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January 31, 2022

Mr. Andy Hynes, P.E.
Deputy City Engineer / Transportation, Engineering and Development Business Group
City of Naperville
400 South Eagle Street
P.O. Box 3020
Naperville, IL 60566-7020

Reference: North Aurora Road Underpass
From Pennsbury Lane to Frontenac Road
DuPage County
P.O. No. 163096
RFP No. 16-135
SUPPLEMENT No. 3

Dear Mr. Hynes,

We are pleased to submit for your review and approval Supplement No. 3 for the North Aurora Road Underpass project. We have included the following items:

- Exhibit A - Scope of Engineering Services
- Exhibit B - Cost Estimate of Consultant Services

This supplement includes two items required to complete the project. The first item is additional technical coordination with Enbridge pipeline, additional coordination with the City in preparation for ICC Status Hearings, assistance related to the development of the construction and maintenance agreements with the railroads, and bi-weekly critical items coordination calls with the project partners. The second item is for the design of the temporary soil retention system for construction of the WCL (CN) bridges. The cost for completing these items in Supplement No. 3 is $60,311.

If you have any questions or require additional information, please call me at (847) 407-5300.

Very truly yours,

Matthew J. Smith, P.E.
enclosures

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EXHIBIT A – Scope of Engineering Services - Supplement No. 3
North Aurora Road Underpass at CN Railroad (Pennsbury Lane to Frontenac Road)
Section No. 06-00133-00-BR

This supplement consists of Phase II engineering services to perform additional work in two areas to complete the North Aurora Road Underpass at CN Railroad project as described in detail below. The following tasks are included to complete this work:

1.0 Additional Project Coordination (174 Hours)

The combination of the original scope (December 2016) and Supplement No. 2 scope (November 2021) assumed a total of 844 hours of project coordination. Given the complexities of the project, additional coordination is required as described below:

a. Meetings with Enbridge Pipeline:
Ongoing technical coordination with Enbridge pipeline in the development of their pipeline relocation design through bi-weekly coordination meetings. These meetings began in January 2021 and are scheduled to continue through September 2022. There have been 20 meetings and it is anticipated that 16 additional meeting are required at 4 hours/meeting for a total of 144 hours.

A total of 54 hours were included in Supplement No. 2, therefore those have been deducted from the 144 total. [36 meetings @ 4 hours/meeting = 144 hours; 144 hours – 54 hours = **90 hours**]

b. Illinois Commerce Commission (ICC) Hearings & WCL Construction & Maintenance Agreement (CMA) Assistance:
   i. Preparation, assistance, and attendance for 5 ICC status hearings (TranSystems staff has attended 4 to date and will attend a 5th in March). Preparation and assistance included pre and post meeting discussions [5 meetings @ 8 hours/meeting = 40 hours]
   ii. Assistance to the City related to the drafting of the WCL CMA [3 meetings @ 4hours/meeting = 12 hours] 40 + 12 = **52 hours]**

c. Critical Items Bi-Weekly Coordination with Project Partners:
Conducted bi-weekly coordination calls with the Cities of Naperville and Aurora, necessary to keep the project partners informed of critical project issues such as status of land acquisition, Buy America compliance, Enbridge pipeline and railroad coordination. There have been 6 meetings to date and it is anticipated that an additional 6 meetings are required for a total of 12 meetings at 6 hours/meeting for a total of 72 hours.

A total of 40 hours were included in Supplement No. 2 for coordination with the project partners, therefore those have been deducted from the 72 total. [12 meetings x 6 hours/meeting = 72 hours; 72 hours – 40 hours = **32 hours]**

2.0 WCL Bridge Temporary Soil Retention System Design (190 hours)

The scope of services includes the design of a temporary soil retention system for the phased construction of the proposed bridge abutments.

Based on the anticipated retained height, the soil retention system will consist of driven steel sheet piling, with two rows of tie-backs and double channel steel wales. Members to be designed in accordance with CN and AREMA standards. Design elements to include:

a. Steel Sheet Piling: Piling will be designed for Cooper E80 live load surcharge in additional the lateral soil pressures. Plans to include overall layout, pile section properties, and embedment depth. Pile design to consider each stage of excavation as outlined below **[24 hours]**:
   i. Stage 1 – Excavate 2 ft. below the level of the first wale and install first row of tie-backs and steel wale. Sheeting will be cantilevered for this stage and sized to meet AREMA and CN deflection requirements. Tie-backs will be fully grouted and tested and wales installed before the excavation continues.
   ii. Stage 2 - Excavate to 2 ft. below the level of the second wale and install the second row of tie-backs and steel wale. Sheeting deflection will be checked considering cumulative deflection from the previous stage. Tie-backs will be fully grouted and tested and wales installed before the excavation continues.
   iii. Final Stage – Excavate to grade and construct new bridge abutment structure.
b. Tie-backs: Design of grouted tie-backs utilizing a hollow bar system. Plans to include layout of tie-backs, service design loads taking into consideration each excavation stage, bonded and unbonded lengths for each row of tie-backs. Performance and Proof testing requirements and procedure will be provided **[24 hours].**
c. Walers: Design of double channel steel wales. Design to include member size, anchor plates, stiffeners, and connection to the steel sheet piling [**20 hours].**
d. Soil Retention Plans (Supplemental to Phasing & Elevation Sheets)
   i. Modify current plan views to show tie-back layout, walers **[18 hours]**
   ii. Modify current elevation views to show walers, tie-backs, pile embedment **[18 hours]**
   iii. New plan sheet with typ. section, soil retention construction sequence, waler details [**42 hours]**
   iv. New plan sheet with tie-back details, test procedures **[20 hours]**
e. Special Provision & Quantities **[12 hours]**
f. QA/QC **[12 hours]**

Assumptions

- Design will be based on the geotechnical data and parameters from the Structural Geotechnical Report developed Wang Engineering and dated August 1, 2019.
- No excavation shall take place below the maximum excavation line shown on the plans.

EXHIBIT B

COST ESTIMATE OF CONSULTANT SERVICES

Illinois Department of Transportation

EXHIBIT E

COST ESTIMATE OF CONSULTANT SERVICES WORKSHEET

FIXED RAISE

Local Public Agency	County	Section Number
City of Naperville	DuPage	06-00133-00-BR

Consultant (Firm) Name	Prepared By	Date
TranSystems Corporation	BVW	1/31/2022

PAYROLL ESCALATION TABLE

CONTRACT TERM	**12**	**MONTHS**	**OVERHEAD RATE**	**143.97%**
START DATE	**3/1/2022**		**COMPLEXITY FACTOR**	**0**
RAISE DATE	**4/2/2022**		**% OF RAISE**	**2.00%**
END DATE	2/28/2023			

ESCALATION PER YEAR

Year	First Date	Last Date	Months	% of Contract
0	3/1/2022	4/2/2022	1	8.33%
1	4/3/2022	3/2/2023	11	93.50%

The total escalation = 1.83%

BLR 05514 (Rev. 04/30/21)
Payroll Escalation

Local Public Agency	County	Section Number
City of Naperville	DuPage	06-00133-00-BR

MAXIMUM PAYROLL RATE 78.00

ESCALATION FACTOR 1.83%

PAYROLL RATES

Exhibit E Cost Estimate of Consultant Services Worksheet Fixed Raise

CLASSIFICATION	IDOT PAYROLL RATES ON FILE	CALCULATED RATE
Engineer 5 (E5)	$78.00	$78.00
Engineer 4 (E4)	$77.39	$78.00
Engineer 3 (E3)	$68.71	$69.97
Engineer 2 (E2)	$48.13	$49.01
Engineer 1 (E1)	$36.00	$36.66
Planner 5 (P5)	$78.00	$78.00
Planner 4 (P4)	$66.91	$68.14
Planner 3 (P3)	$46.70	$47.56
Planner 2 (P2)	$39.64	$40.37
Architect 4 (AR4)	$73.88	$75.23
Architect 3 (AR3)	$65.92	$67.13
Architect 2 (AR2)	$45.24	$46.07
Architect 1 (AR1)	$37.86	$38.55
Environmental Scientist 4 (SC4)	$78.00	$78.00
Industry Specialist 3 (IS3)	$60.11	$61.21
Construction Services 4 (CS4)	$57.14	$58.19
Construction Services 3 (CS3)	$58.46	$59.53
Construction Services 2 (CS2)	$33.08	$33.69
Technician 3 (T3)	$39.18	$39.90
Technician 1 (T1)	$20.04	$20.41
Administrative 3 (A3)	$56.24	$57.27
Administrative 2 (A2)	$30.66	$31.22
Administrative 1 (A1)	$26.94	$27.43

Local Public Agency: City of Naperville

County: DuPage

Section Number: 06-00133-00-BR

COST ESTIMATE WORKSHEET

Exhibit E Cost Estimate of Consultant Services Worksheet Fixed Raise

OVERHEAD RATE 143.97% **COMPLEXITY FACTOR** 0

TASK	STAFF HOURS	PAYROLL	OVERHEAD & FRINGE BENEFITS	DIRECT COSTS	FIXED FEE	SERVICES BY OTHERS	TOTAL	% OF GRAND TOTAL
Additional Project Coordination	174	10,762	15,494	0	3,552	0	29,808	49.42%
WCL Bridge TSRS Design	190	11,013	15,856	0	3,634	0	30,503	50.58%
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Subconsultant DL					0		-	
TOTALS	364	21,775	31,350	-	7,186	-	60,311	100.00%

53,125

Local Public Agency	County	Section Number
City of Naperville	DuPage	06-00133-00-BR

AVERAGE HOURLY PROJECT RATES

Exhibit E Cost Estimate of Consultants Services Worksheet Fixed Raise

PAYROLL CLASSIFICATION	AVG HOURLY RATES	TOTAL PROJ. RATES			Additional Project Coordination			WCL Bridge TSRS Design											
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
Engineer 5 (E5)	78.00	0.0																	
Engineer 4 (E4)	78.00	28.0	7.69%	6.00	12	6.90%	5.38	16	8.42%	6.57									
Engineer 3 (E3)	69.97	162.0	44.51%	31.14	90	51.72%	36.19	72	37.89%	26.51									
Engineer 2 (E2)	49.01	152.0	41.76%	20.47	72	41.38%	20.28	80	42.11%	20.64									
Engineer 1 (E1)	36.66	22.0	6.04%	2.22				22	11.58%	4.24									
Planner 5 (P5)	78.00	0.0																	
Planner 4 (P4)	68.14	0.0																	
Planner 3 (P3)	47.56	0.0																	
Planner 2 (P2)	40.37	0.0																	
Architect 4 (AR4)	75.23	0.0																	
Architect 3 (AR3)	67.13	0.0																	
Architect 2 (AR2)	46.07	0.0																	
Architect 1 (AR1)	38.55	0.0																	
Environmental Scientist 4 (	78.00	0.0																	
Industry Specialist 3 (IS3)	61.21	0.0																	
Construction Services 4 (C	58.19	0.0																	
Construction Services 3 (C	59.53	0.0																	
Construction Services 2 (C	33.69	0.0																	
Technician 3 (T3)	39.90	0.0																	
Technician 1 (T1)	20.41	0.0																	
Administrative 3 (A3)	57.27	0.0																	
Administrative 2 (A2)	31.22	0.0																	
Administrative 1 (A1)	27.43	0.0																	
		0.0																	
		0.0																	
		0.0																	
		0.0																	
TOTALS		364.0	100%	$59.82	174.0	100.00%	$61.85	190.0	100%	$57.96	0.0	0%	$0.00	0.0	0%	$0.00	0.0	0%	$0.00