

TORREY PINES ROAD PRELIMINARY ENGINEERING STUDY

TECHNICAL MEMORANDUM FOR

FENCE CONSIDERATIONS



By

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I. TOPIC DESCRIPTION

Technical items in Torrey Pines Road are being evaluated for a proposed improvement project between Prospect Place and La Jolla Shores Drive. Within the project area, numerous fences in the public right of way exist along the project alignment; most of these fences are chain link type fences in various conditions with the majority in poor condition. Fences in private property are not included in this study. Fence locations are shown in Figure 1 below.

II. DISCUSSIONS OF FINDINGS

II.1. Why Fencing?

Fences act as a pedestrian barrier to protect private property and provide safety to pedestrians from falling down slopes greater than 30-inches. Fences are not generally used to stop vehicles from running off the road however barriers that also act as fences can be designed for such purposes. When locating fences, sometimes there is a requirement to limit view heights to 42 inches or below eye level of pedestrians to preserve view corridors. The San Diego Regional Standards only address chain link fence which in the corridor study was recommended to be replaced. Options for fencing will be investigated and evaluated below.

II.2. Other Studies In and Near the Project Area

TCE is not aware of other studies of fencing in the in or near the project area with the exception of the Corridor study for this project.

II.3. Fence Options

The existing fencing that dominates fencing in the public right of way in the project alignment is chain link fencing which is a standard fencing type throughout the San Diego area and is specified in the San Diego City and Regional Standard Drawings. In a few locations in the project area this fence material has been planted to cover the metal fabric. The fences appear to have been pruned in some locations to provide a suitable barrier, however this has caused obstructions of the view as well. Because of the absence of discussion in the corridor study about this type of fence it is not considered an appropriate fence type for the project area.

The corridor study recommended a fence composed of wooden posts and coated 2 by 4 wire fabric. Some examples of this fence are shown below.

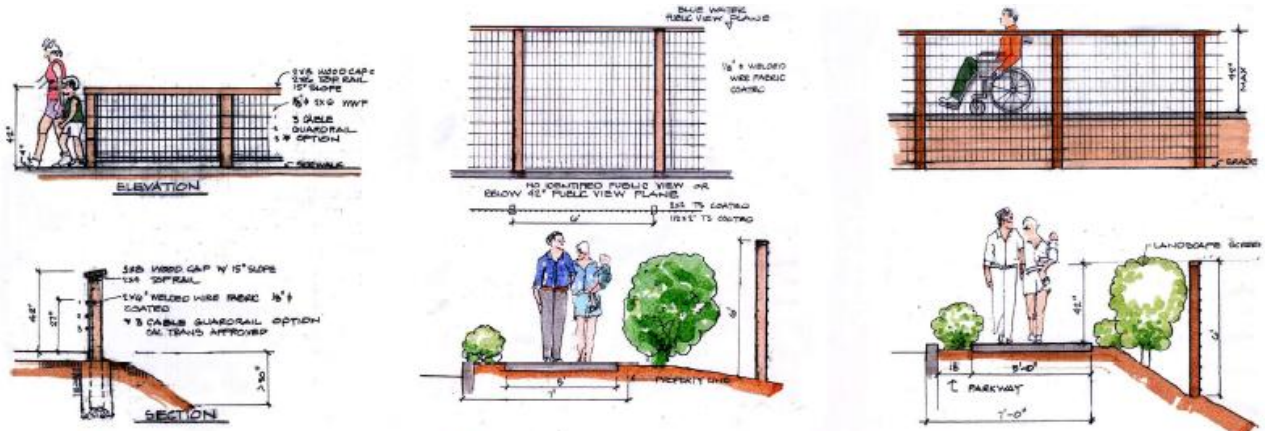




FIGURE 1

Aerial View of Project Showing Proposed Locations of Fences

(Yellow lines represent locations of proposed fences. Line locations are approximate and line widths are not intended to represent the wall size)

In areas where a slope is planted and there is adequate right of way beyond the width of the sidewalk, the fence could be placed at a lower grade to allow for an unobstructed view by the disabled as shown below. A disadvantage of locating a fence away from the sidewalk can be that trash and debris could accumulate behind the shrubs at the fence over a period of time creating an unsightly condition. The wire spacing is not beneficial to preventing letter from migrating through this fence



Example of a 42-Inch High Wood Fence with Wire Fabric

fabric into private property. Although this fence will be

described as a wood and wire fabric fence, this fence should be constructed from a material that will last longer than typical wood fences to reduce maintenance and prolong the life of the fence. Coating of the wire is vital to increase the life of the wire fabric because of the proximity to the ocean. A hot dipped galvanized coating topped with a plastic coating would be best.

In instances where a wood barrier or privacy fence is required such as where a view is not available and homes are located at grade with the fence, a plastic fence such as the one shown at right is suggested. Colors should be suitable to the application.

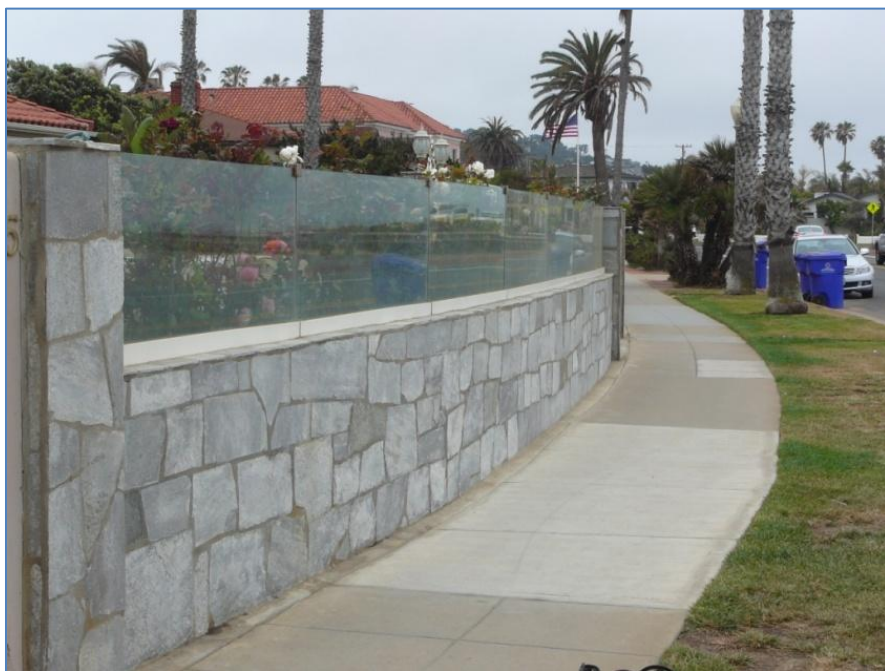
In some fence locations guardrail has been recommended in the corridor study because of past instances where cars have driven off the road at lower speeds, such as across Torrey Pines Road from the intersection with Amalfi Street, a decorative parapet approximately 3 to 3.5 feet high may be constructed in these locations. The parapet wall would be topped with either a railing or, to provide an added barrier, a piece of clear Plexiglas material, from 1 to 3 feet high. The Plexiglas would afford a clear view while providing a barrier to lessen littering and trespassing. The parapet could be designed like a decorative guardrail. Two examples of this type of fence approach are shown below. A concrete or concrete block parapet would replace the stucco parapet shown in the picture



Example of a privacy fence



Example of cement block wall parapet with Plexiglas top. Parapet is on top of a retaining wall in 4S Ranch area



Example of cement block wall with surface treatment and Plexiglas top in Point Loma overlooking Sunset Cliffs

II.4. Fence Locations

In general the fences in the public Right of Way of the project area have not been well maintained as evidenced in the photo below. Many of the chain link fences are rusted and sagging. Most should be replaced.

Many of the fences along the project are on private property, are privately owned, and generally are in good condition, although conditions vary widely. This project does not plan to affect fences placed outside the right of way which are privately owned.

II.4.1. Fence 1

The fence in the scenic view area between Prospect Place and Coast Walk Station 12+00 to 16+00 will be approximately 400 feet long, replacing the current chain link fence overgrown with plant materials – see Pictures 2752 and 3959 below. The slope in this area will be modified to accommodate a wider sidewalk and an 18 inch parkway with plants and/or trees. It is suggested that this fence be a 72 inch high fence, high enough to prevent access down the slope and limiting the amount of litter that is tossed down the slope, which is a problem according to residents. A shorter 42 inch fence could increase unwanted trespassers and litter problems. A steep embankment is located here and therefore a retaining wall will also be required. Additionally the corridor study had recommended a guardrail barrier to prevent cars from running off the road. Therefore part of this fence could be integrated into a decorative guardrail/parapet with a high Plexiglas wall to open this area as a view corridor to travelers. Retaining walls, view corridors and guardrail are the topics of other technical memoranda; please see these technical memoranda for additional recommendations and details.

If retaining walls can be avoided in some portions of this location and shrubs can be placed down the embankment another suggested alternative is that this fence be a 72 inch high wood with metal fabric fence that is set down the slope approximately 4 feet so the view is not obstructed.



Picture 2752 - Overgrown Fence near Prospect Place



Picture 3959 - Fence Looking Southwest

II.4.2. Fence 2

Between Station 17+20 and 18+20 an existing retaining wall supports the sidewalk and road. There is a drop of at least 10 feet over the retaining wall. Currently, a chain link fence is mounted on the retaining wall with a green plastic woven cover as shown on Pictures 3957, 2742 & 2741. This is a view corridor, so the fence should be replaced. If a wood and steel wire fabric is utilized here, steel posts may be needed instead of wooden post for structural reasons, depending on how the posts are to be installed in the retaining wall. It would be unsafe to install a shorter fence here. At this location, a concrete parapet with Plexiglas material that reaches a total height of 72-inches could be integrated into the existing retaining wall.



Picture 3957- View through Opening in Fence



Picture 2742 - Behind the Chain Link Fence Looking East



Picture 2741 - Behind the Chain Link Fence Looking West

II.4.3. Fence 3

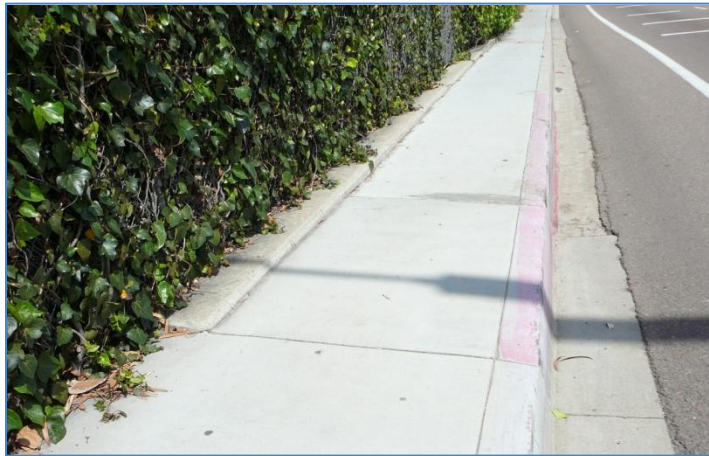
Another special fencing case between Station 21+40 to 22+70 (Charlotte Street, a paper street) across from Amalfi St. where there is a concrete retaining wall with a chain link fence constructed on top, along the edge of the sidewalk as shown in pictures 3398, 3399, 2735 & 3951 below. The existing chain link fence is overgrown with ivy and the ocean view is not visible from the sidewalk or the road. The corridor study recommends a guardrail across from Amalfi to prevent cars from running off the road. A 72-inch fence is recommended for safety in this area because there is more than a 10-foot drop. It would be dangerous to install a shorter fence here. A parapet with a Plexiglas top is recommended here to provide a proper barrier while providing a view through the Plexiglas.



Picture 3398 - Charlotte Street Fence



Picture 3399 - Charlotte Street Fence Overgrown with Ivy



Picture 2735 - Charlotte Street Fence, Top of Retaining Wall and Sidewalk

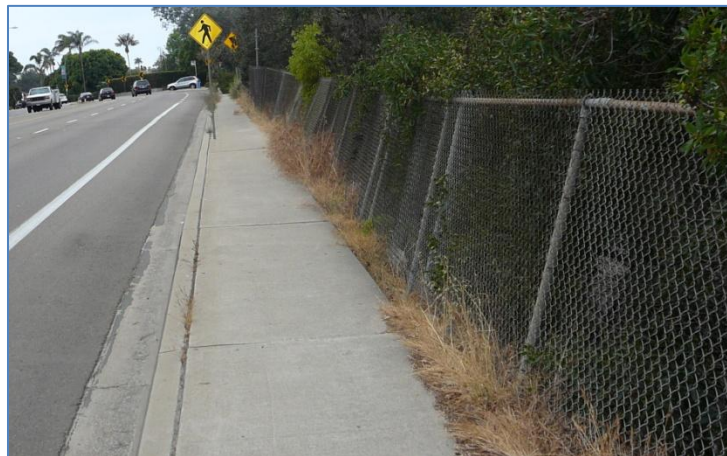
The Charlotte Street chain link fence continues to the east and is supplemented with a privately built wood fence directly behind it as shown in the photo below. It is recommended to leave this portion of the fence as-is since it is in good condition, or remove the city's chain link fence, leaving the private fence. If a public fence is required and not a chain link fence for this area, a wood and wire fabric fence is recommended.



Picture 3951 - Continuation of the Charlotte Street Fence

II.4.4. Fence 4

A 300-foot fence from Station 32+50 to 35+50 needs to be replaced. This fence, located above St. Louis Terrace is in poor condition as shown in Pictures 3925 and 3926 below. A 72-inch high wood and wire fabric fence is recommended for this location.



Picture 3925 - Fence above St. Louis Terrace



Picture 3926 - Fence above St. Louis Terrace

II.4.5. Fence 5

Between Little Street and Roseland Drive, from Station 38+00 to 41+00, there is an area without a fence between the sidewalk and private homes below as shown in Picture 3977 below. This flat unused land area is adjacent to the sidewalk and described in the Corridor Study as being the location for Little Street Park. It is recommended that a fence be installed around the top of the slope. Since this is a view corridor with a partially obstructed view of the ocean and beach area a 42-inch high wood and wire fabric fence is recommended however this should be further discussed in the park development not included in this preliminary design.



Picture 3977 - No Fence near Little Street at Station 40+00

II.1.1. Fence 6

It is recommended that the old 300-foot long fence from Station 41+00 to 44+00, shown in Picture 3915 below, be replaced with a 72-inch high fence. Although this is not a view corridor a view of the ocean over existing homes is provided from this location the 72-inch fence could be set down the hill from the sidewalk to enhance the view. A wood and wire fabric fence could be utilized for this area.

The continuation of the chain link fence above, from Station 44+00 to 44+60, shown in Picture 3914, is also on City Right of Way. It is overgrown with bamboo and plants that should be cleaned up and a new fence installed.



Picture 3915 - Old Existing Fence



Picture 3914 - Approximate Station 44+ 60 that Needs New Fence

II.5. Fence O&M Considerations

From the perspective of operations and maintenance of fences, the fence that provides the least effort to keep it looking its best is the best fence for the application. Since the project location is a highly saline environment the material must be noncorrosive or coated to prevent corrosion. Use of high quality materials during the capital improvement will lessen the operation and maintenance.

As stated before, for ferrous materials like the wire fabric it is best to protect the metal with a hot dipped galvanized coating followed by plastic coating that provides color variety and additional corrosion protection. Similar material located on Coast walk near the project area is coated with plastic and is showing signs of corrosion and will need to be replaced in the near future. Ideally a plastic with carbon black would resist degradation by ultraviolet sunlight. Also stated above, the fence posts and structural members would last longer if a composite material composed partly of plastic materials was used. This material has shown signs of good durability and service life over wood.

To protect concrete parapets from corrosion due to salinity, it is recommended that the cement used be type 2 or 5 which protects concrete from sulfide attack.

II.6. Fence Cost Estimates

Costs for work in this area could be higher due to additional costs for architectural features colors, patterns, etc. Costs are estimates based on 2010 costs.

Based on a split block wall cost of \$22 per square foot and assuming a 42 inch parapet the cost for a the block parapet wall would be approximately \$75 per linear foot. The addition of 2.5 feet of Plexiglas ½ inch thick is a unit cost of approximately \$90 per linear foot for a total wall cost of \$180 per linear foot.

A reinforced concrete parapet such as at a location where it replaces guardrail at Amalfi St would cost approximately \$100 per linear foot. Adding the Plexiglas cost the total cost is approximately \$190 per linear foot

The a typical wood and metal wire fabric fence costs could cost approximately \$25 per linear foot installed and could be more depending on the quantity of fence constructed. Fabric should be special hot dip galvanized, not electroplate galvanized followed by coating with the plastic material. This special coating system will cost more but save on maintenance in the long run. Including special coatings and materials the cost per foot should be approximately \$30 per linear foot.



Privacy fences composed of vinyl coated or vinyl composite can cost as much as \$30 per foot for materials only. A total cost would be approximately \$50 per foot

III. RECOMMENDATIONS

Improvements to Torrey Pines Road between Prospect Place and La Jolla Shores Drive will involve replacement of various fences throughout the project alignment. The project as laid out on the Project plans and locations for fences have been identified. Further detailed selections and designs of fences should be carried out during detailed design to refine the approach to be taken at each fence area. There are six locations where fences were identified and one of those locations is split with two recommendations provided. These are shown on the project plans and Figure 1. Our recommendations are provided below:

Fence No. & Station	Approx. Length	Estimated Cost	Notes & Comments
Fence 1 12+00-16+00	400'	Parapet /Plexiglas: \$76,000	Integrate guardrail protection or parapet and Plexiglas top to provide fence and barrier. If a guardrail type barrier is not required in specific areas, a 72-inch wood and wire fabric fence is recommended down slope to provide an unobstructed view.
Fence 2 17+30-18+20	90'	Parapet /Plexiglas: \$16,200.	Recommend 72-inch high parapet and Plexiglas top. Parapet would be approximately 42 inches high and Plexiglas approximately 30 inches high.
Fence 3 21+40-23+00	160'	Parapet /Plexiglas: \$30,400	Recommend 72-inch high parapet and Plexiglas top. This location must be designed to prevent cars from crossing Torrey Pines Road from Amalfi street and running down the embankment
Fence 4 32+50-35+50	300'	Wood & Metal Fabric: \$9,000	A 72-inch high wood and metal fabric fence is recommended for this location
Fence 5 38+00-41+00	300'	Wood & Metal Fabric \$9,000 to be determined by Park Designer	This is the location of the proposed Little Street Park identified in the Corridor study. Initially the recommendation is for a wood and wire fabric fence. However fence style and location should be coordinated with the designer of this park. Recommendation is for locating a wood and metal fabric fence around the top of the slope.
Fence 6 41+00-44+00	300'	Wood & Metal Fabric: \$9,000	Recommend replacing the existing chain link fence with the wood and metal fabric fence
Fence 7 44+00-44+60	60'	Privacy Fence: \$3,000	Recommend placing a privacy fence here because of the location of a nearby home at grade with the road here.

