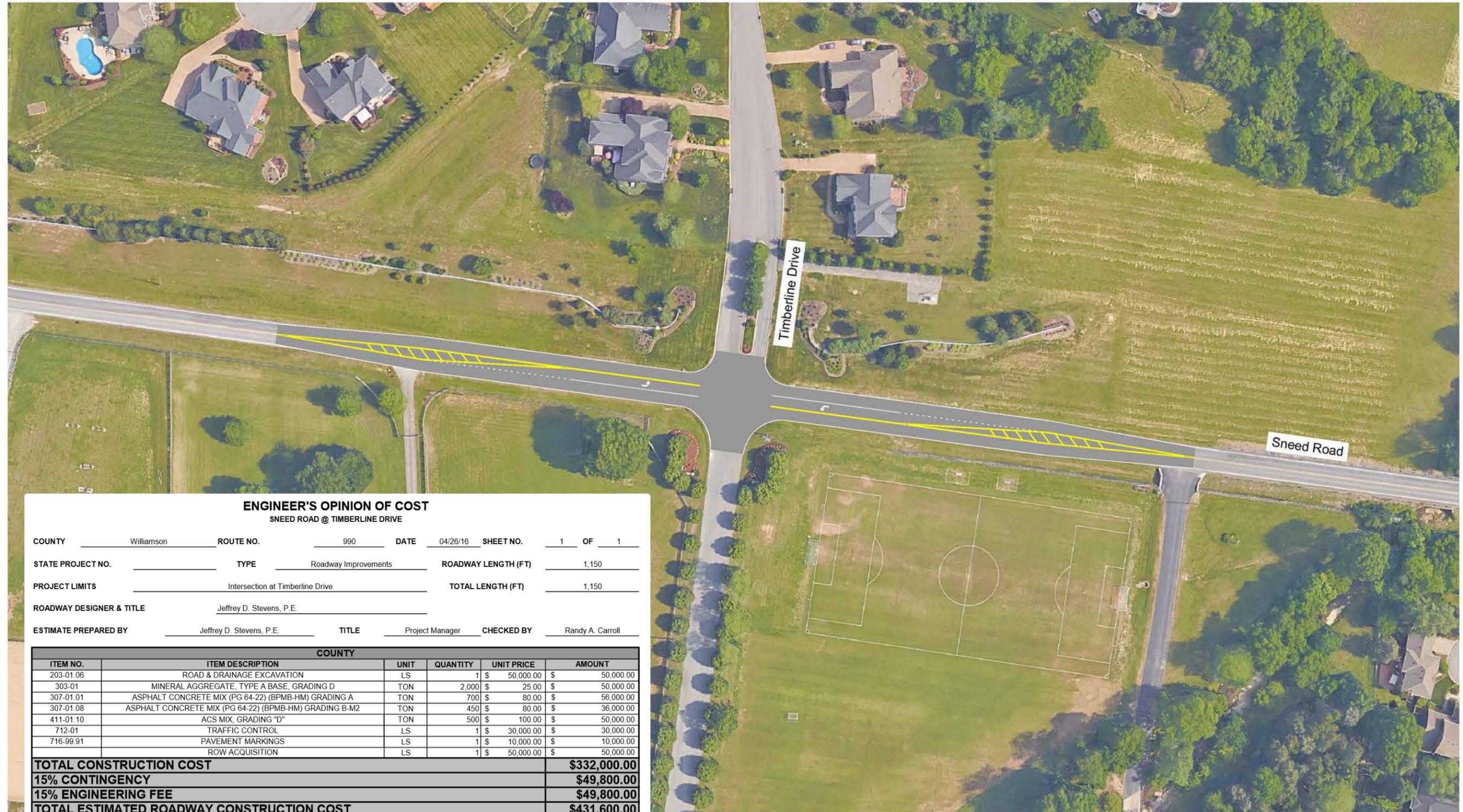


4.5 2020 IMPROVEMENTS

Estimates and concept plans for the 2020 improvements are as follows:



ENGINEER'S OPINION OF COST
SNEED ROAD @ TIMBERLINE DRIVE

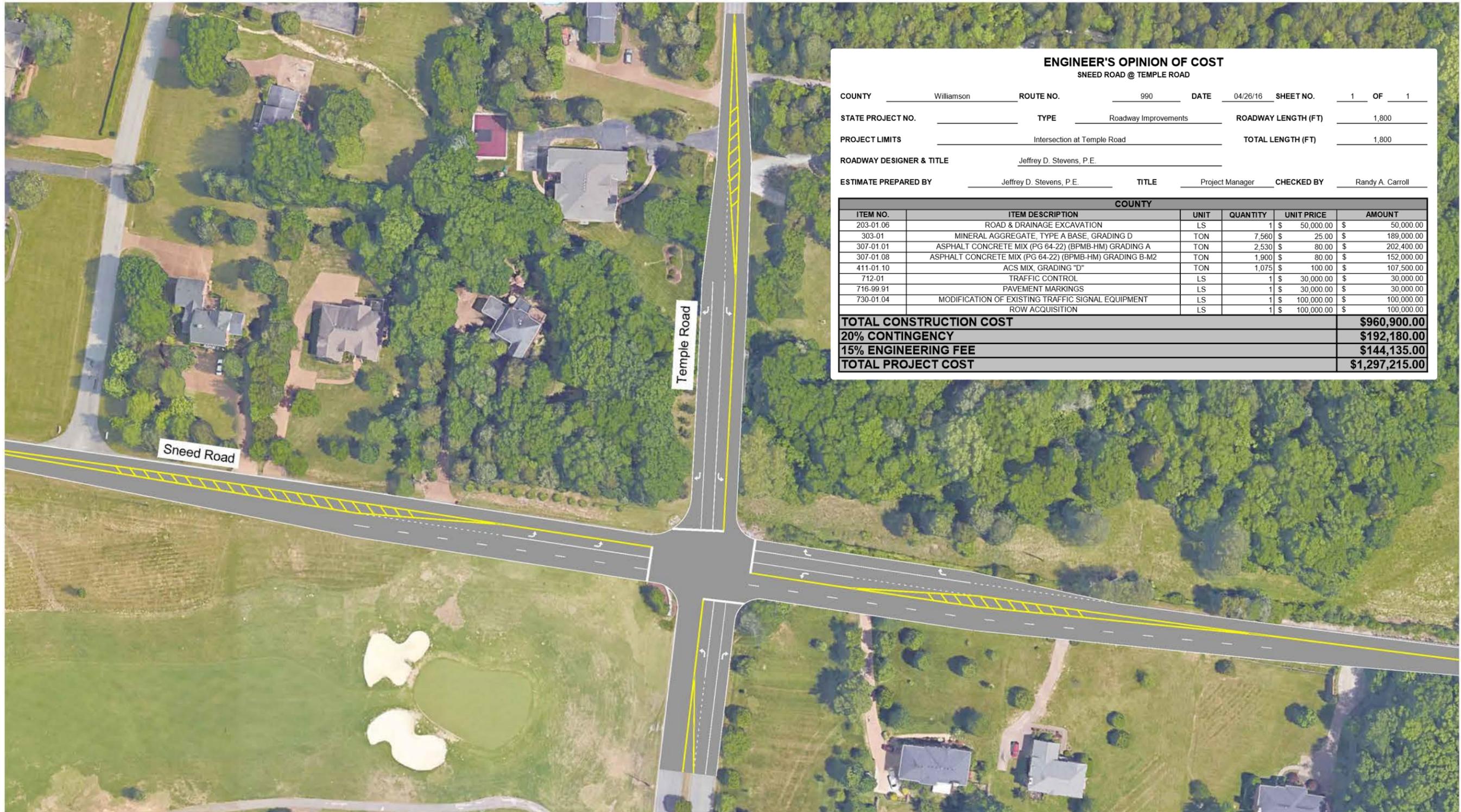
COUNTY Williamson ROUTE NO. 990 DATE 04/26/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,150
 PROJECT LIMITS Intersection at Timberline Drive TOTAL LENGTH (FT) 1,150
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	2,000	\$ 25.00	\$ 50,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	700	\$ 80.00	\$ 56,000.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	450	\$ 80.00	\$ 36,000.00
411-01.10	ACS MIX, GRADING "D"	TON	500	\$ 100.00	\$ 50,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 10,000.00	\$ 10,000.00
	ROW ACQUISITION	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$332,000.00
15% CONTINGENCY					\$49,800.00
15% ENGINEERING FEE					\$49,800.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$431,600.00



Sneed Road - 2020 Short Term Recommended Improvements (Sneed Road and Timberline Drive)





ENGINEER'S OPINION OF COST
SNEED ROAD @ TEMPLE ROAD

COUNTY Williamson ROUTE NO. 990 DATE 04/26/16 SHEET NO. 1 OF 1

STATE PROJECT NO. TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,800

PROJECT LIMITS Intersection at Temple Road TOTAL LENGTH (FT) 1,800

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	7,560	\$ 25.00	\$ 189,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	2,530	\$ 80.00	\$ 202,400.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,900	\$ 80.00	\$ 152,000.00
411-01.10	ACS MIX, GRADING "D"	TON	1,075	\$ 100.00	\$ 107,500.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	ROW ACQUISITION	LS	1	\$ 100,000.00	\$ 100,000.00
TOTAL CONSTRUCTION COST					\$960,900.00
20% CONTINGENCY					\$192,180.00
15% ENGINEERING FEE					\$144,135.00
TOTAL PROJECT COST					\$1,297,215.00

 Sneed Road - 2020 Short Term Recommended Improvements (Sneed Road and Temple Road)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ OXFORD GLEN DRIVE

COUNTY Williamson ROUTE NO. 984 DATE 04/26/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,050

PROJECT LIMITS Intersection @ Oxford Glen Drive TOTAL LENGTH (FT) 2,050

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

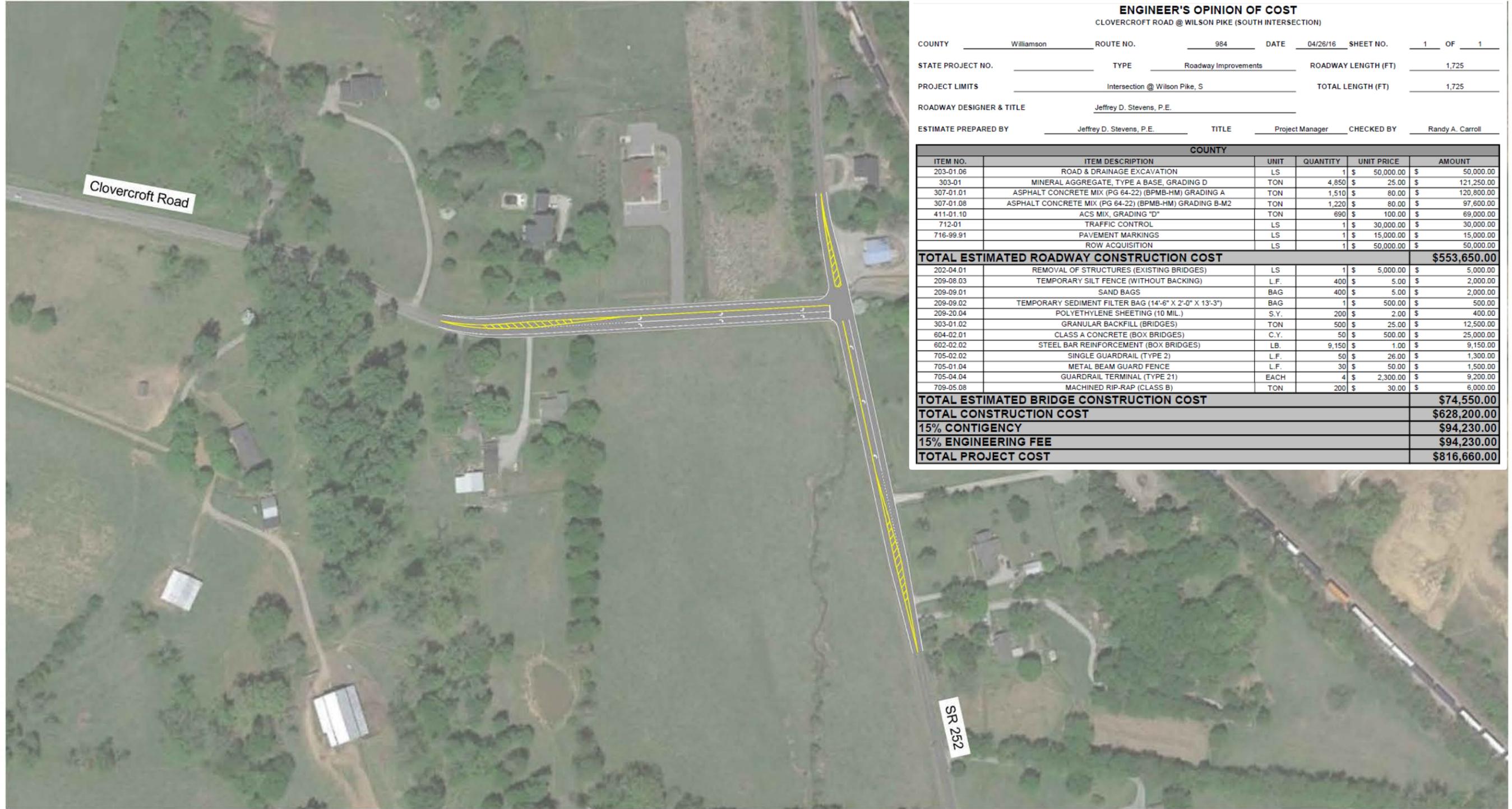
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 25,000.00	\$ 25,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	6,320	\$ 25.00	\$ 158,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,950	\$ 80.00	\$ 156,000.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,590	\$ 80.00	\$ 127,200.00
411-01.10	ACS MIX, GRADING "D"	TON	890	\$ 100.00	\$ 89,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	PIPE IMPROVEMENTS (CLOVERCROFT OVER WATSON BRANCH)	LS	1	\$ 50,000.00	\$ 50,000.00
	ROW ACQUISITION	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTIN COST					\$830,200.00
20% CONTINGENCY					\$166,040.00
15% ENGINEERING FEE					\$124,530.00
TOTAL PROJECT COST					\$1,120,770.00



Clovercroft Road - 2020 Short Term Recommended Improvements (Clovercroft Drive and Oxford Glen Drive)





ENGINEER'S OPINION OF COST

CLOVERCROFT ROAD @ WILSON PIKE (SOUTH INTERSECTION)

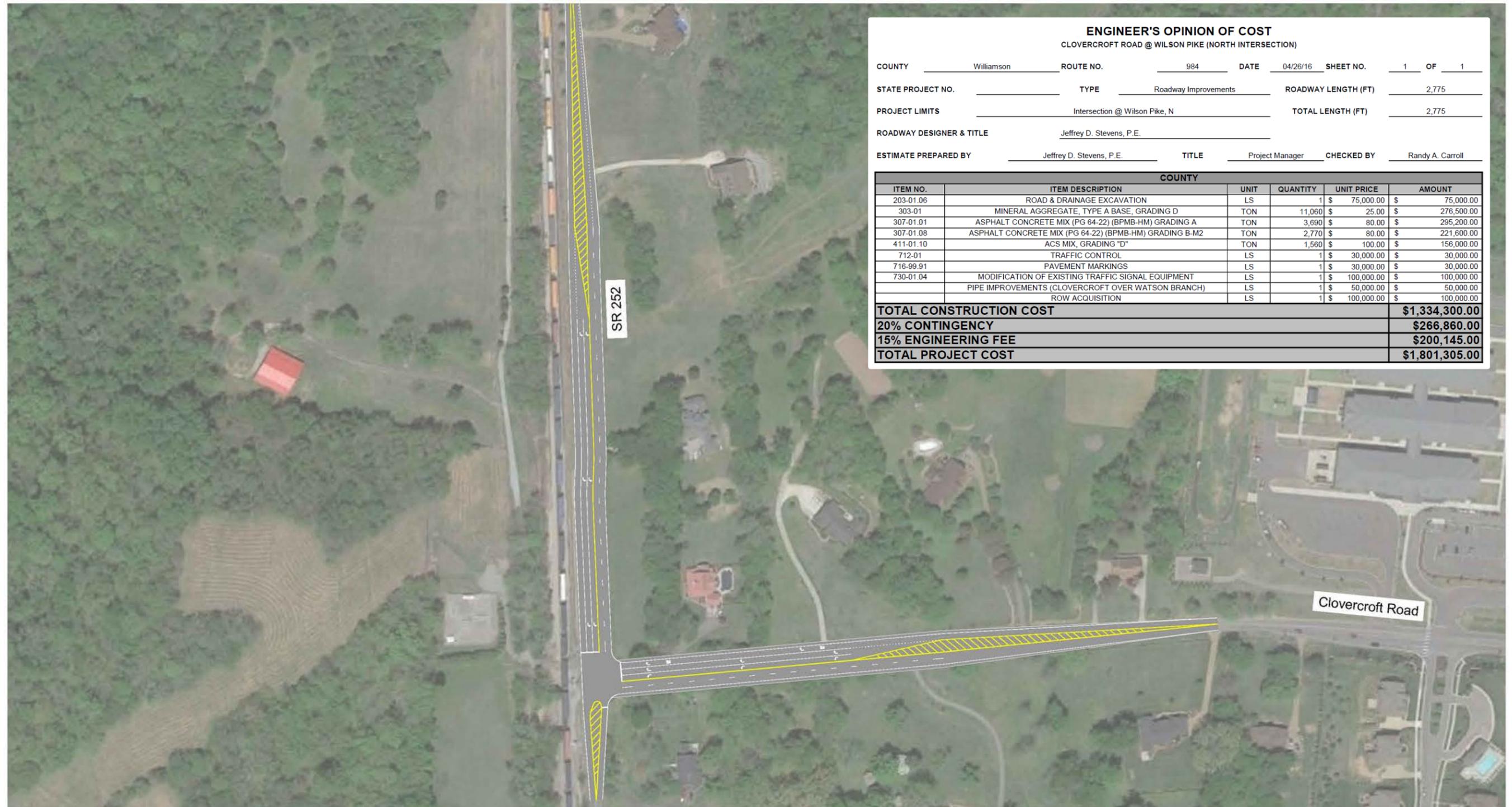
COUNTY	Williamson	ROUTE NO.	984	DATE	04/26/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,725				
PROJECT LIMITS	Intersection @ Wilson Pike, S			TOTAL LENGTH (FT)	1,725				
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	4,850	\$ 25.00	\$ 121,250.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,510	\$ 80.00	\$ 120,800.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,220	\$ 80.00	\$ 97,600.00
411-01.10	ACS MIX, GRADING "D"	TON	690	\$ 100.00	\$ 69,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
	ROW ACQUISITION	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$553,650.00
202-04.01	REMOVAL OF STRUCTURES (EXISTING BRIDGES)	LS	1	\$ 5,000.00	\$ 5,000.00
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	400	\$ 5.00	\$ 2,000.00
209-09.01	SAND BAGS	BAG	400	\$ 5.00	\$ 2,000.00
209-09.02	TEMPORARY SEDIMENT FILTER BAG (14'-6" X 2'-0" X 13'-3")	BAG	1	\$ 500.00	\$ 500.00
209-20.04	POLYETHYLENE SHEETING (10 MIL.)	S.Y.	200	\$ 2.00	\$ 400.00
303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	500	\$ 25.00	\$ 12,500.00
604-02.01	CLASS A CONCRETE (BOX BRIDGES)	C.Y.	50	\$ 500.00	\$ 25,000.00
602-02.02	STEEL BAR REINFORCEMENT (BOX BRIDGES)	LB.	9,150	\$ 1.00	\$ 9,150.00
705-02.02	SINGLE GUARDRAIL (TYPE 2)	L.F.	50	\$ 26.00	\$ 1,300.00
705-01.04	METAL BEAM GUARD FENCE	L.F.	30	\$ 50.00	\$ 1,500.00
705-04.04	GUARDRAIL TERMINAL (TYPE 21)	EACH	4	\$ 2,300.00	\$ 9,200.00
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	200	\$ 30.00	\$ 6,000.00
TOTAL ESTIMATED BRIDGE CONSTRUCTION COST					\$74,550.00
TOTAL CONSTRUCTION COST					\$628,200.00
15% CONTIGENCY					\$94,230.00
15% ENGINEERING FEE					\$94,230.00
TOTAL PROJECT COST					\$816,660.00



Clovercroft Road - 2020 Short Term Recommended Improvements (Clovercroft Drive and SR 252 South)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ WILSON PIKE (NORTH INTERSECTION)

COUNTY Williamson ROUTE NO. 984 DATE 04/26/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,775

PROJECT LIMITS Intersection @ Wilson Pike, N TOTAL LENGTH (FT) 2,775

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

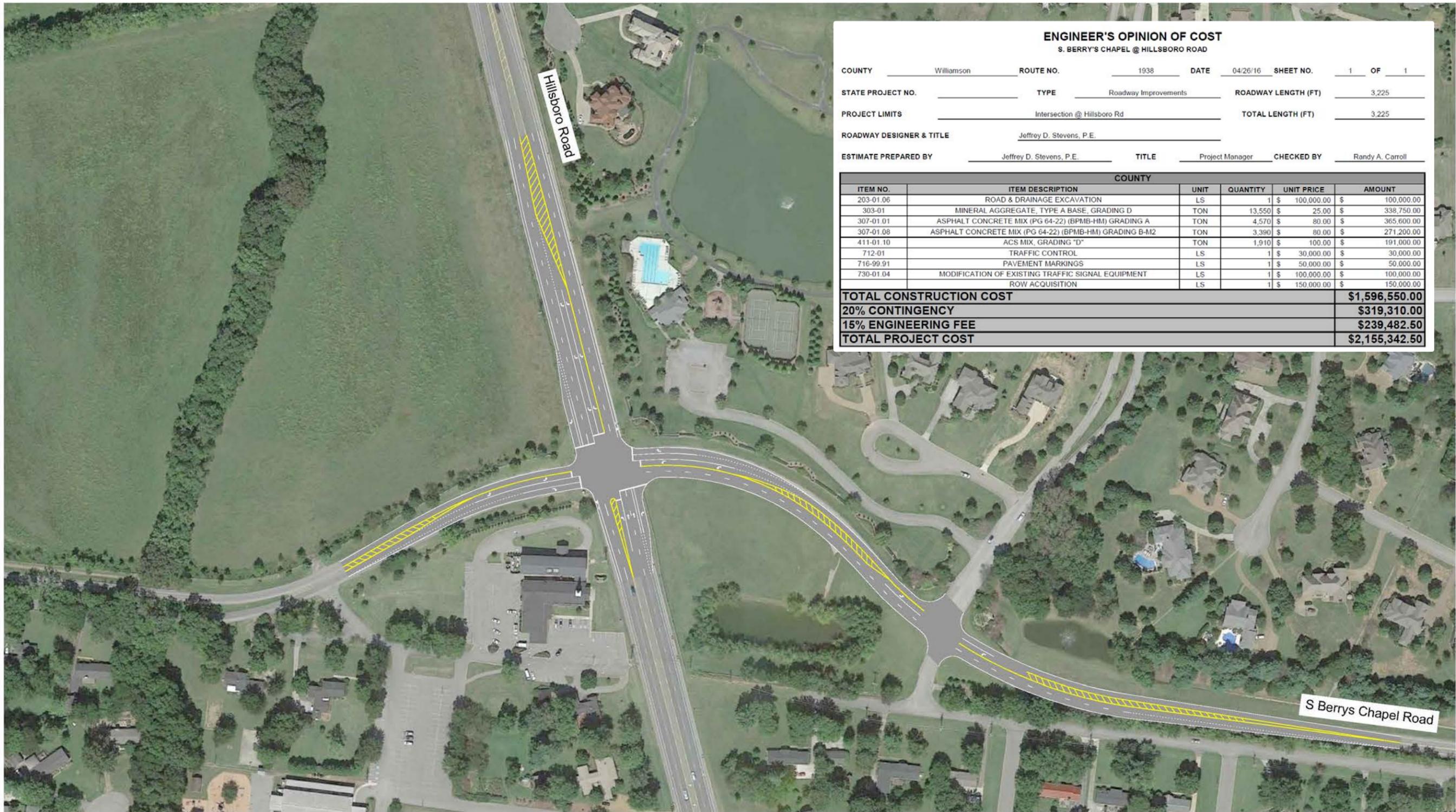
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	11,060	\$ 25.00	\$ 276,500.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,690	\$ 80.00	\$ 295,200.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	2,770	\$ 80.00	\$ 221,600.00
411-01.10	ACS MIX, GRADING "D"	TON	1,560	\$ 100.00	\$ 156,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	PIPE IMPROVEMENTS (CLOVERCROFT OVER WATSON BRANCH)	LS	1	\$ 50,000.00	\$ 50,000.00
	ROW ACQUISITION	LS	1	\$ 100,000.00	\$ 100,000.00
TOTAL CONSTRUCTION COST					\$1,334,300.00
20% CONTINGENCY					\$266,860.00
15% ENGINEERING FEE					\$200,145.00
TOTAL PROJECT COST					\$1,801,305.00



Clovercroft Road - 2020 Short Term Recommended Improvements (Clovercroft Drive and SR 252 North)





ENGINEER'S OPINION OF COST
S. BERRY'S CHAPEL @ HILLSBORO ROAD

COUNTY Williamson ROUTE NO. 1938 DATE 04/26/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 3,225

PROJECT LIMITS Intersection @ Hillsboro Rd TOTAL LENGTH (FT) 3,225

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

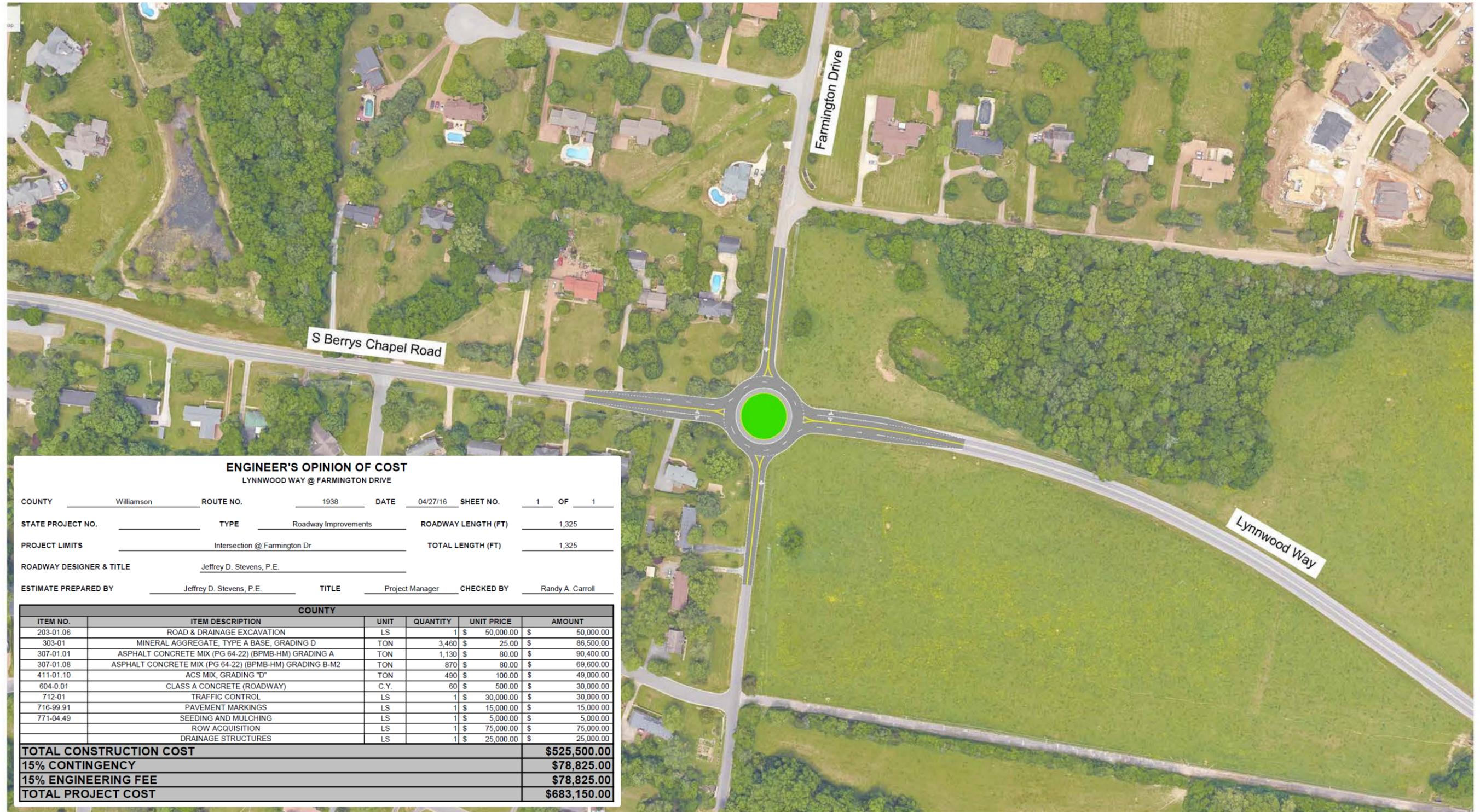
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	13,550	\$ 25.00	\$ 338,750.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	4,570	\$ 80.00	\$ 365,600.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	3,390	\$ 80.00	\$ 271,200.00
411-01.10	ACS MIX, GRADING "D"	TON	1,910	\$ 100.00	\$ 191,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 50,000.00	\$ 50,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	ROW ACQUISITION	LS	1	\$ 150,000.00	\$ 150,000.00
TOTAL CONSTRUCTION COST					\$1,596,550.00
20% CONTINGENCY					\$319,310.00
15% ENGINEERING FEE					\$239,482.50
TOTAL PROJECT COST					\$2,155,342.50



Lynnwood Way - 2020 Short Term Recommended Improvements (Lynnwood Way and Hillsboro Road)





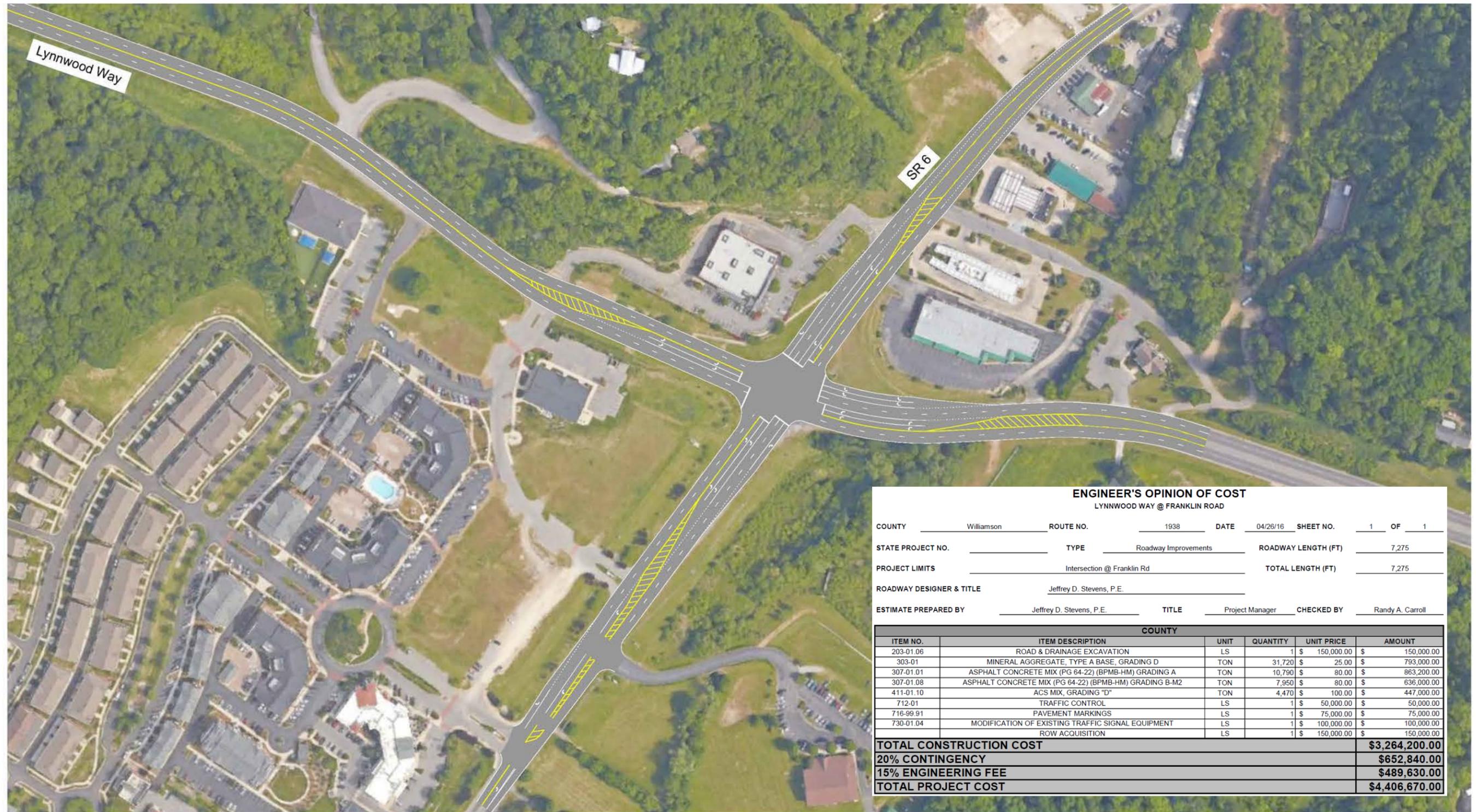
Lynnwood Way - 2020 Short Term Recommended Improvements (Lynnwood Way and Farmington Drive)





Lynnwood Way - 2020 Short Term Recommended Improvements (Lynnwood Way from Sawyer Road to SR 6)

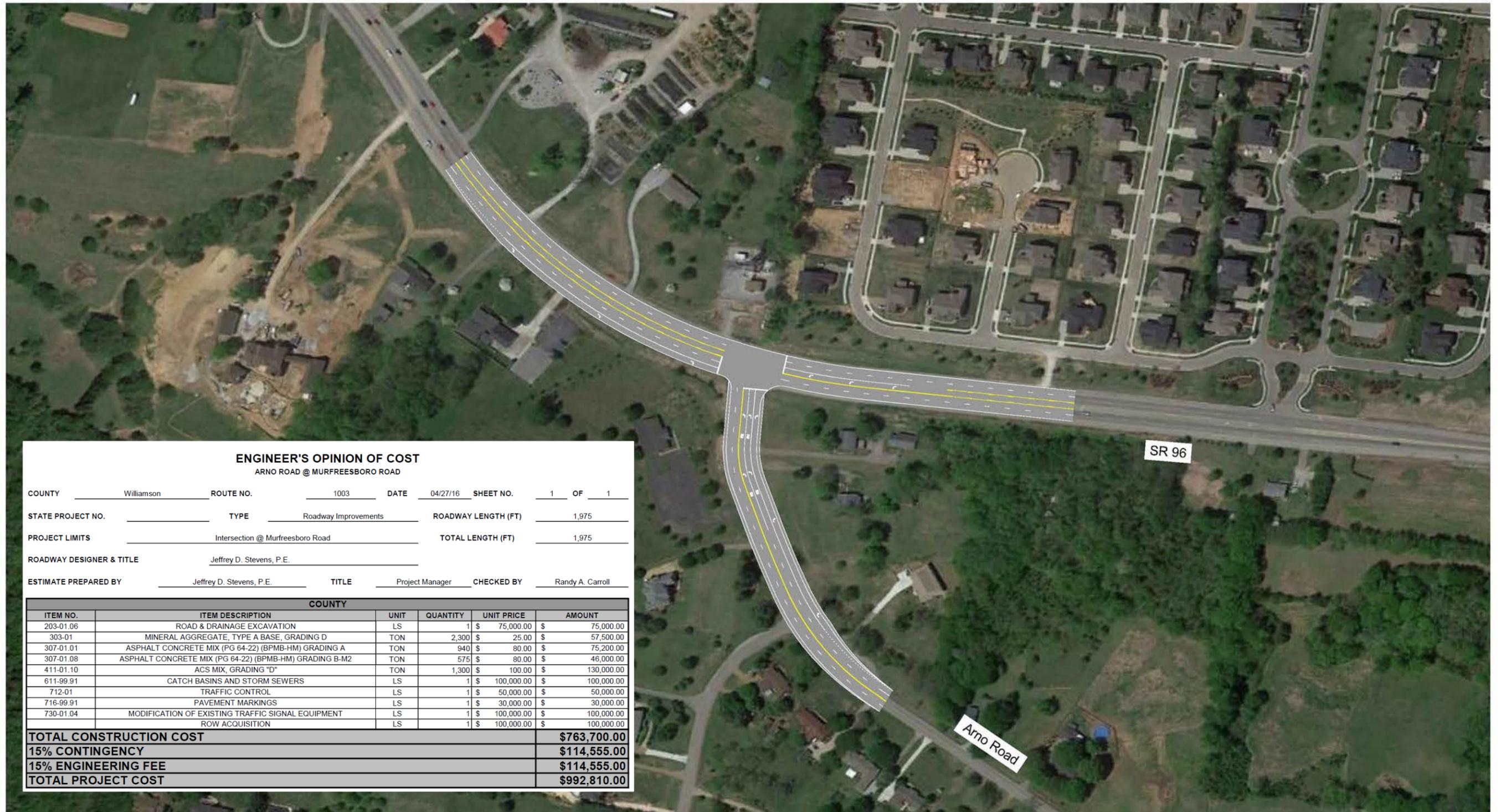




ENGINEER'S OPINION OF COST					
LYNNWOOD WAY @ FRANKLIN ROAD					
COUNTY	Williamson	ROUTE NO.	1938	DATE	04/26/16
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	7,275
PROJECT LIMITS	Intersection @ Franklin Rd			TOTAL LENGTH (FT)	7,275
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 150,000.00	\$ 150,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	31,720	\$ 25.00	\$ 793,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	10,790	\$ 80.00	\$ 863,200.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	7,950	\$ 80.00	\$ 636,000.00
411-01.10	ACS MIX, GRADING "D"	TON	4,470	\$ 100.00	\$ 447,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 75,000.00	\$ 75,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	ROW ACQUISITION	LS	1	\$ 150,000.00	\$ 150,000.00
TOTAL CONSTRUCTION COST					\$3,264,200.00
20% CONTINGENCY					\$652,840.00
15% ENGINEERING FEE					\$489,630.00
TOTAL PROJECT COST					\$4,406,670.00

 Lynnwood Way - 2020 Short Term Recommended Improvements (Lynnwood Way and SR 6)





ENGINEER'S OPINION OF COST					
ARNO ROAD @ MURFREESBORO ROAD					
COUNTY	Williamson	ROUTE NO.	1003	DATE	04/27/16 SHEET NO. 1 OF 1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,975
PROJECT LIMITS	Intersection @ Murfreesboro Road			TOTAL LENGTH (FT)	1,975
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	2,300	\$ 25.00	\$ 57,500.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	940	\$ 80.00	\$ 75,200.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	575	\$ 80.00	\$ 46,000.00
411-01.10	ACS MIX, GRADING "D"	TON	1,300	\$ 100.00	\$ 130,000.00
611-99.91	CATCH BASINS AND STORM SEWERS	LS	1	\$ 100,000.00	\$ 100,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 100,000.00	\$ 100,000.00
	ROW ACQUISITION	LS	1	\$ 100,000.00	\$ 100,000.00
TOTAL CONSTRUCTION COST					\$763,700.00
15% CONTINGENCY					\$114,555.00
15% ENGINEERING FEE					\$114,555.00
TOTAL PROJECT COST					\$992,810.00



Arno Road - 2020 Short Term Recommended Improvements (Arno Road and SR 96)





ENGINEER'S OPINION OF COST
ARNO ROAD @ SOUTH CAROTHERS ROAD

COUNTY Williamson ROUTE NO. 1003 DATE 04/27/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,275

PROJECT LIMITS Intersection @ South Carothers Road TOTAL LENGTH (FT) 1,275

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

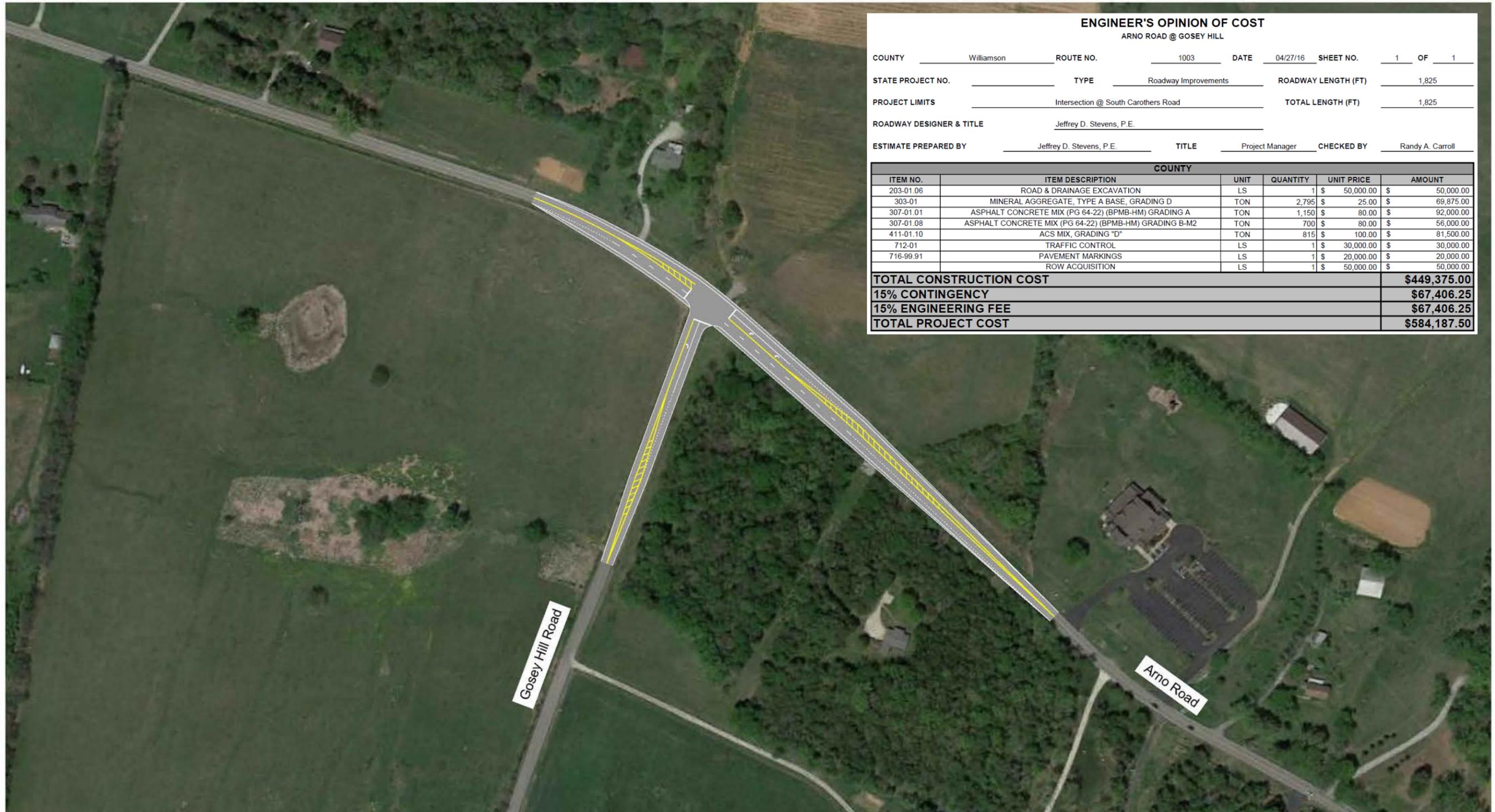
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,550	\$ 25.00	\$ 38,750.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	635	\$ 80.00	\$ 50,800.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	385	\$ 80.00	\$ 30,800.00
411-01.10	ACS MIX, GRADING "D"	TON	505	\$ 100.00	\$ 50,500.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
	BRIDGE REPLACEMENT (ARNO OVER HARPETH RIVER)	LS	1	\$ 1,440,000.00	\$ 1,440,000.00
	ROW ACQUISITION	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$1,755,850.00
20% CONTINGENCY					\$351,170.00
15% ENGINEERING FEE					\$263,377.50
TOTAL PROJECT COST					\$2,370,397.50



Arno Road - 2020 Short Term Recommended Improvements (Arno Road and South Carothers Road)





ENGINEER'S OPINION OF COST
ARNO ROAD @ GOSEY HILL

COUNTY Williamson ROUTE NO. 1003 DATE 04/27/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,825

PROJECT LIMITS Intersection @ South Carothers Road TOTAL LENGTH (FT) 1,825

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	2,795	\$ 25.00	\$ 69,875.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,150	\$ 80.00	\$ 92,000.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	700	\$ 80.00	\$ 56,000.00
411-01.10	ACS MIX, GRADING "D"	TON	815	\$ 100.00	\$ 81,500.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
	ROW ACQUISITION	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$449,375.00
15% CONTINGENCY					\$67,406.25
15% ENGINEERING FEE					\$67,406.25
TOTAL PROJECT COST					\$584,187.50



Arno Road - 2020 Short Term Recommended Improvements (Arno Road and Gosey Hill Road)





ENGINEER'S OPINION OF COST
ARNO ROAD @ PEYTONSVILLE-TRINITY ROAD

COUNTY Williamson ROUTE NO. 1003 DATE 04/27/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,200

PROJECT LIMITS Intersection @ Peytonsville-Trinity Road TOTAL LENGTH (FT) 2,200

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

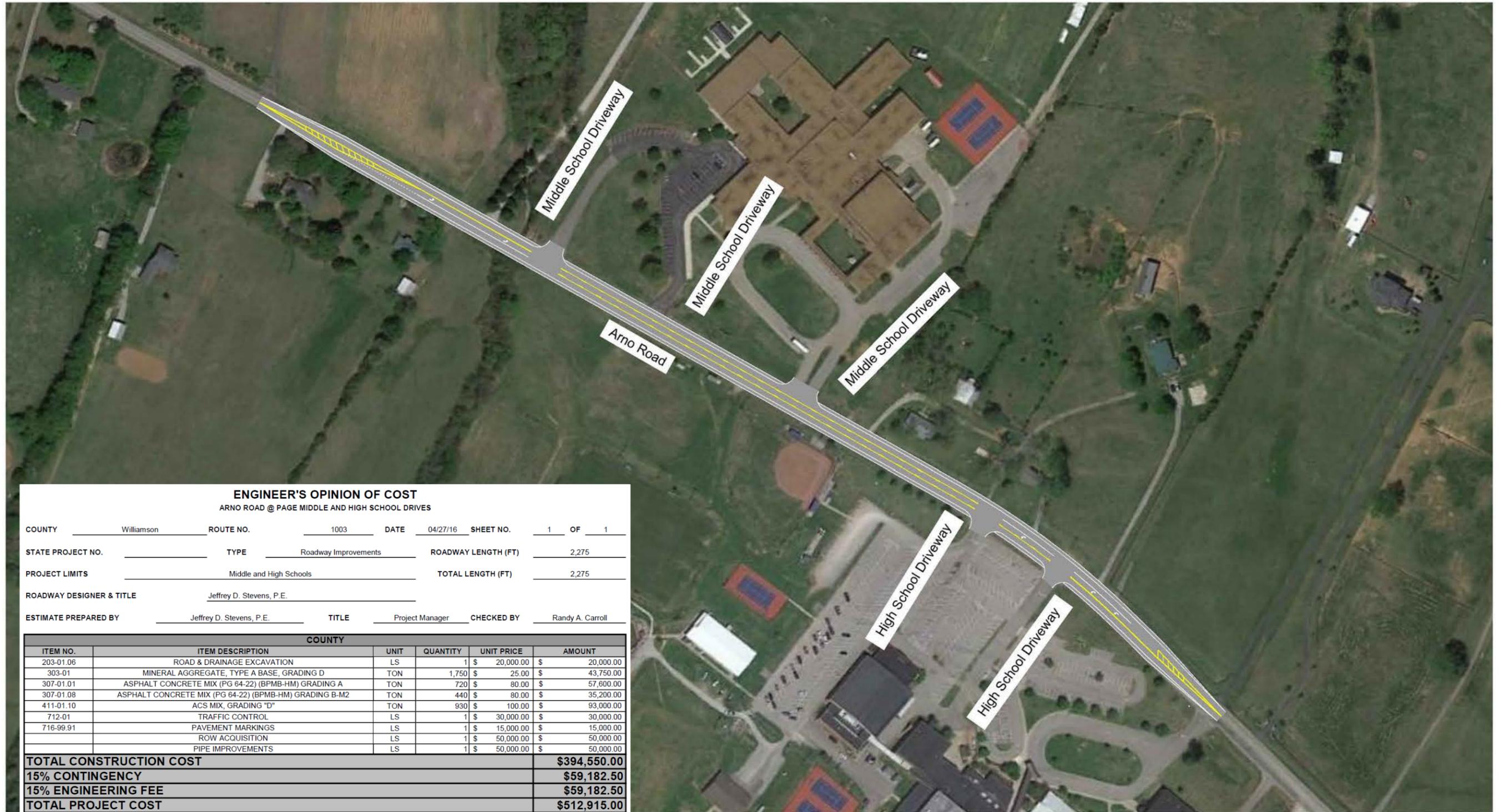
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 25,000.00	\$ 25,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	6,120	\$ 25.00	\$ 153,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,880	\$ 80.00	\$ 150,400.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,535	\$ 80.00	\$ 122,800.00
411-01.10	ACS MIX, GRADING "D"	TON	865	\$ 100.00	\$ 86,500.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
	ROW ACQUISITION	LS	1	\$ 75,000.00	\$ 75,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$712,700.00
15% CONTINGENCY					\$106,905.00
15% ENGINEERING FEE					\$106,905.00
TOTAL PROJECT COST					\$926,510.00



Arno Road - 2020 Short Term Recommended Improvements (Arno Road and Peytonsville - Trinity Road)





ENGINEER'S OPINION OF COST

ARNO ROAD @ PAGE MIDDLE AND HIGH SCHOOL DRIVES

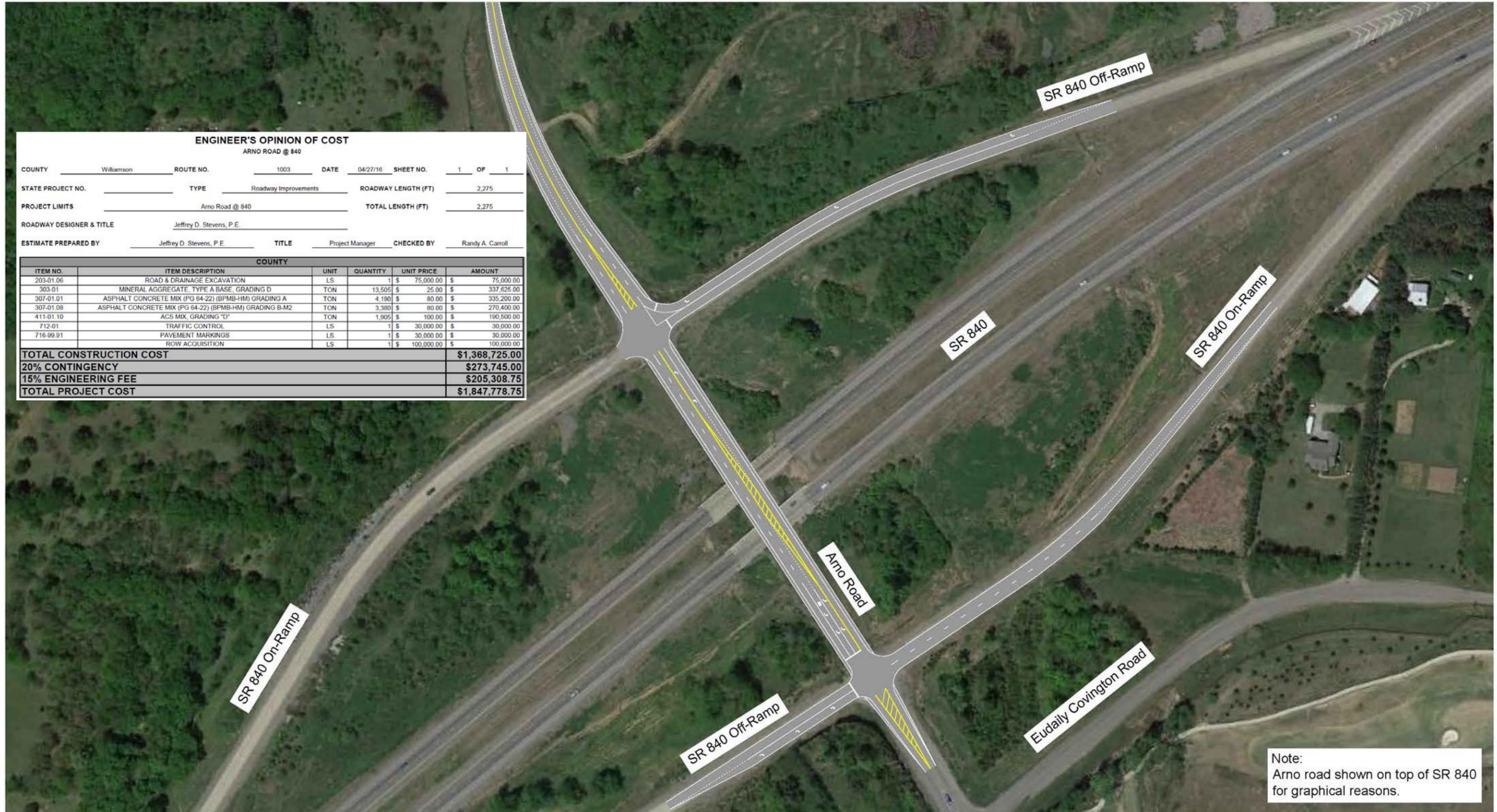
COUNTY	Williamson	ROUTE NO.	1003	DATE	04/27/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	2,275				
PROJECT LIMITS		Middle and High Schools		TOTAL LENGTH (FT)	2,275				
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 20,000.00	\$ 20,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,750	\$ 25.00	\$ 43,750.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	720	\$ 80.00	\$ 57,600.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	440	\$ 80.00	\$ 35,200.00
411-01.10	ACS MIX, GRADING "D"	TON	930	\$ 100.00	\$ 93,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
	ROW ACQUISITION	LS	1	\$ 50,000.00	\$ 50,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$394,550.00
15% CONTINGENCY					\$59,182.50
15% ENGINEERING FEE					\$59,182.50
TOTAL PROJECT COST					\$512,915.00



Arno Road - 2020 Short Term Recommended Improvements (Arno Road and Page Middle and High School Driveways)



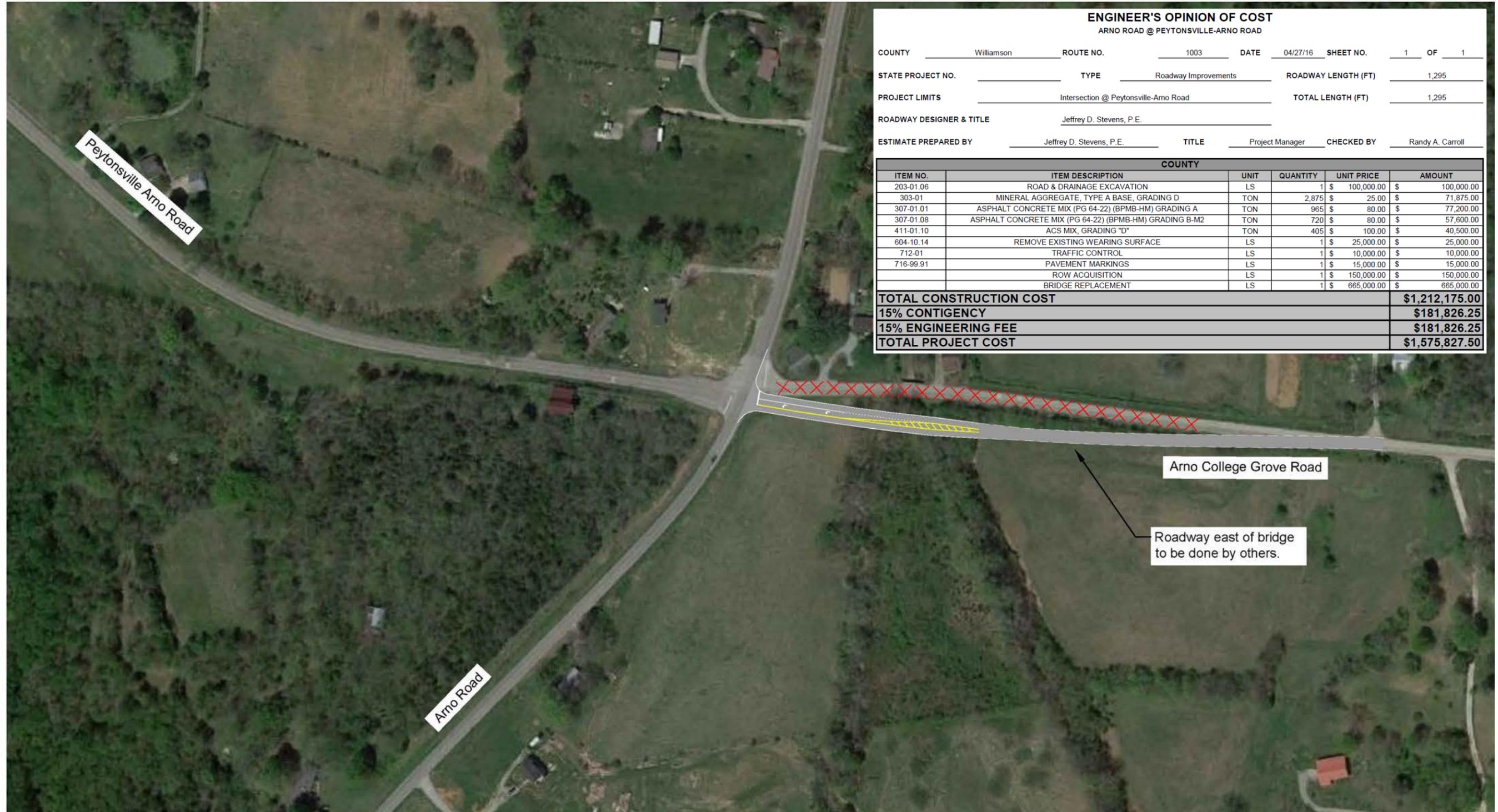


Note:
Arno road shown on top of SR 840
for graphical reasons.



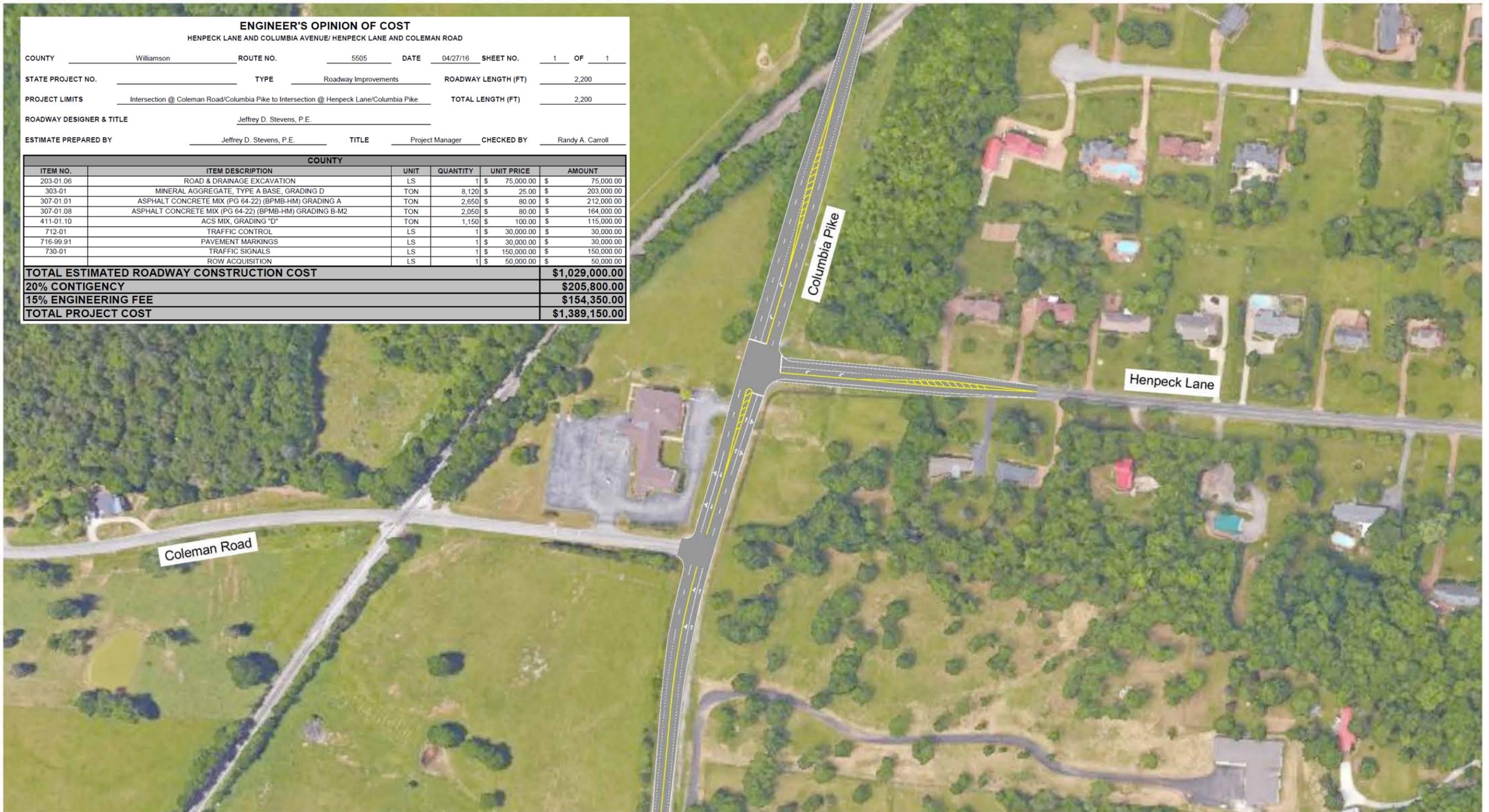
Arno Road - 2020 Short Term Recommended Improvements (Arno Road and SR 840 Ramps)





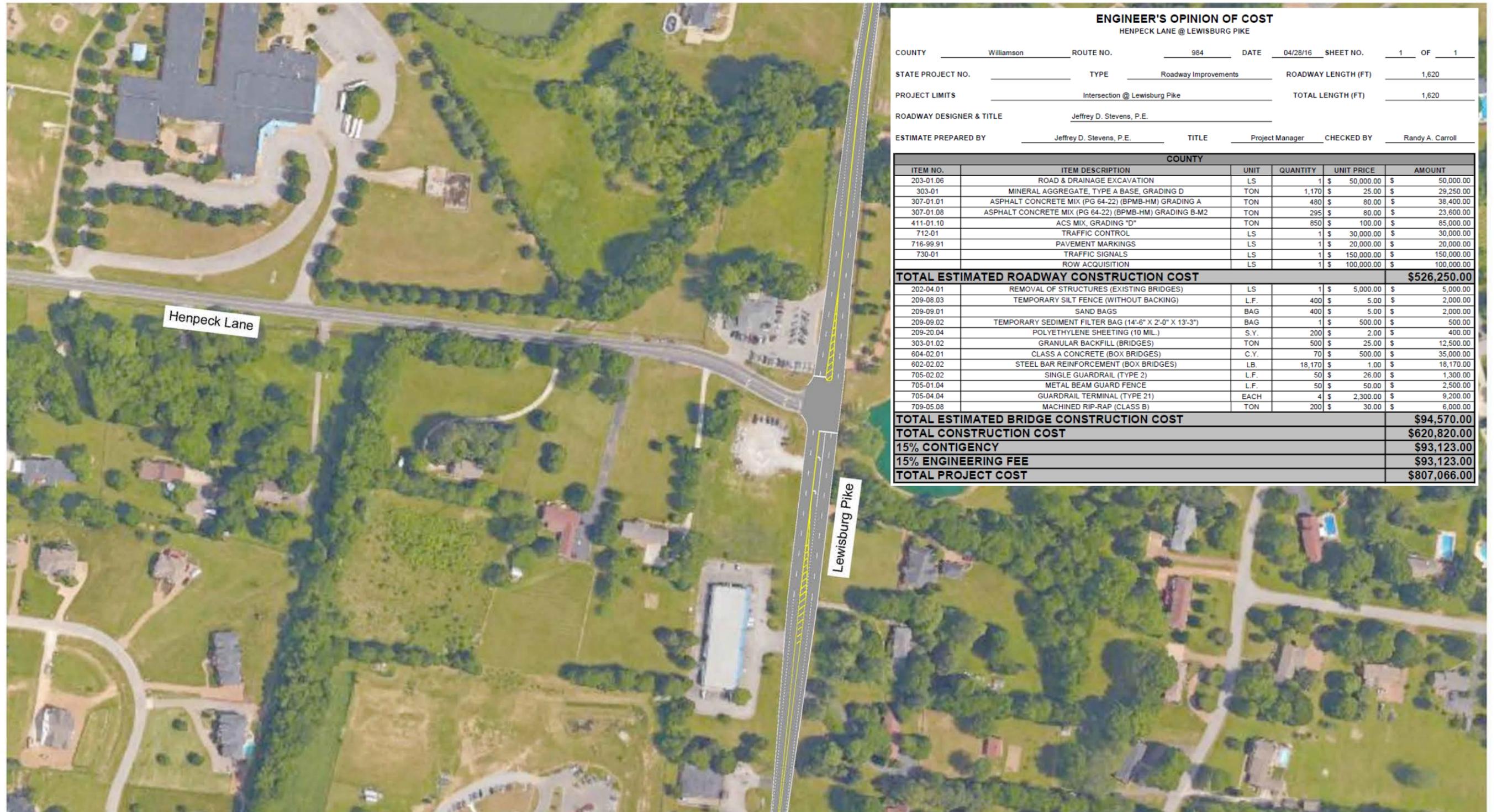
Arno Road - 2020 Short Term Recommended Improvements (Arno Road and Peytonsville Arno Road / Arno College Grove Road)





Henpeck Lane - 2020 Short Term Recommended Improvements (Henpeck Lane and Columbia Avenue / Henpeck Lane and Coleman Road)





ENGINEER'S OPINION OF COST
HENPECK LANE @ LEWISBURG PIKE

COUNTY Williamson ROUTE NO. 984 DATE 04/28/16 SHEET NO. 1 OF 1

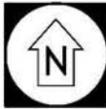
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,620

PROJECT LIMITS Intersection @ Lewisburg Pike TOTAL LENGTH (FT) 1,620

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,170	\$ 25.00	\$ 29,250.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	480	\$ 80.00	\$ 38,400.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	295	\$ 80.00	\$ 23,600.00
411-01.10	ACS MIX, GRADING "D"	TON	850	\$ 100.00	\$ 85,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 30,000.00	\$ 30,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
730-01	TRAFFIC SIGNALS	LS	1	\$ 150,000.00	\$ 150,000.00
	ROW ACQUISITION	LS	1	\$ 100,000.00	\$ 100,000.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$526,250.00
202-04.01	REMOVAL OF STRUCTURES (EXISTING BRIDGES)	LS	1	\$ 5,000.00	\$ 5,000.00
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	400	\$ 5.00	\$ 2,000.00
209-09.01	SAND BAGS	BAG	400	\$ 5.00	\$ 2,000.00
209-09.02	TEMPORARY SEDIMENT FILTER BAG (14'-6" X 2'-0" X 13'-3")	BAG	1	\$ 500.00	\$ 500.00
209-20.04	POLYETHYLENE SHEETING (10 MIL.)	S.Y.	200	\$ 2.00	\$ 400.00
303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	500	\$ 25.00	\$ 12,500.00
604-02.01	CLASS A CONCRETE (BOX BRIDGES)	C.Y.	70	\$ 500.00	\$ 35,000.00
602-02.02	STEEL BAR REINFORCEMENT (BOX BRIDGES)	LB.	18,170	\$ 1.00	\$ 18,170.00
705-02.02	SINGLE GUARDRAIL (TYPE 2)	L.F.	50	\$ 26.00	\$ 1,300.00
705-01.04	METAL BEAM GUARD FENCE	L.F.	50	\$ 50.00	\$ 2,500.00
705-04.04	GUARDRAIL TERMINAL (TYPE 21)	EACH	4	\$ 2,300.00	\$ 9,200.00
709-05.08	MACHINED RIP-RAP (CLASS B)	TON	200	\$ 30.00	\$ 6,000.00
TOTAL ESTIMATED BRIDGE CONSTRUCTION COST					\$94,570.00
TOTAL CONSTRUCTION COST					\$620,820.00
15% CONTINGENCY					\$93,123.00
15% ENGINEERING FEE					\$93,123.00
TOTAL PROJECT COST					\$807,066.00

 **Henpeck Lane - 2020 Short Term Recommended Improvements (Henpeck Lane and Lewisburg Pike)**

 GRAPHIC SCALE

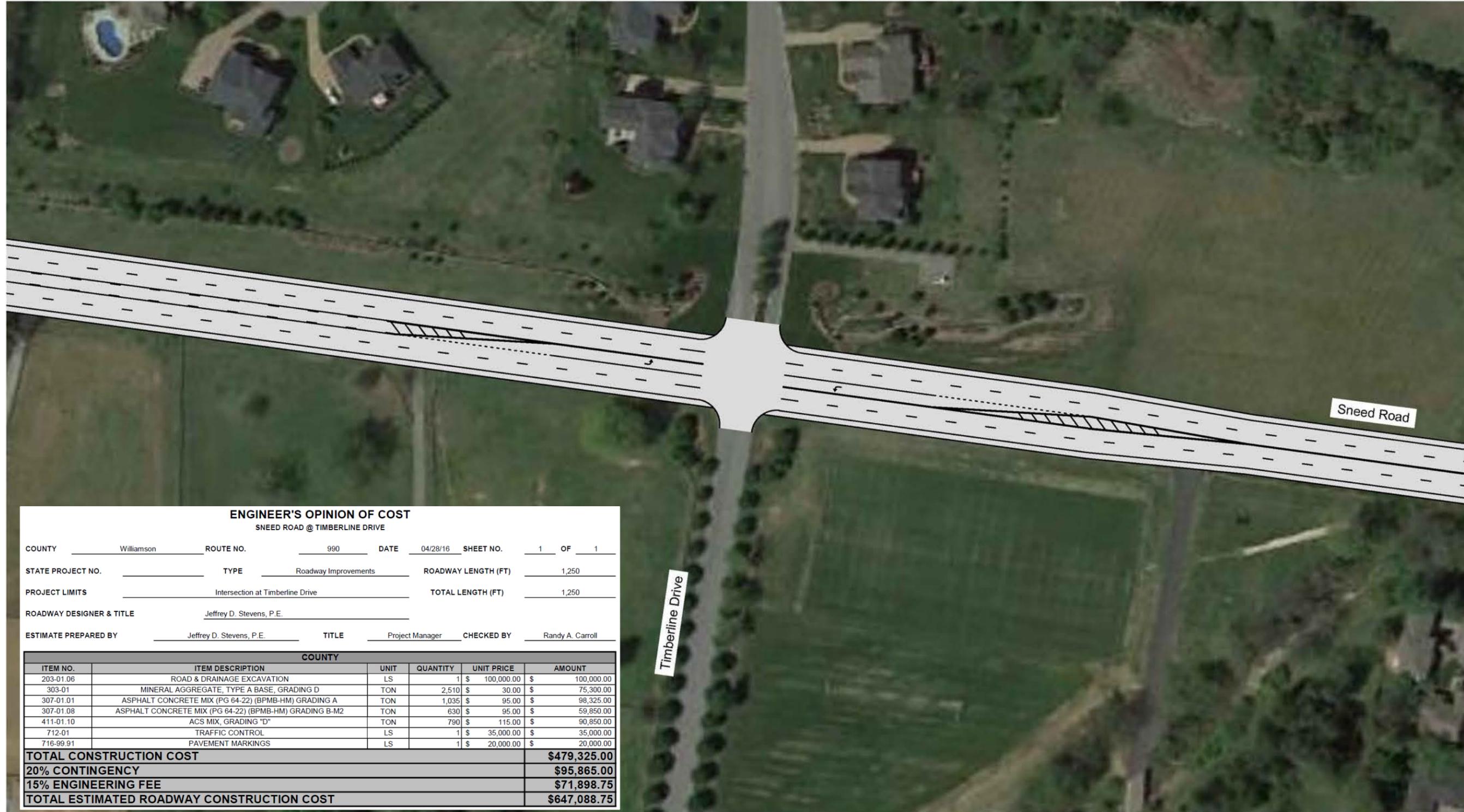
4.6 2030 IMPROVEMENTS

Corridor widening estimates precede the individual concept plans and intersection estimates for each corridor as follows:

ENGINEER'S OPINION OF COST
SNEED ROAD

COUNTY Williamson ROUTE NO. 990 DATE 05/04/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 16,520
 PROJECT LIMITS Timberline Drive to Hillsboro Road TOTAL LENGTH (FT) 16,520
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 825,000.00	\$ 825,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	62,115	\$ 30.00	\$ 1,863,450.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	20,440	\$ 95.00	\$ 1,941,800.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	15,560	\$ 95.00	\$ 1,478,200.00
411-01.10	ACS MIX, GRADING "D"	TON	8,755	\$ 115.00	\$ 1,006,825.00
712-01	TRAFFIC CONTROL	LS	1	\$ 125,000.00	\$ 125,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 200,000.00	\$ 200,000.00
	ROW ACQUISITION	LS	1	\$ 3,513,000.00	\$ 3,513,000.00
	BRIDGES	LS	1	\$ 4,817,500.00	\$ 4,817,500.00
TOTAL CONSTRUCTION COST					\$10,953,275.00
20% CONTINGENCY					\$2,190,655.00
15% ENGINEERING FEE					\$1,642,991.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$14,786,921.25



ENGINEER'S OPINION OF COST
SNEED ROAD @ TIMBERLINE DRIVE

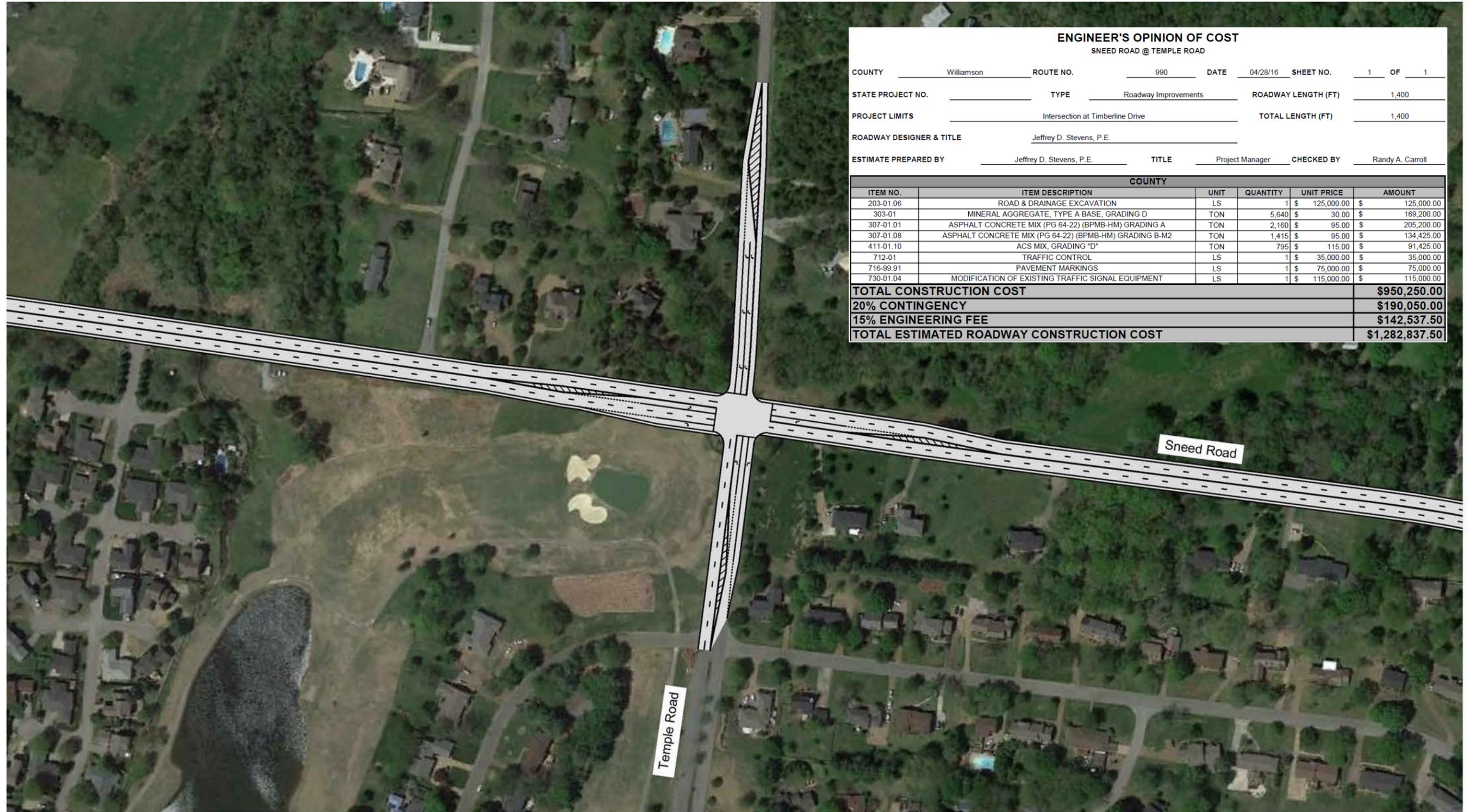
COUNTY Williamson ROUTE NO. 990 DATE 04/28/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,250
 PROJECT LIMITS Intersection at Timberline Drive TOTAL LENGTH (FT) 1,250
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	2,510	\$ 30.00	\$ 75,300.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,035	\$ 95.00	\$ 98,325.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	630	\$ 95.00	\$ 59,850.00
411-01.10	ACS MIX, GRADING "D"	TON	790	\$ 115.00	\$ 90,850.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
TOTAL CONSTRUCTION COST					\$479,325.00
20% CONTINGENCY					\$95,865.00
15% ENGINEERING FEE					\$71,898.75
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$647,088.75



Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Timberline Drive)





ENGINEER'S OPINION OF COST
SNEED ROAD @ TEMPLE ROAD

COUNTY Williamson ROUTE NO. 990 DATE 04/28/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,400

PROJECT LIMITS Intersection at Timberline Drive TOTAL LENGTH (FT) 1,400

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

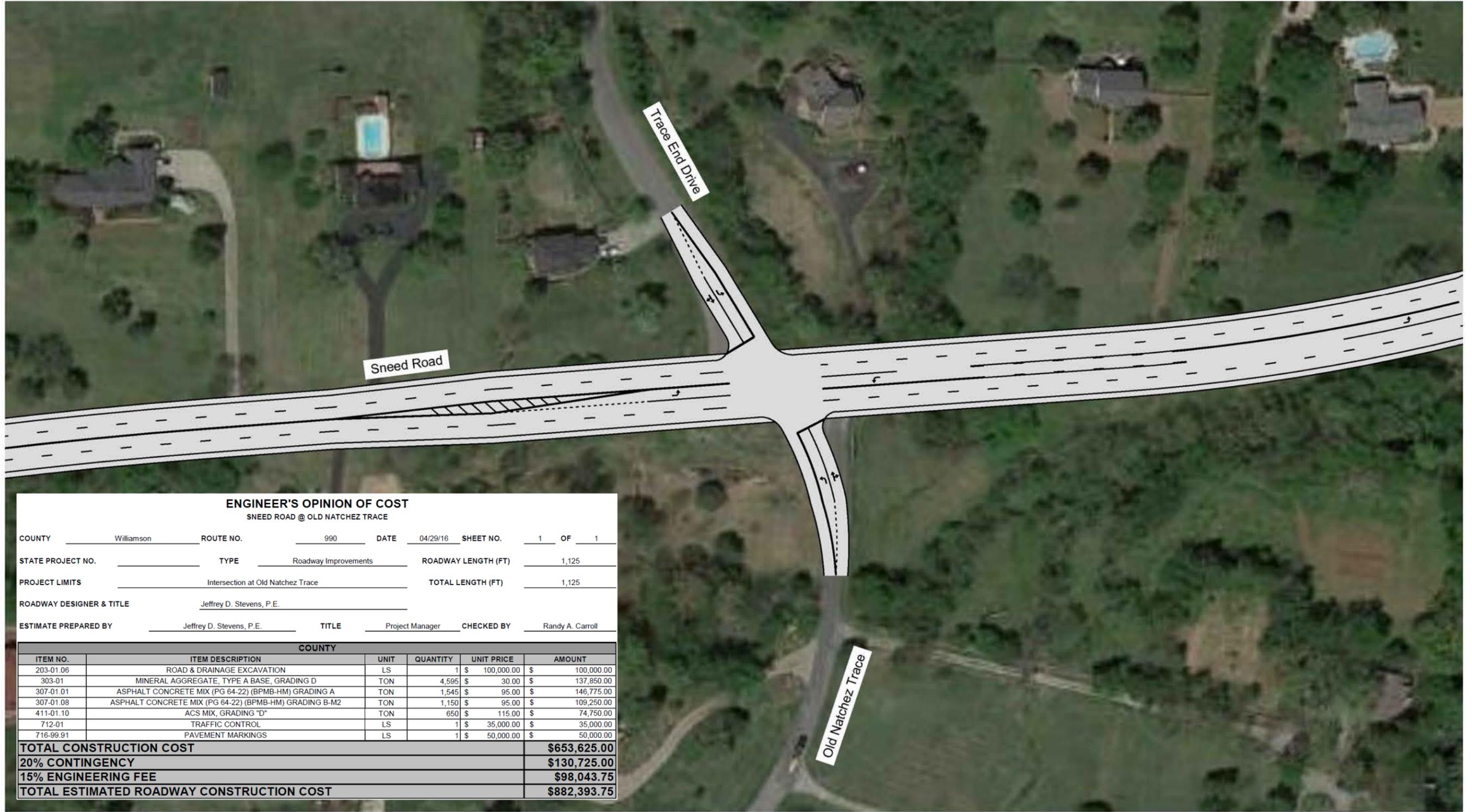
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 125,000.00	\$ 125,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	5,640	\$ 30.00	\$ 169,200.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	2,160	\$ 95.00	\$ 205,200.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,415	\$ 95.00	\$ 134,425.00
411-01.10	ACS MIX, GRADING "D"	TON	795	\$ 115.00	\$ 91,425.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 75,000.00	\$ 75,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
TOTAL CONSTRUCTION COST					\$950,250.00
20% CONTINGENCY					\$190,050.00
15% ENGINEERING FEE					\$142,537.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,282,837.50



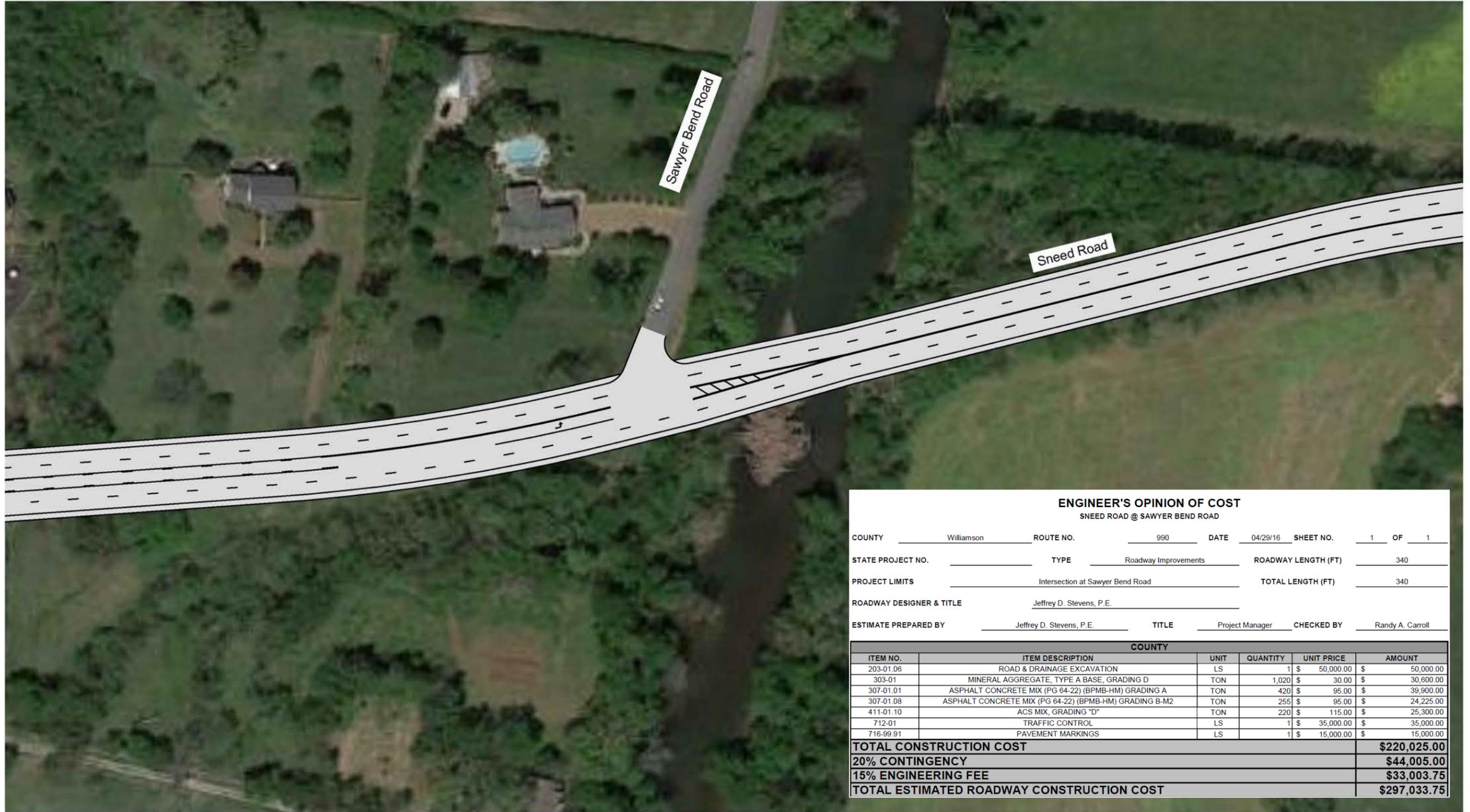
Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Temple Road)





Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Old Natchez Trace)





ENGINEER'S OPINION OF COST
SNEED ROAD @ SAWYER BEND ROAD

COUNTY Williamson ROUTE NO. 990 DATE 04/29/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 340

PROJECT LIMITS Intersection at Sawyer Bend Road TOTAL LENGTH (FT) 340

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,020	\$ 30.00	\$ 30,600.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	420	\$ 95.00	\$ 39,900.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	255	\$ 95.00	\$ 24,225.00
411-01.10	ACS MIX, GRADING "D"	TON	220	\$ 115.00	\$ 25,300.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$220,025.00
20% CONTINGENCY					\$44,005.00
15% ENGINEERING FEE					\$33,003.75
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$297,033.75



Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Sawyer Bend Road)

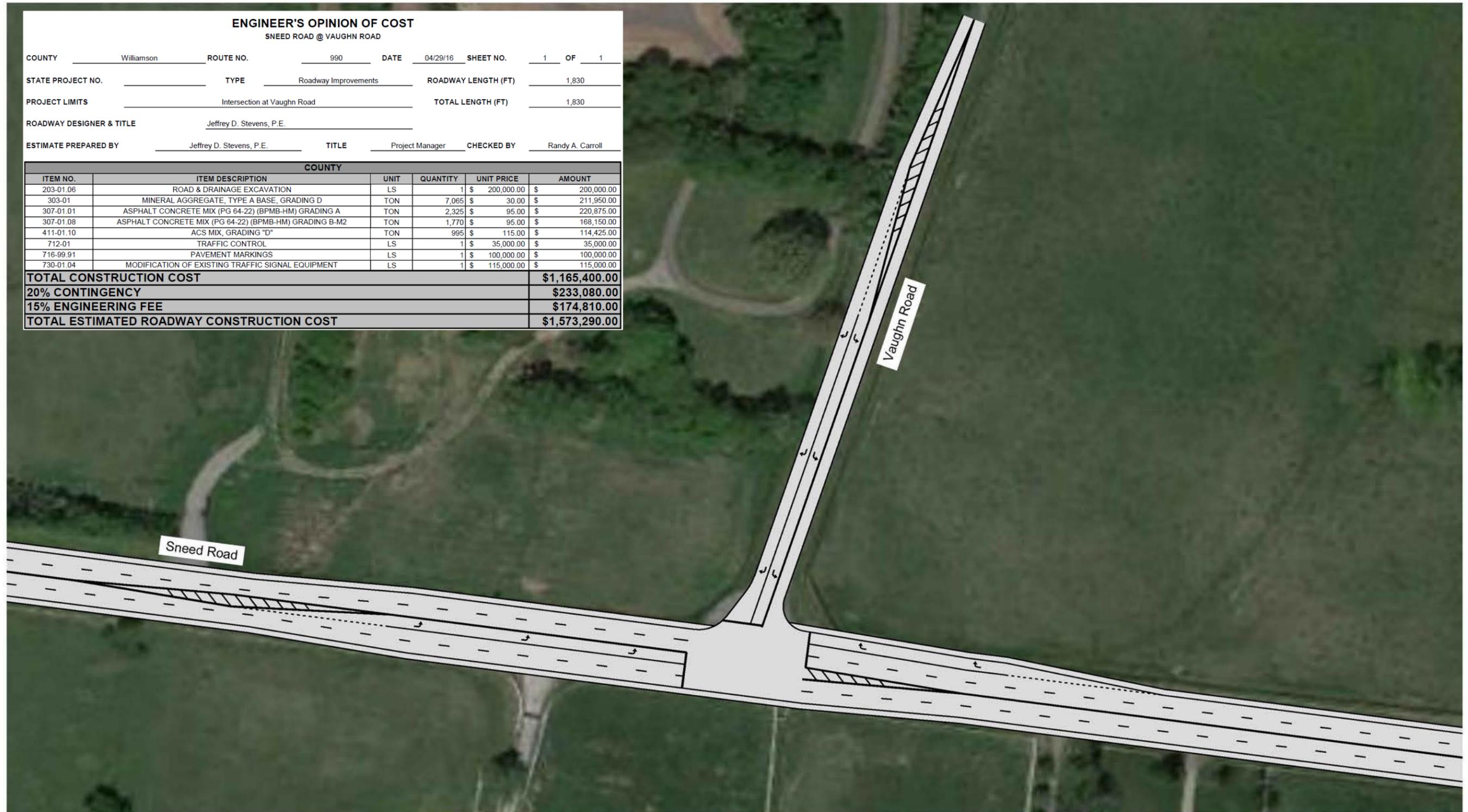


ENGINEER'S OPINION OF COST

SNEED ROAD @ VAUGHN ROAD

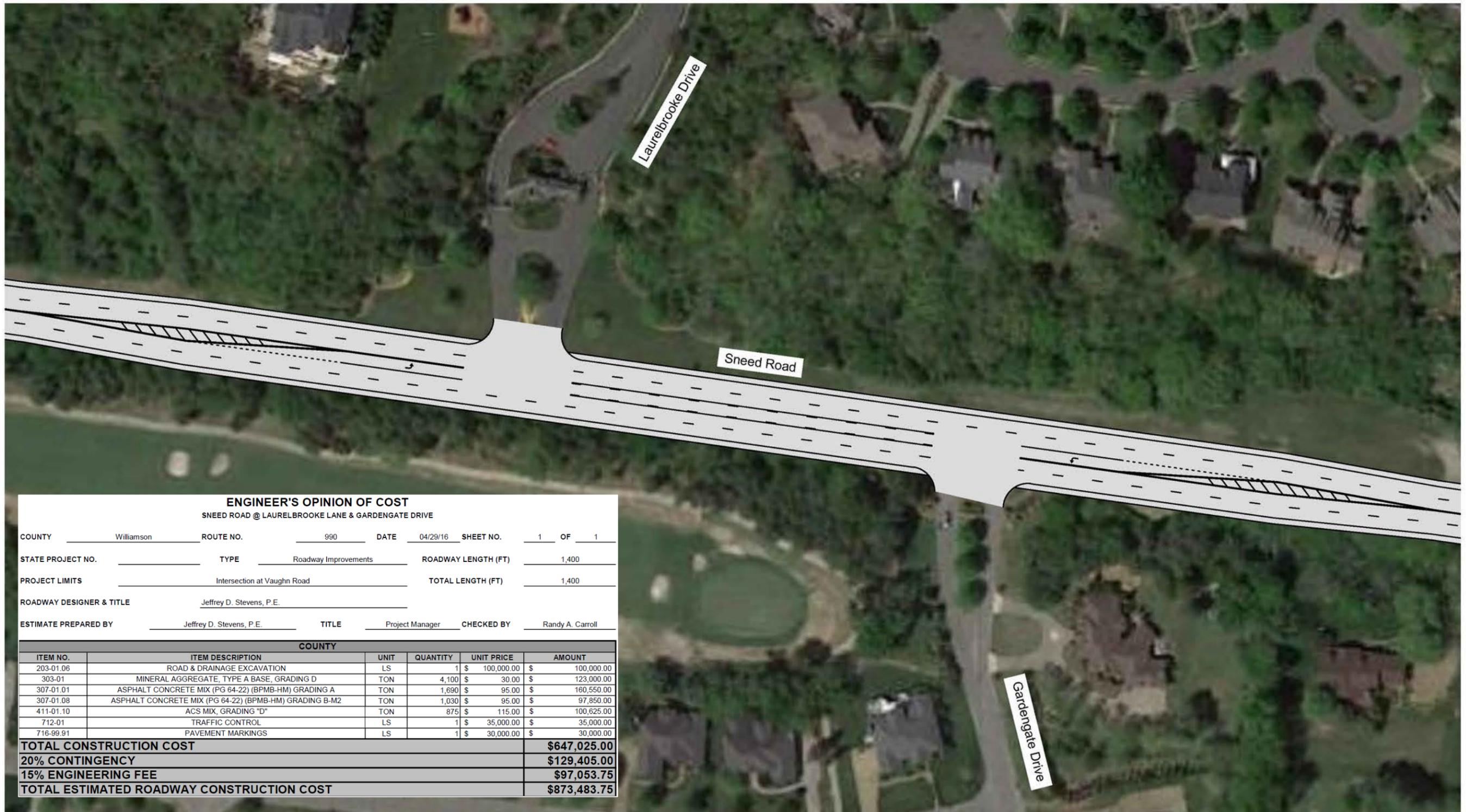
COUNTY Williamson ROUTE NO. 990 DATE 04/29/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,830
 PROJECT LIMITS Intersection at Vaughn Road TOTAL LENGTH (FT) 1,830
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 200,000.00	\$ 200,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	7,065	\$ 30.00	\$ 211,950.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	2,325	\$ 95.00	\$ 220,875.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,770	\$ 95.00	\$ 168,150.00
411-01.10	ACS MIX, GRADING "D"	TON	995	\$ 115.00	\$ 114,425.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 100,000.00	\$ 100,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
TOTAL CONSTRUCTION COST					\$1,165,400.00
20% CONTINGENCY					\$233,080.00
15% ENGINEERING FEE					\$174,810.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,573,290.00



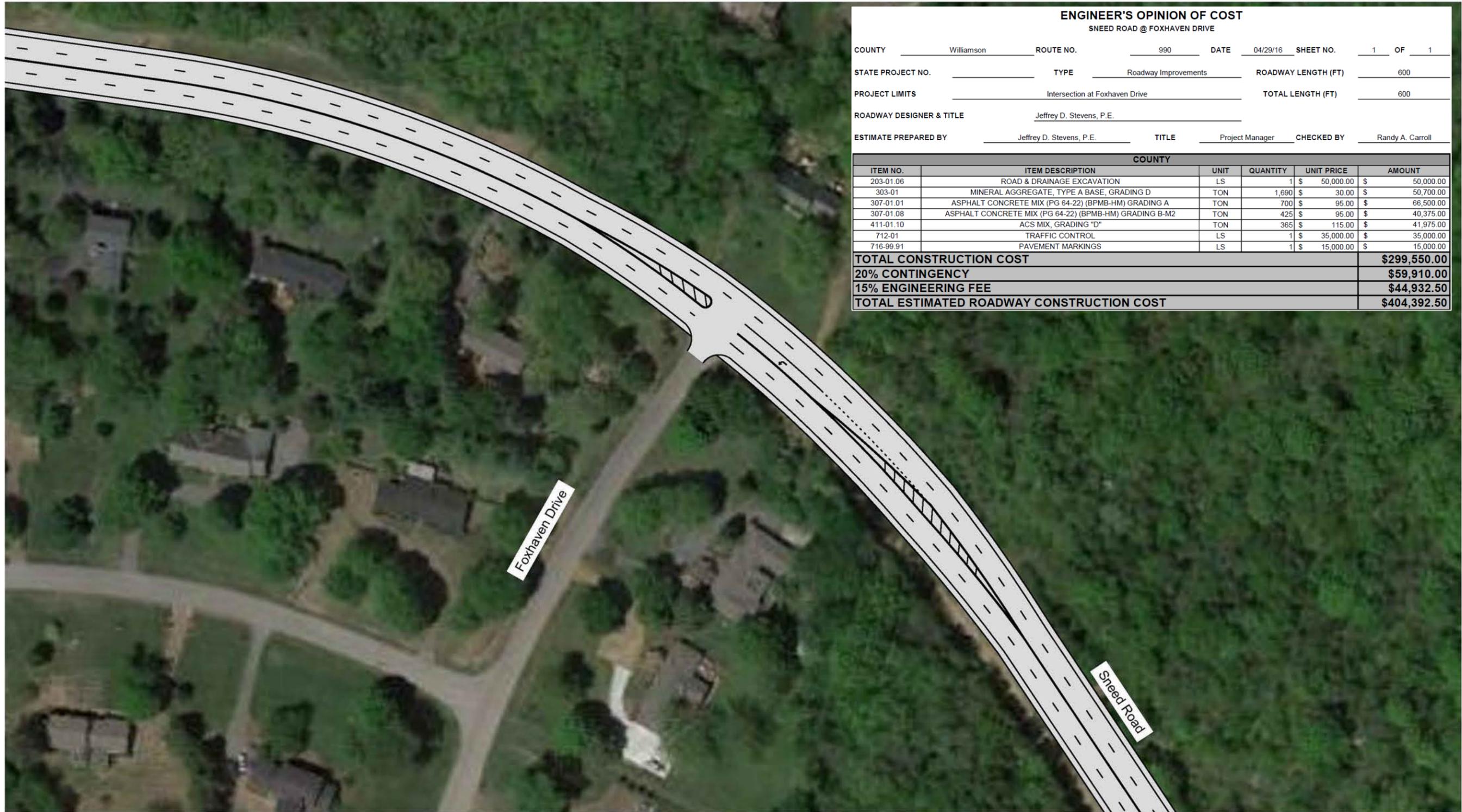
Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Vaughn Road)





Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Gardengate Drive / Laurelbrooke Drive)





ENGINEER'S OPINION OF COST
SNEED ROAD @ FOXHAVEN DRIVE

COUNTY Williamson ROUTE NO. 990 DATE 04/29/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 600

PROJECT LIMITS Intersection at Foxhaven Drive TOTAL LENGTH (FT) 600

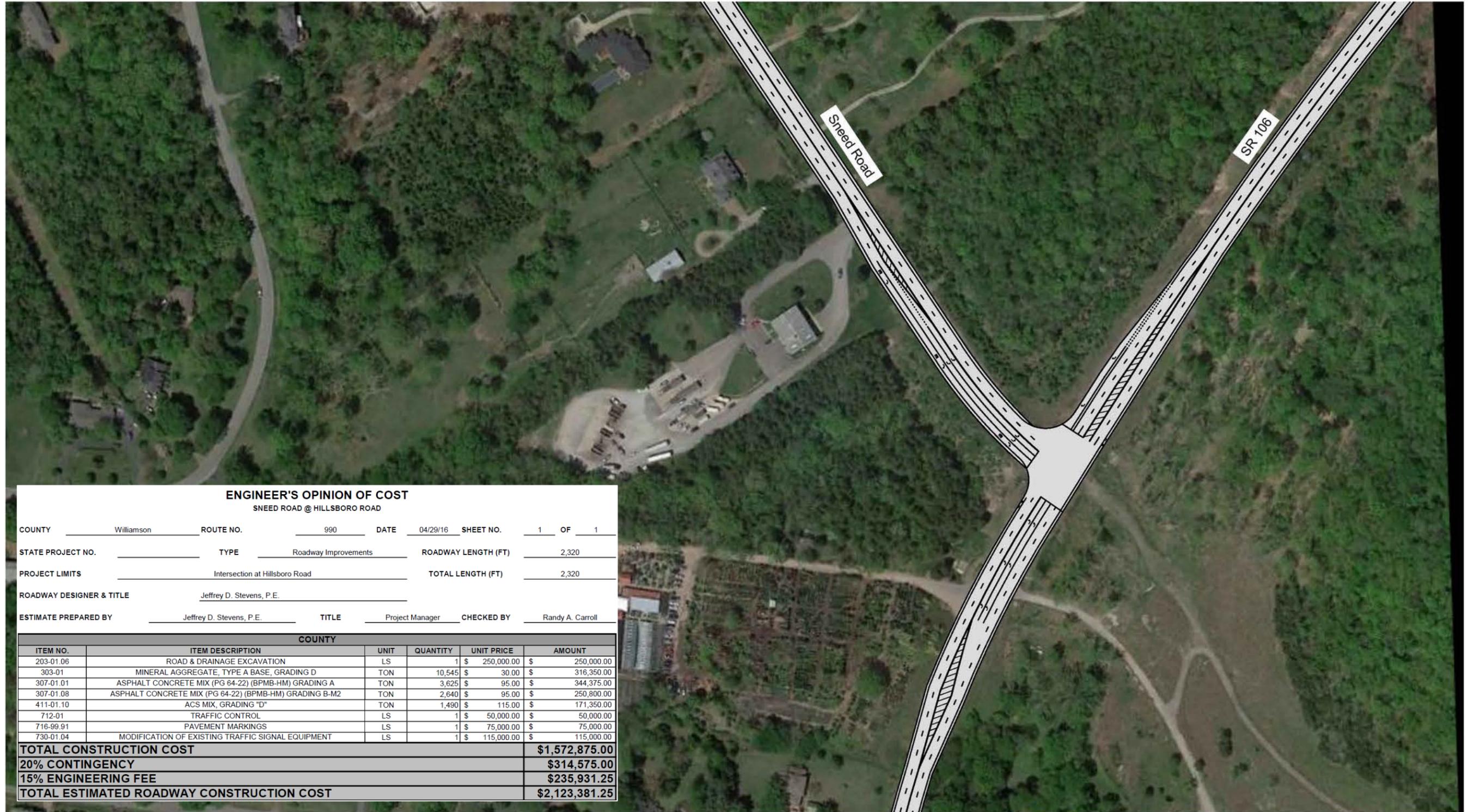
ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,690	\$ 30.00	\$ 50,700.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	700	\$ 95.00	\$ 66,500.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	425	\$ 95.00	\$ 40,375.00
411-01.10	ACS MIX, GRADING "D"	TON	365	\$ 115.00	\$ 41,975.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$299,550.00
20% CONTINGENCY					\$59,910.00
15% ENGINEERING FEE					\$44,932.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$404,392.50

 **Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and Foxhaven Drive)**

 GRAPHIC SCALE



ENGINEER'S OPINION OF COST
SNEED ROAD @ HILLSBORO ROAD

COUNTY Williamson ROUTE NO. 990 DATE 04/29/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,320
 PROJECT LIMITS Intersection at Hillsboro Road TOTAL LENGTH (FT) 2,320
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 250,000.00	\$ 250,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	10,545	\$ 30.00	\$ 316,350.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,625	\$ 95.00	\$ 344,375.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	2,640	\$ 95.00	\$ 250,800.00
411-01.10	ACS MIX, GRADING "D"	TON	1,490	\$ 115.00	\$ 171,350.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 75,000.00	\$ 75,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
TOTAL CONSTRUCTION COST					\$1,572,875.00
20% CONTINGENCY					\$314,575.00
15% ENGINEERING FEE					\$235,931.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$2,123,381.25



Sneed Road - 2030 Long Term Recommended Improvements (Sneed Road and SR 106)

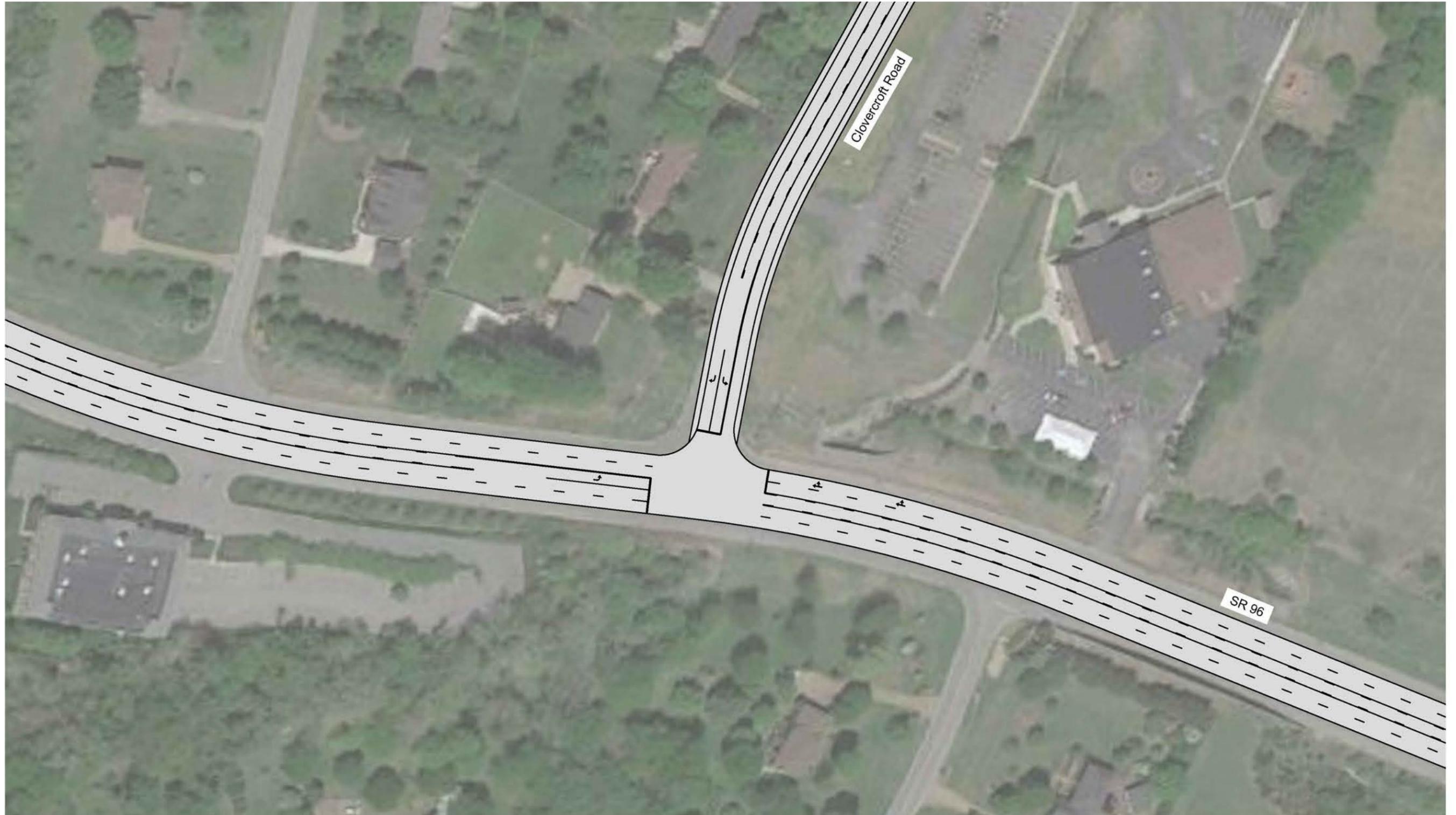


ENGINEER'S OPINION OF COST

CLOVERCROFT ROAD

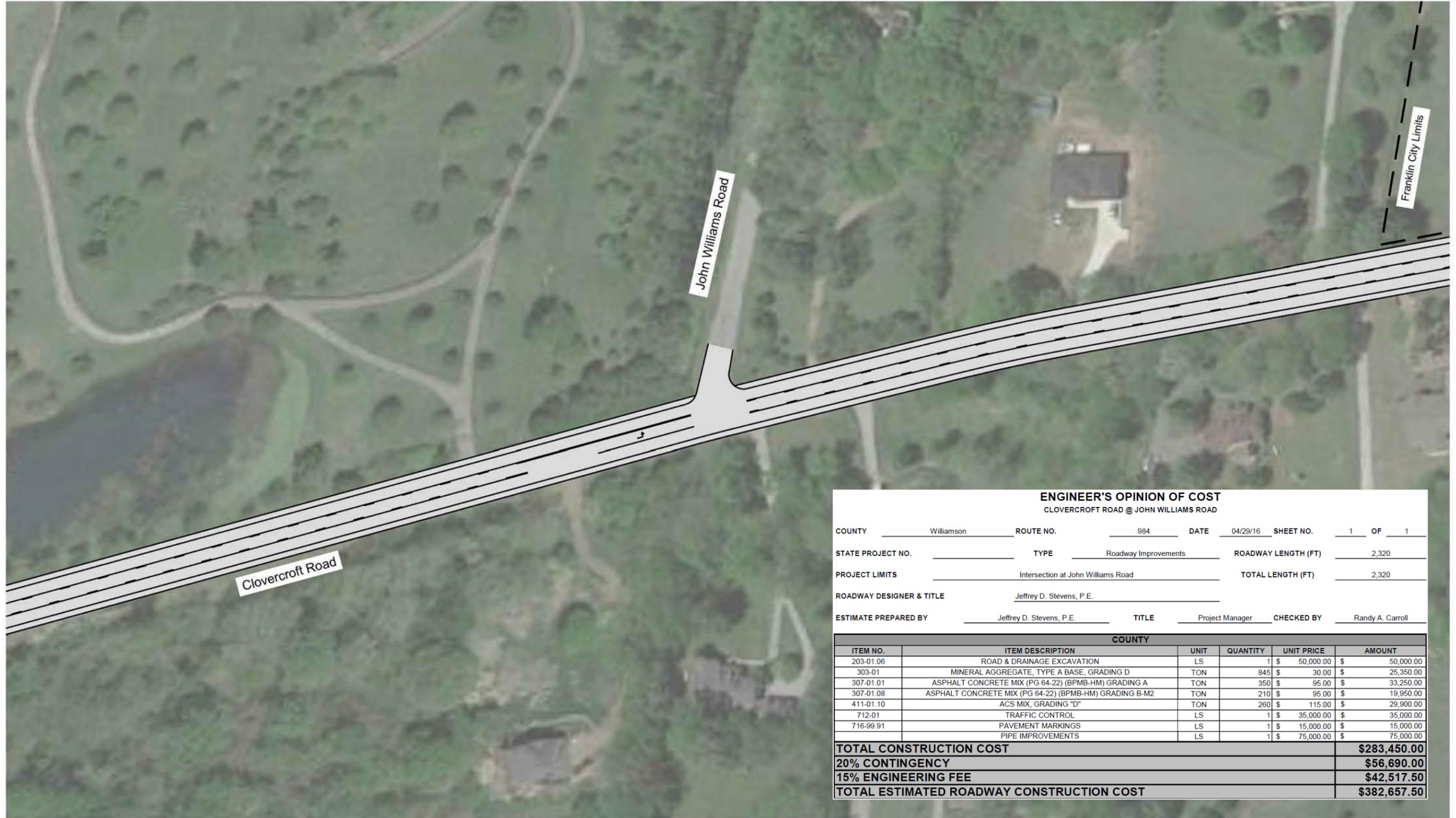
COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 31,710
 PROJECT LIMITS Murfreesboro Road to Nolensville Town Limits TOTAL LENGTH (FT) 31,710
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 2,400,000.00	\$ 2,400,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	124,760	\$ 30.00	\$ 3,742,800.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	41,530	\$ 95.00	\$ 3,945,350.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	31,270	\$ 95.00	\$ 2,970,650.00
411-01.10	ACS MIX, GRADING "D"	TON	17,600	\$ 115.00	\$ 2,024,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 150,000.00	\$ 150,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 700,000.00	\$ 700,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 225,000.00	\$ 225,000.00
	ROW ACQUISITION	LS	1	\$ 2,916,000.00	\$ 2,916,000.00
					\$19,073,800.00
20% CONTINGENCY					\$3,814,760.00
15% ENGINEERING FEE					\$2,861,070.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$25,749,630.00



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and SR 96)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ JOHN WILLIAMS ROAD

COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,320

PROJECT LIMITS Intersection at John Williams Road TOTAL LENGTH (FT) 2,320

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

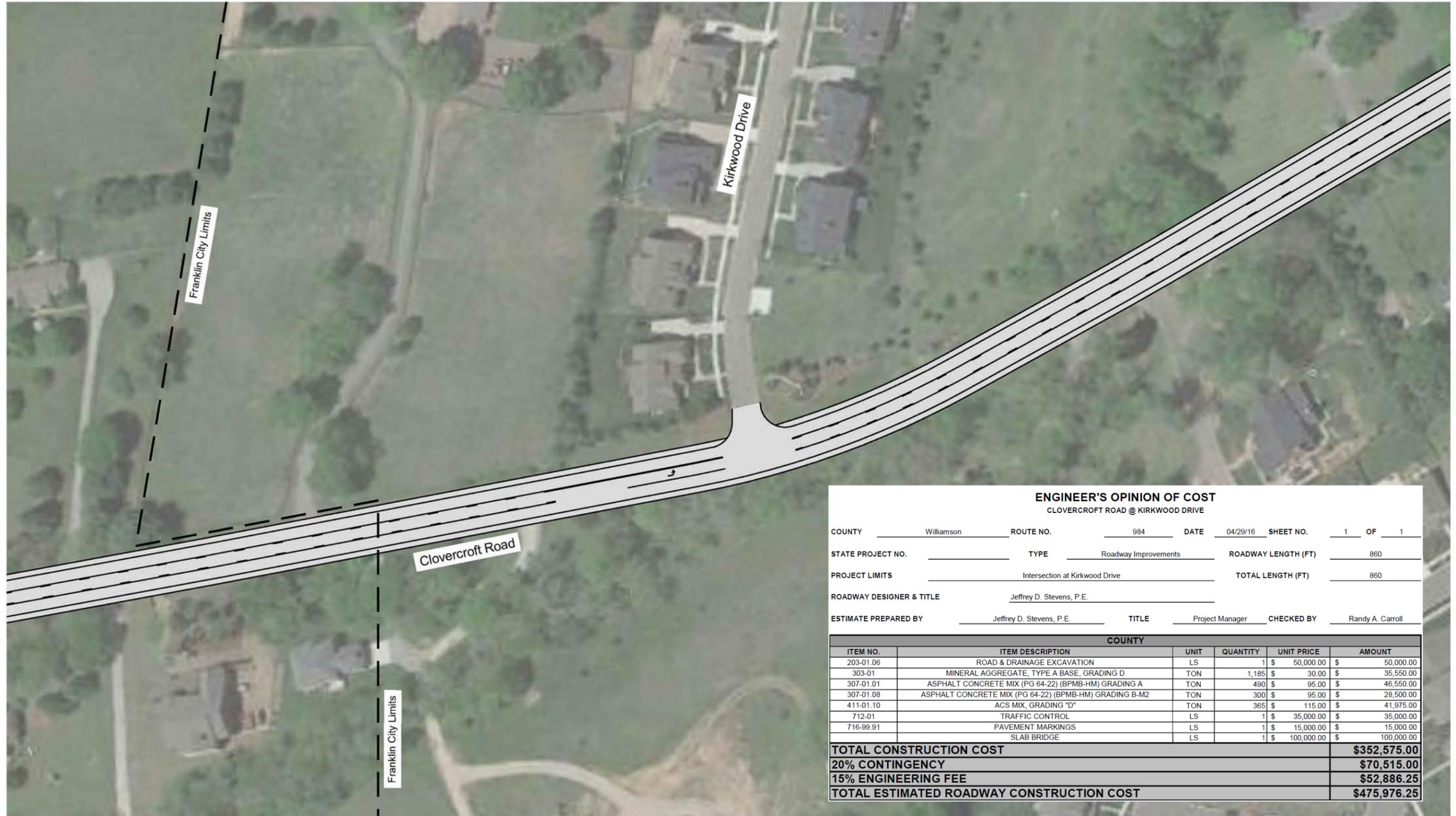
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	845	\$ 30.00	\$ 25,350.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	350	\$ 95.00	\$ 33,250.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	210	\$ 95.00	\$ 19,950.00
411-01.10	ACS MIX, GRADING "D"	TON	260	\$ 115.00	\$ 29,900.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTION COST					\$283,450.00
20% CONTINGENCY					\$56,690.00
15% ENGINEERING FEE					\$42,517.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$382,657.50



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and John Williams Road)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ KIRKWOOD DRIVE

COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 860

PROJECT LIMITS Intersection at Kirkwood Drive TOTAL LENGTH (FT) 860

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY						
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$	50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,185	\$ 30.00	\$	35,550.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	490	\$ 95.00	\$	46,550.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	300	\$ 95.00	\$	28,500.00
411-01.10	ACS MIX, GRADING "D"	TON	365	\$ 115.00	\$	41,975.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$	35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$	15,000.00
	SLAB BRIDGE	LS	1	\$ 100,000.00	\$	100,000.00
TOTAL CONSTRUCTION COST						\$352,575.00
20% CONTINGENCY						\$70,515.00
15% ENGINEERING FEE						\$52,886.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST						\$475,976.25



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Kirkwood Drive)



ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ OXFORD GLEN AND VERDE MEADOW DRIVE

COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1

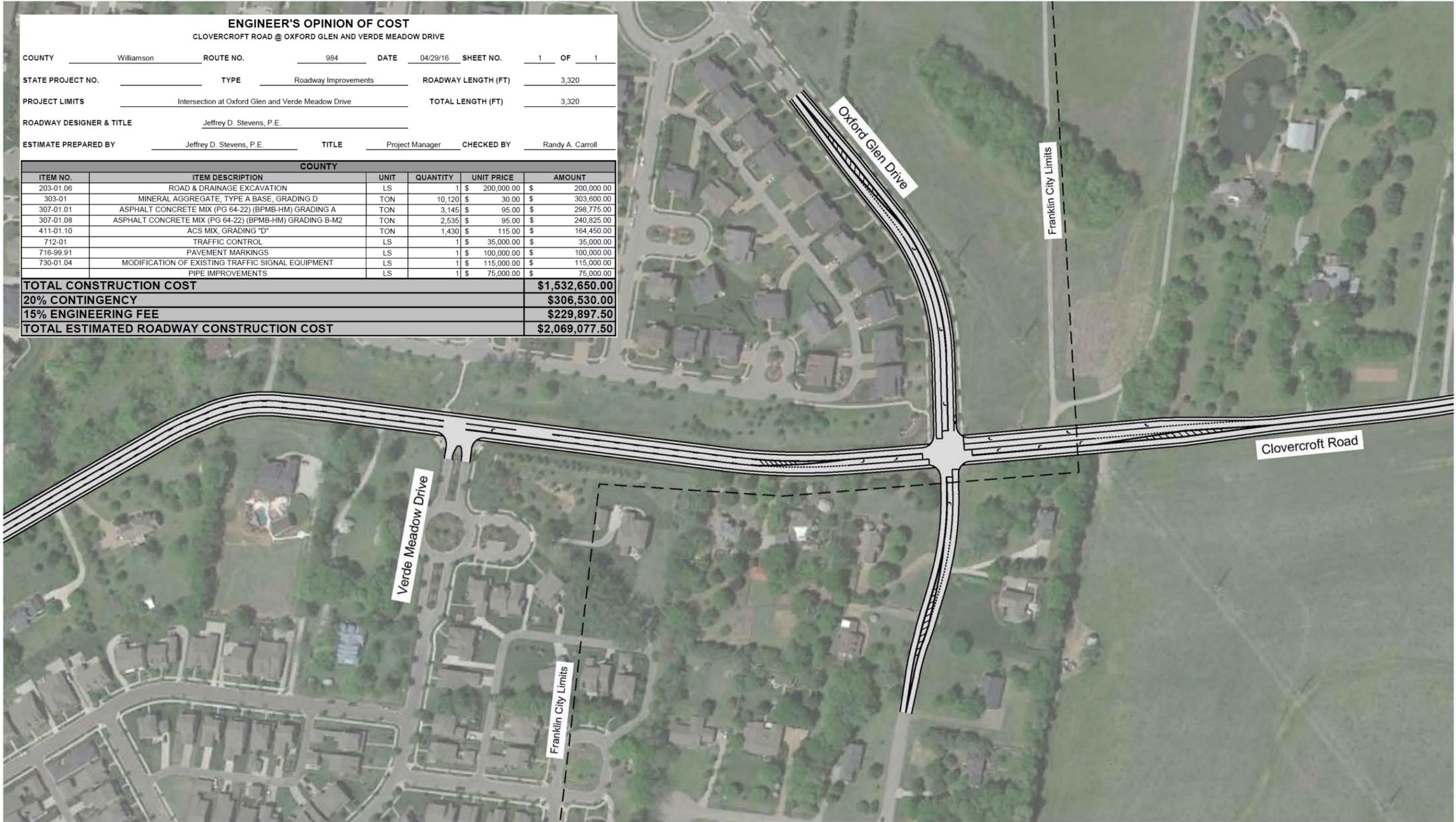
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 3,320

PROJECT LIMITS Intersection at Oxford Glen and Verde Meadow Drive TOTAL LENGTH (FT) 3,320

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 200,000.00	\$ 200,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	10,120	\$ 30.00	\$ 303,600.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,145	\$ 95.00	\$ 298,775.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	2,535	\$ 95.00	\$ 240,825.00
411-01.10	ACS MIX, GRADING "D"	TON	1,430	\$ 115.00	\$ 164,450.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 100,000.00	\$ 100,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTION COST					\$1,532,650.00
20% CONTINGENCY					\$306,530.00
15% ENGINEERING FEE					\$229,897.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$2,069,077.50



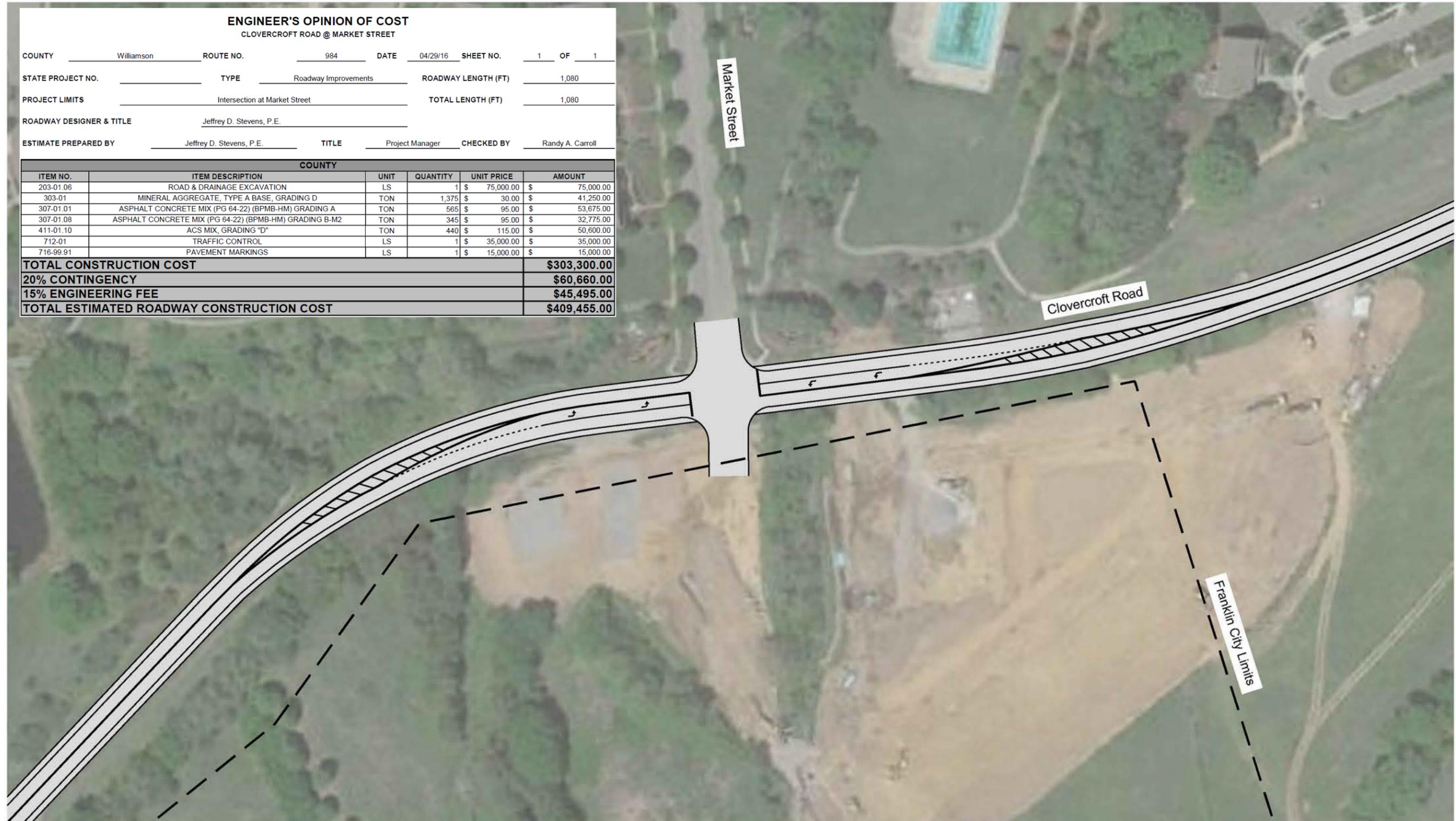
Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Oxford Glen Drive / Verde Meadow Drive)



ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ MARKET STREET

COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,080
 PROJECT LIMITS Intersection at Market Street TOTAL LENGTH (FT) 1,080
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,375	\$ 30.00	\$ 41,250.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	565	\$ 95.00	\$ 53,675.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	345	\$ 95.00	\$ 32,775.00
411-01.10	ACS MIX, GRADING "D"	TON	440	\$ 115.00	\$ 50,600.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$303,300.00
20% CONTINGENCY					\$60,660.00
15% ENGINEERING FEE					\$45,495.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$409,455.00



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Market Street)





ENGINEER'S OPINION OF COST

CLOVERCROFT ROAD @ WILSON PIKE (SOUTH INTERSECTION)

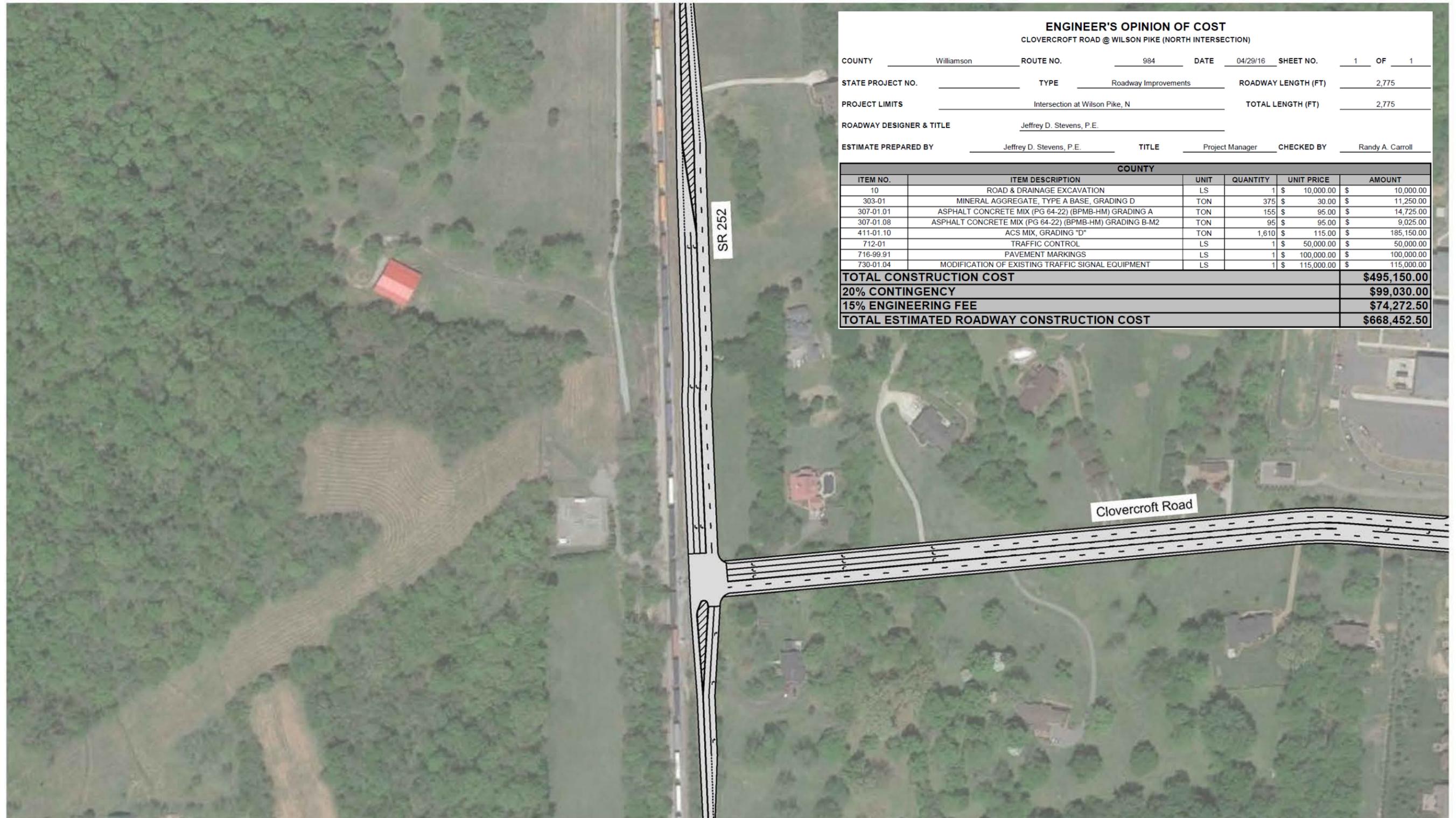
COUNTY Williamson ROUTE NO. 984 DATE 04/29/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,640
 PROJECT LIMITS Intersection at Wilson Pike, S TOTAL LENGTH (FT) 1,640
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
411-01.10	ACS MIX, GRADING "D"	TON	660	\$ 115.00	\$ 75,900.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 35,000.00	\$ 35,000.00
730-01	TRAFFIC SIGNALS	LS	1	\$ 175,000.00	\$ 175,000.00
TOTAL CONSTRUCTION COST					\$335,900.00
20% CONTINGENCY					\$67,180.00
15% ENGINEERING FEE					\$50,385.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$453,465.00



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and SR 252 South)



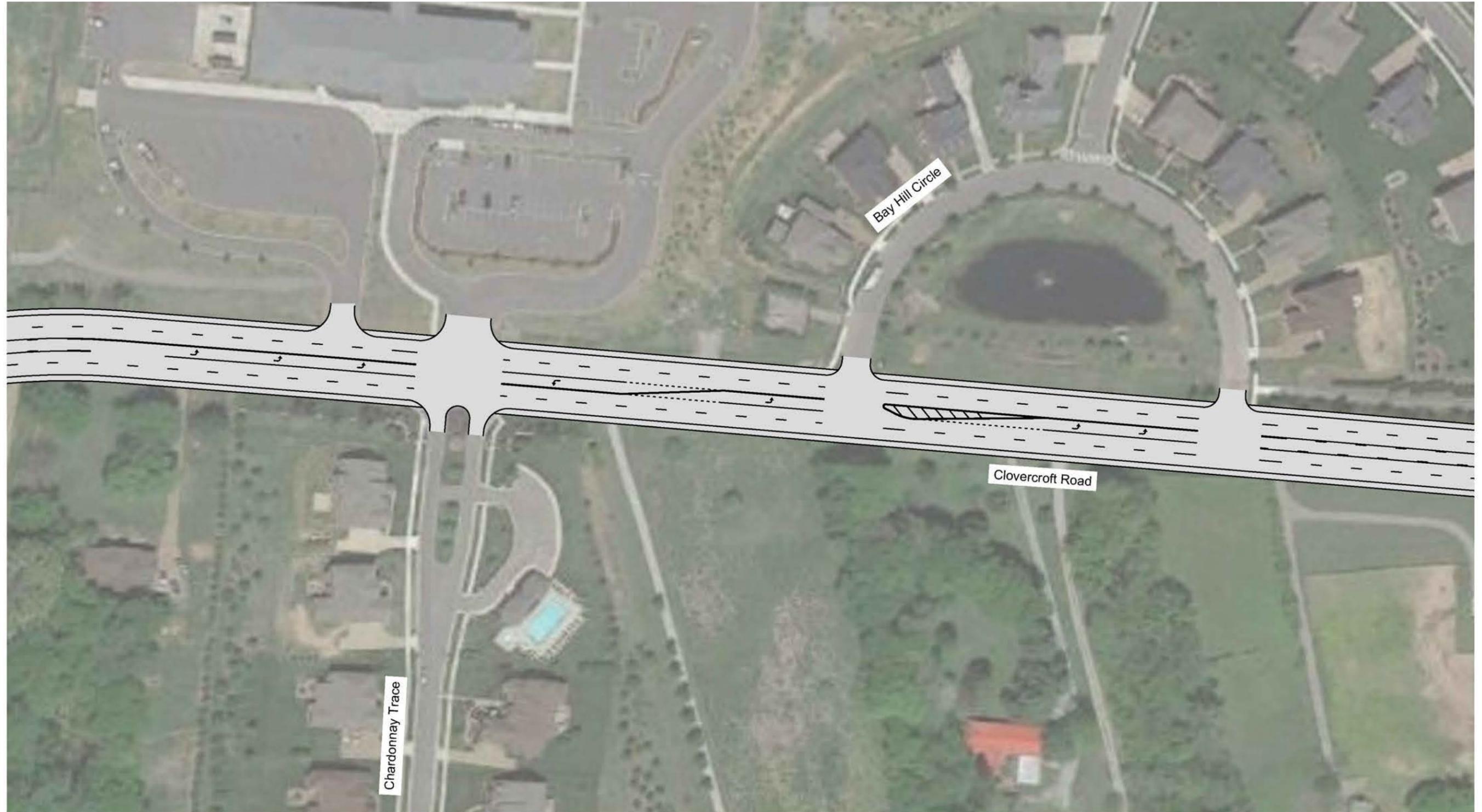


ENGINEER'S OPINION OF COST					
CLOVERCROFT ROAD @ WILSON PIKE (NORTH INTERSECTION)					
COUNTY	Williamson	ROUTE NO.	984	DATE	04/29/16 SHEET NO. 1 OF 1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	2,775
PROJECT LIMITS	Intersection at Wilson Pike, N			TOTAL LENGTH (FT)	2,775
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
10	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 10,000.00	\$ 10,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	375	\$ 30.00	\$ 11,250.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	155	\$ 95.00	\$ 14,725.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	95	\$ 95.00	\$ 9,025.00
411-01.10	ACS MIX, GRADING "D"	TON	1,610	\$ 115.00	\$ 185,150.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 100,000.00	\$ 100,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
TOTAL CONSTRUCTION COST					\$495,150.00
20% CONTINGENCY					\$99,030.00
15% ENGINEERING FEE					\$74,272.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$668,452.50



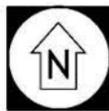
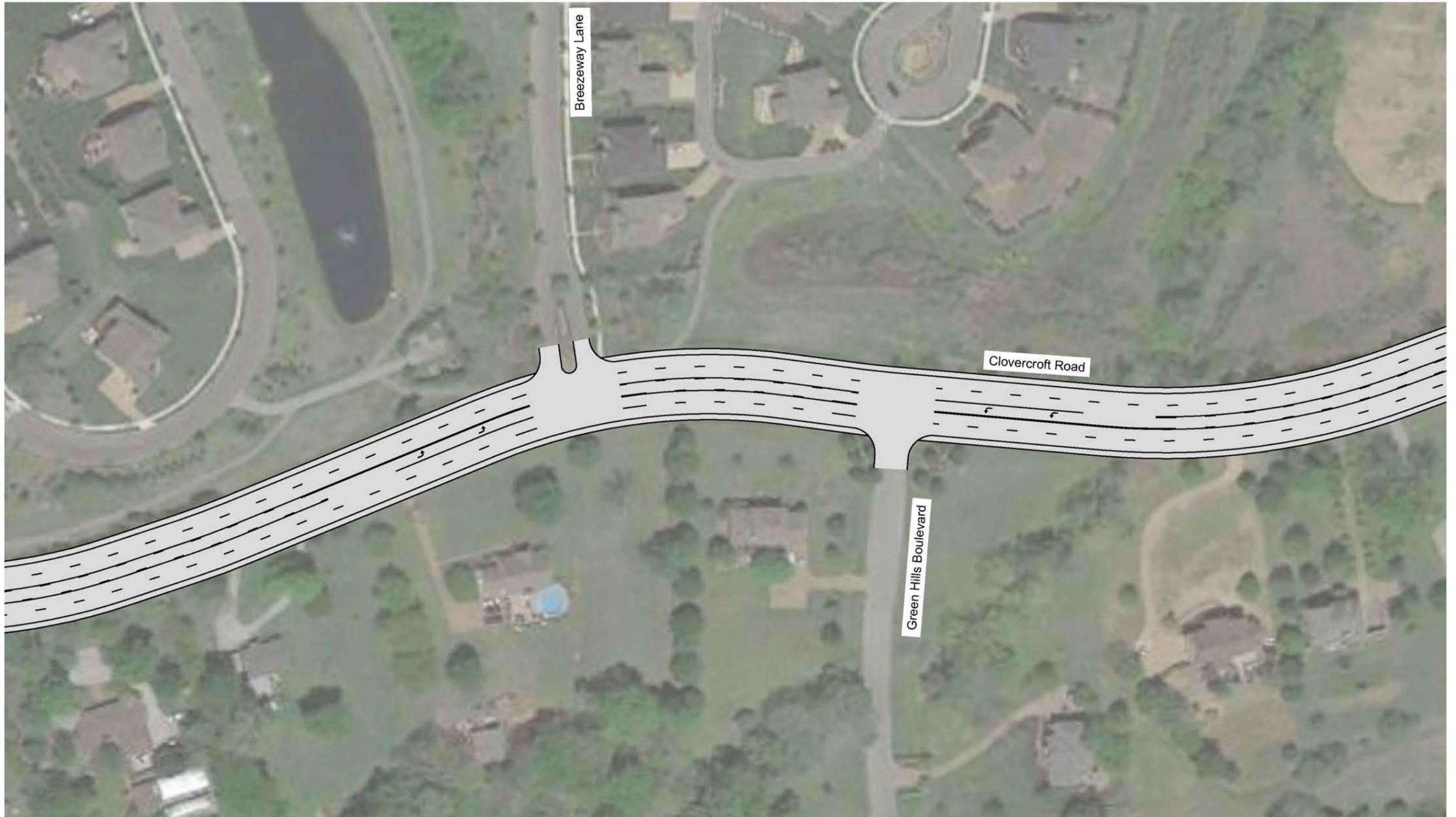
Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and SR 252 North)





Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Chardonmay Trace / Bay Hill Circle)





Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Breezeway Lane / Green Hills Boulevard)

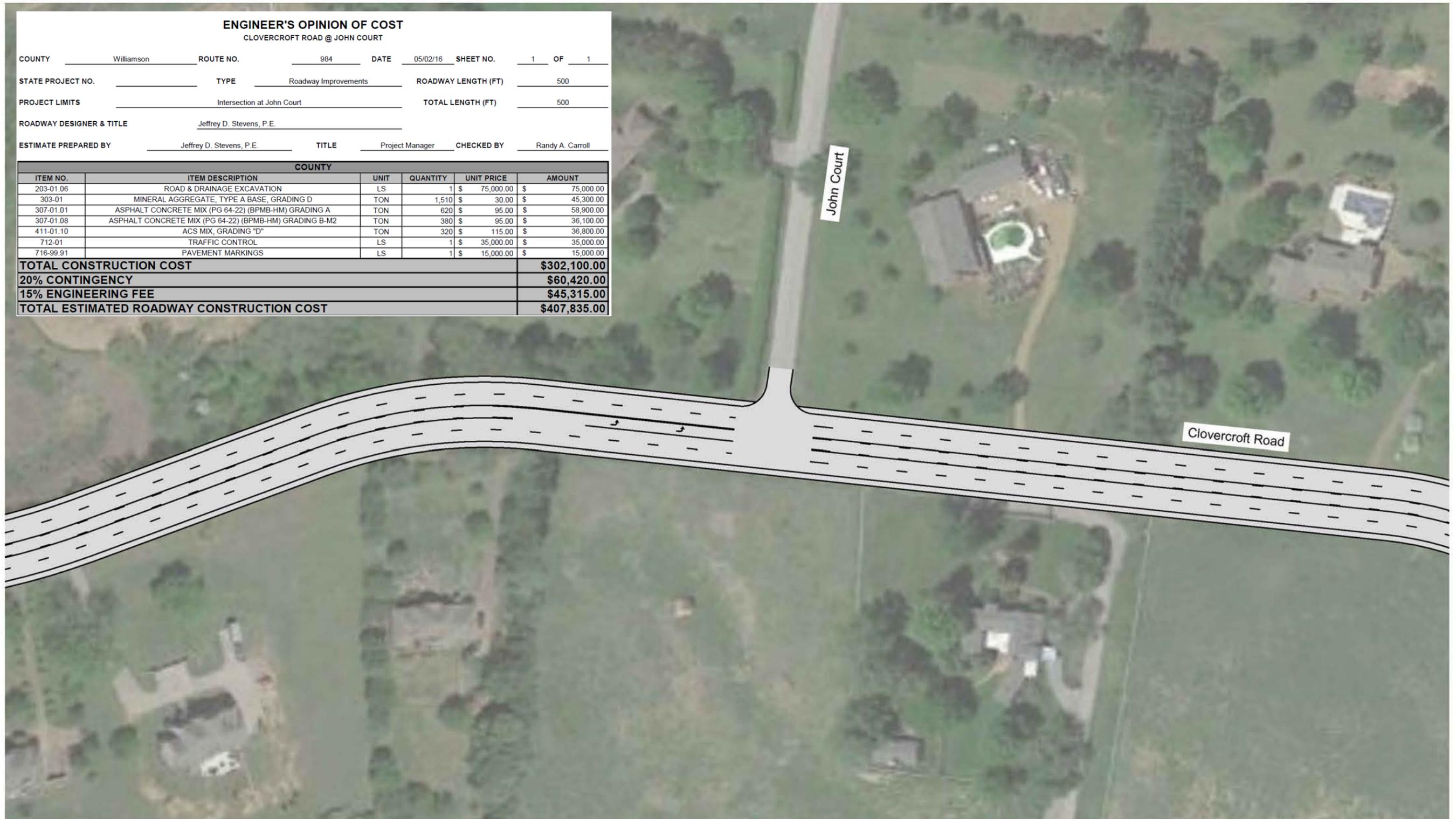


ENGINEER'S OPINION OF COST

CLOVERCROFT ROAD @ CHARDONNAY TRACE TO BREEZEWAY LANE

COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,200
 PROJECT LIMITS Intersection at Chardonay Trace to Intersection @ Breezeway Lane TOTAL LENGTH (FT) 2,200
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 200,000.00	\$ 200,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	9,925	\$ 30.00	\$ 297,750.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,405	\$ 95.00	\$ 323,475.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	2,485	\$ 95.00	\$ 236,075.00
411-01.10	ACS MIX, GRADING "D"	TON	1,400	\$ 115.00	\$ 161,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 100,000.00	\$ 100,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTION COST					\$1,428,300.00
20% CONTINGENCY					\$285,660.00
15% ENGINEERING FEE					\$214,245.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,928,205.00



ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ JOHN COURT

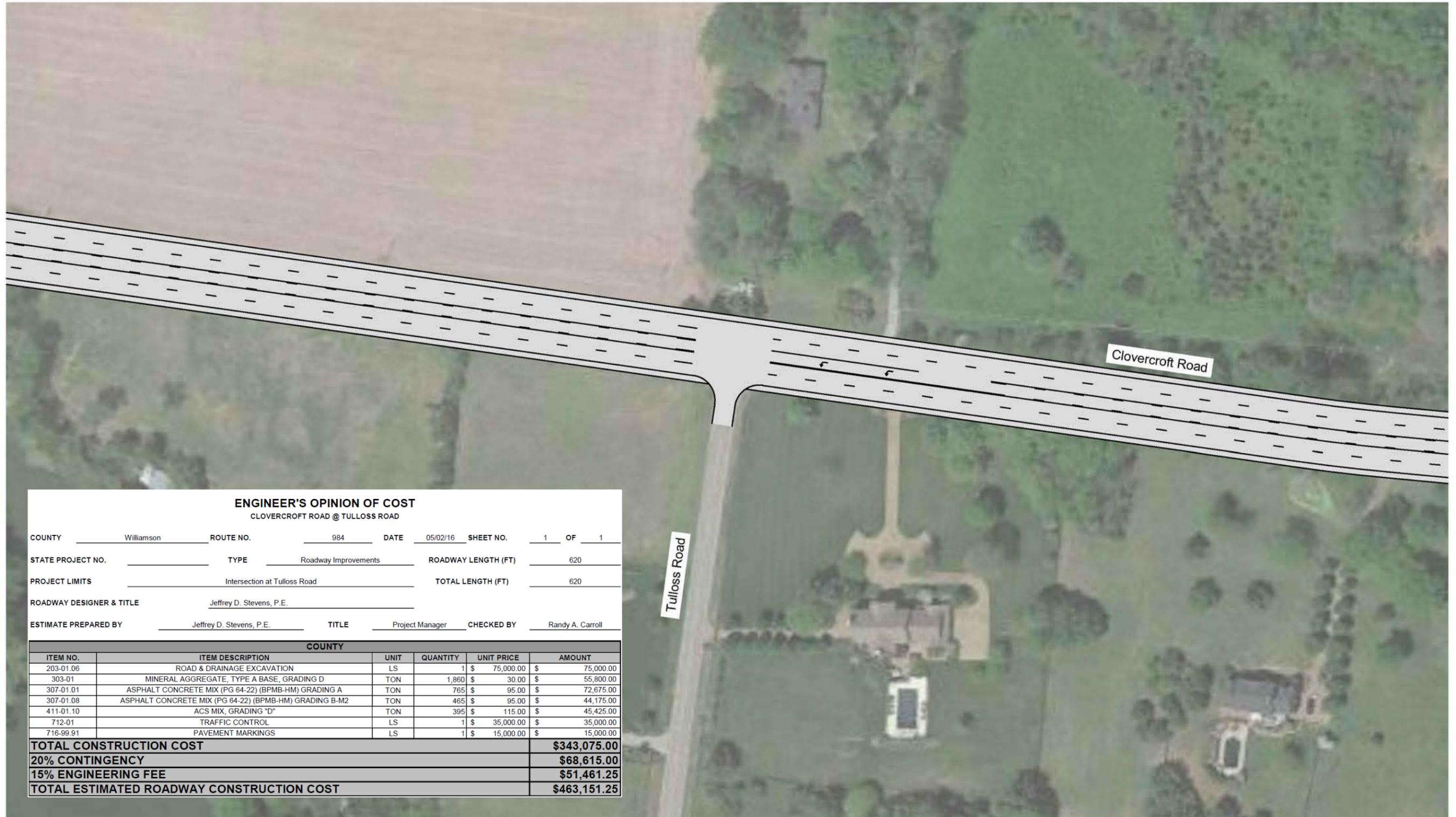
COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 500
 PROJECT LIMITS Intersection at John Court TOTAL LENGTH (FT) 500
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,510	\$ 30.00	\$ 45,300.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	620	\$ 95.00	\$ 58,900.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	380	\$ 95.00	\$ 36,100.00
411-01.10	ACS MIX, GRADING "D"	TON	320	\$ 115.00	\$ 36,800.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$302,100.00
20% CONTINGENCY					\$60,420.00
15% ENGINEERING FEE					\$45,315.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$407,835.00



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and John Court)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ TULLOSS ROAD

COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 620
 PROJECT LIMITS Intersection at Tulloss Road TOTAL LENGTH (FT) 620
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,860	\$ 30.00	\$ 55,800.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	765	\$ 95.00	\$ 72,675.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	465	\$ 95.00	\$ 44,175.00
411-01.10	ACS MIX, GRADING "D"	TON	395	\$ 115.00	\$ 45,425.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$343,075.00
20% CONTINGENCY					\$68,615.00
15% ENGINEERING FEE					\$51,461.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$463,151.25



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Tulloss Road)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ BELLE BROOK DRIVE

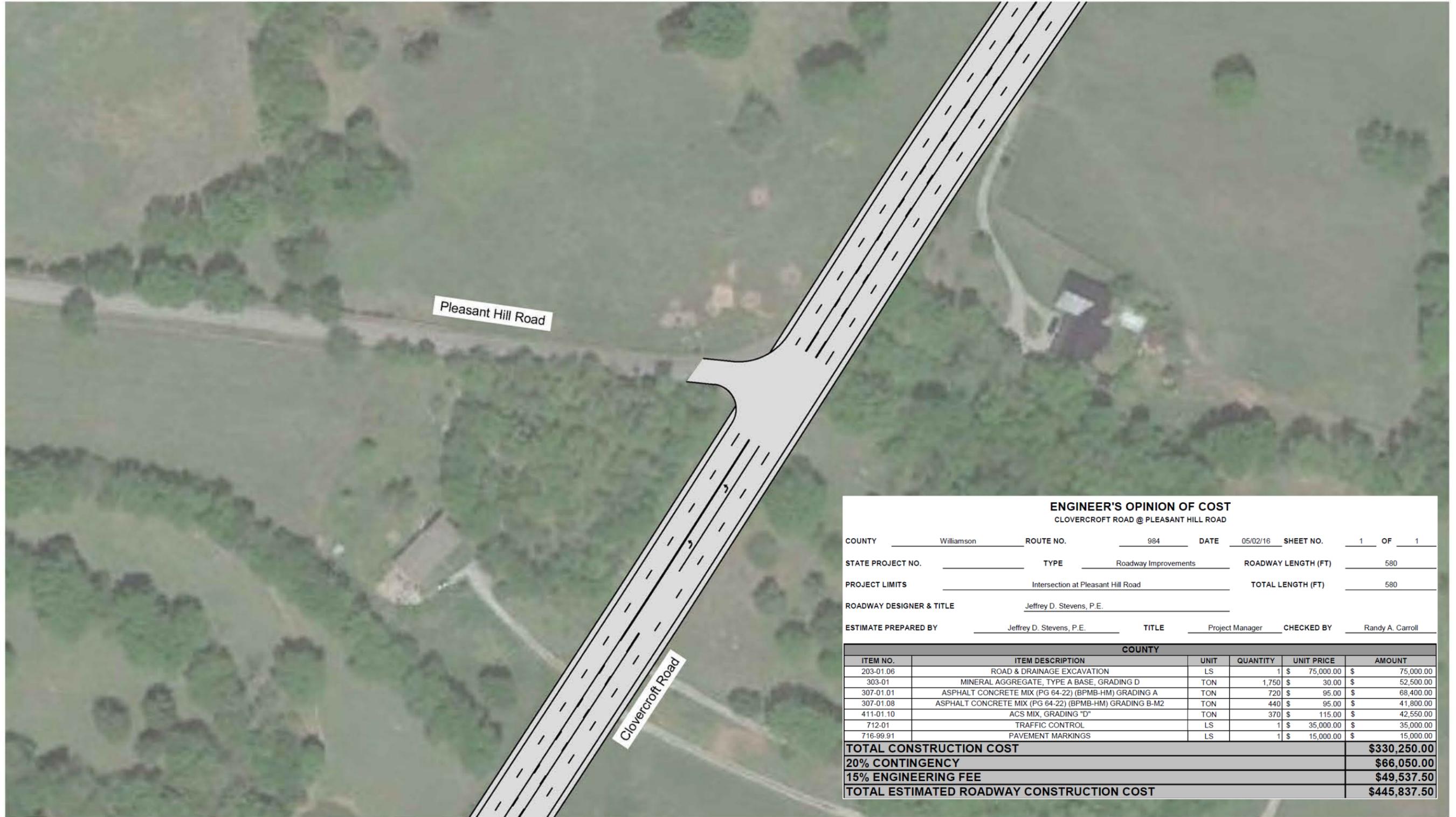
COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 620
 PROJECT LIMITS Intersection at Belle Brook Drive TOTAL LENGTH (FT) 620
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,860	\$ 30.00	\$ 55,800.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	765	\$ 95.00	\$ 72,675.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	465	\$ 95.00	\$ 44,175.00
411-01.10	ACS MIX, GRADING "D"	TON	395	\$ 115.00	\$ 45,425.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$343,075.00
20% CONTINGENCY					\$68,615.00
15% ENGINEERING FEE					\$51,461.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$463,151.25



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Belle Brook Drive)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ PLEASANT HILL ROAD

COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1

STATE PROJECT NO. TYPE Roadway Improvements ROADWAY LENGTH (FT) 580

PROJECT LIMITS Intersection at Pleasant Hill Road TOTAL LENGTH (FT) 580

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

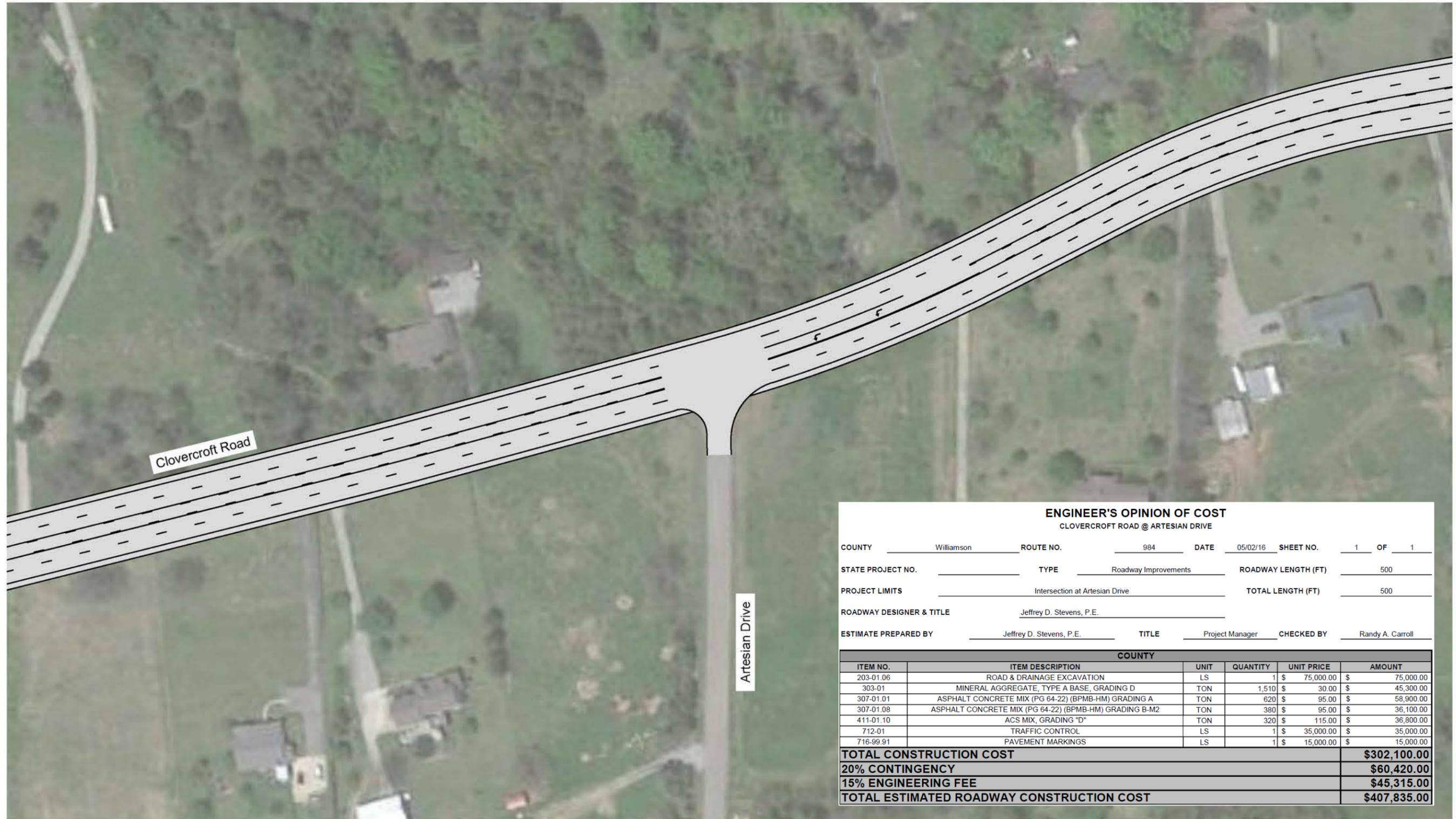
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,750	\$ 30.00	\$ 52,500.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	720	\$ 95.00	\$ 68,400.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	440	\$ 95.00	\$ 41,800.00
411-01.10	ACS MIX, GRADING "D"	TON	370	\$ 115.00	\$ 42,550.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$330,250.00
20% CONTINGENCY					\$66,050.00
15% ENGINEERING FEE					\$49,537.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$445,837.50



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Pleasant Hill Road)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ ARTESIAN DRIVE

COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 500

PROJECT LIMITS Intersection at Artesian Drive TOTAL LENGTH (FT) 500

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

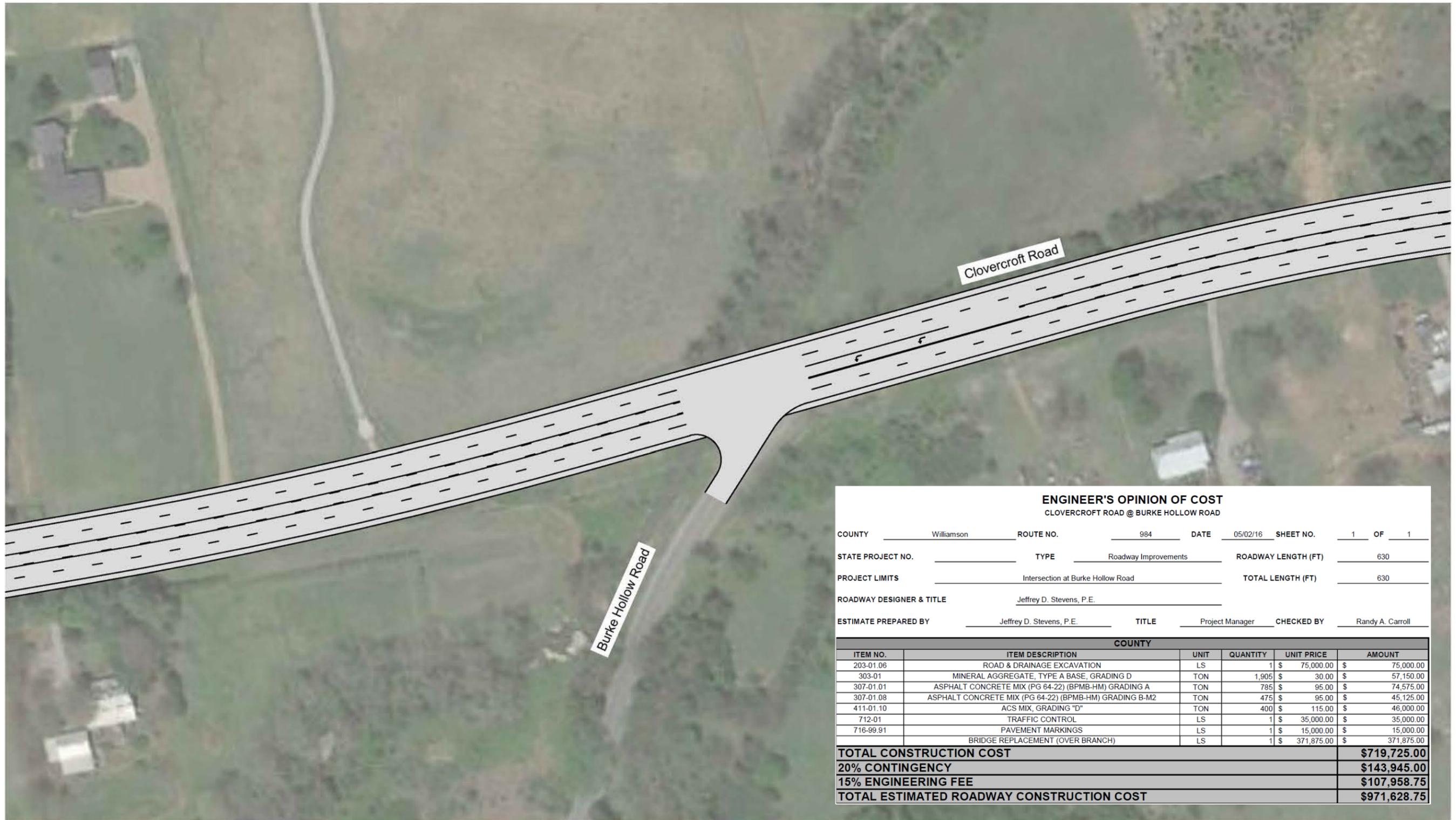
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,510	\$ 30.00	\$ 45,300.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	620	\$ 95.00	\$ 58,900.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	380	\$ 95.00	\$ 36,100.00
411-01.10	ACS MIX, GRADING "D"	TON	320	\$ 115.00	\$ 36,800.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$302,100.00
20% CONTINGENCY					\$60,420.00
15% ENGINEERING FEE					\$45,315.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$407,835.00



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Artesian Drive)





ENGINEER'S OPINION OF COST
CLOVERCROFT ROAD @ BURKE HOLLOW ROAD

COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 630

PROJECT LIMITS Intersection at Burke Hollow Road TOTAL LENGTH (FT) 630

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,905	\$ 30.00	\$ 57,150.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	785	\$ 95.00	\$ 74,575.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	475	\$ 95.00	\$ 45,125.00
411-01.10	ACS MIX, GRADING "D"	TON	400	\$ 115.00	\$ 46,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
	BRIDGE REPLACEMENT (OVER BRANCH)	LS	1	\$ 371,875.00	\$ 371,875.00
TOTAL CONSTRUCTION COST					\$719,725.00
20% CONTINGENCY					\$143,945.00
15% ENGINEERING FEE					\$107,958.75
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$971,628.75



Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Burke Hollow Road)





Clovercroft Road - 2030 Long Term Recommended Improvements (Clovercroft Road and Williams Road)



ENGINEER'S OPINION OF COST
S BERRYS CHAPEL ROAD/LYNNWOOD WAY

COUNTY Williamson ROUTE NO. 1938 DATE 05/04/16 SHEET NO. 1 OF 1

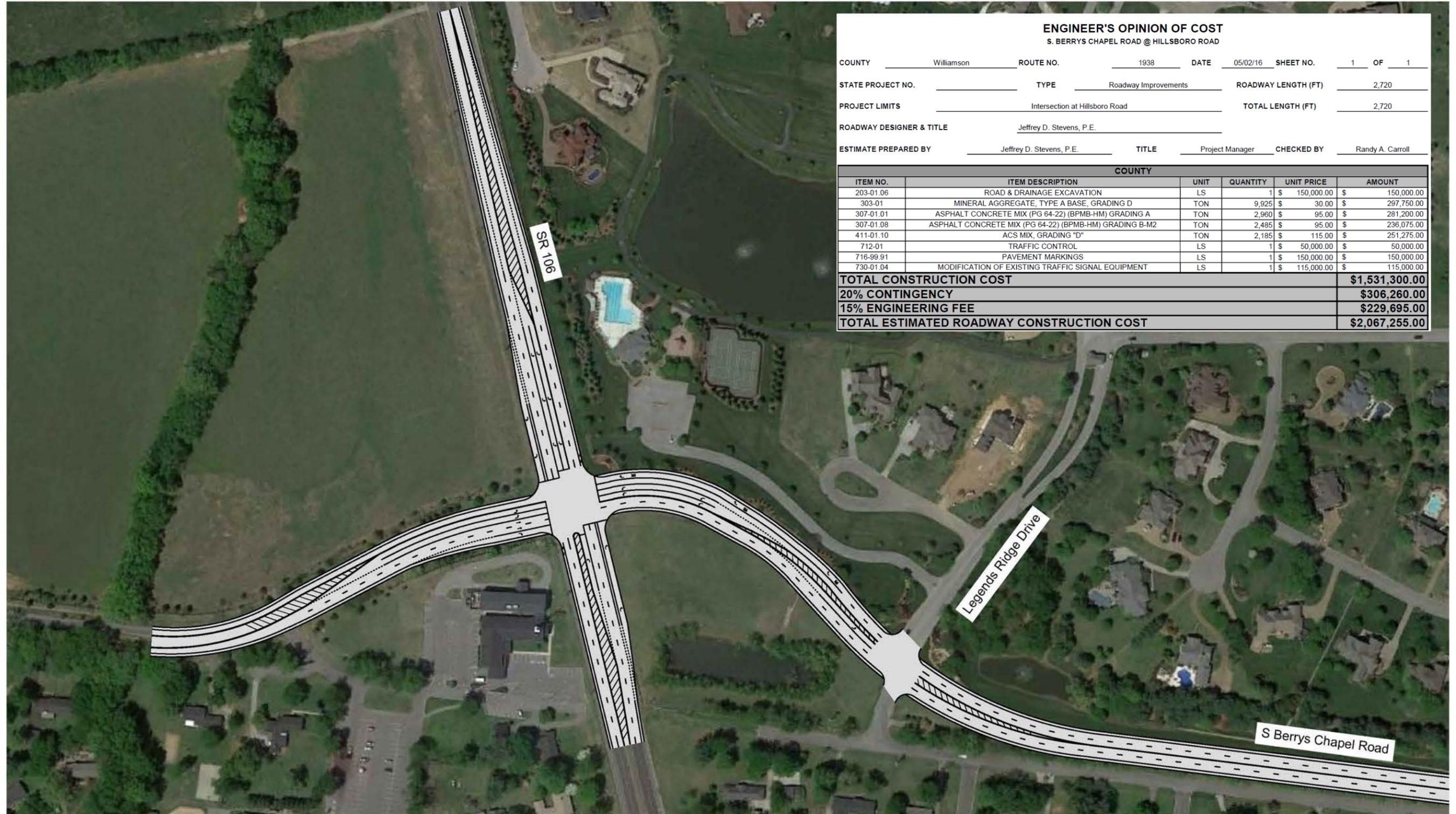
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 16,240

PROJECT LIMITS Hillsboro Road to Franklin Road TOTAL LENGTH (FT) 16,240

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

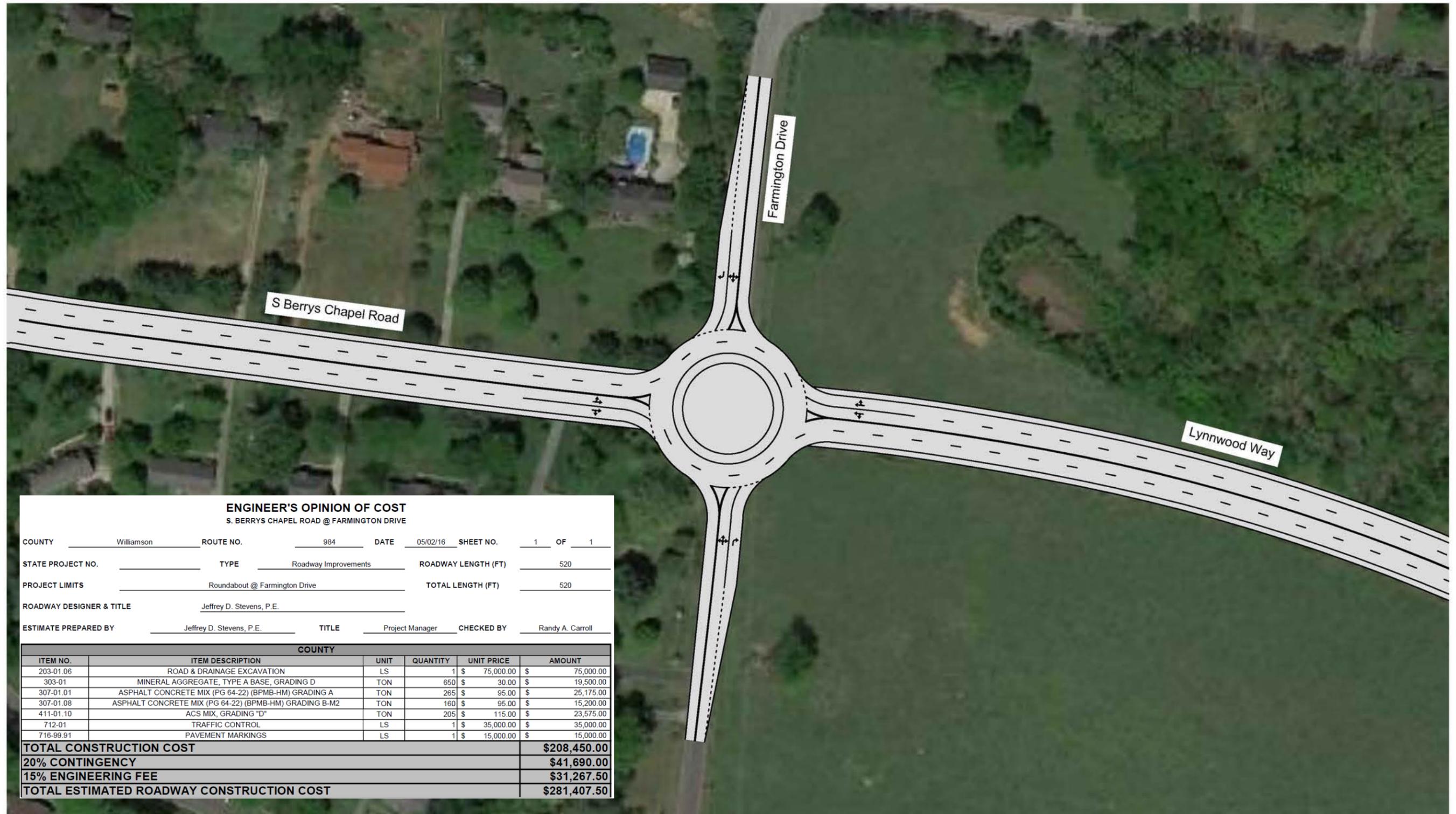
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 900,000.00	\$ 900,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	50,600	\$ 30.00	\$ 1,518,000.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	16,665	\$ 95.00	\$ 1,583,175.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	12,675	\$ 95.00	\$ 1,204,125.00
411-01.10	ACS MIX, GRADING "D"	TON	8,610	\$ 115.00	\$ 990,150.00
712-01	TRAFFIC CONTROL	LS	1	\$ 125,000.00	\$ 125,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 275,000.00	\$ 275,000.00
	ROW ACQUISITION	LS	1	\$ 634,500.00	\$ 634,500.00
	BRIDGES	LS	1	\$ 506,875.00	\$ 506,875.00
TOTAL CONSTRUCTION COST					\$7,229,950.00
20% CONTINGENCY					\$1,445,990.00
15% ENGINEERING FEE					\$1,084,492.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$9,760,432.50



Lynnwood Way - 2030 Long Term Recommended Improvements (Lynnwood Way and Legends Ridge Drive / SR 106)





ENGINEER'S OPINION OF COST
S. BERRYS CHAPEL ROAD @ FARMINGTON DRIVE

COUNTY	Williamson	ROUTE NO.	984	DATE	05/02/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)			520		
PROJECT LIMITS		Roundabout @ Farmington Drive		TOTAL LENGTH (FT)			520		
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	650	\$ 30.00	\$ 19,500.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	265	\$ 95.00	\$ 25,175.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	160	\$ 95.00	\$ 15,200.00
411-01.10	ACS MIX, GRADING "D"	TON	205	\$ 115.00	\$ 23,575.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$208,450.00
20% CONTINGENCY					\$41,690.00
15% ENGINEERING FEE					\$31,267.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$281,407.50



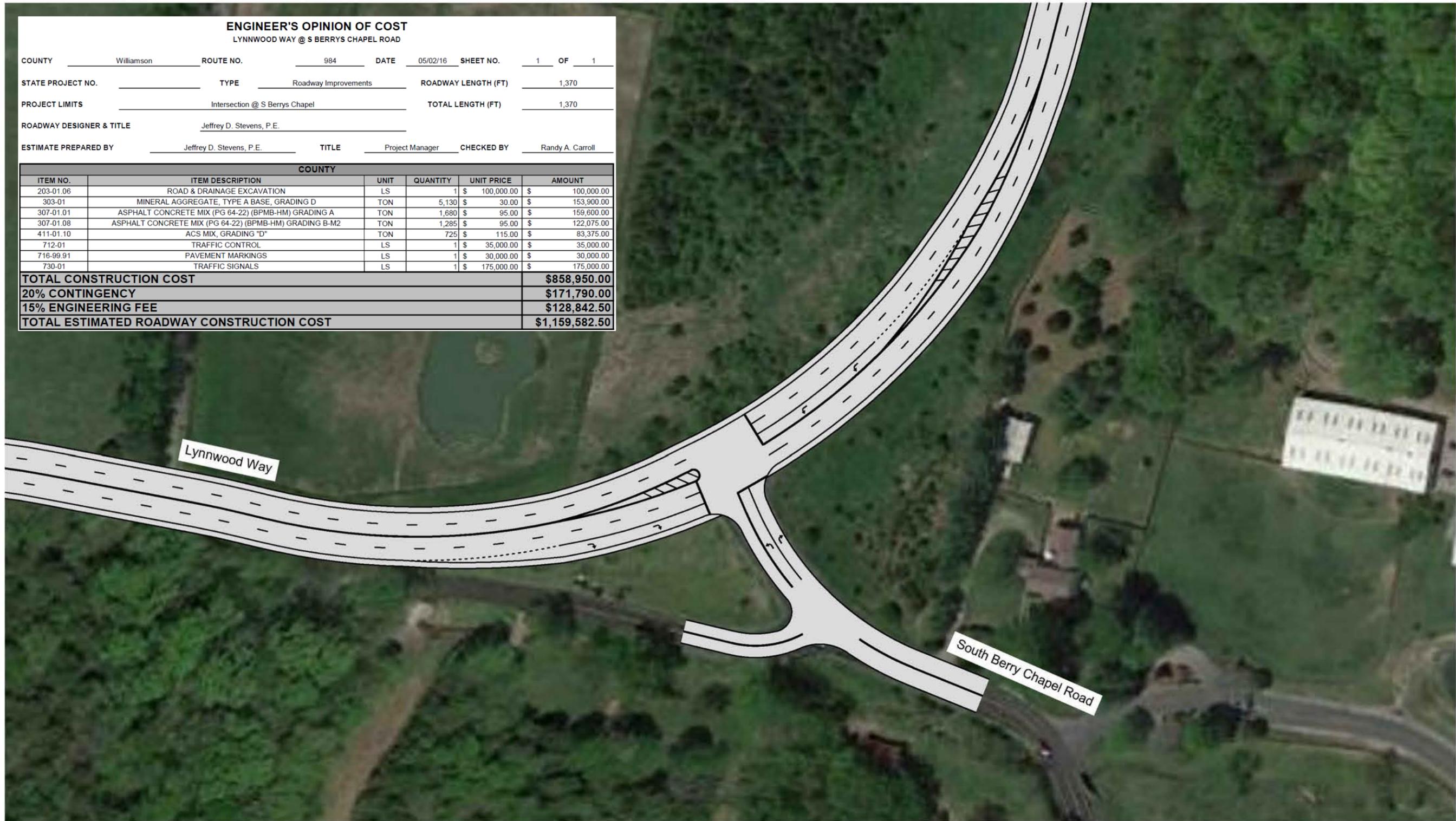
Lynnwood Way - 2030 Long Term Recommended Improvements (Lynnwood Way and Farmington Drive)



ENGINEER'S OPINION OF COST
LYNNWOOD WAY @ S BERRYS CHAPEL ROAD

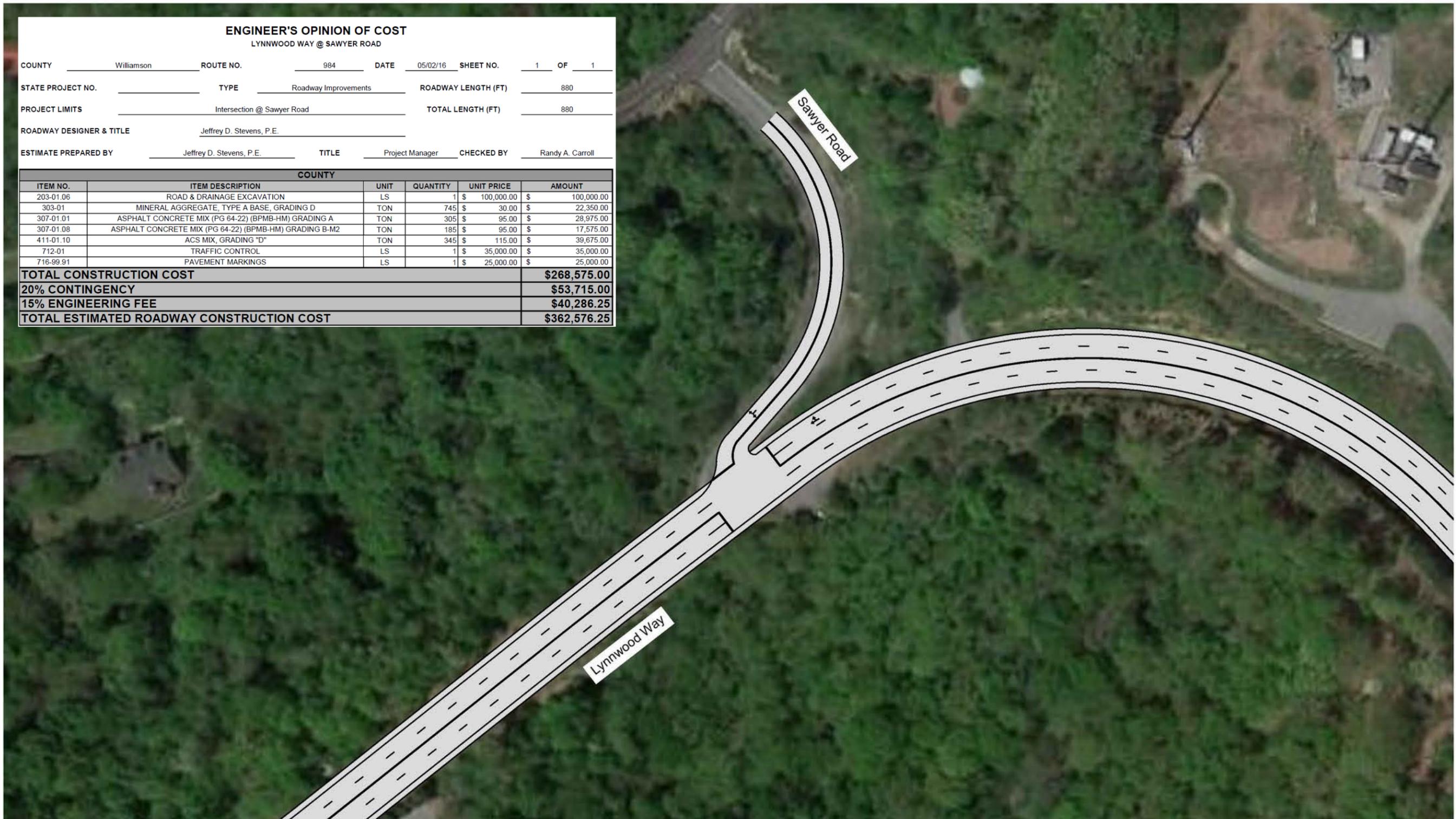
COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,370
 PROJECT LIMITS Intersection @ S Berrys Chapel TOTAL LENGTH (FT) 1,370
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	5,130	\$ 30.00	\$ 153,900.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,680	\$ 95.00	\$ 159,600.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,285	\$ 95.00	\$ 122,075.00
411-01.10	ACS MIX, GRADING "D"	TON	725	\$ 115.00	\$ 83,375.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
730-01	TRAFFIC SIGNALS	LS	1	\$ 175,000.00	\$ 175,000.00
TOTAL CONSTRUCTION COST					\$858,950.00
20% CONTINGENCY					\$171,790.00
15% ENGINEERING FEE					\$128,842.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,159,582.50



Lynnwood Way - 2030 Long Term Recommended Improvements (Lynnwood Way and South Berry Chapel Road)





ENGINEER'S OPINION OF COST

LYNNWOOD WAY @ SAWYER ROAD

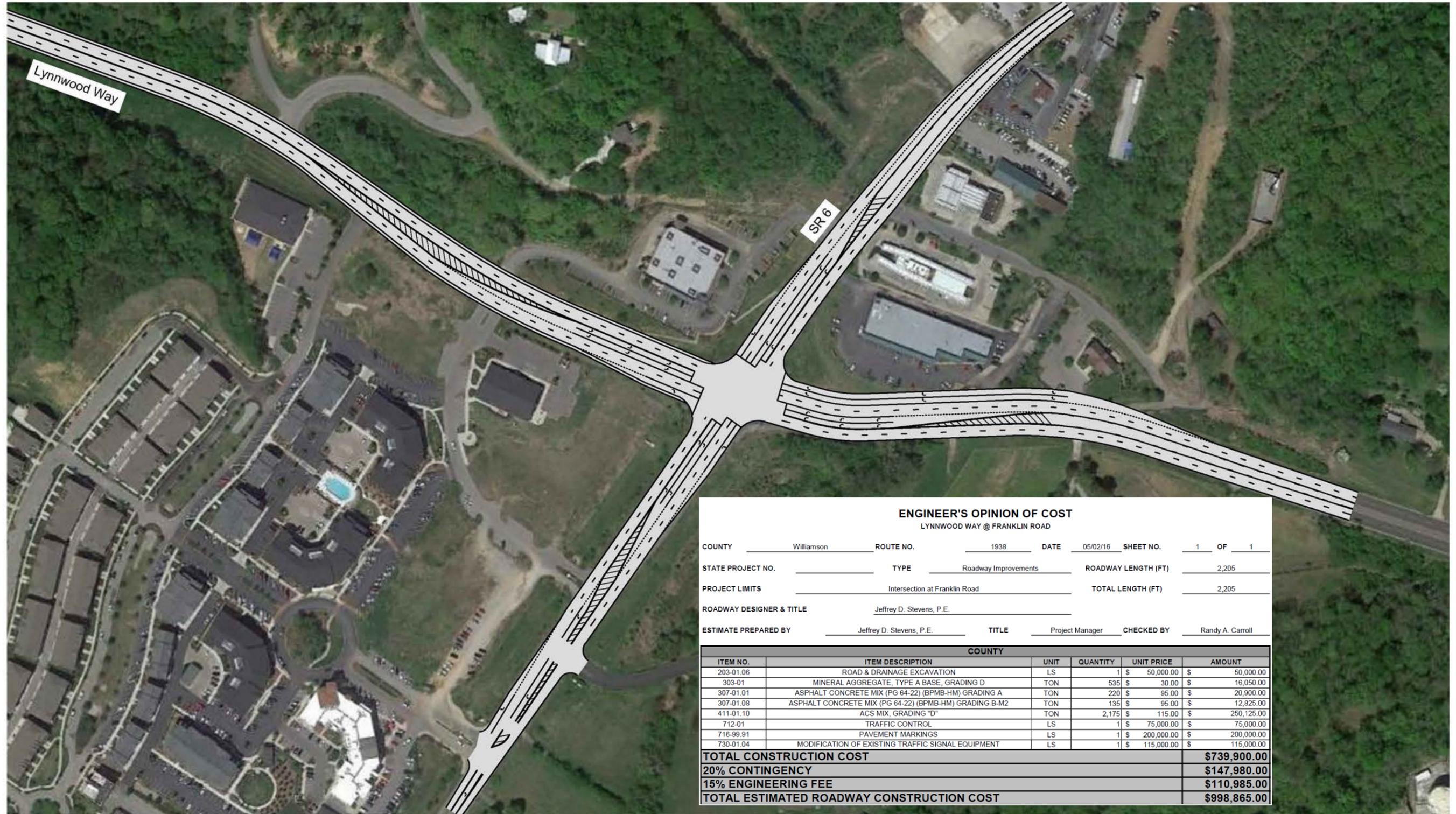
COUNTY Williamson ROUTE NO. 984 DATE 05/02/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 880
 PROJECT LIMITS Intersection @ Sawyer Road TOTAL LENGTH (FT) 880
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	745	\$ 30.00	\$ 22,350.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	305	\$ 95.00	\$ 28,975.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	185	\$ 95.00	\$ 17,575.00
411-01.10	ACS MIX, GRADING "D"	TON	345	\$ 115.00	\$ 39,675.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 25,000.00	\$ 25,000.00
TOTAL CONSTRUCTION COST					\$268,575.00
20% CONTINGENCY					\$53,715.00
15% ENGINEERING FEE					\$40,286.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$362,576.25



Lynnwood Way - 2030 Long Term Recommended Improvements (Lynnwood Way and Sawyer Road)





Lynnwood Way - 2030 Long Term Recommended Improvements (Lynnwood Way and SR 6)



ENGINEER'S OPINION OF COST

ARNO ROAD

COUNTY Williamson ROUTE NO. 1003 DATE 05/04/16 SHEET NO. 1 OF 1

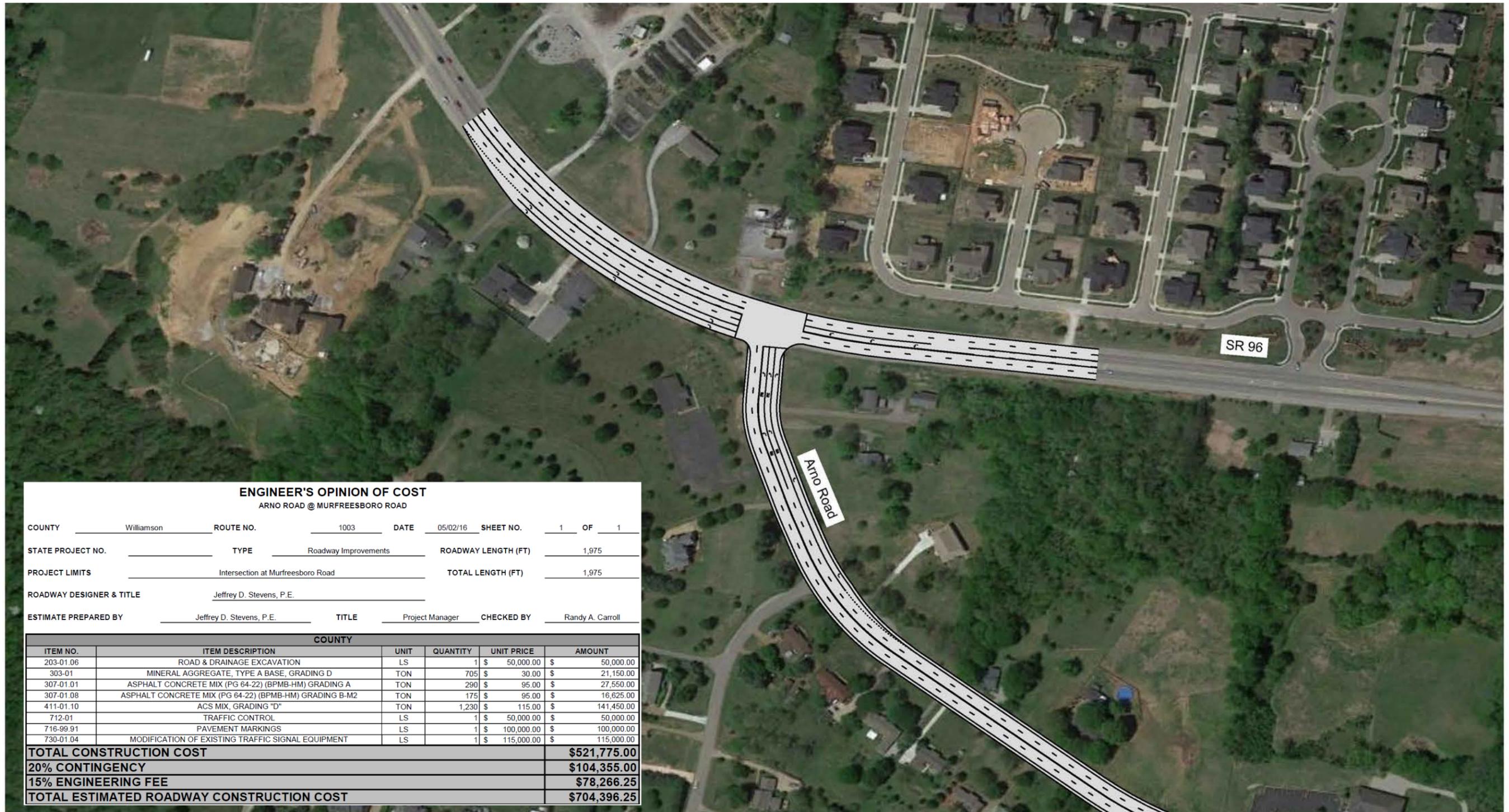
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 34,720

PROJECT LIMITS Murfreesboro Road to Peytonsville-Arno Road TOTAL LENGTH (FT) 34,720

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 1,800,000.00	\$ 1,800,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	130,720	\$ 30.00	\$ 3,921,600.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	43,045	\$ 95.00	\$ 4,089,275.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	32,745	\$ 95.00	\$ 3,110,775.00
411-01.10	ACS MIX, GRADING "D"	TON	18,440	\$ 115.00	\$ 2,120,600.00
712-01	TRAFFIC CONTROL	LS	1	\$ 200,000.00	\$ 200,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 415,000.00	\$ 415,000.00
	ROW ACQUISITION	LS	1	\$ 5,424,000.00	\$ 5,424,000.00
	BRIDGES	LS	1	\$ 1,013,750.00	\$ 1,013,750.00
	PIPE IMPROVEMENTS	LS	1	\$ 150,000.00	\$ 150,000.00
TOTAL CONSTRUCTION COST					\$22,245,000.00
20% CONTINGENCY					\$4,449,000.00
15% ENGINEERING FEE					\$3,336,750.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$30,030,750.00



ENGINEER'S OPINION OF COST					
ARNO ROAD @ MURFREESBORO ROAD					
COUNTY	Williamson	ROUTE NO.	1003	DATE	05/02/16
SHEET NO.	1	OF	1		
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,975
PROJECT LIMITS	Intersection at Murfreesboro Road			TOTAL LENGTH (FT)	1,975
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	705	\$ 30.00	\$ 21,150.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	290	\$ 95.00	\$ 27,550.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	175	\$ 95.00	\$ 16,625.00
411-01.10	ACS MIX, GRADING "D"	TON	1,230	\$ 115.00	\$ 141,450.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 100,000.00	\$ 100,000.00
730-01.04	MODIFICATION OF EXISTING TRAFFIC SIGNAL EQUIPMENT	LS	1	\$ 115,000.00	\$ 115,000.00
TOTAL CONSTRUCTION COST					\$521,775.00
20% CONTINGENCY					\$104,355.00
15% ENGINEERING FEE					\$78,266.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$704,396.25



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and SR 96)

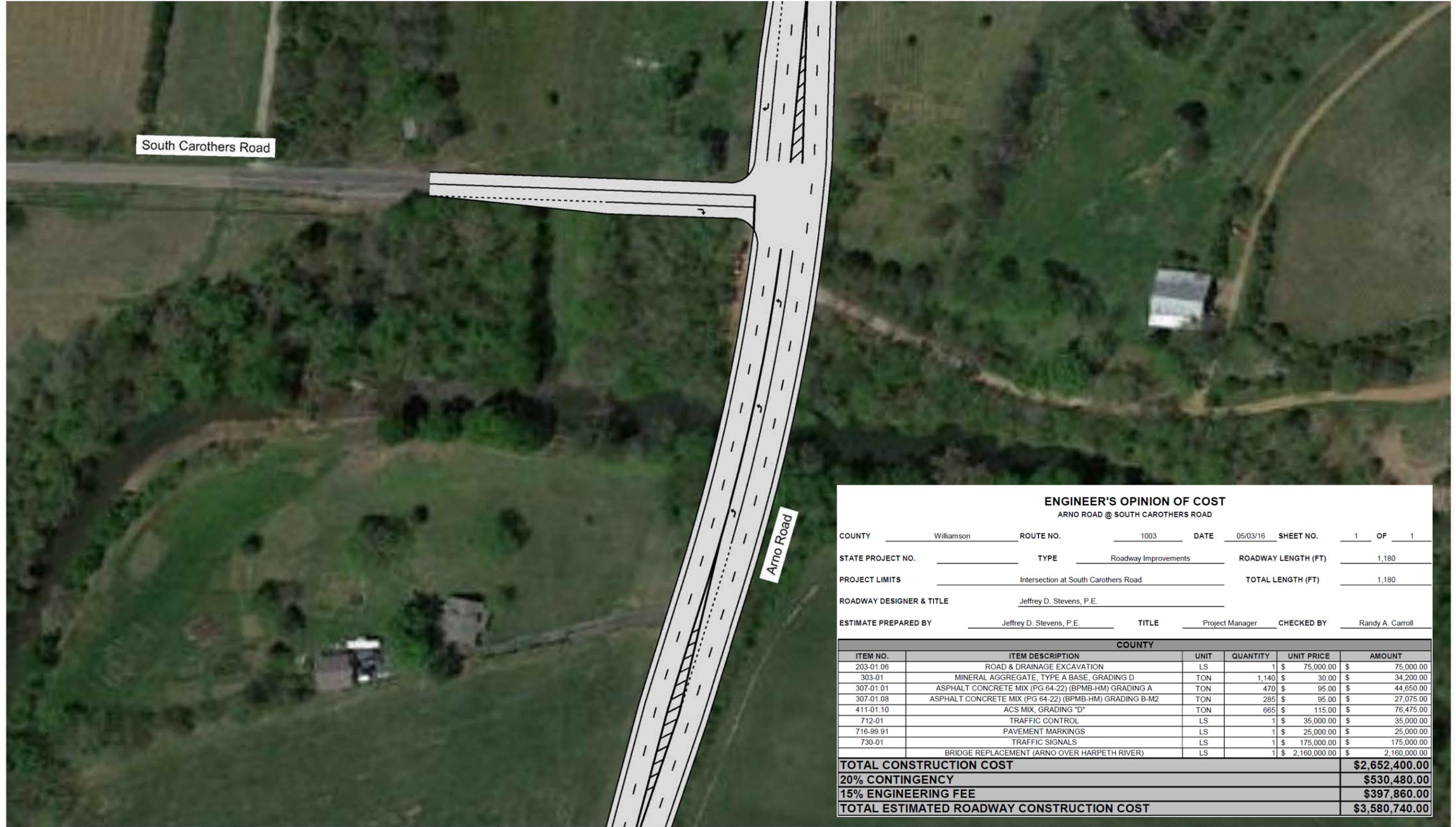


ENGINEER'S OPINION OF COST					
ARNO ROAD @ PATE ROAD					
COUNTY	Williamson	ROUTE NO.	1003	DATE	05/03/16 SHEET NO. 1 OF 1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,080
PROJECT LIMITS	Intersection at Pate Road			TOTAL LENGTH (FT)	1,080
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	4,230	\$ 30.00	\$ 126,900.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,410	\$ 95.00	\$ 133,950.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,060	\$ 95.00	\$ 100,700.00
411-01.10	ACS MIX, GRADING "D"	TON	600	\$ 115.00	\$ 69,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 25,000.00	\$ 25,000.00
TOTAL CONSTRUCTION COST					\$565,550.00
20% CONTINGENCY					\$113,110.00
15% ENGINEERING FEE					\$84,832.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$763,492.50



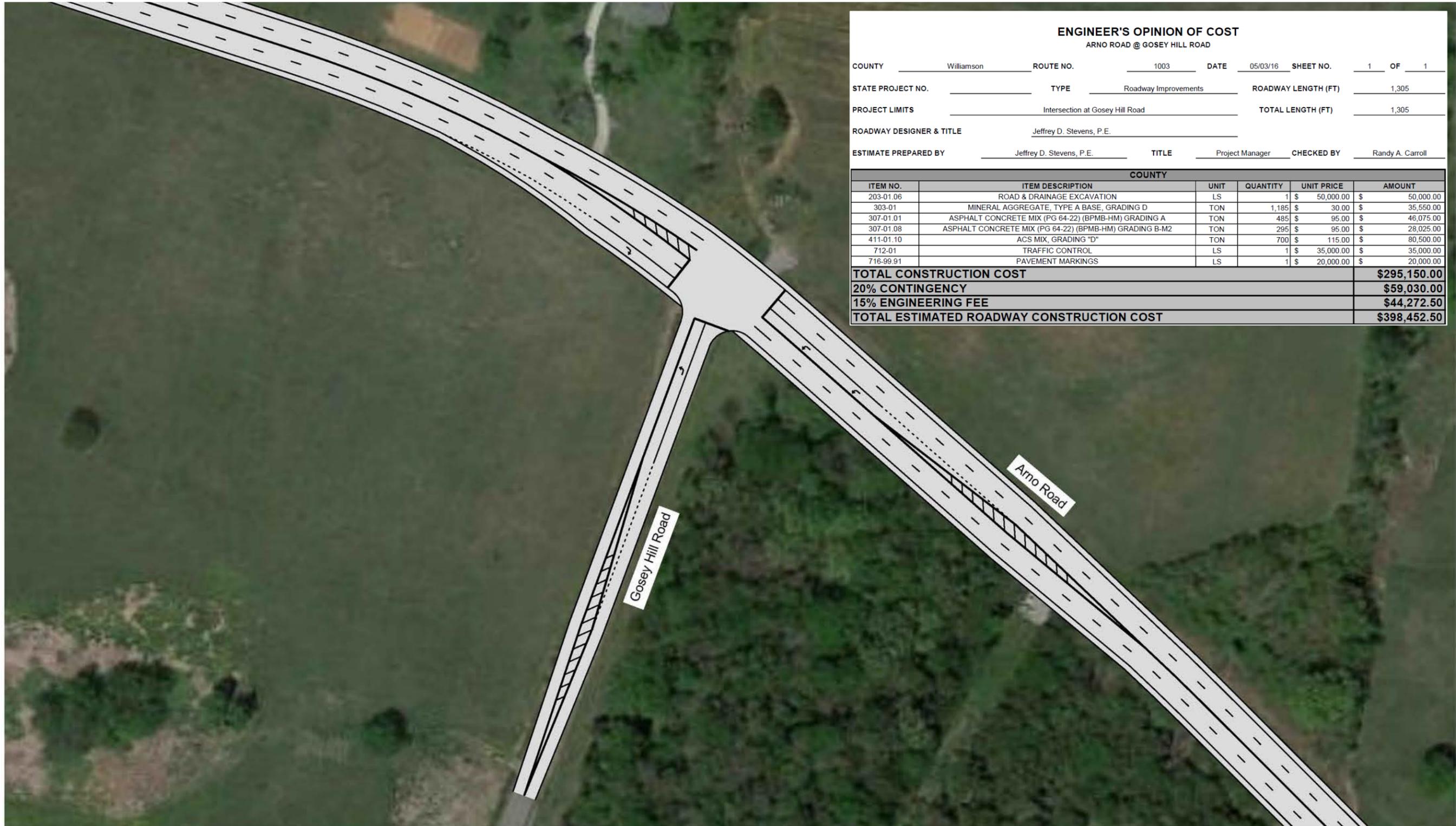
Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Pate Road)





Arno Road - 2030 Long Term Recommended Improvements (Arno Road and South Carothers Road)





ENGINEER'S OPINION OF COST
ARNO ROAD @ GOSEY HILL ROAD

COUNTY Williamson ROUTE NO. 1003 DATE 05/03/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,305

PROJECT LIMITS Intersection at Gosey Hill Road TOTAL LENGTH (FT) 1,305

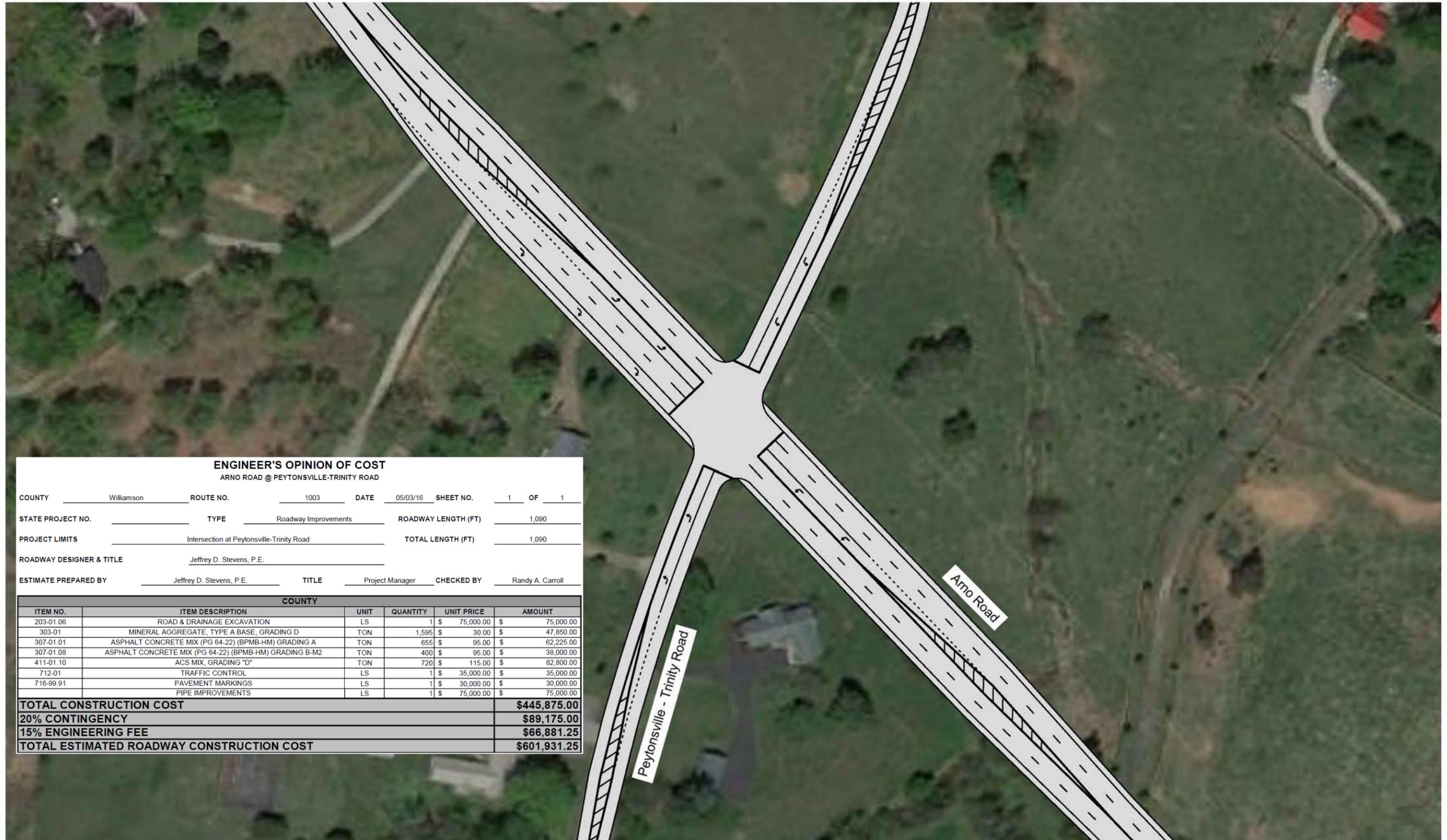
ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,185	\$ 30.00	\$ 35,550.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	485	\$ 95.00	\$ 46,075.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	295	\$ 95.00	\$ 28,025.00
411-01.10	ACS MIX, GRADING "D"	TON	700	\$ 115.00	\$ 80,500.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
TOTAL CONSTRUCTION COST					\$295,150.00
20% CONTINGENCY					\$59,030.00
15% ENGINEERING FEE					\$44,272.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$398,452.50

 **Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Gosey Hill Road)**

 GRAPHIC SCALE



ENGINEER'S OPINION OF COST
ARNO ROAD @ PEYTONSVILLE-TRINITY ROAD

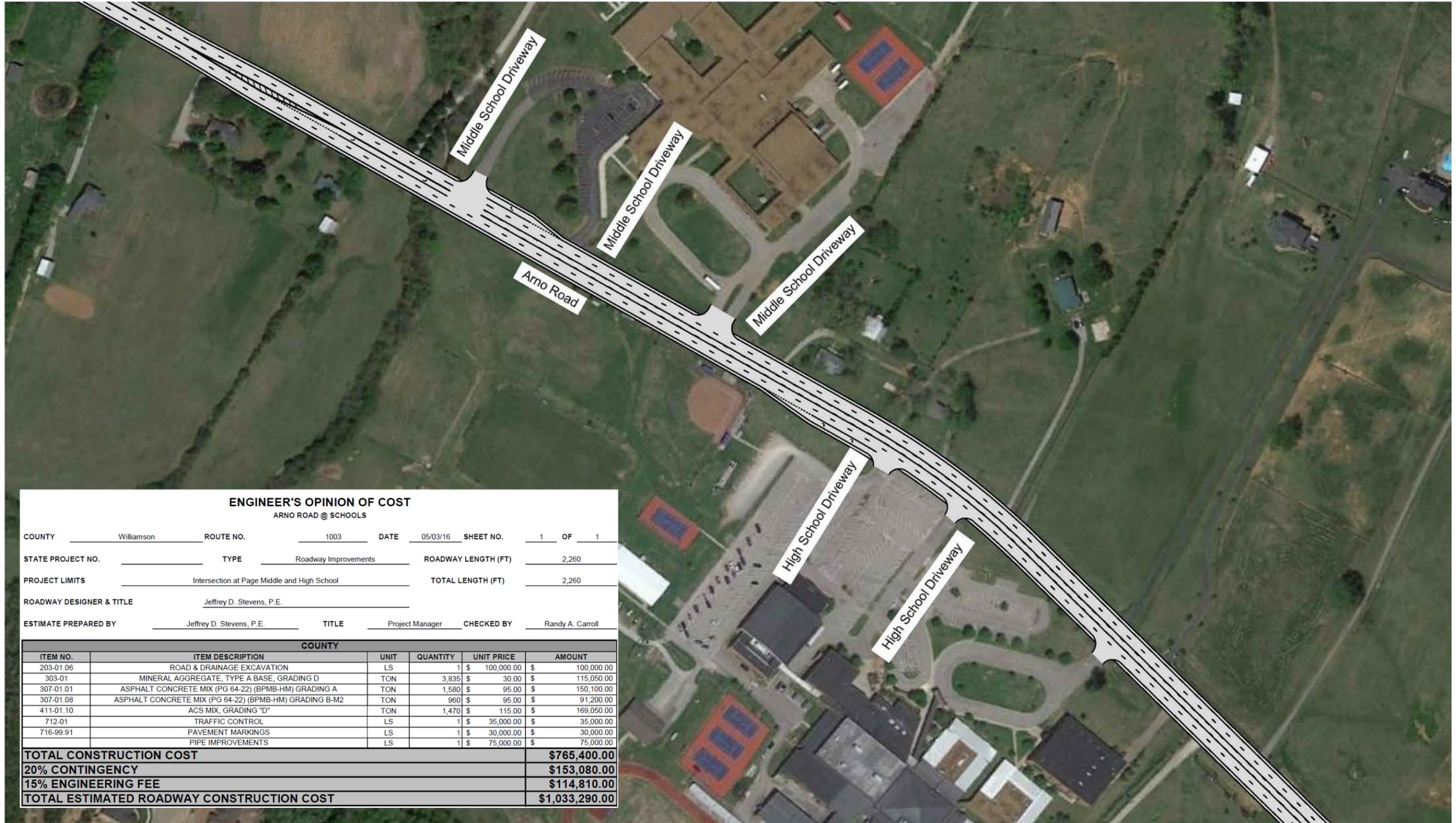
COUNTY Williamson ROUTE NO. 1003 DATE 05/03/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,090
 PROJECT LIMITS Intersection at Peytonsville-Trinity Road TOTAL LENGTH (FT) 1,090
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,595	\$ 30.00	\$ 47,850.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	655	\$ 95.00	\$ 62,225.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	400	\$ 95.00	\$ 38,000.00
411-01.10	ACS MIX, GRADING "D"	TON	720	\$ 115.00	\$ 82,800.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTION COST					\$445,875.00
20% CONTINGENCY					\$89,175.00
15% ENGINEERING FEE					\$66,881.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$601,931.25



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Peytonsville / Trinity Road)





ENGINEER'S OPINION OF COST
ARNO ROAD @ SCHOOLS

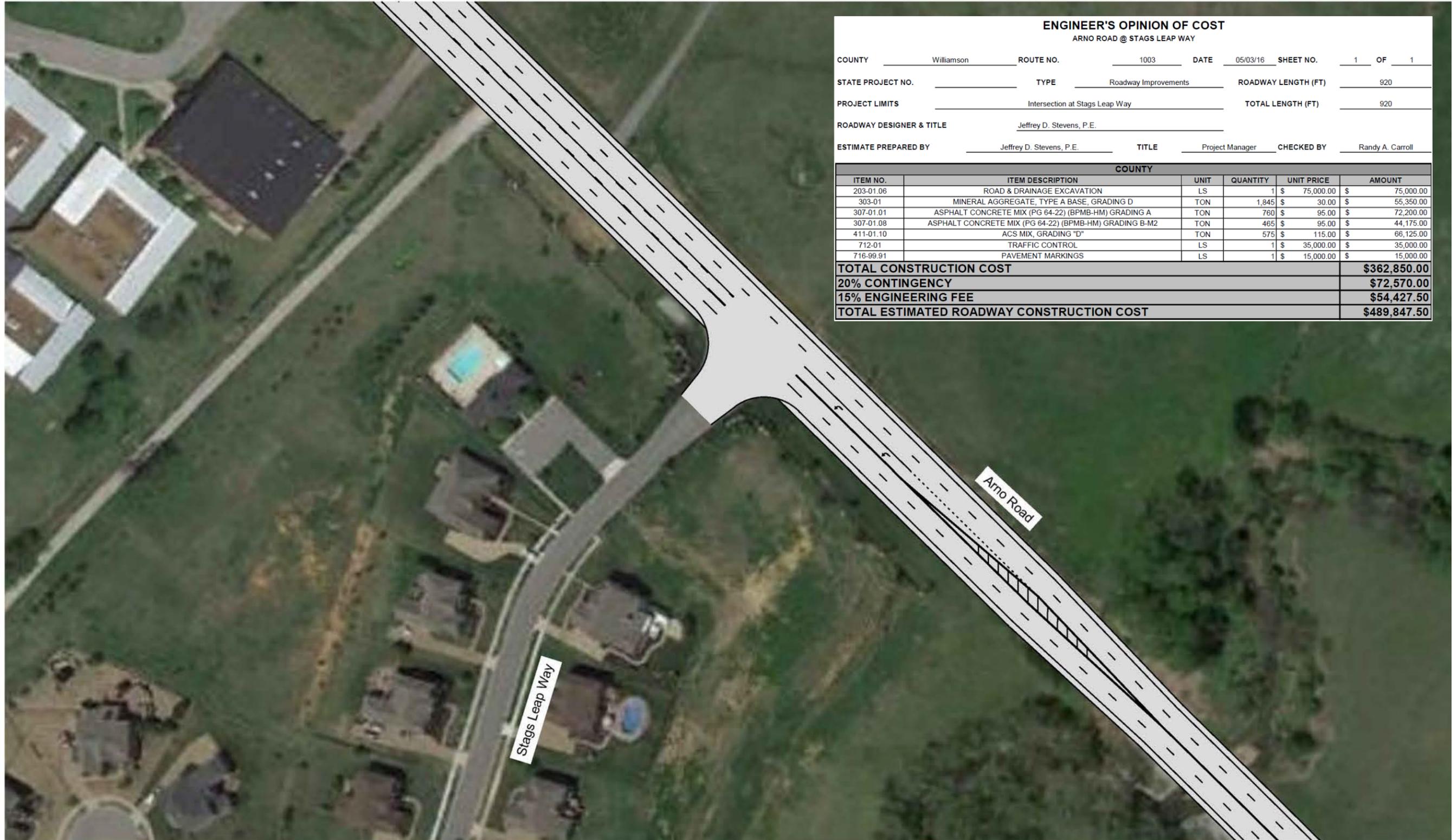
COUNTY Williamson ROUTE NO. 1003 DATE 05/03/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,260
 PROJECT LIMITS Intersection at Page Middle and High School TOTAL LENGTH (FT) 2,260
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	3,835	\$ 30.00	\$ 115,050.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,580	\$ 95.00	\$ 150,100.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	960	\$ 95.00	\$ 91,200.00
411-01.10	ACS MIX, GRADING "D"	TON	1,470	\$ 115.00	\$ 169,050.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 30,000.00	\$ 30,000.00
	PIPE IMPROVEMENTS	LS	1	\$ 75,000.00	\$ 75,000.00
TOTAL CONSTRUCTION COST					\$765,400.00
20% CONTINGENCY					\$153,080.00
15% ENGINEERING FEE					\$114,810.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,033,290.00



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Page Middle and High School Driveways)



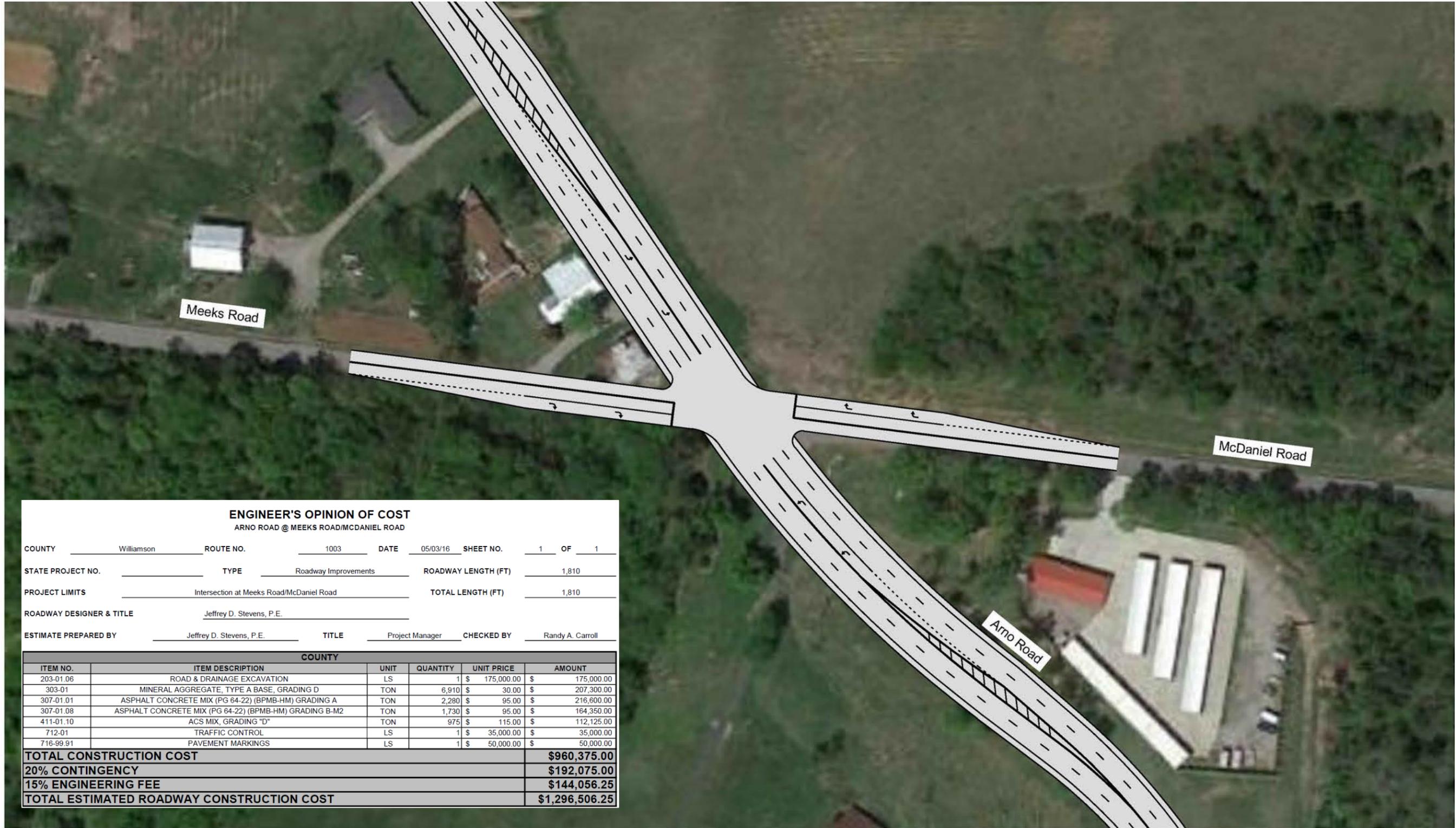


ENGINEER'S OPINION OF COST					
ARNO ROAD @ STAGS LEAP WAY					
COUNTY	Williamson	ROUTE NO.	1003	DATE	05/03/16
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	920
PROJECT LIMITS	Intersection at Stags Leap Way			TOTAL LENGTH (FT)	920
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.				
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll
COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,845	\$ 30.00	\$ 55,350.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	760	\$ 95.00	\$ 72,200.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	465	\$ 95.00	\$ 44,175.00
411-01.10	ACS MIX, GRADING "D"	TON	575	\$ 115.00	\$ 66,125.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 15,000.00	\$ 15,000.00
TOTAL CONSTRUCTION COST					\$362,850.00
20% CONTINGENCY					\$72,570.00
15% ENGINEERING FEE					\$54,427.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$489,847.50



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Stags Leap Way)





ENGINEER'S OPINION OF COST

ARNO ROAD @ MEEKS ROAD/MCDANIEL ROAD

COUNTY	Williamson	ROUTE NO.	1003	DATE	05/03/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,810				
PROJECT LIMITS	Intersection at Meeks Road/McDaniel Road			TOTAL LENGTH (FT)	1,810				
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 175,000.00	\$ 175,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	6,910	\$ 30.00	\$ 207,300.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	2,280	\$ 95.00	\$ 216,600.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,730	\$ 95.00	\$ 164,350.00
411-01.10	ACS MIX, GRADING "D"	TON	975	\$ 115.00	\$ 112,125.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 50,000.00	\$ 50,000.00
TOTAL CONSTRUCTION COST					\$960,375.00
20% CONTINGENCY					\$192,075.00
15% ENGINEERING FEE					\$144,056.25
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,296,506.25



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Meeks Road / McDaniel Road)





Arno Road - 2030 Long Term Recommended Improvements (Arno Road and SR 840 Westbound Ramps)





Arno Road - 2030 Long Term Recommended Improvements (Arno Road and SR 840 Eastbound Ramps)





Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Eudaily Covington Road)



ENGINEER'S OPINION OF COST

ARNO ROAD @ 840 AND EUDAILY COVINGTON ROAD

COUNTY Williamson ROUTE NO. 1003 DATE 05/03/16 SHEET NO. 1 OF 1

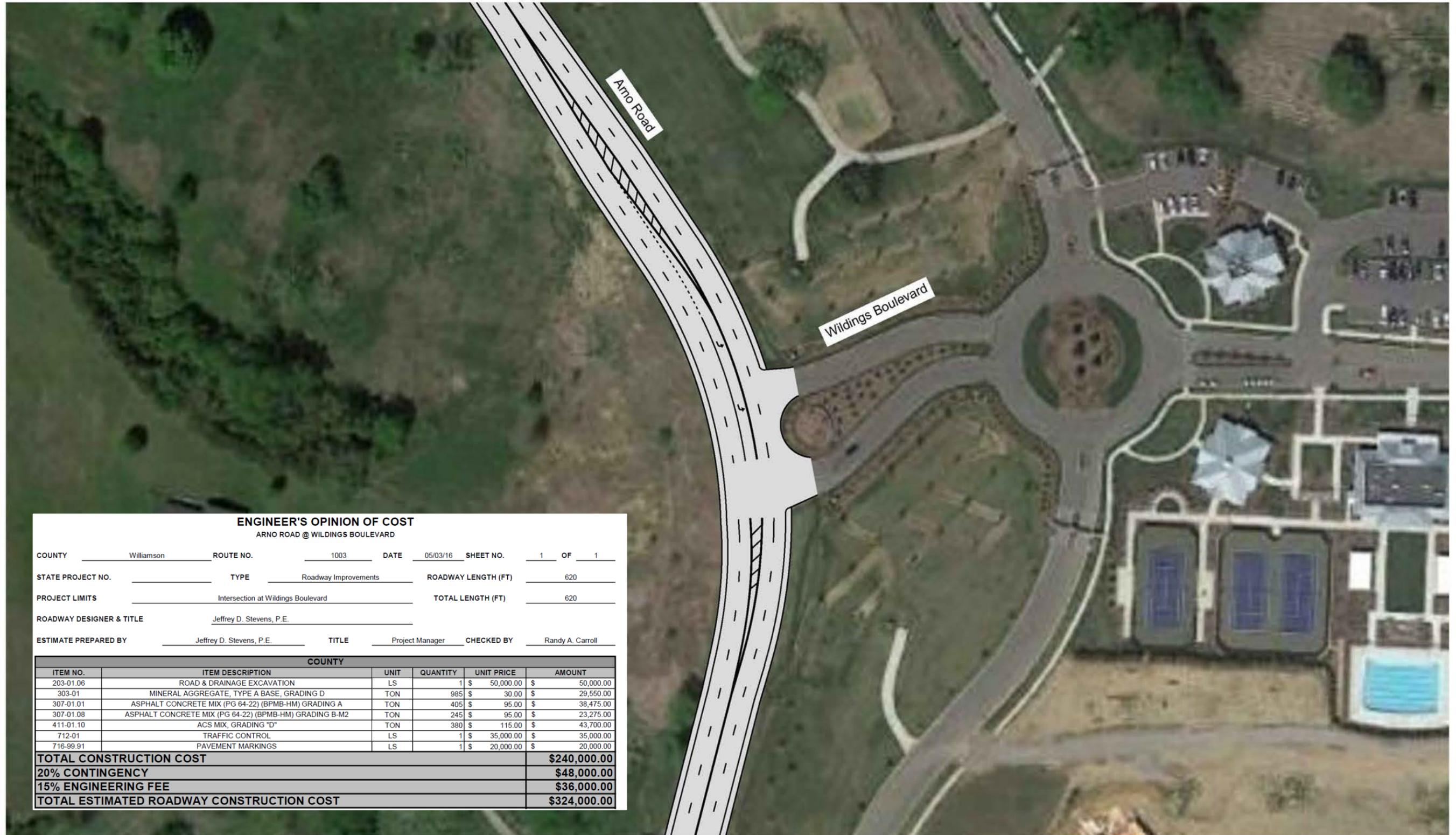
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 3,360

PROJECT LIMITS Intersection at 840 & Eudaily Covington Road TOTAL LENGTH (FT) 3,360

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 200,000.00	\$ 200,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	15,125	\$ 30.00	\$ 453,750.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	5,185	\$ 95.00	\$ 492,575.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	3,790	\$ 95.00	\$ 360,050.00
411-01.10	ACS MIX, GRADING "D"	TON	2,135	\$ 115.00	\$ 245,525.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 150,000.00	\$ 150,000.00
730-01	TRAFFIC SIGNALS	LS	1	\$ 175,000.00	\$ 175,000.00
TOTAL CONSTRUCTION COST					\$2,126,900.00
20% CONTINGENCY					\$425,380.00
15% ENGINEERING FEE					\$319,035.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$2,871,315.00



ENGINEER'S OPINION OF COST
ARNO ROAD @ WILDINGS BOULEVARD

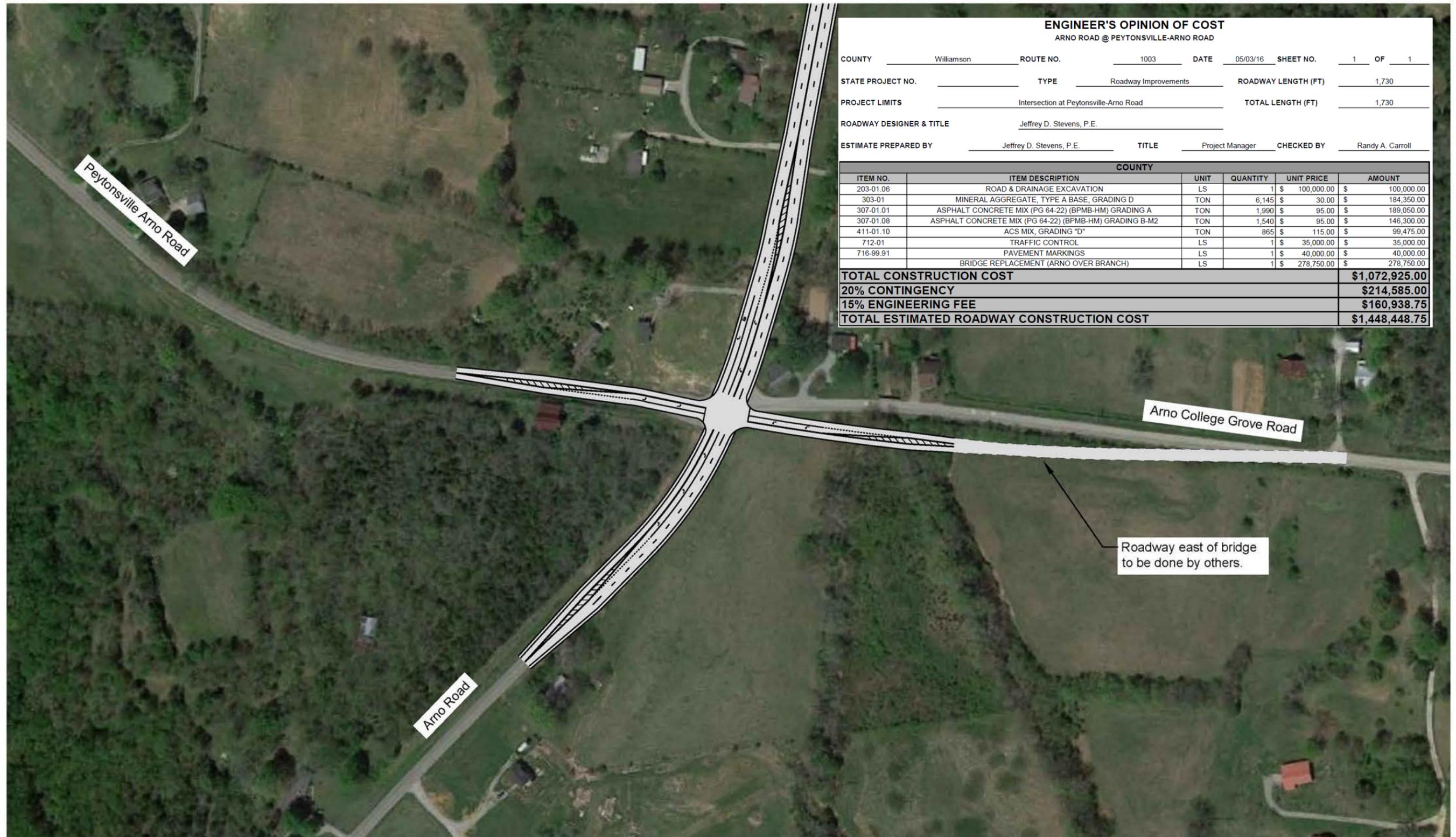
COUNTY Williamson ROUTE NO. 1003 DATE 05/03/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 620
 PROJECT LIMITS Intersection at Wildings Boulevard TOTAL LENGTH (FT) 620
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 50,000.00	\$ 50,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	985	\$ 30.00	\$ 29,550.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	405	\$ 95.00	\$ 38,475.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	245	\$ 95.00	\$ 23,275.00
411-01.10	ACS MIX, GRADING "D"	TON	380	\$ 115.00	\$ 43,700.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 20,000.00	\$ 20,000.00
TOTAL CONSTRUCTION COST					\$240,000.00
20% CONTINGENCY					\$48,000.00
15% ENGINEERING FEE					\$36,000.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$324,000.00



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Wildings Boulevard)





ENGINEER'S OPINION OF COST

ARNO ROAD @ PEYTONSVILLE-ARNO ROAD

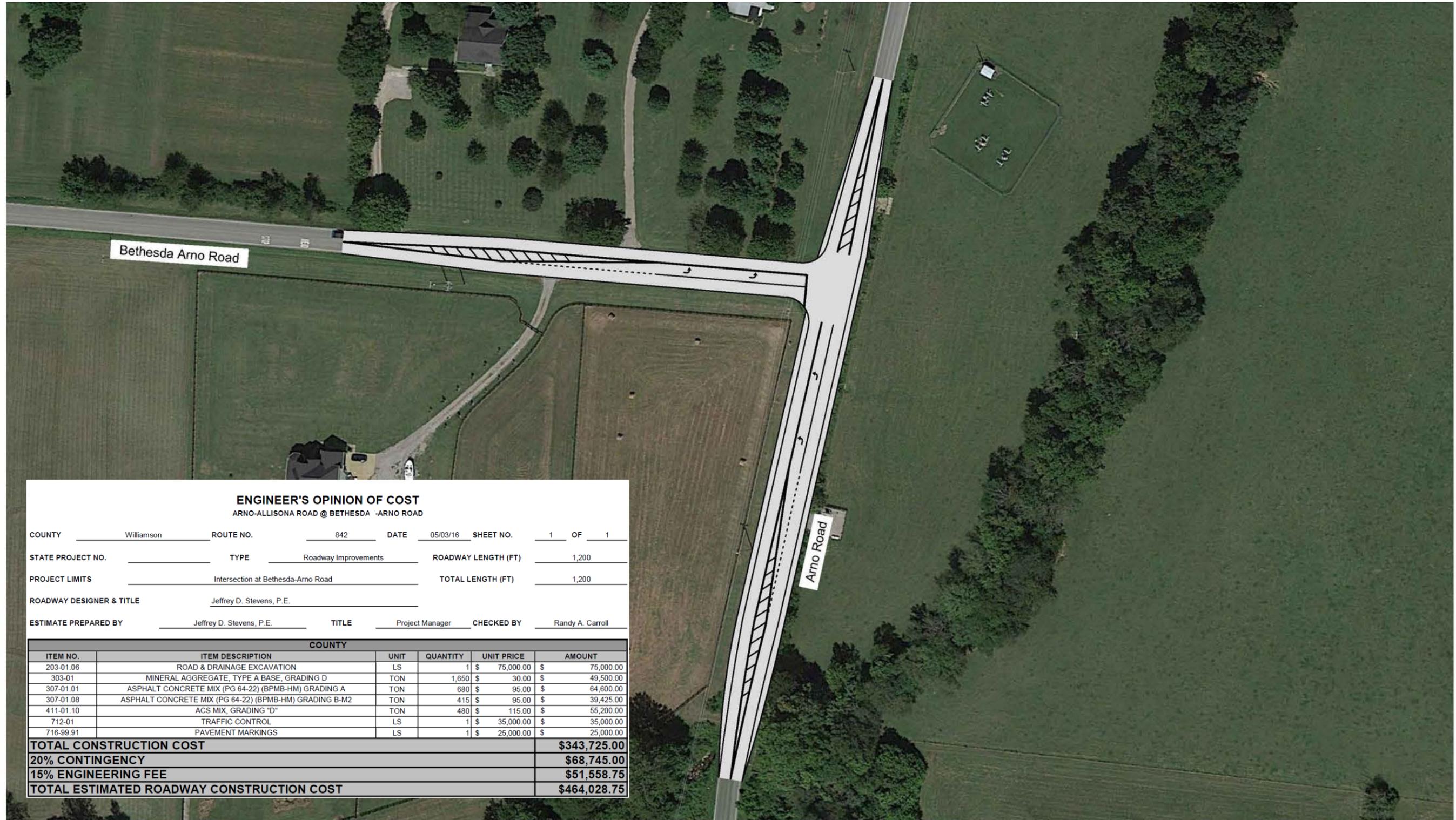
COUNTY	Williamson	ROUTE NO.	1003	DATE	05/03/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,730				
PROJECT LIMITS	Intersection at Peytonsville-Arno Road			TOTAL LENGTH (FT)	1,730				
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 100,000.00	\$ 100,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	6,145	\$ 30.00	\$ 184,350.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	1,990	\$ 95.00	\$ 189,050.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	1,540	\$ 95.00	\$ 146,300.00
411-01.10	ACS MIX, GRADING "D"	TON	865	\$ 115.00	\$ 99,475.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 40,000.00	\$ 40,000.00
	BRIDGE REPLACEMENT (ARNO OVER BRANCH)	LS	1	\$ 278,750.00	\$ 278,750.00
TOTAL CONSTRUCTION COST					\$1,072,925.00
20% CONTINGENCY					\$214,585.00
15% ENGINEERING FEE					\$160,938.75
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$1,448,448.75



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Peytonsville Arno Road / Arno College Grove Road)





ENGINEER'S OPINION OF COST

ARNO-ALLISONA ROAD @ BETHESDA - ARNO ROAD

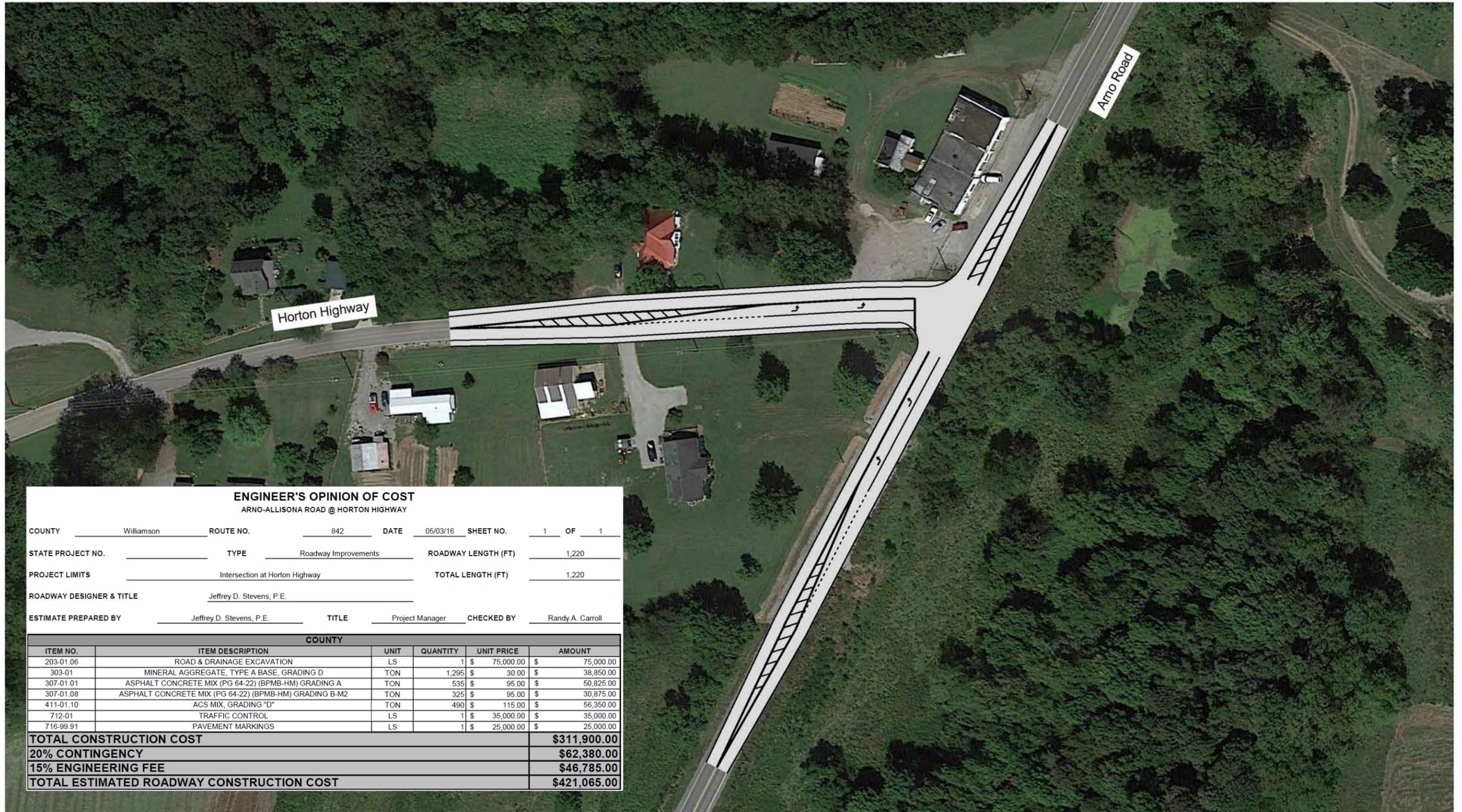
COUNTY Williamson ROUTE NO. 842 DATE 05/03/16 SHEET NO. 1 OF 1
 STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 1,200
 PROJECT LIMITS Intersection at Bethesda-Arno Road TOTAL LENGTH (FT) 1,200
 ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.
 ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,650	\$ 30.00	\$ 49,500.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	680	\$ 95.00	\$ 64,600.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	415	\$ 95.00	\$ 39,425.00
411-01.10	ACS MIX, GRADING "D"	TON	480	\$ 115.00	\$ 55,200.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 25,000.00	\$ 25,000.00
TOTAL CONSTRUCTION COST					\$343,725.00
20% CONTINGENCY					\$68,745.00
15% ENGINEERING FEE					\$51,558.75
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$464,028.75



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Bethesda Arno Road)





ENGINEER'S OPINION OF COST
ARNO-ALLISONA ROAD @ HORTON HIGHWAY

COUNTY	Williamson	ROUTE NO.	842	DATE	05/03/16	SHEET NO.	1	OF	1
STATE PROJECT NO.		TYPE	Roadway Improvements	ROADWAY LENGTH (FT)	1,220				
PROJECT LIMITS	Intersection at Horton Highway			TOTAL LENGTH (FT)	1,220				
ROADWAY DESIGNER & TITLE	Jeffrey D. Stevens, P.E.								
ESTIMATE PREPARED BY	Jeffrey D. Stevens, P.E.	TITLE	Project Manager	CHECKED BY	Randy A. Carroll				

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	1,295	\$ 30.00	\$ 38,850.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	535	\$ 95.00	\$ 50,825.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	325	\$ 95.00	\$ 30,875.00
411-01.10	ACS MIX, GRADING "D"	TON	490	\$ 115.00	\$ 56,350.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 25,000.00	\$ 25,000.00
TOTAL CONSTRUCTION COST					\$311,900.00
20% CONTINGENCY					\$62,380.00
15% ENGINEERING FEE					\$46,785.00
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$421,065.00



Arno Road - 2030 Long Term Recommended Improvements (Arno Road and Horton Highway)



ENGINEER'S OPINION OF COST
HENPECK LANE AND COLEMAN ROAD @ COLUMBIA PIKE

COUNTY Williamson ROUTE NO. _____ DATE 05/03/16 SHEET NO. 1 OF 1

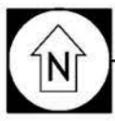
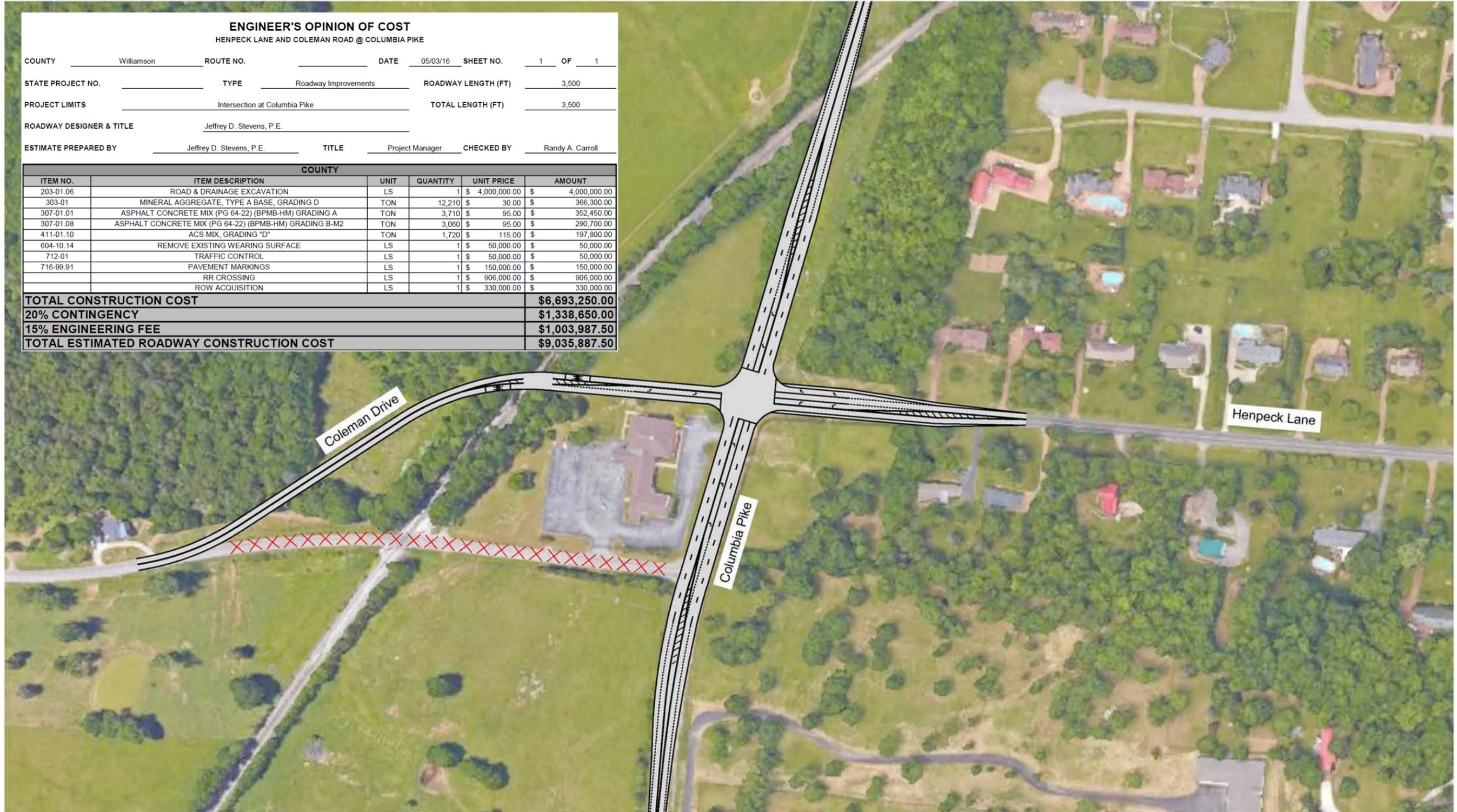
STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 3,500

PROJECT LIMITS Intersection at Columbia Pike TOTAL LENGTH (FT) 3,500

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

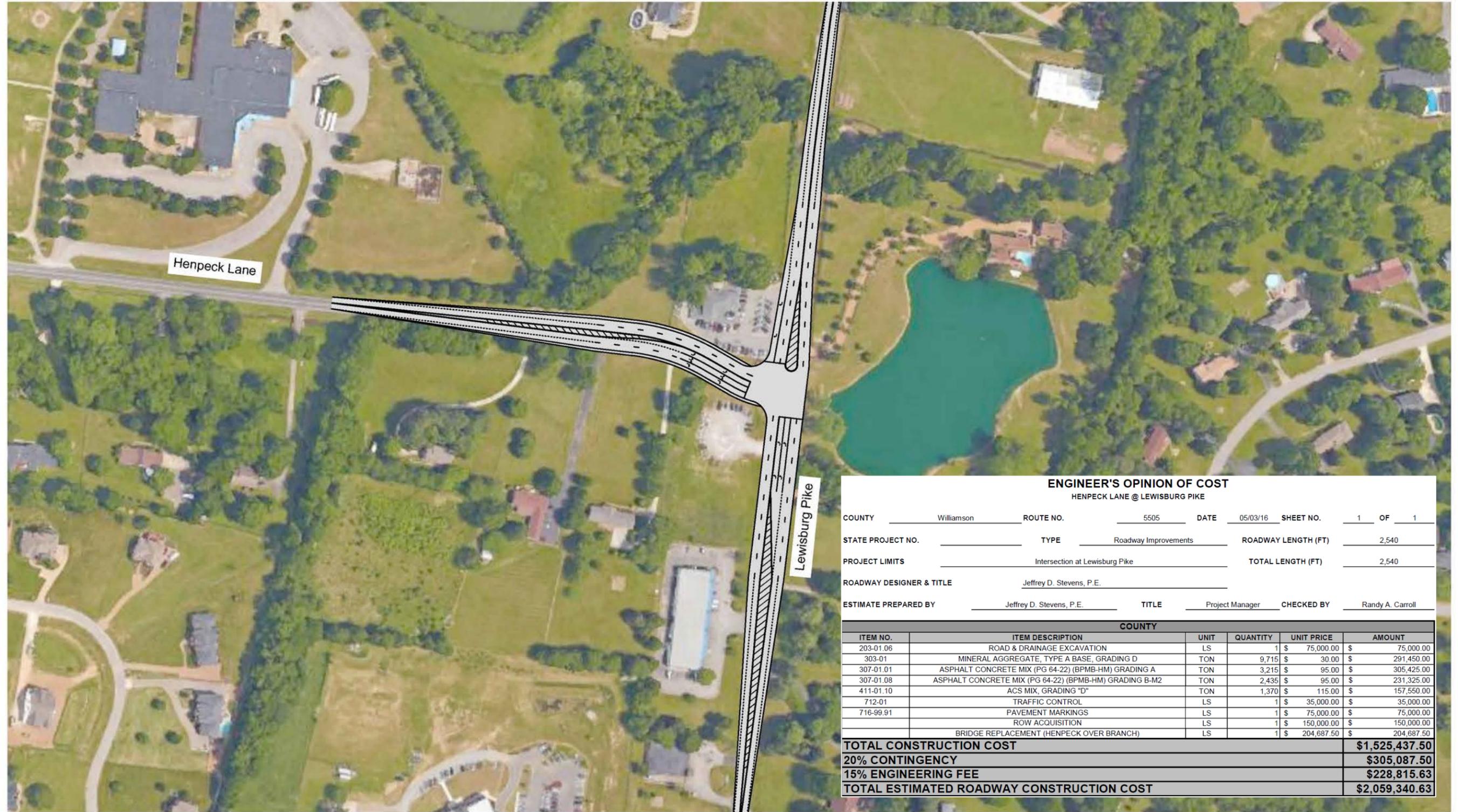
ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 4,000,000.00	\$ 4,000,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	12,210	\$ 30.00	\$ 366,300.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,710	\$ 95.00	\$ 352,450.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	3,060	\$ 95.00	\$ 290,700.00
411-01.10	ACS MIX, GRADING "D"	TON	1,720	\$ 115.00	\$ 197,800.00
604-10.14	REMOVE EXISTING WEARING SURFACE	LS	1	\$ 50,000.00	\$ 50,000.00
712-01	TRAFFIC CONTROL	LS	1	\$ 50,000.00	\$ 50,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 150,000.00	\$ 150,000.00
	RR CROSSING	LS	1	\$ 906,000.00	\$ 906,000.00
	ROW ACQUISITION	LS	1	\$ 330,000.00	\$ 330,000.00
TOTAL CONSTRUCTION COST					\$6,693,250.00
20% CONTINGENCY					\$1,338,650.00
15% ENGINEERING FEE					\$1,003,987.50
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$9,035,887.50



Henpeck Lane - 2030 Long Term Recommended Improvements (Henpeck Lane and Coleman Drive / Columbia Pike)





ENGINEER'S OPINION OF COST
HENPECK LANE @ LEWISBURG PIKE

COUNTY Williamson ROUTE NO. 5505 DATE 05/03/16 SHEET NO. 1 OF 1

STATE PROJECT NO. _____ TYPE Roadway Improvements ROADWAY LENGTH (FT) 2,540

PROJECT LIMITS Intersection at Lewisburg Pike TOTAL LENGTH (FT) 2,540

ROADWAY DESIGNER & TITLE Jeffrey D. Stevens, P.E.

ESTIMATE PREPARED BY Jeffrey D. Stevens, P.E. TITLE Project Manager CHECKED BY Randy A. Carroll

COUNTY					
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
203-01.06	ROAD & DRAINAGE EXCAVATION	LS	1	\$ 75,000.00	\$ 75,000.00
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	9,715	\$ 30.00	\$ 291,450.00
307-01.01	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING A	TON	3,215	\$ 95.00	\$ 305,425.00
307-01.08	ASPHALT CONCRETE MIX (PG 64-22) (BPMB-HM) GRADING B-M2	TON	2,435	\$ 95.00	\$ 231,325.00
411-01.10	ACS MIX, GRADING "D"	TON	1,370	\$ 115.00	\$ 157,550.00
712-01	TRAFFIC CONTROL	LS	1	\$ 35,000.00	\$ 35,000.00
716-99.91	PAVEMENT MARKINGS	LS	1	\$ 75,000.00	\$ 75,000.00
	ROW ACQUISITION	LS	1	\$ 150,000.00	\$ 150,000.00
	BRIDGE REPLACEMENT (HENPECK OVER BRANCH)	LS	1	\$ 204,687.50	\$ 204,687.50
TOTAL CONSTRUCTION COST					\$1,525,437.50
20% CONTINGENCY					\$305,087.50
15% ENGINEERING FEE					\$228,815.63
TOTAL ESTIMATED ROADWAY CONSTRUCTION COST					\$2,059,340.63

 **Henpeck Lane - 2030 Long Term Recommended Improvements (Henpeck Lane and Lewisburg Pike)**

 GRAPHIC SCALE