

Existing Conditions Aerial dated 04-01-2021

TULIP & COLLEGE PARK INTERSECTION REVIEW OF IMPROVEMENT OPTIONS

Prepared by: Culpepper & Terpening, Inc.

September 20, 2021



TULIP & COLLEGE PARK INTERSECTION



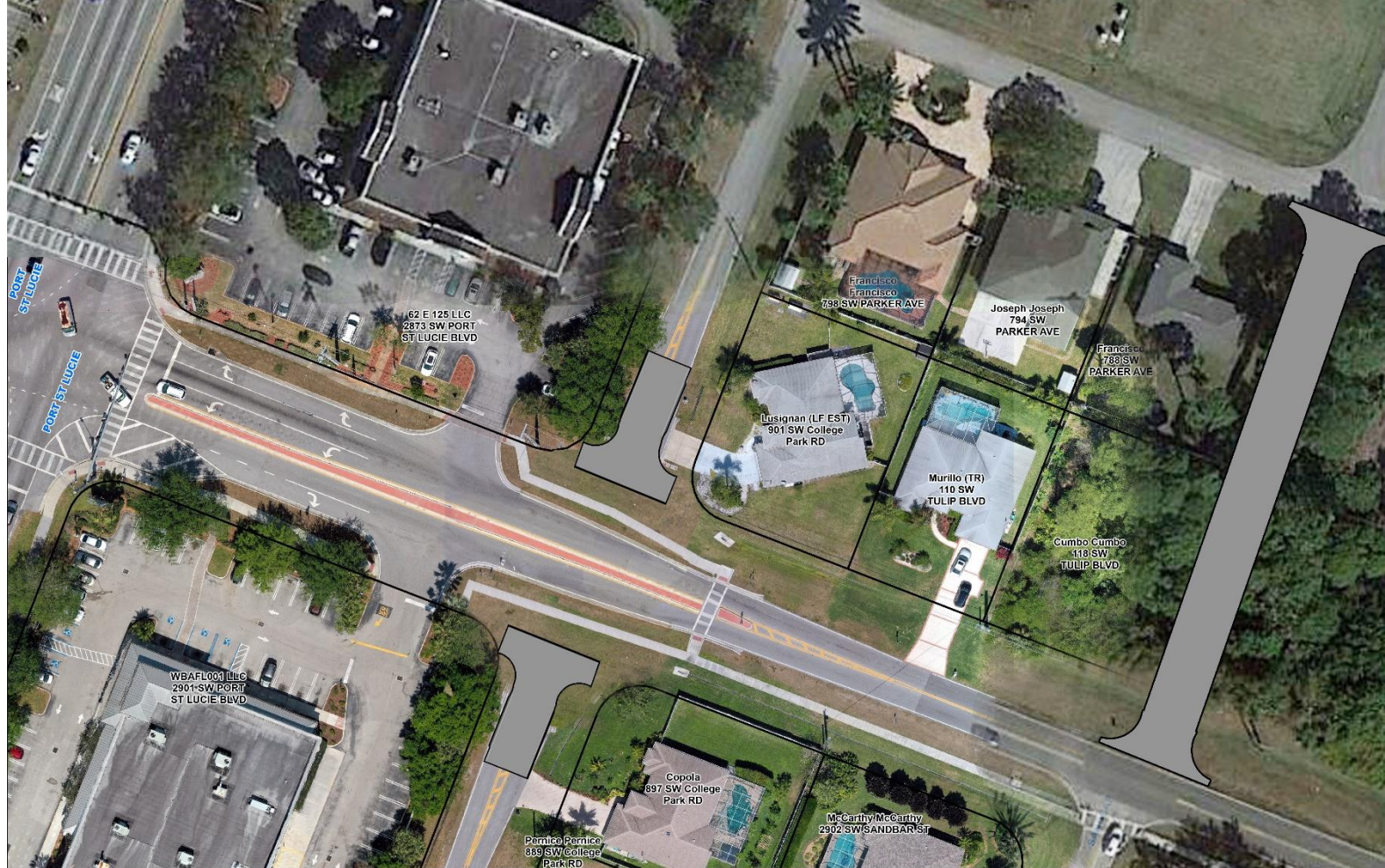
PROJECT BACKGROUND

History	Resident Concerns
<ul style="list-style-type: none">▪ Mini-roundabout was constructed as part of the PSL/Gatlin safety improvement project in collaboration with FDOT;▪ Mini-roundabout was provided to maintain access to Walgreens and CVS; and▪ Mini-roundabout also serves to slow traffic entering the neighborhood.	<ul style="list-style-type: none">▪ East/West traffic queues from signal through mini-roundabout blocking northbound and southbound traffic on College Park▪ Signs and markings stating “Do Not Block” are ineffective▪ Concrete “island” is unsightly and is not landscaped like other roundabouts in the City

TULIP & COLLEGE PARK INTERSECTION



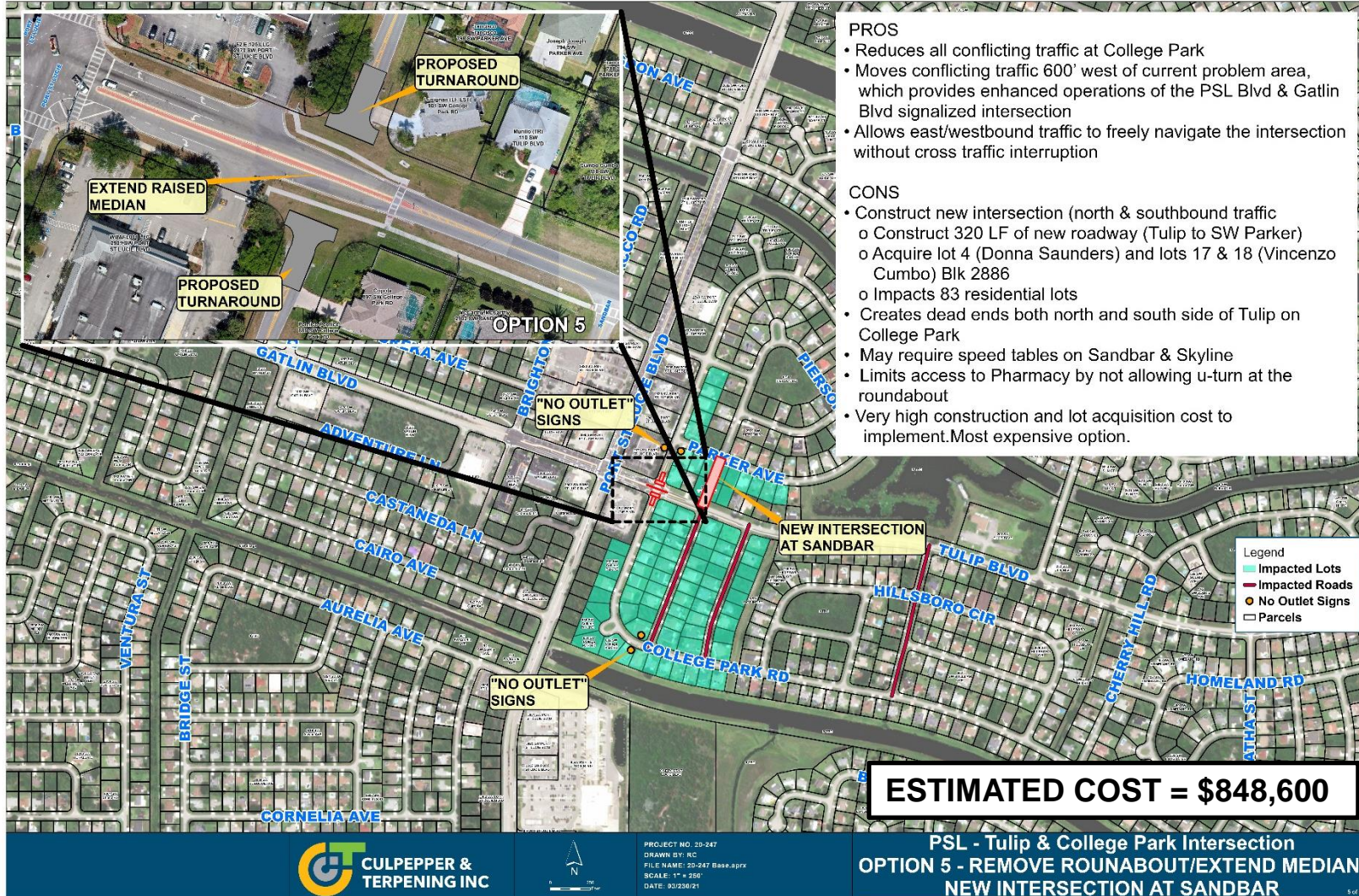
OPTION 5 | REPLACE W/ MEDIAN NEW INTERSECTION



TULIP & COLLEGE PARK INTERSECTION



OPTION 5 | REPLACE W/ MEDIAN NEW INTERSECTION



- PROS**
- Reduces all conflicting traffic at College Park
 - Moves conflicting traffic 600' west of current problem area, which provides enhanced operations of the PSL Blvd & Gatlin Blvd signalized intersection
 - Allows east/westbound traffic to freely navigate the intersection without cross traffic interruption
- CONS**
- Construct new intersection (north & southbound traffic)
 - o Construct 320 LF of new roadway (Tulip to SW Parker)
 - o Acquire lot 4 (Donna Saunders) and lots 17 & 18 (Vincenzo Cumbo) BIK 2886
 - o Impacts 83 residential lots
 - Creates dead ends both north and south side of Tulip on College Park
 - May require speed tables on Sandbar & Skyline
 - Limits access to Pharmacy by not allowing u-turn at the roundabout
 - Very high construction and lot acquisition cost to implement. Most expensive option.

ESTIMATED COST = \$848,600

OPTION 5

REPLACE W/ MEDIAN NEW INTERSECTION

Detailed Estimate of Probable Cost

Pay Item Number	Pay Item Description	Quantity	Unit	Engineer's Unit Cost	Engineer's Subtotal Cost
101-1A	MOBILIZATION	1	LS	15.0%	\$ 55,488.00
101-18	CONSTRUCTION VIDEO	1	LS	1.0%	\$ 2,585.20
101-99	SURVEY STAKING AND RECORD DRAWINGS	1	LS	2.5%	\$ 6,463.00
102-1	MAINTENANCE OF TRAFFIC	1	LS	10.0%	\$ 36,992.00
104-10-3	SEDIMENT BARRIER	1040	LF	\$ 1.50	\$ 1,560.00
104-10-3	INLET PROTECTION	4	LF	\$ 50.00	\$ 200.00
110-1-1	CLEARING AND GRUBBING (SELECT)	1.64	AC	\$ 6,500.00	\$ 10,660.00
110-4-10	REMOVAL OF EXISTING CONCRETE/PAVEMENT	540	SY	\$ 30.00	\$ 16,200.00
120-1	REGULAR EXCAVATION & EMBANKMENT	1	LS	\$ 10,000.00	\$ 10,000.00
334-1-12	ROADWAY CONSTRUCTION	1540	SY	\$ 100.00	\$ 154,000.00
425-1-521	INLET, VALLEY GUTTER, < 10', RELOCATE	0	EA	\$ 3,500.00	\$ -
430-174-124	PIPE CULVERT, RCP, ROUND, 24"	80	LF	\$ 60.00	\$ 4,800.00
455-1A	DEWATERING FOR CONSTRUCTION OPERATIONS	1	LS	\$ 2,500.00	\$ 2,500.00
520-1	TYPE F CURB & GUTTER	460	LF	\$ 25.00	\$ 11,500.00
522-1	CONCRETE MEDIAN	58	SY	\$ 100.00	\$ 5,800.00
522-1	CONCRETE SIDEWALK 4" THICK	80	SY	\$ 50.00	\$ 4,000.00
700-1-11	SINGLE POST SIGN, < 12 SF	22	EA	\$ 300.00	\$ 6,600.00
711-11101	6" WHITE, SOLID TRAFFIC, THERMOPLASTIC	1400	LF	\$ 2.50	\$ 3,500.00
711-11141	6" WHITE, SKIP TRAFFIC, THERMOPLASTIC	0	LF	\$ 2.50	\$ -
711-11141	6" YELLOW, TRAFFIC, THERMOPLASTIC	1300	LF	\$ 2.50	\$ 3,250.00
711-11170	THERMOPLASTIC STD, WHITE, ARROW	4	EA	\$ 150.00	\$ 600.00
570-1-2	PERFORMANCE TURF, SOD	1870	SY	\$ 5.00	\$ 9,350.00
580-1-1	LANDSCAPE	2	LS	\$ 5,000.00	\$ 10,000.00
2000-1	UTILITY ADJUSTMENT	8	EA	\$ 500.00	\$ 4,000.00
LOT ACQUISITION					
	LOTS 2, 17 & 18	1.00	LS	\$ 111,400.00	\$ 111,400.00

Subtotal	\$ 471,448.20
Contingency @ 50%	\$ 235,724.10
Tech Services @ 20%	\$ 141,434.46
Total	\$ 848,606.76

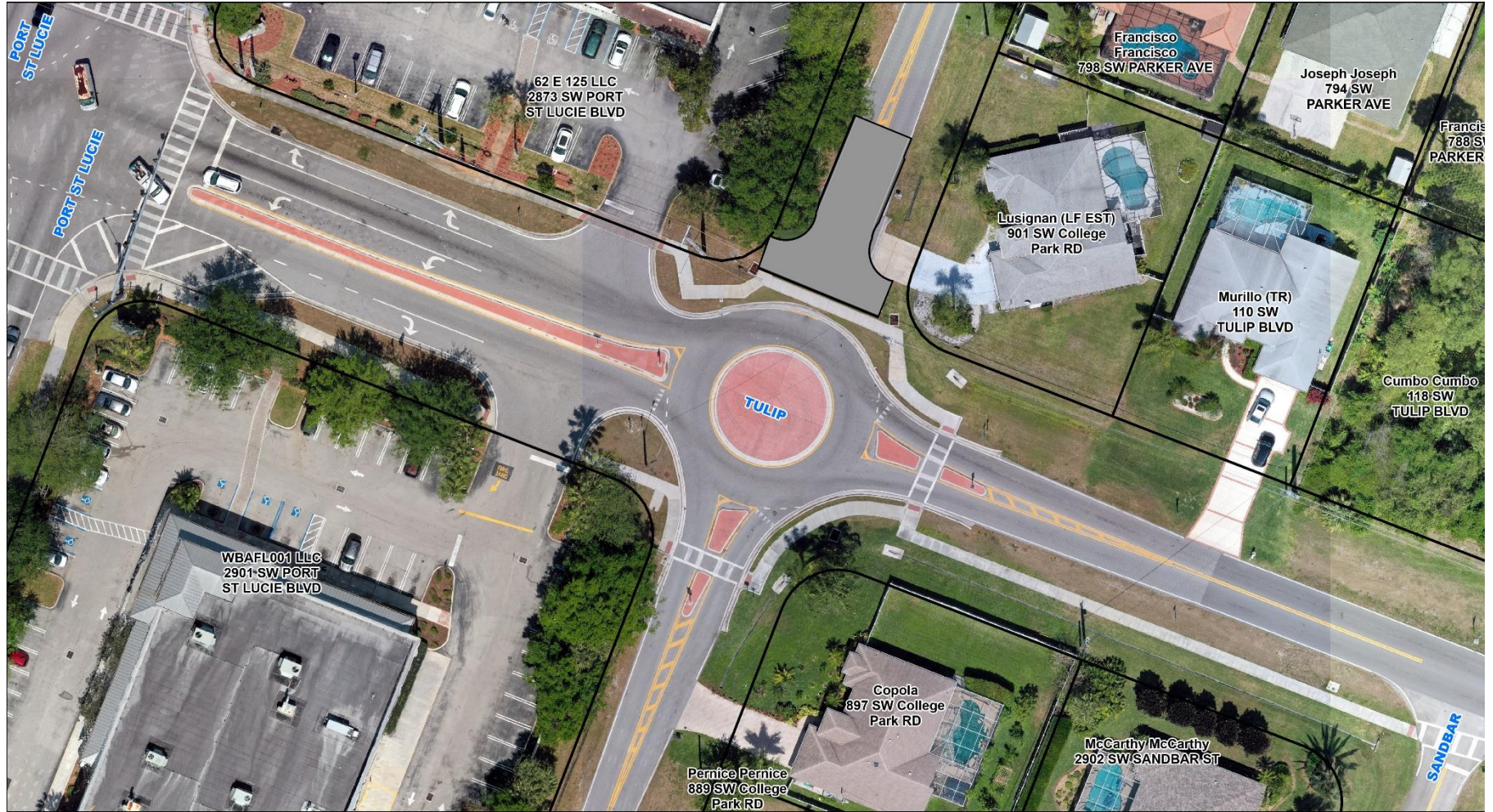


TULIP &
COLLEGE PARK
INTERSECTION

TULIP & COLLEGE PARK INTERSECTION



OPTION 4 | CLOSE NORTH SIDE



TULIP & COLLEGE PARK INTERSECTION



OPTION 4 | CLOSE NORTH SIDE



OPTION 4 | CLOSE NORTH SIDE

TULIP & COLLEGE PARK INTERSECTION



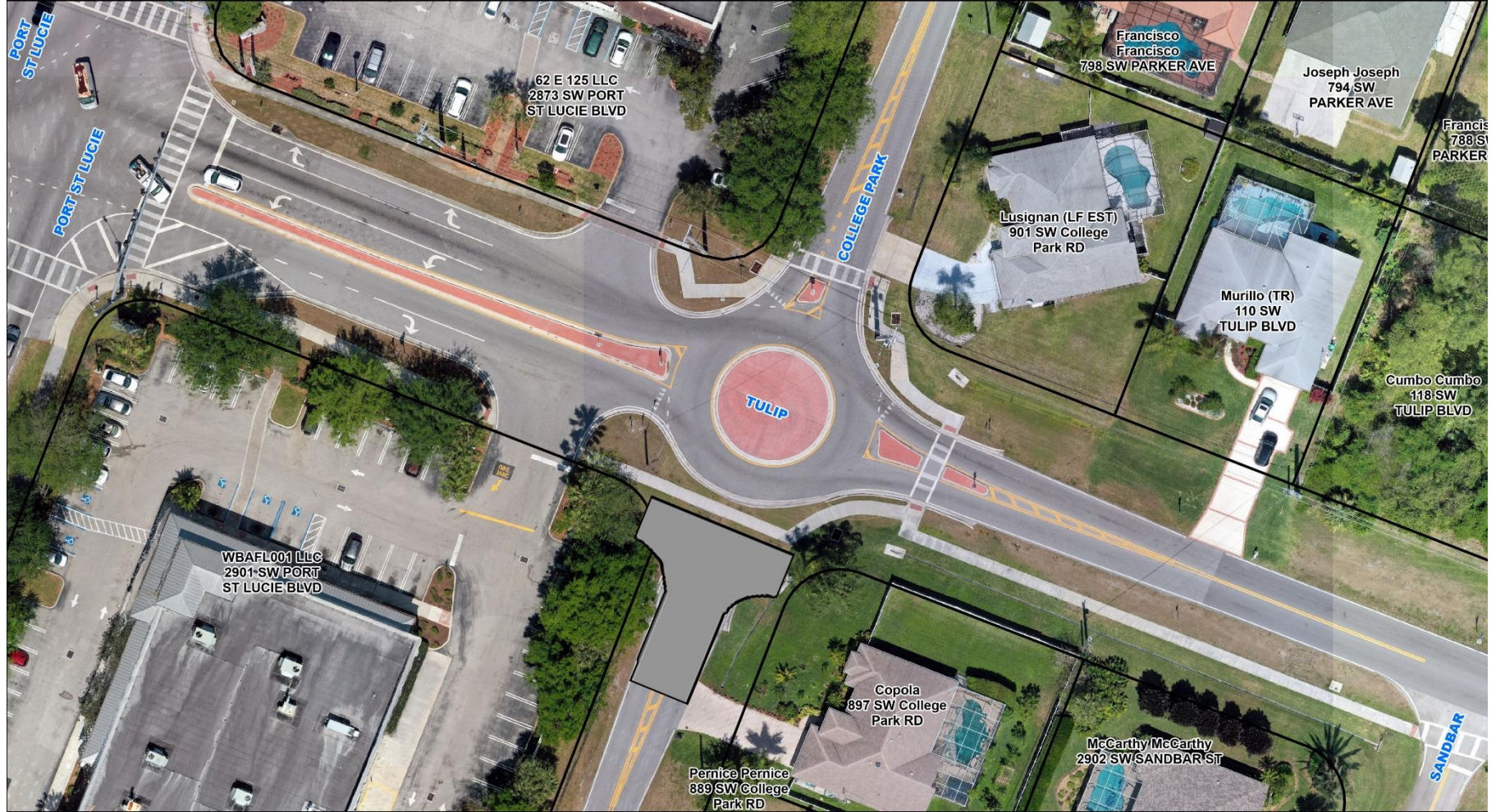
Detailed Estimate of Probable Cost

Pay Item Number	Pay Item Description	Quantity	Unit	Engineer's Unit Cost	Engineer's Subtotal Cost
101-1A	MOBILIZATION	1	LS	15.0%	\$ 13,932.00
101-18	CONSTRUCTION VIDEO	1	LS	2.0%	\$ 689.00
101-99	SURVEY STAKING AND RECORD DRAWINGS	1	LS	2.5%	\$ 861.25
102-1	MAINTENANCE OF TRAFFIC	1	LS	20.0%	\$ 18,576.00
104-10-3	SEDIMENT BARRIER	200	LF	\$ 1.50	\$ 300.00
110-1-1	CLEARING AND GRUBBING (SELECT)	0.40	AC	\$ 6,500.00	\$ 2,600.00
110-4-10	REMOVAL OF EXISTING CONCRETE	70	SY	\$ 30.00	\$ 2,100.00
120-1	REGULAR EXCAVATION & EMBANKMENT	1	LS	\$ 2,500.00	\$ 2,500.00
334-1-12	ROADWAY CONSTRUCTION	100	SY	\$ 100.00	\$ 10,000.00
425-1-521	INLET, VALLEY GUTTER, < 10', RELOCATE	0	EA	\$ 3,500.00	\$ -
430-174-124	PIPE CULVERT, RCP, ROUND, 24"	0	LF	\$ 60.00	\$ -
455-1A	DEWATERING FOR CONSTRUCTION OPERATIONS	1	LS	\$ 2,500.00	\$ 2,500.00
520-1	TYPE F CURB & GUTTER	100	LF	\$ 25.00	\$ 2,500.00
522-1	CONCRETE SIDEWALK 4" THICK	40	SY	\$ 50.00	\$ 2,000.00
700-1-11	SINGLE POST SIGN, < 12 SF	6	EA	\$ 300.00	\$ 1,800.00
711-11101	6" WHITE, SOLID TRAFFIC, THERMOPLASTIC	200	LF	\$ 2.50	\$ 500.00
711-11141	6" WHITE, SKIP TRAFFIC, THERMOPLASTIC	100	LF	\$ 2.50	\$ 250.00
711-11141	6" YELLOW, TRAFFIC, THERMOPLASTIC	200	LF	\$ 2.50	\$ 500.00
711-11170	TREMOPLASTIC STD, WHITE, ARROW	2	EA	\$ 150.00	\$ 300.00
570-1-2	PERFORMANCE TURF, SOD	220	SY	\$ 5.00	\$ 1,100.00
580-1-1	LANDSCAPE	1	LS	\$ 5,000.00	\$ 5,000.00
2000-1	UTILITY ADJUSTMENT	1	EA	\$ 500.00	\$ 500.00
	STABILIZED ACCESS				
110-1-1	CLEARING AND GRUBBING (SELECT)	0.22	AC	\$ 6,500.00	\$ 1,430.00
334-1-12	STABILIZED PATHWAY (EMERGENCY VEHICLES)	720	SY	\$ 75.00	\$ 54,000.00
570-1-2	PERFORMANCE TURF, SOD	360	SY	\$ 5.00	\$ 1,800.00
700-1-11	SINGLE POST SIGN, < 12 SF (DO NOT ENTER/EVO)	4	EA	\$ 300.00	\$ 1,200.00
				Subtotal	\$ 126,938.25
				Contingency @ 50%	\$ 63,469.13
				Tech Services @ 20%	\$ 38,081.48
				Total	\$ 228,488.85

TULIP & COLLEGE PARK INTERSECTION



OPTION 3 | CLOSE SOUTH SIDE



TULIP & COLLEGE PARK INTERSECTION



OPTION 3 | CLOSE SOUTH SIDE



- PROS:**
- Reduces conflicting traffic by 25%;
 - Allows eastbound traffic to freely navigate the roundabout without side street interruption;
 - Continues to provide second access to northern neighborhood;
 - Moderate construction cost to implement; and
 - Could be considered as phased implementation of options.
 - Smallest estimated cost.
- CONS:**
- Creates dead end on College Park and forces residents to use Sandbar, Skyline or Pierson to access Tulip;
 - Impacts 58 residential lots with new traffic pattern; and
 - May require speed tables on Sandbar, Skyline or Pierson.

ESTIMATED COST = \$89,600

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INTERSECTION



OPTION 3

CLOSE SOUTH SIDE

Detailed Estimate of Probable Cost

Pay Item Number	Pay Item Description	Quantity	Unit	Engineer's Unit Cost	Engineer's Subtotal Cost
101-1A	MOBILIZATION	1	LS	15.0%	\$ 5,167.50
101-18	CONSTRUCTION VIDEO	1	LS	2.0%	\$ 689.00
101-99	SURVEY STAKING AND RECORD DRAWINGS	1	LS	2.5%	\$ 861.25
102-1	MAINTENANCE OF TRAFFIC	1	LS	25.0%	\$ 8,612.50
104-10-3	SEDIMENT BARRIER	200	LF	\$ 1.50	\$ 300.00
110-1-1	CLEARING AND GRUBBING (SELECT)	0.40	AC	\$ 6,500.00	\$ 2,600.00
110-4-10	REMOVAL OF EXISTING CONCRETE	70	SY	\$ 30.00	\$ 2,100.00
120-1	REGULAR EXCAVATION & EMBANKMENT	1	LS	\$ 2,500.00	\$ 2,500.00
334-1-12	ROADWAY CONSTRUCTION	100	SY	\$ 100.00	\$ 10,000.00
425-1-521	INLET, VALLEY GUTTER, < 10', RELOCATE	0	EA	\$ 3,500.00	\$ -
430-174-124	PIPE CULVERT, RCP, ROUND, 24"	0	LF	\$ 60.00	\$ -
455-1A	DEWATERING FOR CONSTRUCTION OPERATIONS	1	LS	\$ 2,500.00	\$ 2,500.00
520-1	TYPE F CURB & GUTTER	100	LF	\$ 25.00	\$ 2,500.00
522-1	CONCRETE SIDEWALK 4" THICK	40	SY	\$ 50.00	\$ 2,000.00
700-1-11	SINGLE POST SIGN, < 12 SF	6	EA	\$ 300.00	\$ 1,800.00
711-11101	6" WHITE, SOLID TRAFFIC, THERMOPLASTIC	200	LF	\$ 2.50	\$ 500.00
711-11141	6" WHITE, SKIP TRAFFIC, THERMOPLASTIC	100	LF	\$ 2.50	\$ 250.00
711-11141	6" YELLOW, TRAFFIC, THERMOPLASTIC	200	LF	\$ 2.50	\$ 500.00
711-11170	TREMOPLASTIC STD, WHITE, ARROW	2	EA	\$ 150.00	\$ 300.00
570-1-2	PERFORMANCE TURF, SOD	220	SY	\$ 5.00	\$ 1,100.00
580-1-1	LANDSCAPE	1	LS	\$ 5,000.00	\$ 5,000.00
2000-1	UTILITY ADJUSTMENT	1	EA	\$ 500.00	\$ 500.00
Subtotal					\$ 49,780.25
Contingency @ 50%					\$ 24,890.13
Tech Services @ 20%					\$ 14,934.08
Total					\$ 89,604.45

TULIP & COLLEGE PARK INTERSECTION



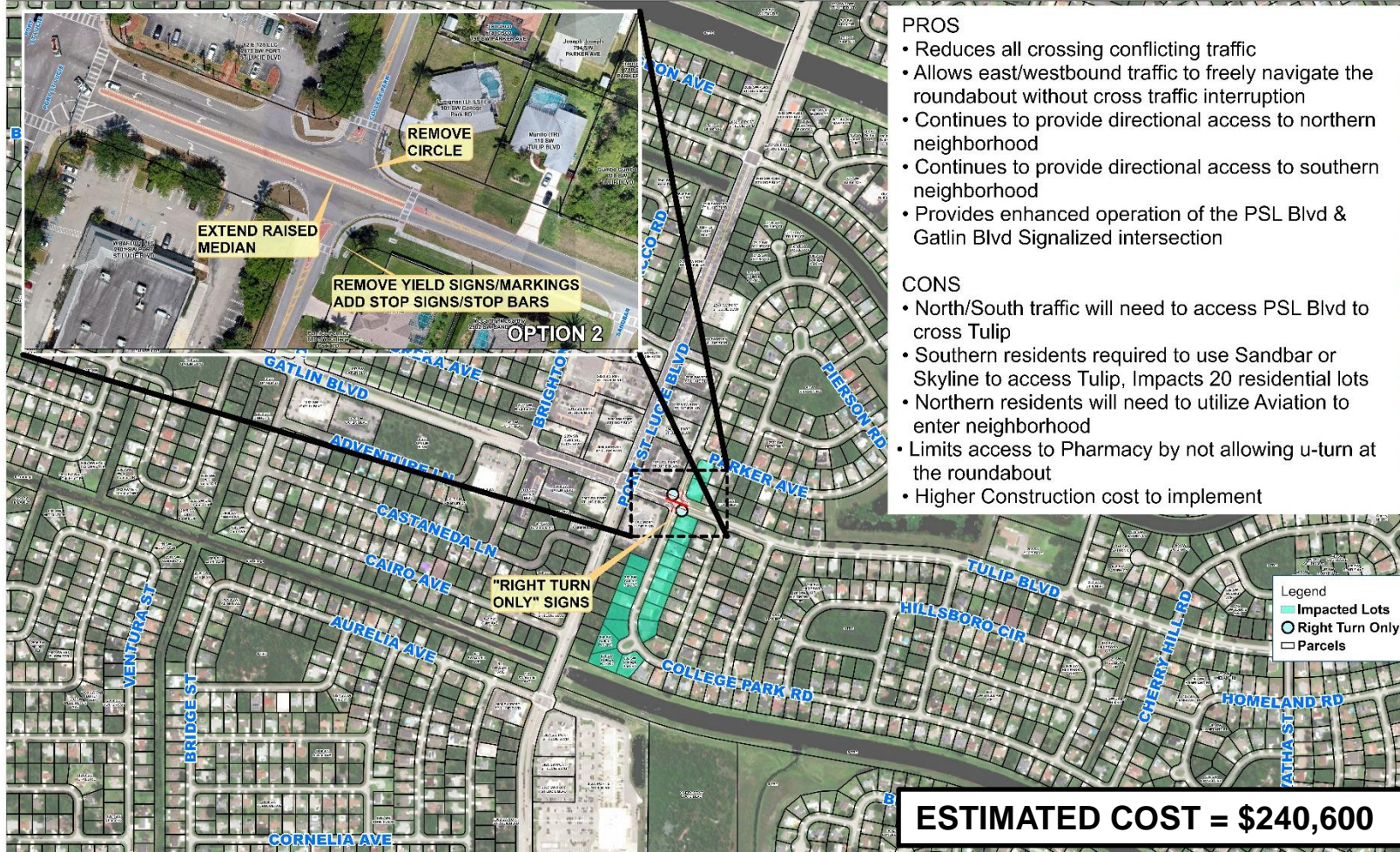
OPTION 2 | REPLACE W/ MEDIAN



TULIP & COLLEGE PARK INTERSECTION



OPTION 2 | REPLACE W/ MEDIAN



PROS

- Reduces all crossing conflicting traffic
- Allows east/westbound traffic to freely navigate the roundabout without cross traffic interruption
- Continues to provide directional access to northern neighborhood
- Continues to provide directional access to southern neighborhood
- Provides enhanced operation of the PSL Blvd & Gatlin Blvd Signalized intersection

CONS

- North/South traffic will need to access PSL Blvd to cross Tulip
- Southern residents required to use Sandbar or Skyline to access Tulip, Impacts 20 residential lots
- Northern residents will need to utilize Aviation to enter neighborhood
- Limits access to Pharmacy by not allowing u-turn at the roundabout
- Higher Construction cost to implement

ESTIMATED COST = \$240,600



TULIP &
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INTERSECTION



OPTION 2 | REPLACE W/ MEDIAN

Detailed Estimate of Probable Cost

7/29/2021

Pay Item Number	Pay Item Description	Quantity	Unit	Engineer's Unit Cost	Engineer's Subtotal Cost
101-1A	MOBILIZATION	1	LS	15.0%	\$ 13,365.00
101-18	CONSTRUCTION VIDEO	1	LS	5.0%	\$ 4,455.00
101-99	SURVEY STAKING AND RECORD DRAWINGS	1	LS	10.0%	\$ 8,910.00
102-1	MAINTENANCE OF TRAFFIC	1	LS	20.0%	\$ 17,820.00
104-10-3	INLET PROTECTION	4	LF	\$ 50.00	\$ 200.00
110-1-1	CLEARING AND GRUBBING (SELECT)	0.00	AC	\$ 6,500.00	\$ -
110-4-10	REMOVAL OF EXISTING CONCRETE/PAVEMENT	400	SY	\$ 30.00	\$ 12,000.00
120-1	REGULAR EXCAVATION & EMBANKMENT	1	LS	\$ 1,000.00	\$ 1,000.00
334-1-12	ROADWAY CONSTRUCTION	620	SY	\$ 100.00	\$ 62,000.00
425-1-521	INLET, VALLEY GUTTER, < 10', RELOCATE	0	EA	\$ 3,500.00	\$ -
430-174-124	PIPE CULVERT, RCP, ROUND, 24"	0	LF	\$ 60.00	\$ -
455-1A	DEWATERING FOR CONSTRUCTION OPERATIONS	0	LS	\$ 2,500.00	\$ -
520-1	TYPE F CURB & GUTTER	260	LF	\$ 25.00	\$ 6,500.00
522-1	CONCRETE MEDIAN	58	SY	\$ 50.00	\$ 2,900.00
700-1-11	SINGLE POST SIGN, < 12 SF	8	EA	\$ 300.00	\$ 2,400.00
711-11101	6" WHITE, SOLID TRAFFIC, THERMOPLASTIC	300	LF	\$ 2.50	\$ 750.00
711-11141	6" WHITE, SKIP TRAFFIC, THERMOPLASTIC	0	LF	\$ 2.50	\$ -
711-11141	6" YELLOW, TRAFFIC, THERMOPLASTIC	300	LF	\$ 2.50	\$ 750.00
711-11170	TREMOPLASTIC STD, WHITE, ARROW	4	EA	\$ 150.00	\$ 600.00
570-1-2	PERFORMANCE TURF, SOD	0	SY	\$ 5.00	\$ -
580-1-1	LANDSCAPE	0	LS	\$ 5,000.00	\$ -
2000-1	UTILITY ADJUSTMENT	0	EA	\$ 500.00	\$ -
	STABILIZED ACCESS				
110-1-1	CLEARING AND GRUBBING (SELECT)	0.00	AC	\$ 6,500.00	\$ -
334-1-12	STABILIZED PATHWAY (EMERGENCY VEHICLES)	0	SY	\$ 75.00	\$ -
570-1-2	PERFORMANCE TURF, SOD	0	SY	\$ 5.00	\$ -
700-1-11	SINGLE POST SIGN, < 12 SF (DO NOT ENTER/EVO)	0	EA	\$ 300.00	\$ -

Subtotal	\$ 133,650.00
Contingency @ 50%	\$ 66,825.00
Tech Services @ 20%	\$ 40,095.00
Total	\$ 240,570.00

TULIP & COLLEGE PARK INTERSECTION



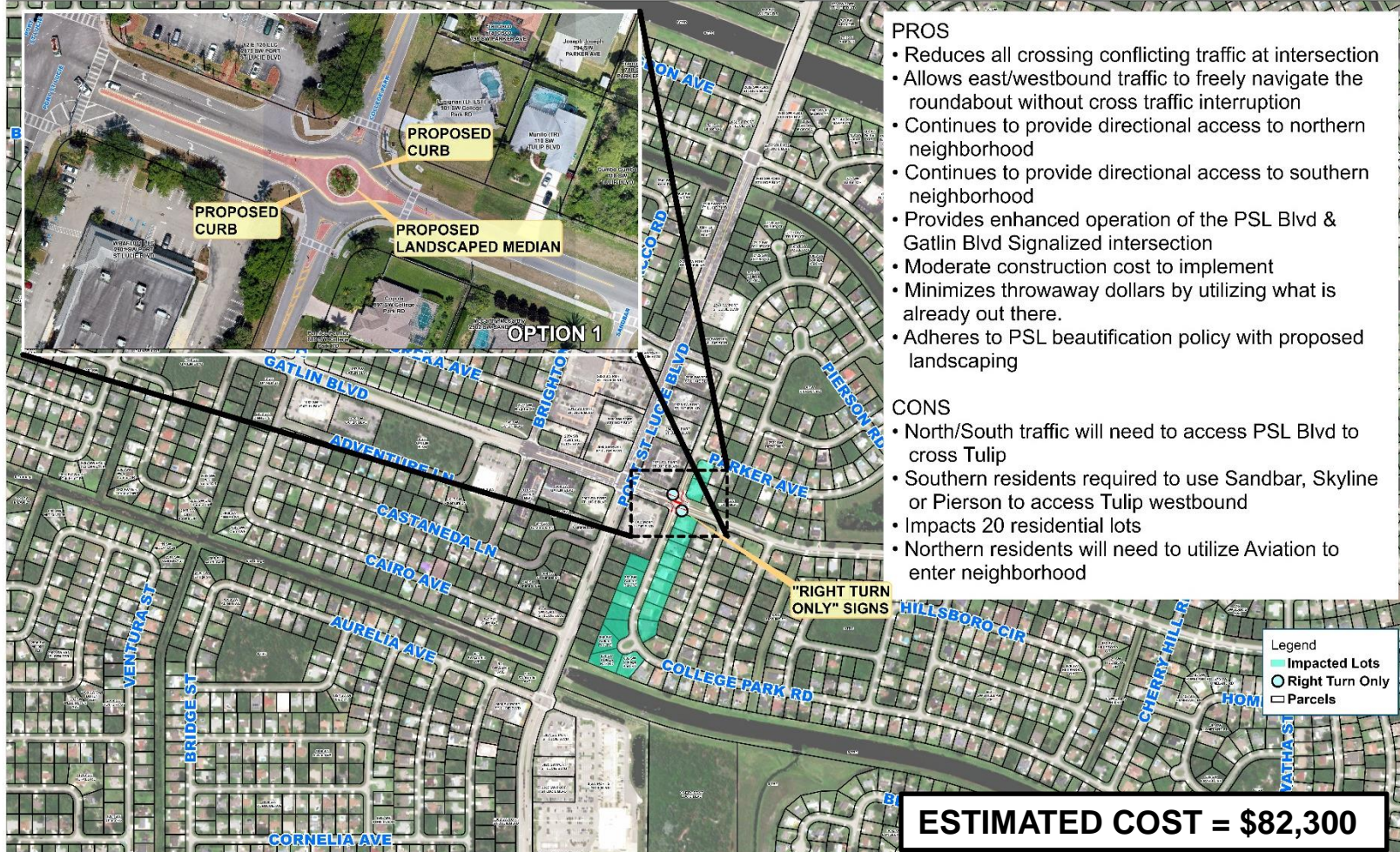
OPTION 1 | BLOCK NORTH/SOUTH



TULIP & COLLEGE PARK INTERSECTION



OPTION 1 | BLOCK NORTH/SOUTH



- PROS**
- Reduces all crossing conflicting traffic at intersection
 - Allows east/westbound traffic to freely navigate the roundabout without cross traffic interruption
 - Continues to provide directional access to northern neighborhood
 - Continues to provide directional access to southern neighborhood
 - Provides enhanced operation of the PSL Blvd & Gatlin Blvd Signalized intersection
 - Moderate construction cost to implement
 - Minimizes throwaway dollars by utilizing what is already out there.
 - Adheres to PSL beautification policy with proposed landscaping

- CONS**
- North/South traffic will need to access PSL Blvd to cross Tulip
 - Southern residents required to use Sandbar, Skyline or Pierson to access Tulip westbound
 - Impacts 20 residential lots
 - Northern residents will need to utilize Aviation to enter neighborhood

Legend
 ■ Impacted Lots
 ○ Right Turn Only
 □ Parcels

ESTIMATED COST = \$82,300



OPTION 1 | BLOCK NORTH/SOUTH

TULIP & COLLEGE PARK INTERSECTION



Detailed Estimate of Probable Cost

Pay Item Number	Pay Item Description	Quantity	Unit	Engineer's Unit Cost	Engineer's Subtotal Cost
101-1A	MOBILIZATION	1	LS	15.0%	\$ 4,035.00
101-18	CONSTRUCTION VIDEO	1	LS	5.0%	\$ 1,345.00
101-99	SURVEY STAKING AND RECORD DRAWINGS	1	LS	10.0%	\$ 6,690.00
102-1	MAINTENANCE OF TRAFFIC	1	LS	40.0%	\$ 26,760.00
104-10-3	INLET PROTECTION	4	LF	\$ 50.00	\$ 200.00
110-1-1	CLEARING AND GRUBBING (SELECT)	0.00	AC	\$ 6,500.00	\$ -
110-4-10	REMOVAL OF EXISTING CONCRETE	190	SY	\$ 30.00	\$ 5,700.00
120-1	REGULAR EXCAVATION & EMBANKMENT	1	LS	\$ 500.00	\$ 500.00
334-1-12	ROADWAY CONSTRUCTION	0	SY	\$ 100.00	\$ -
425-1-521	INLET, VALLEY GUTTER, < 10', RELOCATE	0	EA	\$ 3,500.00	\$ -
430-174-124	PIPE CULVERT, RCP, ROUND, 24"	0	LF	\$ 60.00	\$ -
455-1A	DEWATERING FOR CONSTRUCTION OPERATIONS	0	LS	\$ 2,500.00	\$ -
520-1	TYPE F CURB & GUTTER	300	LF	\$ 25.00	\$ 7,500.00
522-1	CONCRETE MEDIAN	170	SY	\$ 50.00	\$ 8,500.00
700-1-11	SINGLE POST SIGN, < 12 SF	8	EA	\$ 300.00	\$ 2,400.00
711-11101	6" WHITE, SOLID TRAFFIC, THERMOPLASTIC	300	LF	\$ 2.50	\$ 750.00
711-11141	6" WHITE, SKIP TRAFFIC, THERMOPLASTIC	0	LF	\$ 2.50	\$ -
711-11141	6" YELLOW, TRAFFIC, THERMOPLASTIC	300	LF	\$ 2.50	\$ 750.00
711-11170	THERMOPLASTIC STD, WHITE, ARROW	4	EA	\$ 150.00	\$ 600.00
570-1-2	PERFORMANCE TURF, SOD	0	SY	\$ 5.00	\$ -
580-1-1	LANDSCAPE	1	LS	\$ 25,000.00	\$ 25,000.00
590-70	IRRIGATION	1	LS	\$ 15,000.00	\$ 15,000.00
2000-1	UTILITY ADJUSTMENT	0	EA	\$ 500.00	\$ -
	STABILIZED ACCESS				
110-1-1	CLEARING AND GRUBBING (SELECT)	0.00	AC	\$ 6,500.00	\$ -
334-1-12	STABILIZED PATHWAY (EMERGENCY VEHICLES)	0	SY	\$ 75.00	\$ -
570-1-2	PERFORMANCE TURF, SOD	0	SY	\$ 5.00	\$ -
700-1-11	SINGLE POST SIGN, < 12 SF (DO NOT ENTER/EVO)	0	EA	\$ 300.00	\$ -
				Subtotal	\$ 105,730.00
				Contingency @ 50%	\$ 52,865.00
				Tech Services @ 20%	\$ 31,719.00
				Total	\$ 190,314.00

**TULIP &
COLLEGE PARK
INTERSECTION**



OVERVIEW | OPTIONS

COMPARISON MATRIX (PRESENTED IN ORDER OF INCREASED RANKING)

ITEM	OPTION 5	OPTION 4	OPTION 3	OPTION 2	OPTION 1
Description	Replace w/ Median New Intersection	Close North Side	Close South Side	Replace w/ Median	Block North/South
No. of Impacted Lots	83	17	58	20	20
Blocks North of Intersection	Yes	Yes	No	No	No
Blocks South of Intersection	Yes	No	Yes	No	No
North/South Traffic Impacted	N/A	N/A	N/A	Yes	Yes
East/West Traffic Impacted	No	No	No	No	No
ROW Acquisition Required	Yes	No	No	No	No
Estimated Cost	\$848,600	\$228,500	\$89,600	\$240,600	\$190,300.00

RECOMMENDED OPTION

RECOMMENDED OPTION



2980 SOUTH 25TH ST | FT. PIERCE, FL 34981
772.464.3537 | FAX: 772.464.9497
WWW.CT-ENG.COM

TULIP & COLLEGE PARK INTERSECTION



THANK YOU

QUESTIONS