

Memorandum

Department of Public Works



TO: Michael O. Geisel, P.E.
City Administrator

FROM: James A. Eckrich, P.E. *JAE*
Public Works Dir. / City Engineer

DATE: January 31, 2019

RE: Los Padres Sidewalk

As you know, the City of Chesterfield recently updated its ADA Transition Plan (Plan) and the manner in which we rate sidewalk deficiencies. To date, the sidewalks within two thirds of the City have been rated in accordance with the new criteria. Through this process, it has become apparent that a section of sidewalk on Los Padres Court is the worst section of sidewalk in the City of Chesterfield. Not surprisingly, the City has received complaints regarding this sidewalk in the past, the most recent occurring in November of 2017.

Due to a number of factors, which are detailed within the attached memorandum from Civil Engineer Steve Merk, these deteriorated sections of sidewalk on Los Padres Court cannot simply be removed and replaced. The primary reason is that the sidewalk, which should be sloped two percent toward the street, is actually sloped up to eight percent away from the street – toward the adjacent residential structures. Further complicating matters is that the adjacent properties contain private retaining walls and/or are sloped very steeply (approximately 2:1) toward the homes.

City Engineering Staff reviewed the sidewalk on Los Padres Court in detail in 2018. Ultimately, the Staff recommendation was to remove the sidewalk. That recommendation was made for the following reasons:

- 1) Removing the sidewalk will reduce the amount of impervious surface draining toward the houses.
- 2) By removing the sidewalk we can avoid disturbing the existing steep slope and retaining walls on the adjacent residential properties. It would very difficult, and potentially problematic, to re-establish these slopes and reconstruct private retaining walls. Doing so would not only be difficult from a constructability perspective, but it would also necessitate the acquisition of easements and open the City to liability concerns related to slope stability and future maintenance of the retaining walls.

- 3) Los Padres Court receives very little traffic (56 vehicles per day) and sidewalk on one side of the street is sufficient to accommodate pedestrian traffic given the limited vehicular traffic.
- 4) The cost to remove the sidewalk is significantly less than the cost to replace the sidewalk.

The recommendation to remove the sidewalk was presented to area residents at an on-site meeting on August 23, 2018. During that meeting the majority of residents expressed opposition to the sidewalk removal. That said, there was one resident who supported removal, and all residents understood that the deteriorating sections of sidewalk could not simply be removed and replaced as-is. In response the City Staff stated that we would study the matter further in an effort to determine whether anything else could be done.

The City Staff reviewed this matter further, culminating in the attached report from Civil Engineer Steve Merk. The estimate to remove and replace the sidewalk was refined, resulting in a final estimate of \$208,000. A second option which included the construction of an "S" Curb to support the sidewalk, avoiding disturbance of the adjacent parcels, was estimated at \$93,000. However, both of these options are believed to be inferior to the removal option, which is estimated at \$28,000. **Accordingly, I am recommending that the section of sidewalk on Los Padres Court, from Rogue River Drive to 14633 Los Padres Court, be removed and replaced with grass.** This expenditure is included within the 2019 Budget, and no additional funding is necessary.

The attached letter was sent to the residents on Los Padres Court, and those residents have been invited to attend the Planning and Public Works meeting during which this matter will be discussed.

Action Recommended

This matter should be forwarded to the Planning and Public Works Committee of City Council. The Planning and Public Works Committee should determine whether City Staff should proceed with the project to remove a portion of the sidewalk on Los Padres Court. If the PPW Committee votes in favor of removal, City Staff will proceed with the project. If the PPW Committee votes against the sidewalk removal, it should provide Staff direction as to how to proceed.

This matter does NOT need to be forwarded to the full City Council at this time. If removal is recommended, that project is already funded in the City Budget. If the PPW Committee votes in favor of another course of action, City Staff will perform the necessary design / estimate work and re-submit to PPW / City Council in the future for additional funding.

Please direct to the PPW Committee for review and further direction. 2/1/2019





690 Chesterfield Pkwy W • Chesterfield MO 63017-0760
Phone: 636-537-4000 • Fax 636-537-4798 • www.chesterfield.mo.us

February 6, 2019

«Homeowners»
«NO» «Address»
«City_State_Zip»

RE: Los Padres Court Sidewalk

Dear Chesterfield Resident:

As you probably know, there is a deteriorating section of sidewalk on the north and east side of Los Padres Court, just north of Rogue River Drive. Unfortunately, this section of sidewalk cannot simply be removed and replaced due to the slope of the sidewalk and the slope of the adjacent properties. This matter has been studied at length by City of Chesterfield Engineering Staff, who have recommended that the problematic section of sidewalk be removed. That recommendation was presented to area residents at an on-site meeting held on August 23, 2018. During that meeting several residents objected to the removal of the sidewalk, and expressed their preference that the sidewalk be replaced. Accordingly, this matter was reviewed in further detail by City Staff.

After reviewing the problem at length, I concur with the recommendation that the section of sidewalk be removed. The reasons for recommending removal are as follows:

- 1) Removing the sidewalk will reduce the amount of impervious surface draining toward the houses.
- 2) By removing the sidewalk, we can avoid disturbing the existing steep (approximately 2:1) slope and retaining walls on the adjacent residential properties. It would be very difficult, and potentially problematic, to re-establish such a steep slope.
- 3) Los Padres Court receives very little traffic (56 vehicles per day) and sidewalk on one side of the street is sufficient to accommodate pedestrian traffic given the limited vehicular traffic.

- 4) The cost to remove the sidewalk (\$30,000) is significantly less than the cost to replace the sidewalk (\$210,000) in accordance with all ADA standards.

I understand that some area residents may object to the removal of this section of sidewalk. However, after reviewing all the factors, I believe removal is in the best interest of the City. Accordingly, I will be making a recommendation to remove this section of sidewalk to the City of Chesterfield Planning and Public Works Committee on March 7, 2019. Should you wish to comment on the proposed sidewalk removal, you can do so by attending that meeting.

I assure you that the decision to remove this section of sidewalk was not made lightly, and alternative options were considered. Ultimately, removal of the sidewalk is the best option for the long-term safety of City residents and stewardship of City funds.

Should you have questions or wish to discuss this matter, please contact me at (636) 537-4764.

Sincerely,

James A. Eckrich, P.E.
Director of Public Works / City Engineer

cc: Mayor Bob Nation
Barry Flachsbart – Ward 1 Councilmember
Barbara McGuinness – Ward 1 Councilmember
Michael O. Geisel, City Administrator
Zachary S. Wolff, P.E. – Assistant City Engineer
Steven J. Merk, P.E. – Civil Engineer
Ronald Horst – Conway Forest Trustee
Katherine Hipp – Conway Forest Trustee
Neale Brassell – Conway Forest Trustee

Memorandum

Department of Public Works



TO: James A. Eckrich, P.E.
Public Works Director / City Engineer

FROM: Steven J. Merk, P.E. *Sm*
Civil Engineer

DATE: January 31, 2019

RE: Los Padres Court Sidewalk

BACKGROUND

Los Padres Court is located in the Conway Forest subdivision. The street was platted in 1972 with 20 lots on the street and sees very low vehicular traffic. A traffic study was conducted between 7/16/2018 and 7/23/2018 and found an Annual Average Daily Traffic (AADT) count of only 56 vehicles.

The City of Chesterfield received a complaint related to a deteriorated section of sidewalk on Los Padres Court in November 2017. The complaint was made by a resident, Ms. Ilene Shaw, who lives at 14641 Los Padres Court. Ms. Shaw's concern was that the existing sidewalk was severely sloped and difficult to traverse in the area to the east of her residence.

Public Works staff responded to Ms. Shaw advising her that City staff would investigate that portion of sidewalk and potentially include it in the City sidewalk replacement program in the future.

In association with the revision to the ADA Transition Plan, Public Works staff investigated this issue further to evaluate potential solutions. During a visit to the site, several safety hazards in the segment of sidewalk between Rogue River Drive and the driveway serving 14633 Los Padres Court were found. The sidewalk inventory database was also reviewed, and it was found that this segment of sidewalk had the worst rating of all segments that had been scored in the City. See Attachment A for overall plan views of this area.

The sidewalk in this area has an inconsistent cross slope of up to eight percent away from the back of curb. As a point of reference, the maximum slope allowable, in accordance with ADA standards, is two percent. The sidewalk is adjacent to 2:1 slopes which are heavily vegetated, and the elevations of the sidewalk are approximately 20 feet higher than the finished floor elevations of the adjacent houses. There is also sidewalk cracking and vertical heaving in several locations.

Finally, there is an existing eight-foot railroad tie retaining wall located on private property between two feet and six feet horizontally behind the steeply sloped sidewalk along the frontage of 1220 Los Padres Court. The wall is located on a horizontal curve with no fall protection at the top of the wall. Smaller retaining walls are also located along the frontage of two other lots in the area.

Several photos of the current conditions can be found in Attachment B. Additional photos can be found on the network, in folder: <G:\PublicServices\Streets\Street Files\Los Padres\Sidewalk Photos 2018-07-16>.

SOLUTION OPTIONS

Option 1

The first option considered to provide a comprehensive, long-term solution involves a complete redesign and reconstruction of the section of sidewalk between 14633 Los Padres Court and Rogue River Drive. Removing and reconstructing the segment of sidewalk would be a significant project. It would involve a large amount of grading due to the settlement of the existing sidewalk and the proximity to the existing 2:1 slope down to the houses, especially at 14633 Los Padres Court. The sidewalk grade would need to be raised in some areas to avoid tree roots, and the outside edge of the sidewalk would need to be raised in most locations by as much as six inches to provide a proper 2% cross slope toward the back of curb.

It would be necessary to remove all of the existing mature trees and clear the existing undergrowth on the existing 2:1 slope in the front of 14633 Los Padres Ct. Raising the elevation of the sidewalk to provide a proper cross slope would require filling and regrading of this entire slope. A geotechnical engineering analysis and design for the slope reconstruction would be necessary since the existing slope is so steep (typical maximum slope is 3:1) and appears to be settling. The design by a geotechnical engineer would minimize the chance of future slope settlement and sidewalk deformation.

It is assumed that the new slope would be designed at a 3:1 maximum adjacent to the sidewalk and would drop approximately 20' vertically before leveling out in front of the residence at 14633 Los Padres Court. Therefore, 36" pedestrian protection fencing would need to be installed along the property frontage. Additionally, there are retaining walls only a couple feet from the back of sidewalk along the frontages of 14627, 14619, and 1220 Los Padres Court. The 36" pedestrian protection fencing would be required to be installed at the back of sidewalk along the frontage of these lots as well.

A full reconstruction of the sidewalk would also require the reconstruction of the existing railroad tie retaining wall along the frontage of 1220 Los Padres Court. The existing wall is currently bowing and appears to be in danger of eventual collapse. The wall would need to be reconstructed prior to the sidewalk reconstruction since geogrid reinforcement would likely be required to be installed under the sidewalk. Also, the wall reconstruction should be part of this project to ensure that it is designed and built properly to be a permanent solution for the sidewalk reconstruction.

The existing retaining wall is located only 13' from the back of curb of Los Padres Court at the closest point, so there is a possibility that the construction of the proposed retaining wall geogrid reinforcement could compromise the curb and pavement of Los Padres Court. This could result in a segment of street that would need to be reconstructed for the replacement of the sidewalk and retaining wall. This is unlikely, but it is a possibility that could not be definitively determined until the wall is under construction.

Finally, it is recommended to replace the driveway aprons for the properties between 14633 and 1230 Los Padres Court since there is a high probability that they would be damaged during the sidewalk removal and replacement. The existing deficient curb ramp at the intersection of Los Padres Court and Rogue River Drive should also be replaced.

Prior to commencing any work, temporary construction easements would be required from the property owners adjacent to the sidewalk replacement limits.

The cost estimate for this comprehensive removal and reconstruction option is \$208,000. See Attachment C for a line item cost estimate.

Option 2

The cost of Option 1 seems so prohibitive that other options were considered as solutions to the existing situation. The second option involves removal and replacement of the sidewalk, but it avoids the reconstruction of the slope in front of 14633 Los Padres Court and reconstruction of the retaining wall in front of 1220 Los Padres Court.

To avoid the regrading work detailed above with Option 1, a St. Louis County Type "S" Concrete Curb could be constructed at the back of sidewalk which would act as a small retaining wall for the fill dirt that would be required to construct the sidewalk at the appropriate grades and cross slope. A geotechnical engineering analysis would still be required to verify that the existing conditions are suitable to allow for this solution.

Assuming that this would be a feasible solution, the Type S curb could be built along the frontage of the lots at 14633, 14627, 14619, and 1220 Los Padres Court to avoid any slope regrading on these properties. In addition, since slope regrading would not be required behind the retaining wall at 1220 Los Padres, the existing wall could remain in place and remain the responsibility of the homeowner.

A fall protection barrier would be required by ADA Code with this option because of the resulting drop off from the edge of sidewalk to existing ground, so a 36" fence would be proposed along the property frontages.

It is believed that the deformation of the sidewalk in front of 14633 Los Padres Court is due to the existing 2:1 slope slowly creeping or settling. Therefore, since this option would not regrade and stabilize the existing slope, this sidewalk solution would not resolve the underlying issue that is the root cause of the main sidewalk deficiencies in this area. Therefore, this option is not recommended.

The cost estimate for this removal and reconstruction option is \$93,000. See Attachment C for a line item cost estimate.

Option 3

A final option to remedy this situation would be to permanently remove the existing sidewalk on the east side of Los Padres Court between 14633 Los Padres Court and Rogue River Drive. The designated project limits are recommended to minimize the number of properties that would be directly affected by the sidewalk removal. This option would provide a permanent and all-encompassing solution to the safety and maintenance issues in this segment of sidewalk.

The existing sidewalk on the opposite side of Los Padres Court would remain for pedestrian traffic on the cul-de-sac. Given the small number of lots and the low traffic volume on the street, sidewalk on one side of this segment of road would be adequate. For a new subdivision, City Code requires sidewalk on both sides of a cul-de-sac with more than eight lots. However, it is my engineering opinion that, in this case, the benefit to public safety would outweigh the benefit of the sidewalk.

The project scope for the removal option would be relatively minimal. The existing concrete sidewalk would need to be removed, then the remaining area would need to be backfilled with topsoil and sodded. The existing curb ramp at Rogue River Drive would be removed and replaced.

The cost of sidewalk removal would be significantly less than either option for reconstruction. Additionally, the removal of this sidewalk would reduce the amount of impervious area draining toward the adjacent properties. The cost estimate for sidewalk removal between 14633 Los Padres Court and the intersection with Rogue River Drive is \$28,000. See Attachment C for a line item cost estimate.

MEETING WITH RESIDENTS

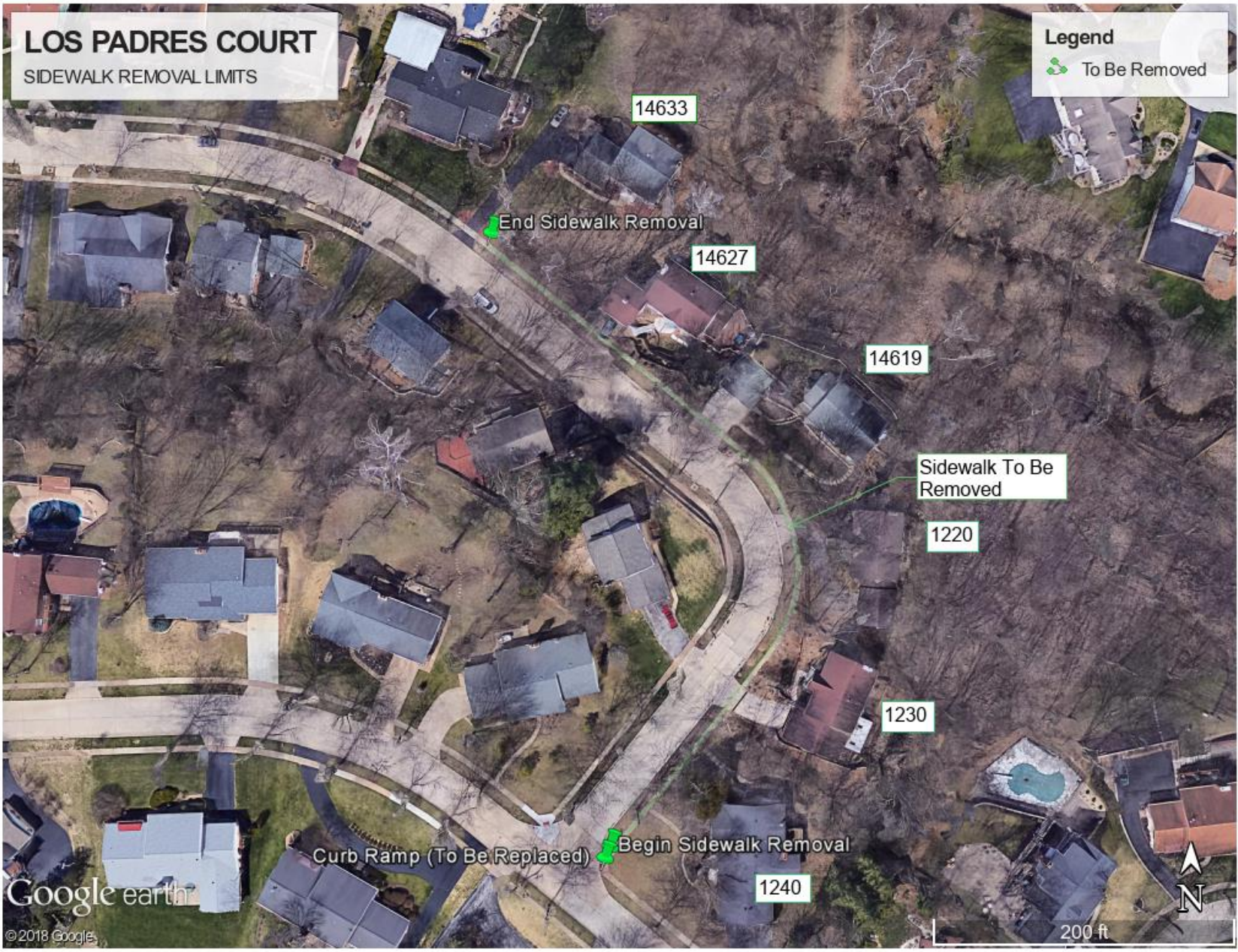
A meeting was held on-site with Public Works staff and Los Padres Court residents on 8/23/2018. Prior to the meeting Staff had decided that removal of the sidewalk would be the most economical, safest, and the only permanent solution to the current sidewalk problem. Therefore, City staff was soliciting feedback from residents on the proposal to remove the section of sidewalk as described in Option 3 above.

The majority of the seven residents present at the meeting were opposed to removal of the sidewalk. One resident, Mr. Brassell at 1220 Los Padres Court, was strongly in support of the removal. The residents against the removal primarily objected because they believed it may negatively affect the aesthetics of their street. All residents present agreed that the current condition of the sidewalk is not acceptable, but they did not understand why the City could not just replace their sidewalk.

Attachments

ATTACHMENT A

PLAN VIEWS

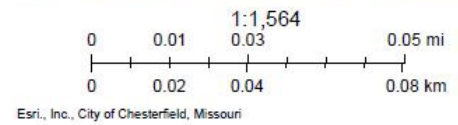


LOS PADRES COURT



July 18, 2018

- City 2ft, Valley 1ft
- Parcels



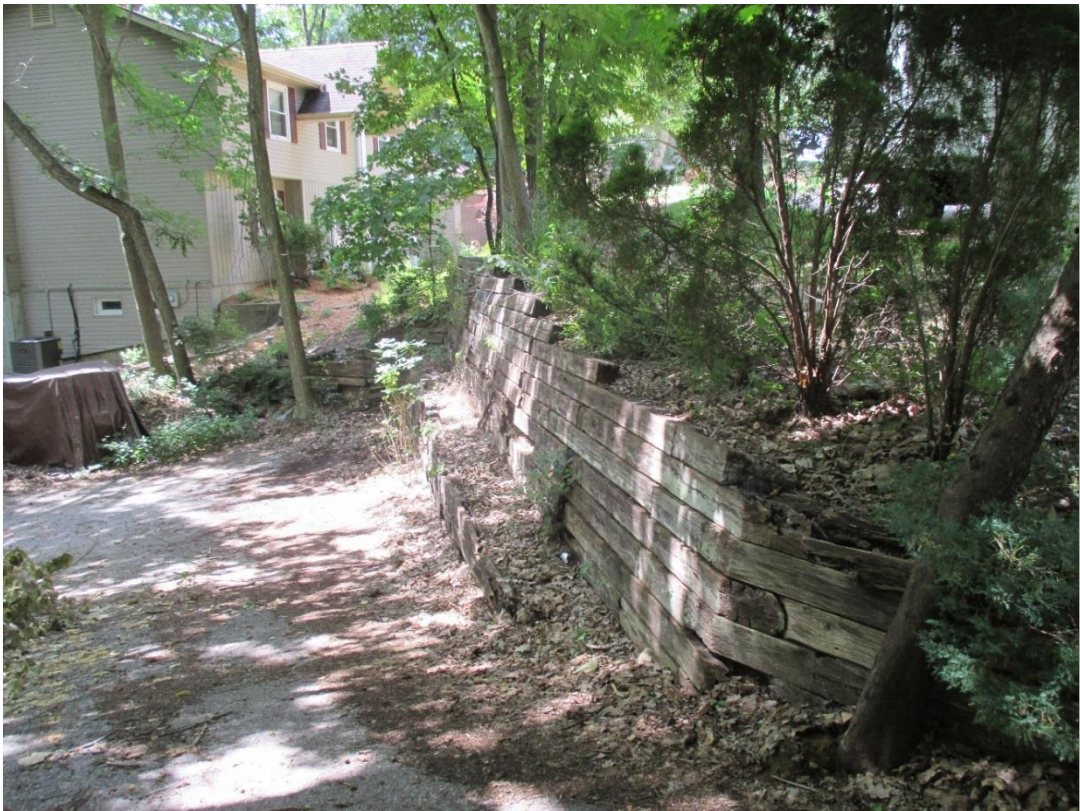
This Map has been prepared from the most reliable information obtainable. We cannot, however, due to circumstances beyond our control, guarantee complete accuracy. Any errors or omissions brought to our attention will be appreciated and will be corrected in subsequent updates.

ATTACHMENT B

SITE PHOTOS







ATTACHMENT C

COST ESTIMATES

Project Name: Los Padres Sidewalk
 Engineer: Steven J. Merk, P.E.
 Date: 1/25/2019

OPTION 1
 Remove & Replace S/W, Regrade 3:1 Slope, Replace Retaining Wall

REMOVE AND REPLACE EXISTING SIDEWALK 550 L.F.
 From Rogue River Drive to 14633 Los Padres Court

Description	Qty	Unit	Unit Price	Cost
Removal				
Remove ex. 4' sidewalk	2200	S.F.	\$ 4.00	\$ 8,800.00
Pavement				
New Sidewalk Base	2200	S.F.	\$ 3.00	\$ 6,600.00
Construct 4' Sidewalk	2200	S.F.	\$ 7.00	\$ 15,400.00
Replace Concrete Driveway Apron	560	S.F.	\$ 12.00	\$ 6,720.00
Replace Asphalt Driveway Apron	140	S.F.	\$ 10.00	\$ 1,400.00
Remove and Replace Ex. Curb Ramp	1	EA	\$ 5,000.00	\$ 5,000.00
Earthwork				
Mobilization	1	L.S.	\$ 10,000.00	\$ 10,000.00
Tree Removal - 14633 LPC	1	L.S.	\$ 20,000.00	\$ 20,000.00
Topsoil Stripping	20	C.Y.	\$ 5.00	\$ 100.00
Import Fill	200	C.Y.	\$ 10.00	\$ 2,000.00
Regrade Existing 2:1 Slope	1	L.S.	\$ 10,000.00	\$ 10,000.00
Garage Pier Shoring (14627 LPC)	1	L.S.	\$ 10,000.00	\$ 10,000.00
Seed and Mulch new 3:1 Slope	2000	S.Y.	\$ 2.00	\$ 4,000.00
Sod Tree Lawn	300	S.Y.	\$ 5.00	\$ 1,500.00
Retaining Wall				
	50	L.F.	7	ft Height avg.
Remove & Replace Ex. RR Tie Retaining Wall	350	S.F.	\$ 75.00	\$ 26,250.00
Black Chain Link Fence *	275	L.F.	\$ 20.00	\$ 5,500.00
* from 14633 - 1220 LPC				
Miscellaneous				
Geotechnical Engineering Consultant - Slope stability & wall design	1	LS	\$ 15,000.00	\$ 15,000.00
Civil Engineering/Surveying Consultant	1	LS	\$ 25,000.00	\$ 25,000.00
Adjust Ex. SMH to grade	1	EA	\$ 1,000.00	\$ 1,000.00
Permanent Easement	1	LS	\$ 3,000.00	\$ 3,000.00
Temporary Construction Easements	1	LS	\$ 4,000.00	\$ 4,000.00
Remove & Replace one lane of Los Padres Ct for retaining wall construction				
Pavement Slab Replacement		EA	\$ 2,500.00	TBD
Roadway Shoring		L.S.	\$ 10,000.00	TBD
Concrete Curb Replacement		LF	\$ 20.00	TBD
Tree Removal		EA	\$ 2,000.00	TBD
Backfill		CY	\$ 10.00	TBD
Sod		SF	\$ 5.00	TBD

SUBTOTAL = \$ 181,270.00

15% Contingency = \$ 27,190.50

TOTAL = \$ 208,460.50

Project Name: Los Padres Sidewalk
Engineer: Steven J. Merk, P.E.
Date: 1/25/2019

OPTION 2
 Remove and Replace s/w, no re-grading of 3:1 Slope, Type S Curb

REMOVE AND REPLACE EXISTING SIDEWALK 550 L.F.
 From Rogue River Drive to 14633 Los Padres Court

Description	Qty	Unit	Unit Price	Cost
Removal				
Remove ex. 4' sidewalk	2200	S.F.	\$ 4.00	\$ 8,800.00
Pavement				
New Sidewalk Base	2200	S.F.	\$ 3.00	\$ 6,600.00
Construct 4' Sidewalk	2200	S.F.	\$ 7.00	\$ 15,400.00
Replace Concrete Driveway Apron	560	S.F.	\$ 12.00	\$ 6,720.00
Replace Asphalt Driveway Apron	140	S.F.	\$ 10.00	\$ 1,400.00
Remove and Replace Ex. Curb Ramp	1	EA	\$ 5,000.00	\$ 5,000.00
Type "S" Concrete Curb	275	L.F.	\$ 15.00	\$ 4,125.00
Earthwork				
Sod Tree Lawn	300	S.Y.	\$ 5.00	\$ 1,500.00
Safety Fence				
Pedestrian Fence *	275	L.F.	\$ 40.00	\$ 11,000.00
* from 14633 - 1220 LPC				
Miscellaneous				
Construction Easements	1	LS	\$ 5,000.00	\$ 5,000.00
Geotechnical Engineering	1	LS	\$ 15,000.00	\$ 15,000.00

Note:

Formula
Good
Best Estimate

SUBTOTAL = \$ 80,545.00
 15% Contingency = \$ 12,081.75
TOTAL = \$ 92,626.75

Project Name: Los Padres Sidewalk
Engineer: Steven J. Merk, P.E.
Date: 1/25/2019

OPTION 3
 Permanently Remove Sidewalk

REMOVE EXISTING SIDEWALK 550 L.F.
 From Rogue River Drive to 14633 Los Padres Court

Description	Qty	Unit	Unit Price	Cost
Remove ex. 4' sidewalk	2200	S.F.	\$ 4.00	\$ 8,800.00
Remove ex. Access Sidewalk	120	S.F.	\$ 4.00	\$ 480.00
Remove and replace ex. Curb ramp	1	EA	\$ 5,000.00	\$ 5,000.00
End Pavement reflective signs	1	EA	\$ 1,000.00	\$ 1,000.00
Sod	672	S.Y.	\$ 5.00	\$ 3,361.11
Install new 4' Access Sidewalk	180	S.F.	\$ 7.00	\$ 1,260.00
Replace 4' concrete driveway section	320	S.F.	\$ 12.00	\$ 3,840.00
Replace 4' asphalt driveway section	80	S.F.	\$ 10.00	\$ 800.00

SUBTOTAL = \$ 24,541.11

15% Contingency = \$ 3,681.17

TOTAL = \$ 28,222.28