



CITY of NOVI CITY COUNCIL

Agenda Item D
April 23, 2018

SUBJECT: Approval to award civil engineering services to Spalding DeDecker for design engineering services associated with signal modernization and intersection improvements at Beck Road & Pontiac Trail and at Haggerty Road & Fourteen Mile Road in the amount of \$42,438.00.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division

CITY MANAGER APPROVAL: 

EXPENDITURE REQUIRED	\$ 23,308.00 202-202.00-863.022-ENG023 Signal Modern (14 mile & Haggerty)
	\$ 19,130.00 202-202.00-863.023-ENG024 Signal Modern (Beck & Pontiac Trail)
	\$ 42,438.00 Total
AMOUNT BUDGETED	\$ 32,887 202-202.00-863.022-ENG023 Signal Modern (14 Mile & Haggerty)
	\$ 27,298 202-202.00-863.023-ENG024 Signal Modern (Beck & Pontiac Trail)
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	202-202.00-863.022 – ENG023 Signal Modern/turn(14 Mile & Haggerty) 202-202.00-863.023 – ENG024 Signal Modern (Beck & Pontiac Trail)

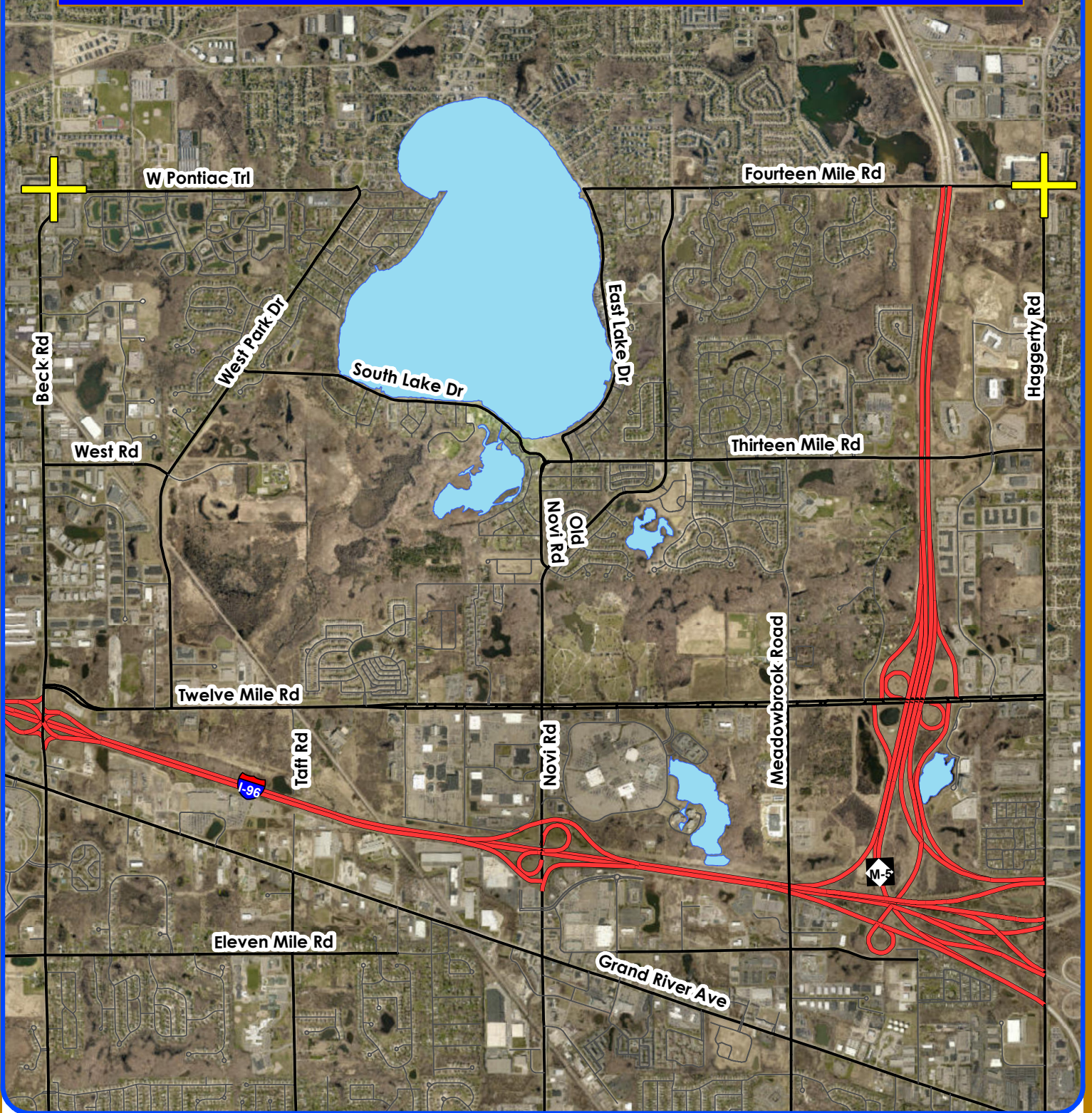
BACKGROUND INFORMATION:

The City has obtained funding through the MDOT Local Safety (HSIP) Program to perform signal modernization and intersection improvements for the Beck Road & Pontiac Trail and Haggerty Road & Fourteen Mile Road intersections. The intersection improvements will include mast-arm signal installations with complete pedestrian push-button upgrades. The intersection work at Haggerty Road and Fourteen Mile Road will also include the addition of a dedicated right turn only lane for the southbound Haggerty Road to westbound Fourteen Mile Road movement. The project will also include sidewalk ramp and crosswalk upgrades, as necessary to meet current ADA requirements. The estimated construction cost for the Beck/Pontiac Trail intersection is \$227,427.00; the estimated construction cost of the Haggerty/Fourteen Mile intersection is \$263,529.00. MDOT will administer the project through the Local Agency Program unit. Staff needs to submit final construction documents to MDOT prior to August 17, 2019, to ensure the funds are obligated within the 2019 fiscal year.

The attached *Design Engineering Services* proposal, as executed by Spalding DeDecker, outlines the scope of services in more detail. The design fee rate per the Exhibit B Fee Curve Schedule (as part of the City's general Engineering Services Contract with Spalding DeDecker) is \$17,057.00 (7.5% of \$227,427.00 for Beck Road & Pontiac Trail) and \$17,443.00 (7.5% of \$232,577.00 for Haggerty Road and Fourteen Mile Road minus the right turn lane) for the signal modernization work. The design fee rate for the construction of the right turn lane at Haggerty Road and Fourteen Mile is \$3,792.00 (12.25% of \$30,952.00). Finally, a lump sum fee of \$1,200.00 for utility coordination costs and \$2,946.00 for MDOT LAP administration tasks is built-in, divided between the projects. The total costs of these projects are \$42,438.00.

RECOMMENDED ACTION: Approval to award civil engineering services to Spalding DeDecker for design engineering services associated with signal modernization and intersection improvements at Beck Road & Pontiac Trail and at Haggerty Road & Fourteen Mile Road in the amount of \$42,438.00.

Beck Road & Pontiac Trail and 14 Mile Road & Haggerty Road Intersection Improvements Map



Map Author: Joseph Akers
Date: April 9, 2018
Project: 2018 Intersection Improvements
Version #: 1

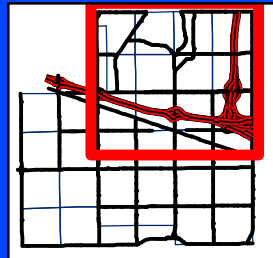
Amended By:
Date:
Department:

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



Project Area



City of Novi

Engineering Division
Department of Public Services
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org



1 inch = 2,939 feet



April 4, 2018

Mr. George D. Melistas
Engineering Senior Manager & Traffic Engineer
City of Novi - Department of Public Services
26300 Lee BeGole Drive
Novi, Michigan 48375

Re: **Engineering Services for Intersection Improvements at
Beck Road and Pontiac Trail; Haggerty Road and Fourteen Mile Road
SD Job No.: PR18-134**

Dear Mr. Melistas:

Project Overview and Understanding of Requested Services

The City of Novi has obtained funding through the MDOT Local Safety (HSIP) Program to perform signal modernization and intersection improvements for the subject intersections. Each intersection will receive mast arm signal installations with complete pedestrian push button upgrades. The signals shall be designed in accordance with the Road Commission for Oakland County's 2014 Standard Construction Details for Traffic Signals. The intersection work at Haggerty Road and Fourteen Mile Road will also include the addition of a dedicated right turn only lane for the southbound Haggerty Road to westbound Fourteen Mile Road movement. Sidewalk ramps at crosswalks will be upgraded, as necessary to meet current ADA requirements. The estimated construction cost for the Beck/Pontiac Trail intersection is \$227,427.00; the estimated construction cost of the Haggerty/Fourteen Mile intersection is \$263,529.00. This project will be administered through the MDOT Local Agency Program unit. Final construction documents must be submitted to MDOT prior to August 17, 2019, to ensure the funds are obligated within the 2019 fiscal year.

Soil borings must be obtained and the foundation design for the mast arms must be verified by a licensed geotechnical engineer. Soil borings are also recommended to confirm the pavement design required for the additional right turn lane on Haggerty Road. We understand that the City will obtain the required geotechnical engineering service under separate contract and Spalding DeDecker will work with the City's geotechnical engineer to coordinate the work.

An on-site visit conducted on March 26, 2018, identified numerous underground and overhead public and private utilities. Extensive utility coordination will be required to relocate, at a minimum, overhead utility lines which currently conflict with the installation of mast arms. Based on field observations, the existing public right of way and presence of underground utilities may require temporary or permanent easement to be obtained to facilitate

construction of mast arm foundations. All effort will be made to avoid the need to obtain temporary or permanent easements, as this may affect the final plan completion date.

Spalding DeDecker (SD) proposes to perform design services for each of the intersection improvement projects as described below.

Proposed Scope of Services

- SD will perform a topographic survey of the existing intersection quadrants within the right of way, including locating the existing ROW lines. The northwest quadrant of Haggerty Road and Fourteen Mile Road will be included to a point 250' north of Fourteen Mile to provide adequate survey information for the design of the right turn lane. All sidewalk ramps will also be included. This survey will include all above ground features including structures and existing utilities. Trees greater than 3" within the survey limits will be located. With the exception of pavement grades for the right turn lane, no survey is proposed within the roadway pavement of the intersections.
- The proposed design includes:
 - Removing existing traffic signal poles and span wire within the project limits
 - Installation of mast arm traffic signals and RCOC required intelligent traffic control devices (autoscope cameras, pavement loops, etc.)
 - Constructing a southbound right turn only lane on Haggerty Road, proposed pavement section on Haggerty Road shall be approved by the RCOC
 - Permanent signing will be salvaged and re-erected if impacted by construction
 - Sidewalk ramps upgraded or replaced as necessary to meet current ADA standards
- Private utility structures will be noted and marked as adjusted by others on the plans.
- Prepare the Program Application for submittal to MDOT (no later than May 28, 2018).
- SD will prepare preliminary plans and submit to the City and RCOC for review prior to submittal to MDOT (no later than June 11, 2018).
- Prepare and submit permit applications as needed for RCOC and the City of Wixom.
- Attend the Grade Inspection meeting (preliminary plan review) with MDOT
- SD will prepare and submit Final Plans, Proposal & Estimate to MDOT by August 17, 2018
- Assist with responding to bidder inquiries

Construction Cost Estimate and Proposed Fees

Based on our pre-qualification status with the City, engineering design fees are based on a percentage of the pre-design construction cost estimate. The fee percentage used depends on the type of services to be provided based on the proposed work. The fees for this project will be based on the service category of "Traffic Signals" with minor additional services for the additional right turn lane on Haggerty Road, and the approved 2019 MDOT HSIP construction costs.

<u>Project</u>	<u>Construction Budget</u>	<u>Design Fee Rate</u>	<u>Proposed Design Fee</u>
Beck Road at Pontiac Trail Signal Modernization	\$227,427.00	7.50%	\$ 17,057.00
Haggerty Road at Fourteen Mile Road Signal Modernization (less right turn lane)	\$232,577.00	7.50%	\$ 17,443.00
Haggerty Road at Fourteen Mile Road Right Turn Lane	\$ 30,952.00	12.25%	\$ 3,792.00
Additional utility coordination			\$ 1,200.00
Additional MDOT LAP Administration Tasks			\$ 2,946.00
Total Design Fee:			\$ 42,438.00

Project Schedule

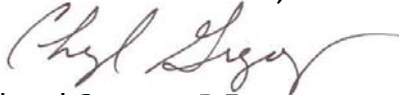
The following summarizes the anticipated schedule for the roadway project:

<u>Milestone</u>	<u>No Later Than</u>
Design Project Award	4/24/2018
Submit Program Application	5/28/2018
Submit Preliminary Plans to MDOT	7/11/2018
Submit Final Plans to MDOT	8/17/18
Anticipated Bid Letting	November 2018
Construction Start, Estimated	April 2019
Construction Completion, Estimated	July 2019

Although MDOT does not require final plans until August 2019 to remain eligible for the HSIP funding, we will strive to meet the schedule noted above to allow the improvements to be undertaken as soon as possible.

Thank you for your selection of SD to provide design services for these important safety improvement projects. Please don't hesitate to contact me if you have any questions or comments regarding this submittal.

Sincerely,
SPALDING DEDECKER, INC.



Cheryl Gregory, P.E.
Sr. Project Manager

cc: SD Job File

Engineer's Opinion of Costs

Project Number: NV17010
Estimate Number: 2: Beck Rd and Pontiac Trail
Project Type: Safety
Location: Novi
Description:

Project Engineer: EI
Date Created: 7/12/2017
Date Edited: 7/28/2017
Fed/State #:
Fed Item:
Control Section:

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
Category: 0001 Regular/Federal Participation						
0001	1500001	Mobilization, Max	1.000	LSUM	\$20,600.00	\$20,600.00
0002	2090001	Project Cleanup	1.000	LSUM	\$400.00	\$400.00
0003	8100510	Mast Arm Pole, Cat I	4.000	Ea	\$6,870.00	\$27,480.00
0004	8100545	Mast Arm, 45 foot, Cat III	4.000	Ea	\$5,630.00	\$22,520.00
0005	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	5.000	Ea	\$84.00	\$420.00
0006	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	5.000	Ea	\$4.00	\$20.00
0007	8120170	Minor Traf Devices	1.000	LSUM	\$3,900.00	\$3,900.00
0008	8120250	Plastic Drum, High Intensity, Furn	20.000	Ea	\$22.00	\$440.00
0009	8120251	Plastic Drum, High Intensity, Oper	20.000	Ea	\$164.00	\$3,280.00
0010	8120330	Sign, Portable, Changeable Message, Furn	1.000	Ea	\$3,024.00	\$3,024.00
0011	8120331	Sign, Portable, Changeable Message, Oper	1.000	Ea	\$113.00	\$113.00
0012	8120350	Sign, Type B, Temp, Prismatic, Furn	400.000	Sft	\$6.00	\$2,400.00
0013	8120370	Traf Regulator Control	1.000	LSUM	\$3,800.00	\$3,800.00
0014	8190027	Conduit, DB, 1, 1 1/2 inch	140.000	Ft	\$12.00	\$1,680.00
0015	8190029	Conduit, DB, 1, 3 inch	105.000	Ft	\$13.00	\$1,365.00
0016	8190035	Conduit, DB, 3, 3 inch	30.000	Ft	\$22.00	\$660.00
0017	8190038	Conduit, DB, 4, 3 inch	15.000	Ft	\$33.00	\$495.00
0018	8190259	Hh, Round, 3 foot Dia.	1.000	Ea	\$3,000.00	\$3,000.00
0019	8190260	Hh, Round	3.000	Ea	\$1,301.00	\$3,903.00
0020	8190268	Light Std Arm, 12 foot	4.000	Ea	\$838.00	\$3,352.00
0021	8190277	Light Std Arm, Rem	1.000	Ea	\$159.00	\$159.00
0022	8190399	Cable, Sec, 600V, 1, 3/C#6	1.000	Ft	\$7.00	\$7.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	8190505	Wood Pole, Rem	2.000	Ea	\$343.00	\$686.00
0024	8200020	Case Sign, Rem	5.000	Ea	\$135.00	\$675.00
0025	8200029	Case Sign (LED), One Way, 24 inch by 30 inch	4.000	Ea	\$2,505.00	\$10,020.00
0026	8200030	Controller and Cabinet, Rem	1.000	Ea	\$272.00	\$272.00
0027	8200045	Controller Fdn, Base Mount	1.000	Ea	\$2,006.00	\$2,006.00
0028	8200055	Digital Loop Detector	1.000	Ea	\$571.00	\$571.00
0029	8200065	Fdn, Rem	3.000	Ea	\$793.00	\$2,379.00
0030	8200121	Pushbutton and Sign	4.000	Ea	\$609.00	\$2,436.00
0031	8200122	Pushbutton, Rem	4.000	Ea	\$86.00	\$344.00
0032	8200135	Serv Disconnect	1.000	Ea	\$1,272.00	\$1,272.00
0033	8200141	Span Wire, Rem	1.000	Ea	\$262.00	\$262.00
0034	8200145	Steel Pole, Rem	2.000	Ea	\$430.00	\$860.00
0035	8200175	TS, Bracket Arm Mtd, Rem	4.000	Ea	\$121.00	\$484.00
0036	8200182	TS, Span Wire Mtd, Rem	5.000	Ea	\$129.00	\$645.00
0037	8200301	TS, One Way Mast Arm Mtd, RTGA (LED)	4.000	Ea	\$545.00	\$2,180.00
0038	8200329	TS, 4th Level, LTGA (LED)	4.000	Ea	\$405.00	\$1,620.00
0039	8200339	TS, Pedestrian, Two Way Bracket Arm Mtd (LED) Countdown	4.000	Ea	\$1,974.00	\$7,896.00
0040	8200359	TS, One Way Mast Arm Mtd (LED)	4.000	Ea	\$1,040.00	\$4,160.00
0041	8200393	Wireless Intercn, Closed Loop, Master	1.000	Ea	\$5,197.00	\$5,197.00
0042	8200396	Wireless Intercn, Closed Loop, Rem	1.000	Ea	\$276.00	\$276.00
0043	8200501	Backplate, TS	12.000	Ea	\$170.00	\$2,040.00
0044	8207050	_ Autoscope Camera (Solo Pro), RCOC	4.000	Ea	\$4,487.00	\$17,948.00
0045	8207050	_ Autoscope Camera, Rem	4.000	Ea	\$231.00	\$924.00
0046	8207050	_ Bracket Arm, 18 foot, RCOC	4.000	Ea	\$1,290.00	\$5,160.00
0047	8207050	_ Bracket Arm, Rem, RCOC	8.000	Ea	\$125.00	\$1,000.00
0048	8207050	_ Controller and Cabinet, Digital Type, Delivered, RCOC	1.000	Ea	\$18,000.00	\$18,000.00
0049	8207050	_ Controller and Cabinet, Digital Type, RCOC	1.000	Ea	\$2,500.00	\$2,500.00
0050	8207050	_ Mast Arm Std, Fdn, RCOC	4.000	Ea	\$4,400.00	\$17,600.00
0051	8207050	_ Pushbutton Support Post, RCOC	4.000	Ea	\$718.00	\$2,872.00
0052	8207050	_ Support Post, Rem, RCOC	4.000	Ea	\$86.00	\$344.00
0053	8207050	_ Traffic Loop, Presence (Preformed), RCOC	4.000	Ea	\$1,820.00	\$7,280.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0054	8240001	Contractor Staking	1.000	LSUM	\$4,000.00	\$4,000.00
0055	8240020	Staking Plan Errors and Extras, One Person	2.000	Hr	\$75.00	\$150.00
0056	8240021	Staking Plan Errors and Extras, Two Person	1.000	Hr	\$100.00	\$100.00
0057	8240022	Staking Plan Errors and Extras, Three Person	2.000	Hr	\$125.00	\$250.00
Category 0001 Total: \$227,427.00						
Estimate Total: \$227,427.00						

Engineer's Opinion of Costs

Project Number: NV17010
Estimate Number: 1: Haggetry and 14 Mile Rd
Project Type: Safety
Location: Novi
Description:

Project Engineer: EI
Date Created: 7/12/2017
Date Edited: 7/28/2017
Fed/State #:
Fed Item:
Control Section:

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
Category: 0001 Regular/Federal Participation						
0001	1500001	Mobilization, Max	1.000	LSUM	\$23,900.00	\$23,900.00
0002	2040020	Curb and Gutter, Rem	60.000	Ft	\$7.00	\$420.00
0003	2040055	Sidewalk, Rem	225.000	Syd	\$8.10	\$1,822.50
0004	2050010	Embankment, CIP	15.000	Cyd	\$4.20	\$63.00
0005	2050016	Excavation, Earth	300.000	Cyd	\$5.60	\$1,680.00
0006	2090001	Project Cleanup	1.000	LSUM	\$400.00	\$400.00
0007	3070128	Shoulder, CI II, 6 inch	85.000	Syd	\$7.20	\$612.00
0008	3077011	_ Aggregate Base, 10 inch, CIP, 21AA, RCOC	590.000	Syd	\$15.00	\$8,850.00
0009	4040073	Underdrain, Subgrade, 6 inch	230.000	Ft	\$8.80	\$2,024.00
0010	5010005	HMA Surface, Rem	85.000	Syd	\$2.95	\$250.75
0011	5010045	HMA, 3E3	84.000	Ton	\$65.00	\$5,460.00
0012	5010051	HMA, 4E3	56.000	Ton	\$65.00	\$3,640.00
0013	5010057	HMA, 5E3	42.000	Ton	\$70.00	\$2,940.00
0014	8020016	Curb and Gutter, Conc, Det B2	100.000	Ft	\$18.75	\$1,875.00
0015	8030036	Sidewalk Ramp, Conc, 6 inch	64.000	Sft	\$6.10	\$390.40
0016	8030044	Sidewalk, Conc, 4 inch	160.000	Sft	\$3.30	\$528.00
0017	8100510	Mast Arm Pole, Cat I	4.000	Ea	\$6,870.00	\$27,480.00
0018	8100545	Mast Arm, 45 foot, Cat III	4.000	Ea	\$5,630.00	\$22,520.00
0019	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	5.000	Ea	\$84.00	\$420.00
0020	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	5.000	Ea	\$4.00	\$20.00
0021	8120170	Minor Traf Devices	1.000	LSUM	\$4,500.00	\$4,500.00
0022	8120250	Plastic Drum, High Intensity, Furn	20.000	Ea	\$22.00	\$440.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	8120251	Plastic Drum, High Intensity, Oper	20.000	Ea	\$164.00	\$3,280.00
0024	8120330	Sign, Portable, Changeable Message, Furn	1.000	Ea	\$3,024.00	\$3,024.00
0025	8120331	Sign, Portable, Changeable Message, Oper	1.000	Ea	\$113.00	\$113.00
0026	8120350	Sign, Type B, Temp, Prismatic, Furn	400.000	Sft	\$6.00	\$2,400.00
0027	8120370	Traf Regulator Control	1.000	LSUM	\$4,500.00	\$4,500.00
0028	8160100	Slope Restoration, Type A	215.000	Syd	\$1.65	\$354.75
0029	8190027	Conduit, DB, 1, 1 1/2 inch	140.000	Ft	\$12.00	\$1,680.00
0030	8190029	Conduit, DB, 1, 3 inch	105.000	Ft	\$13.00	\$1,365.00
0031	8190035	Conduit, DB, 3, 3 inch	30.000	Ft	\$22.00	\$660.00
0032	8190038	Conduit, DB, 4, 3 inch	15.000	Ft	\$33.00	\$495.00
0033	8190259	Hh, Round, 3 foot Dia.	1.000	Ea	\$3,000.00	\$3,000.00
0034	8190260	Hh, Round	3.000	Ea	\$1,301.00	\$3,903.00
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0037	8190399	Cable, Sec, 600V, 1, 3/C#6	1.000	Ft	\$7.00	\$7.00
0038	8190505	Wood Pole, Rem	1.000	Ea	\$343.00	\$343.00
0039	8200020	Case Sign, Rem	5.000	Ea	\$135.00	\$675.00
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0042	8200045	Controller Fdn, Base Mount	1.000	Ea	\$2,006.00	\$2,006.00
0043	8200055	Digital Loop Detector	1.000	Ea	\$571.00	\$571.00
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0050	8200175	TS, Bracket Arm Mtd, Rem	4.000	Ea	\$121.00	\$484.00
0051	8200182	TS, Span Wire Mtd, Rem	5.000	Ea	\$129.00	\$645.00
0052	8200301	TS, One Way Mast Arm Mtd, RTGA (LED)	4.000	Ea	\$545.00	\$2,180.00
0053	8200329	TS, 4th Level, LTGA (LED)	4.000	Ea	\$405.00	\$1,620.00

Line	Pay Item	Description	Quantity	Units	Unit Price	Total
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0055	8200359	TS, One Way Mast Arm Mtd (LED)	4.000	Ea	\$1,040.00	\$4,160.00
0056	8200393	Wireless Intercn, Closed Loop, Master	1.000	Ea	\$5,197.00	\$5,197.00
0057	8200396	Wireless Intercn, Closed Loop, Rem	1.000	Ea	\$276.00	\$276.00
0058	8200501	Backplate, TS	11.000	Ea	\$170.00	\$1,870.00
0059	8207050	_ Autoscope Camera (Solo Pro), RCOC	4.000	Ea	\$4,487.00	\$17,948.00
0060	8207050	_ Autoscope Camera, Rem	4.000	Ea	\$231.00	\$924.00
0061	8207050	_ Bracket Arm, 18 foot, RCOC	4.000	Ea	\$1,290.00	\$5,160.00
0062	8207050	_ Bracket Arm, Rem, RCOC	8.000	Ea	\$125.00	\$1,000.00
0063	8207050	_ Controller and Cabinet, Digital Type, Delivered, RCOC	1.000	Ea	\$18,000.00	\$18,000.00
0064	8207050	_ Controller and Cabinet, Digital Type, RCOC	1.000	Ea	\$2,500.00	\$2,500.00
0065	8207050	_ Mast Arm Std, Fdn, RCOC	4.000	Ea	\$4,400.00	\$17,600.00
0066	8207050	_ Pushbutton Support Post, RCOC	4.000	Ea	\$718.00	\$2,872.00
0067	8207050	_ Support Post, Rem, RCOC	4.000	Ea	\$86.00	\$344.00
0068	8207050	_ Traffic Loop, Presence (Preformed), RCOC	4.000	Ea	\$1,820.00	\$7,280.00
0069	8240001	Contractor Staking	1.000	LSUM	\$4,600.00	\$4,600.00
0070	8240020	Staking Plan Errors and Extras, One Person	3.000	Hr	\$75.00	\$225.00
0071	8240021	Staking Plan Errors and Extras, Two Person	1.000	Hr	\$100.00	\$100.00
0072	8240022	Staking Plan Errors and Extras, Three Person	2.000	Hr	\$125.00	\$250.00

Category 0001 Total: \$263,529.40

Estimate Total: \$263,529.40