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) Right-of-Way Engineering	\$ 3,000
(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

106th Street and Cumberland Road Des. No. 1297563

Summary of Professional Fees

		Original	Su	pplement	Su	pplement	Sup	plement	ı	Revised
Description		Fee		No. 1	_	No. 2		No. 3	_	Fee
a. Topographic Survey	\$	38,000	\$	1,700	\$	-	\$		\$	39,70
b. Geotechnical Investigation	\$	8,000	\$		\$		\$		\$	8,00
cCategorical Exclusion, Level 4	\$	-18,000-	\$		\$		\$	-3,000	\$	21,00
dArchaeological-Reconnaissance	\$	3,000	\$		\$		\$	1,200	\$	4,20
e. Historic Records Check and Survey	\$	7,000	\$		\$		\$		\$	7,00
f. U.S. Waters Report	\$	3,000	\$		\$		\$	741	\$	-3,00
g. Regulatory-Permits RULE 5	\$	-8,500	\$	-	\$		\$		\$	-8,50
h. Utility Coordination	\$	15,000	\$		\$		\$	9,600	\$	24,60
i. Road Design and Plans	\$	133,000	\$	3,000	\$	÷	\$2	38,100	\$	174,10
j. Lighting Design and Plans	\$	12,000	\$	-	\$		\$		\$	12,00
k. Public Hearing Information Mtg	\$	6,000	\$		\$	- 4	\$		\$	6,00
I. Hydraulic Modeling of Mud Creek	\$	32,000	\$	15,900	\$	-	\$		\$	47,90
m. Regulatory Permits for Mud Creek	\$	5,400	\$	-	\$		\$		\$	5,40
n. Road Design for Modeling of Mud Cre	ek \$	11,000	\$	-	\$		\$		\$	11,00
o. Title Work 6@ \$500	\$		\$	× _ 4	\$	-2,340	- \$		\$	300 -2,34
p. Right-of-Way Engineering 6 @ \$2	2500 \$		\$		\$	-12,600	\$		\$	12,60
q. Staking 6 @ \$ 5	\$00 \$		\$		\$	1,500	\$		\$	1,50
r. Appraisal Problem Analysis (APA's)	\$		\$		\$	800	\$		\$	80
s. Appraisals	\$	-	\$		\$	7,040	\$		\$	7,04
t. Review Appraisals	\$	>	\$	-	\$	3,010	\$	-	\$	3,01
u. Buying	\$	•	\$	-	\$	8,700	\$	1,350	\$	10,05
v Land Acquisition Management	\$		\$		\$	6,000	\$		\$	6,00
TOTALS	\$	299,900	\$	20,600	\$	41,990	\$	53,250	5	415,74

⁽¹⁾ Extra work due to Dake Energ Pedesign/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	100	ost Per Acre	Permanent ROW (acres)	La	and Cost	Damages	Cost to Cure	Relocation	ES	TOTAL STIMATED OFFER	Appraisal Type	А	PA	Appraisal	Appraisal Review		of Way ying	Right of Way Management	Relocation Service		TOTAL SERVICES EXPENSE
1	Mt Comfort Road Properties	Agricultural - Vacant Land	\$	50,000	0.658	\$	32,900				\$	32,900	SF	\$	235	\$ 2,625	\$ 1,26	0 \$	1,785	\$ 1,450	\$	- \$	7,35
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	\$ 2,00	0 \$	1,785	\$ 1,450	\$	- \$	9,67
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			1 17	\$	7,800	wv	\$	235	\$ 630	\$ 37	0 \$	1,785	\$ 1,450	\$	- s	4,47
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	\$ 2,00	0 \$	1,785	\$ 1,450	\$	- \$	9,67
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	s	235	\$ 4,200	\$ 2,00	0 \$	1,785	\$ 1,450	\$	- \$	9,67
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	s	235	\$ 4,200	\$ 2,00	0 \$	1,785	\$ 1,450	\$	- \$	9,67
	TOTAL		\$	3	1.19	\$	54,450	\$ 70,000	\$ -	\$ -	\$	124,450		\$	1,410	\$ 20,055	\$ 9,630	\$	10,710	\$ 8,700	\$	- \$	50,50

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

TOTAL LAND ACQUISITION COST = \$174,995

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	<u>\$25,000</u>
Subtotal	\$1,285,089
25% Contingencies	<u>\$321,272</u>
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%)	<u>\$80,318</u>
Total Construction Cost	\$1,847,315
Rounded Total Construction Cost	\$1,900,000

CR600W Reconstruction in Hancock County Quantity Summary FEBA Segment

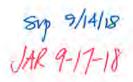
Item	Unit	Totals	Price	Extension	Mainline	S-9-A	Roundabout	Approaches
QC/QA HMA Surface, 4, 70	Tons	932	\$78.68	\$73 <i>,</i> 325	730	201	$\searrow \swarrow$	>><
QC/QA HMA Intermediate, 4, 70	Tons	1,553	\$64.83	\$100,696	1,217	336	$ \nearrow \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $	
QC/QA 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	\searrow
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	\mathbb{V}
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		\mathbb{Z}
Type 2 Pipe, 15"	Lft	916	\$44.12	\$40,414	444	472		\sim
Type 2 Pipe, 18"	Lft	100	\$46.28	\$4,628	>	100		\sim
Type 2 Pipe, 24"	Lft	75	\$67.10	\$5,033		75		\mathcal{M}
Type 2 Pipe, 36"	Lft	1,394	\$113.87	\$158,735	1,394			\mathcal{M}
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		$\searrow \searrow$
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				
					7-1-10-1			
Unit Prices based on INDOT 2017 Unit Price	Summary							

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



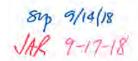
QC/QA HMA Surface, 4, 76		
From Sta. 161+00 to 165+00 = 400 x (38+74)	/2 =	22,400 sft
From Sta. 165+00 to 166+77.35 = 177.35 x 6		10,996 Sft
At Roundabout = $\Pi \times 82.5^2 - \Pi \times 48.50^2 =$		13,993 Sft
From Sta. 168+40.35 to 170+00 = 159.65 x 6	2 =	9,898 Sft
From Sta. 170+00 to 174+00 = 400 x (38+74)		22,400 Sft
110111 314. 170. 30 10 17 1700 100 100 100	Σ=	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
At Noundabout Approaches, Assumen	Σ=	1,300 Lft
QC/QA HMA Intermediate, 4, 76		
Surface Area =		8,854 Sys
Surface Area	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 2		4,611 Sft
At Roundabout = $\pi \times 82.5^2 - \pi \times 48.50^2 =$		13,993 Sft
From Sta. 168+40.35 to 170+00 = 159.65 x 2	26 =	4,151 Sft
From Sta. 170+00 to 174+00 = 400 x 400 x (7,600 Sft
FIGHT 5ta. 170+00 to 174+00 = 400 x 400 x 1	Σ=	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
X.0127 Cy5/11CX 1.30 Tollay 0/4	Σ =	1,888 Tons
QC/QA Intermediate "OG", 19.0 mm		
Surface Area =		4,217 Sys
Sandsernes	x 300/2000 =	633 Tons
Above underdrain = 1,300 Lft		- A
x .0475 cys/lft x 1.80 Tons/Cyd =		<u>111</u> Tons
	Σ =	744 Tons

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



Concrete Center Curb Type D			
From Autocad = 2 x 750 =		15	00 Sft
	x 1/9 =	1	67 Sys
Pipe, Type 4, 6 Inch			
Assume same as Curb & Gutter (fro	om above) =	1,3	00 Lft
Aggregate For Underdrains			
Type 4 Pipe length (from above) =		1,3	00 Lft
x 0.09 cys/lft =		1	17 Cys
Geotextile For Underdrains			
Type 4 Pipe length (from above) =		1,3	00 Lft
x 0.778 sys/lft =		1,0	11 Cys
Subgrade Treatment, Type IB			
Surface Area (from above) =		4,2	17 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 =	6	75 Sys
	Σ =	4,8	92 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
Σ=		10	Each
Type 2 Pipe, 15 Inch (Orange)			
Between Inlets =		4	28 Lft
4' btwn PCBs and MHs		3	16 Lft
Σ=		4.	44 Lft.

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



Type 2	Pipe,	36 Inch	(Yellow)
--------	-------	---------	----------

All stormwater flows north to proposed detention pond

From Plans Σ = 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
		Σ =	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% =

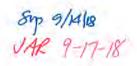
From Cross Sections, assume 200 sft average from Sta. 161+00 to 174+00

Volume = 1300 x 200 x 1/27 = 9,630

x 1.15= 11,074

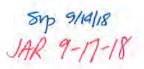
Borrow (Waste) = 10,574 Cys

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



QC/QA HMA Surface, 4, 7	6		
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
		Σ =	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	2 75 Ift Each =		150 Lft
		Σ =	1,496 Lft
QC/QA HMA Intermediat	e, 4, 76		
Surface Area =			2,442 Sys
		x 275/2000 =	336 Tons
QC/QA Base, 3, 64, 25.0 r	nm		
Surface Area =			2,442 Sys
		Net Area =	2,442 Sys
		x 880/2000 =	1,075 Tons
Above underdrain =	1,346 Lft		30.00
x .0127 cys/lft x 1.98 To	ns/Cyd =		34 Tons
Driver of California Co.		Σ =	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 To	ns/Cyd =		<u>115</u> Tons
		Σ =	481 Tons

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



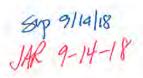
Concrete Center Cui	b Type D					
East Approach (Fron	n Autocad) =			74	5 sft	
West Approach (Fro	m Autocad) =			76	9 sft	
				1,51	4 sft	
		×	1/9 =	16	8 Sys	
Pipe, Type 4, 6 Inch						
Assume same as Cur		om above) =		1,34	6 Lft	
Aggregate For Unde	rdrains					
Type 4 Pipe length (f				1,34	6 Lft	
x 0.09 cys/lft =	1000-1000-				1 Cys	
Geotextile For Unde	erdrains					
Type 4 Pipe length (f	1,147,1151,140			1.34	6 Lft	
x 0.778 sys/lft =	1210.20344				7 Cys	
Subgrade Treatmen	t. Type IB					
Surface Area (from a	3 0 0 0 0 0 0 0 0			2.44	2 Sys	
Beneath Curb & Gut				7.00	210	
Length (from abo	ve) =	1,496 Lft				
Width (From Fig. 5	and the second second	4.67 Lft				
Area =		6,986 Sft. X 1/9) =	77	6 Sys	
			Σ =	3,21	8 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



Type 2 Pipe, 15 Inch (Oran	ge)				
Between Inlets and PCBs =				47	2 Lft.
			Σ=	47	2 Lft.
Type 2 Pipe, 18 Inch					
Between MHs				100	0 Lft
Type 2 Pipe, 24 Inch					
Between MHs				7	5 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
2			Σ=	203	Cys
Common Excavation =					
West Approach: Assume				10	0 Cys
East Approach: Assume 50	0 sft/lft= 345.50 x 50 x	× 1/27 =		<u>640</u> Cys	
			Σ=	740	Cys
Borrow					
West Approach: Assume 7	West Approach: Assume 75 sft/lft= 327.5 x 75 x 1/27 =			91	0 Cys
East Approach: Assume 10	0 sft/lft= 327.5 x 10 x	1/27 =		12	1 Cys
			Σ=	1,03	1 Cys
		X.	1.15=	1,18	6 Cys
		Borrow (Wa	ste)=	446	Cys

CR600W Reconstruction in Hancock County CR600W/CR600N Roundabout Quantities



Integral	Concrete	Curb
milegiai	Concrete	CUIN

Around Raised Island = 2x\pi x35.83 = 225 Lft

Concrete Curb Type "B"

Around Central Island = $2x \parallel x48.50 =$ 305 Lft

9" PCCP For Driveways

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

Subgrade Treatment, Type II

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

Sodding

Raised Central island = $\prod x35.25^2$ = 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 = $2x \prod x82.5 = 518.4$ Lft

Assume 10 sft/lft = 5,184 Cft

 $\Sigma = 33,170 \text{ Cft}$

 $x \frac{1}{27} = \frac{1,229}{2} \text{ Cys}$

x1.15= 1,413 Cys

Net Borrow = 895 Cys

CR600W Reconstruction in Hancock County Approach Quantities



HMA	For	App	roac	hes,	Type	B
-----	-----	-----	------	------	------	---

Location:		Area	
22' Street Approach at Sta. 53+98 "S-9-A" Rt.	-	1588	Sft
	Σ =	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. 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
	Σ =	1590	Sft
	x 1/9 =	177	Sys
Subgrade Treatment, Type II			
Area of 6" PCCP For Approaches=		177	Sys

Common Excavation

250 Cys