

Estimate Documentation



Design ID(s) 1009-30-14
Construction ID(s) 1009-30-16
Est. Doc. Prepared for Final PS&E Plans
Est. Doc. Prepared By: Kyle Witte
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Report finished on 1/29/2019

EXECUTIVE SUMMARY

Description of Proposed Work

Sign structure repair on various highways in various counties (Columbia, Dane, Green, Sauk)

Type of Work -See [FDM 3-5-2](#) for definitions. Select all that apply.

- | | | |
|---|--|--|
| <input type="checkbox"/> Resurfacing | <input type="checkbox"/> Roadway Expansion | <input type="checkbox"/> Bridge Replacement |
| <input type="checkbox"/> Reconditioning | <input type="checkbox"/> Bridge Reconstruction | <input checked="" type="checkbox"/> Other (see comments) |
| <input type="checkbox"/> Pavement Replacement | <input type="checkbox"/> Bridge Expansion | |
| <input type="checkbox"/> Roadway Reconstruction | <input type="checkbox"/> Bridge Rehabilitation | |

Comments: Sign structure repair

Similar Projects or Proposals – List similar project/proposal IDs and how they were referenced

- 20180508014 – Previous year project of exact type of work. Mobilization is not to be used due to expanding multiple regions but the traffic control work is the same. The project took place regionwide in the NE/NW regions.
- 20180508003 – Previous year project of exact type of work. Mobilization and traffic control work is the same. The project took place regionwide in the SW region.

PROJECT CHARACTERISTICS

Schedule and Road User Costs

Let Date	5/14/2019	<input checked="" type="checkbox"/> Lane rental
Anticipated Start Date	9/16/2019	<input type="checkbox"/> Enhanced liquidated damages
Completion Date	Click here to enter a date.	<input type="checkbox"/> Interim liquidated damages
Working Days	20 working days	<input type="checkbox"/> Accelerated schedule
Calendar Days	Click here to enter number.	<input type="checkbox"/> Extraordinary forces expected
<input type="checkbox"/> Interim completion date(s)		<input checked="" type="checkbox"/> Other (Start by September 16,2019 special provision)

Comments: The project schedule has little expected impact on project prices. The schedule gives freedom for the contractor to start anytime prior to September 16th,2019. 20 working days gives enough time not need extra crews.

Traffic Control

Primary Closure Type: Daily/Nightly Lane Closure

Other Closures and Traffic Control Characteristics:

- | | | |
|--|--|---|
| <input type="checkbox"/> Mainline Closure | <input type="checkbox"/> Complex/Unusual staging | <input type="checkbox"/> Temp bike/pedestrian access |
| <input checked="" type="checkbox"/> Shoulder or No Closure | <input type="checkbox"/> Detour required | <input type="checkbox"/> Temp concrete barrier used |
| <input type="checkbox"/> Continuous Lane Closure | <input checked="" type="checkbox"/> Night work expected | <input type="checkbox"/> Temp/Crossover roadways |
| <input checked="" type="checkbox"/> Daily/Nightly Lane Closure | <input checked="" type="checkbox"/> Peak hour restrictions | <input type="checkbox"/> Temp structures |
| <input type="checkbox"/> Moving Lane Closure | <input type="checkbox"/> Limited work zone access | <input type="checkbox"/> Temp traffic control signals |
| <input type="checkbox"/> Flagging Operation | | <input type="checkbox"/> Other (Please Explain) |
| Number of stages: 0 | | |

Comments: SPV for Single and Double lane closure are being used instead of breaking out every item of traffic control for a unit of DAY. This may increase the cost up front but provides less risk of overruns to the department.

Construction Conflicts

- | | |
|---|---|
| <input type="checkbox"/> Aboveground utilities (existing to remain) | <input type="checkbox"/> Hazardous materials |
| <input type="checkbox"/> Underground utilities (existing to remain) | <input type="checkbox"/> Railroad coordination |
| <input type="checkbox"/> Utility work concurrent with construction | <input type="checkbox"/> Archeological Monitor |
| <input type="checkbox"/> Environmentally sensitive areas | <input type="checkbox"/> Other (Please explain) |

Comments: No constructions conflicts are expected to impact prices.

Competition of Contractors

Expected Competition	Acceptable (2 bidders)
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Comments: For proposal 20180508003 and20180508014 only 2 contractors bid on each project. The same would be expected. This type of work has limited number of contractors who do this work.

Other Considerations

- | | |
|--|---|
| <input checked="" type="checkbox"/> Multiple mobilizations | <input checked="" type="checkbox"/> Remote location |
| <input checked="" type="checkbox"/> Multiple, dispersed work locations | <input type="checkbox"/> Haul distance |
| <input type="checkbox"/> Urban or <input type="checkbox"/> Rural | <input type="checkbox"/> Current bid item trends |
| <input checked="" type="checkbox"/> Constrained work environment | <input type="checkbox"/> Material shortages |
| <input type="checkbox"/> Adjacent projects | <input type="checkbox"/> Other (Please explain) |

Comments: Having locations that are not always near each other means more travel time and more set up time to do minimal amount of work at each location. The individual items barely cover the material cost and work. For all the traveling expect the mobilization to be higher.

ITEM LEVEL DOCUMENTATION

Significant Items List – Top 20% of items out of total contract costs and lump sum items

The following 8 (33.33%) items make up 87% of the estimate. The last 3 items are outside of the top 20% but the Traffic Control – Ramp Closure/Double Lane Closure are highly variable with limited data and wanted to include them in significant items due to how close they were to the items that made up the 20%.

- Traffic Control – Single Lane Closure (42.53%)
- Mobilization (15.99%)
- Tension Anchor Rods (10.61%)
- Tension Structural Connection Bolt (Friction) (3.96%)
- Replace Foundation (3.72%)
- Install Sign Panel Connector (3.54%)
- Traffic Control – Ramp Closure (3.51%)
- Traffic Control – Double Lane Closure (3.35%)

Bidx was used for all significant items.

Non-Significant Item Summary – Summary of estimating methodology

BOS came up with all non-significant items looking at previous projects. Traffic control lump sum is estimated as non-significant item due to the single and double lane closures accounting for most of the cost.

Estimate Review Summary

Consultant Reviewer(s):

Region Reviewer(s): Geoff Williams

Estimate comments:

- Include the counties in Description text.
- Make sure to also update check boxes on page 2 if applicable (Kyle T. comments from -15).
- For information – Significant items are now defined as the top 20% of total items (not 80% of estimate). You have actually provided more than necessary, which is fine (5 items out of 24).
- Is “Brown” the appropriate county for Estimator Parameters (pg 3).
- Justifications are obviously tough to anticipate as there are very little “roadway” items. Good use of Similar Projects. Could include location or distance information as it pertains to higher costs (travel/mob per item).

ESTIMATING TOOL PARAMETERS

Estimator Parameters

Source Catalog	ENG2019
Work type	Signs
Highway Type	NR - Planning/Statewide, Enhance/Non HWY
Urban/Rural type	Urban
Season	Spring
County	Dane
Region	SW

Comments: [Click here to enter text.](#)

Bid Express and Other Tool Parameters

Tool(s) Used: Bid Express
County(s): Click here to enter typical counties used.
Date Range: Click here to enter typical date range.
Other Parameters: Click here to enter text.

Comments: For significant items used similar type of projects from the state for 2018 construction season which has limited previous information.

ATTACHMENTS

Attachments are optional and may be referenced in the above documentation.

☒ Unit Price Documentation printout with notes (Estimator, Q2P, Excel spreadsheets)

☒ Other Attachment(s)

Excel spreadsheet showing significant items

Estimate 1009-30-16

Estimated Cost:\$268,978.00

Contingency: 0.00%

Estimated Total: \$268,978.00

Base Date: 11/07/18

Spec Year: 03

Unit System: E

Work Type: Signs

Highway Type: Planning/Statewide, Enhance/Non Hwy Proj

Urban/Rural Type: Urban

Season: Spring

County: Dane

Latitude of Midpoint: 0

Longitude of Midpoint: 0

District:

Federal Project Number:

State Project Number:

Prepared by user

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
	<u>Description</u>				
	<u>Supplemental Description</u>				

Group 0010: Initial Group

0002	509.1500	2.00	SF	\$270.000	\$540.00
	Concrete Surface Repair				
	Bidx Average: \$270.18				
	Timeframe: 1/1/16 - 1/25/19				
	Quantity Range: 0-5 SF				
	County: All				
	Use \$270				
0004	619.1000	1.00	EACH	\$43,000.000	\$43,000.00
	Mobilization				
	Based on last year's mob for SW regions sign repair				
	Proposal 20180508003 was 14.8%. \$43,000 is 16.0%.				
	With high variability year to year of counties in a region and the actual location within the counties it was decided to increase to 16%.				
	Use \$43,000.				
0006	637.2220	8.00	SF	\$46.000	\$368.00
	Signs Type II Reflective SH				
	Bidx price for <200 sf last 2 years similar project avg price was \$46/sf				
0010	643.5000	1.00	EACH	\$2,500.000	\$2,500.00
	Traffic Control				
	Based on last year's traffic control for SW regions sign repair				
	Proposal 20180508003 winning bid was \$1350. This project has more lane closures which justifies a slight increase in overall Traffic Control.				
0012	SPV.0060	95.00	EACH	\$300.000	\$28,500.00
	Special				
	01. Tension Anchor Rod				
	BOS justification: bidx search last 3 years avg price approx 400 for each base plate, use 100 per bolt				
	Winning bids for similar projects				
	20170411012: 58 EA at \$600				
	20160510022: 14 EA at \$735				
	20180508003: 66 EA at \$276				
	20180508014: 136 EA at \$301				
	20170509002: 137 EA at \$325				
	20170509014: 42 EA at \$425				
	20160510004: 98 EA at \$300				
	20180612004: 67 EA at \$931				
	The previous projects are mixed between paying per rod or per anchor assembly. 20170509014 had the plans show eah individual rod.				
	Use \$300 because of the uncertainty of the bids.				
0014	SPV.0060	2.00	EACH	\$400.000	\$800.00
	Special				
	02. Remove Debris and Regrade				
	bidx search last 3 years avg price approx 400, use 400				
	Winning bids from 1/1/16 to 1/25/19				
	20180612004: 4 EA at \$405				
	20170411012: 1 EA at \$1500				
	Use \$400				
0016	SPV.0060	1.00	EACH	\$10,000.000	\$10,000.00
	Special				
	03. Replace Foundation				
	The foundation is similar to a type 13 concrete base. For 1 EA Type 13 bidx showed average bid at \$7146. To remove a concrete base averages at \$300.				
	Erecting the poles are not including in those cost and is typically included in the cost of arms/posts. Roundup to \$10000 for the addition of erecting.				
0018	SPV.0060	16.00	EACH	\$500.000	\$8,000.00
	Special				

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
Description					
<u>Supplemental Description</u>					
<i>04. Remove Grout Pad</i> bidx last 3 years average price 500, use 500					
0020	SPV.0060	71.00	EACH	\$150.000	\$10,650.00
Special					
<i>05. Tension Structural Connection Bolt (Friction)</i> BOS justification: bidx search last 3 years avg price between 150 and 600 for all bolts in a given connection, use 100 for individual bolts					
Proposal 20180508014, the \$150 project was called out at individual bolts. Use \$150.					
0022	SPV.0060	21.00	EACH	\$200.000	\$4,200.00
Special					
<i>06. Secure/Replace Cap</i> bidx search last 3 years for post and chord caps, avg price between 150 and 350, use 200					
0024	SPV.0060	23.00	EACH	\$300.000	\$6,900.00
Special					
<i>07. Slotted Hole Repair on Sign Support Bracket</i> bidx search last 3 years avg price 275, use 300					
0026	SPV.0060	9.00	EACH	\$400.000	\$3,600.00
Special					
<i>08. Replace Sign Connection Clamp</i> bidx prices last 3 years average price around 400, use 400					
0028	SPV.0060	3.00	EACH	\$300.000	\$900.00
Special					
<i>09. Replace U-Bolt</i> bidx search last 3 years avg price between 150-500 use 300					
0030	SPV.0060	11.00	EACH	\$100.000	\$1,100.00
Special					
<i>10. Install ID Plaque</i> bidx search last 3 years avg price 100, use 100					
0032	SPV.0060	136.00	EACH	\$70.000	\$9,520.00
Special					
<i>11. Install Sign Panel Connector</i> BOS justification: bidx search last 3 years avg price 75, use 75					
Average Bid for Replace Sign panel connector for quantity of 50 to 200 from 1/1/16 to 1/25/19. 20160412004: 61 EA at \$67.50 20170509002: 91 EA at \$70 20180612004: 176 EA at \$45					
Use \$70.					
0034	SPV.0060	1.00	EACH	\$300.000	\$300.00
Special					
<i>12. Adjust Vertical Clearance</i> adjusting sign clearance similar work to replacing connection hardware use 300					
0036	SPV.0060	3.00	EACH	\$200.000	\$600.00
Special					
<i>13. Replace Handrail Hinge Pin</i> bidx price last 3 years avg 200, use 200					
0038	SPV.0060	4.00	EACH	\$500.000	\$2,000.00
Special					
<i>14. Replace Safety Chain</i> average price last 3 years 500, use 500					
0040	SPV.0060	6.00	EACH	\$150.000	\$900.00
Special					
<i>15. Install Conduit Plug</i> bidx search last 3 years avg price approx 150, use 150					
0042	SPV.0060	3.00	EACH	\$250.000	\$750.00
Special					
<i>16. Secure/Replace Handhole Cover</i> bidx search last 3 years avg price approx 250, use 250					
0044	SPV.0060	44.00	EACH	\$2,600.000	\$114,400.00
Special					

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
Description					
<u>Supplemental Description</u>					
17. Traffic Control - Single Lane Closure Proposal 20180508014 unit price was \$2700 with a lump sum traffic control of \$1350. Proposal 20180508003 unit price was \$2600 with a lump sum traffic control of \$1300. Proposal 20170509002 unit price was \$750 with a lump sum traffic control of \$15000 (Highway) Proposal 20170509014 unit price was \$225 with a lump sum traffic control of \$35000 (Highway) Since Highway Landscaper can't bid estimating it in the way of putting the cost into the items with a smaller lump sum value. Use \$2600.					
0046	SPV.0060	2.00	EACH	\$4,500.000	\$9,000.00
Special					
18. Traffic Control - Double Lane Closure Proposal 20180508014 had winning bid of \$5005 and runner up of \$3850. 1 EA Proposal 20180508003 had winning bid of \$2700 and runner up of \$3850. 12 EA Use \$4500 because this project has 2 EA.					
0048	SPV.0060	7.00	EACH	\$1,350.000	\$9,450.00
Special					
19. Traffic Control - Ramp Closure Proposal 20180508014 had winning bid of \$2600 and runner up of \$1500. 1 EA Proposal 20180508003 had winning bid of \$1350 and runner up of \$1650. 1 EA Use \$1350 because this project has 7 EA. Once the devices are out there they can be reused. It involves less devices than a single lane closure. Have more than one won't help drop the price because of the labor involved in each closure.					
0050	SPV.0165	5.00	SF	\$200.000	\$1,000.00
Special					
01. Repair Galvanized Coating bidx search last 3 years avg price 200, use 200					

Total for Group 0010:\$268,978.00

Item	Description	Quantity	Unit Price	Extension	Percent	Cumulative
SPV.0060.17	Traffic Control - Single Lane Closure	44	2600	114400	42.53	42.53
619.1000	Mobilization	1	43000	43000	15.99	58.52
SPV.0060.01	Tension Anchor Rods	95	300	28500	10.60	69.11
SPV.0060.05	Tension Structural Connection Bolt (Friction)	71	150	10650	3.96	73.07
SPV.0060.03	Replace Foundation	1	10000	10000	3.72	76.79
SPV.0060.11	Install Sign Panel Connector	136	70	9520	3.54	80.33
SPV.0060.19	Traffic Control - Ramp Closure	7	1350	9450	3.51	83.84
SPV.0060.18	Traffic Control - Double Lane Closure	2	4500	9000	3.35	87.19
SPV.0060.04	Remove Grout Pad	16	500	8000	2.97	90.16
SPV.0060.07	Slotted Hole Repair on Sign Support Bracket	23	300	6900	2.57	92.73
SPV.0060.06	Secure/Replace Cap	21	200	4200	1.56	94.29
SPV.0060.08	Replace Sign Connection Clamp	9	400	3600	1.34	95.63
643.5000	Traffic Control	1	2500	2500	0.93	96.56
SPV.0060.14	Replace Safety Chain	4	500	2000	0.74	97.30
SPV.0060.10	Install ID Plaque	11	100	1100	0.41	97.71
SPV.0165.01	Repair Galvanized Coating	5	200	1000	0.37	98.08
SPV.0060.09	Replace U-bolt	3	300	900	0.33	98.42
SPV.0060.15	Install Conduit Plug	6	150	900	0.33	98.75
SPV.0060.02	Remove Debris and Regrade	2	400	800	0.30	99.05
SPV.0060.16	Secure/Replace Handhole Cover	3	250	750	0.28	99.33
SPV.0060.13	Replace Handrail Hinge Pin	3	200	600	0.22	99.55
509.1500	Concrete Surface Repair	2	270	540	0.20	99.75
637.2220	Signs Type II Reflective SH	8	46	368	0.14	99.89
SPV.0060.12	Adjust Vertical Clearance	1	300	300	0.11	100.00

Total: 268978