Roundabout Hancock CR 600W and CR 600W
Town of McCordsville

Project Cost

Description		Fee
Professional Services (PE)	$	255,000
Utility and Railroad	$	95,000
Land Acquisition (RW1/RW2)	$	175,000
Construction Cost (CN)	$	1,900,000
Construction Inspection (CE)	$	285,000
Total Project Cost (2018)	**$**	**2,710,000**

Roundabout Hancock CR 600W and CR 600W
Town of McCordsville

Professional Services

Description		Fee
Additional Information to Approved CE	$	6,000
Updated US Waters Report	$	4,000
Rule 5 Permit	$	10,000
Utility Coordination	$	15,000
Road Design and Plan	$	175,000
Lighting Design and Plans	$	15,000
Public Information Meeting	$	9,000
Title Work (6 parcels @ $500)	$	3,000
Right-of-Way Engineering (6 parcels @ $2500)	$	15,000
Right-of-Way Staking (6 parcels @ $500)	$	3,000
Total Profession Services	**$**	**255,000**

Land Acquisition Costs are included in the Land, Improvements, and Damages (LID) spreadsheet

ESTIMATED FEES
CR 600W & 600N
ROUNDABOUT

106th Street and Cumberland Road
Des. No. 1297563

Summary of Professional Fees

Description	Original Fee	Supplement No. 1	Supplement No. 2	Supplement No. 3	Revised Fee
a. Topographic Survey	$ 38,000	$ 1,700	$ -	$ -	$ 39,700
b. Geotechnical Investigation	$ 8,000	$ -	$ -	$ -	$ 8,000
c. Categorical Exclusion, Level 4 (ADDITIONAL INFORMATION)	$ 18,000 → 6,000	$ -	$ -	$ 3,000	$ 21,000 → 6,000
d. Archaeological Reconnaissance	$ 3,000	$ -	$ -	$ 1,200	$ 4,200
e. Historic Records Check and Survey	$ 7,000	$ -	$ -	$ -	$ 7,000
f. U.S. Waters Report	$ 3,000 → 4,000	$ -	$ -	$ -	$ 3,000 → 4,000
g. Regulatory Permits (RULE 5)	$ 8,500 → 10,000	$ -	$ -	$ -	$ 8,500 → 10,000
h. Utility Coordination	$ 15,000	$ -	$ -	$ 9,600 (1)	$ 24,600 → 15,000
i. Road Design and Plans	$ 133,000	$ 3,000	$ -	$ 38,100 (2)	$ 174,100 → 175,000
j. Lighting Design and Plans	$ 12,000	$ -	$ -	$ -	$ 12,000 → 15,000
k. Public Hearing (Information Mtg)	$ 6,000	$ -	$ -	$ -	$ 6,000 → 9,000
l. Hydraulic Modeling of Mud Creek	$ 32,000	$ 15,900	$ -	$ -	$ 47,900
m. Regulatory Permits for Mud Creek	$ 5,400	$ -	$ -	$ -	$ 5,400
n. Road Design for Modeling of Mud Creek	$ 11,000	$ -	$ -	$ -	$ 11,000
o. Title Work (6 @ $500)	$ -	$ -	$ 2,340	$ -	$ 2,340 → 3000
p. Right-of-Way Engineering (6 @ $2500)	$ -	$ -	$ 12,600	$ -	$ 12,600 → 15,000
q. Staking (6 @ $500)	$ -	$ -	$ 1,500	$ -	$ 1,500 → 3,000
r. Appraisal Problem Analysis (APA's)	$ -	$ -	$ 800	$ -	$ 800
s. Appraisals	$ -	$ -	$ 7,040	$ -	$ 7,040
t. Review Appraisals	$ -	$ -	$ 3,010	$ -	$ 3,010
u. Buying	$ -	$ -	$ 8,700	$ 1,350	$ 10,050
v. Land Acquisition Management	$ -	$ -	$ 6,000	$ -	$ 6,000
TOTALS	**$ 299,900**	**$ 20,600**	**$ 41,990**	**$ 53,250**	**$ 415,740**

FROM DEVIN

FROM TIM

INCLUDED IN LAD SPREADSHEET

(1) Extra work due to Duke Energy Redesign/Omission

(2) $18,600 Drainage Revisions
$19,500 MOT Revision (Switch from road closed to under traffic)

Town of McCordsville
CR 600W at CR 600N - Intersection Improvements
Land Acquisition Summary of Services

Parcel	Name	Use	Cost Per Acre	Permanent ROW (acres)	Land Cost	Damages	Cost to Cure	Relocation	TOTAL ESTIMATED OFFER	Appraisal Type	APA	Appraisal	Appraisal Review	Right of Way Buying	Right of Way Management	Relocation Services	TOTAL SERVICES EXPENSE
1	Mt Comfort Road Properties	Agricultural - Vacant Land	$ 50,000	0.658	$ 32,900				$ 32,900	SF	$ 235	$ 2,625	$ 1,260	$ 1,785	$ 1,450	$ -	$ 7,355
2	Philip & Beverly Wilson	Residential One Family Dwelling on Unplatted Land of 0-9.99 acres	$ 50,000	0.010	$ 500	$ 15,000			$ 15,500	LF	$ 235	$ 4,200	$ 2,000	$ 1,785	$ 1,450	$ -	$ 9,670
3	Apple, Louise E 1/3 Int & Mary Rosalie Apple 1/3 Int & Sharon Cloyd 1/3 Int	Agricultural - Vacant Land	$ 50,000	0.156	$ 7,800				$ 7,800	WV	$ 235	$ 630	$ 370	$ 1,785	$ 1,450	$ -	$ 4,470
4	PHB & Associates LLC	Residential One Family Dwelling on Unplatted Land of 0-9.99 acres	$ 50,000	0.125	$ 6,250	$ 15,000			$ 21,250	LF	$ 235	$ 4,200	$ 2,000	$ 1,785	$ 1,450	$ -	$ 9,670
5	Richard Blaker	Residential One Family Dwelling on Unplatted Land of 0-9.99 acres	$ 50,000	0.070	$ 3,500	$ 15,000			$ 18,500	LF	$ 235	$ 4,200	$ 2,000	$ 1,785	$ 1,450	$ -	$ 9,670
6	Cohron, Travis W	Residential One Family Dwelling on Unplatted Land of 0-9.99 acres	$ 20,000	0.173	$ 3,500	$ 25,000			$ 28,500	LF	$ 235	$ 4,200	$ 2,000	$ 1,785	$ 1,450	$ -	$ 9,670
	TOTAL		**$ -**	**1.19**	**$ 54,450**	**$ 70,000**	**$ -**	**$ -**	**$ 124,450**		**$ 1,410**	**$ 20,055**	**$ 9,630**	**$ 10,710**	**$ 8,700**	**$ -**	**$ 50,505**

Notes: APA, Appraisal, Appraisal Review, and Buying fees established using 10/1/2017 INDOT Fee Schedule.

TOTAL LAND ACQUISITION COST = $174,955
ROUNDED LAND ACQUISTION COST = $175,000

Roundabout Hancock CR 600W and CR 600W
Town of McCordsville

Construction Cost

Description	Fee
Quantity Summary (next page)	$1,180,089
Erosion Control	$50,000
Roundabout Lighting	$20,000
Pavement Markings	$10,000
Signing	$25,000
Subtotal	$1,285,089
25% Contingencies	$321,272
Subtotal	$1,606,361
Construction Engineering (3%)	$48,191
Clear Right-of-Way (2%)	$32,127
Maintain Traffic (5%)	$80,318
Mob and Demob (5%)	$80,318
Total Construction Cost	$1,847,315
Rounded Total Construction Cost	**$1,900,000**

CR600W Reconstruction in Hancock County

Quantity Summary

FEBA Segment

Item	Unit	Totals	Price	Extension	Mainline	S-9-A	Roundabout	Approaches
QC/QA HMA Surface, 4, 70	Tons	**932**	$78.68	$73,325	730	201		
QC/QA HMA Intermediate, 4, 70	Tons	**1,553**	$64.83	$100,696	1,217	336		
QC/QA Base, 3, 64, 25.0 mm	Tons	**2,997**	$73.38	$219,894	1,888	1,108		
QC/QA Intermediate "OG", 19.0 mm	Tons	**1,225**	$79.00	$96,786	744	481		
Concrete Curb & Gutter, "C"	Lft	**2,796**	$20.73	$57,961	1,300	1,496		
Integral Concrete Curb	Lft	**225**	$18.03	$4,059			225	
Concrete Curb Type "B"	Lft	**305**	$29.57	$9,011			305	
Concrete Center Curb Type D	Sys	**335**	$50.29	$16,842	167	168		
HMA For Approaches, Type B	Tons	**116**	$103.67	$12,073				116
6" PCCP For Driveways	Sys	**177**	$63.50	$11,218				177
9" PCCP For Driveways	Sys	**350**	$95.25	$33,380			350	
Pipe, Type 4, 6 Inch	Lft	**2,646**	$5.21	$13,786	1,300	1,346		
Aggregate For Underdrains	Tons	**238**	$43.83	$10,438	117	121		
Geotextile For Underdrains	Sys	**2,059**	$3.00	$6,176	1,011	1,047		
Subgrade Treatment, Type IB	Sys	**8,287**	$6.68	$55,354	4,892	3,218		176
Subgrade Treatment, Type II	Sys	**527**	$13.82	$7,285			350	177
Common Excavation	Cys	**2,008**	$12.00	$24,097	500	740	518	250
Borrow (Waste)	Cys	**10,910**	$9.53	$103,976	10,574	446	895	
Structure Backfill, Type 1	Cys	**1,541**	$21.43	$33,023	1,338	203		
Type 2 Pipe, 15"	Lft	**916**	$44.12	$40,414	444	472		
Type 2 Pipe, 18"	Lft	**100**	$46.28	$4,628		100		
Type 2 Pipe, 24"	Lft	**75**	$67.10	$5,033		75		
Type 2 Pipe, 36"	Lft	**1,394**	$113.87	$158,735	1,394			
Inlet Type B-15	Each	**5**	$2,471.00	$12,355	2	3		
Inlet Type C-15	Each	**11**	$2,342.00	$25,762	4	7		
Inlet Type E-7	Each	**1**	$1,646.00	$1,646		1		
Pipe Catch Basin, 18 inch	Each	**9**	$1,572.00	$14,148	6	3		
Manhole Type C-4	Each	**7**	$2,764.00	$19,348	5	2		
Sodding	Sys	**1,878**	$5.46	$10,255	1,444		434	
			Subtotal 1	$1,181,701				
Unit Prices based on INDOT 2017 Unit Price Summary								

CR600W Reconstruction in Hancock County
Line "A1" (Mainline) Quantities

SP 9/14/18
MR 9-17-18

QC/QA HMA Surface, 4, 76

From Sta. 161+00 to 165+00 = 400 x (38+74)/2 =		22,400 sft
From Sta. 165+00 to 166+77.35 = 177.35 x 62 =		10,996 Sft
At Roundabout = $\prod x82.5^2 - \prod x48.50^2$ =		13,993 Sft
From Sta. 168+40.35 to 170+00 = 159.65 x 62 =		9,898 Sft
From Sta. 170+00 to 174+00 = 400 x (38+74)/2 =		22,400 Sft
	∑ =	79,687 Sft
	x 1/9 =	8,854 Sys
	x 165/2000 =	**730 Tons**

Concrete Curb & Gutter, "C"

From Sta. 165+00 to 170+00 = 2 x 500 =		1,000 Lft
At Roundabout Approaches, Assume...		300 Lft
	∑ =	**1,300 Lft**

QC/QA HMA Intermediate, 4, 76

Surface Area =		8,854 Sys
	x 275/2000 =	**1,217 Tons**

QC/QA Base, 3, 64, 25.0 mm

From Sta. 161+00 to 165+00 = 400 x (0+19)/2 x 2=		7,600 Sft
From Sta. 165+00 to 166+77.35 = 177.35 x 26 =		4,611 Sft
At Roundabout = $\prod x82.5^2 - \prod x48.50^2$ =		13,993 Sft
From Sta. 168+40.35 to 170+00 = 159.65 x 26 =		4,151 Sft
From Sta. 170+00 to 174+00 = 400 x 400 x (0+19)/2 x 2=		7,600 Sft
	∑ =	37,955 Sft
	x 1/9 =	4,217 Sys
	x 880/2000 =	1,856 Tons

Above underdrain = 1,300 Lft		
x .0127 cys/lft x 1.98 Tons/Cyd =		33 Tons
	∑ =	**1,888 Tons**

QC/QA Intermediate "OG", 19.0 mm

Surface Area =		4,217 Sys
	x 300/2000 =	633 Tons
Above underdrain = 1,300 Lft		
x .0475 cys/lft x 1.80 Tons/Cyd =		111 Tons
	∑ =	**744 Tons**

CR600W Reconstruction in Hancock County
Line "A1" (Mainline) Quantities

SVP 9/14/18
JAR 9-17-18

Concrete Center Curb Type D
From Autocad = 2 x 750 = 1500 Sft
x 1/9 = **167 Sys**

Pipe, Type 4, 6 Inch
Assume same as Curb & Gutter (from above) = **1,300 Lft**

Aggregate For Underdrains
Type 4 Pipe length (from above) = 1,300 Lft
x 0.09 cys/lft = **117 Cys**

Geotextile For Underdrains
Type 4 Pipe length (from above) = 1,300 Lft
x 0.778 sys/lft = **1,011 Cys**

Subgrade Treatment, Type IB
Surface Area (from above) = 4,217 Sys
Beneath Curb & Gutter:
Length (from above) = 1,300 Lft
Width (From Fig. 52-13N)= 4.67 Lft
Area = 6,071 Sft. X 1/9 = 675 Sys
∑ = **4,892 Sys**

Inlet Type B-15 (Green)
From Plans **2 Each**

Inlet Type C-15 (Pink)
From Plans **4 Each**

Pipe Catch Basin (Purple)
From Plans **6 Each**

Manhole Type C-4 (Blue)
From Plans (roundabout) 5 Each
From Plans (to Detention) 5 Each
∑ = **10 Each**

Type 2 Pipe, 15 Inch (Orange)
Between Inlets = 428 Lft
4' btwn PCBs and MHs 16 Lft
∑ = **444 Lft.**

CR600W Reconstruction in Hancock County
Line "A1" (Mainline) Quantities

SJP 9/14/18
JAR 9-17-18

Type 2 Pipe, 36 Inch (Yellow)
All stormwater flows north to proposed detention pond
From Plans ∑ = **1,394 Lft.**

Structure Backfill, Type 1

Size/Type	Length	cys/lft	Total	
15" Type 2 Pipe, T = 1'	444	0.25	111	Cys
36" Type 2 Pipe, T = 2'	1,394	0.88	1226.72	Cys
		∑ =	**1,338**	**Cys**

Sodding
From Sta. 161+00 to 174+00 = 1300 x 5 x 2= 13,000 Sft
x 1/9 = **1,444 Sys**

Common Excavation
Assume 500 cys at roundbaout approaches = **500 Cys**

Borrow
Fill + 15% =
From Cross Sections, assume 200 sft average from Sta. 161+00 to 174+00
Volume = 1300 x 200 x 1/27 = 9,630
x 1.15= 11,074
Borrow (Waste) = **10,574 Cys**

CR600W Reconstruction in Hancock County
Line "S-9-A" (CR600N) Quantities

Sup 9/14/18
JAR 9-17-18

QC/QA HMA Surface, 4, 76

West Approach		
Gross Area		11,905 Sft
Deduct Center Curb		-476 Sft
Deduct Raised Island		-745 Sft
East Approach		
Gross Area		12,580 Sft
Deduct Center Curb		-516 Sft
Deduct Raised Island		-769 Sft
	∑ =	**21,979 sft**
	x 1/9 =	2,442 Sys
	x 165/2000 =	**201 Tons**

Concrete Curb & Gutter, "C"

From Sta. 45+90 to 49+17.50 = 2 x 327.50 =		655 Lft
From Sta. 50+82.50 to 54+28 = 2 x 345.50 =		691 Lft
At Splitter Islands, Assume 75 lft Each =		150 Lft
	∑ =	**1,496 Lft**

QC/QA HMA Intermediate, 4, 76

Surface Area =		2,442 Sys
	x 275/2000 =	**336 Tons**

QC/QA Base, 3, 64, 25.0 mm

Surface Area =		2,442 Sys
	Net Area =	2,442 Sys
	x 880/2000 =	1,075 Tons
Above underdrain = 1,346 Lft		
x .0127 cys/lft x 1.98 Tons/Cyd =		34 Tons
	∑ =	**1,108 Tons**

QC/QA Intermediate "OG", 19.0 mm

Surface Area =		2,442 Sys
	Net Area =	2,442 Sys
	x 300/2000 =	366 Tons
Above underdrain = 1,346 Lft		
x .0475 cys/lft x 1.80 Tons/Cyd =		115 Tons
	∑ =	**481 Tons**

CR600W Reconstruction in Hancock County
Line "S-9-A" (CR600N) Quantities

Svp 9/14/18
JAR 9-17-18

Concrete Center Curb Type D

East Approach (From Autocad) =		745 sft
West Approach (From Autocad) =		769 sft
		1,514 sft
	x 1/9 =	**168 Sys**

Pipe, Type 4, 6 Inch

Assume same as Curb & Gutter (from above) =	**1,346 Lft**

Aggregate For Underdrains

Type 4 Pipe length (from above) =	1,346 Lft
x 0.09 cys/lft =	**121 Cys**

Geotextile For Underdrains

Type 4 Pipe length (from above) =	1,346 Lft
x 0.778 sys/lft =	**1,047 Cys**

Subgrade Treatment, Type IB

Surface Area (from above) =			2,442 Sys
Beneath Curb & Gutter:			
Length (from above) =	1,496 Lft		
Width (From Fig. 52-13N)=	4.67 Lft		
Area =	6,986 Sft.	X 1/9 =	776 Sys
		∑ =	**3,218 Sys**

Inlet Type B-15	(Green)		
From Plans		**3**	**Each**
Inlet Type C-15	(Pink)		
From Plans		**7**	**Each**
Inlet Type E-7	(Purple)		
From Plans		**1**	**Each**
Pipe Catch Basin	(Purple)		
From Plans		**3**	**Each**
Manhole Trype C-4	(Blue)		
From Plans		**2**	**Each**

CR600W Reconstruction in Hancock County
Line "S-9-A" (CR600N) Quantities

Sup 9/14/18
JAR 9-17-18

Type 2 Pipe, 15 Inch (Orange)

Between Inlets and PCBs =		472 Lft.
	∑ =	**472 Lft.**

Type 2 Pipe, 18 Inch

Between MHs	**100 Lft**

Type 2 Pipe, 24 Inch

Between MHs	**75 Lft**

Structure Backfill, Type 1

Type/Size	Length	cys/lft		Total	
15" Type 2 Pipe, T = 1'	472	0.25		118	Cys
18" Type 2 Pipe, T = 2'	100	0.44		44	Cys
24" Type 2 Pipe, T = 2'	75	0.55		41.25	Cys
			∑ =	**203**	**Cys**

Common Excavation =

West Approach: Assume		100 Cys
East Approach: Assume 50 sft/lft= 345.50 x 50 x 1/27 =		640 Cys
	∑ =	**740 Cys**

Borrow

West Approach: Assume 75 sft/lft= 327.5 x 75 x 1/27 =		910 Cys
East Approach: Assume 10 sft/lft= 327.5 x 10 x 1/27 =		121 Cys
	∑ =	**1,031** Cys
	x 1.15=	1,186 Cys
	Borrow (Waste)=	**446 Cys**

CR600W Reconstruction in Hancock County
CR600W/CR600N Roundabout Quantities

SMP 9/14/18
JAR 9-14-18

Integral Concrete Curb

Around Raised Island = 2x∏x35.83 =		**225 Lft**

Concrete Curb Type "B"

Around Central Island = 2x∏x48.50 =		**305 Lft**

9" PCCP For Driveways

At Roundabout = $\pi x47.83^2 - \pi x35.83^2$ =		3,154 Sft
	x 1/9 =	**350 Sys**

Subgrade Treatment, Type II

Area of 9" Cement Concrete Pavement For Driveways =		**350 Sys**

Sodding

Raised Central island = $\pi x35.25^2$ =		3,904 Sft
	x 1/9 =	**434 Sys**

Common Excavation

Pavement Surface Area =		13,993 Sft
	Assume 1' Depth =	13,993 Cft
	x 1/27 =	**518 Cys**

Borrow

Fill +15%

Pavement Surface Area =		13,993 Sft
	Assume 2' Depth =	27,986 Cft
Roundabout Perimeter = 2x∏x82.5 = 518.4 Lft		
Assume 10 sft/lft =		5,184 Cft
	∑ =	33,170 Cft
	x 1/27 =	1,229 Cys
	x1.15=	1,413 Cys
	Net Borrow =	**895 Cys**

CR600W Reconstruction in Hancock County
Approach Quantities

SVJ 9/14/18
JAR 9-17-18

HMA For Approaches, Type B

Location:		Area	
22' Street Approach at Sta. 53+98 "S-9-A" Rt.=		1588	Sft
	∑ =	1,588	Sft
	x 1/9 =	176	Sys
	x 1320/2000 =	**116**	**Tons**

Subgrade Treatment, Type IB

Area of HMA For Approaches=		**176**	**Sys**

6" PCCP For Driveways

24' Cl. I Dr. at Sta. 170+02 "A1" Rt. =		780	Sft
12' Cl. I Dr at Sta. 52+12 "S-9-A" Lt. =		313	Sft
16' Cl. I Dr at Sta. 53+87 "S-9-A" Lt. =		497	Sft
	∑ =	1590	Sft
	x 1/9 =	**177**	**Sys**

Subgrade Treatment, Type II

Area of 6" PCCP For Approaches=		**177**	**Sys**

Common Excavation

Assume		**250**	**Cys**