

**TWIN OAKS BOARD OF ALDERMEN
NOTICE OF WORK SESSION
TWIN OAKS CITY HALL
WEDNESDAY, MAY 5, 2021, 6:15 P.M.
TWIN OAKS, MO 63021**

To balance both the need for continuity of government and protection of the health and safety of our residents, business persons and employees, this meeting of the Board of Aldermen will be open to public attendance in person, providing that those who attend wear face coverings and maintain social distancing.

In addition, the meeting will also be livestreamed on Facebook so that the public may watch and listen to the meeting virtually. The livestream of the meeting will be accessible by tablet/laptop/PC or mobile device at www.facebook.com/twinoaksmo.

The Board apologizes for any inconvenience these requirements may pose but it is extremely important all measures in compliance with the orders issued by public health authorities be taken to protect employees, residents, and elected officials during these extraordinary times.

TENTATIVE AGENDA

1. Sidewalk Project Prioritization
2. Adjournment

Frank Johnson
City Clerk

POSTED: May 3, 2021, 3 p.m.

Please note: Any person requiring physical or verbal accommodations should contact the city office 12 hours prior to meeting at 636-225-7873. Copies of public records for this agenda are available for public inspection before and at the time of the meeting.

Memo to: Board of Aldermen
From: Frank Johnson, City Clerk
Subject: Review of Sidewalk Plans
Date: April 23, 2021

Following the recent open house on the Crescent Avenue Sidewalk Project, staff reviewed previous sidewalk plans the City has produced as well as the discussions surrounding those plans.

2011-2012

In 2011 in response to resident concerns over speeding on Boly Lane, the Board requested that the City's engineering firm at the time, GBA, put together a rough estimate for installing sidewalks. It's not clear if this estimate was ever produced, as it is not mentioned again in subsequent meetings nor was staff able to locate any such estimate in the City's archives.

The next year, the City produced what remains the only comprehensive plan for pedestrian pathways throughout the City. However, it was done as part of a much larger stormwater study from BFA and is a very preliminary document. It sketches a possible route for a walking trail, but does not provide any additional detail or cost. A review of board minutes from the time did not find any discussion of the concept plan.

2015-2017

Several years later in 2015, a group of residents again brought concerns over speeding and pedestrian safety to the Board. The option of sidewalks and bike lanes was discussed. The Board again requested that the City's engineers, now BFA, research putting in sidewalks throughout the village. The result of this request was the Boly Lane and Autumn Leaf Sidewalk Route Evaluation. The document sketched a route from Big Bend to Birnamwood Trails and included a discussion of the issues involved with such a project. It estimated the cost to be \$394,197, a figure that was revised upward in 2018 to \$673,305.

There was some brief discussion of rolling the costs of the sidewalks into the financing for the Town Hall in 2016, but the financial advisor for the bond issue advised holding off on taking that step.

In 2017, in response to a question from a resident seeking an update on the sidewalks, the Board noted some of the hurdles facing the project, such as the fact that not all residents were in favor and that easements would be involved, and that it required further study.

2018-Present

The Board next considered adding a sidewalk project to the CIP in 2018. The pricing from the 2015 study was updated, but it was ultimately decided to not include sidewalks in the 2019 budget but consider it in the future.

Lastly, in 2019, the Board started exploring a possible sidewalk project on Crescent Avenue in addition to having BFA produce a more scaled back plan for Boly Lane. The Board also held a strategic planning

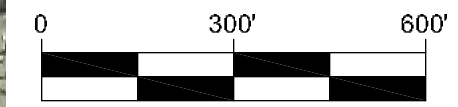
session where they identified sidewalks as a public safety priority. During this meeting, the Board also decided to focus their efforts on Crescent Avenue. Subsequently, the Board adopted a budget for 2020 that initially included \$180,000 for a sidewalk but was revised down to \$30,000 in order to prepare a grant application for federal funds for the project.

The City applied for a nearly \$1 million grant from East-West Gateway Council of Governments in 2020. The project would have completely rebuilt Crescent Avenue in addition to adding sidewalks, but was not successful. Following this, the City began exploring how a smaller portion of the project could still be done on Crescent Ave using only local funds, which led to the current concept plans under consideration.

SIDEWALK PLANS ON FILE

Year	Description	Engineer	Cost Est
2021	Crescent Avenue Sidewalk Concept Plan <i>Crescent Rd to Golden Oak Ct</i>	BFA	\$117,117
2020	Crescent Avenue STP Grant Application <i>Crescent Rd to Valley School Dr</i>	Weiss	\$1,064,832
2019	Boly Lane Sidewalk Concept Plan <i>Big Bend Rd to Autumn Leaf Dr</i>	BFA	\$136,262
2015	Boly Lane and Autumn Leaf Sidewalk Route Evaluation <i>Big Bend Rd to Birnamwood Trails Dr</i>	BFA	\$394,197/ \$673,305
2012	Walking Trail Concept Plan <i>Citywide</i>	BFA	N/A

WALKING TRAIL CONCEPT



SCALE: 1" = 300'



CITY LIMITS

DRAFT OF BRIDGE LOCATION

EXISTING WALKING TRAIL

DRAFT OF TRAIL PLAN

LEGEND

- DRAFT OF TRAIL PLAN
- EXISTING WALKING TRAIL
- CITY LIMITS

E-Mail: mail@bfaeng.com Telephone: (636) 239-4751

BFA
CONSULTANTS-ENGINEERS-SURVEYORS
www.bfaeng.com

103 ELM STREET WASHINGTON, MISSOURI 63090

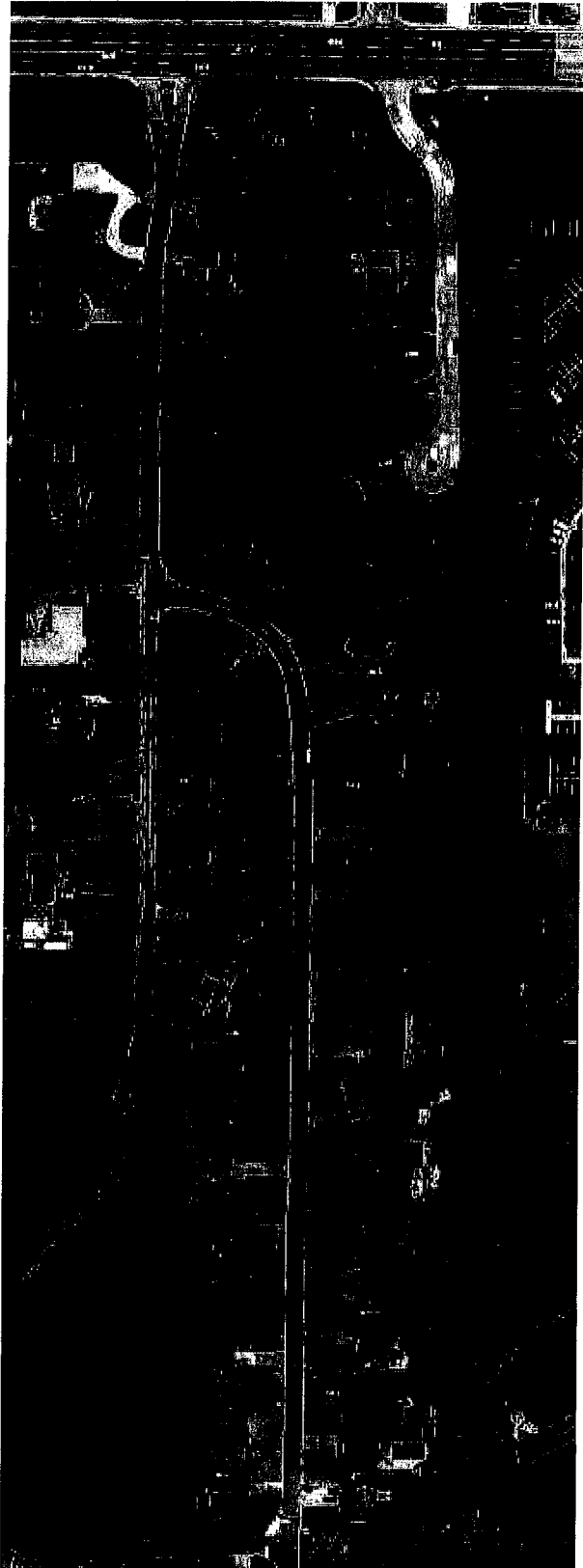
DWN. BY T.S.M.	DATE 11-26-12	PROJ. NO. 2959
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A | B | C | D | E | F | G | H

1
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**2015 Boly Lane – Autumn Leaf
Drive Sidewalk Route Evaluation
and Cost Estimate**

for

Village of Twin Oaks
1393 Big Bend Road, Suite F
Twin Oaks, MO 63021
www.vil.twin-oaks.mo.us

developed by

BFA – Engineers & Surveyors
103 Elm Street
Washington, MO 63090
www.bfaeng.com

November 2015

Introduction:

BFA was asked to review and provide information to assist the Village in evaluating a proposed sidewalk route along Boly Lane and Autumn Leaf Drive that would link to the Southwest Entrance of Twin Oaks Park. The scope of work for this evaluation was:

- Visit Site to determine best route for sidewalks based on existing conditions
- Prepare a sketch plan to show the proposed sidewalk route
- Prepare a preliminary cost estimate for construction and final engineering design

BFA conducted a site visit to evaluate a route for a proposed sidewalk from the intersection of Big Bend Boulevard and Boly Lane to the southwest entrance to Twin Oaks Park near the intersection of Autumn Leaf Drive and Birnamwood Trail Drive. The route was photographed and existing features such as utilities and ground topography were evaluated in order to suggest which side of Boly Lane and Autumn Leaf Drive the sidewalk should be placed, based on trying to have the least impact to homeowners and cost effectiveness.

Recommended Route:

As shown in exhibits 1-6, BFA's recommended route (shown in white) connects with the existing Big Bend sidewalk on the west side of Boly Lane at its intersection with Big Bend and travels south along the west side of Boly Lane until it intersects with Autumn Leaf Drive. There is a cross-walk on Boly Lane on the north side of its intersection with Autumn Leaf Drive, then the sidewalk continues on the north side of Autumn Leaf until Autumn Leaf makes a turn to the south and the sidewalk ends up being on the east side of the street. The route continues on the east side of Autumn Leaf until it connects to the existing park entrance.

Evaluated Alternative Route:

BFA also evaluated taking the route along the south and west side of Autumn Leaf, as it comes off of Boly Lane and then crossing to the east about halfway down Autumn Leaf. This route is shown in light blue on the exhibits. BFA sees no benefit over this route compared to the recommended route, which is safer for pedestrians due to the mid-street crossing that is required for the alternate route. Along with being a mid-street crossing, it also occurs a relatively short distance from the curved and steeply inclined road section of Autumn Leaf – creating a limited site distance for pedestrians and drivers in a location of likely higher vehicle speeds due to the downhill grade of the roadway. It is safer to have the users cross at the stop sign on Boly Lane and stay on one side of the road the rest of the way.

Discussion

Some hurdles for the ultimate completion of this project include, right-of-way and property ownership agreements (both temporary and permanent), utility conflicts, and topography challenges requiring slope grading and/or retaining walls on private properties.

Right-of-Way, Easements, Agreements, and Topography

One of the first steps that should be done for this project moving forward is to research and confidently delineate the right-of-way lines along the route. Using right-of-way already owned by the Village alleviates the need for obtaining easements and agreements and saves money that may be spent in obtaining easements from private land owners. Based on parcel data images available on St. Louis County's GIS website, it appears possible that half of the proposed sidewalk (particularly along Autumn Leaf) can be constructed within right-of-way already owned by the Village. However, this information needs to be confirmed with in-the-field survey work. Additionally, temporary grading easements will

likely be needed for construction even if the final constructed walkway lies totally within designated right-of-way.

The Village will have to work with property owners to discuss relocations of mailboxes, planting beds, trees, and other items.

Many driveways along the route are installed with slopes to facilitate storm water drainage and access to their associated garages. In many cases, these slopes (if the proposed sidewalk crosses these drives) would create an unacceptable cross-slope condition. In which case, this portion of the driveway would need to be demolished and reconstructed. The change in grade for this portion of the driveway (which also serves as the sidewalk) may result in steeper grades for the remainder of the driveway as the elevation is tied back to the existing driveway. This will likely also push the construction limits further out of the Village's Right of Way and require more easements from private property owners.

Many yards will require construction of retaining walls in order to accommodate a 5' wide sidewalk without exceeding normally acceptable slopes of 3:1 (that is 1 foot of rise for every 3 feet horizontal). Additionally, if the sidewalk route and associated retaining walls create a drop-off situation, a fence or guard rail may be required to keep users from falling.

Utilities

The utilities need to be identified, marked, and delineated for the plan. And those utility companies need to be consulted with, in order to understand their policies and possible (highly variable) costs in moving or relocating utilities. There are several apparent utilities along the east side of Autumn Leaf that have potential to adversely affect the sidewalk construction.

Assumptions on Cost Estimate:

The columns of the cost estimate represent "estimates" based on walking the route and reviewing photographs; no field survey work was done, nor was any property survey research.

Permanent Easement Column:

This column adds a "Best Guess" value of \$5,000 for each property in which it appears the sidewalk and/or retaining wall (if needed) will actually fall onto private property – this easement will give the Village the right to build and maintain the sidewalk and associated walls, fences, etc. in the future. This easement could be donated by the owner (reducing the cost of the project) or they may feel they deserve more for their easement (increasing the cost of the project). Additionally, since the estimate is based on St. Louis County GIS images and parcel lines, it may be determined that additional easements are needed for properties that appear unaffected, initially.

Temporary Easement Column:

This column adds a "Best Guess" value of \$500 for each property along the route – even if the sidewalk ends up sitting completely within Village Right of Way after completion, it is likely some grading or other work will impact private property, at least temporarily.

Grading & Demo Column:

Values were assigned for Grading and Demo on each parcel. Parcels with relatively flat land near the road are assumed to require a "Minor" amount of grading and demo and assigned a cost of \$5,000; parcels with steep front yards, or visible utilities, or other items are assumed to require a "Major"

amount of grading and demo and assigned a cost of \$30,000. In between, is a "Moderate" rating that is assigned an amount of \$15,000.

Walls Column:

The anticipated retaining walls are expected to be between 1 to 4 feet tall – the square foot of wall required was estimated from aerial and on the ground photographs and assigned a multiplier of \$40 per square foot of retaining wall.

Sidewalk Column:

This column represents a multiplier that places the cost of the concrete sidewalk at \$54 square yard (which works out to be \$30 per linear foot of 5' wide sidewalk) and does not include the cost of the sidewalk which crosses a driveway.

Driveway Column:

This column represents the same cost of concrete per square yard as the sidewalks, but doubles the value because it is anticipated that additional concrete will need to be placed in order to tie the driveway back into existing grade. Lots that list 200 SF of driveway have 2 entrances; lots that list 100 SF of driveway have 1 entrance.

Seeding:

Estimate for cost of seeding or placing sod when the project is over, based on anticipated areas of disturbance ("Minor", "Moderate", or "Major").

Engineering

Generally, engineering design is estimated at 8-15% of the construction cost (depending on complexity and other issues) and does not include surveying services. With utility relocations, retaining walls, surveying and easement negotiations, estimating engineering at the 15% amount is reasonable. This places this preliminary cost estimate at **\$394,197.00**

I assemble this information, with input and review by James Quilacio and Ray Frankenberg. Please feel free to contact me with any questions regarding the information contained in the report.

Best regards,



Wes Theissen
BFA, Inc.

Attachments:

Route Exhibits 1-6

Photos along Route

Cost Estimate Spreadsheet

Exhibit 1



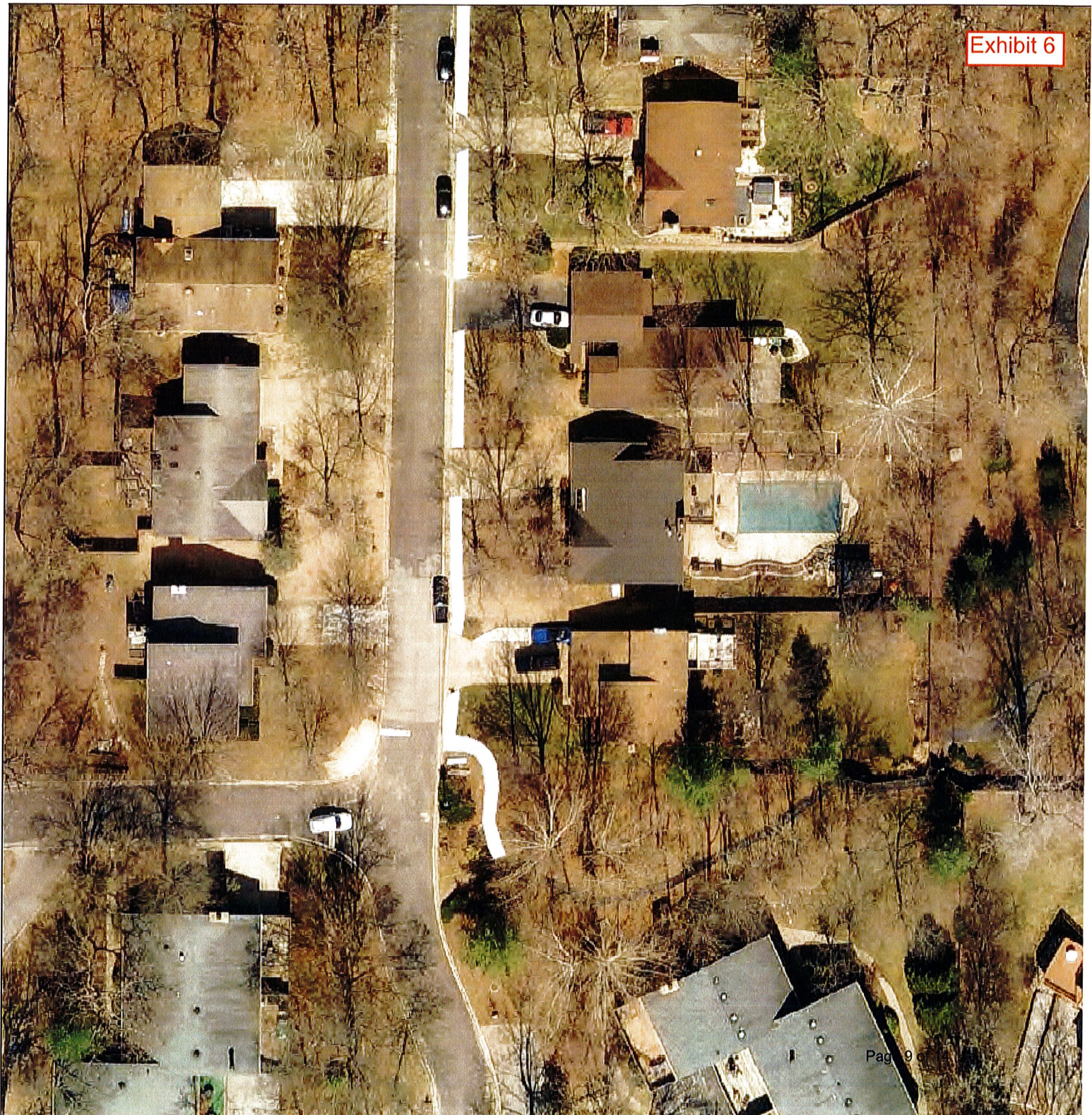




Exhibit 4







Village of Twin Oaks													
BFA 3497-2E Boly Ln/Autumn Leaf Sidewalks - 11/13/2015													
	Permanent Easement	Temp Easement	Grading & Demo Minor = \$5000 -Moderate = \$15000 - Major = \$30000	Walls \$40/SF		Sidewalk \$30/LF		Driveway \$12/SF		Seeding - Minor \$200 - Moderate \$500 - Major \$1000		Total	
				SF	\$\$	LF	\$\$	SF	\$\$	\$\$			
1311 Boly Lane	\$ 5,000.00	\$ 500.00	Minor \$ 5,000.00	0	\$ -	180	\$ 5,400.00	200	\$ 2,400.00	Minor	\$ 200.00	\$ 18,500.00	
1323 Boly Lane	\$ 5,000.00	\$ 500.00	Mod \$ 15,000.00	0	\$ -	75	\$ 2,250.00	100	\$ 1,200.00	Mod	\$ 500.00	\$ 24,450.00	
1325 Boly Lane	\$ 5,000.00	\$ 500.00	Minor \$ 5,000.00	40	\$ 1,600.00	20	\$ 600.00	0	\$ -	Minor	\$ 200.00	\$ 12,900.00	
1327 Boly Lane	\$ 5,000.00	\$ 500.00	Mod \$ 15,000.00	0	\$ -	112	\$ 3,360.00	200	\$ 2,400.00	Mod	\$ 500.00	\$ 26,760.00	
1333 Boly Lane	\$ 5,000.00	\$ 500.00	Minor \$ 5,000.00	0	\$ -	84	\$ 2,520.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 14,420.00	
1339 Boly Lane	\$ 5,000.00	\$ 500.00	Minor \$ 5,000.00	0	\$ -	15	\$ 450.00	0	\$ -	Minor	\$ 200.00	\$ 11,150.00	
1402 Autumn Leaf	\$ 5,000.00	\$ 500.00	Minor \$ 5,000.00	0	\$ -	120	\$ 3,600.00	0	\$ -	Minor	\$ 200.00	\$ 14,300.00	
1406 Autumn Leaf	\$ 5,000.00	\$ 500.00	Major \$ 30,000.00	270	\$ 10,800.00	100	\$ 3,000.00	100	\$ 1,200.00	Major	\$ 1,000.00	\$ 51,500.00	
1412 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1418 Autumn Leaf	\$ -	\$ 500.00	Mod \$ 15,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 18,550.00	
1424 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1430 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1436 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1442 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1448 Autumn Leaf	\$ -	\$ 500.00	Mod \$ 15,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Mod	\$ 500.00	\$ 18,850.00	
1454 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Major	\$ 1,000.00	\$ 9,350.00	
1460 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	0	\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1466 Autumn Leaf	\$ -	\$ 500.00	Mod \$ 15,000.00	45	\$ 1,800.00	55	\$ 1,650.00	100	\$ 1,200.00	Mod	\$ 500.00	\$ 20,650.00	
1472 Autumn Leaf	\$ -	\$ 500.00	Mod \$ 15,000.00	110	\$ 4,400.00	55	\$ 1,650.00	100	\$ 1,200.00	Mod	\$ 500.00	\$ 23,250.00	
1478 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00	30	\$ 1,200.00	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 9,750.00	
1484 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00		\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
1490 Autumn Leaf	\$ -	\$ 500.00	Minor \$ 5,000.00		\$ -	55	\$ 1,650.00	100	\$ 1,200.00	Minor	\$ 200.00	\$ 8,550.00	
	\$ 40,000.00	\$ 11,000.00	\$ 195,000.00		\$ 19,800.00		\$ 44,280.00		\$ 25,200.00		\$ 7,500.00	\$ 342,780.00	
										Engineering 15%		\$ 51,417.00	
MoDOT 2014 STL District Price Book for 4" sidewalk = \$100/SY (High); \$30/SY (Low); \$36/SY (Avg) - estimate assumes about \$54/SY											Total	\$ 394,197.00	

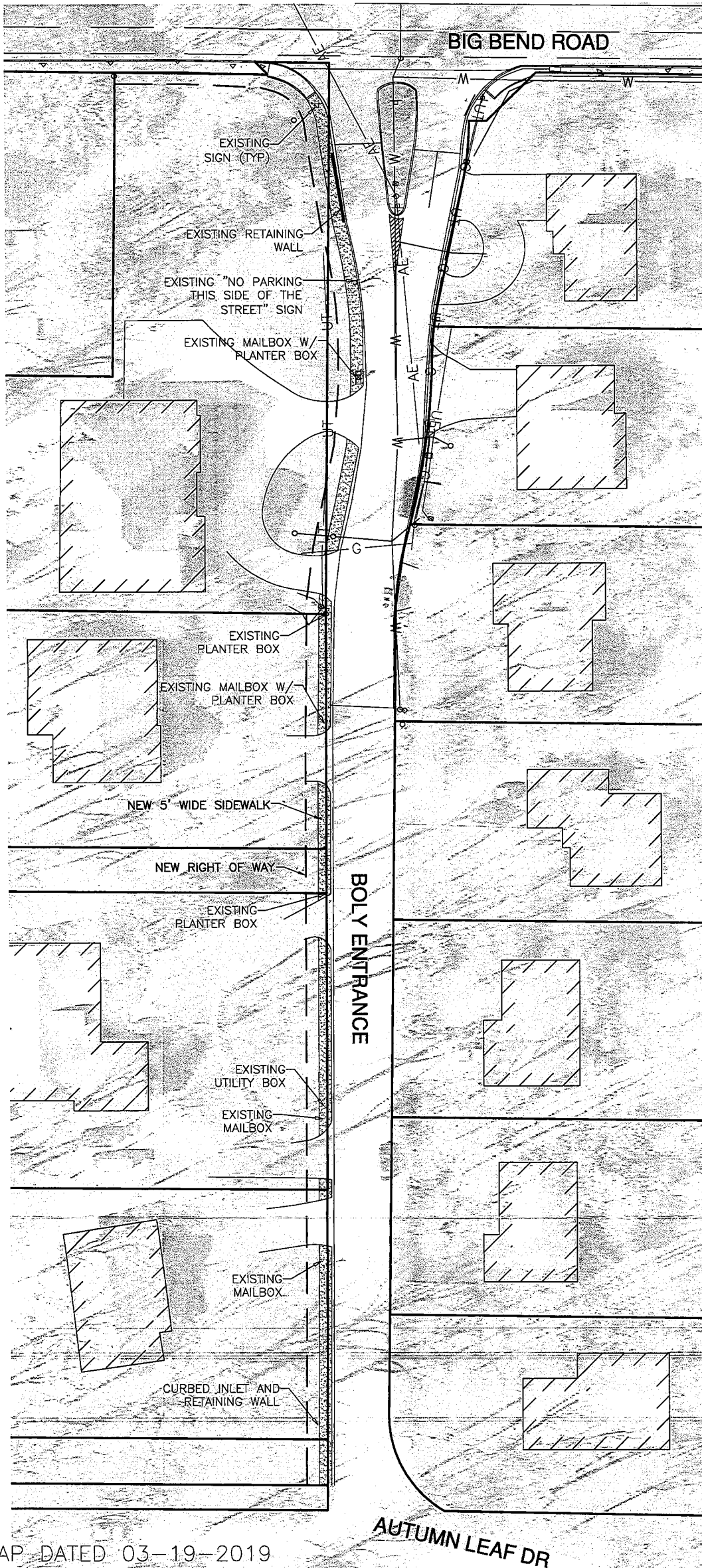
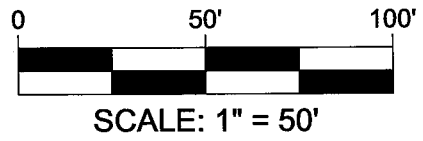
Sidewalk like

City of Twin Oaks
BFA 3497-2E.1. Boly Ln/Autumn Leaf Sidewalks - 2/2/18

	Permanent Easement	Temp Easement	Utility Relocation \$1500/EA		Construct around or rebuild obstacles e.g. mailboxes, planters, signs, drain tile \$250/EA		Earthwork Cut/Fill \$1/CF		Walls \$50/SF		Sidewalk \$30/LF		Driveway \$12/SF		Sod and Finish Grading \$2.5/SF		Subtotals	
			EA	\$\$	EA	\$\$	CF	\$\$	SF	\$\$	LF	\$\$	SF	\$\$	SF	\$\$		
1311 Boly Lane	\$ 5,000.00	\$ 500.00	2	\$ 3,000.00	3	\$ 750.00	510	\$ 510.00	100	\$ 5,000.00	170	\$ 5,100.00	675	\$ 8,100.00	1700	\$ 4,250.00	\$ 31,700.00	
1323 Boly Lane	\$ 5,000.00	\$ 500.00	1	\$ 1,500.00	2	\$ 500.00	525	\$ 525.00	0	\$ -	75	\$ 2,250.00	340	\$ 4,080.00	750	\$ 1,875.00	\$ 16,230.00	
1325 Boly Lane	\$ 5,000.00	\$ 500.00	0	\$ -	1	\$ 250.00	140	\$ 140.00	0	\$ -	20	\$ 600.00	0	\$ -	200	\$ 500.00	\$ 6,990.00	
1327 Boly Lane	\$ 5,000.00	\$ 500.00	1	\$ 1,500.00	1	\$ 250.00	510	\$ 510.00	0	\$ -	85	\$ 2,550.00	700	\$ 8,400.00	850	\$ 2,125.00	\$ 20,835.00	
1333 Boly Lane	\$ 5,000.00	\$ 500.00	1	\$ 1,500.00	1	\$ 250.00	340	\$ 340.00	37.5	\$ 1,875.00	85	\$ 2,550.00	255	\$ 3,060.00	850	\$ 2,125.00	\$ 17,200.00	
1339 Boly Lane	\$ 5,000.00	\$ 500.00	0	\$ -	0	\$ -	80	\$ 80.00	0	\$ -	20	\$ 600.00	0	\$ -	200	\$ 500.00	\$ 6,680.00	
1402 Autumn Leaf	\$ 5,000.00	\$ 500.00	1	\$ 1,500.00	0	\$ -	805	\$ 805.00	0	\$ -	115	\$ 3,450.00	0	\$ -	1150	\$ 2,875.00	\$ 14,130.00	
1406 Autumn Leaf	\$ 5,000.00	\$ 500.00	3	\$ 4,500.00	2	\$ 500.00	630	\$ 630.00	0	\$ -	90	\$ 2,700.00	375	\$ 4,500.00	900	\$ 2,250.00	\$ 20,580.00	
1412 Autumn Leaf	\$ -	\$ 500.00	3	\$ 4,500.00	4	\$ 1,000.00	455	\$ 455.00	0	\$ -	65	\$ 1,950.00	165	\$ 1,980.00	650	\$ 1,625.00	\$ 12,010.00	
1418 Autumn Leaf	\$ -	\$ 500.00	0	\$ -	3	\$ 750.00	845	\$ 845.00	227.5	\$ 11,375.00	65	\$ 1,950.00	850	\$ 10,200.00	650	\$ 1,625.00	\$ 27,245.00	
1424 Autumn Leaf	\$ -	\$ 500.00	2	\$ 3,000.00	2	\$ 500.00	300	\$ 300.00	0	\$ -	60	\$ 1,800.00	270	\$ 3,240.00	600	\$ 1,500.00	\$ 10,840.00	
1430 Autumn Leaf	\$ -	\$ 500.00	0	\$ -	1	\$ 250.00	300	\$ 300.00	0	\$ -	60	\$ 1,800.00	300	\$ 3,600.00	600	\$ 1,500.00	\$ 7,950.00	
1436 Autumn Leaf	\$ -	\$ 500.00	4	\$ 6,000.00	3	\$ 750.00	605	\$ 605.00	165	\$ 8,250.00	55	\$ 1,650.00	920	\$ 11,040.00	550	\$ 1,375.00	\$ 30,170.00	
1442 Autumn Leaf	\$ -	\$ 500.00	1	\$ 1,500.00	3	\$ 750.00	600	\$ 600.00	180	\$ 9,000.00	60	\$ 1,800.00	540	\$ 6,480.00	600	\$ 1,500.00	\$ 22,130.00	
1448 Autumn Leaf	\$ -	\$ 500.00	0	\$ -	1	\$ 250.00	520	\$ 520.00	162.5	\$ 8,125.00	65	\$ 1,950.00	510	\$ 6,120.00	650	\$ 1,625.00	\$ 19,090.00	
1454 Autumn Leaf	\$ -	\$ 500.00	3	\$ 4,500.00	5	\$ 1,250.00	520	\$ 520.00	162.5	\$ 8,125.00	65	\$ 1,950.00	480	\$ 5,760.00	650	\$ 1,625.00	\$ 24,230.00	
1460 Autumn Leaf	\$ -	\$ 500.00	1	\$ 1,500.00	1	\$ 250.00	220	\$ 220.00	0	\$ -	55	\$ 1,650.00	330	\$ 3,960.00	550	\$ 1,375.00	\$ 9,455.00	
1466 Autumn Leaf	\$ -	\$ 500.00	1	\$ 1,500.00	2	\$ 500.00	650	\$ 650.00	175	\$ 8,750.00	50	\$ 1,500.00	900	\$ 10,800.00	500	\$ 1,250.00	\$ 25,450.00	
1472 Autumn Leaf	\$ -	\$ 500.00	2	\$ 3,000.00	2	\$ 500.00	650	\$ 650.00	175	\$ 8,750.00	50	\$ 1,500.00	700	\$ 8,400.00	500	\$ 1,250.00	\$ 24,550.00	
1478 Autumn Leaf	\$ -	\$ 500.00	0	\$ -	3	\$ 750.00	500	\$ 500.00	150	\$ 7,500.00	50	\$ 1,500.00	760	\$ 9,120.00	190	\$ 475.00	\$ 20,345.00	
1484 Autumn Leaf	\$ -	\$ 500.00	2	\$ 3,000.00	1	\$ 250.00	400	\$ 400.00	125	\$ 6,250.00	50	\$ 1,500.00	570	\$ 6,840.00	500	\$ 1,250.00	\$ 19,990.00	
1490 Autumn Leaf	\$ -	\$ 500.00	1	\$ 1,500.00	1	\$ 250.00	300	\$ 300.00	0	\$ -	50	\$ 1,500.00	510	\$ 6,120.00	500	\$ 1,250.00	\$ 11,420.00	
Condos	\$ 5,000.00	\$ 500.00	0	\$ -	0	\$ -	150	\$ 150.00	0	\$ -	50	\$ 1,500.00	0	\$ -	1000	\$ 2,500.00	\$ 9,650.00	
Subtotals	\$ 45,000.00	\$ 11,500.00		\$ 43,500.00		\$ 10,500.00		\$ 10,405.00		\$ 83,000.00		\$ 43,800.00		\$ 121,800.00		\$ 35,725.00	\$ 408,870.00	
																	Traffic Control	\$ 20,000.00
																	Erosion Control	\$ 20,000.00
																	Subtotal	\$ 448,870.00
																	Engineering 15%	\$ 67,330.50
																	Contractor Overhead and Profit 15%	\$ 67,330.50
																	Contingency 20%	\$ 89,774.00
																	Total	\$ 673,305.00

MoDOT 2014 STL District Price Book for 4" sidewalk = \$100/SY (High); \$30/SY (Low); \$36/SY (Avg) - estimate assumes about \$54/SY

SIDEWALK CONCEPTUAL 1.0



DESCRIPTION	SITE PLAN LEGEND	
	PROPOSED	EXISTING
AERIAL ELECTRIC	— AE —	— AE —
UTILITY POLE	•	•
ELECTRIC BOX	■	■
MAILBOX	■	■
SIGN	⊥	⊥
RETAINING WALL	—	—
CURB	—	—
WATER VALVE	•	•
EASEMENT	—	—
PROPERTY LINE	—	—

NOTE:
 1. BOUNDARY INFORMATION IS GRAPHICALLY SCALED FROM AVAILABLE MAPS AND DATA, THUS PROPERTY LINES SHALL BE CONSIDERED APPROXIMATE ONLY.
 2. EXISTING SITE DATA IS A COMBINATION OF FIELD WORK AND GRAPHICALLY SCALED FROM AVAILABLE MAPS, THUS SHALL BE CONSIDERED APPROXIMATE ONLY.

NEARMAP DATED 03-19-2019

AUTUMN LEAF DR

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11/1/2019 2:22 PM

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Telephone: (636) 239-4751



103 ELM STREET WASHINGTON, MISSOURI 63090
 DWN. BY C.M.V. DATE 11/01/19 PROJ. NO. 3497 2D SHEET 1 OF 1

103 Elm Street
Washington, MO 63090



636.239.4751
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PRELIMINARY ESTIMATE OF QUANTITIES AND COST
Sidewalk along Boly Ln from Big Bend Rd to Autumn Leaf Dr
Twin Oaks, Missouri
BFA Project No.3497-2D
Updated 11/01/19

Construction Cost

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
Mobilization	1	LS	\$ 4,000.00	\$ 4,000.00
Traffic Control, Signage, Barriers	1	LS	\$ 6,000.00	\$ 6,000.00
Purchase of Right of way	1	LS	\$ 20,000.00	\$ 20,000.00
Temporary Erosion Control	1	LS	\$ 1,000.00	\$ 1,000.00
Demolition/Relocation				
Driveway Demo	135	SY	\$ 15.00	\$ 2,025.00
Shrub/Bush Relocation	9	EA	\$ 80.00	\$ 720.00
18" Tree Relcation	1	EA	\$ 500.00	\$ 500.00
Concrete Block Retaining Wall Relcation	240	SF	\$ 30.00	\$ 7,200.00
Wood Retaining Wall Demo	30	LF	\$ 3.00	\$ 90.00
Mail Box Relocation	4	EA	\$ 800.00	\$ 3,200.00
Utility Adjustments	1	LS	\$ 2,000.00	\$ 2,000.00
New Construction				
5' Wide Concrete Sidewalk and Granular Base	250	SY	\$ 57.00	\$ 14,250.00
Driveway Replacement	1200	SF	\$ 12.00	\$ 14,400.00
Grass Seeding and Mat	0.05	AC	\$ 3,500.00	\$ 175.00
Finish Grading	60	SY	\$ 2.00	\$ 120.00
Earthwork	1	LS	\$ 6,000.00	\$ 6,000.00
SUBTOTAL				\$ 81,680.00
Contingency due to preliminary	Lump Sum		25%	\$ 20,420.00
Construction Cost Total				\$ 102,100.00

Engineering Fees

ITEM	UNIT	UNIT PRICE	TOTAL
Survey	LS	\$ 2,500.00	\$ 2,500.00
Design	LS	15%	\$ 15,315.00
Right of Way Adjustment*	LS	\$ 9,200.00	\$ 9,200.00
Bid Administration	LS	3%	\$ 3,063.00
Construction Inspections	LS	4%	\$ 4,084.00
Engineering Fees Total			\$ 34,162.00

*This does not include negotiations for Acquisition

Grand Total

\$136,262.00



Crescent Avenue Improvements (STP)

2020 STP-S GRANT APPLICATION

Assembled by Weis Design Group

A/E# 1912-19-1

FEBRUARY 13, 2020

Estimate of Project Costs

Project Sponsor: City of Twin Oaks
 Project Title: Crescent Avenue Improvements (STP)
 Date: 2/5/2020

Specific Roadway Items

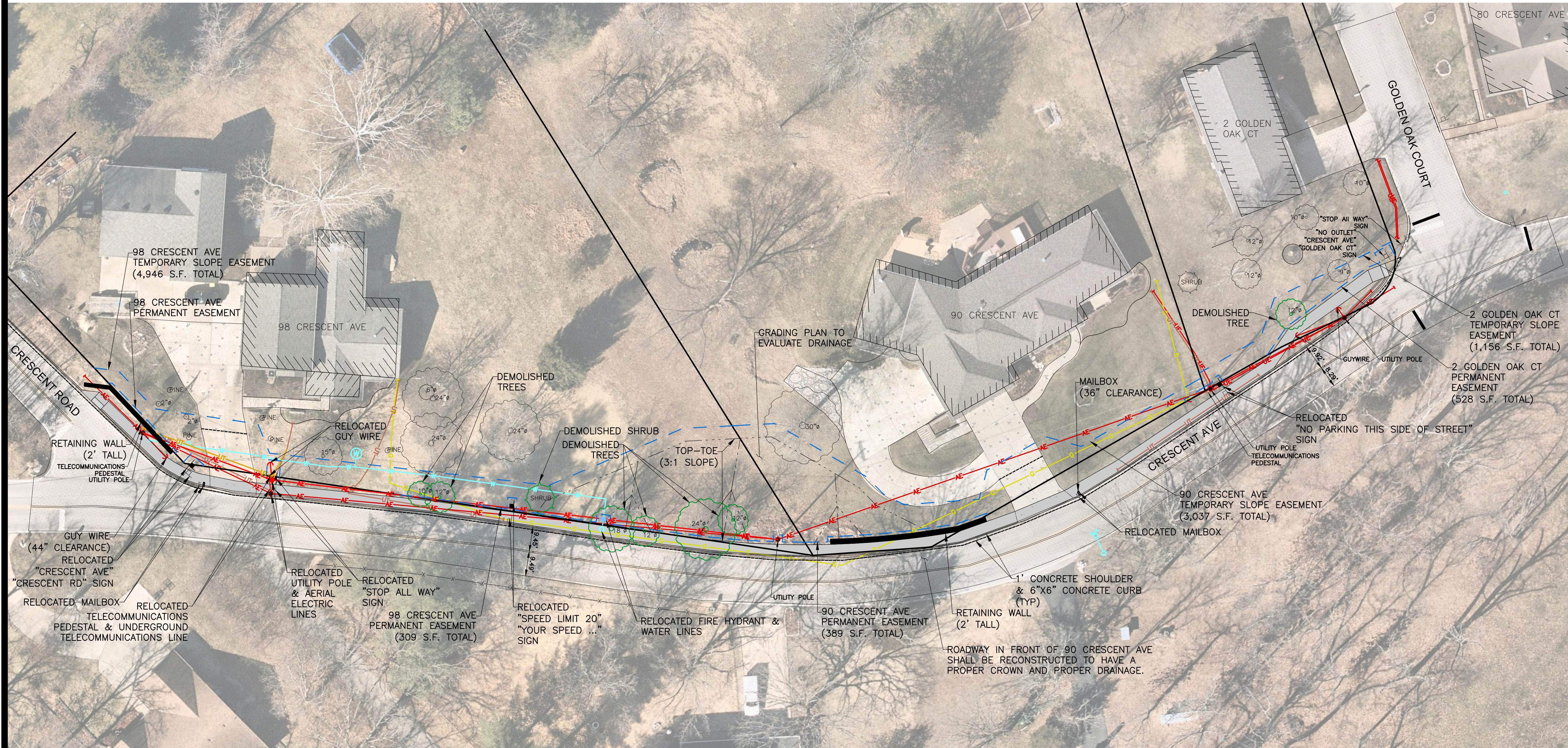
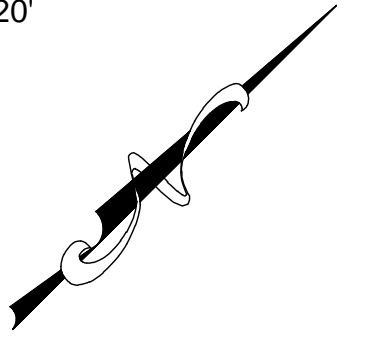
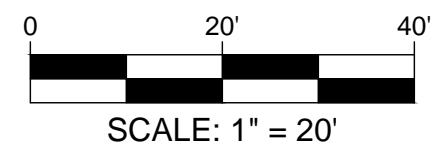
Item	Quantity	Unit	Unit Price	Amount
MOBILIZATION	1	LS	\$13,465.00	\$13,465.00
EROSION CONTROL	1	LS	\$8,000.00	\$8,000.00
CONTRACTOR SURVEYING/LAYOUT, CONSTRUCTION STAKING AND MONUMENT REPLACEMENT	1	LS	\$10,000.00	\$10,000.00
SAWCUT EXISTING PAVEMENT (FULL DEPTH)	3,920	LF	\$3.00	\$11,760.00
CLEARING AND GRUBBING	1	LS	\$1,000.00	\$1,000.00
EXCAVATION AND REMOVALS	610	CY	\$30.00	\$18,300.00
EMBANKMENT FOR RETAINING WALL	1	LS	\$10,000.00	\$10,000.00
GRADING FOR SIDEWALK AND RETAINING WALL	1	LS	\$35,000.00	\$35,000.00
REMOVE ASPHALT DRIVEWAY AND APRON INCLUDES SUBBASE	192	SY	\$20.00	\$3,840.00
REMOVE CONCRETE DRIVEWAY AND APRON INCLUDES SUBBASE	288	SY	\$20.00	\$5,760.00
REMOVE AND REPLACE CONCRETE WALK 6" AGGREGATE SUBBASE (COMPACTED) (FOR CONC. CURB & GUTTER)	430	TN	\$20.00	\$8,600.00
4" AGGREGATE SUBBASE (COMPACTED) (FOR WALKS, DRIVES, AND APRONS)	350	TN	\$20.00	\$7,000.00
EDGE MILL EXISTING ASPHALT 5' WIDE, 0" TO 1" DEPTH	2,180	SY	\$0.65	\$1,417.00
ASPHALT WEDGE COURSE	40	TN	\$140.00	\$5,600.00
PLACE 2" ASPHALT CONCRETE SURFACE COURSE TYPE "BP-1"	650	TN	\$90.00	\$58,500.00
PLACE 6" CONCRETE DRIVE	480	SY	\$75.00	\$36,000.00
PLACE 1.5' WIDE, 6" VERTICAL CONCRETE CURB AND GUTTER. INCLUDES PREPARATION OF SUBGRADE.	3,920	LF	\$30.00	\$117,600.00
RETAINING WALL	1,728	SF	\$45.00	\$77,760.00
BUTT JOINTS	4	EA	\$230.00	\$920.00
SILT SOCKS	3	EA	\$80.00	\$240.00
SUBTOTAL				\$433,262.00

Utilities

Item	Quantity	Unit	Unit Price	Amount
HYDRANT RELOCATION	4	EA	\$2,000.00	\$8,000.00
POWER POLE RELOCATION	10	EA	\$4,000.00	\$40,000.00
INSTALL CURB INLET	1	EA	\$3,000.00	\$3,000.00
INSTALL AREA INLET	1	EA	\$3,000.00	\$3,000.00
INSTALL 12" RCP	150	LF	\$100.00	\$15,000.00
INSTALL FLARED END SECTION	1	EA	\$8,000.00	\$8,000.00
ADJUST VALVE BOX, METER BOX, STOP BOX, SANITARY CLEANOUT, ETC.	4	EA	\$90.00	\$360.00
WATER SERVICE LINE ADJUSTMENTS	4	EA	\$150.00	\$600.00
				\$0.00
				\$0.00
SUBTOTAL				\$77,960.00

CONCEPTUAL PLAN D

(THIS IS NOT A BOUNDARY SURVEY)



NOTES:

- Deteriorated asphaltic roadway shoulder and curb removal
- New concrete roadway shoulder of approximately 1' (shoulder protects roadway from traffic damage)
- New 6" tall and 6" wide concrete curb
- Relocated Utility Pole, Guy Wire, and Telecommunications Pedestal at 98 Crescent Ave
- 4' wide sidewalk
- 3:1 slope in portions of 90 Crescent Ave & 98 Crescent Ave
- 2' tall retaining wall at 90 Crescent Ave
- 2' tall retaining wall at 98 Crescent Ave
- City to provide a new tree to each owner for every tree demolished

CONCEPTUAL PLAN D LEGEND		
DESCRIPTION	PROPOSED	EXISTING
AERIAL ELECTRIC	— AE —	— AE —
UNDERGROUND ELECTRIC	— UE —	— UE —
UNDERGROUND TELEPHONE	— UT —	— UT —
GAS LINE	— G —	— G —
WATERLINE	— W —	— W —
FENCE	— X — X — X —	— X — X — X —
WATER VALVE	•	•
FIRE HYDRANT	•	•
CONCRETE JOINTS	—	—
SIDEWALK	—	—

UTILITY POLE LEGEND			
DESCRIPTION	PROPOSED	TO BE RELOCATED	TO REMAIN
UTILITY POLE	•	•	•

Three working days prior to the start of any excavation on this site the Contractor shall contact 1-800-344-7483 for utility location information.

The contractor shall verify and implement all the required Federal Occupational Safety and Health Administration (OSHA) and/or OSHA approved state-plan regulations established for the type of construction required by these plans.

PRELIMINARY DRAWING

**FOR REVIEW PURPOSES ONLY
NOT TO BE USED FOR CONSTRUCTION**

**CITY OF TWIN OAKS
TWIN OAKS
ST. LOUIS COUNTY
MISSOURI, 63088**

DRAWN
C.M.B.
CHECKED
T.S.C.
DATE
4/2/2021
SCALE
1"=20'
JOB No.
3497-13A
SHEET NAME
CONCEPTUAL PLAN D

CP-D

103 Elm Street
Washington, MO 63090



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www.bfaeng.com

Crescent Ave Sidewalk - Phase I

Concept Plan D

BFA Project No. 3497-13A

Updated 4/2/2021

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
Mobilization	1	LS	\$ 3,000.00	\$ 3,000.00
Traffic Control	1	LS	\$10,000.00	\$ 10,000.00
Temporary Erosion Control	1	LS	\$ 3,000.00	\$ 3,000.00
Demolition				
Tree Removal 10"-24" diameter	7	EACH	\$ 500.00	\$ 3,500.00
Shrub Removal	1	EACH	\$ 80.00	\$ 80.00
Pavement Driveway	87	SY	\$ 15.00	\$ 1,305.00
Pavement Roadway	65	SY	\$ 15.00	\$ 975.00
To Be Relocated				
Mailbox	2	EACH	\$ 200.00	\$ 400.00
Signs	4	EACH	\$ 150.00	\$ 600.00
Guy Wire Adjusted Due to Grading	3	EACH	\$ 1,500.00	\$ 4,500.00
Utility Pole to be Adjusted Due to Grading	3	EACH	\$ 1,500.00	\$ 4,500.00
Utility Pole & Guy Wire	1	EACH	\$ 8,500.00	\$ 8,500.00
Fire Hydrant	1	EACH	\$ 3,000.00	\$ 3,000.00
Telecommunications Pedestal Adjusted	1	EACH	\$ 1,500.00	\$ 1,500.00
Telecommunications Pedestal	1	EACH	\$ 2,175.00	\$ 2,175.00
Sitework				
4' Concrete Sidewalk (4" thick)	275	SY	\$ 58.00	\$ 15,950.00
Concrete Curb	660	LF	\$ 23.00	\$ 15,180.00
Seeding/Sodding	475	SY	\$ 3.00	\$ 1,425.00
Earthwork, Import Fill	40	CY	\$ 15.00	\$ 600.00
Earthwork, Cut & Fill Rotation	175	CY	\$ 5.00	\$ 875.00
Truncated Dome	2	EACH	\$ 200.00	\$ 400.00
Driveway Sawcut	37	LF	\$ 10.00	\$ 370.00
Rebuild Concrete Driveway	60	SY	\$ 43.00	\$ 2,580.00
2' Tall Retaining Wall	110	LF	\$ 105.00	\$ 11,550.00
Roadway				
Striping	660	LF	\$ 1.00	\$ 660.00
Sawcut	660	LF	\$ 10.00	\$ 6,600.00
Concrete Roadway	660	LF	\$ 5.00	\$ 3,300.00
SUBTOTAL				\$ 106,525.00
Contingency due to preliminary	10%			\$ 10,652.50
CONSTRUCTION TOTAL				\$ 117,177.50