



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

April 17, 2014

SUBJECT: FAI Route 90/94 (I-90/94/290)
Project ACNHPP-000S(959)
Section 2013-036R
Cook County
Contract No. 60W71
Item No. 006, April 25, 2014 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Replaced the Schedule of Prices
2. Revised the Table of Contents to the Special Provisions
3. Revised pages 2, 3, 10-12, 44-48, 58-62, 112, 150-152, and 176-193 of the Special Provisions
4. Added pages 440-442 to the Special Provisions
5. Revised Sheets 1, 2, 4, 12, 14-18, 19A, 19B, 26, 32-43, 48, 49, 52, 52A, 54-56, 56A, 57, 60, 81, 91A-91D, 236, 254, 254A, 255, 255A and 256 of the Plans
6. Added Sheets 33B, 33C, 33D and 251C to the Plans

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

John D. Baranzelli, P.E.
Acting Engineer of Design and Environment

A handwritten signature in black ink, appearing to read "Ted B. Walschleger P.E." with a stylized flourish at the end.

By: Ted B. Walschleger, P. E.
Engineer of Project Management

cc: John Fortmann, Region 1, District 1; Tim Kell; D. Carl Puzey; Estimates

MS/kf

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60W71

State Job # - C-91-360-13

County Name - COOK - -

Code - 31 - -

District - 1 - -

Section Number - 2013-036R

Project Number

ACNHPP-000S/959/

*REVISED: APRIL 10, 2014

Route

FAI 90/94

FAI 290

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0322024	TRENCH DRAIN	EACH	1.000				
X0322141	REM TEMP WOOD POLE	EACH	11.000				
X0323407	FLAG POLES	EACH	1.000				
*ADD X0323553	ORN FENCE WRT IRON	FOOT	24.000				
X0324198	REMOV ASB CEM CONDUIT	FOOT	2,460.000				
X0324455	DRILL/SET SOLD P SOIL	CU FT	3,101.000				
X0324571	MAINT ST LTG SYS CHGO	L SUM	1.000				
*ADD X0325003	REM EX VALVE & VAULT	EACH	1.000				
X0325154	MASONRY RECONSTRUCT	SQ YD	2.000				
X0325207	TV INSPECT OF SEWER	FOOT	752.000				
X0325279	CLASS SI CONC (MISC)	CU YD	69.000				
X0325349	TEMP CON BAR (PERM)	FOOT	87.500				
X0325815	REMOVE EXISTING CABLE	FOOT	1,595.000				
X0326326	CC TPX 2-1/C6 1-1/CG	FOOT	925.000				
X0326486	DECORATIVE RAIL PR MT	FOOT	405.000				

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X0326801	COMBND SEWR TO BE CLN	FOOT	132.000				
X0326935	CROSSHOLE SONIC LOG	EACH	3.000				
*ADD X0327004	TEMP WP 60 CL 4	EACH	2.000				
X0327070	REMOV EXISTG FLAGPOLE	EACH	1.000				
X0327357	CONSTRN VBRN MONITRNG	L SUM	1.000				
X0327614	COMB SEW REM 12	FOOT	133.000				
X0327615	COMB SEW REM 8	FOOT	48.000				
X0327616	MAINT ITS DURG CONSTR	CAL MO	15.000				
X0327646	REMOVE GATE POSTS	EACH	2.000				
X0327648	COMB SEW REM 60	FOOT	57.000				
X0327649	SOIL RETENTION SYSTEM	SQ FT	1,636.000				
*ADD X0327682	CDWM ENG SERVICES	L SUM	1.000		50,900.000		50,900.000
X0327699	STEEL SECURITY FENCE	FOOT	46.000				
X0327700	STL SECURITY GATE 12	EACH	2.000				
X0327745	FOUND CONSTR EX SH OB	EACH	19.000				

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X0370017	DRILL HNDHL/MNHL CHGO	EACH	13.000				
X0370047	INST LP MA & LUM CHGO	EACH	6.000				
X0370049	UGRD C PVC2SCH80 CDOT	FOOT	165.000				
X0370068	CF24 1.25A15B CDOT	EACH	2.000				
*REV X0370069	COMB SEW ESVCP 8 CDOT	FOOT	56.000				
*ADD X0370070	COMB SEW WMR 8 CDOT	FOOT	20.000				
X0370071	COMB SEW WMR 12 CDOT	FOOT	38.000				
X0370074	RACKING CBL MH/HHCDOT	EACH	3.000				
X0370075	UGRD C PVC4SCH80 CDOT	FOOT	930.000				
X0370076	ROD/CL DCT COND CDOT	FOOT	125.000				
X0370080	COMB C&G B V.12(CDOT)	FOOT	308.500				
X0370085	CLN MNHL/HNDHL (CDOT)	EACH	3.000				
X0370135	CONC CURB TB SPL CDOT	FOOT	235.000				
X0370164	MAN TA 4D T1F CL CHGO	EACH	1.000				
X0370168	COMB SEW A T3 60 CDWM	FOOT	16.000				

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X0370185	COMB SEW ESVCP 12CDOT	FOOT	32.000				
X0370186	EL MH 3X4X4 30FL CDOT	EACH	1.000				
*ADD X0370202	COMB SEW DIP 8 CDWM	FOOT	25.000				
X2130010	EXPLOR TRENCH SPL	FOOT	100.000				
X4060110	BIT MATLS PR CT	POUND	1,400.000				
X4240800	DETECTABLE WARN SPL	SQ FT	17.000				
X5537800	SS CLEANED 12	FOOT	222.000				
X5538000	SS CLEANED 18	FOOT	22.000				
X5610708	WATER MAIN REMOV 8	FOOT	29.000				
X5619548	TAP VALVE & SLEEVE 48	EACH	1.000				
X5619648	REM REPL TAP SLEEV 48	EACH	1.000				
X5860110	GRANULAR BACKFILL STR	CU YD	212.000				
X6011705	PIPE DRAINS 6 SPL	FOOT	6.000				
X6020083	INLET TA T1FOL (CHGO)	EACH	1.000				
X6020270	MAN TB 4D T1F CL CHGO	EACH	1.000				

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X6022505	CB TA 4D T1FOL (CHGO)	EACH	3.000				
X6028000	MAN RECONST SPL	EACH	1.000				
X6030310	FR & LIDS ADJUST SPL	EACH	8.000				
X6050040	REMOV MANHOLES SPL	EACH	1.000				
X6050405	FILL VALVE VLTS SPL	EACH	2.000				
X6640050	CH LK FENCE 42 ATS SP	FOOT	33.000				
X6640200	TEMP CH LK FENCE	FOOT	69.000				
*ADD X6640704	TEMP CL FENCE SCRN 4	FOOT	75.000				
X6700410	ENGR FLD OFF A SPL	CAL MO	15.000				
X7010216	TRAF CONT & PROT SPL	L SUM	1.000				
*ADD X7010410	SPEED DISPLAY TRAILER	CAL MO	15.000				
X7011015	TR C-PROT EXPRESSWAYS	L SUM	1.000				
X7013820	TR CONT SURVEIL EXPWY	CAL DA	136.000				
*REV X7035104	TEMP EPOXY PVT MK L4	FOOT	5,475.000				
X7035105	TEMP EPOXY PVT MK L5	FOOT	709.000				

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X7035108	TEMP EPOXY PVT MK L8	FOOT	3,391.000				
X7035112	TEMP EPOXY PVT MK L12	FOOT	405.000				
X7200305	SIGN PANEL T3 SPL	SQ FT	43.000				
Z0004552	APPROACH SLAB REM	SQ YD	527.000				
Z0007118	UNTREATED TIMBER LAG	SQ FT	458.000				
Z0012754	STR REP CON DP = < 5	SQ FT	78.000				
Z0012755	STR REP CON DP OVER 5	SQ FT	13.000				
Z0013302	SEGMENT CONC BLK WALL	SQ FT	59.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0022800	FENCE REMOVAL	FOOT	145.000				
Z0026404	FUR SOLDIER PILES WS	FOOT	323.000				
*REV Z0030850	TEMP INFO SIGNING	SQ FT	205.000				
Z0033028	MAINTAIN LIGHTING SYS	CAL MO	15.000				
Z0046304	P UNDR FOR STRUCT 4	FOOT	266.000				
Z0073002	TEMP SOIL RETEN SYSTM	SQ FT	481.000				

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Z0076600	TRAINEES	HOUR	1,000.000		0.800		800.000
Z0076604	TRAINEES TPG	HOUR	1,000.000		15.000		15,000.000
20100110	TREE REMOV 6-15	UNIT	90.000				
20100210	TREE REMOV OVER 15	UNIT	16.000				
20200100	EARTH EXCAVATION	CU YD	1,305.000				
20800150	TRENCH BACKFILL	CU YD	711.300				
21001000	GEOTECH FAB F/GR STAB	SQ YD	100.000				
21101615	TOPSOIL F & P 4	SQ YD	338.000				
25000210	SEEDING CL 2A	ACRE	0.250				
25000400	NITROGEN FERT NUTR	POUND	45.000				
25000600	POTASSIUM FERT NUTR	POUND	45.000				
25100135	MULCH METHOD 4	ACRE	0.500				
25100630	EROSION CONTR BLANKET	SQ YD	986.000				
25200110	SODDING SALT TOLERANT	SQ YD	338.000				
25200200	SUPPLE WATERING	UNIT	3.400				

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28000400	PERIMETER EROS BAR	FOOT	1,080.000				
28000510	INLET FILTERS	EACH	20.000				
30300001	AGG SUBGRADE IMPROVE	CU YD	130.000				
31101200	SUB GRAN MAT B 4	SQ YD	253.000				
31101400	SUB GRAN MAT B 6	SQ YD	371.000				
35300400	PCC BSE CSE 9	SQ YD	233.000				
40201000	AGGREGATE-TEMP ACCESS	TON	250.000				
40600300	AGG PR CT	TON	1.000				
40600635	LEV BIND MM N70	TON	19.000				
40603085	HMA BC IL-19.0 N70	TON	30.000				
40603340	HMA SC "D" N70	TON	58.000				
42001200	PAVEMENT FABRIC	SQ YD	215.000				
42001300	PROTECTIVE COAT	SQ YD	974.000				
42001430	BR APPR PVT CON (FLX)	SQ YD	85.000				
42300400	PCC DRIVEWAY PAVT 8	SQ YD	618.000				

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42400200	PC CONC SIDEWALK 5	SQ FT	1,873.500				
44000100	PAVEMENT REM	SQ YD	383.000				
44000158	HMA SURF REM 2 1/4	SQ YD	219.000				
44000200	DRIVE PAVEMENT REM	SQ YD	496.000				
44000300	CURB REM	FOOT	170.000				
44000500	COMB CURB GUTTER REM	FOOT	420.000				
44000600	SIDEWALK REM	SQ FT	2,392.000				
44001980	CONC BARRIER REMOV	FOOT	118.000				
44201796	CL D PATCH T4 12	SQ YD	184.000				
50100100	REM EXIST STRUCT	EACH	1.000				
50157300	PROTECTIVE SHIELD	SQ YD	1,128.000				
50200100	STRUCTURE EXCAVATION	CU YD	1,064.000				
50300225	CONC STRUCT	CU YD	335.000				
50300255	CONC SUP-STR	CU YD	734.000				
50300260	BR DECK GROOVING	SQ YD	1,068.000				

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50300285	FORM LINER TEX SURF	SQ FT	1,002.000				
50300300	PROTECTIVE COAT	SQ YD	1,848.000				
50500105	F & E STRUCT STEEL	L SUM	1.000				
50500505	STUD SHEAR CONNECTORS	EACH	6,166.000				
50800105	REINFORCEMENT BARS	POUND	447,480.000				
50800205	REINF BARS, EPOXY CTD	POUND	202,563.000				
50800515	BAR SPLICERS	EACH	122.000				
50800530	MECHANICAL SPLICERS	EACH	440.000				
51100100	SLOPE WALL 4	SQ YD	72.000				
51500100	NAME PLATES	EACH	1.000				
51602000	PERMANENT CASING	FOOT	1,266.000				
51603000	DRILLED SHAFT IN SOIL	CU YD	1,024.000				
51604000	DRILLED SHAFT IN ROCK	CU YD	11.000				
52000110	PREF JT STRIP SEAL	FOOT	135.000				
52100010	ELAST BEARING ASSY T1	EACH	24.000				

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52100510	ANCHOR BOLTS 3/4	EACH	48.000				
52100520	ANCHOR BOLTS 1	EACH	24.000				
54248510	CONCRETE COLLAR	CU YD	1.900				
550A0050	STORM SEW CL A 1 12	FOOT	151.000				
550A0340	STORM SEW CL A 2 12	FOOT	40.000				
55100500	STORM SEWER REM 12	FOOT	271.000				
56103900	D I WATER MAIN MJ 8	FOOT	34.000				
56105000	WATER VALVES 8	EACH	1.000				
56400500	FIRE HYDNNTS TO BE REM	EACH	1.000				
56400600	FIRE HYDRANTS	EACH	1.000				
58700300	CONCRETE SEALER	SQ FT	6,606.000				
59000200	EPOXY CRACK INJECTION	FOOT	5.000				
59100100	GEOCOMPOSITE WALL DR	SQ YD	145.000				
60107700	PIPE UNDERDRAINS 6	FOOT	33.000				
60108200	PIPE UNDERDRAIN 6 SP	FOOT	6.000				

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60200205	CB TA 4 DIA T1F CL	EACH	1.000				
60206905	CB TC T1F OL	EACH	2.000				
60207005	CB TC T1F CL	EACH	1.000				
60252800	CB RECONST	EACH	1.000				
60255500	MAN ADJUST	EACH	3.000				
60500040	REMOV MANHOLES	EACH	2.000				
60500050	REMOV CATCH BAS	EACH	5.000				
60500060	REMOV INLETS	EACH	1.000				
60500405	FILL VALVE VLTS	EACH	2.000				
64300240	IMP ATTEN FRD NAR TL2	EACH	1.000				
66400105	CH LK FENCE 4	FOOT	84.000				
66407400	CH LK GATES 6X8 DBL	EACH	1.000				
66900200	NON SPL WASTE DISPOSL	CU YD	1,000.000				
66900450	SPL WASTE PLNS/REPORT	L SUM	1.000				
66900530	SOIL DISPOSAL ANALY	EACH	2.000				

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67100100	MOBILIZATION	L SUM	1.000				
70103815	TR CONT SURVEILLANCE	CAL DA	136.000				
70300100	SHORT TERM PAVT MKING	FOOT	18,002.000				
70300520	PAVT MARK TAPE T3 4	FOOT	2,872.000				
70300530	PAVT MARK TAPE T3 5	FOOT	107.000				
70300550	PAVT MARK TAPE T3 8	FOOT	1,182.000				
70301000	WORK ZONE PAVT MK REM	SQ FT	293.000				
*REV 70400100	TEMP CONC BARRIER	FOOT	987.500				
*REV 70400200	REL TEMP CONC BARRIER	FOOT	175.000				
70600260	IMP ATTN TEMP FRN TL3	EACH	4.000				
70600332	IMP ATTN REL FRN TL3	EACH	1.000				
72000100	SIGN PANEL T1	SQ FT	31.000				
72400100	REMOV SIN PAN ASSY TA	EACH	1.000				
72400310	REMOV SIGN PANEL T1	SQ FT	18.000				
72800100	TELES STL SIN SUPPORT	FOOT	15.000				

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72900200	METAL POST TY B	FOOT	14.000				
78000100	THPL PVT MK LTR & SYM	SQ FT	36.000				
78000200	THPL PVT MK LINE 4	FOOT	410.000				
78000400	THPL PVT MK LINE 6	FOOT	132.000				
78000600	THPL PVT MK LINE 12	FOOT	97.000				
78000650	THPL PVT MK LINE 24	FOOT	270.000				
78005110	EPOXY PVT MK LINE 4	FOOT	1,736.000				
78005120	EPOXY PVT MK LINE 5	FOOT	569.000				
78005140	EPOXY PVT MK LINE 8	FOOT	1,642.000				
78005150	EPOXY PVT MK LINE 12	FOOT	214.000				
78006100	PREF THPL PM LTR-SYM	SQ FT	26.000				
78008200	POLYUREA PM T1 LTR-SY	SQ FT	10.000				
78008210	POLYUREA PM T1 LN 4	FOOT	530.000				
78008230	POLYUREA PM T1 LN 6	FOOT	1,035.000				
78008250	POLYUREA PM T1 LN 12	FOOT	24.000				

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78100100	RAISED REFL PAVT MKR	EACH	16.000				
78200530	BAR WALL MKR TYPE C	EACH	7.000				
*REV 78300100	PAVT MARKING REMOVAL	SQ FT	4,029.000				
78300200	RAISED REF PVT MK REM	EACH	16.000				
81100320	CON AT ST 1 PVC GS	FOOT	610.000				
81100805	CON AT ST 3 PVC GALVS	FOOT	95.000				
81101005	CON AT ST 4 PVC GALVS	FOOT	1,650.000				
81200230	CON EMB STR 2 PVC	FOOT	840.000				
81300220	JUN BX SS AS 6X6X4	EACH	3.000				
81300530	JUN BX SS AS 12X10X6	EACH	9.000				
81300830	JUN BX SS AS 18X18X8	EACH	5.000				
81603081	UD 3#2#4GXLP USE 1.5 P	FOOT	150.000				
81702110	EC C XLP USE 1C 10	FOOT	2,050.000				
82107100	UNDERPAS LUM 70W HPS	EACH	3.000				
82107200	UNDERPAS LUM 100W HPS	EACH	6.000				

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SOILS INFORMATION

Soil boring logs and generalized soil profiles are shown in the Plans for Harrison Street and Halsted Street.

The reports below are available for inspection at IDOT District 1, 201 W. Center Court, Schaumburg, Illinois.

Structure Geotechnical Report

Performed for Harrison Street Bridge Over Southbound Interstate 90/94
SN 016-1713, Section 2013-008R
IDOT D-91-227-13, PTB 163/ITEM 001
Cook County, Illinois
Prepared by:
Wang Engineering, Inc.
April 04, 2013

Structure Geotechnical Report

Performed for Halsted Street Bridge Over Interstate 290 and the CTA
Existing SN 016-2081, Proposed SN 016-1716, Section 2013-009R
IDOT D-91-227-13, PTB 163/ITEM 001
Cook County, Illinois
Prepared by:
Wang Engineering, Inc.
April 15, 2013

CONTRACTOR COOPERATION

The Contractor's attention is directed to the fact that other separate contracts may be under construction during the duration of this Contract. Adjacent contracts may consist of, but are not limited to projects near:

- Contract 60F63 - FAI 90/94 (Kennedy Expressway) at Ohio Street
- Contract 60W36 – Tunnel Bulkheading (Circle Interchange)
- Contract 60W25 – Morgan Street Bridge at I-290 / Congress Pkwy (Circle Interchange)
- Contract 60W26 – Harrison Street Bridge (West) at I-90/94 and Halsted Street Bridge at I-290 (Circle Interchange)
- Contract 60W29 – Peoria Street Bridge at I-290 / Congress Pkwy (Circle Interchange)
- Contract 60W28 – Northwest Flyover Bridge at I-90/94 and I-290 / Congress Pkwy (Circle Interchange)
- Contract 60W30 – Taylor Street Bridge at I-90/94 (Circle Interchange)
- CDWM Improvements within and around the Cermak Pumping Station
- And others.

Revised 4/17/14

The Contractor will be governed by Article 105.08 of the Standard Specifications.

It is intended that the Contractor for Harrison Street, Contract 60W71 takes over the detour for the Harrison Street closure after the May 31, 2015 completion date for Halsted and Harrison Streets Project – Contract 60W26.

This work shall include all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

The Contractor shall be responsible for the repair and maintenance of the Harrison Street detour and all its related appurtenances. No extra payment will be made for systems maintenance, repairs or for damages incurred as a result of vandalism, theft or other criminal activities.

The Contractor is allowed to close the existing NE ramp no earlier than January 1, 2015. If schedules align, the existing NW ramp and NE ramp will be closed and detoured under a separate contract, which would eliminate the need to close and detour the NE ramp under this contract. Access within this area must be coordinated with the Engineer. Access to the proposed Pier 4 by others as shown on the Suggested Stages of Construction and Traffic Control Plans must be allowed through the work zone. In addition, there should be no bridge superstructure in place (existing or proposed structures) between the dates defined in "Completion Date Plus Working Days."

The Contractor will coordinate proposed project start dates and sequence of construction with the Engineer and other Contractors to present an effective and timely schedule for successful completion of the project.

PROGRESS SCHEDULE

Description. Time is of the essence in this Contract. It may be necessary for the Contractor to work longer hours, use additional crews, and work during weekends in order to complete the work within the required time limit. The Contractor shall submit a Critical Path Method (CPM) Progress Schedule as described below for the Engineer's approval before the work can be started.

The Contractor will not be allowed any compensation for working longer hours or using extra shifts; and working on weekends or during Holidays; working during winter months, etc. to meet the specified Completion Date.

This work shall consist of preparing, revising and updating a detailed progress schedule based upon the Critical Path Method (CPM). This work shall also consist of performing time impact analysis of the progress schedule based upon the various revisions and updates as they occur.

Requirements. The software shall produce an electronic progress schedule for submission to the department that is 100% compatible with Primavera SureTrak 3.0 Project Manager, published by Primavera Systems, Inc.

Revised 4/17/14

MAINTENANCE OF ROADWAYS

Effective: September 30, 1985

Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

RESTRICTION ON WORKING DAYS AFTER A COMPLETION DATE

All temporary lane closures *on arterial streets* during the period governed by working days after a completion date will not be permitted during the hours of 6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 6:00 p.m. Monday through Friday.

All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above. Also, these signs should be taken down within one-half (1/2) hour after the closure is removed.

FAILURE TO COMPLETE THE WORK ON TIME

Should the Contractor fail to complete the work on or before the completion date as specified in the Special Provision for "Completion Date Plus Working Days", or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of **\$ 10,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

The Contractor shall be liable to the Department in the amount of **\$10,000**, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed for failing to complete the work on or before the interim completion date as specified in the Special Provision for "Completion Date Plus Working Days."

Revised 4/17/14

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the Department's actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway if the project is delayed in completion. The Department shall not be required to provide any actual loss in order to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, twenty-four hours later.

SUBMITTALS

There are elements of construction that may require long lead times between order and delivery to the project site for installation. The Contractor must prioritize timely submittals of shop drawings to minimize any delays in project execution.

Submittals must be complete, include all necessary and required information, and must be submitted for review in a timely matter to insure that the Contract meets all milestone and completion date requirements. No additional compensation and no extension of calendar days will be made due to delays in receiving material or equipment to the site because of incomplete or delayed shop drawing submittals.

The Contractor shall provide notice to the Engineer concerning shop drawing submittal schedules and when shop drawing submittal deadlines may be delayed.

Revised 4/17/14

CLEANING EXISTING SEWERS AND DRAINAGE STRUCTURES

Description. All existing storm sewers and combined sewers shall be considered as sewers insofar as the interpretation of this Special Provision is concerned. When specified for payment, the location of sewer to be cleaned will be shown on the plans.

All existing drainage structures which are to be adjusted or reconstructed shall be cleaned according to Article 602.15 of the Standard Specifications. This work will be paid for in accordance with Article 602.16 of the Standard Specifications.

All existing sewers which are specified to be cleaned on the plans will be cleaned according to Article 602.15 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in feet for the length of sewer that is to be cleaned.

Basis of Payment. This work will be paid for at the contract unit price per foot for STORM SEWERS TO BE CLEANED, of the diameter specified, or at the contract unit price per foot for COMBINED SEWERS TO BE CLEANED.

Revised 4/17/14

STATUS OF UTILITIES TO BE ADJUSTED

Effective: January 30, 1987

Revised: January 24, 2013

Utility companies involved in this project have provided the following estimated durations:

NAME OF UTILITY	TYPE	LOCATION	Estimated Duration of Time for the Completion of Relocation or Adjustments
ComEd	Electric	Currently located along south portion of Harrison Street	ComEd has indicated that all conduits will be vacated prior to the start of bridge demolition. Some lines will be relocated into the large duct package to the north of Harrison. Service must be reestablished across the new Harrison Street bridge over SB I-90/94, which will feed the Cermak Pumping Station during construction, prior to the removal of cables and conduits on the bridge structure to be demolished. ComEd anticipates that cable relocation will take approximately two to three weeks, not including the proposed duct construction to serve the Cermak Pumping Station. ComEd will construct new ducts on proposed bridge structure as identified in the plans. ComEd will construct new ducts in pavement leading to the bridge crossing, intercepting existing the existing ducts and manholes as necessary. ComEd is expected to begin cable placement after the Contractor has completed the proposed Harrison Street bridge, but before the Contractor has completed all work. This work is anticipated to take two to three weeks.

Revised 4/17/14

ComEd	Electric	Feed into the Cermak Pumping Station	<p>The existing underground electrical service into the Cermak Pumping Station will be impacted by the bridge and roadway reconstruction. The new ComEd infrastructure must be installed after the west driveway into the pumping station has been reopened (by others). The work by ComEd and their contractors may be complete prior to the start of work. The cables are anticipated to be installed at the same time as service across the west bridge. Once operational, the Contractor shall protect the electrical service to allow uninterrupted service to the pumping station. The Contractor shall also aid ComEd in their removal (as necessary) of the existing electrical lines and ductbank as the existing facilities conflict with the Contractor's work. Proposed driveway pavement reconstruction is identified on the plans.</p>
ComEd	Electric	Duct package north of Harrison	<p>ComEd maintains a large package of major electrical service that must not be disturbed during construction without ComEd involvement. Soil Retention System must be installed in and around the ductbank. The location of the duct is identified on the plans. The depth of the duct as determined by a detailed locate by ComEd will be provided to aid in the design and installation of the Soil Retention System.</p>
ComEd	Electric	<p><u>Harrison Street</u> Manhole Structure at 7811+24.39, 16.92 RT</p> <p><u>Cermak Pumping Station</u> <u>East Driveway</u> Manhole Structure at 7811+98.82, 144.92 RT</p>	<p>ComEd will adjust manholes to final grade. The structure adjustments must be coordinated with ComEd.</p>

Revised 4/17/14

AT&T	Telephone / Fiber Optic	Duct package north of Harrison	AT&T maintains a large package of major communication services that must not be disturbed during construction without AT&T involvement. Soil Retention System must be installed in and around the ductbank. The location of the duct is identified on the plans. The depth of the duct as determined by a detailed locate by AT&T will be provided to aid in the design and installation of the Soil Retention System. Prior to the start of contract work, AT&T has proposed to install standpipes to delineate the location of the duct along the south edges. During the course of construction, as excavation work in the area of the AT&T duct, AT&T has proposed to install steel plates vertically extending from the edge of the duct up to a point a minimum of one (1) foot above proposed finished grade.
Peoples Gas	Gas	<u>Harrison Street</u> Valve Structure at 7811+10.79, 51.10 RT. <u>Cermak Pumping Station</u> <u>East Driveway</u> Valve Structure at 7811+66.01, 125.20 RT.	Peoples will adjust structures to final grade. The structure adjustments must be coordinated with ComEd.
City of Chicago	Communications	Current package in Harrison Street	Existing OEMC facilities will be temporarily rerouted outside of the existing bridge in advance of construction (by others). The temporary relocation will utilize poles, conduits attached to structures underground raceways, cable installed in conduits and aerial cable with connections into existing City of Chicago structures. The removal of the temporary routing, all cable, temporary poles and other infrastructure, along with all restoration, is included within this contract. The removal shall not begin until the Contractor has completed the installation of all new cable (as shown on the plans) and OEMC has made all connections with the new cable and disconnection of the temporary cable. OEMC must provide written authorization prior to the removal of the temporary poles and cable.

Revised 4/17/14

FAI Route 90/94/290 (I-90/94/290)
 Project ACNHPP-000S(959)
 Section 2013-036R
 Cook County
 Contract 60W71

City of Chicago	Electric	Roadway lighting along Harrison Street	Roadway lighting will be demolished/reconstructed by the Contractor.
City of Chicago	Water	Harrison Street/Cermak Pumping Station	The existing 48" water main ring, valves, support structures and other items related to the operations of the Cermak Pumping Station must remain undamaged and fully operational. The northeast portion of the ring may be shut down to facilitate the utility work and abutment construction under this contract. The schedule and timing of this shut down shall be coordinated with and approved by the City of Chicago Department of Water Management.
City of Chicago	Water	Harrison Street/Cermak Pumping Station	The City of Chicago Department of Water Management has proposed replacing a portion of the existing 48" water main ring between the driveways leading into the Cermak Pumping Station. The replacement is planned to include at least one valve and vault, one manhole and one fire hydrant to be installed by CDWM. The work by CDWM is intended to be completed prior to the start of work under this contract. The proposed structures are not identified on the plans, but must be accommodated as part of sidewalk and roadway reconstruction.
City of Chicago	Water	8" Water Main to Fire Hydrant near Cermak Pumping Station Harrison Street Fire Hydrant at 7811+89.65, 27.02 RT.	Fire hydrant and 8" lead water main are to be removed and reconstructed as part of the Contract. The existing valve on the 8" lead shall be completely removed as identified in the plans with the existing tapping connection removed and replaced to enclose the existing opening. The hydrant is proposed to be relocated using a new tapping sleeve and valve connection, new hydrant lead and valve and a new hydrant. The Contractor must provide a proposed layout of the new lead based upon utilities and other conflicts in coordination with CDWM. The plans provide a conceptual layout and nominal quantities.
City of Chicago	Water	Water Main Valve Structures - Various Locations	As part of work under this contract, structures are to be filled or adjusted as shown in the plans.

Revised 4/17/14

City of Chicago	Water	<u>Harrison Street</u> 12" Water Main, Fire Hydrant at Sta. 7813+61.09, 28.69 RT.	The fire hydrant will be relocated or eliminated by CDWM. The exact scope is to be determined by CDWM. The existing 12" water main will be abandoned in place and shall only be removed where it conflicts with proposed improvements. The Contractor shall accommodate CDWM in their work.
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The above represents the best information available to the Department and is included for the convenience of the bidder. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

In accordance with 605 ILCS 5/9-113 of the Illinois Compiled Statutes, utility companies have 90 days to complete the relocation of their facilities after receipt of written notice from the Department. The 90-day written notice will be sent to the utility companies after the following occurs:

- 1) Proposed right of way is clear for contract award.
- 2) Final plans have been sent to and received by the utility company.
- 3) Utility permit is received by the Department and the Department is ready to issue said permit.
- 4) If a permit has not been submitted, a 15 day letter is sent to the utility company notifying them they have 15 days to provide their permit application. After allowing 15 days for submission of the permit the 90 day notice is sent to the utility company.
- 5) Any time within the 90 day relocation period the utility company may request a waiver for additional time to complete their relocation. The Department has 10 days to review and respond to a waiver request.

KEEPING THE EXPRESSWAY OPEN TO TRAFFIC

Effective: March 22, 1996
 Revised: February 13, 2014

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards and the District Freeway details. All Contractors' personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer at www.idotlcs.com twenty-four (24) hours in advance of all daily lane, ramp and shoulder closures and one week in advance of all permanent and weekend closures on all Freeways and/or Expressways in District One. This advance notification is calculated based on workweek of Monday through Friday and shall not include weekends or Holidays.

LOCATION: I-90/94 Dan Ryan: Roosevelt to I-290

WEEK NIGHT	TYPE OF CLOSURE	ALLOWABLE LANE CLOSURE HOURS		
			to	
Sunday-Thursday	1-Lane	10:00 PM	to	5:00 AM
	2-Lane	11:59 PM	to	5:00 AM
Friday	1-Lane	11:00 PM (Fri)	to	6:00 AM (Sat)
	2-Lane	11:59 PM (Fri)	to	6:00 AM (Sat)
Saturday	1-Lane	10:00 PM (Sat)	to	9:00 AM (Sun)
	2-Lane	11:59 PM (Sat)	to	9:00 AM (Sun)

Revised 4/17/14

TRAFFIC CONTROL FOR WORK ZONE AREAS

Effective: 9/14/95

Revised: 1/1/07

Work zone entry and exit openings shall be established daily by the Contractor with the approval of the Engineer. All vehicles including cars and pickup trucks shall exit the work zone at the exit openings. All trucks shall enter the work zone at the entry openings. These openings shall be signed in accordance with the details shown elsewhere in the plans and shall be under flagger control during working hours.

The Contractor shall plan his trucking operations into and out of the work zone as well as on to and off the expressway to maintain adequate merging distance. Merging distances to cross all lanes of traffic shall be no less than 1/2 mile. This distance is the length from where the trucks enter the expressway to where the trucks enter the work zone. It is also the length from where the trucks exit the work zone to where the trucks exit the expressway. The stopping of expressway traffic to allow trucks to change lanes and/or cross the expressway is prohibited.

Failure to comply with the above requirements will result in a Traffic Control Deficiency charge. The deficiency charge will be calculated as outlined in Article 105.03 of the Standard Specifications. The Contractor will be assessed this daily charge for each day a deficiency is documented by the Engineer.

Revised 4/17/14

STAGING AND INTERCHANGE RESTRICTIONS

Prior to the actual beginning and completion of the various stages of construction and traffic protection, the Contractor will be required to provide lane closures and barricade systems, for preparation work such as pavement marking removal, temporary lane marking, placing temporary concrete barrier, relocating existing guardrail, etc. These lane closures and barricade systems, including barricades, drums, cones, lights, signs, flaggers etc. shall be provided in accordance with details in the plans and these Special Provisions and as approved by the Engineer. The cost of this work will not be paid for separately but shall be considered included in the contract lump sum price for **TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)**.

Revised 4/17/14

LANE AND RAMP CLOSURES

Prior to and after stage construction, temporary closures of I-90/94 will only be permitted at night during the allowable hours as listed in the Special Provision "Keeping the Expressway Open to Traffic".

For all ramp closures the Contractor shall furnish and install signage per District Detail TC-08, as directed by the Engineer.

Closure of Ramp NE must not be established prior to January 1, 2015. If adjacent construction that requires the closure of Ramp NE under future Contracts has not started, Ramp NE shall be re-opened immediately after the completion of pier construction.

The Contractor shall submit to the Department two (2) weeks ahead of time, in writing, the starting date for each of the extended ramp and/or lane closures. Approval from the Department is required prior to closing the ramp and/or lanes. Should the Contractor fail to complete the work and reopen the ramp to traffic within the allowable time limit, the Contractor shall be liable to the Department for liquidated damages as noted under FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC

Revised 4/17/14

HARRISON STREET CLOSURE

The Contractor must maintain access to the Cermak Pumping Station until the West Harrison Street Bridge (SN 016-1713) and west driveway into the Cermak Pumping Station can be used for access by CDWM. It is anticipated that the West Harrison Street Bridge (SN 016-1713) will be complete by September 1, 2014.

Revised 4/17/14

GENERAL ELECTRICAL REQUIREMENTS

Effective: January 1, 2012

Add the following to Article 801 of the Standard Specifications:

“Maintenance transfer and Preconstruction Inspection:

General. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall request a maintenance transfer and preconstruction site inspection, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting and/or traffic control systems which may be affected by the work. The request for the maintenance transfer and preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance transfer and preconstruction inspection shall:

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Revised 4/17/14

Method of Measurement. This work will be measured for payment as each TRENCH DRAIN installed.

Basis of Payment. This work will be paid for at the contract unit price of each TRENCH DRAIN, which price shall include all costs for excavation and disposal of unsuitable material, bolts, anchors, connectors, and grates.

PIPE DRAINS 6" (SPECIAL) will be paid for at the contract unit price per foot PIPE DRAINS 6" (SPECIAL).

REMOVE TEMPORARY WOOD POLE

Description. This item consists of removing existing temporary wood poles, aerial cables, conduits attached to the pole, cable mounting equipment, and all associated apparatus and connections. This removal shall also include removal of all wiring and connections to the associated equipment. All equipment and material removed as part of this item shall become property of the Contractor and shall be removed from the site.

Pole holes shall be backfilled according to Article 841.02.

Method of Measurement. Units measured for payment will be counted on a per-pole basis, regardless of pole material, mounting height, and installation depth.

Basis of Payment. This work will be paid for at the Contract unit price each for REMOVE TEMPORARY WOOD POLE.

FLAG POLES

Description. This work will consist of furnishing and installing of new ground mounted flagpoles made from aluminum at locations specified, and as agreed to by the City of Chicago Department of Water Management (CDWM). The final flagpole finish will be determined by CDWM prior to installation.

The proposed flagpole will be a maximum of thirty (30) feet long as measured from the ground. CDWM may indicate that a smaller flag pole is desired at this location.

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Top surface of these foundations in parkway will be at an elevation of two inches (2") above grade or as required by the Engineer. Care must be taken to install a level foundation and to ensure adequate anchor rod projections for double nut installation. The foundations must be centered back from the face of the curb in accordance with dimensions shown on the construction plans. Foundation raceways must consist of large radius conduit elbow(s) in quantity, size and type as specified on the corresponding standard drawing or in the construction plans. Any number of elbows in excess of the number shown on the standard drawing must be paid for under a separate pay item. The elbow ends above ground will be capped with standard conduit bushings. The Contractor must furnish anchor rods, a ground rod, hardware, conduit elbow(s) and all other material shown on applicable foundation construction drawings. Depth of foundation will be as shown on the appropriate drawing. The foundation top must be chamfered 3/4 of an inch. When the foundation is installed in a sidewalk, the foundation must be installed level, with the height of the foundation as close to the height of the sidewalk as possible, or as directed by the Engineer. A proper expansion joint will be installed between the sidewalk and the foundation.

Anchor rods must be set in accordance with applicable construction plans so that when poles are mounted on the foundations, the street lighting mast arm will be properly oriented as indicated on the construction plans. The anchor rods will be set by means of a metal template which shall be submitted for approval before any foundation work is begun. The template must hold the rods vertical, and in proper position. Anchor rods must conform in all respects to the appropriate drawing.

Method of Measurement. This item will be measured per each foundation installed complete.

Basis of Payment. Payment will be made for foundations installed in place, including elbows, in accordance with construction drawings, constructions plans and these specifications. All necessary excavation and restoration of pavement, sidewalk and fill to their original conditions.

COMBINED SEWER (EXTRA STRENGTH VITRIFIED CLAY PIPE) (CDOT) COMBINED SEWER (DUCTILE IRON PIPE) (CDWM)

Description. Work under these items shall be performed according to Article 542.08 and Section 550 of the IDOT Standard Specifications and the current City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management and DWM Standard Specifications for Water and Sewer Main Construction, except as herein modified.

This work shall consist of constructing all combined sewers 21 inches (525 mm) in diameter and smaller at locations shown on the Plans. Where pipe bends, elbows, tees or collars may be required, it shall be installed at the locations shown on the plans and will not be paid for separately.

Materials. Materials shall be per the most current DWM Standard Specifications for Water and Sewer Main Construction. The type of material to be used is designated on the Plans.

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For extra strength vitrified clay pipe (ESVCP), the pipe shall conform to ASTM Designation C-700. Sewer pipes shall be also gasketed in such a manner as to produce a compression type joint conforming to the requirements of ASTM C-425.

For ductile iron pipe (DIP), the pipe shall be class 52 or equivalent, with push on self-contained, pre-lubricated gaskets or mechanical joints.

Concrete collars shall conform to Article 1020.04 of the IDOT Standard Specifications.

Construction Requirements. Where a sewer or drain connection is to be made to a proposed ESVCP combined sewer, a manufactured Y or T branch pipe shall be installed in the sewer at this junction.

Where a sewer or drain connection is to be made to a proposed reinforced concrete pipe (RCP) sewer, a pipe section with a predrilled hole of the proper diameter shall be installed at this junction.

Where a sewer or drain connection is made to an existing sewer, a "T" or "Y" saddle shall be installed. The circular opening in the existing sewer must be core drilled to the same size as the external diameter of the proposed or drain connection. The protrusion of the proposed sewer into the existing sewer must not exceed a maximum of 1 inch. Edge of core holes must be a minimum of 1.5 feet from the edge of pipe and a minimum distance of 5 feet horizontally between holes. Do not drill holes higher than 10 and 2 o'clock.

Where a proposed combined sewer is connecting to an existing combined sewer, a concrete collar shall be used and shall be constructed in conformance with the applicable portions of Article 542.08 of the IDOT Standard Specifications.

QC/QA Requirements. The Contractor must provide a Manufacturer's written certification that the materials comply with these specifications. All sewers and sewer structures must be inspected prior to the final payment to the Contractor.

Method of Measurement. This work will be measured for payment in place per foot.

Basis of Payment. This work will be paid for at the contract unit price per foot for the COMBINED SEWER (EXTRA STRENGTH VITRIFIED CLAY PIPE) of the diameter specified (CDOT) or COMBINED SEWER (DUCTILE IRON PIPE) of the diameter specified (CDWM).

Trench backfill will be paid for according to Article 208.04.

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COMBINED SEWER ADJACENT TO OR CROSSING WATER MAIN

Description. This work consists of constructing combined sewer adjacent to or crossing a water main at the locations shown on the plans. The material and installation requirements shall be according to the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", "City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management", "City of Chicago DWM Standard Specifications for Water and Sewer Main Construction", and the applicable portions of Section 550 of the Standard Specifications; which may include concrete collars and encasing pipe with seals if required.

Pipe materials shall meet the requirements of Sections 40 and 41-2.01 of the "Standard Specifications for Water and Sewer Main Construction in Illinois" and the current "City of Chicago DWM Standard Specifications for Water and Sewer Main Construction". Ductile Iron pipe is required and shall be class 52 or equivalent, with push on self-contained, pre-lubricated gaskets or mechanical joints.

Method of Measurement. Sewers installed adjacent to or crossing water main shall be measured for payment in feet for COMBINED SEWER, (WATER MAIN REQUIREMENTS), of the diameter specified CDOT.

Basis of Payment. This work will be paid according to Article 550.10 of the Standard Specifications, except the pay item shall be COMBINED SEWER, (WATER MAIN REQUIREMENTS), of the diameter specified CDOT.

RACKING CABLES IN MANHOLE OR HANDHOLE (CDOT)

Description. This item consists of providing labor and materials for racking of fiber optic cable in split innerduct and/or traffic signal and lighting copper cable around the inside perimeter of a manhole, in conformance with the Plans. In each manhole, the Contractor shall furnish and install at least four support brackets attached to the manhole walls, on which neatly coiled fiber optic cable in split innerduct and copper cable can be secured. The support brackets shall be attached firmly by screws drilled into the wall. Specific racking layout and components shall be provided in a submittal to the Engineer for each manhole, for review and approval in advance of installation.

In the event that a cable enclosure or other protective treatment of cable is used in place of racking on brackets at the direction of the Engineer, such alternate treatment shall be considered incidental to this pay item.

Method of Measurement. This Work will be measured on a per each basis each for manhole or handhole racked.

Basis of Payment. This Work will be paid for at the Contract Unit Price each per RACKING CABLES IN MANHOLE OR HANDHOLE (CDOT), which will be payment in full for the material and work described herein.

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Basis of Payment. The cost of all surface preparation, galvanizing, painting and all other work described herein shall be considered as included in the unit price bid for the applicable pay items to be galvanized and painted, according to the Standard Specifications.

FILLING VALVE VAULTS (SPECIAL)

Description. Work under this item will include the abandonment of existing City of Chicago Water Main vault structures along abandoned water supply tunnels adjacent to the Cermak Pumping Station. After the optional removal of all pipe, valves, fittings, taps and other water main elements, the brick or concrete structure must be filled in conformance with Section 605 of the IDOT Standard Specifications for Road and Bridge Construction and City of Chicago Department of Water Management Standards.

Filling. The vault structures to be filled are access/valve points along the water supply network tunnels previously abandoned and completely filled as part of work under IDOT Contract No. 60W36. The work will consist of removing the frame and cover of an existing vault structure, removal of valves, fittings, taps and other elements of the water system easily accessible, partial removal of the structure to a minimum depth of 36 inches below proposed grade and filling the structure with either sand or controlled low strength material (CLSM). The Contractor may elect to avoid salvaging any elements of the vault structure. If this occurs, the existing elements of the structure must be removed to a minimum depth of 36 inches below proposed grade and then filled in as described. If proposed drainage structures or other items are identified to be located within the area of structure to be filled, additional depth or area of partial structure removal shall be completed. Sand must be compacted. CLSM must meet the requirements of Section 593 of the IDOT Standard Specifications for Road and Bridge Construction.

Care shall be used during the removal of the frame and cover and the removal of the structure to a minimum depth of 36 inches below proposed grade. Active City of Chicago communication conduits and cables are installed adjacent to the vault structure. These cables must remain active prior to the removal described in the plans and under other requirements of these Special Provisions.

Record information identifying the dimensions of the vaults to be filled are included within the plans. These record drawings shall be utilized by the contractor to determine the treatment of the existing structures and valve and other components that remain inside.

The vaults utilize multiple levels and may have positive closure between the levels. The entire vault must be filled. At the onset of work, there is the expectation that there will be no hydraulic connection to any water source to the vaults, however there may be residual water within the vaults. Tremie methods for CLSM placement may be required. The Contractor may elect to dewater the structure prior to filling.

Any frames, lids, valves, fittings, taps or other water main elements that are salvaged in reasonable condition in the opinion of the Engineer may be offered to the City of Chicago Department of Water Management. Any debris, including the frame, lid, valves, fittings, taps or other items must be disposed of off-site in an approved manner. The Contractor will pay for all disposal fees.

Method of Measurement. This work will be paid for per each vault filled using methods as described. No separate measurement for materials used for the purposes of filling structures will be made.

Basis of Payment. This work will be paid for at the contract unit price per each for FILLING VALVE VAULTS (SPECIAL) which price will be payment in full for all labor and materials necessary to complete the work as described. Salvaging of any materials will be considered incidental to this item.

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**STEEL SECURITY FENCE
STEEL SECURITY GATE, 12'**

Description. This work shall consist of the supply and installation of security fence including all components (i.e., pales, rails, posts, gates, foundation footings and hardware) required and security gates at the City of Chicago Department of Water Management Cermak Pumping Station. Security fence shall be a minimum height of twelve (12') feet measured from the ground at the base of the fence. The fence height shall vary to provide a uniform top of fence on each side of the pumping station. Gates shall be twelve (12') feet high measured from the base of the gate support posts and shall be consistent with the height of the adjoining fence sections with a designed length of thirteen (13) feet and six (6) inches wide. The gate shall be fully automated and utilize a motor-operated vertical pivot movement and card reader access control system. The gate and operator shall be specifically designed to complement each other as a system and be provided by a single manufacturer. Components (operator from one source and gate panel from another) assembled at the job site to form a system will not be approved.

References. The following ASTM, IDOT, IEEE, NFPA, IBC, CBC and UL references apply to the materials to be used for the fence and gates:

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process. ASTM A1011/A1011M - Test Method for Galvanizing After Forming.
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus. ASTM D523 – Test Method for Specular Gloss.
- ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar.
- ASTM C1107 - Standard Specification for Packaged, Dry, Hydraulic-Cement Grout (Nonshrink)
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- ASTM F 2200 - Standard Specification for Automated Vehicular Gate Construction.
- ASTM F2408 - Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets.
- CBC - Chicago Building Code
- IBC - International Building Code
- IDOT – Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

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- IEEE 81 – IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System.
- NFPA (National Fire Protection Association) 70 - National Electrical Code
- UL 325 - Gate Operator Requirements.

Requirements. Steel material for fence and gate framework (i.e., corrugated pales, rails and posts), when galvanized prior to forming, shall conform to the requirements of ASTM A924/A924M, with a minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft² (276 g/m²), Coating Designation G-90. The interior surface must be coated with a minimum of 81% nominal zinc pigmented coating, 0.3 mils (0.0076 mm) minimum thickness. The color must be black. See Table 1 for performance requirements.

The Material for corrugated pales shall be a nominal 2.75" x .75" x 14 Ga minimum. The cross-sectional shape of the rails shall conform to a nominal 2" x 2" x 11 Ga minimum. Pre-drilled holes in the rail shall be spaced 4-3/16" on center, providing a pale airspace of no greater than 1-1/2" (38mm). Tamperproof fasteners shall be used to fasten each pale to rail at every intersection. Fence posts shall conform to the manufacturer's design with a nominal 4" x 4" x 11 Ga minimum. Gate leaf posts shall conform to the manufacturer's design with a nominal 8" x 8" x 1/4" minimum.

Finish: The manufactured galvanized framework must be subjected to a thermal stratification coating process including a pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic application of a polyester finish. The base coat must be a zinc-rich thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat must be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color must be black. The stratification-coated framework must be capable of meeting the performance requirements for each quality characteristic shown in Table

TABLE 1

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (retention of coating) over 90% of test area (tape and knife test)
Corrosion Resistance	B117 & D1654	Corrosion resistance over 3,500 hours (scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters)
Impact Resistance	D2794	Impact resistance over 60 inch lb. (forward impact using 0.625" ball).
Weathering Resistance	D822, D2244, D523 (60 Degree Method)	Weathering resistance over 1,000 hours (failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units)

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Material for corrugated pales must have a minimum nominal material thickness of 0.075 inches. The cross-sectional shape of the rails must conform to the manufacturer's Impasse™ rail design with a nominal thickness of 0.100 inches. Pre-drilled holes in the Impasse™ rail must be spaced 6" o.c. Tamperproof fasteners must be used to fasten each pale to each rail. Posts must conform to the manufacturer's Impasse™ I-Beam design with a nominal thickness of 0.100.

Provide a curved anti-scale section at the top portion of the fence. The projection must face the fence exterior.

Structural Performance: Provide steel fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated. Design shall conform to the City of Chicago Building Code and the International Building Code, latest editions, and the design requirements specified in this Special Provision. Where requirements conflict between any of the standards specified in this Special Provision or shown on the Drawings, the more stringent requirement, whichever produces the more severe condition, shall apply.

1. Post, Rail, Pale, Pickets and Foundation Footing Design: Provide posts, rails, pales, pickets and foundation footings of minimum size and maximum spacing indicated but not less than sizes and spacing required in resisting the following wind-load criteria, based on fence height, picket size, and pattern indicated. Foundation footing design shall include foundation footings for the posts, gate and gate operator. Sizes indicated in this Specification Section and on the drawings are minimum sizes and shall be increased as required based on the structural analysis performed by the Contractor's Illinois licensed Structural Engineer and the subgrade material encountered during excavation for the foundations, at no additional cost to the Owner.
 - a. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed and exposure category indicated
 - i. Wind Speed: 100 mph minimum.
 - ii. Wind Load: 30 psf minimum.
 - b. Foundation Depth: 48 inches minimum.

Provide framework for fences based on the following criteria:

- a. Fence Height: 12 feet minimum.
 - b. Line Post Spacing: 8 feet maximum.
2. Completed panels must be capable of supporting a 400 lb. load (applied at midspan) without permanent deformation. Panels must be biasable to a 30 degree change in grade.
 3. Foundation footings to take into account type of subgrade soils that occur at the foundation footing locations based on existing available soils information. Subgrade soils assumed in the design of the foundations shall be verified in the field during installation of the fencing by an independent Geotechnical Engineer and any changes in the foundation footing design shall be performed by the Contractor's Illinois licensed Structural Engineer prior to installation of foundation footings at no additional cost to the Owner. Contractor to submit certification letter sealed and signed by the Contractor's Illinois licensed Structural Engineer that this has been verified.

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4. Structural design of the gate and fence components, including but not limited to the posts, rails, pickets and foundation footings, is the responsibility of the Contractor and the fence and gate supplier. CDWM and Engineer review and approval of Contractor's design calculations and drawings shall not relieve the Contractor, his Illinois licensed Structural Engineer or his fence and gate supplier of their responsibility for the design.

Rails and post must be pre-cut to specified lengths. Rails must be pre-punched to accept tamperproof security fasteners.

Submittals. Submittals must be submitted to and approved by CDWM and the Engineer for installation at the Cermak Pumping Station facility. Items to be submitted include the following:

1. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, finishes for fences and gates, fasteners and tamperproof security fasteners:
 - a. Fence and gate posts, rails, pales and fittings.
 - b. Gates and hardware.
 - c. Gate operators, including operating instructions and safety literature.
 - d. Motors: Show nameplate data, ratings, characteristics, and mounting arrangements.
 - e. Access control system: include data for all components including but not limited to card reader, access control system panel, accessory boards, and enclosures.
 - f. Fence, gate and gate operator foundation footing dimensions and reinforcing.
 - g. Concrete mix designs for foundation footings and all materials used in the concrete mixes.
 - h. All materials used in the design of the fence and gates as evidence of conformance with this Special Provision and material certifications from the supplier/fabricator.
2. Shop Drawings: Show locations of fences, gates, posts, rails, details of extended posts, gate operator, accessories, foundations and locations of buried utilities and structures in the vicinity of the fence. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, foundation footings and foundation footing reinforcement, attachment, bracing, and other required installation and operational clearances.
 - a. Gate Operator: Show locations and details for installing operator components, switches, and controls. Indicate motor size, electrical characteristics, drive arrangement, mounting, foundations and grounding provisions.
 - b. Access Control System: Provide complete shop drawing showing all schematic wiring diagrams, technical data for all system components, bill of materials, sequence of operation, and interface with CDWM main system located at Jardine Water Purification Plant.
 - c. Wiring Diagrams: Power and control wiring.
 - d. For installed products indicated to comply with design loads, include structural analysis data and drawings signed and sealed by a qualified Structural Engineer responsible for their preparation, employed by the Contractor and licensed in the State of Illinois.

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3. Operation and Maintenance Data: For the following to include in O&M manuals:
 - a. Polymer finishes.
 - b. Gate operator.
 - c. Access Control System
 - d. Manuals must include descriptive bulletins and operation leaflets, and maintenance procedures for the equipment.
 - i. Each manual must be in a three ring hard binder with tabbed sections. The binder cover must have the project name and equipment name. The lettering must be block type and must be a minimum height of 1/2 inch. The binder edge must have the project name and equipment name and must be visible when stacked on a shelf. The lettering must be block type and must be a minimum height of 1/4 inch.
 - ii. Each manual must contain the "As Built" drawings, complete operating and instruction manuals, spare parts lists, certified test documents, and other special data required for this equipment.
 - iii. The "As Built" drawings larger than 8-1/2 inch by 11 inch must be fan folded.
 - iv. Three copies of the final approved O&M Manuals must be provided.
 - e. Certified test reports must include all assembly and subassembly test and inspection reports. These certified test reports must be included in each instruction manual.
 - f. Spare parts bulletins must include catalog cuts for each item and must be included in each instruction manual.

4. Installer Qualifications - An experienced installer who has completed at least five (5) high security fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

The Contractor shall field verify all dimensions and subgrade soil conditions for foundation footing installation prior to ordering materials and start of construction.

Materials.

Acceptable Fence Manufacturers:

1. IMPASSE II Anti-Climb™ Gauntlet Style™ fence by Ameristar Fence Products, 1555 N. Mingo Rd., Tulsa, OK 74116; (866) 467-2773.
2. Approved Equal

Acceptable Vertical Pivot Gate and Operator Manufacturers:

1. Tilt-A-Way a subsidiary of Ideal Manufacturing Inc., Billings, MT
2. Autogate, Inc., Berlin Heights OH.
3. Tymetal Corporation, Greenwich, NY
4. International Security Products, Brooklyn Park, MN
5. Approved Equal.

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Acceptable Access Control System Manufacturers:

1. For purposes of compatibility and interchangeability of hardware and software with other security equipment presently used by the City of Chicago Department of Water Management, the security hardware and software included in this Specification has been pre-qualified for this Project.
2. The new Access Control system shall be based upon the Identocard™ Premisys™ system. Contractor must not substitute.

Gates must be fabricated using the same posts, rails, pickets and steel pales sections as the fence. All rail and upright intersections must be joined by welding. All picket and rail intersections must also be joined by welding.

Fence Grounding

1. Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
 - a. Material above Finished Grade: Copper.
 - b. Material on or below Finished Grade: Copper.
 - c. Bonding Jumpers: Braided copper tape, 1 inch wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.
2. Connectors and Grounding Rods: Listed in UL 467.
 - a. Connectors for Below-Grade Use: Exothermic welded type.
 - b. Grounding Rods: Copper-clad steel.
 - i. Size: 3/4 by 120 inches.

Gate Operators

1. Provide gate operators that comply with UL 325.
2. The gate operator shall open and close the gate panel to provide convenience and security, incorporating a soft start/stop feature. This model must adapt to function with a card reader entry system. The operator is 24v DC powered with 120VAC (15 amp) supply, having a minimum of 48 hours of back-up operation provided via batteries installed with the operator. The solid state coated APeX control board is housed in a NEMA 4x weatherproof electrical enclosure. The operator design is conducive to low maintenance, having a minimum amount of moving parts and no hydraulics or internal cables. To protect against catastrophic failure, the counter balance system shall be a multi-spring design. Installation should not require field welding.
3. Mechanical components:
 - a. Gear Motor: 1/3 horse power.
 - b. Duty cycle: continuous.
 - c. Frame: 2" square, 11 gauge steel tubing.
 - d. Cover: 18 gauge galvaneal steel and color coated; Doors: 14 gauge galvaneal steel and color coated (Cover and doors shall be same color as gate frame).
 - e. Three point door lock.
 - f. 24v built-in system brake when 120v or battery power is present.
 - g. Operator size: 68" long x 51" high x 30" wide.
 - h. High torque double reduction belt drive system.

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4. Electrical components:
 - a. APeX Controller with integrated radio receiver, plug-in loop detector capability, surge protection, and easy to read labeling standard.
 - b. Open / Closing cycles: 10 – 12 seconds.
 - c. Solid state logic controls featuring 15 diagnostic L.E.D. indicators and auto-close timer (one second to 9 minutes).
 - d. Control circuitry: APeX control board in NEMA 4x weatherproof electrical enclosure. Sealed proximity switches ensure weather & moisture-proof integrity. Boards tested to -40 degrees F.
 - e. Control wiring: 16 and 18 gauge single conductor, copper with electrolytic copper compression terminals, tin-plated for maximum corrosion prevention.
 - f. Built in cycle counter to assist with maintenance scheduling.
 - g. Obstruction sensor: Adjustable Instant Reverse Device (IRD) senses obstructions opening or closing.
 - h. 24v AC indicator light on front of operator indicates AC power is on.
 - i. Through beam photo eyes may be included integral to the gate operator or provided installed separately within 6 inches of the gate on the secure side of the fence..
5. The gate operator shall be UL 325 compliant for Class I, II, III, and IV.
6. Optional accessories, contact, non-contact, and control devices:
 - a. Control devices shall be card reader interface. The card reader shall be as specified for operation with the Identicard Premysis Access control system. Gate actuation via the card readers shall be through the Identicard Premysis system.
 - b. UL 325 recommended contact devices include contact edges. As a minimum, a contact pressure sensing device must be installed on the gate.
 - c. Loop detector reversing devices to be installed on either side of the gate as shown on the drawings and as required for optimal operation.
 - d. Infrared photo beam detector to be supplied at the gate for crush protection.
 - e. Power supplies as required for operation of all vehicle detection devices shall be provided and installed in separate NEMA 4X enclosures and located at the gate operator if such devices are not supplied integral to the gate operator.
7. Factory Inspection and Testing
 - a. Manufacturer shall test each operator at factory to assure smooth, quiet operation.
 - b. Manufacturer shall test all control inputs to ensure proper function.
8. All electrical installations shall comply with the latest versions of the Chicago Electrical Code.

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9. Remote Controls: Electric controls separated from gate and motor and drive mechanism, with NEMA ICS 6, Type 4 enclosure for pedestal mounting, and with space for additional optional equipment.
 - a. Vehicle Loop Detector: System including automatic closing timer with adjustable time delay before closing, timer cut-off switch, and loop detector designed to close gate and reverse gate. Provide electronic detector with adjustable detection patterns, adjustable sensitivity and frequency settings, and panel indicator light designed to detect presence or transit of a vehicle over an embedded loop of wire and to emit a signal activating the gate operator. Provide number of loops consisting of multiple strands of wire, number of turns, loop size, and method of placement at location shown on Drawings, as recommended in writing by detection system manufacturer for function indicated.
 - a. Loop: Wire, in size indicated for field assembly, for pave-over and saw-cut with epoxy-grouted installation.
 - b. Loop: Factory preformed in size indicated; style for pave-over installation.
 - b. Vehicle Presence Detector: System including automatic closing timer with adjustable time delay before closing, timer cut-off switch, and presence detector designed to hold gate open until traffic clears. Provide emitter/receiver detector with adjustable detection zone pattern and sensitivity, designed to detect the presence or transit of a vehicle in gate pathway when infrared beam in zone pattern is interrupted, and to emit a signal activating the gate operator.
 - c. Remote pushbutton station: Provide pushbutton station as shown on the drawings to allow for manual remote actuation of the gate by the security guard inside the station. This station shall actuate the gate regardless of inputs from the Identicard system. Once the gate has opened and the vehicle has crossed the reversing loops; the gate shall close and return to normal operation.
10. Limit Switches: Adjustable switches, interlocked with motor controls and set to automatically stop gate at fully retracted and fully extended positions.
11. Emergency Release Mechanism: Quick-disconnect release of operator drive system of the following type of mechanism, permitting manual operation if operator fails. Design system so control circuit power is disconnected during manual operation.
 - a. Type: Integral fail-safe release, allowing gate to be pushed open without mechanical devices, keys, cranks, or special knowledge.
 - b. Type: Mechanical device, key, or crank-activated release.
12. Operating Features:
 - a. Digital Microprocessor Control: Electronic programmable means for setting, changing, and adjusting control features. Provide unit that is isolated from voltage spikes and surges.
 - b. System Integration: With controlling circuit board capable of accepting any type of input from external devices.
 - c. Automatic Closing Timer: With adjustable time delay before closing.
 - d. Open Override Circuit: Designed to override closing commands.
 - e. Reversal Time Delay: Designed to protect gate system from shock load on reversal in both directions.
 - f. Maximum Run Timer: Designed to prevent damage to gate system by shutting down system if normal time to open gate is exceeded.

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13. Accessories:

- a. Warning Module: Audio, Visual, ADA-compliant, constant-light alarm sounding three to five seconds in advance of gate operation and continuing until gate stops moving.
- b. External electric-powered solenoid lock with delay timer allowing time for lock to release before gate operates.
- c. Instructional, Safety, and Warning Labels and Signs: According to UL 325.

Access Control System

1. Control Panel

- a. All components must be compatible with the existing Identocard Premisys access control system currently in use at all CDWM facilities. All necessary hardware and software modifications to the existing equipment located at Jardine Water Purification Plant (JWPP) must be provided and the new access control system setup to interface with the database of existing badges already in use by CDWM.
- b. Each control panel must be a NEMA 12 enclosure of suitable size to house all components specified and required to provide a complete and functional system.
- c. The new equipment installed at Cermak Pumping Station must be integrated with the JWPP system in order to facilitate logging of all station entries and exits; and to access the personnel database for use with key cards already in use by CDWM.
- d. PremiSys One Reader Board: Board to be provided to control each of the two new gate operators and card access stations at the Cermak Rd. facility. Board shall provide control and monitoring of card reader; and interface with the new gate operators. Board to be Identocard PremiSys model PREM-BRD1RDR.
- e. PremiSys Input Board: Board to be provided to monitor all gate positions. Each board shall be furnished with 16 inputs. Board to be Identocard PremiSys model PREM-BRDIN.
- f. All PremiSys boards shall be installed inside a standard Identocard enclosure inside the NEMA 12 control panel.
- g. Each panel must include power supply with supervised power management and battery backup.
- h. Each panel must include 2 duplex 120VAC outlets and a switched fluorescent light.
- i. Wireway must be provided inside the control panel for all internal wiring.
- j. A DIN rail mounted 20A rated main circuit breaker shall be installed inside the cabinet for the main 120VAC power to the control panel. Provide additional power terminal blocks, fuses, and control power transformer as necessary.

2. Card Reader

- a. Each card reader is to be manufactured by Identocard Model XceedID. The card reader shall be a multi-frequency reader utilizing both 125 kHz proximity technologies and 13.56 MHz smart card technologies.
- b. Card readers must be installed in weatherproof enclosures suitable for installation outdoors.
- c. The card reader shall be set up for operation with the existing badges currently in use at the facility.

Revised 4/17/14

3. T1 Line and Network Communication

- a. Provide all additional interface modules necessary for communication over a new AT&T T1 line between JWPP and the Cermak Pumping Station. Contact Jeff Parr (City of Chicago) for details on installation of a new T1 connection.
- b. Furnish and install a new T1 router and Cisco Gigabit network switch that are compatible with existing CDWM equipment. A new router and switch are required at each of two locations: Cermak Pumping Station in the telephone closet as noted on drawing 91C, and at the JWPP on Level +25 by the commissioner's office. The JWPP is located at 1000 E. Ohio St., Chicago, IL 60611.
- c. All additional wiring, conduit, power, communication, and telephone connections required to complete the communication link must be provided. Not all details are shown on the drawings.

4. Outdoor Pedestal mounts

- a. Provide pedestal mounts on both the entrance and exits for each of the gates to support the card readers that will be used to gain access to the facility.
- b. Pedestal mounts to be installed in their own separate concrete foundations as recommended by the manufacturer, but with minimum foundation depth to be below the frost line.

Gate System:

1. Gate Width:

- a. 13'-6" wide.

2. Gate Frame:

- a. The gate frame shall be fabricated from 6063-T52 aluminum alloy tube. The frame members shall be fabricated from 2.50" square tube, weighing no less than 2.137 lb/lf.
- b. The gate frame shall be welded. All corner joints shall be full penetration welds; others are full circle welds.
- c. Mounting hardware is 304 stainless steel.

3. Gate Filler:

- a. Pickets: Steel Ameristar Impasse II or approved equal curved pickets per detailed drawings. Pickets will extend through the entire length of the gate as required. A secondary gate filler shall be secured at the operator end of the gate frame and shall be secured to the frame and pickets at lift bar location. The secondary gate filler shall extend to full height above grade and shall be sized to prevent a 2 1/4" diameter sphere from passing through. All openings covered by the operator when the gate is either in the fully open or fully closed position and in that portion of the operator and adjacent fence that the gate covers during the travel of the gate, shall be guarded or screened anywhere in the gate to prevent a 2 1/4" sphere from passing through the openings. Attachment to the gate frame shall be per manufacturer recommendations.

4. Gate Finish:

- a. The gate panel shall be pretreated to ensure proper coating adherence and shall be color coated to match the fencing. Refer to finishes for fence.

Revised 4/17/14

Concrete and Grout for Fence, Gate Structures, and Gate Operator.

Concrete: Portland cement complying with ASTM C150, Type I, aggregates complying with ASTM C33, and potable water for ready-mixed concrete complying with ASTM C94/ C94M. Normal-weight concrete, air entrained, with not less than 3500psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate for I-beam posts. Use Class SI concrete conforming to the Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction. Use 6000 psi concrete fill for gate posts. Dry-packaged concrete mix complying with ASTM C387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior applications.

Construction Requirements.

Field verify and identify the depths and locations of all water mains, gas mains, electrical supply ductbanks and other utilities in the area of fence, gate and operator installation. Any conflicts shall be brought to the attention of the Engineer along with the Contractor's suggested resolution to conflict for CDWM and Engineer review and approval. Modifications shall be completed at no additional cost to the Owner.

Heavy compaction equipment and/or heavy pneumatic-tired equipment will not be permitted to be used on site due to the potential to damage existing water mains and other utilities.

Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

Post Location - Space I-beam line posts equidistant at intervals not exceeding 8 ft ($\pm\frac{1}{2}$ inch) for 8 ft. wide panels. Measure the interval parallel to the grade of the proposed fence and in the line of fence from center to center of post. Square posts, where indicated, must be located as shown on the details.

Post Setting – I-beam posts must be installed with the vertical slot in post facing the exterior of the property. Square posts must be installed with the face of the post closest to the outside of the property set off of I-beam face as indicated (see detail drawing). Set posts in concrete in holes of minimum diameter and depth indicated unless a greater depth is required by the structural analysis performed by the Contractor's Illinois licensed Structural Engineer.

Revised 4/17/14

Intended use and local soil conditions must determine post footing dimensions. Set posts in a vertical position, plumb and in line. Backfill concrete (minimum 3500 psi for I-beam posts) into the excavation and extend 1 in. above grade. Square gate, and termination posts must be backfilled with minimum 6000 psi concrete, and poured into the interior of the post using appropriate vibratory equipment. When solid rock or concrete is encountered, without an overburden of soil, set posts in the solid rock or concrete. Slope top of concrete foundations for water runoff.

Bracket and Rail Attachment - Care must be taken to not snap off any of the carriage bolt nuts until all alignment of panels has been completed. Failure to follow this procedure will result in extreme difficulty in panel alignment and spacing. Rails must be attached to the I-beam post using the appropriate end, corner or line bracket and security fastener. Rails must be placed in alignment with each other along the horizontal plane. The open side of rail must face the interior of the property. Line brackets installed on I-beam posts for non-cabled rails must set in the interior of the rail. Security fastener must be installed thru the predrilled hole in the rail's side with the carriage bolt head facing the exterior of the property and hand tightened. Square posts must have the end or corner brackets mounted underneath the rail. Security fastener must be installed thru the rail and bracket with the carriage bolt head inside the rail and hand tightened. Rails must be aligned to allow equal distance from posts on both ends and raked to follow grade change as necessary. The carriage bolts for the bracket to rail attachment must then be tightened and the nut snapped off by the use of an impact wrench.

Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

Installation.

Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.

Hand-excavate holes for reinforced concrete foundation footings for gate operator to dimensions and depths and at locations as required by gate operator component manufacturer's written instructions and as required by the structural analysis performed by the Contractor's Illinois licensed Structural Engineer, but not less than that shown on the drawings or specified in this Special Provision.

Gate Operator Concrete Foundation Footings: Cast-in-place, depth not less than 48 inches dimensioned and reinforced according to gate-operator component manufacturer's written instructions and as required by the structural analysis performed by the Contractor's Illinois licensed Structural Engineer, but not less than that shown on the drawings or specified in this Specification Section.

Fence Post Installation: Fence post shall be spaced at a maximum 8'-0" center to center. For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 48" or greater and a minimum diameter as required by the structural analysis performed by the Contractor's Illinois licensed Structural Engineer.

Revised 4/17/14

Comply with NFPA 70 and manufacturer's written instructions for grounding of electric-powered motors, controls, and other devices.

The existing wrought iron half-moon shapes salvaged from the work under REMOVE GATE POSTS and as provided to the Contractor shall be cleaned, painted and finished to match the proposed fence and fence posts. The half-moon shapes shall be attached to each end post adjacent to the retaining wall along northbound and southbound I-90/94. The attachment method shall be identified in advance of fence installation. The connections utilized shall be appropriate for the wind and other loads utilized for the design of the fence, gates, foundations and other elements of the proposed items.

The contractor must clean the jobsite thoroughly to ensure it is left neat and free of any debris caused by the installation of the fence and gate system.

Grounding and Bonding

1. Fence Grounding: Install as shown on the Drawings and as follows:
 - a. Gates and Other Fence Openings: Ground fence on each side of opening.
 - i. Bond metal gates to gate posts.
 - ii. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches below finished grade.
2. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location. Confirm underground utility locations prior to driving rods.
3. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.
4. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - a. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
 - b. Make connections with clean, bare metal at points of contact.
 - c. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 - d. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
 - e. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

Revised 4/17/14

Testing and Adjusting

Grounding-Resistance Testing: The Contractor will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

Grounding-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure grounding resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural grounding resistance. Perform tests by two-point method according to IEEE 81.

Excessive Grounding Resistance: If resistance to grounding exceeds specified value, notify the Commissioner promptly. Include recommendations for reducing grounding resistance and a proposal to accomplish recommended work.

Report: Prepare test reports, certified by testing agency, of grounding resistance at each test location. Include observations of weather and other phenomena that may affect test results.

Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

Automatic Gate Operator: Energize circuits to electrical equipment and devices. Adjust operators, controls, safety devices, alarms, and limit switches.

Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

Test and adjust controls, alarms, and safeties. Replace damaged and malfunctioning controls and equipment.

Lubricate hardware, gate operator, and other moving parts.

Repair and refinish all damaged surfaces of fabrications that will affect the appearance and performance of finish coatings. Submit materials and methods of surface repair and repainting to the Engineer for review prior to application. No additional compensation will be made for repairs to damaged surfaces.

The complete and installed fence and gate must be demonstrated to CDWM personnel prior to acceptance. CDWM personnel must receive training on the system prior to acceptance. The demonstration and training shall be scheduled with the Engineer. All maintenance and operation guide, maintenance schedules and supplies and other items shall be provided to CDWM personnel.

Warranty. A warranty shall be provided to the City of Chicago covering all products and installation. The warranty shall include: Manufacturer's standard form in which manufacturer agrees to repair or replace components of steel fences and gates that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, deterioration of metals, metal finishes, and other materials beyond normal weathering. The warranty period shall extend one (5) years from date of Substantial Completion.

Revised 4/17/14

Method of Measurement. Fence will be measured for payment in feet in place, including all posts and foundation footings. Gates will be measured for payment per each gate at the specified sizes fully installed and operational, including all posts, foundation footings, operators, manual overrides, entry control items, vehicle detector loops or sensors, cables, conduits and controllers and connections to CDWM SCADA systems, all per the contract plans and this Special Provision.

Basis of Payment. This work shall be paid for at the contract unit price per foot for STEEL SECURITY FENCE and per each item for STEEL SECURITY GATE, 12' as specified. The price will be payment in full for furnishing, installing and testing the fence, gate, gate operator, key card reader and access control items and power and communication connections, and will include all material, labor and incidentals necessary for a complete installation of the work per the contract plans and this Special Provision.

Revised 4/17/14

COMBINED SEWERS (CDWM)

Description: This work shall consist of constructing combined sewers of the class, type, and diameter specified, at the locations shown on the Plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Article 542.08 and Section 550 of the IDOT Standard Specifications for Road & Bridge Construction, the current City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management and Sections 30 and 31 of the Standard Specifications for Water & Sewer Construction in Illinois, except as modified herein.

This work shall consist of constructing all combined sewers 24 inches in diameter and larger at locations shown on the Plans.

Materials. Materials shall be per the most current DWM Standard Specifications for Water and Sewer Main Construction.

All combined sewers constructed using reinforced concrete pipe shall conform to ASTM Designation C-76, Class III, Wall-B with O-ring type joints which is the minimum requirement for this type of pipe. If self-lubricating gaskets are used, the physical properties of the gaskets must conform to ASTM C-361.

Concrete collars shall conform to Article 1020.04 of the IDOT Standard Specifications.

General Requirements: The Contractor must maintain flow at all times in the existing sewer during and after construction. The Contractor is responsible for pumping and bypassing sewer flow from the existing sewer. The Contractor must take all necessary precautions to ensure that the water pressure created by diverting or retarding the flow does not cause any damage or flooding to public or private property being served by the main sewer section being repaired.

A concrete collar shall be used when connecting a proposed combined sewer to an existing combined sewer and will be constructed in conformance with the applicable portions of Article 542.08 of the Standard Specifications.

Trenches resulting from the installation of combined sewer shall be backfilled according to the applicable requirements of Article 550.07.

Method of Measurement: Combined sewers will be measured for payment in place in feet. When the sewer enters a manhole, the measurement will end at the inside wall of the manhole. Allowance will be made for the length of pipe necessary to permit the pipe to meet the sides of the manhole. No payment for combined sewer will be made through a manhole where the manhole is paid for as a separate item.

Basis of Payment: This work will be paid for at the contract unit price per foot for COMBINED SEWERS, of the class, type, and diameter specified (CDWM).

Gasketed joints and sewer testing will also be included in the unit cost of this item.

Revised 4/17/14

The cost of pumping and bypassing sewers to permit rehabilitation operations shall be included in the unit cost of this item.

Trench backfill will be paid for according to Article 208.04.

When cast-in-place concrete collars are specified in the plans, the concrete will be paid for at the contract unit price per cubic yard for CONCRETE COLLAR. Reinforcement will be paid for according to Article 508.08 for REINFORCEMENT BARS, EPOXY COATED.

REMOVE AND REPLACE TAPPING SLEEVES, 48"

Description. This work will consist of the complete removal of the existing tapping sleeve and valve on the 48" water main ring at the Cermak Pumping Station and the installation of a new tapping sleeve to enclose the existing opening as agreed to by the City of Chicago Department of Water Management.

The Contractor is advised that the work will be performed on a potable water system owned and operated by the Chicago Department of Water Management (CDWM). As such, all operations shall be performed in such a way as to avoid contamination of the water system through the introduction of contaminants or the process of the work. All work will require the review and approval of the CDWM prior to the commencement of work operations.

The water main shutdown required to perform the Work will only be allowed based upon scheduling by CDWM. The Work must be substantially complete in order to place the water main back into service in coordination with CDWM. The construction schedule must clearly indicate when testing of the new water main items will be made and for the water main to be inspected by CDWM prior to placing the new water main into service.

Construction Requirements. The removal and replacement of the existing 48" x 8" tapping sleeve and valve shall conform to the Contract and the applicable sections of the Chicago Department of Water Management's Technical Specifications for Water Main Construction shown below and included as part of this special provision (See Appendix B):

Ductile Iron Pipe and Fittings	Section 33 11 13
Water Main Tapping Connections and Valves	Section 33 12 17
Hydrostatic Testing and Disinfecting Water Mains	Section 33 13 00

Material selection for the proposed sleeve to be used to enclose the existing opening shall be coordinated with CDWM. An 8" ductile iron blind flange shall be provided to seal the outlet of the proposed tapping sleeve.

Testing and disinfecting as required by the City of Chicago Department of Water Management is included under this item.

Any water main dewatering required during this work shall be considered included as part of the successful execution of the removal and replacement of the tapping sleeve.

Method of Measurement. This work will be paid for per each existing tapping sleeve removed and replaced with a new tapping sleeve installed and accepted.

Revised 4/17/14

COMPLETION DATE PLUS WORKING DAYS

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on September 15, 2015."

"The Contractor must maintain access to the Cermak Pumping Station until the West Harrison Street Bridge (SN 016-1713) and west driveway into the Cermak Pumping Station can be used for access by CDWM. It is anticipated that the West Harrison Street Bridge (SN 016-1713) will be complete by September 1, 2014."

The Contractor will coordinate proposed project start dates and sequence of construction with the Engineer and other Contractors to present an effective and timely schedule for successful completion of the project.

"The removal of existing structures of East Harrison Bridge (SN 016-1088) between the existing east abutment and existing pier shall be completed prior to December 31, 2014."

"The soil retention system shown on the plans and associated excavation to proposed ground shall be completed prior to December 31, 2014. The excavation adjacent to the existing east abutment shall not take place until the removal of existing structures of East Harrison Bridge (SN 016-1088) is complete."

"All pier, beam erection and superstructure work consisting of proposed East Harrison Bridge (SN 016-1711) construction must commence no earlier than April 1, 2015 or as authorized by the Engineer. This work shall be coordinated with the Contractor under a future contract."

The Contractor will be allowed to complete all clean-up work and punch list items within 10 working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for cleanup work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer."

Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

Added 4/17/14

TEMPORARY CHAIN LINK FENCE WITH SCREENING, 4'

Description. Work under this item shall consist of constructing, installing, maintaining, relocating and removing a chain link fence and gates with screening, of the height specified on the plans, or as directed by the Engineer. Work under this item shall be performed according to Section 664 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

General Requirements. The chain link fence shall be anchored sufficient to resist wind loads of 30 pounds per square foot without deflection of more than three inches between top and bottom fence. The base shall not interfere with pedestrian and/or vehicular traffic, and shall be approved by the Engineer.

Opaque fabric meshing shall be affixed to the chain link fence face. The fabric meshing shall allow passage of air but shall contain dust and dirt. The mesh fabric shall be the full height of the fence and cover the entire length of the fence including any gated opening. The fabric meshing and fence shall not contain any advertisement. The color of the fabric shall be approved by the Engineer.

Method of Measurement. Chain link fence will be measured for payment in feet along the top of fence from center to center of end posts, including the length occupied by gates.

Basis of Payment. This work will be paid at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE WITH SCREENING, of the height specified.

RELOCATE EXISTING WOOD POLES

Revise Section 844 of the Standard Specifications to read:

Description: This work will consist of removing and reinstalling an existing wood pole at the locations shown on the plans, or as directed by the Engineer.

This pay item will also include the relocation of existing wood poles required by Contractors in other contracts with the approval of IDOT.

Removal and Reinstallation: No removal work shall be permitted without approval from the Engineer. The temporary wood pole shall be removed and installed immediately at the new location. The existing cables and conduits attached to the pole shall be detached and temporarily supported until they can be reattached to the pole at the new location. The existing cables shall remain fully connected and operational for the entire pole relocation process.

The existing cables, conduit and associate hardware shall be reattached to the pole immediately after the pole is installed. If the existing conduits are not of sufficient length to reach the relocated pole, conduit extensions shall be provided and spliced to the existing conduits to the relocated pole at no additional cost.

Added 4/17/14

The void caused by the removal of the pole shall be backfilled according to Article 841.02.

Any damage sustained to the wood pole, conduit, cables and associated hardware during the removal and/or reinstallation operations shall be repaired, or replaced in kind, to the satisfaction of the Engineer. The Engineer will be the sole judge to determine the extent of damage and the suitability of repair and/or replacement.

When an existing wood pole is not in conflict with the proposed construction, but is in conflict with the Contractor's proposed sequence of operations, or the relocation is for the Contractor's convenience, relocation of said wood pole will be at the Contractor's option and expense.

Method of Measurement: This work will be measured on a per pole basis, regardless of pole material, pole length and the number of other appurtenant items attached thereto.

Basis of Payment: This work will be paid for at the Contract Unit Price for each RELOCATE EXISTING WOOD POLES, which price will be payment in full for all labor, equipment, materials and incidental work necessary to complete the work as specified.

TEMPORARY WOOD POLE, 60 FT., CLASS 4

Description. This item shall consist of furnishing and installing a temporary wood pole, as specified herein and all hardware and accessories required for the intended temporary use of the pole.

This item shall also include all work and hardware required to attach existing aerial cables to the temporary wood pole as directed by the Engineer.

Materials. Materials shall be according to the following Articles of Section 1000 - Materials

Item	Article/Section
(a) Wood Pole.....1069.04

CONSTRUCTION REQUIREMENTS

Installation. Installation shall be as described in Article 830.03(c). The Contractor shall provide all hardware to install the pole as specified herein and indicated on the plans.

Wood poles may be used poles as approved by the Engineer as described in Article 830.04. The wood pole, as applicable, shall remain the property of the Contractor and shall be removed when directed by the Engineer.

Method Of Measurement. Wood poles shall be counted as, each installed.

The attachment of existing cables to the temporary wood pole to facilitate relocation of the cable due to staging and other construction requirements will not be measured for payment.

Basis Of Payment. This item shall be paid at the contract unit price each for TEMPORARY WOOD POLE, of the class and length indicated.

Added 4/17/14