BLACKBERRY FARM

Entrance Road Improvements

Feasibility Study

Final Report

Prepared for

City of Cupertino
August 2020

By

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Executive Summary

Blackberry Farm (BBF) is a popular recreation center and retreat area in the heart of Cupertino. The entrance road to BBF is part of the frequently used Stevens Creek Trail. The segment of this entrance road is about 300 feet long; however, it does not meet current traffic safety guidelines and needs improvements to increase safety.

Figure 1- Narrow portion of the Entrance Road to Blackberry Farm in 2019

Improvements to the entrance road is ranked in the 2016 Cupertino Bicycle Transportation Plan (Bike Plan) as a Tier 3 project (42 points out of a possible 100) and in the 2018 Cupertino Pedestrian Transportation Plan (Pedestrian Plan) as a Tier 2 Sidewalk project (55 points out of a possible 100). Although these rankings are moderate relative to other bike and pedestrian projects envisioned in the Bike and Pedestrian Plans, there are safety reasons that make it imperative to perform these improvements.

The entrance road is currently used by many modes of transportation including 18-wheel delivery trucks, autos, motorcycles, bicycles, and pedestrians as there are no sidewalks. Safety rules suggest that vehicular traffic should be separated from non-vehicular (bicycle, pedestrian traffic) whenever possible.

Caltrans and US Department of Transportation Federal Highway Administration Office of Safety recommend lane widths between 9 feet and 12 feet for local urban roadways with less than 400 daily trips. (Source: A Policy on Geometric Design of Highways and Streets, AASHTO). Additionally, Americans with Disabilities Act (ADA) regulations dictate that when there is an upgrade to any public facility, the upgraded facility can not hinder ADA access.

When it comes to improvements for ADA access (i.e. sidewalks and pathways in this case), federal regulations set strict design guidelines on maximum slopes, minimum widths, maximum length of sloped segments, type of surface materials, height and shape of handrails, etc. for the ADA accessible paths.

For the BBF entrance road to meet the Caltrans's standards and the federal ADA regulations for lane width, stopping sight distance, drainage design and for the ADA pathway, we will have to overcome the following challenges. The entrance road has issues with the existing roadway conditions that need to be resolved, specifically with the following:

- Horizontal Alignment– The 2-way entrance road is only 17 feet wide at its narrowest part (See Figure 1 above). Ideally, the vehicular lanes should be at least 9 feet wide with minimum 1-foot shoulders on each side of the road in keeping with the residential nature of the neighborhood. Bound by a rock retaining wall on the south side and by a chain link fence covered with dense vegetation, trees, and steep embankment on the north.
- Vertical Alignment - The slope is greater than 8.33% which is maximum slope Federal ADA standards allow for an accessible path of travel. The stopping sight distance is too short, because of a sharp curve in the downhill direction. This adds to the safety concerns.
- Low light – Currently there is no lighting on the road. Dense vegetation and trees create dark shade, even during the noon hour.

As outlined above, the existing horizontal alignment of the roadway does not have the necessary lanes and pathways to meet the State and Federal regulations without encroaching onto the sloped embankment on the north side of road. At the same time, cost and preservation of trees are big considerations in choosing the right alternative.

Early in analysis and development of the alternatives, we found that due to slope of the road and limited width, the ADA path could not be alongside the road. Next, we reasoned that pedestrians should share the path with ADA users in order to minimize construction costs. Thus, the vehicular traffic can use the roadway after improvements and the pedestrians and ADA traffic can use the proposed ADA accessible path. In this case, only the bicycle traffic remains to be accommodated.

The expert bicycle riders can and will likely use the vehicular lanes in both directions as the San Fernando Avenue is the most direct route and they are more comfortable riding with vehicular traffic. However, in the uphill (eastbound) direction, bikers need options to climbing uphill, including a separate bike lane. The 5 alternatives presented here briefly discuss the uphill bike lane issue.

Alternative A – The uphill bike lane is located next to the existing rock retaining wall. Then there are two vehicular lanes, then the tall fence to protect against errant golf balls (hitting the cars or bikers), the embankment and the concrete aerial ADA pathway followed by the J-fence.

Alternative B – Same as Alternative A with the exception that the uphill bike lane is located adjacent to the aerial concrete ADA pathway and the roadway is dedicated to two vehicular lanes.

Alternative C – This is similar to Alternative A with the exception that the uphill bike lane is shifted to north of the downhill vehicular lane (the other side of the road).

Alternative D - Use traffic signals to control traffic over one bi-directional lane and an adjacent bike lane to minimize widening of the entrance road.

Alternative E – A typical roadway section with two shared bike and vehicular lanes and a concrete sidewalk on each side.

We evaluated these alternatives on factors such as safety, loss of trees, traffic impact, constructability, and cost.

Alternative C

This alternative locates the uphill bike lane on the north side of the road (next to the descending vehicle lane) which is not a normal configuration and can cause distraction. Although this is one of the least expensive alternatives, it did not rank high in the overall safety score.

Alternative D

This alternative did not score well because of the cost and the inconvenience that it would introduce to the neighborhood traffic. Additionally; preliminary evaluation found significant road widening will still be needed in other portions of the road. It will also be possible that impatient drivers may run the red light as they may not want to wait for the green light.

Alternative E

This alternative also did not score well either as it exacerbates all the deficiencies of the current roadway. It would remove many trees, require difficult construction on a steep embankment, and involve high costs.

This leaves options A and B as the favored alternatives. They scored high on most categories, including cost, preservation of trees, constructability and most importantly safety. See Page 14 for Alternatives Comparison table.

The final two alternatives (A and B) present these two options. The uphill bike lane will be either located next to the rock retaining wall (as in Alternative A) or next to the ADA pathway (as in Alternative B). Pricewise they are very similar. Expert bicyclists will likely take the roadway as their route. Novice riders, especially adults accompanied by children will be safer using the proposed accessible path alignment outlined in Alternative B.

Background and Issues

Blackberry Farm (BBF) is a wonderful community asset in the City of Cupertino. It is located in the western area of Cupertino and near Monta Vista High School, Kennedy Middle School, Lincoln Elementary School, McClellan Ranch Preserve, Stevens Creek Trail and located south of the Stevens Creek Blvd.

Besides its recreational pool and cafe, BBF offers the community group picnics sites, educational programs and wild animal exhibits during harvest festival. It is surrounded by Blackberry Farm Golf Course, Stevens Creek Trail and residences.

The San Fernando Avenue entrance road provides access to the popular Stevens Creek Trail and BBF. Since, the opening of BBF Golf Course there have been no major roadway improvements to the entrance road. Portions of this road are not safe for the pedestrians, bicyclists and handicapped residents. At locations, this entrance road is too narrow, steep, curved, dark and occasionally, pedestrians, bicyclists and an 18-wheeler tractor-trailer share the same space.

Although, according to Transportation Injury Mapping System (TIMS) there has not been any major traffic accidents or injuries at this reach of the road, the community have stated drivers are traveling at high speeds and running the stop signs at and near San Fernando Avenue and Byrne Avenue.

The goal then is to separate the pedestrian and non-motorized traffic from using the same space as the motorized traffic. Additionally, we need to limit or eliminate conflicting traffic movements in order to increase the safety of this section of the road.

This study was thus commissioned to look at different alternatives to make the entrance road safer for the public's use and pick the alternative(s) that strike the best balance between safety, cost, tree loss, traffic impacts, constructability and ease of maintenance.

Federal American with Disabilities Act (ADA) rules dictate that when there is an improvement to any public facility, the needs of the disabled community must be considered and the ADA rules must be followed. In this case, the improvements have to include an ADA compliant pathway so ADA community can safely access Blackberry Farm.

These regulations set a limit on steepness of the route profile that can be used in design of ADA Path of Travel. These pathways cannot be steeper than 8.33% in longitudinal direction and not exceed 2.08% in cross slope.

Geometric Challenges

San Fernando Avenue runs east and west. Travelling west on San Fernando, it crosses Byrne Avenue (sloping down towards Stevens Creek), it separates into a wye intersection (See Figure 1). The north fork of the wye goes towards BBF and the south fork goes to San Fernando residences. The north fork has the following physical characteristics as it goes towards BBF:

Horizontal Alignment – The roadway measures only 17 feet in width at its narrowest. Caltrans and US Department of Transportation Federal Highway Administration Office of Safety recommend lane widths between 9 feet and 12 feet for local urban roadways with less than 400 daily trips. (Source: A Policy on Geometric Design of Highways and Streets, AASHTO). If the entrance road were to have a minimum of 2 lanes, it needs a minimum total width of 18 feet for both lanes plus additional one- to four-foot width for shoulder on each side (for a minimum width of 20 feet). So, 17 feet is not enough space for two cars to safely pass each other. The roadway is also bound by an old rock retaining wall on south side and a brush covered fence, dense trees and steep embankment towards the golf course on the north side.

Blind Curve – As you travel west (downhill) the roadway turns right and the existing 16-foot tall chain link fence (which is overgrown with vegetation) blocks the view of hazards on or next to the road.

Vertical Alignment - The entrance road slope is greater than 8.33% in longitudinal slope for a length of approximately 250 feet. This slope is greater than allowable by the Federal ADA regulations. This means locating the ADA (Accessible) pathway immediately next to roadway is not possible unless significant additional width were available.

This is a complex issue and in order to solve it, we need to break it down in to smaller problems and address each one separately. The strategy is discussed in the next section.

Strategy

Separating the Motorized Traffic from the Non-motorized Traffic

The entrance road is too steep and there is not enough width next to the roadway to locate the ADA pathway immediately adjacent to San Fernando Ave. Since the destination BBF is on the north side of road, we looked for the ADA pathway alignments on the north side of the roadway, through the dense trees. Preserving as many trees as possible was one of the main goals in plotting a course for the alignment of the ADA pathway.

In addition to missing the dense trees, another challenge will be to overcome the steep downhill grade of the embankment surrounding the trees. Not only does the slope of the proposed ADA pathway has a regulatory upper limit in both longitudinal direction (1 inch per foot) and cross slope (¼ inch per foot), but there also needs to be a 5-footlong landing when the change in elevation reaches 2.5 feet. This would also mean portion of the pathway will be an aerial pathway, like a board walk with handrails on both sides.

The wider the ADA pathway, the more trees may need to be removed, so the width of the proposed ADA pathway should not be more than what is necessary.

Increasing the Roadway Width

The existing asphalt roadway sits at the top of an embankment with a 2 to 1 slope. Any widening will require construction on this embankment to build a retaining wall with foundations that penetrate into the embankment slope to be able to hold up the weight of vehicular traffic above it.

Based on these challenges, the following alternatives were created and are discussed in the next section.

Alternatives and Discussions

The rock retaining wall at the south side of the roadway was built to hold up the embankment and the residential homes above on San Fernando Court. There is a large diameter oak tree embedded in this retaining wall at southern edge of the roadway. The large diameter oak tree is the reason for not removing the rock retaining wall. So, widening of the road, would have to occur on the northside of the roadway. Based on the above discussions, five alternatives were developed and labeled A through E.

These alternatives apply to bicyclists who are traveling west or east. It was reasoned that because of the steepness of the road, the westbound bicyclists can safely share the road with the westbound motorized vehicles and the bicyclists will not hinder the following traffic. However, the eastbound bicyclists may need to take the entire lane going uphill on a steep grade, which then will back up the traffic.

The alternatives considered along with their advantages and disadvantages are explained in more details below:

ALTERNATIVE A

This alternative, shown in Figure 2 below, keeps the uphill bike lane as a dedicated 5-foot wide lane on the south side next to the existing rock retaining wall. It will also allow for two vehicular lanes of 20-foot wide which produces 25 feet of total roadway width. The proposed aerial ADA pathway will be 10-foot wide and traverse over the embankment and between trees.

This configuration produces a minimum of 8 feet of widening onto the embankment and construction of a new retaining wall to withstand the traffic loading of the westbound vehicular traffic. This traffic includes 18-wheel trucks.

The estimated tree loss is 4 trees due to the ADA pathway and 17 trees as part of the roadway widening and retaining wall installation. The construction cost is estimated to be $2.1M.

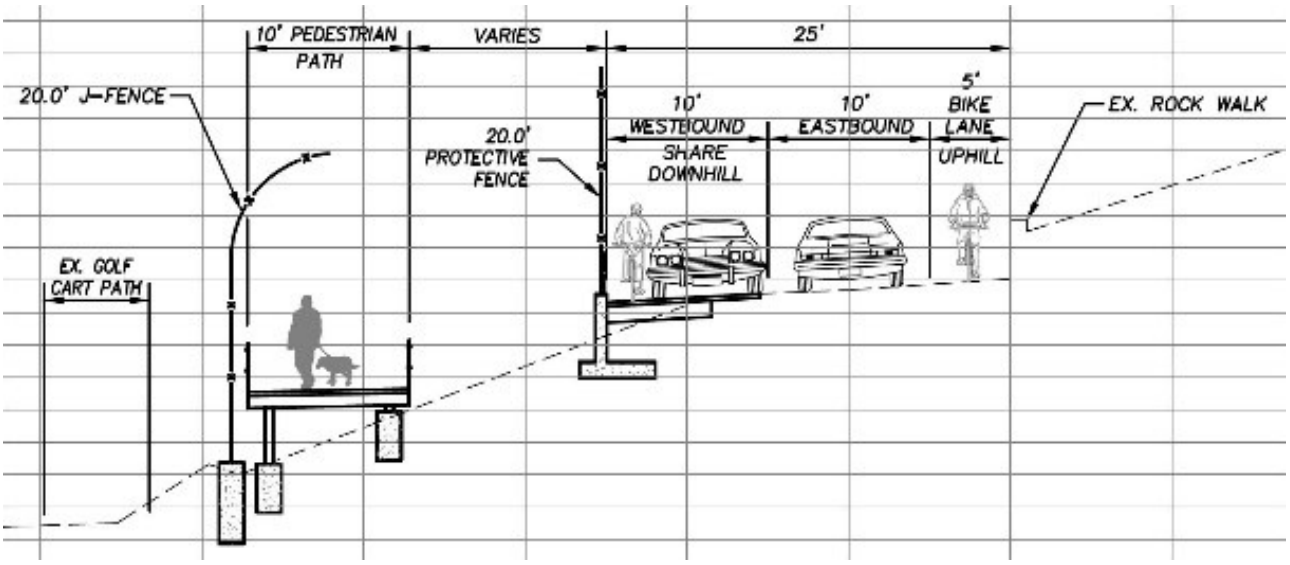


Figure 2 – Alternative A Cross-section alignment

Advantages

This configuration meets many of the desired features, for example bicycle movement is in the same direction as the adjacent vehicular lane. The pedestrian traffic is separated from the vehicular traffic and the conflicts of different modes of traffic is low.

The construction cost of this alternative is the lowest of all other alternatives.

Disadvantages

The number of trees potentially removed with the improvements is approximately 21. As for safety, the uphill bicyclists are forced to enter the controlled wye intersection and road striping is needed to make sure the vehicle traffic is aware of presence of incoming bikes.

ALTERNATIVE B

This alternative, shown in Figure 3 below, locates the uphill bicycle lane next to the ADA pathway and makes it 14-feet wide instead of 10-feet wide (as in Alternative A). The roadway would then accommodate two shared bike and vehicular lanes. The uphill lane will be 9 feet wide plus a 2-foot shoulder and the downhill lane will be 9 feet wide with a 1-foot shoulder.

This alternative meet many of the desired features like high factor of safety, the least amount of tree loss, and ease of constructability. The estimated number of trees lost is 9 due to the ADA pathway and five (5) due to the widening and retaining wall tasks. The construction cost is estimated to be $2.2M.

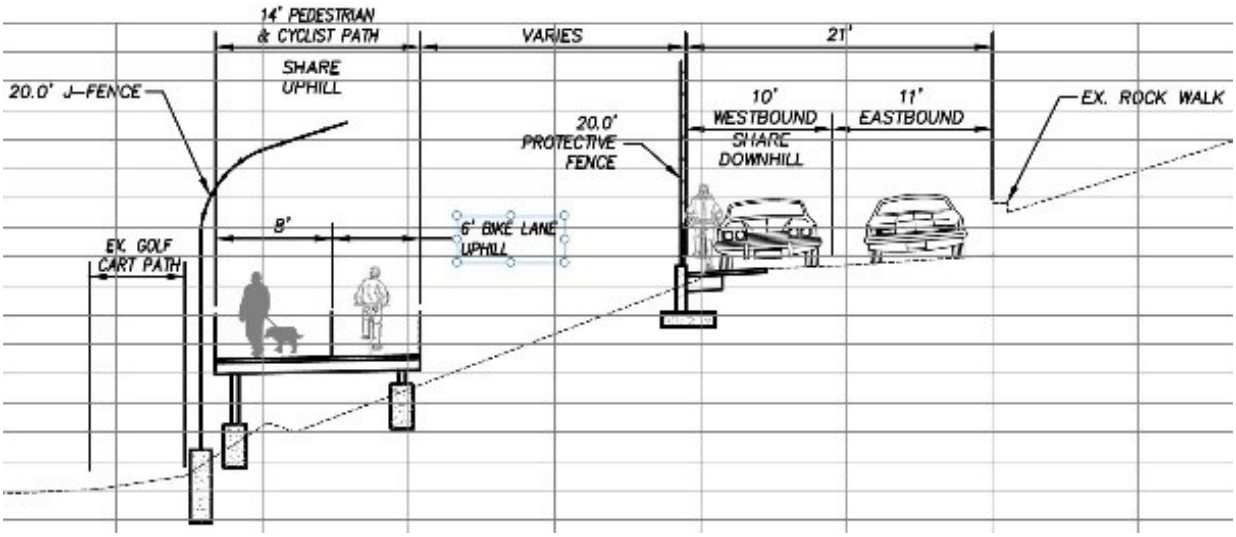


Figure 3 – Alternative B Cross-section alignment

Advantages

This alternative is the safest in terms of traffic and pedestrian safety. It removes fewer number of trees, requires less widening than Alternative A, smaller retaining walls and creates less impact to traffic.

Disadvantages

One disadvantage is that expert bicyclists will likely stay on the roadway (since it is a more direct route) and not obey the signs to use the designated path for the uphill bike lane as it is not a natural instinct to leave the road that is in front of them. The novice bicyclists will likely take the path to avoid conflict with vehicle traffic.

The other disadvantage is that it is not the least expensive alternative here, but it is relatively close in costs to Alternatives A and B.

ALTERNATIVE C

This alternative will eliminate the issue of routing the uphill bicycle lane through the wye intersection. The ADA pathway will be 10 -feet wide and the uphill bike traffic will occur on the roadway and north of the vehicle traffic. There will be a physical separation separating the uphill bike lane from the downhill vehicular traffic. The uphill vehicular lane is 9 feet wide plus a 1-foot shoulder allowing a buffer from the existing rock retaining wall. The shared bike and vehicle lane is also 9 feet wide plus a 1-foot shoulder/separation from the delineators. This alternative results in the same tree loss as the Alternative A. It removes 4 trees due to the ADA Path and 17 trees as part of the roadway widening and retaining wall installation. The cost of this alternative is estimated to be $2.1M to construct.

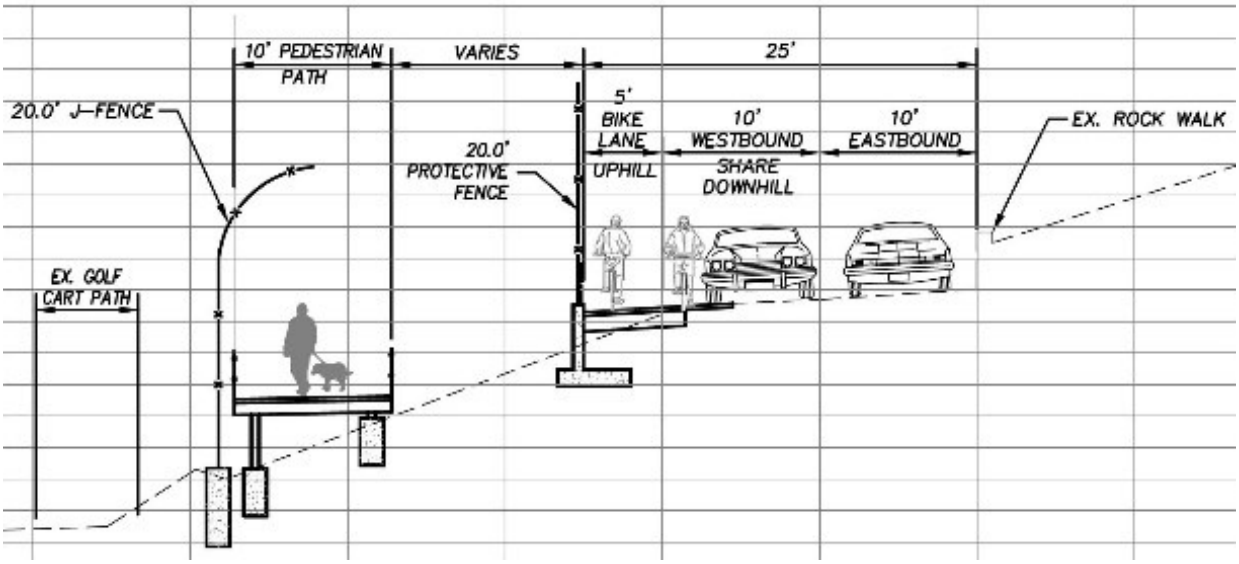


Figure 4 – Alternative C Cross-section alignment

Advantages

Compared to Alternative A, safety is increased a bit as the uphill bicyclists are not directed into the wye intersection. The cost is slightly lower than Alternative B.

Disadvantages

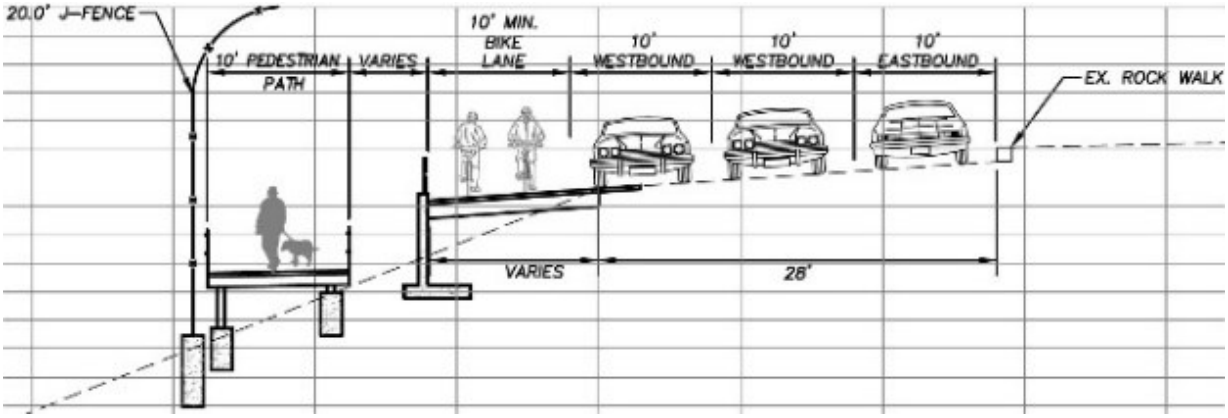
For bicyclists, travelling in opposite direction of the adjacent vehicular lane, is counter intuitive and not very logical. The delineators may offer a false sense of security especially to novice riders. Safety is not significantly improved by this alternative.

Although the widening area is the same as Alternative A, the retaining walls will need to be longer to enable the merger of the bike lane with the ADA pathway.

ALTERNATIVE D

This alternative proposes to use 2 traffic signals to regulate the traffic movement. It uses one lane of the entrance road for bi-directional travel. It removes only 4 trees due to the ADA Path and 5 trees due to widening and retaining wall tasks. The cost is estimated to be $3.1M to construct.

Cross-section before the wye intersection



Cross section after the wye intersection

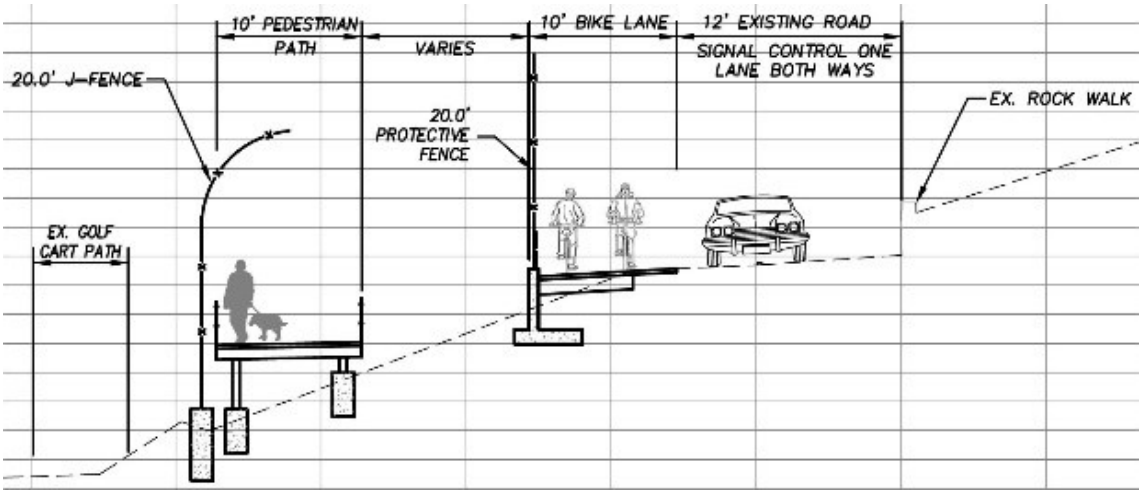


Figure 5 – Alternative D Cross-section alignment

Advantages

This alternative will require the least amount of roadway widening on San Fernando Avenue west of the wye intersection.

Disadvantages

The cost of the traffic signals will be highest of all alternatives. It will require significant widening east of the wye intersection and will cause delay and inconvenience for the neighbors.

ALTERNATIVE E

This alternative proposes to have a sidewalk on each side of the road and two 10-foot shared bike and vehicle lanes for 2-way travel. The width of sidewalks would be 5-feet each and the roadway being 20 feet wide for a total of 30 feet. This alternative will remove approximately 4 trees due to the ADA path and 25 trees as part of the roadway widening and retaining wall installation. This alternative is estimated to be $2.5M to construct.

Advantages

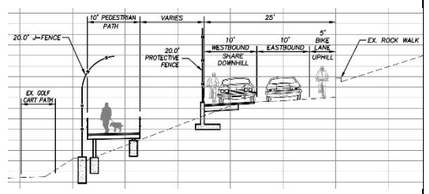
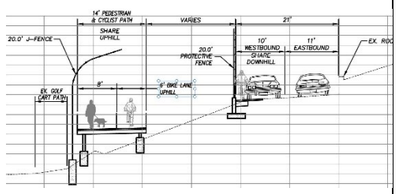
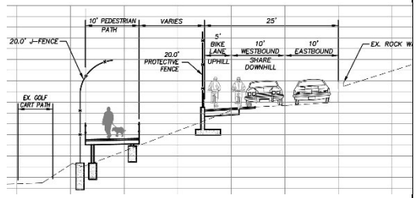
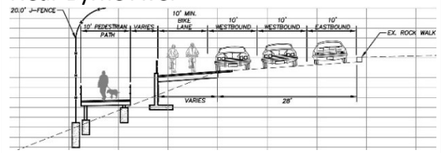
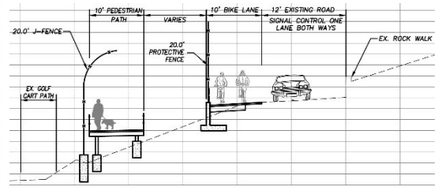
This layout provides the most user-friendly alternative, but lack of adequate width and the steep slopes on either side of the entrance road result in additional expenses to design and construct and have further impacts to the area surround area, including more loss of trees.

Disadvantages

Safety is not improved. As in Alternative A the uphill bicyclists as well as the pedestrians will be routed through the wye intersection. This creates a blind approach and potential conflicts. The downhill sidewalk on the northside of the road creates additional roadway widening and a larger retaining wall would be needed. This results in the highest tree loss over other alternatives.

The following Alternative Comparison table, shows the summary of comparison of the alternatives and tabulates their advantages and disadvantages.

Alternatives Comparison*

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Description/ From left to right	20-foot high J fence 10-foot aerial pedestrian pathway 20-foot high fence 10-foot downhill vehicle lane 10-foot uphill vehicle lane 5-foot uphill bike lane next to the rock retaining wall.	20-foot high J fence 14-foot aerial pedestrian pathway & bike lane 20-foot high fence 10-foot downhill vehicle lane 10-foot uphill vehicle lane next to the rock retaining wall.	20-foot high J fence 10-foot aerial pedestrian pathway 20-foot high fence 5-foot uphill bike lane 10-foot downhill vehicle lane 10-foot uphill vehicle lane next to the rock retaining wall.	Near the BBF entrance: 20-foot high J fence 10-foot aerial pedestrian pathway 20-foot high fence 5-foot bi-directional bike lane 12-foot single bi-directional vehicle lane next to the rock retaining wall.	20-foot high fence 5-foot sidewalk 10-foot downhill vehicle lane 10-foot uphill vehicle lane 5-foot sidewalk next to the rock retaining wall.
Cross-Sections				Near Byrne Ave.   Near the entrance to BBF	
Factors/Score	High	High	Moderate	Lowest	Low
Safety	High	High	Moderate	Moderate	Low
Trees Loss (#)	High (21)	Moderate (15)	High (21)	Low (9)	High (29)
Traffic Impact	Low	Low	Low	High	Low
Constructability	Moderate	Easy	Moderate	Difficult	Difficult
Construction Cost	$2,100,000	$2,183,000	$2,149,000	$3,103,000	$2,504,000

*Notes:

- All Alternatives have two 10-foot wide minimum vehicle lanes and shoulders except Alternative D which has one 12-foot wide Bi-Directional vehicle lane and shoulder.
- In all Alternatives (except Alternative D), the downhill bicyclists share the lane with the downhill vehicles. In Alternative D, the bicyclists have a dedicated 10-foot lane adjacent to the vehicle lane.
- All Alternatives (except Alternative E), the 10-foot (or 14-foot in case of Alternative B) wide concrete aerial ADA pathway is designed on the existing sloped embankment north of the entrance road. In Alternative E, ADA pathway would have been the sidewalk and the bicyclists would have to share both lanes with vehicular traffic.

Path Surface Materials & Stormwater Runoff Issues

Comparison of the estimated construction cost versus the ongoing maintenance cost is necessary to ensure the right surface materials are recommended.

As can be seen in the graph below (Figure 6), material such as wood decking may have a lower initial construction cost ($15/sf) versus pervious concrete ($25/sf). However; the life cycle cost is higher than concrete decking due to higher ongoing maintenance costs. In the Life cycle costs example in Figure 6, the initial cost for pervious concrete deck material results in overall lower costs than the wood deck materials within 7 years in service.

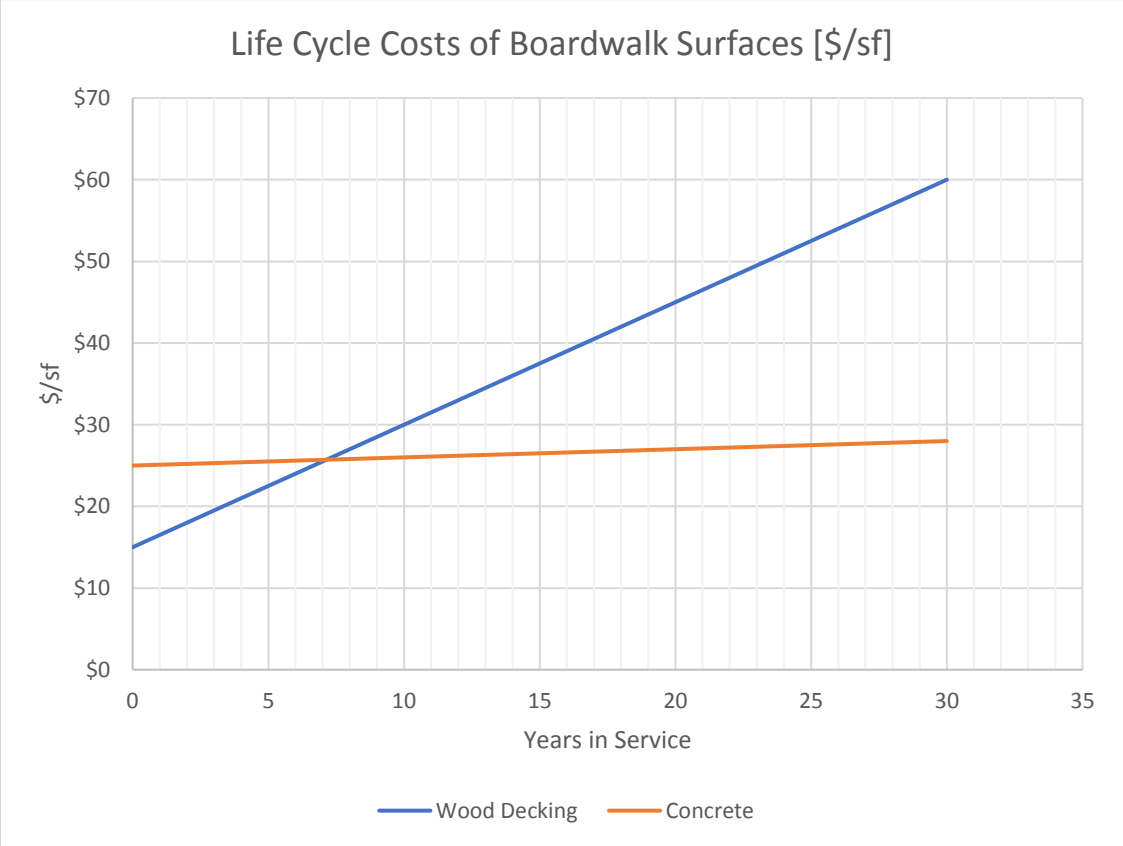


Figure 6 – Life Cycle Costs of Boardwalk Surfaces

However, the choices are not so easy as there are other concerns. If the overall area of improvements exceeds 10,000 sf, the provisions of C.3 (NPDES Municipal Regional Permit) could get triggered. The C.3 regulations stem from the National Pollution Discharge Elimination System (NPDES) and requires cleaning and filtering of stormwater runoff over new impervious surfaces if they exceed 10,000 sf. The roadway widening and the secondary pathway adjacent

to the driveway entrance to the parking lot will approach the regulatory limit. If the square footage exceeds the limits, then additional space, resources and budget is needed to locate and construct a water treatment facility.

However, if pervious concrete is used, the project may stay below the 10,000-sf threshold and not trigger C.3 requirements. That is because pervious concrete allows water to filter through it and has adequate strength for pathway loading.

Slotted or Grated Steel Decking (see Figure 7 below) was another type of surface considered, but due to high initial costs and the heat it retains on hot summer months, it is not recommended.

Figure 7 – Pedestrian Steel Decking in New York

We recommend use of pervious concrete on the deck of the ADA pathway and any other non-vehicular pathways.

Fencing, Utility Lines and Railing for the ADA Pathway

Fencing

The proposed location of the aerial ADA pathway is not next to the roadway, so although the safety is increased over existing situation, the security is a concern. Also, the pathway places the pathway users closer to the golf course where there is an increased likelihood of being hit by an errant golf ball, if not protected. So, we are proposing 2 rows of tall fencing both on north side of the path and on north side of the road. The existing chain link fence and netting system along Blackberry Farm Golf Course Hole #3 needs replacement as over the years utility lines have been mounted on them.

Hole #3 on the adjacent golf Course will need to be reconfigured (moved away from the path) as the space between the path and the hole #3 will be less than before.

Utility lines

There are some utility lines, (e.g. overhead cable and telephone lines and underground storm and sanitary pipes) below the embankment that cross under the proposed ADA pathway. Most, if not all, of these lines can remain undisturbed. The designers and the construction crew will first locate them and then choose a pile spacing that will avoid conflict with the construction of the pathway.

Pathway Sub-Structure and Railing

Given the steep embankment and the tree density, we recommend that the pathway be partially elevated over the embankment using concrete piles as foundation for the structure and to support the girders and beams that will support the decking and the handrails. This is an attempt to minimize the disturbance of the soil in the area and not cut off the natural drainage patterns in the area.

As for the railings the ADA dictates that an ADA pathway must have handrails among other safety features (non-slip surface, mildly sloped to drain away) if it is sloped more than 5%. Here, we will have 8% longitudinal slope. So, the proposed pathway will be designed with handrails on both sides. If Alternate B is ultimately chosen, there will be a handrail between the uphill bicycle lane and the adjacent ADA pathway also.

Public Outreach

A neighborhood community meeting was held on Wednesday, February 12, 2020, by the Department of Public Works. Public Works staff also met with Parks and Recreation Commission and the Bicycle and Pedestrian Commission to present the report and obtain feedback following this meeting.

The public meeting of February 12 was attended by 23 community members. The attendees included nearby neighbors as well as school bicyclist advocates. The project scope was presented along with the design alternatives. Members of the panel also had individual discussions with the community members after the presentation (Attachment C).

In general, the majority of comments were supportive. The alternatives were evaluated based on the input received from the community members and alternatives selected by the Commissioners. These recommendations are in the next section.

Preferred Alternatives

As the Alternative Comparison table showed, Alternatives A and B scored higher than the other alternatives as they provide the best balance of safety for the pedestrians, ADA considerations and the bicycle community. Both alternatives remove a lesser number of trees and disturb less soil due to number of the piles needed for the elevated portion of the pathway (in contrast with other more invasive techniques). An example of more invasive technique would be building retaining walls on both sides of the elevated pathway and filling the area under the pathway with compacted dirt which would be much more invasive and disturbing to the embankment.

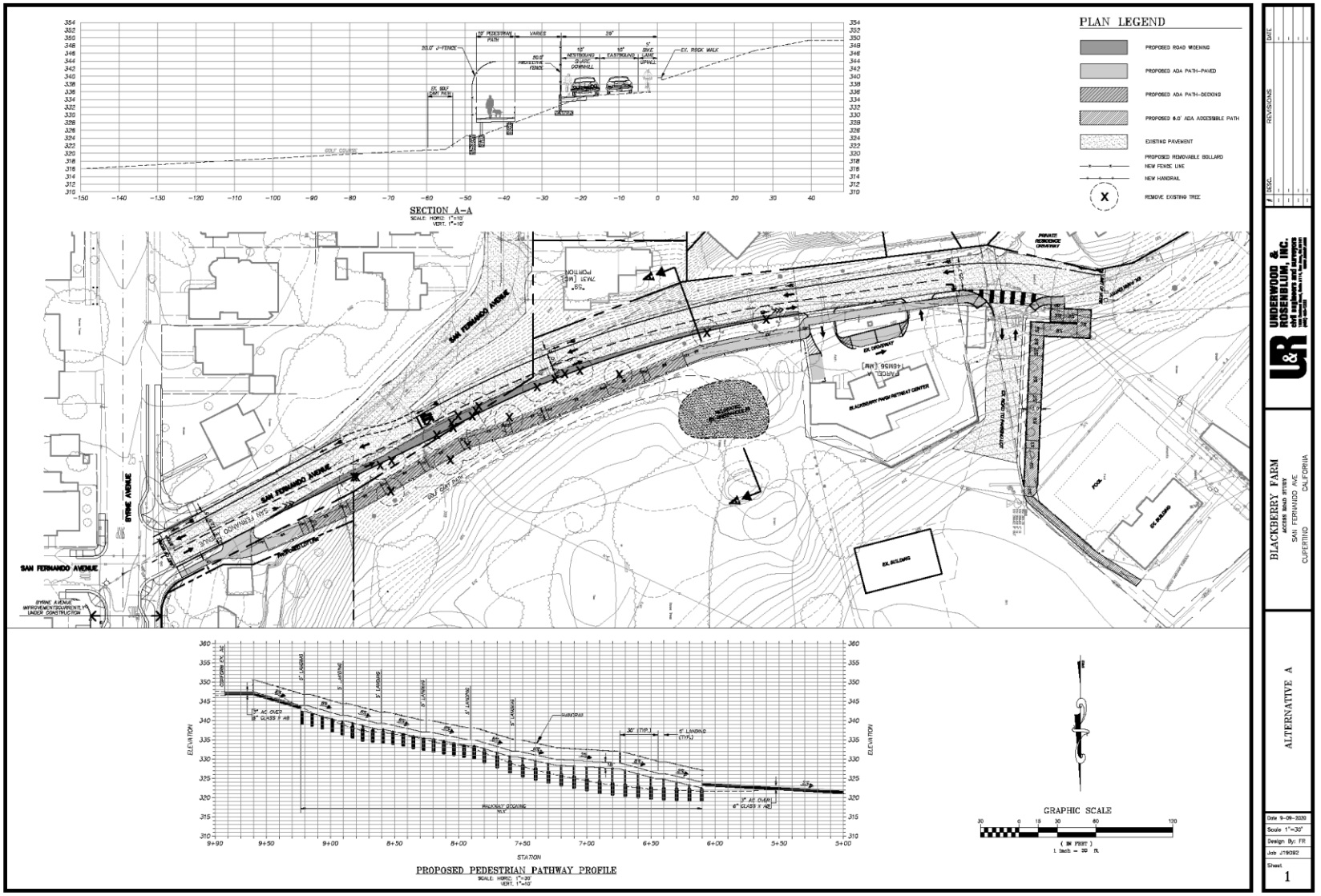
Both alternatives use standard construction methods, making them relatively easy to construct. The color rendering of Alternative B (Attachment B) shows the relative location of the aerial ADA pathway.

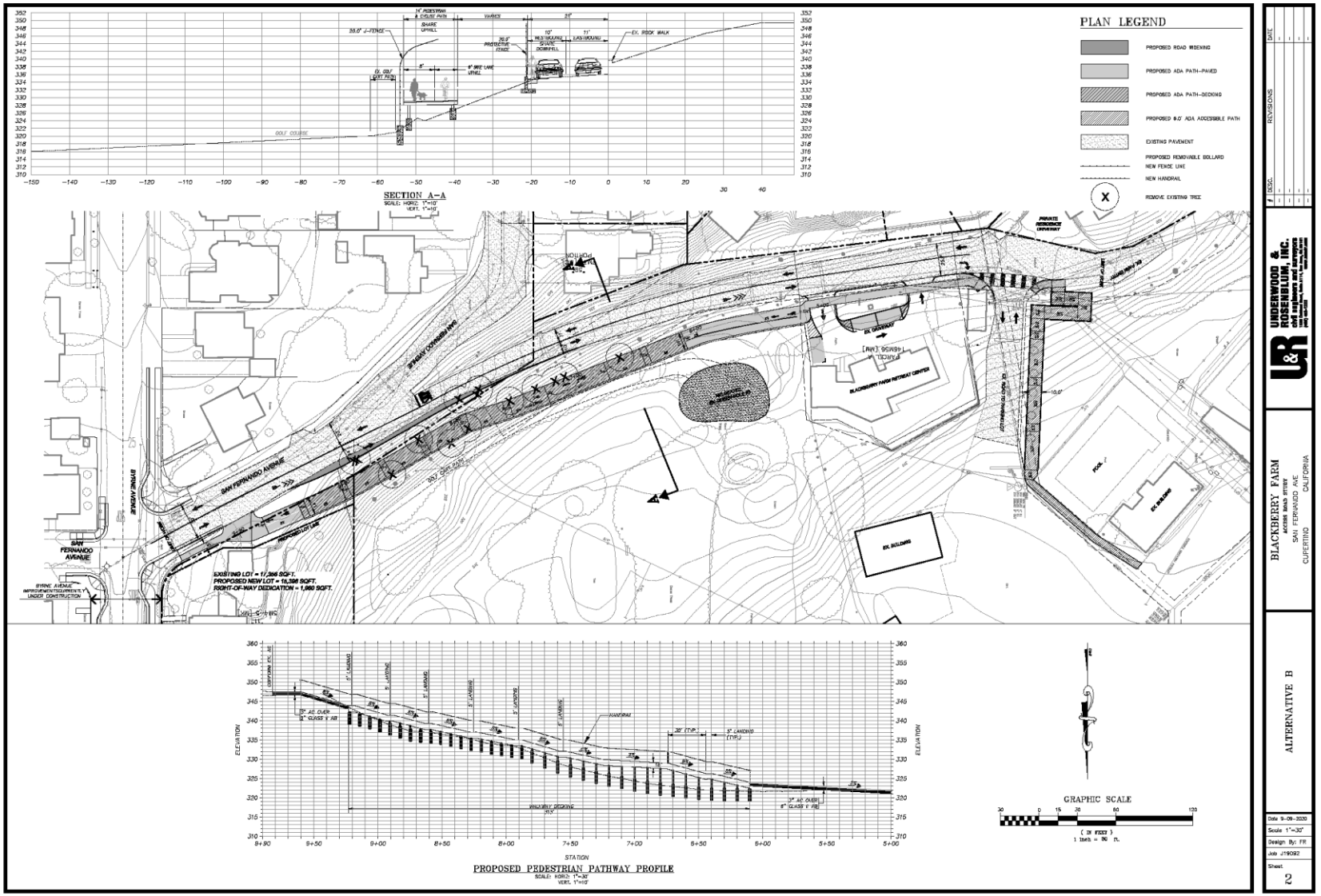
Alternative A supports expert bicyclists as they will opt for using the roadway as a more direct route of travel. However, the novice bicyclists may not be comfortable using the roadway and may instead opt to take the ADA pathway.

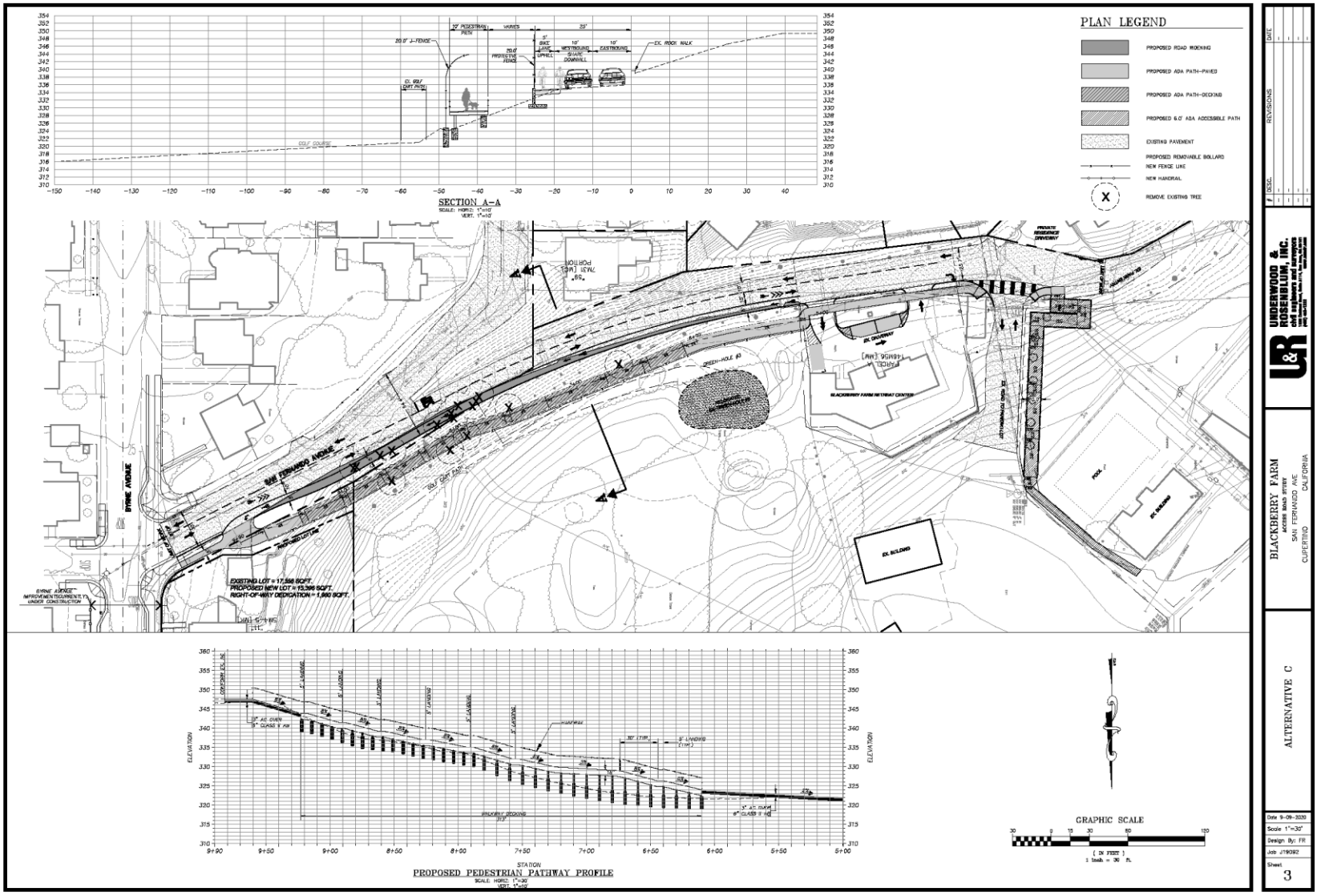
Alternative B provides a choice for the expert riders who may choose to stay on the roadway and also provides a more bicycle friendly alternative for all riders. In addition, this alternative saves more trees than Alternative A and thus is the Preferred Alternative. Furthermore, most of the residents that attended the public meeting, as well as the Parks and Recreation Commission members and the Bicycle and Pedestrian Commission members, preferred Alternative B as well.

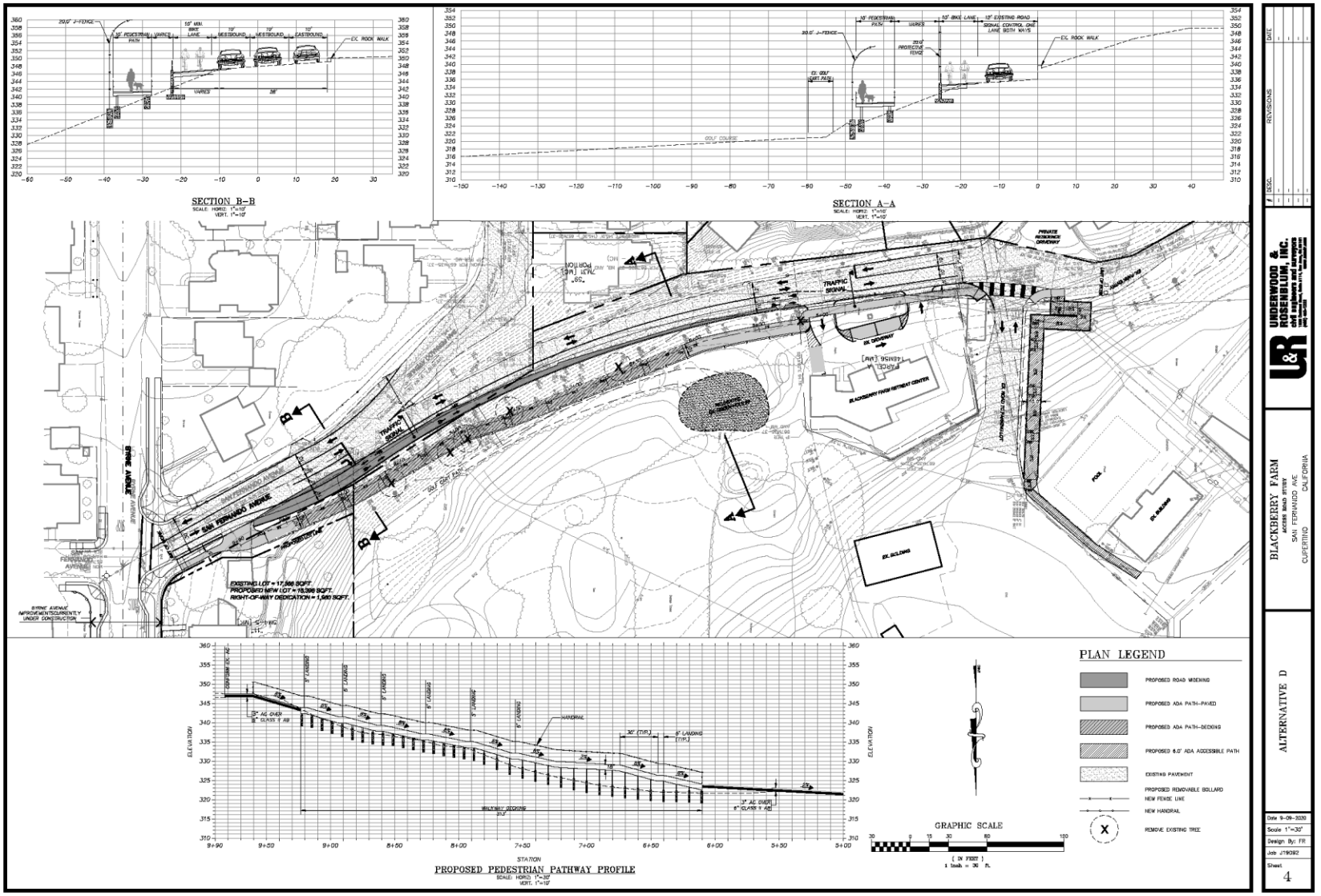
Attachments:

- Plan and Profile of Alternatives A through D
- Attachment A – TIMS Map Report
- Attachment B – Color Rendering
- Attachment C – Community Members Comments

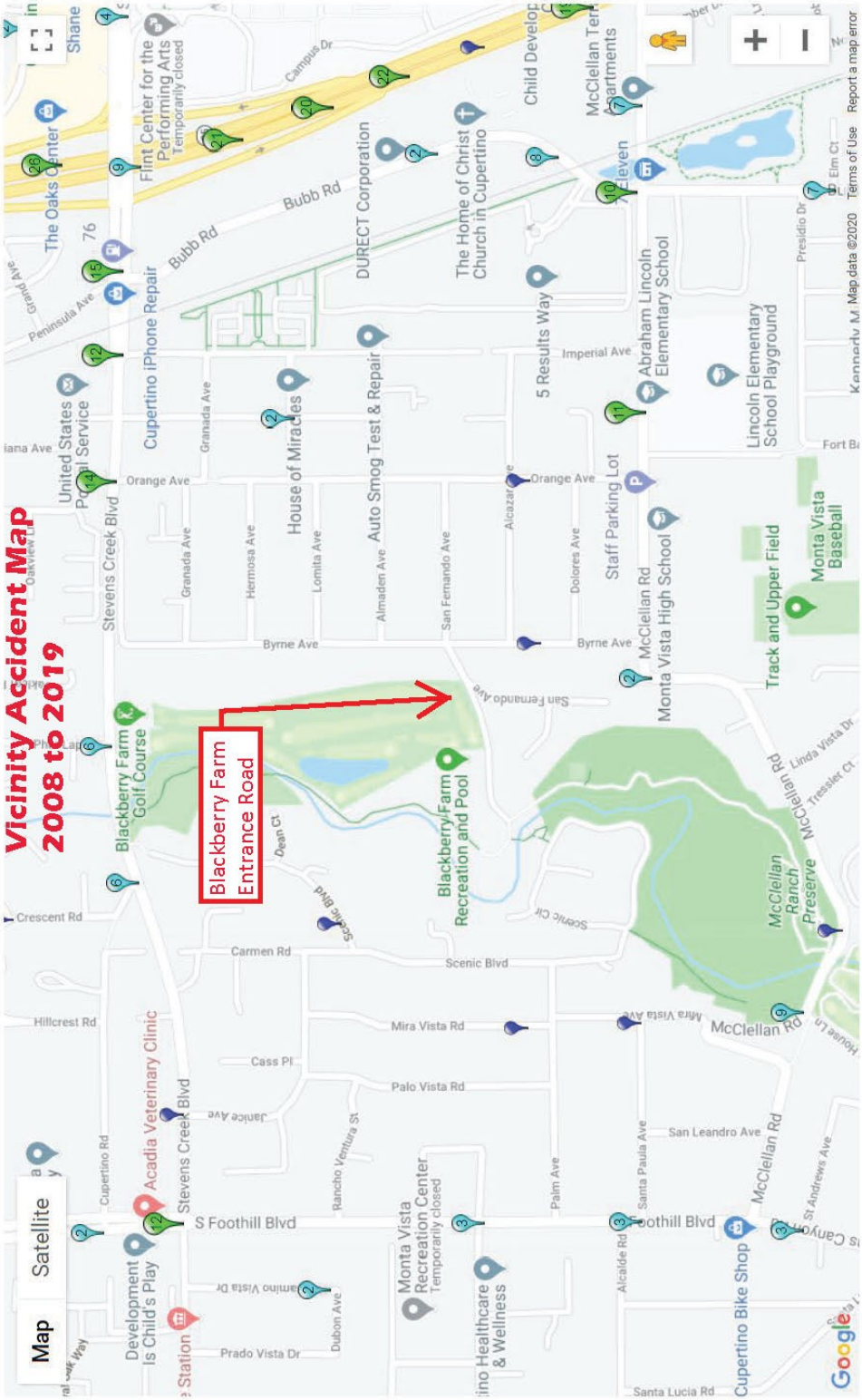

PLAN LEGEND
PROPOSED ROAD WIDENING
PROPOSED ADA PATH–PAVED
PROPOSED ADA PATH–DECKING
PROPOSED 6.0' ADA ACCESSIBLE PATH
EXISTING PAVEMENT
PROPOSED REMOVABLE BOLLARD
NEW FENCE LINE
NEW HANDRAIL
REMOVE EXISTING TREE
SECTION A–A
SCALE: HORIZ. 1"=10'
VERT. 1"=10'
SAN FERNANDO AVENUE
BYRNE AVENUE
BLACKBERRY FARM RETREAT CENTER
EX. BUILDING
PROPOSED PEDESTRIAN PATHWAY PROFILE
SCALE: HORIZ. 1"=30'
VERT. 1"=10'
ELEVATION
STATION
GRAPHIC SCALE
UNDERWOOD & ROSENBLUM, INC.
civil engineers and surveyors
BLACKBERRY FARM
ACCESS ROAD STUDY
SAN FERNANDO AVE
CUPERTINO CALIFORNIA
ALTERNATIVE A
Date 9-09-2020
Scale 1"=30'
Design By: FR
Job J190982
Sheet
1


SECTION A–A
SCALE: HORIZ. 1"=10'
VERT. 1"=10'
PLAN LEGEND
PROPOSED ROAD WIDENING
PROPOSED ADA PATH–PAVED
PROPOSED ADA PATH–DECKING
PROPOSED 6.0' ADA ACCESSIBLE PATH
EXISTING PAVEMENT
PROPOSED REMOVABLE BOLLARD
NEW FENCE LINE
NEW HANDRAIL
REMOVE EXISTING TREE
SAN FERNANDO AVENUE
BYRNE AVENUE
EXISTING LOT = 11,266 SQFT.
PROPOSED NEW LOT = 10,306 SQFT.
RIGHT-OF-WAY DEDICATION = 1,960 SQFT.
BLACKBERRY FARM RETREAT CENTER
EX. BUILDING
EX. GARAGE
POOL
PROPOSED PEDESTRIAN PATHWAY PROFILE
SCALE: HORZ. 1"=30'
VERT. 1"=10'
STATION
ELEVATION
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
UNDERWOOD & ROSENBLUM, INC.
BLACKBERRY FARM
ACCESS ROAD STUDY
SAN FERNANDO AVE
CUPERTINO CALIFORNIA
ALTERNATIVE B
Date 9-09-2020
Scale 1"=30'
Design By: FR
Job J19092
Sheet
2


PLAN LEGEND
PROPOSED ROAD WIDENING
PROPOSED ADA PATH-PAVED
PROPOSED ADA PATH-DECKING
PROPOSED 6.0' ADA ACCESSIBLE PATH
EXISTING PAVEMENT
PROPOSED REMOVABLE BOLLARD
NEW FENCE LINE
NEW HANDRAIL
REMOVE EXISTING TREE
SECTION A-A
SCALE: HORIZ. 1"=10'
VERT. 1"=10'
BYRNE AVENUE
SAN FERNANDO AVENUE
EXISTING LOT = 17,398 SQFT.
PROPOSED NEW LOT = 15,396 SQFT.
RIGHT-OF-WAY DEDICATION = 1,980 SQFT.
PROPOSED PEDESTRIAN PATHWAY PROFILE
SCALE: HORIZ. 1"=30'
VERT. 1"=10'
ELEVATION
STATION
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
UNDERWOOD & ROSENBLUM, INC.
civil engineers and surveyors
BLACKBERRY FARM
ACCESS ROAD STUDY
SAN FERNANDO AVE
CUPERTINO CALIFORNIA
ALTERNATIVE C
Date 9-09-2020
Scale 1"=30'
Design By: FR
Job J19092
Sheet
3


SECTION B-B
SCALE: HORIZ. 1"=10'
VERT. 1"=10'
SECTION A-A
SCALE: HORIZ. 1"=10'
VERT. 1"=10'
BYRNE AVENUE
SAN FERNANDO AVENUE
BLACKBERRY FARM RETREAT CENTER
EX. BUILDING
EXISTING LOT = 17,366 SQFT.
PROPOSED NEW LOT = 16,206 SQFT.
RIGHT-OF-WAY DEDICATION = 1,160 SQFT.
BYRNE AVENUE IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION
PROPOSED PEDESTRIAN PATHWAY PROFILE
SCALE: HORIZ. 1"=30'
VERT. 1"=10'
STATION
ELEVATION
PLAN LEGEND
PROPOSED ROAD WIDENING
PROPOSED ADA PATH-PAVED
PROPOSED ADA PATH-DECKING
PROPOSED 6.0' ADA ACCESSIBLE PATH
EXISTING PAVEMENT
PROPOSED REMOVABLE BOLLARD
NEW FENCE LINE
NEW HANDRAIL
REMOVE EXISTING TREE
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
UNDERWOOD & ROSENBLUM, INC.
civil engineers and surveyors
BLACKBERRY FARM
ACCESS ROAD STUDY
SAN FERNANDO AVE
CUPERTINO CALIFORNIA
ALTERNATIVE D
Date 9-09-2020
Scale 1"=30'
Design By: FR
Job J19082
Sheet
4

Attachment A



Attachment B

Attachment C

BBF ENTRANCE ROAD FEASIBILITY STUDY
COMMENT SHEET

MEETING DATE: 02/12/20
MEETING TIME: 6:30-8:00pm
MEETING LOCATION: 22221 McCLELLAN ROAD, EEC

COMMENT NUMBER	DWG.NO.	COMMENT TYPE	COMMENT	RESPONSE
1	Alt C	E	Uphill bike lane on the wrong side of the road is confusing and dangerous. Opposed to Option C.	
2	Alt D	E	Road is much too wide. Opposed to Alternative D.	
3	Alt C	E	Lose fewer trees take out more of the golf course. Best Option.	
4	Alt B	E	Best Plan: Easier Construction. Fewer tree removal. Option B.	
5	Alt B	E	Ok to lose some trees to make path better and lose less golf course.	
6	Alt B	E	Lose fewer trees and take out more of the golf course.	
7	Alt B	E	Why do we need this?	
8	Alt B	E	Will people opt to use the ped path?	
9	Alt B	E	2nd best option.	
10	Alt B	E	Option B! This one please. =)	
11	-	E	Please minimal impact to the golf course hole #3.	
12	-	E	I think a bike/ped separated path from oncoming traffic is best.	
13	-	E	Please keep the stone wall. Bikes separate from walkers.	
14	-	E	How does alternative B deal with bike traffic having to cross oncoming bikes at top/bottom of the slope?	
15	-	E	Bikes obey traffic rules so riding on street is appropriate to max extent possible therefore Option A appears best followed by C.	
16	-	E	If it is deemed necessary for such a project, then we need to preserve trees and minimize cost. Therefore, Alternative B seems to be the best compromise.	
17	-	E	Do not install bike curbs like on McClellan.	
18	-	E	Reconsider relocating entrance to BBF on Stevens Creek Blvd. (2x)	
19	-	E	Install tall fence to protect homes and vehicles from golf balls.	

COMMENT TYPE: A – Aesthetics
C – Costs
M – Maintenance
S – Safety
T – Traffic

ACTION CODES: A – Originator agrees and will comply/take action
B – Originator disagrees for reasons noted; discussion may be required
C – Answer provided; no action needed

CUPERTINO

MEETING DATE: 02/12/20 PAGE 2 of 3
MEETING TIME: 6:30-8:00pm
MEETING LOCATION: 22221 McCLELLAN ROAD, EEC

BBF ENTRANCE ROAD FEASIBILITY STUDY
COMMENT SHEET

COMMENT NUMBER	DWG.NO.	COMMENT TYPE	COMMENT	RESPONSE
20	-	E	Masterplan conceptual designed a meandering path. Was this considered?	
21	-	E	Keep bikes on the road. Separate pedestrians from the roadway. (2x)	
22	-	E	No on Option D. No to traffic signalized option.	
23	-	S	What are the collision statistics? Any reported accidents?	
24	-	T	Traffic calming at McClellan/Byrne similar to San Fernando/Byrne.	
25	-	C	Do not widen road. Install ADA path only.	
26	-	S	Bike path should be a gradual not undulating path uphill.	
27	-	-	Provide a more valid explanation that this project needs to be done.	
28	-	-	Keep it simple	
29	-	T	There is no need for any special bicycle treatment in my opinion. I can envisage two types of bicycle usage: A. Kiddie bikes with parents – these can use the pedestrian walkway B. Adults on bikes – I foresee very little usage of this access by adult bicyclists. It will be quite rare. Bicyclists will commonly use the Stevens Creek Trail, but access to Byrne will not be an important element. In the rare case an adult wants to use this access, they can walk their bike on the pathway, or choose to ride uphill or downhill and share lanes with cars. The cars wouldn't be obstructed in the uphill direction, only for the reason that the cars going uphill will be already traveling at a very slow speed. In the rare case a car has to follow a bike uphill, it will not impact the traffic flow significantly, as there is already a stop sign at the top of hill – this is not a through route. Going downhill, an adult bike will already be traveling at the same speed as a car.	

COMMENT TYPE: A – Aesthetics
C – Costs
M – Maintenance
S – Safety
T – Traffic

ACTION CODES: A – Originator agrees and will comply/take action
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C – Answer provided; no action needed

CUPERTINO

MEETING DATE: 02/12/20 PAGE 3 of 3
MEETING TIME: 6:30-8:00pm
MEETING LOCATION: 22221 McCLELLAN ROAD, EEC

BBF ENTRANCE ROAD FEASIBILITY STUDY
COMMENT SHEET

COMMENT NUMBER	DWG.NO.	COMMENT TYPE	COMMENT	RESPONSE
30	-	T	We don't need more than two lanes for autos.	
31	-	T	We don't need signaling!	
32	-	T	The design should provide the widest reasonable two-lane bike/ped pathway. If the widest is 14', then please use that. If wider is possible, even better.	
33	-	T	The most dangerous section has not been addressed. It is for cars exiting the parking lot making a restricted view left hand turn. This is at the bottom of a hill and downhill bikers can NOT see the cars. The cars can also not see to the left until they are on Fernando. This is the double blind intersection. None of the alternates appear to address this.	
34	-	T	Why does the ADA path need to be 10 foot wide?	
35	-	T	One fat lane is safer than two. If forces the cars to be careful. If forces the drivers to move over or have a head on collision. If you widen the road for 2 lanes there will be more accidents. Widening the road will increase the speed of drivers. This is bad for bikers too. It makes it faster and less safe. So Alternate A is the closest to this.	

COMMENT TYPE: A – Aesthetics
C – Costs
M – Maintenance
S – Safety
T – Traffic

ACTION CODES: A – Originator agrees and will comply/take action
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C – Answer provided; no action needed