

DATE: December 5, 2016

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

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

RE: River Valley Drive Closure - Redesign



*Please forward to
PPW for direction
mesc
12/5/2016*

As directed by City Council, in May of 2015 Public Services Staff provided a report detailing the impacts of the closure and / or vacation of River Valley Drive and Hog Hollow Road. This report was generated in response to the potential development of the Howard Bend area within the City of Maryland Heights. At that time City Council directed Staff to prepare plans and a cost estimate for the closure of River Valley Drive. As you may recall, the City Attorney reviewed this matter and advised that a closure could be effected so long as the closure was constructed in conformance with City road standards and the public impacts were thoroughly considered.

In November of 2015 City Staff submitted plans and an estimate for the closure of River Valley Drive to the Planning and Public Works Committee. These plans proposed the use of portions of properties to the northeast of River Valley Drive, specifically 178 River Valley Drive and 180 River Valley Drive. At that time it was Staff's understanding that those properties were controlled by the River Bend Trustees, who were supportive of the project and could convey the necessary easements.

The plans and estimate were reviewed by the PPW Committee and were positively recommended for approval to City Council, who unanimously authorized Staff to create a bid package. Bids for the River Valley Drive Closure Project were opened on March 8, 2016. After reviewing the bids, I sent a memorandum to City Council recommending that the project be awarded to Krupp Construction in the amount of \$155,000, which included the low bid amount of \$140,282 and a ten percent contingency.

Prior to Council consideration, a River Bend resident contacted the City and contested the right of way dedication. The resident asserted that the River Bend Trustees had no authority to convey an easement for the property at 178 River Valley Drive. After a lengthy review involving two City Attorneys, it was determined that the River Bend Trustees did not have the authority to grant an easement over 178 River Valley Drive. At that time the project stalled as residents of the River Bend subdivision met to discuss how to proceed with this project. It is my understanding that it has now been determined that the River Bend Subdivision does not desire to

address the title issues related to the property conveyance. Instead, the property owner across the street, 76 River Valley Drive, has offered to convey to the City the property necessary to construct a standard cul-de-sac. Of course, this will necessitate a redesign of the cul-de-sac utilizing a portion of the property at 76 River Valley Drive, and entirely avoiding the property at 178 River Valley Drive.

Attached is a drawing (Exhibit A) showing the original cul-de-sac design, and a second drawing (Exhibit B) showing a schematic of a more conventional cul-de-sac design. You will note the original design incorporated what is commonly referred to as a "golf club" cul-de-sac, whereby the cul-de-sac is offset to one side of the street. The original cul-de-sac was designed in this configuration because the property to the northeast is not usable, and it was our understanding that it could be conveyed by the River Bend Trustees. In order to entirely avoid construction on the 178 River Valley Drive parcel, the cul-de-sac will be re-designed as a more of a conventional, or "bulb" cul-de-sac. The cul-de-sac will still be slightly offset toward the property at 180 River Valley Drive (in order to minimize the impact to 76 River Valley drive) but will be moved approximately 24 feet to the southwest. The result is a pavement and drainage section which abuts the right of way / property line at 76 River Valley Drive. Please note that this does not mean that the City will not need an easement at 76 River Valley Drive. At a minimum a Temporary Slope and Construction License (TSCL) will be necessary to allow grading and working room for the contractor. However, it appears a permanent easement may not be required unless it is determined during detailed design that the cul-de-sac needs to be moved farther southwest, or if retaining walls are necessary on the southwest side of the road.

Please note that the cul-de-sac location and distances described above are only an estimate at this time, based upon preliminary data. After we obtain survey information and perform a detailed design, we will be able to determine the optimal location of the cul-de-sac in order to minimize costs and impacts to the parcel at 76 River Valley Drive.

The City Staff completed the original cul-de-sac design in such a manner that construction would have minimal impacts to adjacent property, including avoiding the need for retaining walls and substantial drainage structures. It is our opinion that the original design would have resulted in the lowest overall project cost. Moving the cul-de-sac as shown on Exhibit B will necessitate a re-design resulting in additional design costs and construction costs, which are detailed as follows:

DESIGN

- A) The existing survey acquired for the original design did not include data on the property at 76 River Valley Drive. Accordingly, additional survey data on that property will be required, at an estimated cost of \$6,000.
 - B) The previous right of way dedication was recorded prior to the execution of a construction contract. That right of way dedication must be repealed in order to return the properties at 178 and 180 River Valley Drive to their original condition. This will be accomplished by City Staff at minimal cost (recording fees).
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- C) After the survey is completed we can commence preliminary design. This will include laying out the exact location of the cul-de-sac, grading, drainage, and retaining walls. Once a preliminary design is complete we will contact area utilities and address any conflicts or comments. It is possible that the redesign will result in conflicts with Laclede Gas and/or Missouri American Water Company, due to their facilities being located on the west side of River Valley Drive. However, these facilities are located within the public right-of-way, so any costs associated with their relocation will not financially impact the City of Chesterfield. After utility conflicts are addressed a final design will be completed, including plans, specifications, and estimate. There is no out-of-pocket cost for this design work, which will be completed utilizing existing City Staff.
- D) As you can see on Exhibit A, at the most northeastern point of the cul-de-sac, the elevation of the road (470) is approximately seven feet higher than the existing ground (463). The existing design allowed for that elevation difference to be made up by grading over the adjacent properties, extending approximately 34 feet outside the edge of pavement. With the City no longer able to utilize the property at 180 River Valley Drive for grading, it is likely that a retaining wall will be necessary. Such a wall will require a St. Louis County permit, which necessitates plans and calculations from a retaining wall / geotechnical engineer. The cost for this service is estimated at \$15,000.
- E) New right-of-way (ROW) and temporary slope construction license (TSCL) exhibits, including legal descriptions, will need to be assembled for 76 River Valley Drive and 180 River Valley Drive (the River Bend Bath and Tennis Club). These will be completed once the survey and design are complete. The estimated cost for these documents is \$4,000.

The cost of re-designing the cul-de-sac, using in-house engineering staff, is estimated at \$25,000. We believe this work, including survey, site layout, utility coordination, geotechnical design, exhibit creation, and right of way acquisition, will take approximately seven months. This is partially due to the City being short one Civil Engineer and one GIS Analyst / CAD Technician at this time. However, even if fully staffed, re-design would likely take nearly six months due the time required in order to complete the survey and obtain agency approvals.

CONSTRUCTION

- F) As referenced above, the reconfigured cul-de-sac may require a retaining wall along the northeast side of the cul-de-sac due to the elevation difference between the edge of pavement and the existing grade at 178 River Valley Drive. It is estimated that a retaining wall could add \$25,000 to the construction costs of this project. The actual size and location of any retaining wall would be determined during design.
- G) Moving the cul-de-sac southwest will have an impact to the frontage of the property at 76 River Valley Drive. We believe we can design the cul-de-sac in such a manner that we will avoid any negative impact to the circular concrete paver driveway (with an integrated ice melting system) and private gates. However, there
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will certainly be some impact to the extensive landscaping, which includes a pond and waterfall system. It is estimated that there will be approximately \$10,000 in landscaping restoration costs associated with the relocated cul-de-sac.

- H) It is my understanding that the property owner at 76 River Valley Drive has consented to the property donation in exchange for an eight feet high concrete fence / wall to be located between his property and the new cul-de-sac. City Staff has obtained an estimate for 100 LF of concrete fence / wall at a cost of \$28,000.
- I) Moving the cul-de-sac to the southwest will necessitate redesigning and reconstructing the roadside drainage. At this time we anticipate a ditch / channel along the side of the roadway. However, if this cannot be accomplished, a drainage structure and pipes of some kind may be required. At this time no costs have been added for storm sewer facilities in the expectation that a roadside ditch can be utilized.
- J) In the original design, the cul-de-sac was being constructed adjacent to the existing roadway. The new design incorporates the cul-de-sac into the existing roadway. The result is that slightly less pavement will need to be constructed, and there is no longer a need for an island with vertical curb. Preliminary calculations show that the proposed project includes approximately 70 fewer square yards of concrete. This will correlate to a cost avoidance, or savings, of an estimated \$6,000.

In addition to the \$25,000 in design costs detailed above, there is an estimated \$57,000 in additional construction costs, for a total cost increase of \$82,000. Adding this to the original bid of \$140,282 yields a cost of \$222,282. The addition of a ten percent contingency results in a total estimated project cost of \$245,000.

A table summarizing these costs is below:

Original Construction Bid	\$140,282
Additional Survey	\$6,000
Retaining Wall / Geotechnical Eng.	\$15,000
Easement Exhibits	\$4,000
Retaining Wall Construction	\$25,000
Landscaping at 76 River Valley Drive	\$10,000
Eight Feet Concrete Fence at 176 RVD	\$28,000
Reduction in Pavement Costs	-\$6,000
Project Sub-total	\$222,282
Ten Percent Contingency	\$22,228
Total Project Cost (rounded)	\$245,000

Action Recommended

This matter should be presented to the Planning and Public Works Committee for consideration. Should the Committee desire to proceed with this project, it should make a positive recommendation to City Council. Such a recommendation should include the

allocation of \$25,000 from General Fund – Fund Reserves above the 40% Policy for design costs. If Council elects to proceed with this project, design will begin immediately, with the expectation that a construction contract will be submitted to City Council during the summer of 2017.

Exhibit A

CITY OF CHESTERFIELD
 DEPT. OF PUBLIC SERVICES
 600 CHESTERFIELD PARKWAY WEST
 CHESTERFIELD, MO 63017
 PH: 636-597-4700
 FAX: 636-597-4798



CITY OF CHESTERFIELD
 2015-PW-14
 RIVER VALLEY DRIVE CLOSURE

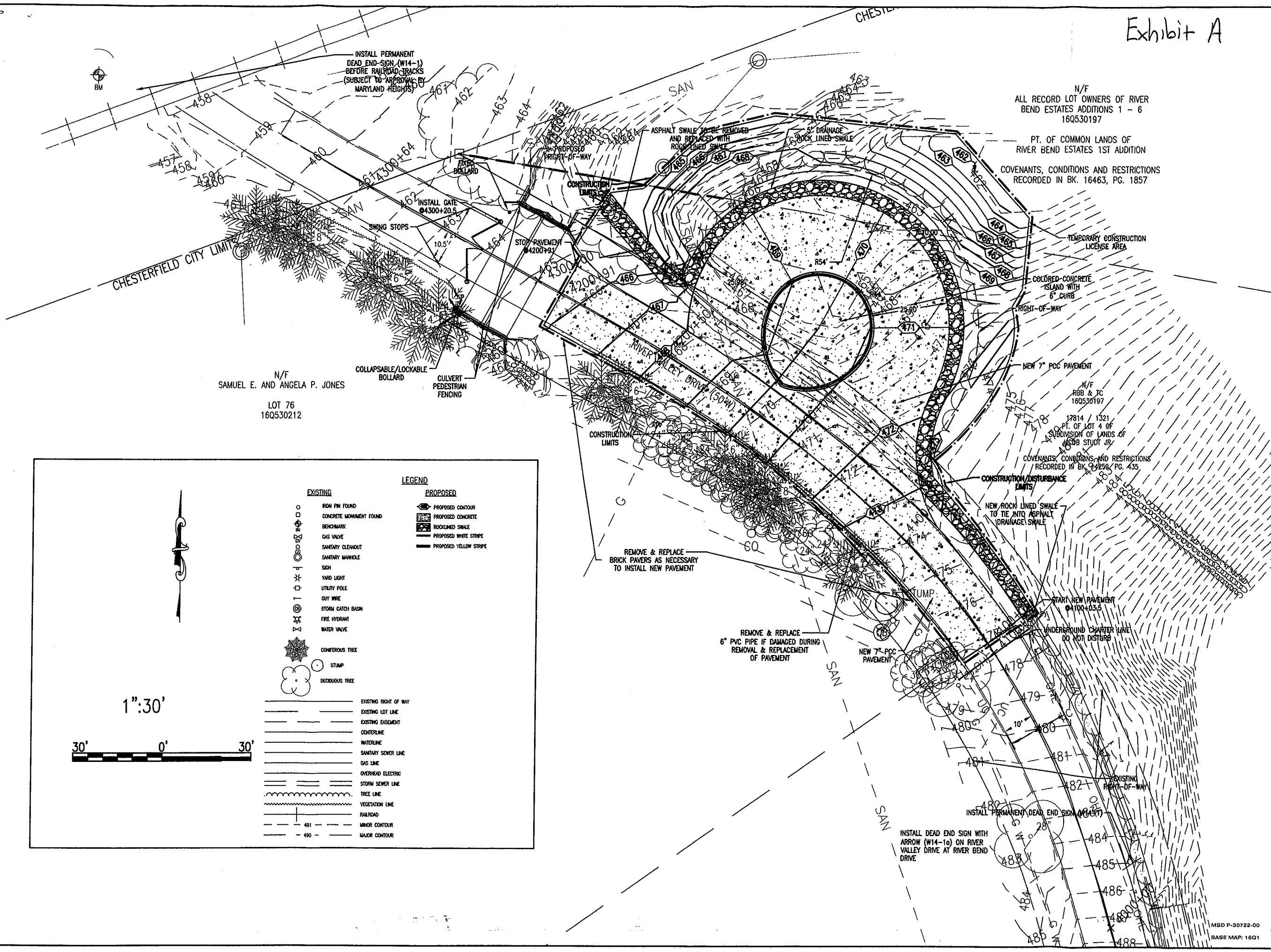
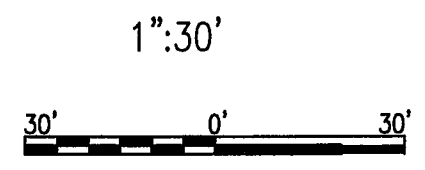
CHRISTOPHER KRUEGER
 PROFESSIONAL ENGINEER
 PE-2014016972

DESIGNED BY	CREATED BY
S. SPIEGEL	CAK
DATE	JOB NO.
02/23/2016	2015-PW-14
SHEET TITLE:	
PROPOSED SITE PLAN	
SHEET NO.	C3

N/F
 ALL RECORD LOT OWNERS OF RIVER
 BEND ESTATES ADDITIONS 1 - 6
 16Q530197
 PT. OF COMMON LANDS OF
 RIVER BEND ESTATES 1ST ADDITION
 COVENANTS, CONDITIONS AND RESTRICTIONS
 RECORDED IN BK. 16463, PG. 1857

N/F
 SAMUEL E. AND ANGELA P. JONES
 LOT 76
 16Q530212

EXISTING	PROPOSED



MSD P-30722-00
 BASE MAP: 16Q1

