Alternative 2B – Replace Outside Handrail with Horizontal System

Alternative 2B would construct a new 10-foot-high barrier consisting of ⅜-inch diameter steel horizontal cables. A rub rail would be installed at the same height as the public safety railing (4 feet 6 inches). The entire system would be constructed of steel that would be painted International Orange to match the material and color of the outside handrail. Transparent panels would be installed along the upper 6 ½-foot portion at the belvederes and towers on both sides of the Bridge. A transparent winglet would be placed on top of the rail posts, with a slight concave curvature extending across the length of the suicide deterrent barrier, except at the north and south towers.

Views of the Bridge

In regards to the views towards the Bridge, Alternative 2B would primarily have minimally adverse visual impacts. Table 2.2-10 summarizes the overall visual impact of Alternative 2B to views of the Bridge. Figures 2.2-39 through 2.2-44 illustrates the visual impacts to views of the Bridge for Alternative 2B. However, Alternative 2B would have an adverse visual impact from Viewpoint 4 (Vista Point) because the physical suicide deterrent system would be a co-dominant visual feature in a landscape with high viewer sensitivity, altering views of the Bridge and interfering with views of the larger landscape.

Conversely, visual impacts from Viewpoint 2 (Baker Beach) would be negligible for Alternative 2B due to the distant viewing location, which affords low view blockage and high visual compatibility with the Bridge features and surrounding environment. Due to the viewing distance from the views of the Bridge and the International Orange coloring of Alternative 2B, the horizontal cables would blend into the Bridge span and the existing vertical line form created by the suspender ropes and light posts. While the replacement of the outside handrail with the horizontal system would slightly elevate the horizontal line of the outside handrail across the entire Bridge span, the overall appearance of the Bridge would not noticeably change from the views towards the Bridge.

The transparent winglet and transparent panels would introduce some reflectivity to views of the Bridge and would introduce a new material and visual texture to the Bridge; however, their transparency substantially reduces their visibility at views towards the Bridge. Overall, the primary visual change associated with Alternative 2B to views towards the Bridge would be the appearance of a higher outside railing on the Bridge with the corresponding increased International Orange coloring added to the landscape.

Table 2.2-10 Alternative 2B: Overall Visual Impact to Views of the Bridge

Viewpoint		Existing Condition		Proposed Condition			Visual Impact
No.	Location	Visual Quality	Viewer Exposure	Visual Compatibility	Visual Dominance	View Blockage	
1	Fort Point	High	High	Moderate	Subordinate	Moderate	Minimally Adverse
2	Baker Beach	Outstanding	High	High	Subordinate	Moderate	Minimally Adverse
3	North Fishing Pier	Moderate	High	Moderate	Subordinate	Low	Minimally Adverse
4	Vista Point	High	High	Moderate	Co-Dominant	Moderate	Adverse
5	Marin Headlands	Outstanding	High	Moderate	Subordinate	Moderate	Minimally Adverse
6	Boat View West	High	Moderate	Moderate	Subordinate	Moderate	Minimally Adverse
7	Boat View East	High	Moderate	Moderate	Subordinate	Moderate	Minimally Adverse

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-39
VIEWPOINT 1: FORT POINT - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-40

VIEWPOINT 2: BAKER BEACH - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-41

VIEWPOINT 3: NORTH FISHING PIER - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-42

VIEWPOINT 4: VISTA POINT - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-43

VIEWPOINT 5: MARIN HEADLANDS - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-44

VIEWPOINT 6: BOAT VIEW WEST - ALTERNATIVE 2B

Source: macdonald architects, 2008

Views from the Bridge

Alternative 2B would primarily have adverse visual impacts to views from the Bridge, with the exception of a strongly adverse visual impact from Viewpoint 11 (Car View East) where the horizontal addition to the outside handrail would introduce the transparent winglet into the view and comprise a larger portion of the field of view than the existing elements. Table 2.2-11 summarizes the visual impacts of Alternative 2B to views from the Bridge. Figures 2.2-45 through 2.2-49 illustrate the visual impacts to views from the Bridge with Alternative 2B.

Primary visual changes associated Alternative 2B to views from the Bridge include raising the height of the outside Bridge railing such that it would extend across a viewer's total field of view, and replacing the thick, 4-foot vertical outside handrail with thin horizontal cables. The horizontal replacement system of the outside handrail would be seen in the immediate foreground, representing a co-dominant to dominant visual feature in the landscape, depending on the viewing angle.

Overall, Alternative 2B would have moderate view blockage and low visual compatibility with the existing landscape, with the exception of moderate compatibility at Viewpoints 12 and 13 (Sidewalk North and Sidewalk South). The transparent winglet and transparent panels at the belvederes (24 widened areas located on both the east and west sidewalks) would also be visible at views from the Bridge and would contrast with the color and materials of the Bridge. While the horizontal cables are consistent with the horizontal line form established by the natural environment, such as the horizon of the blue-green waters of the San Francisco Bay and East Bay hills, the horizontal cables contrast with the vertical Bridge towers, suspender ropes and light posts on the Bridge.

Although the horizontal replacement of the outside handrail would extend across the expanded field of view for motorists, pedestrians and bicyclists on the Bridge, the natural landscape features, such as the open water of San Francisco Bay and the Marin hills would remain visible through the horizontal addition. The thin horizontal cables, transparent winglet, and transparent panels would allow the viewer to see through Alternative 1B with low to moderate view blockage.

Table 2.2-11 Alternative 2B: Overall Visual Impact to Views from the Bridge

Viewpoint		Existing Condition		Proposed Condition			Visual Impact
No.	Location	Visual Quality	Viewer Exposure	Visual Compatibility	Visual Dominance	View Blockage	
8	Car View West	Moderate	Moderate	Moderate	Co-Dominant	Low	Minimally Adverse
9	Car View Center	High	High	Low	Co-Dominant	Moderate	Adverse
10	Car View North	High	High	Low	Co-Dominant	Moderate	Adverse
11	Car View East	High	High	Low	Dominant	Moderate	Strongly Adverse
12	Sidewalk North	High	High	Moderate	Dominant	Moderate	Adverse
13	Sidewalk South	Outstanding	High	Moderate	Dominant	Moderate	Adverse

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-45

VIEWPOINT 8: CAR VIEW WEST - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-46

VIEWPOINT 9: CAR VIEW CENTER - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

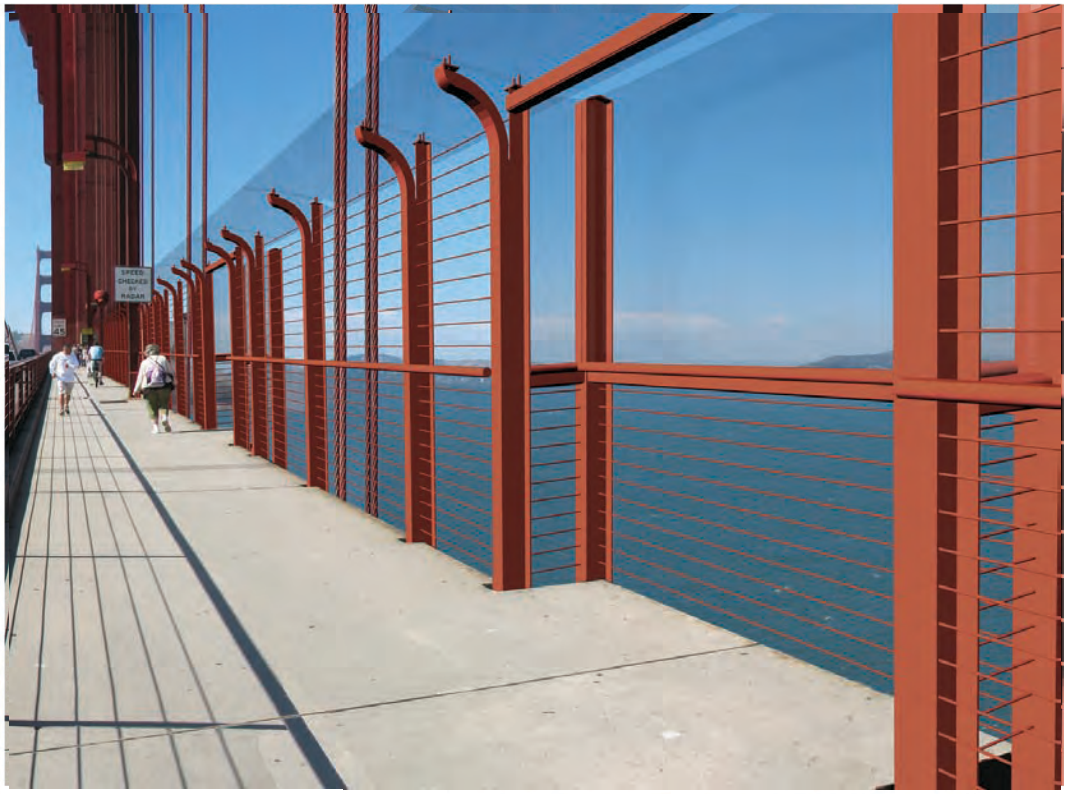
ALTERNATIVE 2B

FIGURE 2.2-47

VIEWPOINT 11: CAR VIEW EAST - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING



ALTERNATIVE 2B

FIGURE 2.2-48

VIEWPOINT 12: SIDEWALK VIEW NORTH - ALTERNATIVE 2B

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 2B

FIGURE 2.2-49

VIEWPOINT 13: SIDEWALK VIEW SOUTH - ALTERNATIVE 2B

Source: macdonald architects, 2008

Alternative 3 – Add Net System

This alternative would construct a horizontal net system approximately 20 feet below the sidewalk and approximately 5 feet above the bottom chord of the exterior main truss that would extend horizontally 20 feet from the Bridge. The net and the steel horizontal support system would be painted to match the International Orange Bridge color. With this alternative there would be no modifications to the above-deck Bridge features. Refer to Chapter 1, Proposed Project, for a detailed description of Alternative 3.

Views of the Bridge

Visual impacts associated with Alternative 3 to views of the Bridge would generally be minimally adverse, with the exception of an adverse visual impact from Viewpoint 4 (Vista Point) and negligible visual impacts from Viewpoints 2 (Baker Beach) and 3 (North Fishing Pier). Table 2.2-12 summarizes the visual impacts of Alternative 3 to view of the Bridge. Figures 2.2-50 through 2.2-55 illustrate the visual impacts to view of the Bridge with Alternative 3.

The primary visual change associated with Alternative 3 would be the introduction of a strong horizontal element to the outside of the Bridge in contrast to the existing verticality of the Bridge. The texture and International Orange coloring of the net color would blend in with the Bridge, except at the North Anchorage Housing, and would not intrude into the existing visual landscape, except for a small sliver of the blue skyline. From the majority of viewpoints towards the Bridge, Alternative 3 would be a subordinate visual feature with low to moderate visual compatibility and moderate view blockage, representing minimally adverse visual impacts. From the views of the Bridge, the Bridge would remain the dominant feature. Visual impacts associated with Alternative 3 would be negligible from Viewpoints 2 and 3 due to the distant viewer location and upward viewing angle, respectively.

Alternative 3 would have an adverse visual impact from Viewpoint 4, as the net would be visible across the total field of view. The projection of the net would disrupt the continuous horizontal line of the Bridge form extending across the San Francisco Bay. It would also break up the vertical plane of the concrete pylon.

Table 2.2-12 Alternative 3: Overall Visual Impact to Views of the Bridge

Viewpoint		Existing Condition		Proposed Condition			Visual Impact
No.	Location	Visual Quality	Viewer Exposure	Visual Compatibility	Visual Dominance	View Blockage	
1	Fort Point	High	High	Low	Subordinate	Moderate	Minimally Adverse
2	Baker Beach	Outstanding	High	High	Subordinate	Low	Negligible
3	North Fishing Pier	Moderate	High	High	Subordinate	Low	Negligible
4	Vista Point	High	High	Low	Co-Dominant	Moderate	Adverse
5	Marin Headlands	Outstanding	High	Moderate	Subordinate	Low	Minimally Adverse
6	Boat View West	High	Moderate	Moderate	Subordinate	Moderate	Minimally Adverse

EXISTING

ALTERNATIVE 3

FIGURE 2.2-50

VIEWPOINT 1: FORT POINT - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-51

VIEWPOINT 2: BAKER BEACH - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-52

VIEWPOINT 3: NORTH FISHING PIER - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-53

VIEWPOINT 4: VISTA POINT - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-54

VIEWPOINT 5: MARIN HEADLANDS - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-55

VIEWPOINT 6: BOAT VIEW WEST - ALTERNATIVE 3

Source: macdonald architects, 2008

Views from the Bridge

As Alternative 3 would be located beneath the Bridge span, it would have a negligible visual impact to most views from the Bridge. Alternative 3 would not generally be visible to motorists, pedestrians and bicyclists on the Bridge due to its lowered location. However, Alternative 3 would be visible from the sidewalk when viewers stand adjacent to the main towers as illustrated by Viewpoint 14. Alternative 3 would introduce a horizontal element that would visually widen the base of the Bridge. The horizontal nature of the net would contrast with the strong verticality of the suspender ropes, light posts and Bridge towers, representing low visual compatibility.

From Viewpoint 14, Alternative 3 would not substantially block views of the surrounding landscape. The net would disrupt a small portion of the views towards San Francisco Bay looking down from the Bridge, while views of the exterior of the Bridge would remain undisturbed due to the location of the net. View blockage would be limited to downward viewing angles, demonstrating moderate view blockage. Thus, from Viewpoint 14, Alternative 3 would constitute an adverse visual impact.

Table 2.2-13 summarizes the overall visual impact to the views from the Bridge as a result of Alternative 3. Figures 2.2-56 and 2.2-57 illustrate the visual impact of Alternative 3 from the Bridge at Viewpoints 8 and 14 (Car View West and Bridge Tower). Viewpoint 8 is representative of a motorist's view of Alternative 3 from the Bridge. As Alternative 3 would not be visible at the other views from the Bridge, the visual character of Alternative 3 would be identical to that of the existing condition of the outside handrail. Refer to the existing conditions photographs in Figures 2.2-45 through 2.2-49.

Table 2.2-13 Alternative 3: Overall Visual Impact to Views from the Bridge

Viewpoint		Existing Condition		Proposed Condition			Visual Impact
No.	Location	Visual Quality	Viewer Exposure	Visual Compatibility	Visual Dominance	View Blockage	
8	Car View West	Moderate	Moderate	Not Visible	Not Visible	None	Negligible
9	Car View Center	High	High	Not Visible	Not Visible	None	Negligible
10	Car View North	High	High	Not Visible	Not Visible	None	Negligible
11	Car View East	High	High	Not Visible	Not Visible	None	Negligible
12	Sidewalk North	High	High	Not Visible	Not Visible	None	Negligible
13	Sidewalk South	Outstanding	High	Low	Co-Dominant	None	Negligible
14	Bridge Tower	High	High	Moderate	Co-Dominant	Moderate	Adverse

No-Build Alternative

While the No-Build Alternative would continue current suicide deterrent program operations on the Bridge, this alternative would not physically change the appearance of the Bridge. Views towards the Bridge and from the Bridge at all of the viewpoints would remain the same as under existing conditions. Pedestrian and cyclist views from the sidewalks would not be altered. Views from the roadway would also not be altered. Because there would be no change to the physical appearance of the Bridge under this alternative, there would be no impact to existing views.

A portion of the west outside handrail (between the towers) is planned to be replicated to improve the aerodynamic stability of the Bridge as part of a separate and previously approved project. That project was approved as part of the seismic upgrade program, with the appropriate environmental and Section 106 clearances. Viewpoint 8 illustrates the view of the outside handrail following completion of the seismic upgrade program.

EXISTING

ALTERNATIVE 3

FIGURE 2.2-56
VIEWPOINT 8: CAR VIEW WEST - ALTERNATIVE 3

Source: macdonald architects, 2008

EXISTING

ALTERNATIVE 3

FIGURE 2.2-57

VIEWPOINT 14: BRIDGE TOWER - ALTERNATIVE 3

Source: macdonald architects, 2008