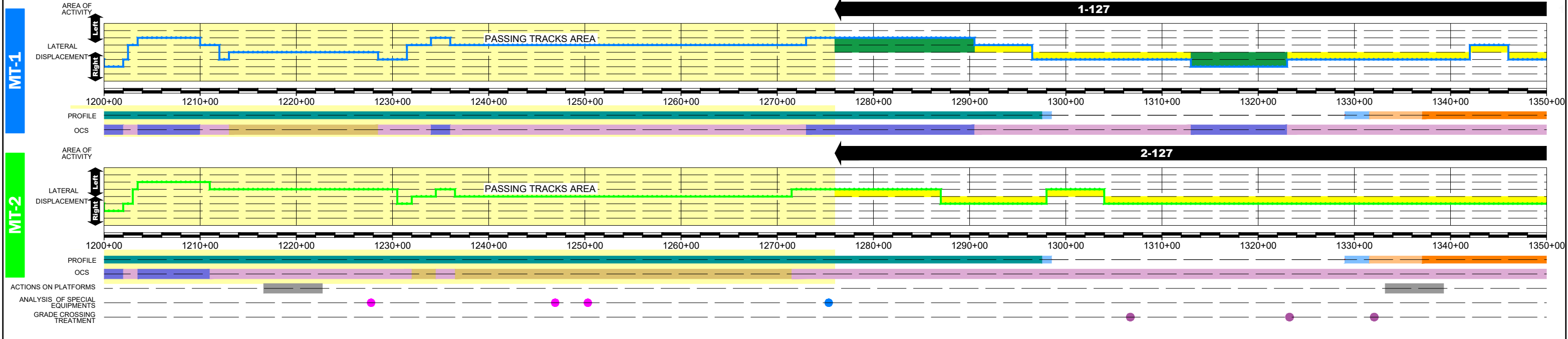
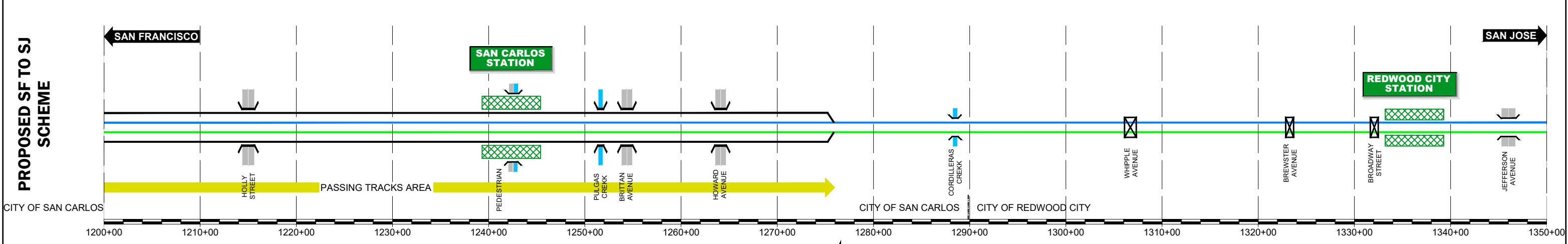
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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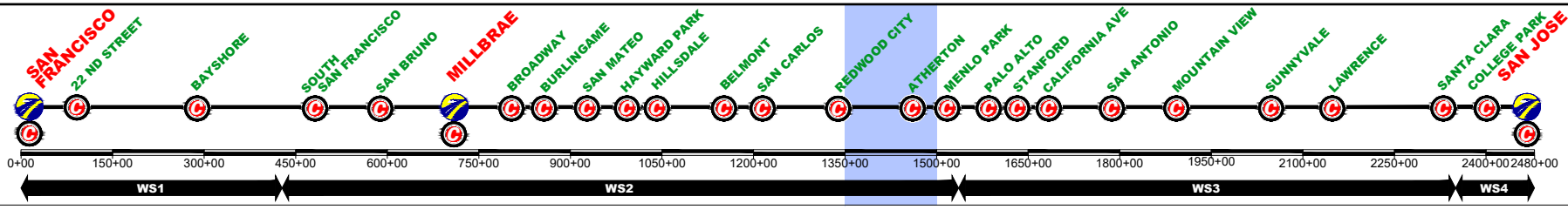
**CALIFORNIA**  
High-Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

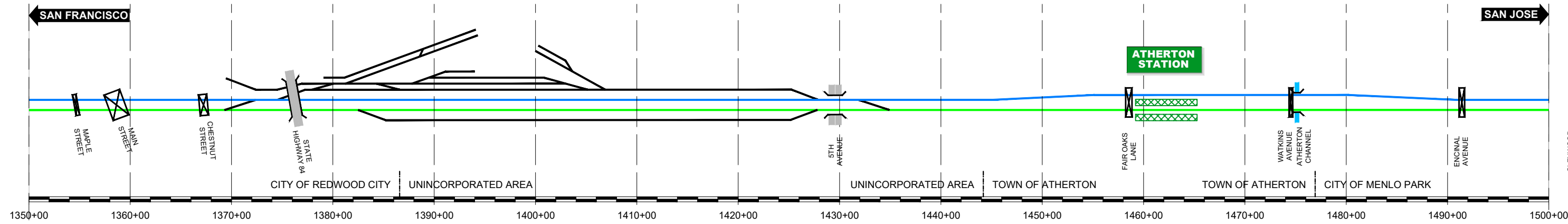
CONTRACT NO.	
DRAWING NO.	FJ-CV-I6FS-TSB-10
SCALE	NOT TO SCALE
SHEET NO.	10 OF 17

- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

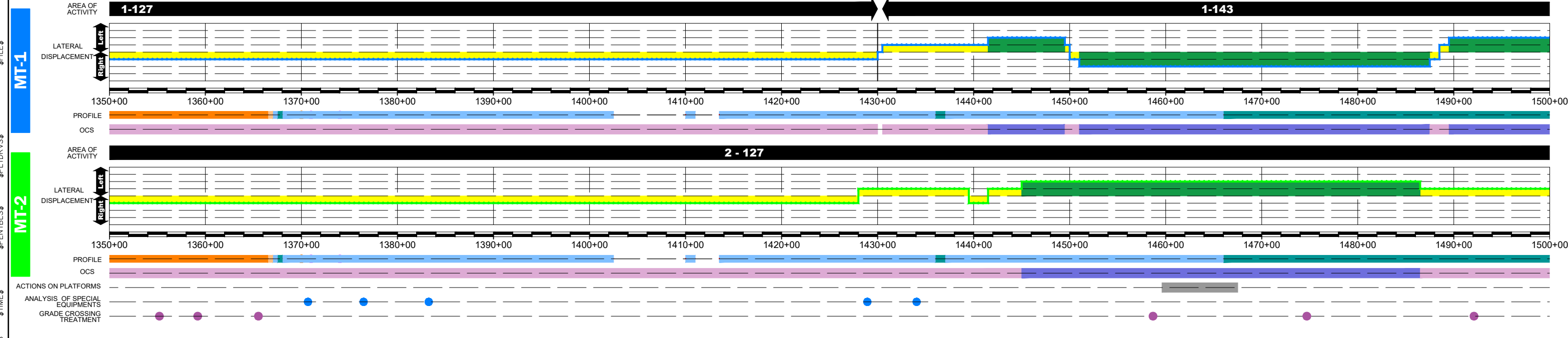
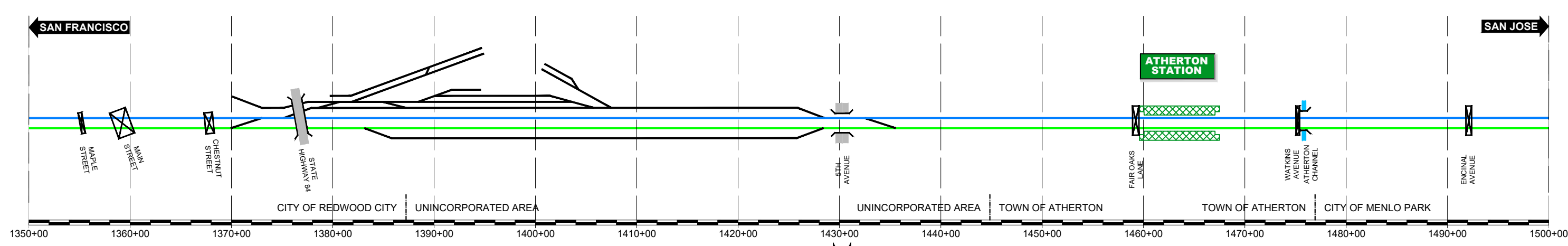
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
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- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



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**SAN FRANCISCO TO SAN JOSE**

SAN FRANCISCO TO SCOTT TRACK SHIFTS WORKS ALTERNATIVE B

CONTRACT NO.	
DRAWING NO.	FJ-CV-16FS-TSB-11
SCALE	NOT TO SCALE
SHEET NO.	11 OF 17

**LATERAL DISPLACEMENT**

- LESS THAN 1 ft.
- MORE THAN 1 ft. AND LESS THAN 10 ft.
- MORE THAN 10 ft. AND LESS THAN 21,34 ft.
- MORE THAN 21,34 ft.

**PROFILE**

- INCREASE SUBGRADE
- DECREASE SUBGRADE
- INCREASE BALLAST THICKNESS
- DECREASE BALLAST THICKNESS

**OCS**

- NEW OCS SYSTEM
- DISPLACEMENT OF OCS POLE
- DISPLACEMENT OF CONTACT WIRE
- VERTICAL DISPLACEMENT OF CONTACT WIRE

**ACTIONS ON PLATFORMS**

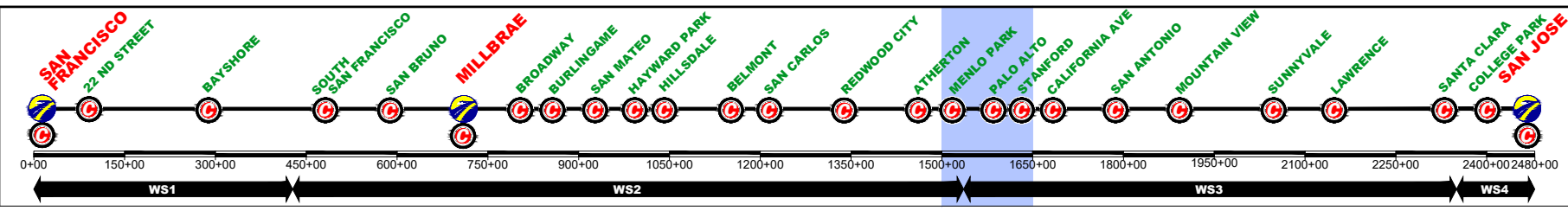
- MODIFICATION OF EXISTING PLATFORM

**ANALYSIS OF SPECIAL EQUIPMENT**

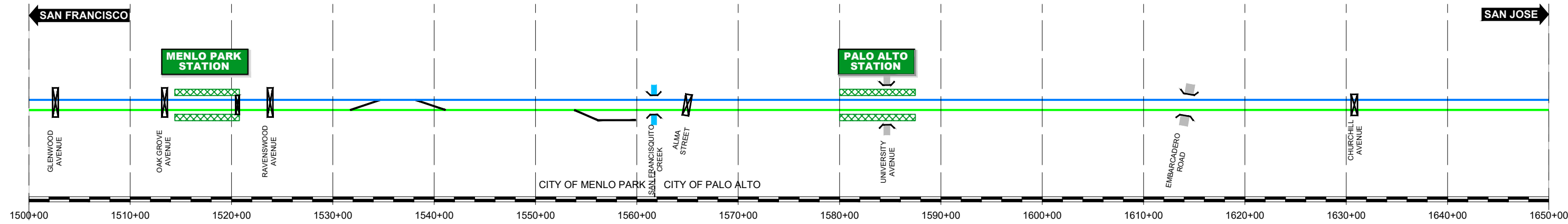
- REMOVE
- REMAIN VERTICAL ADAPTATION
- NEW EQUIPMENT

**GRADE CROSSING TREATMENT**

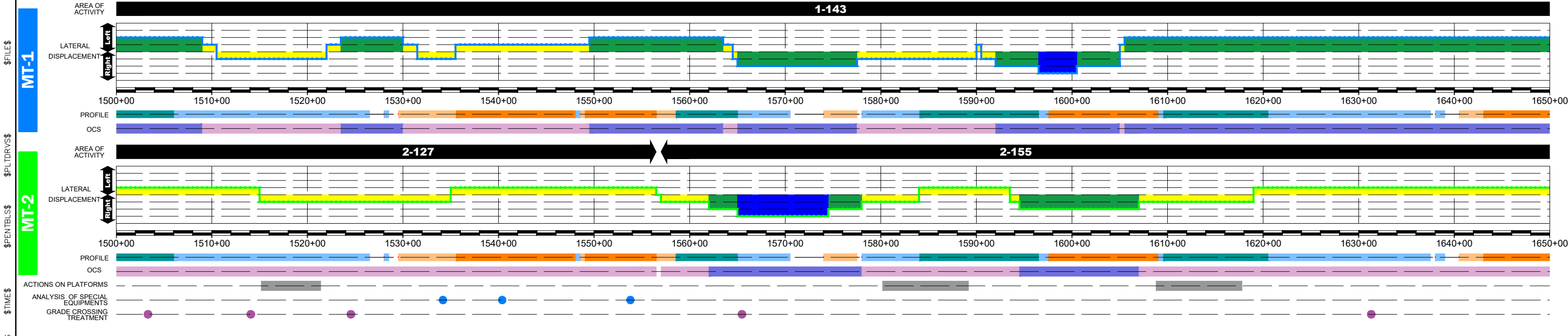
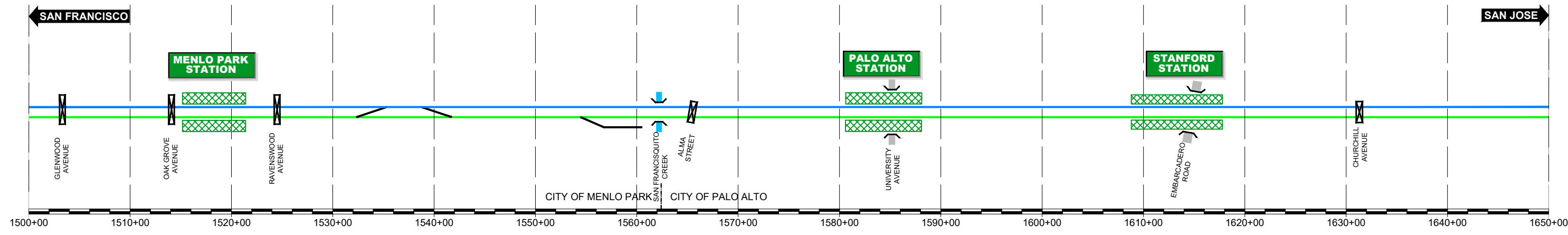
- ADAPT
- USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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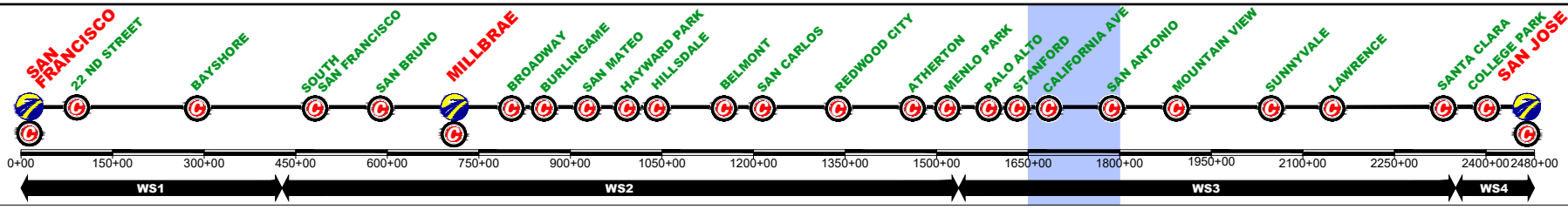
**CALIFORNIA**  
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CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

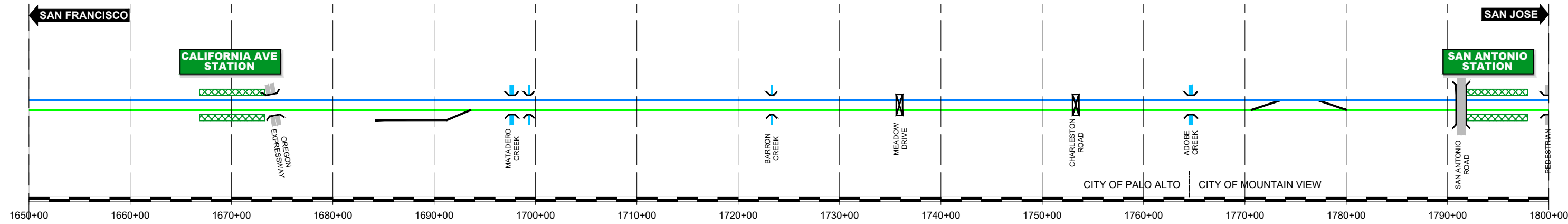
CONTRACT NO.	
DRAWING NO.	FJ-CV-I6FS-TSB-12
SCALE	NOT TO SCALE
SHEET NO.	12 OF 17

- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

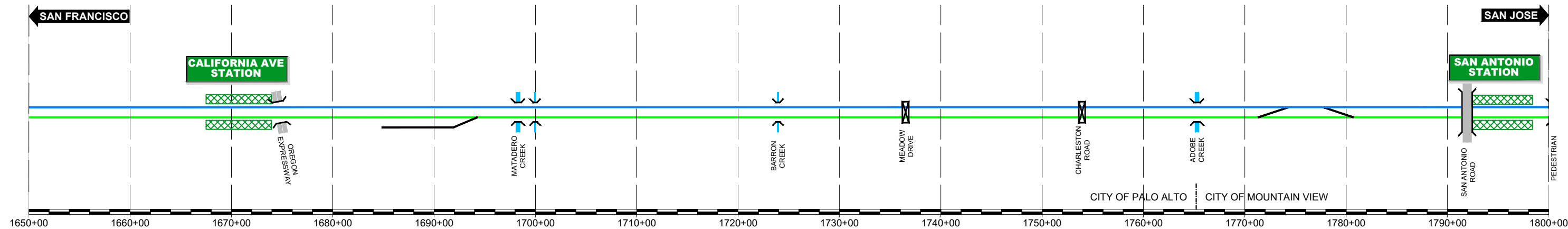
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



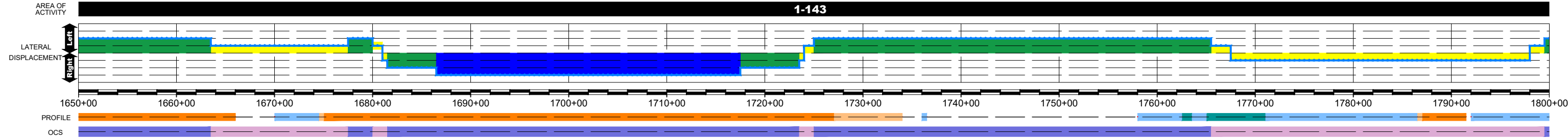
**EXISTING SF TO SJ SCHEME**



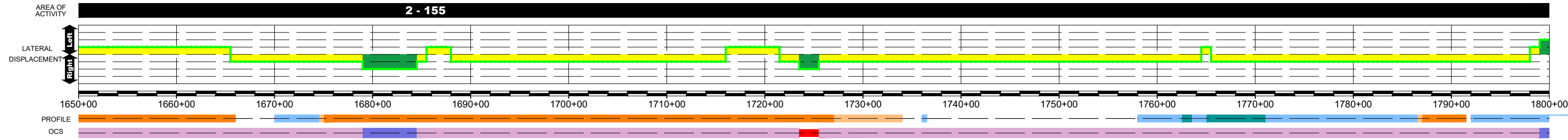
**PROPOSED SF TO SJ SCHEME**



**MT-1**



**MT-2**



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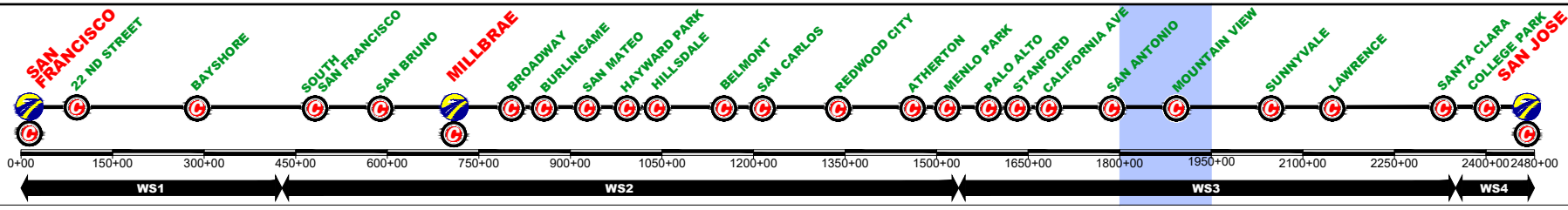
**CALIFORNIA**  
High-Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

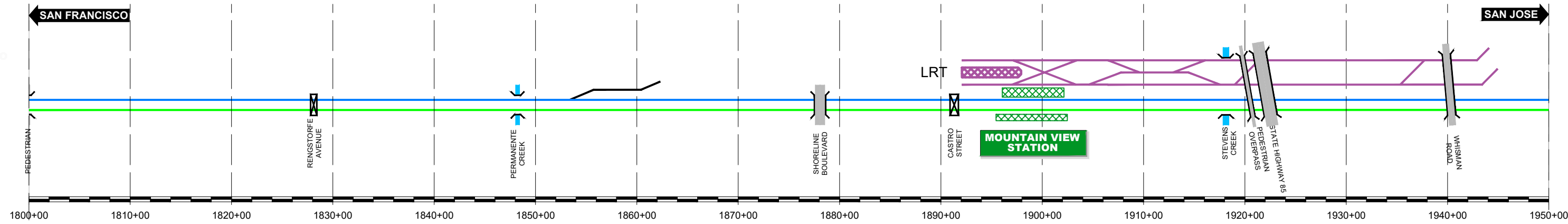
CONTRACT NO.  
DRAWING NO.  
FJ-CV-I6FS-TSB-13  
SCALE  
NOT TO SCALE  
SHEET NO.  
13 OF 17

- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

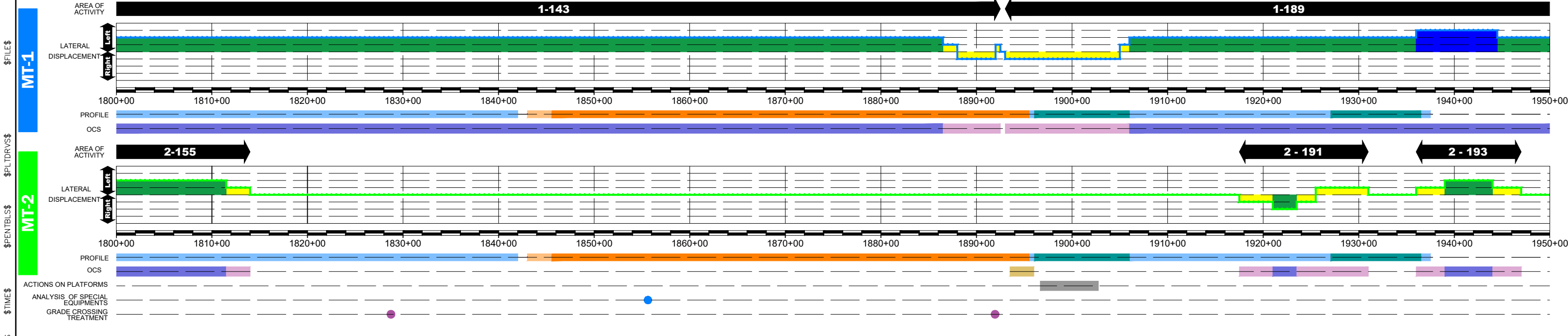
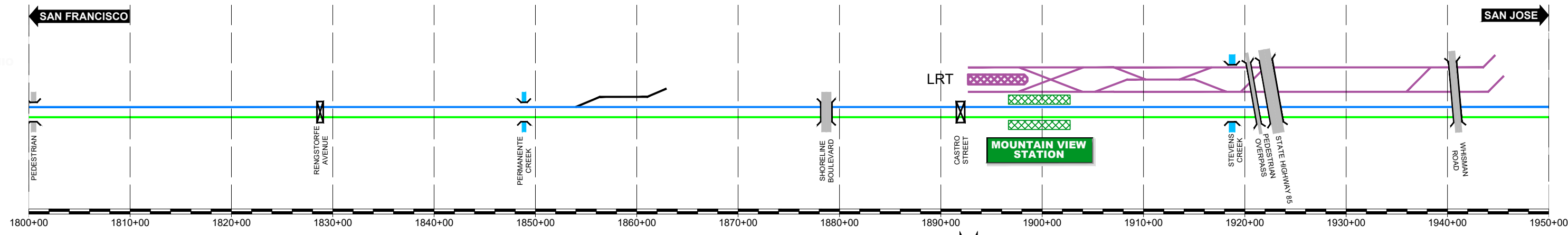
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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CALIFORNIA HIGH-SPEED TRAIN PROJECT

**SAN FRANCISCO TO SAN JOSE**

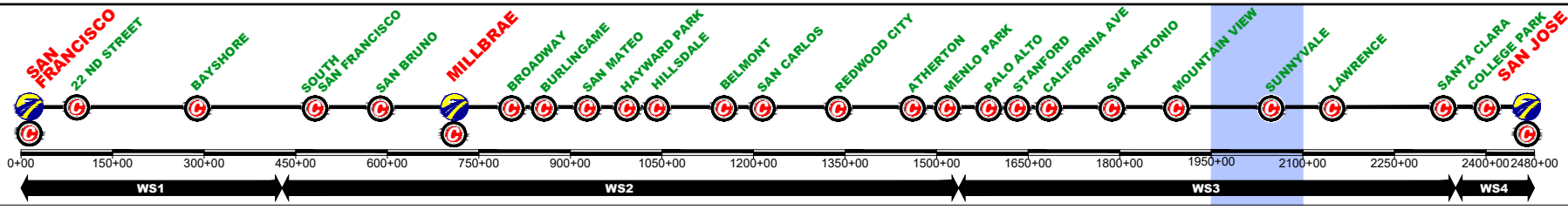
SAN FRANCISCO TO SCOTT TRACK SHIFTS WORKS ALTERNATIVE B

CONTRACT NO.	
DRAWING NO.	FJ-CV-I6FS-TSB-14
SCALE	NOT TO SCALE
SHEET NO.	14 OF 17

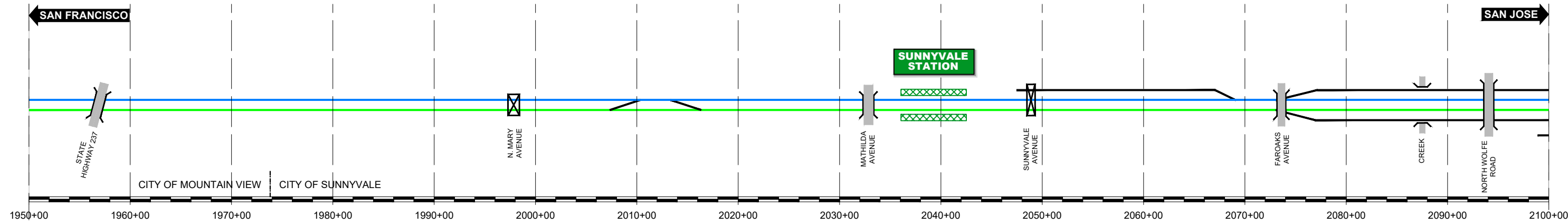


- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

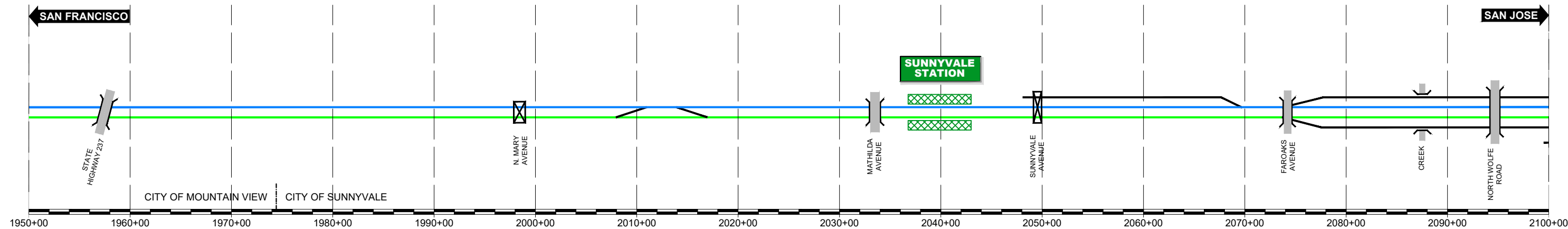
- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE
- ACTIONS ON PLATFORMS**
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- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



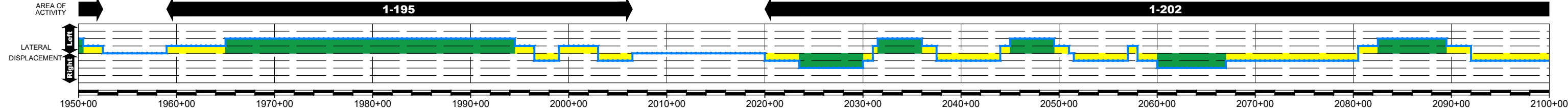
**EXISTING SF TO SJ SCHEME**



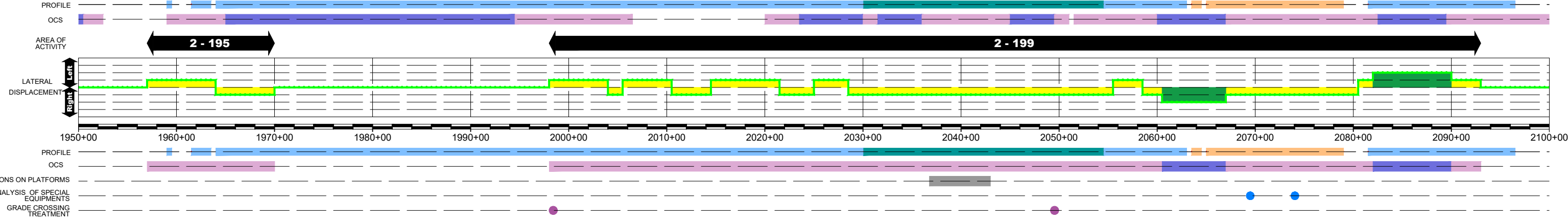
**PROPOSED SF TO SJ SCHEME**



**MT-1**



**MT-2**



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CALIFORNIA HIGH-SPEED TRAIN PROJECT

**SAN FRANCISCO TO SAN JOSE**

SAN FRANCISCO TO SCOTT

TRACK SHIFTS WORKS

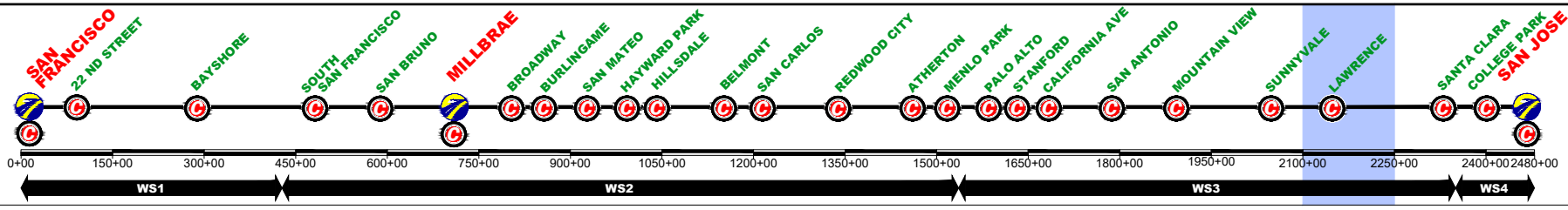
ALTERNATIVE B

CONTRACT NO.	
DRAWING NO.	FJ-CV-I6FS-TSB-15
SCALE	NOT TO SCALE
SHEET NO.	15 OF 17

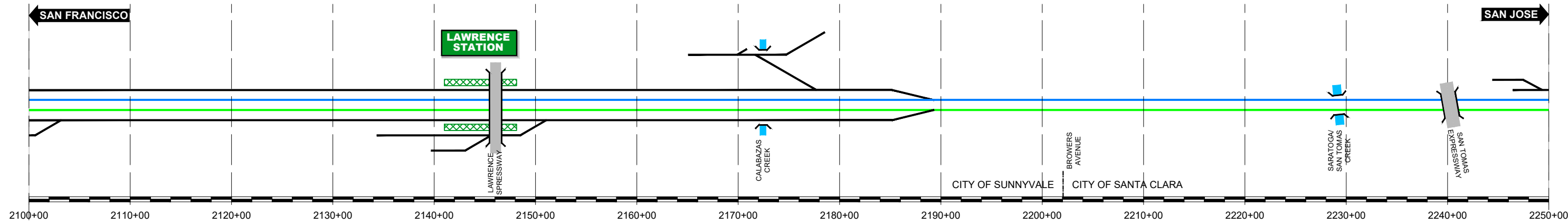
- LATERAL DISPLACEMENT**
- LESS THAN 1 ft.
  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE

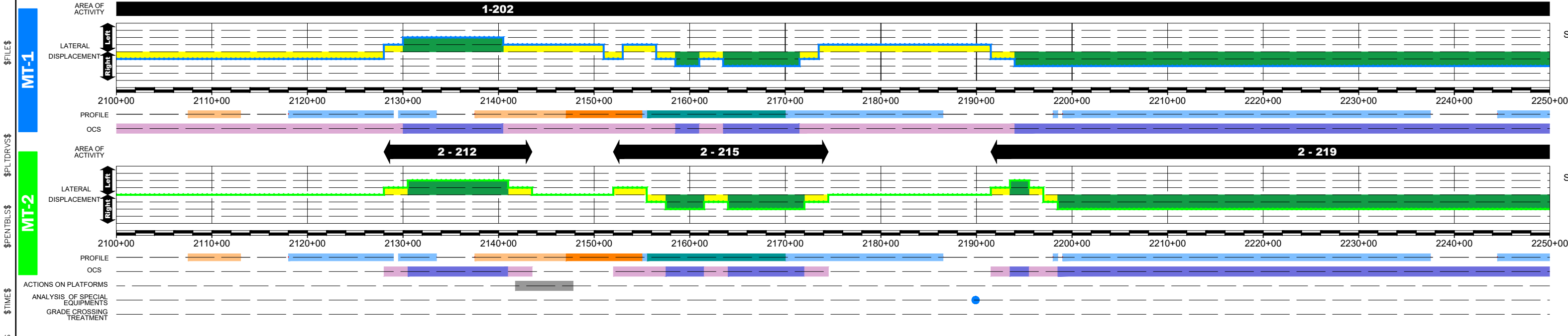
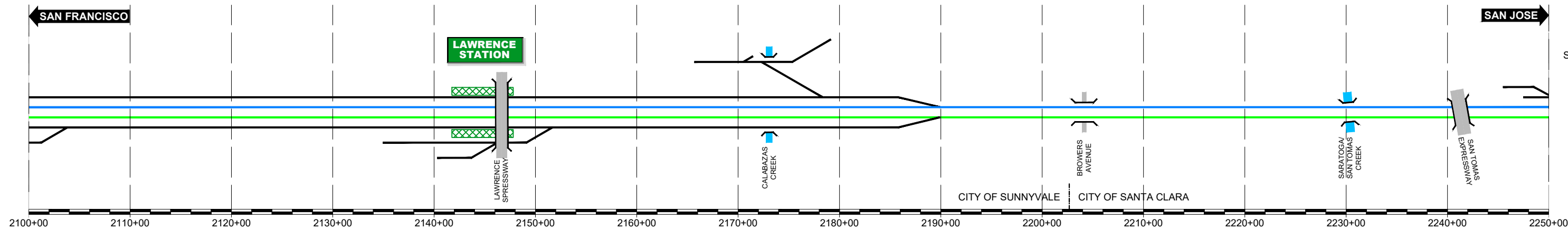
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



**PROPOSED SF TO SJ SCHEME**



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REV	DATE	BY	SUB	APP	DESCRIPTION

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High-Speed Rail Authority

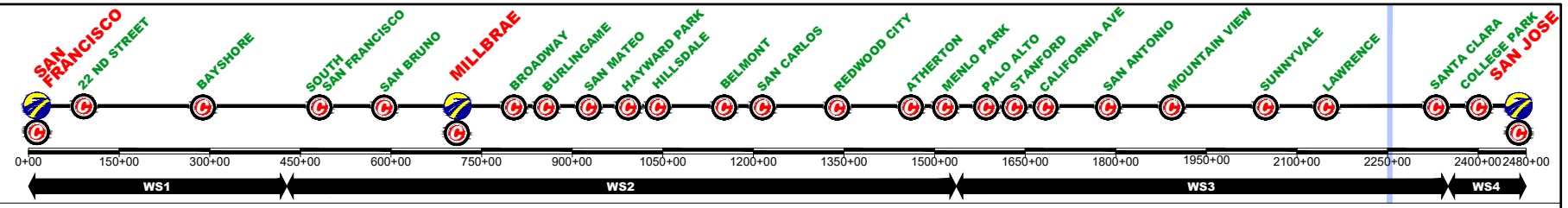
CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

CONTRACT NO.
DRAWING NO. FJ-CV-16FS-TSB-16
SCALE NOT TO SCALE
SHEET NO. 16 OF 17

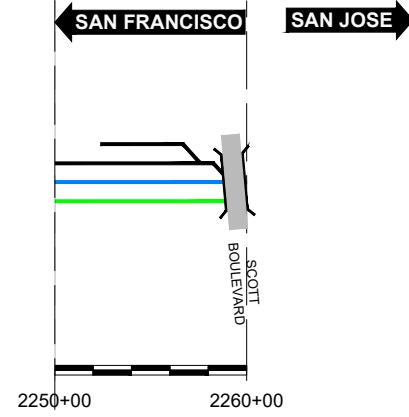
- LATERAL DISPLACEMENT**
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  - MORE THAN 1 ft. AND LESS THAN 10 ft.
  - MORE THAN 10 ft. AND LESS THAN 21,34 ft.
  - MORE THAN 21,34 ft.
- PROFILE**
- INCREASE SUBGRADE
  - DECREASE SUBGRADE
  - INCREASE BALLAST THICKNESS
  - DECREASE BALLAST THICKNESS

- OCS**
- NEW OCS SYSTEM
  - DISPLACEMENT OF OCS POLE
  - DISPLACEMENT OF CONTACT WIRE
  - VERTICAL DISPLACEMENT OF CONTACT WIRE

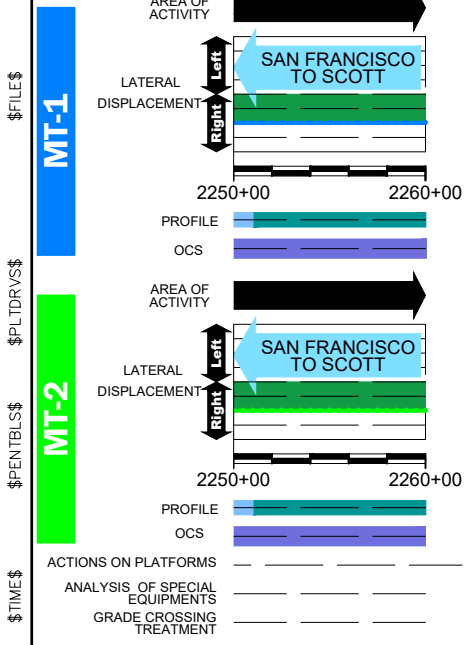
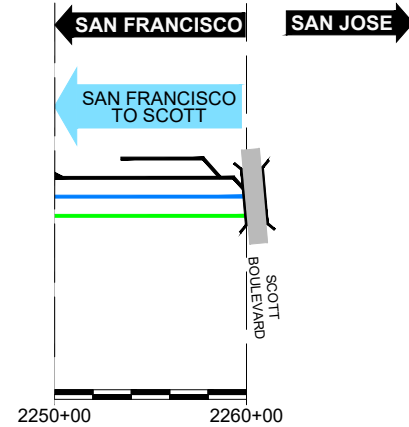
- ACTIONS ON PLATFORMS**
- MODIFICATION OF EXISTING PLATFORM
- ANALYSIS OF SPECIAL EQUIPMENT**
- REMOVE
  - REMAIN VERTICAL ADAPTATION
  - NEW EQUIPMENT
- GRADE CROSSING TREATMENT**
- ADAPT
  - USABLE



**EXISTING SF TO SJ SCHEME**



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**CALIFORNIA**  
High-Speed Rail Authority

CALIFORNIA HIGH-SPEED TRAIN PROJECT  
**SAN FRANCISCO TO SAN JOSE**  
SAN FRANCISCO TO SCOTT  
TRACK SHIFTS WORKS  
ALTERNATIVE B

CONTRACT NO.	
DRAWING NO.	FJ-CV-I6FS-TSB-17
SCALE	NOT TO SCALE
SHEET NO.	17 OF 17

