Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

February 20, 2014

SUBJECT: FAI Route 290 (I-290)
Project ACNHPP-0290(200)
Section 2013-011R
Cook County
Contract No. 60W29
Item No. 117, February 28, 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 10-32, 38, 150, 195-197, 209, 210, 213, 296-300, 418-426 & 467-473 of the Special Provisions
4. Added pages 1277-1293 to the Special Provisions
5. Revised sheets 1, 2, 6, 8, 10, 15, 17, 19, 22, 28, 44-47, 49, 60-63, 77, 90, 117, 133, 146-148, 167, 192, 217 & 231 of the Plans.
6. Added sheet 67A 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

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 - 60W29

State Job # - C-91-231-13

County Name - COOK- -
Code - 31 - -
District - 1 - -
Section Number - 2013-011R

Project Number
ACNHPP-0290/200/

Route
FAI 290

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
K0029634	WEED CONTR PRE-EM GRN	POUND	1.000				
K1003679	MULCH	CU YD	14.000				
X0322141	REM TEMP WOOD POLE	EACH	4.000				
X0322400	PILE EXTRACTION	EACH	77.000				
X0324198	REMOV ASB CEM CONDUIT	FOOT	885.000				
X0324571	MAINT ST LTG SYS CHGO	L SUM	1.000				
X0325207	TV INSPECT OF SEWER	FOOT	1,546.000				
X0325815	REMOVE EXISTING CABLE	FOOT	340.000				
X0326326	CC TPX 2-1/C6 1-1/CG	FOOT	1,115.000				
X0326382	CONC BARRIER BASE SPL	FOOT	467.000				
X0326486	DECORATIVE RAIL PR MT	FOOT	496.000				
X0326801	COMBND SEWR TO BE CLN	FOOT	453.000				
X0326935	CROSSHOLE SONIC LOG	EACH	4.000				
X0327004	TEMP WP 60 CL 4	EACH	4.000				
X0327357	CONSTRN VBRN MONITRNG	L SUM	1.000				

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X0327614	COMB SEW REM 12	FOOT	4.000				
X0327615	COMB SEW REM 8	FOOT	85.000				
X0327616	MAINT ITS DURG CONSTR	CAL MO	15.000				
X0327649	SOIL RETENTION SYSTEM	SQ FT	104.000				
X0327685	COMB SEW REM 54	FOOT	95.000				
X0327687	SIPHON RECONSTRUCTION	L SUM	1.000				
X0327688	REM ETU BOLLARD FDN	EACH	2.000				
X0327689	COMB SEW CLEANED SPL	FOOT	930.000				
X0327690	TV INSPECT SEWER SPL	FOOT	1,860.000				
X0370049	UGRD C PVC2SCH80 CDOT	FOOT	635.000				
X0370069	COMB SEW ESVCP 8 CDOT	FOOT	110.000				
X0370070	COMB SEW WMR 8 CDOT	FOOT	30.000				
X0370074	RACKING CBL MH/HHCDOT	EACH	4.000				
X0370075	UGRD C PVC4SCH80 CDOT	FOOT	2,565.000				
X0370076	ROD/CL DCT COND CDOT	FOOT	160.000				

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X0370080	COMB C&G B V.12(CDOT)	FOOT	238.500				
X0370081	SAND CUSHION 4 (CDOT)	SQ FT	4,844.000				
X0370085	CLN MNHL/HNDHL (CDOT)	EACH	4.000				
X0370135	CONC CURB TB SPL CDOT	FOOT	807.600				
X0370185	COMB SEW ESVCP 12CDOT	FOOT	4.000				
X0370186	EL MH 3X4X4 30FL CDOT	EACH	2.000				
X0370187	CONCRETE (CTA)	L SUM	1.000				
X0370188	DEMOLITION CTA	L SUM	1.000				
X0370189	STR STL METAL DCK CTA	L SUM	1.000				
X0370191	ELEVATOR CTA	L SUM	1.000				
X0370192	MECH & PLUMBING CTA	L SUM	1.000				
X0370193	ELEC & COMM CTA	L SUM	1.000				
X0370195	RELOC DUCT BANK CTA	L SUM	1.000				
*DELETE ~~X0370196~~	~~BALLST TRCK CONST CTA~~	~~EACH~~	~~4.000~~				
X0370197	MAINT TRANS OPER CTA	L SUM	1.000				

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X0370198	EXPLORATRY TRENCH CTA	FOOT	560.000				
X0370199	EARTHWK MP DS CTA	L SUM	1.000				
X0370200	STATION RENOVAT CTA	L SUM	1.000				
X0370201	U C PVC 3/4 S80 CDOT	FOOT	775.000				
X0539800	TREE GRATES	EACH	3.000				
*ADD X2011000	TEMPORARY FENCE SPL	FOOT	370.000				
X4240800	DETECTABLE WARN SPL	SQ FT	12.000				
X5011100	FOUNDATION REM	EACH	8.000				
X5040500	PREC CONC DECK PANELS	SQ FT	15,272.000				
X5091730	BRIDGE FENCE RAIL SP	FOOT	129.000				
X5537700	SS CLEANED 10	FOOT	176.000				
X5610712	WATER MAIN REMOV 12	FOOT	103.000				
X5860110	GRANULAR BACKFILL STR	CU YD	683.000				
X6020083	INLET TA T1FOL (CHGO)	EACH	1.000				
X6022505	CB TA 4D T1FOL (CHGO)	EACH	7.000				

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X6022900	CB RECONST SPL	EACH	1.000				
X6030310	FR & LIDS ADJUST SPL	EACH	3.000				
X6331110	STEEL POSTS SPECIAL	EACH	3.000				
X6370050	CONC BAR WALL SPL	FOOT	317.000				
X6370700	CONC BAR TRANS SPL	FOOT	150.000				
X6640200	TEMP CH LK FENCE	FOOT	1,075.000				
X6700410	ENGR FLD OFF A SPL	CAL MO	15.000				
X7010216	TRAF CONT & PROT SPL	L SUM	1.000				
X7011015	TR C-PROT EXPRESSWAYS	L SUM	1.000				
X7013820	TR CONT SURVEIL EXPWY	CAL DA	259.000				
X7035104	TEMP EPOXY PVT MK L4	FOOT	7,305.000				
X7035105	TEMP EPOXY PVT MK L5	FOOT	3,026.000				
X7035108	TEMP EPOXY PVT MK L8	FOOT	15,489.000				
X7035112	TEMP EPOXY PVT MK L12	FOOT	41.000				
X7360300	REM OH SIN STR-WLKWAY	FOOT	88.000				

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X7830050	RAISD REF PM REFL REM	EACH	387.000				
X8360110	LIGHT POLE FDN SPL	FOOT	30.000				
X8780107	CONC FDN SPL	FOOT	12.000				
*ADD X8951011	REM AERIAL CABLE	FOOT	140.000				
Z0004002	BOLLARDS	EACH	2.000				
Z0004552	APPROACH SLAB REM	SQ YD	184.000				
Z0005305	BOX CUL TO BE CLEANED	FOOT	144.000				
Z0006012	BR DK LTX C OLY 2 1/4	SQ YD	1,614.000				
Z0007120	WELD WIRE FAB 6X6	SQ YD	66.000				
Z0013302	SEGMENT CONC BLK WALL	SQ FT	50.000				
Z0013797	STAB CONSTR ENTRANCE	SQ YD	998.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0018002	DRAINAGE SCUPPR DS-11	EACH	2.000				
Z0018800	DRAINAGE SYSTEM	L SUM	1.000				
Z0022800	FENCE REMOVAL	FOOT	44.000				

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Z0030850	TEMP INFO SIGNING	SQ FT	443.000				
Z0033028	MAINTAIN LIGHTING SYS	CAL MO	15.000				
Z0046304	P UNDR FOR STRUCT 4	FOOT	318.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
Z0062456	TEMP PAVEMENT	SQ YD	849.000				
Z0073002	TEMP SOIL RETEN SYSTM	SQ FT	9,532.000				
Z0076600	TRAINEES	HOUR	2,500.000		0.800		2,000.000
Z0076604	TRAINEES TPG	HOUR	2,500.000		15.000		37,500.000
20100110	TREE REMOV 6-15	UNIT	1,230.000				
*DELETE ~~20101000~~	~~TEMPORARY FENCE~~	~~FOOT~~	~~226.000~~				
20101100	TREE TRUNK PROTECTION	EACH	24.000				
20101200	TREE ROOT PRUNING	EACH	24.000				
20101300	TREE PRUN 1-10	EACH	20.000				
20101350	TREE PRUN OVER 10	EACH	4.000				
20200100	EARTH EXCAVATION	CU YD	1,270.000				

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20201200	REM & DISP UNS MATL	CU YD	520.000				
20400800	FURNISHED EXCAVATION	CU YD	1,300.000				
20800150	TRENCH BACKFILL	CU YD	902.000				
21001000	GEOTECH FAB F/GR STAB	SQ YD	150.000				
21101615	TOPSOIL F & P 4	SQ YD	5,221.000				
21301052	EXPLOR TRENCH 52	FOOT	100.000				
25000210	SEEDING CL 2A	ACRE	0.250				
25000400	NITROGEN FERT NUTR	POUND	81.000				
25000600	POTASSIUM FERT NUTR	POUND	81.000				
25000750	MOWING	ACRE	0.250				
25100115	MULCH METHOD 2	ACRE	2.500				
25100135	MULCH METHOD 4	ACRE	0.750				
25100630	EROSION CONTR BLANKET	SQ YD	611.000				
25200110	SODDING SALT TOLERANT	SQ YD	4,610.000				
25200200	SUPPLE WATERING	UNIT	207.600				

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28000250	TEMP EROS CONTR SEED	POUND	241.000				
28000400	PERIMETER EROS BAR	FOOT	2,163.000				
28000510	INLET FILTERS	EACH	37.000				
30300001	AGG SUBGRADE IMPROVE	CU YD	50.000				
31101200	SUB GRAN MAT B 4	SQ YD	1,035.000				
31101400	SUB GRAN MAT B 6	SQ YD	1,448.000				
35300400	PCC BSE CSE 9	SQ YD	98.000				
35301200	HES PCC BSE CSE 9	SQ YD	10.000				
35501316	HMA BASE CSE 8	SQ YD	68.000				
40600200	BIT MATLS PR CT	TON	0.300				
40600300	AGG PR CT	TON	0.200				
40600982	HMA SURF REM BUTT JT	SQ YD	19.000				
40603085	HMA BC IL-19.0 N70	TON	34.000				
*REV 40603340	HMA SC "D" N70	TON	44.000				
42001200	PAVEMENT FABRIC	SQ YD	98.000				

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42001300	PROTECTIVE COAT	SQ YD	133.000				
42001420	BR APPR PVT CON (PCC)	SQ YD	28.000				
42300400	PCC DRIVEWAY PAVT 8	SQ YD	1,290.000				
42400200	PC CONC SIDEWALK 5	SQ FT	4,771.000				
44000100	PAVEMENT REM	SQ YD	2,158.000				
44000200	DRIVE PAVEMENT REM	SQ YD	125.000				
44000300	CURB REM	FOOT	50.000				
44000500	COMB CURB GUTTER REM	FOOT	774.000				
44000600	SIDEWALK REM	SQ FT	16,344.000				
44001980	CONC BARRIER REMOV	FOOT	507.000				
50100100	REM EXIST STRUCT	EACH	1.000				
50157300	PROTECTIVE SHIELD	SQ YD	1,394.000				
50200100	STRUCTURE EXCAVATION	CU YD	3,368.000				
50300225	CONC STRUCT	CU YD	1,060.100				
50300254	RUBBED FINISH	SQ FT	4,065.000				

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50300255	CONC SUP-STR	CU YD	209.300				
50300285	FORM LINER TEX SURF	SQ FT	1,020.000				
50300300	PROTECTIVE COAT	SQ YD	395.000				
50500105	F & E STRUCT STEEL	L SUM	1.000				
50500505	STUD SHEAR CONNECTORS	EACH	6,806.000				
50800105	REINFORCEMENT BARS	POUND	292,640.000				
*REV 50800205	REINF BARS, EPOXY CTD	POUND	169,020.000				
51500100	NAME PLATES	EACH	1.000				
51602000	PERMANENT CASING	FOOT	1,554.000				
51603000	DRILLED SHAFT IN SOIL	CU YD	1,318.900				
51604000	DRILLED SHAFT IN ROCK	CU YD	38.200				
52100010	ELAST BEARING ASSY T1	EACH	18.000				
52100020	ELAST BEARING ASSY T2	EACH	9.000				
52100520	ANCHOR BOLTS 1	EACH	18.000				
52100530	ANCHOR BOLTS 1 1/4	EACH	36.000				

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550A0050	STORM SEW CL A 1 12	FOOT	100.000				
550A0330	STORM SEW CL A 2 10	FOOT	6.000				
550A0340	STORM SEW CL A 2 12	FOOT	18.000				
55100400	STORM SEWER REM 10	FOOT	22.000				
58700300	CONCRETE SEALER	SQ FT	8,459.000				
59100100	GEOCOMPOSITE WALL DR	SQ YD	535.000				
60200105	CB TA 4 DIA T1F OL	EACH	5.000				
60201310	CB TA 4 DIA T20F&G	EACH	2.000				
60208210	CB TC T20F&G	EACH	1.000				
60250200	CB ADJUST	EACH	5.000				
60255500	MAN ADJUST	EACH	7.000				
60500040	REMOV MANHOLES	EACH	1.000				
60500050	REMOV CATCH BAS	EACH	4.000				
60500060	REMOV INLETS	EACH	2.000				
60500405	FILL VALVE VLTS	EACH	1.000				

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60605000	COMB CC&G TB6.24	FOOT	188.000				
60618300	CONC MEDIAN SURF 4	SQ FT	73.000				
63200310	GUARDRAIL REMOV	FOOT	305.000				
66400105	CH LK FENCE 4	FOOT	5.000				
66400305	CH LK FENCE 6	FOOT	58.000				
66900200	NON SPL WASTE DISPOSL	CU YD	10,400.000				
66900450	SPL WASTE PLNS/REPORT	L SUM	1.000				
66900530	SOIL DISPOSAL ANALY	EACH	4.000				
67100100	MOBILIZATION	L SUM	1.000				
70103815	TR CONT SURVEILLANCE	CAL DA	259.000				
70106800	CHANGEABLE MESSAGE SN	CAL MO	35.000				
70301000	WORK ZONE PAVT MK REM	SQ FT	3,880.000				
70400100	TEMP CONC BARRIER	FOOT	1,463.000				
70400200	REL TEMP CONC BARRIER	FOOT	463.000				
70600260	IMP ATTN TEMP FRN TL3	EACH	2.000				

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70600332	IMP ATTN REL FRN TL3	EACH	1.000				
72000100	SIGN PANEL T1	SQ FT	28.000				
72000200	SIGN PANEL T2	SQ FT	35.000				
72000300	SIGN PANEL T3	SQ FT	1,031.000				
72400100	REMOV SIN PAN ASSY TA	EACH	7.000				
72400200	REMOV SIN PAN ASSY TB	EACH	1.000				
72400310	REMOV SIGN PANEL T1	SQ FT	6.000				
72400320	REMOV SIGN PANEL T2	SQ FT	12.000				
72400330	REMOV SIGN PANEL T3	SQ FT	181.000				
72400730	RELOC SIGN PANEL T3	SQ FT	181.000				
72800100	TELES STL SIN SUPPORT	FOOT	35.000				
73000100	WOOD SIN SUPPORT	FOOT	45.000				
73304000	OVHD SIN STR BR MT	FOOT	35.000				
73602000	REM OVHD SN STR-BR MT	EACH	4.000				
73700100	REM GR MT SIN SUPPORT	EACH	2.000				

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78005110	EPOXY PVT MK LINE 4	FOOT	2,914.000				
78005120	EPOXY PVT MK LINE 5	FOOT	1,925.000				
78005140	EPOXY PVT MK LINE 8	FOOT	4,182.000				
78005150	EPOXY PVT MK LINE 12	FOOT	421.000				
78100100	RAISED REFL PAVT MKR	EACH	103.000				
78100300	REPLACEMENT REFLECTOR	EACH	387.000				
78200530	BAR WALL MKR TYPE C	EACH	127.000				
78300100	PAVT MARKING REMOVAL	SQ FT	4,687.000				
78300200	RAISED REF PVT MK REM	EACH	98.000				
81028220	UNDRGRD C GALVS 3	FOOT	240.000				
81028350	UNDRGRD C PVC 2	FOOT	255.000				
81028370	UNDRGRD C PVC 3	FOOT	1,688.000				
81100320	CON AT ST 1 PVC GS	FOOT	495.000				
81100805	CON AT ST 3 PVC GALVS	FOOT	130.000				
81101005	CON AT ST 4 PVC GALVS	FOOT	2,280.000				

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81200230	CON EMB STR 2 PVC	FOOT	960.000				
81300530	JUN BX SS AS 12X10X6	EACH	17.000				
81300830	JUN BX SS AS 18X18X8	EACH	12.000				
81400200	HD HANDHOLE	EACH	3.000				
81603000	UD 2#8 #8G XLPUSE 3/4	FOOT	190.000				
81603081	UD 3#2#4GXLPUSE 1.5 P	FOOT	340.000				
81702110	EC C XLP USE 1C 10	FOOT	1,560.000				
81702120	EC C XLP USE 1C 8	FOOT	255.000				
81702130	EC C XLP USE 1C 6	FOOT	510.000				
81702140	EC C XLP USE 1C 4	FOOT	135.000				
81702150	EC C XLP USE 1C 2	FOOT	400.000				
81800300	A CBL 3-1C2 MESS WIRE	FOOT	650.000				
*ADD 81800330	A CBL 3-1C6 MESS WIRE	FOOT	140.000				
82102150	LUM SV HOR MT 150W	EACH	16.000				
82107200	UNDERPAS LUM 100W HPS	EACH	8.000				

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County Name -	COOK- -	ACNHPP-0290/200/	FAI 290
Code -	31 - -		
District -	1 - -	*REVISED: FEBRUARY 19, 2014	
Section Number -	2013-011R		

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
83000023	LT P A 18MH 8 DA	EACH	12.000				
83000024	LT P A 18MH 8 DA-TW	EACH	2.000				
84200500	REM LT UNIT SALV	EACH	12.000				
84200804	REM POLE FDN	EACH	15.000				
87000885	ECA C XLPTC 2C 6 8	FOOT	1,478.000				
87301727	ELCBL C COMM 19 6C	FOOT	1,478.000				
87900200	DRILL EX HANDHOLE	EACH	11.000				
89502380	REMOV EX HANDHOLE	EACH	3.000				

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Shop drawings for structures, pipes, fittings, and other items related to the construction of the siphon along the east side of Peoria Street must be submitted within one (1) week of the award of the contract. No additional compensation and no extension of calendar days will be made due to delays in receiving the materials to the project area 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.

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).

LANE AND RAMP CLOSURES

Prior to and after stage construction, temporary closures of I-290 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.

The Contractor shall coordinate the work such that no two (2) adjacent entrance or exit ramps in one direction of the expressway are closed at the same time. The closing of ramps, which are used as the detour route for other roadways or ramps, is prohibited. Should the Contractor fail to completely open, and keep open, the ramps to traffic in accordance with the above limitations, the Contractor shall be liable to the Department for liquidated damages as noted under the Special Provision, "Failure to Open Traffic Lanes to Traffic".

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.

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TRAFFIC STAGING

The following is a brief description of the traffic staging, which will be required from the Contractor during the reconstruction of the expressway. The following description shall be correlated with the Maintenance of Traffic (MOT) details located in the plans and these Special Provisions.

This suggested sequence of operations and summary for Traffic Staging does not, nor is it intended to, depict all the work that will be required by the Contractor for the maintenance of traffic during this Contract. This summary is given as an aid and guide for the Contractor's use to establish the necessary guidelines to insure a safe and as smooth as possible traffic operation during the duration of the Contract.

Stage 1A:

- Existing utilities to be relocated by others as noted on the plans. The relocation of the existing utilities shall be coordinated with and is at the discretion of the utility agencies.
- Place the temporary shoring to support the existing CTA station on the west side of the bridge and the stairs on the east side of the bridge.
- Remove the CTA equipment in the existing brick house building on the bridge.
- Remove the existing brick house on the bridge.
- Relocate the existing electrical and communications conduits and cabling that are mounted to the underside of the platform where they interfere with the installation of the temporary platform support shoring and in areas where the platform will be removed for the proposed work.
- Relocate the ITS communications and power cable lines along EB and WB I-290 as shown on the plans.
- Remove the existing bridge mounted guide signs on Peoria Street and install the proposed bridge mounted signs on Morgan Street.
- Remove the existing Peoria Street Bridge superstructure, abutments, Pier 2 and approaches.
- Remove the existing concrete barrier wall along both shoulders of WB I-290 and the outside shoulder of EB I-290.
- Remove the curb and gutter along the outside shoulder of WB I-290.
- Construct all of the substructures except for Pier 1.
- Demolition and reconstruction of Peoria Street Bridge (SN 016-1708) piers and superstructure adjacent to the CTA shall be coordinated with the CTA. CTA track access is allowed during off-peak hours only. All CTA track access shall be coordinated and performed in accordance to the discretion of the CTA. Refer to the "CTA flagging and coordination" special provision for requirements when working adjacent to or above the CTA right-of-way.

- Construct the temporary pavement (to remain) and concrete barrier wall along the outside shoulder of EB I-290 and inside shoulder of WB I-290. Construct the temporary pavement (to remain) and curb and gutter along the outside shoulder of WB I-290.
- Begin reconstruction of the siphon along Peoria Street.
- Begin construction of the north end of Peoria Street.
- Construct the stabilized construction entrance.
- Begin construction of the south end of Peoria Street.

Stage 1B:

- Continue work along Pier 2 and the north abutment, if required.
- Remove the existing CTA PA speakers, CCTV cameras, communications signage and telephone equipment in the area of the platform renovation work. Turn over the devices to the CTA.
- Provide temporary conduits and cabling for the existing electrical, lighting, CCTV, PA System and communications systems that are mounted to the underside of the platform canopy and routed through the proposed work area. Maintain the existing platform level systems throughout construction.
- Remove the existing Pier 1.
- Remove the existing concrete barrier wall along the inside shoulder of EB I-290.
- Construct Pier 1.
- Demolition and reconstruction of Peoria Street Bridge (SN 016-1708) piers and superstructure adjacent to the CTA shall be coordinated with the CTA. CTA track access is allowed during off-peak hours only. All CTA track access shall be coordinated and performed in accordance to the discretion of the CTA. Refer to the "CTA flagging and coordination" special provision for requirements when working adjacent to or above the CTA right-of-way.
- Construct the temporary pavement (to remain) and concrete barrier wall along the inside shoulder of EB I-290.
- Complete construction of the bridge superstructure including bridge parapets, bridge railings and bridge lighting but excluding the bridge deck latex concrete overlay. Construct temporary ramps as shown on the plans.
- Remove the temporary shoring and re-attach the CTA station on the west side of the bridge and the stairs on the east side of the bridge to the new fascia beams.
- Complete reconstruction of the siphon along Peoria Street.
- Complete construction of the north end of Peoria Street.
- Construct the stabilized construction entrance.
- Continue construction of the south end of Peoria Street.

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Stage 2:

- Rehabilitate the CTA station glass building.
- Remove and replace the existing CTA station platform, canopy and stairs for the new elevator and station house extension.
- Complete construction of the sidewalk on the south end of Peoria Street, including all drainage, earthwork, lighting and landscaping activities.

Stage 3:

- Construct bridge deck latex concrete overlay.
- Remove the existing east sidewalk on the south end of Peoria Street and complete all earthwork and landscaping activities.
- Reconstruct the sections of sidewalk and curb and gutter along Harrison Street as shown on the plans.

WINTER WORK

No adjustment will be made in the contract unit prices for any concrete if winter work is necessary to meet the required completion dates specified in the contract.

CTA FLAGGING AND COORDINATION

All work to be done by the Contractor on, over, or in close proximity of the CTA (Chicago Transit Authority) right-of-way shall be performed according to Article 107.12 of the Standard Specifications and this specification. This specification generally conforms to CTA Master Specification Section 01 35 15, “Special Project Procedures for Adjacent Construction.” No interruption to CTA service will be allowed unless approved in writing by the CTA.

The CTA’s Representative for this project will be:

Mr. Rick Herndobler
Manager, Capital Construction
(312) 681-3921

1.01 SUMMARY

A. This section includes the requirements for safe construction operations on, above, below and adjacent to operating tracks of the CTA rail system. The Contractor shall be responsible for compliance with the CTA Safety Manual for Contract Construction On, Above, or Adjacent to the CTA Rail System in effect at such time.

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B. After the letting of the contract and prior to performing any work, the CTA Representative shall be notified by the Department to attend the preconstruction meeting. In this meeting, the Contractor shall confer with the CTA's Representative regarding the CTA's requirements for the protection of clearances, operations and safety.

C. Prior to the start of any work on or over the CTA's right-of-way, the Contractor shall meet with the CTA Representative to determine his requirements for flagmen and all other necessary items related to the work activities on, over and next to the CTA facilities and to receive CTA's approval for the Contractor's proposed operations.

D. The Contractor shall notify the CTA Representative 72-hours in advance of the time he intends to enter upon the CTA right-of-way for the performance of any work.

1.02 PROJECT CONDITIONS

A. The Chicago Transit Authority (CTA) is an operating transportation agency and must maintain rail operations at all scheduled times for the benefit of the public. The Contractor shall conduct his operations in such a manner as not to cause damage to the CTA equipment, put the public or the CTA personnel in danger, cause inconvenience to the customers, interrupt train service (except as permitted herein) or cause avoidable inconvenience to the public and the surrounding communities.

B. The CTA will be operating trains during the construction of this project. The rail operations are 24 hours per day, seven days per week.

C. Certain portions of the project may be performed on, above or adjacent to sections of track where rail service is suspended in order to facilitate the work. For any work occurring within, above or adjacent to a section of track to be taken out of service, the Contractor shall confirm with the CTA that track within the work limits has been taken out of service and the third rail de-energized, as required, prior to beginning the work.

D. If the CTA deems any of the Contractor's work or operations hazardous to the CTA's operations or to the public, the CTA shall contact the Engineer. The Engineer may elect to order the Contractor to immediately suspend work until reasonable remedial measures are taken satisfactory to the CTA.

E. The CTA may review of any of the Contractor's procedures, methods, temporary structures, tools or equipment that will be utilized within the CTA Right-of-Way. These reviews do not relieve the Contractor of responsibility for the safety, maintenance, and repairs of any temporary structure or work, or for the safety, construction, and maintenance of the work, or from any liability whatsoever on account of any procedure or method employed, or due to any failure or movement of any temporary structure, tools or equipment furnished as necessary to execute work on CTA Right-of-Way.

F. At least five (5) weeks prior to the start of any work on, above or adjacent to the CTA right-of-way, the Contractor will be required to attend weekly coordination meetings with CTA Operations and other CTA departments to review and coordinate proposed work activities of the Contractor(s). The Contractor will be required to provide a five week look-ahead schedule, in a format acceptable to CTA, reflecting proposed work activities within the CTA Right-of-Way.

G. The Contractor, through the Engineer, shall submit a Rail Service Bulletin Request form to the CTA at least twenty-one (21) calendar days in advance of the Contractor's proposed scheduled time to enter upon the CTA Right-of-Way for the performance of any work under this Contract. Bulletin requests will be required when performing work which impacts rail operations such as prior to each phase of staged station construction, Track Access Occurrences, track survey, etc.

H. CTA generally permits only one Track Access Occurrence at a time on any given route. Other work on CTA's system, including required operations and/or maintenance by CTA, or work by other contractors elsewhere on the route, may limit the available dates of track access occurrences for this project. The contractor is strongly encouraged to submit Rail Service Bulletin requests with more than the twenty-one (21) day minimum required advance notice. The CTA has indicated that they typically will not grant Track Access Occurrences on consecutive weekend periods in order to provide scheduled service to customers.

I. The Contractor shall at all times observe all rules, safety regulations and other requirements of the CTA, including, but not limited to, the following Standard Operating Procedures (SOP's).

1. No. 7037, "Flagging on the Right-of-Way".
2. No. 7038, "Train Operation Through Slow Zones".
3. No. 7041, "Slow Zones".
4. No. 8111, "Workers Ahead Warning System".
5. No. 8130, "Safety on Rapid Transit Tracks".
6. No. 8212, "Test Train Procedures".
7. Sketch 2000-SZ-1, Slow Zone Equipment.

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1.03 REIMBURSEMENT OF COSTS

A. The cost of all flagmen, infrastructure crews, engineering inspection, switchmen, and other workmen furnished by the CTA and authorized by the Engineer shall be paid for directly to the CTA by the contractor.

B. The costs associated with Track Access Occurrences granted and established by the CTA shall be paid for directly to the CTA by the Contractor.

C. The amount paid to the Contractor shall be the amount charged to the Contractor for all authorized CTA charges including CTA additive rates audited and accepted by the Department, according to Article 107.12 and Article 109.05 of the Standard Specifications.

D. Following approval of the CTA invoices by the Department, the Contractor shall pay all monies to the CTA as invoiced and shall submit to the Department certified and notarized evidence of the amount of payments. No overhead or profit will be allowed on these payments.

E. There are maximum amounts of flagger shifts identified within this specification. If Contractor operations require flagger shifts that are granted by the CTA beyond these limits, the Contractor shall pay for the services, but will receive no reimbursement.

F. The Department will not be liable for any delays by the CTA in providing flagmen, establishing track closures or other service provided by the CTA and identified within this special provision.

1.04 RAIL SAFETY TRAINING

A. All Contractor and Subcontractor employees assigned to work on, over or near the CTA Right-of-Way shall be required to attend an all-day Rail Right-of-Way Safety Training Session in accordance with the CTA Safety Manual for Contract Construction On, Above, or Adjacent to the CTA Rail System. The cost of this training is currently $200.00 per employee, paid by the Contractor in advance. The certification is good for one calendar year from the date of issuance. The Contractor shall coordinate rail safety training with the Engineer. The cost of training shall be paid directly to the CTA by the Contractor.

B. Rail Right-of-Way Safety Training for contractor and subcontractor personnel will be scheduled by CTA as training slots become available. The Contractor is advised that the Contractor’s failure to request training sufficiently in advance of when the employee is required on the work site shall not be cause for relaxing the requirement for Rail Right-of-Way Safety Training.

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C. The $200.00 fee is non-refundable. If any individual fails to report for training or is rejected for training and must be rescheduled, an additional $200.00 will be required. No additional compensation will be made for the rescheduling of any training.

D. Upon successful completion of CTA Rail Safety Training, each trainee will be issued a non-transferable Rail Safety Tour Identification Card with the trainee's photo and a decal with pressure sensitive adhesive to be affixed on the hard hat. The Rail Safety Tour Identification Card and the decal are valid for one (1) year from the date of issue. The validity of the Card and the decal are in no way related to the length of this Contract.

E. Contractor and Subcontractor personnel must renew their Rail Safety Tour Identification Cards annually by successfully completing Rail Safety Training again. Contractor or Subcontractor personnel who fail to maintain a valid Rail Safety Tour Identification Card are not permitted to work on, above or adjacent to the CTA Rail Right of Way and CTA reserves the right to remove such personnel from the work site.

F. The costs incurred by the Contractor for CTA Rail Safety Training will not be reimbursed.

1.05 MANDATORY ITEMS FOR EMPLOYEES ON CTA RIGHT-OF-WAY

A. Contractor's and Subcontractor's employees assigned to work on the CTA Right-of-Way:

1. Contractor's and Subcontractor's employees will be given individual property permits. These permits shall be carried by each employee at all times while on CTA property. All permits issued shall be returned to CTA at the completion of the project, if the employee no longer works on this project, or on the date of expiration.

2. Each employee shall carry a valid Rail Safety Tour Identification Card at all times while on CTA right-of-way in accordance with Article 2-2 of the CTA Safety Manual.

3. All employees shall wear an undamaged hard hat with current rail safety sticker affixed, CTA standard safety vest and eye protection at all times while on CTA right-of-way. Noise protection shall be used when necessary. The Contractor must also comply with all OSHA requirements as required for the work. The CTA shall provide the rail safety sticker to each Contractor employee upon successful completion of the Rail Right-of-Way Safety Training.

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4. Contractor personnel shall wear suitable work shoes with defined heel and non-slip soles. Steel toes or metal cleats on the sole or heel of shoes are prohibited. Shoelaces are to be kept short so they do not pose a tripping hazard. Athletic shoes, sandals, open-toed shoes, moccasins and/or shoes with heels higher than 1" are not permitted.

5. Contractor personnel shall have a non-metallic, working flashlight after dark or when working in the subway.

B. Contractor and Subcontractor employees assigned to work adjacent to or above the CTA right-of-way shall wear a CTA standard safety vest at all times. Personnel without current Rail Safety Training and a valid property permit shall not enter onto any CTA Right-of-Way.

1.06 WORK AREA AVAILABILITY

A. DEFINITIONS

1. RIGHT-OF-WAY WORK: Any work performed at, above, or below track level within the CTA Right-of-Way.

2. IN-SERVICE TRACK: All CTA tracks are in service seven days a week, 24 hours a day, unless specifically removed from service for specific times by a Rail Service Bulletin issued by the Vice President, Rail Operations. Copies of the CTA's current train schedule for the lines affected by this project is available on the CTA's website and are subject to changes at any time, before or during, the Contract.

3. OUT-OF-SERVICE TRACK: The CTA tracks within limits defined by CTA that are temporarily removed from service for the purpose of completing specific work. Traction power will remain on at all times unless power removal is requested by the Contractor and approved by the CTA. In such cases, traction power must be removed and restored by CTA personnel. The Contractor may request the CTA to de-energize portions of the CTA right-of-way to perform work on, or near an Out-of-Service Track when no revenue service is scheduled, or as specified under a Rail Service Bulletin. Upon completion of the Out-of-Service Work, the Contractor shall maintain sufficient personnel on-site to correct any deficiencies in the Contractor's Work discovered by the CTA during power and service restoration and testing.

4. TRACK ACCESS OCCURRENCE: A condition(s) which provides a modification to the normal operation of CTA service to facilitate access for a Contractor(s) to perform work on or near the CTA Right-of-Way as defined and limited herein.

5. RE-ROUTE: Modification to the normal routing of trains in order to remove rail traffic from a section of track to facilitate access for a Contractor(s) to perform work on or near the CTA Right-of-Way as defined and limited herein.

6. LINE CUT: A temporary cessation of all service on a transit line; meaning total stoppage of transit service on all tracks and at all stations within the closure zone to facilitate access for a contractor(s) to perform work on or near the CTA Right-of-Way as defined and limited herein.

7. SINGLE-TRACK: A temporary operation established by operating trains bi-directionally on one track while the adjacent track is taken out-of-service as defined in paragraph 1.06.A.4, above. Only one single-track at a time can be set up on a line and only for very limited time periods. If CTA or a separate contractor(s) request single track operations along the same line concurrently with the contractor for this contract, CTA shall have the exclusive authority to determine which request shall be granted.

8. RUSH HOURS: Monday through Friday, from 0500 to 0900 hours and from 1500 to 1900 hours.

9. FLAGGER SHIFT: A flagger shift is defined as the services of a CTA Flagman up to, but no more than eight (8) hours including travel and required breaks. For example:

    a. A Contractor five hour work shift which requires 3 flaggers will use 3 flagger shifts.
    b. A Contractor eight hour work shift requiring 3 flaggers shall use 6 flagger shifts (because travel & break time will increase the flaggers work hours beyond eight).
    c. A Contractor ten hour work shift requiring 3 flaggers will use 6 flagger shifts.

10. INFRASTRUCTURE SHIFT: An infrastructure shift is defined as up to, but no more than eight (8) hours worked per CTA Infrastructure employee. For example:

    a. A Contractor five hour work shift requiring 2 signal maintainers will use 2 infrastructure shifts.
    b. A Contractor eight hour work shift requiring 2 towermen shall use 2 infrastructure shifts.
    c. A ten hour work shift requiring 2 lineman will use 4 infrastructure shifts.

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11. PERSON-IN-CHARGE (PIC): A person or persons, specified in a CTA Rail Service Bulletin, who is solely in charge of a work zone and is the single point contact between CTA and all persons (Contractor's, CTA and others) working in a work zone. The Rail Service Bulletin may identify the PIC by name or by radio call number. The Engineer or the Engineer's designee shall serve as PIC.

12. POWER & WAY SERVICE BULLETIN (PWS Bulletin): A document authorized by the CTA Infrastructure Division intended to supplement a CTA Rail Service Bulletin by defining power/signal removal and restoration procedures and other work zone protection measures required to safely perform construction and/or maintenance work on or adjacent to the CTA Right-of-Way (ROW).

B. No service disruptions will be allowed for the completion of this work, except as noted herein. If the CTA deems it necessary, the CTA will impact operations to avoid a hazardous condition to either the passengers or employees and charge the Contractor for all associated costs and damages incurred. No compensation will be made for CTA charges to the Contractor due to unauthorized Contractor access or other unapproved impacts to CTA operations.

1.07 CTA OPERATING REQUIREMENTS

1. Strictly comply with operating requirements of the Chicago Transit Authority while construction work is in progress, specifically as follows:

   1. All work performed on the CTA Right-of-Way will be allowed during the Construction Period only in accordance with the Article 1.08 "ALLOWABLE HOURS OF CONSTRUCTION". During most periods of construction, a "slow zone" shall be established at the work site and flagging personnel shall be deployed to facilitate safe and continuous train operations and to protect Contractor, CTA employees, passengers, the general public and property in the vicinity.

   2. No one is permitted to enter the CTA Right-of-Way during Rush Hours. Access to the underside of the existing or proposed bridge structure within the limits of the CTA Right-of-Way will not be permitted.

2. As much work as possible is to be done under normal CTA operating conditions (under traffic) without disruption of train movements. A maximum interruption of service to the CTA traffic of 15 minutes or as agreed upon with the CTA will be allowed. No interruption to CTA service will be allowed unless approved in writing by the CTA. The CTA has indicated during overnight periods, train headways are between fifteen (15) and thirty (30) minutes.

3. Pedestrian traffic to the CTA facility entrance at Peoria Street shall be prohibited until the bridge is reopened to pedestrian traffic as shown in the plans. Barricades and signage for closures of the entrance at Peoria Street must be coordinated with the CTA at least twenty-eight (28) days prior to modifications to staging.

4. Access control of the CTA Right-of-Way must be maintained at all times. This includes eliminating openings directly to the Right-of-Way where existing median barriers are to be removed. All planned removals of existing access control must be coordinated with the CTA, with plans for counter measures provided to the CTA at least three (3) weeks prior to removals.

1.08 ALLOWABLE HOURS OF CONSTRUCTION

A. Construction activities within CTA Right-of-Way are not permitted during Rush Hours. Access to the underside of the existing or proposed bridge structure within the limits of the CTA Right-of-Way will not be permitted during Rush Hours.

B. Construction activities within CTA Right-of-Way may be permitted during non-Rush Hour periods under flagging protection with the advance concurrence of the CTA as follows:

1. Monday thru Friday: From 1900 hours to 0500 hours the next day (the power shall remain on for these hours unless allowed via specific Track Access Occurrence).

2. Weekends: 1900 hours Friday to 0500 hours Monday

C. Track Access Occurrences:

1. The total number of Track Access Occurrences shall be as specified below:

a. Weekday Overnight Single Tracks: A maximum of thirty (30) Weekday Overnight Single-Track Track Access Occurrences will be permitted. Construction activities within the CTA Right-of-Way may be permitted on Monday through Thursday nights between the hours of 22:00 and 04:00 the following morning, including any time required for test trains stipulated in the Rail Service Bulletin. Fifteen (15) Weekday Overnight Occurrences will be permitted for the bridge reconstruction during Stage 1A/1B. Fifteen (15) Weekday Overnight Occurrences will be permitted for the station rehabilitation during Stage 2 and 3.

b. Extended Weekend Overnight Single Tracks: One (1) Extended Weekend Overnight Single-Track Track Access Occurrence will be permitted. This Track Access Occurrence shall be used to install the temporary shoring for the CTA Station prior to removal of the existing Peoria Street Bridge. Construction activities within the CTA Right-of-Way may be permitted between the hours of 22:00 Friday night and 8:00 the following morning, including any time required for test trains stipulated in the Rail Service Bulletin.

c. Weekend Single Tracks: A maximum of eight (8) Weekend Single-Track Track Access Occurrences will be permitted. Construction activities within the CTA Right-of-Way may be permitted between the hours of 22:00 Friday night and 04:00 the following Monday morning, including any time required for test trains stipulated in the Rail Service Bulletin. Four (4) Weekend Occurrences will be permitted for the bridge reconstruction during Stage 1A/1B. Four (4) Weekend Occurrences will be permitted for the station rehabilitation during Stage 2 and 3.

2. The exact dates and hours for all Track Access Occurrences are subject to change by the CTA depending on the nature of the work, access requirements of CTA personnel, work performed under separate contract or operational requirements of the CTA. The approval of specific dates and times for Track Access Occurrences on this Contract may be affected by major events or by a Track Access Occurrence scheduled elsewhere on that route or the CTA System. Consecutive weekend periods may not be possible due to special events and other track access needs on the CTA rail system.

3. The Department has identified the following windows to the CTA for completing proposed work adjacent to the tracks. The majority of requested Track Access Occurrences should be for weekend and weeknight periods during the following windows:

a. Stage 1A/1B – July 7, 2014 through November 3, 2014 (All Track Access Occurrences prior to August 4, 2014 must be overlapping occurrences with Contract 60W26 or 60W25.
b. Stage 2 & 3 – November 4, 2014 through March 30, 2015

The CTA may grant access outside of the above window(s) depending on Contractor progress and Contractor needs.

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4. Contractors completing other Department projects may also request Track Access Occurrences along the same section of track as described herein. These projects are identified in CONTRACTOR COOPERATION. Provided these Track Access Occurrences are approved, scheduled and initiated by the CTA, the Contractor shall be able to access CTA Right-of-Way with no impact to the total count of Track Access Occurrences attributed to this Contract.

D. The CTA reserves the right to modify the allowable dates or hours of track access occurrences based on service requirements for the subject route and manpower availability for the date and location requested.

E. The CTA reserves the right to deny or to cancel a previously approved request for a Track Access Occurrence based on service requirements for the time period requested. The CTA may notify the Contractor of such denial or cancellation no later than 1 day prior to a Track Access Occurrence. Service requirements may be affected by major events (e.g., festivals, White Sox and Cubs games, concerts), or by a Track Access Occurrence scheduled elsewhere on that route or the CTA System.

F. The Contractor will not be permitted to perform work requiring a Track Access Occurrence or Flagging during the following special events:

1. Taste of Chicago
2. Independence Day
3. Chicago Air and Water Show
4. Chicago Marathon
5. Chicago Jazz Festival
6. Chicago Blues Festival
7. Chicago St. Patrick's Day Parade
8. The Saturday before Thanksgiving Day through the Monday following Thanksgiving
9. New Year’s Eve and New Year’s Day
10. Easter Sunday
11. Gospel Fest
12. Chicago White Sox Home Games
13. Chicago Cubs Home Games
14. Chicago Bears Home Games
15. Lollapalooza
16. Pride Parade

In addition, CTA reserves the right to limit or deny access to the system during other major special events that may develop and that may impact service needs, during emergencies, and during severe weather conditions.

The CTA, at their discretion, may provide a Track Access Occurrence or Flagging during a time period identified above provided the request is made in conformance with this specification and is properly scheduled with the CTA as required.

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1.09 CONSTRUCTION PROCESS PLAN

A. CTA will require the Contractor to submit a Construction Process Plan whenever any work, in the opinion of the CTA, affects the safety or causes disruption of service or inconvenience to transit users, CTA Operations or impacts CTA Right-of-Way including, but not limited to: protection of CTA tracks/ CTA Right-of-Way, demolition, temporary fence installation, temporary shoring installation, drilled shaft installation, pier construction, structural steel erection over CTA tracks/ CTA Right-of-Way, and any other necessary temporary construction related to the above listed items. At a minimum, an individual Construction Process Plan shall be required for each instance the Contractor requests a Track Access Occurrence from CTA and for any work that requires flagging protection from CTA. The Contractor shall also refer to the following special provisions for submittal requirements to the CTA: Temporary Soil Retention System and Temporary Fence (Special).

B. A draft Construction Process Plan must be submitted to CTA by such method as the CTA may direct, at least twenty-one (21) calendar days in advance of work and at least fourteen (14) calendar days prior to a pre-activity meeting. The plan shall include/address the following:

3. Applicable Contract Documents
4. Options
5. Possible conflicts
6. Compatibility problems
7. Time schedules
8. Weather limitations
9. Temporary facilities & signage
10. Space and access limitations
11. Governing regulations
12. Safe Work Plans (including Hazard Analysis)
13. CTA Operations Impact
14. Proposed Traffic Control & Staging Areas
15. Lift Plan

C. The draft plan must also include reference to all Contractor Requests for Information (RFI's) and submittals that pertain to work identified in the plan.

D. In addition, for any work to be performed during a Track Access Occurrence, the Contractor shall provide the following to the CTA:

1. A track access plan submitted to and approved by the CTA specifically identifying the area(s) of power removal and work zone protection methods being requested by the Contractor.
2. Work zone protection methods to be performed by the Contractor
3. Name, title, contact information, and work hours for Contractor's on-site supervision

4. Work zone protection requested by the Contractor for implementation by the CTA (subject to CTA approval).
5. Pre-approved Safety and Quality Control Checklists, applicable to the work elements being performed during the specific track(s) outage request for completion by the Contractor and submission to the Person-In-Charge during Track Access Occurrence.
6. A general schedule reflecting proposed work to be performed within the requested Track Access Occurrence.

E. After pre-activity meeting minutes have been agreed to, all comments from the meeting must be incorporated into a final Construction Process Plan. This plan must be submitted and approved by the Engineer and CTA prior to the start of related work.

F. Prior to the CTA implementing an authorized Track Access Occurrence, the Contractor must provide, at least 48 hours in advance, an hourly schedule broken into tasks with a defined critical path that clearly establishes milestones that may be monitored. The hourly schedule shall also include, but not be limited to:

1. Name, title, contact information, and work hours for Contractor's on-site supervision.

2. Power removal (min 1 hour)

3. Proposed work activities.

4. Activities for inspection and completion of safety & quality checklists by Contractor.

5. Submission of safety & quality checklists to the CTA's Person-In-Charge (PIC) during Track Access Occurrence. The checklists shall be submitted to the PIC prior to commencing power restoration activities.

6. Power, Signal Restoration (min 1 hour).

7. Test train (min ½ hour).

G. The CTA intends to issue Power & Way Service Bulletins to supplement CTA Rail Service Bulletins. The Power & Way Service Bulletins are intended to provide procedural guidelines for safely removing and restoring the CTA's power & way systems (primarily traction power & signal) within the limits defined by the contract and Contractors specific track outage plan(s).

Revised 2/20/14

H. CTA labor shall be required to de-energize and re-energize traction power and perform such other work as may be deemed by the CTA to be required pursuant to the Contractor's work activities and authorized Track Access Occurrences, etc. CTA Signal Maintainer shall also be required to observe and witness the Contractor disconnection and reconnection of temporary signal work at each location where modifications are performed to support construction activities. One Signal Maintainer will be required to witness testing at each location or housing where it is taking place. CTA Signal Maintainer shall also be required to witness the Contractor restoration safety testing, prior to the line being returned to the CTA.

I. Two Linemen will be required at each location where traction power is energized or de-energized. The Contractor's schedule must include travel time for the CTA Electrician's (min ½ hour) if they are to energize or de-energize traction power at more than one location.

J. Failure of the Contractor to provide the CTA the minimum specified time required for the removal and restoration of all Power & Way systems within an authorized Track Access Occurrence will result in specified liquidated damages for failure to return track(s) to service in accordance with the contract requirements. There will be no reimbursement for liquidated damages charged to the Contractor by CTA. The following schedule for liquidated damages has been established by the CTA.

From 1 minute through 29 minutes delay - $5,000.00

From 30 minutes through 59 minutes delay – an additional $5,000.00

For each additional hour or fraction thereof - $30,000.00 per hour

1.10 HAZARDOUS WORKING CONDITIONS

A. The Contractor shall caution all employees of the presence of electric third rail (600 volts DC), live cables and moving trains on CTA tracks. The Contractor shall take all necessary precautions to prevent damage to life or property through contact with the electrical or operations systems. The Contractor shall caution all employees that any contact with live electric third rail or "live" portions of train undercarriage may result in a severe burn or death.

B. The Contractor shall establish third-rail safety precautions in accordance with CTA regulations, such as using insulating hoods or covers for live third rail or cables adjacent to the work. On every day and at every work site where a live third rail hazard exists, the Contractor shall instruct all employees of the emergency procedures. Knowledge of the disconnect switch locations or manner of disconnection shall be available at all times to the personnel on the job. Unless otherwise noted, only CTA Electricians are allowed to disconnect power.

Revised 2/20/14

C. The third rail may be de-energized during authorized Track Access Occurrences. The planning and implementation of the de-energizing shall be listed in the Contractor's process plan and include documenting checklist requirements.

1.11 TRACK SAFETY

A. The Contractor shall, at all times, take special care to conduct operations over, on, under, adjacent to, or adjoining, the CTA Right-of-Way in such a manner as not to cause damage, settlement or displacement of any structures, tracks or any portion thereof. The Contractor shall suspend such work until reasonable remedial measures, satisfactory to the Engineer and CTA, have been taken.

B. Any damages to the CTA tracks, supporting structures or other existing facilities and properties caused by the Contractor's operations shall be replaced or repaired by the Contractor to the satisfaction of the CTA without reimbursement. Contractor shall obtain photo documentation of damaged property to the CTA prior to performing any repair or replacement work.

C. The CTA shall have the right to perform any work it deems to be of an emergency nature and/or necessary to permit normal train operations during construction operations by the Contractor. The work to be completed by the CTA may impact the ongoing Contractor operations. If the emergency work is required due to Contractor actions, the cost of such service or emergency work provided by the CTA shall be borne by the Contractor with no reimbursement by the Department.

D. All work shall comply with the CTA Safety Manual for Contract Construction On, Above, or Adjacent to the CTA Rail System and CTA Standard Operating Procedures.

Revised 2/20/14

E. The Contractor shall take such precautions as are necessary to ensure the safety and continuity of the CTA operations and passengers. The Contractor shall provide a minimum horizontal clearance of 7'-2" from the centerline of the nearest tangent track to any falsework, bracing and forms or other temporary obstruction during the work under this Contract. The clearance requirements for curved track sections must be calculated by the Contractor to ensure encroachment into the clearance envelope will not occur. Prepare, submit and obtain approval of detailed drawings prepared and sealed by a licensed structural engineer in the state of Illinois for all falsework, sheeting and construction procedures adjacent to and under the tracks before doing any work on same. After obtaining approval of such plans, said falsework, sheeting and construction procedures shall be constructed strictly in accordance with the approved drawings and specifications. All submittals must be submitted to the Engineer to be provided to the CTA In case of any settlement or displacement of structures or tracks, the Contractor shall immediately proceed with all shoring or other work necessary to maintain the CTA property in a safe condition for the operation of train service. If the Contractor fails to undertake this work within 24 hours after notice by the Engineer in writing, the CTA may proceed to repair or shore any such structure or tracks; and the cost thereof shall be billed to the Contractor with no compensation. If the settlement or displacement is severe enough to limit train service, the repairs shall be made immediately. All costs of any disruption to the CTA service due to the Contractor's operations or negligence shall be at the Contractor's expense with no compensation.

F. In limited cases and with advance authorization by the CTA, a minimum horizontal clearance of 6’-1” between the centerline of the nearest tangent track and an obstruction may be allowed. This clearance does not allow CTA or Contractor personnel to safely stand between the obstruction and an operating train. In addition, an obstruction at this clearance is a hazard to motormen with a cab window open. Any required flagging by the CTA will need to be requested as described herein.

G. A minimum vertical clearance of 14′-6″ (4.42 m) above the high running rail the CTA tracks must be provided at all times.

H. Protective Shield

1. The Contractor shall furnish, install, and later remove a protective shield to protect the CTA traffic from damage due to falling material and objects during construction.

2. Protective shield will be necessary for any demolition activities during the removal of the existing structure as well as superstructure construction of the proposed structure.

3. The protective shield may be a platform, a net, or any other Department approved structure.

4. Any protective shield required, as indicated on the plans and the supporting members shall be designed to sustain a load of 200 pounds per square foot in addition to its own weight.

5. Drawings and design calculations for the protective shield shall be stamped by an Illinois Licensed Structural Engineer and shall be submitted to the Department for approval. The protective shield shall be constructed only after the Department has approved the drawings and the design.

1.12 TRACK FLAGGING OPERATIONS

A. Temporary Track Flagging slow zones per CTA SOP 7041 and "CTA Safety Manual for Contract Construction on or Near the CTA Rail System" are restricted in the following manner:

1. Temporary track flagging slow zones can only be mobilized, utilized and demobilized in non-rush hour time periods and no more than one (1) Track Flagging Operation zone will be permitted at any given time. The CTA will be the responsible party responsible to furnish and install the required slow zone signage and equipment. A Track Flagging Operation zone is defined as a contiguous work zone, of no more than 600 feet in length, regardless of the number of tracks fouled. The costs for all manpower, signage and equipment for flagging operations will be billed by the CTA to the Contractor with reimbursement as defined herein.

2. Current Standard Operating Procedures require Slow Zone with flagging protection whenever three or more workers are scheduled to work on, across or near a section of track for one half hour or more. Flagging protection shall be ordered and assigned according to the CTA Flagmen Requirements Manual. These standards must be adhered to and the number of flagmen assigned to a work location shall be as required by the CTA Flagmen Requirements Manual that is available for public viewing at CTA Headquarters upon request.

3. Temporary Track Flagging slow zone signs will be placed, removed or turned by the CTA so the sign cannot be read from the motor cab or hooded to cover the sign so it may not be read from the motor cab when the work crew clears the Right-of-Way.

4. The Contractor shall provide the Engineer with a written request for flagmen and other personnel at least seventy two (72) hours (two normal working days and before noon) prior to the date, and time the work will be performed and the CTA personnel are requested. The Engineer or the Engineer's designee will coordinate all flagmen requests with the CTA.

5. A maximum of Sixty (60) flagger shifts will be reimbursed as part of the Contract. The costs for additional flagger shifts required for the Contractor's operations that are requested and granted by the CTA will not be reimbursed.

B. The providing of such personnel and any other safety precautions taken by the CTA shall not relieve the Contractor of any liability for death, injury or damage arising in connection with the construction operations. See CTA SOP No. 7037, "Flagging on the right-of-way", for a description of flagging personnel duties.

C. To minimize flagmen usage, the Contractor shall use approved barricades, barricaded scaffolds and/or safety railings. Barricades and safety railing arrangements shall be in accordance with Section 4-5.3 of the CTA Safety Manual for Contract Construction On, Above, or Adjacent to the CTA Rail System.

D. The CTA does not guarantee that flagging or other personnel will always be available when requested. The Contractor shall be advised that requests for flagging manpower must conform to the CTA Flagman Requirements Manual, and certain work locations require multiple flagging personnel when only one track is fouled by the work.

E. The Contractor shall pay for all flagging and other personnel costs incurred and charged by the CTA. The cost for the each flagger shift shall be $900.00 per flagger shift. The Contractor shall also be responsible to reimburse the CTA for all costs associated with the use of other personnel for infrastructure shifts throughout the duration of the contract. The cost for any other CTA personnel (signalmen, linemen, towermen, etc.) shall be $1,100.00 per infrastructure shift.

F. By labor contract, CTA flagging personnel are entitled to a 30-minute break after a continuous 5-1/2 hour work period, including report and travel time. The 5-1/2 hour period begins when the person reports to work at his or her home terminal. Additionally, flagging personnel are entitled to occasional personal breaks (to use the washroom facilities) during the normal course of work. When flagging personnel leave the work site, work must cease unless provision is made for a relief flagger. The Contractor shall coordinate the Project work schedule with the flagging personnel break periods.

G. All employees of the Contractor and subcontractors shall report any actions of perceived CTA employee misconduct, or if any CTA employee does not provide a full level of cooperation in support of the contract; immediately and directly to the Engineer. The Engineer will provide written correspondence to the CTA Project Manager, as well as CTA Operations. Only with timely, written documentation will CTA be enabled to resolve work site personnel issues and take appropriate disciplinary action, when necessary.

Revised 2/20/14

H. If the Contractor, Engineer, CTA Construction or Safety Inspector believes that the Flagman is unable to perform his/her duties responsibly, work shall be stopped immediately, ensure that the Right-of-Way is safe for train operations, and the Work Crew shall exit, without delay, the Rail System Right-of-Way. The Contractor must contribute incident information to the Engineer to that a written report can be submitted to the CTA prior to the end of the workday.

1. In addition, all employees of the Contractor and subcontractors must report any actions of perceived CTA employee misconduct, or if any CTA employee does not provide a full level of cooperation in support of the contract immediately to the Engineer. The Engineer will then contact the CTA's Control Center and/or CTA Rail Operations Route Manager. Within 24 hours of alleged incident, the Engineer must provide a written report to the CTA including detailed explanation of incident, employee badge numbers, location of incident, etc. The Contractor must contribute incident information to the Engineer.

2. Failure to make the proper notification in writing may adversely affect any claim that the Department may file with respect to CTA employee performance or lack thereof.

I. CTA Flaggers only provide flagging protection for the CTA Right-of-Way, and only CTA Flaggers are permitted to provide flagging protection for the CTA Right-of-Way. Flaggers for streets, highways or other railroads are solely the responsibility of the Contractor, and will not be permitted to provide flagging protection for the CTA Right-of-Way. Any additional flagging required by other agencies or railroads is the responsibility of the Contractor.

1.13 TRACK ACCESS OCCURRENCES

A. The entire system must be fully operational when the tracks are put back into service after a Track Access Occurrence. The track where work was conducted must be returned to the CTA in revenue condition; all stations must be open, fully functional and properly cleaned. The Contractor shall be immediately available with sufficient staff for up to one hour after revenue operation begins to ensure that all systems are functioning properly.

B. The Contractor shall allow enough time prior to putting the tracks back into service to make sure the line can be fully operational. A test train shall be required after any construction activity, determined by the Engineer or CTA, to require a test train. The scheduling of test trains must include travel time to and from the location being tested. Additional time should also be allowed for any possible remedial work required before the system can be made fully operational.

Revised 2/20/14

C. All components of the system, including, but not limited to, tracks, signals, stations, entrances, etc. must be fully and properly operational prior to putting the tracks and facilities back into service. Any facilities under demolition or construction and any temporary facilities must be safe and secure so they do not impact revenue service operations.

D. The Contractor shall be subject to fines if any station, facility, yard, structure, track, or component is not fully operational and useable at the prescribed predetermined time; including all planned staging of construction sites. The CTA will identify appropriate fines at the time of the incident. No compensation will be made for fines levied by the CTA due to Contractor actions or delays in providing CTA facilities at prescribed times.

E. The contractor shall clean all debris and equipment from the work or staging areas after work has been completed after each work day. In the event the Contractor fails to so clean to the CTA's satisfaction, the CTA may perform any necessary cleaning and fine the Contractor the cost of such cleaning. No compensation will be made for fines levied by the CTA due to delays and cleaning costs.

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.

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:

Revised 2/20/14

COMPLETION DATE PLUS WORKING DAYS

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

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic and the Peoria Street access to the UIC-Halsted CTA Station to transit users by 11:59 PM on May 31, 2015 except as specified herein.

All the work consisting of the Peoria Street Bridge (SN 016-1708) construction including bridge parapets, bridge railings and bridge lighting but excluding the BRIDGE DECK LATEX CONCRETE OVERLAY, 2 ¼ INCHES must be completed to open the bridge as shown in the plans for temporary pedestrian access across the east side of the bridge on or before December 31, 2014.

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.

TRAFFIC CONTROL AND PROTECTION (ARTERIALS)
Effective: February 1, 1996
Revised: March 1, 2011

Specific traffic control plan details and Special Provisions have been prepared for this contract. 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.

When traffic is to be directed over a detour route, the Contractor shall furnish, erect, maintain and remove all applicable traffic control devices along the detour route according to the details shown in the plans.

Method of Measurement: All traffic control (except "Traffic Control and Protection (Expressways)" and temporary pavement markings) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

Temporary pavement markings will be paid for separately unless shown on a Standard.

Revised 2/20/14

Structural Requirements: The aluminum railing system must conform to the requirements of AASHTO "Standard Specifications for Highway Bridges" Section 2.7.

All thickness and material specifications requirements, unless otherwise approved by the Engineer, must be based on certifications based on structural calculations provided by the Contractor.

Acceptable Rail Manufactures:

1. Valentine & Company, Middletown, OH.

2. Approved Equal.

Method of Measurement. This Work will be measured for payment, complete in place, per foot.

Basis of Payment. This Work will be paid for at the Contract Unit Price per foot for DECORATIVE RAILING (PARAPET MOUNTED), which price includes furnishing and placing all material required, including all labor, equipment and incidentals necessary to complete the Work as herein specified.

CLEANING EXISTING SEWERS

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 storm sewers and combined sewers which are specified to be cleaned on the plans will be cleaned according to Article 602.15.

Method of Measurement. This work will measured for payment in feet for the length of sewer that is 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, COMBINED SEWERS TO BE CLEANED, SPECIAL or BOX CULVERTS TO BE CLEANED.

Revised 2/20/14

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The Temporary Pavement shall remain in place unless otherwise noted on the plans, and if so, the removal shall conform to Section 440 of the Standard Specification.

Method of Measurement. TEMPORARY PAVEMENT and SUBBASE GRANULAR MATERIAL, TYPE B 4" will be measured in place and the area computed in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for TEMPORARY PAVEMENT and SUBBASE GRANULAR MATERIAL, TYPE B 4".

Removal of temporary pavement will be paid for at the contract unit price per square yard for PAVEMENT REMOVAL.

TEMPORARY SOIL RETENTION SYSTEM

Description. This work shall consist of designing, furnishing, installing, adjusting for stage construction when required and subsequent removal of the temporary soil retention system according to the dimensions and details shown on the Plans and in the approved design submittal, subject to the construction restrictions listed herein and on the drawings.

General. The temporary soil retention system shall be designed by the Contractor to retain, at a minimum, the exposed surface area specified in the Plans or as directed by the Engineer, including all loads as dictated by the site conditions. The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer for approval. Design calculations and details for the temporary soil retention systems adjacent to the CTA tracks and/or CTA Right of Way proposed by Contractor must also be submitted to the CTA for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

The design shall consider the restrictions on the installation of all components of the temporary soil retention system. These installation restrictions are listed in the next section of this special provision and in the "CONSTRUCTION VIBRATION MONITORING" special provision.

Construction. The Contractor shall verify locations of all underground utilities before installing any of the soil retention system components or commencing any excavation. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. Utility information shown on the drawings was collected from information available at the time of the design. There is no guarantee of complete accuracy with the utility locations.

Revised 2/20/14

The soil retention system must be installed without the use impact-type pile drivers. The location of the temporary soil retention system as shown on the drawings is in a highly sensitive populated area with the potential for damage to adjacent older structures. The proposed equipment and procedures used for installation of sheet piles or other underground support components must be submitted to the Engineer for approval prior to their use. It is anticipated that vibratory equipment may be utilized in performing the work, subject to requirements of other sections of this specification. Contractor shall also submit any documentation available regarding the operating noise levels and operating vibration characteristics of the equipment proposed, prior to approval of the Engineer.

The approval of the equipment and procedure by the Engineer does not guarantee the performance in the field of the equipment will be acceptable. If, in the judgment of the Engineer, the noise and/or vibration effects exceed those required by the local residents, then the Contractor must halt production and find a remedy suitable to the Engineer. Threshold values for vibration monitoring are included in the special provision “CONSTRUCTION VIBRATION MONITORING.” The costs incurred finding suitable equipment and procedures shall be included in the cost of this item. No additional costs shall be paid for this effort.

The temporary soil retention system shall be installed according to the Contractor’s approved design, or as directed by the Engineer, prior to commencing any related excavation. If unable to install the temporary soil retention system as specified in the approved design, the Contractor shall have the adequacy of the design re-evaluated. Any reevaluation shall be submitted to the Engineer for approval prior to commencing the excavation adjacent to the area in question. The Contractor shall not excavate below the maximum excavation line shown in the approved design without the prior permission of the Engineer. The temporary soil retention system shall remain in place until the Engineer determines it is no longer required. At the bottom of the temporary soil retention systems at the abutments, the Contractor shall be required to install a sump pit or a sedimentation basin as per the Illinois Urban Manual Details included in the plans. All water runoff or groundwater located at the abutments shall be directed to either the sump pit or sedimentation basin before it enters the drainage systems along I-290. If the Contractor uses a sump pit and is pumping the water out of the pit, a filter bag shall be required at the end of the pump discharge hose to ensure that sediment does not enter the storm sewer systems along I-290. Dewatering and draining areas along the temporary soil retention systems shall not be paid for separately but shall be included in the cost of TEMPORARY SOIL RETENTION SYSTEM.

The temporary soil retention system shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed by the Engineer, the Contractor may elect to cut off a portion of the temporary soil retention system leaving the remainder in place. The remaining temporary soil retention system shall be removed to a depth which will not interfere with the new construction, and as a minimum, to a depth of 12 in. below the finished grade, or as directed by the Engineer. Removed system components shall become the property of the Contractor.

Revised 2/20/14

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where its presence was not obvious or specifically noted on the Plans prior to bidding, that cannot be driven or installed through or around, with normal driving or installation procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Portions of the existing roadway barriers must be removed in order to install the temporary soil retention system as shown on the drawings. This work shall be included in this pay item, and the barrier treated as an obstruction. The approval of the Engineer is required for the limits and method of removal, so that the barrier to remain can continue to function as intended.

Method of Measurement. The temporary soil retention system furnished and installed according to the Contractor's approved design or as directed by the Engineer will be measured for payment in square feet. The area measured shall be the vertical exposed surface area envelope of the excavation supported by temporary soil retention system. Portions of the temporary soil retention system left in place for reuse in later stages of construction shall only be measured for payment once.

Any temporary soil retention system installed beyond dimensions shown on the Plans or the approved Contractor's design without the written permission of the Engineer, shall not be measured for payment but shall be done at the Contractor's own expense.

Basis of Payment. This work will be paid for at the contract unit price per square foot for TEMPORARY SOIL RETENTION SYSTEM.

Payment for any excavation, related solely to the installation and removal of the temporary soil retention system and/or its components, shall not be paid for separately but shall be included in the unit bid price for TEMPORARY SOIL RETENTION SYSTEM. Other excavation, performed in conjunction with this work, will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation for other than the known tunnel obstruction shall be paid for according to Article 109.04 of the Standard Specifications.

SIPHON RECONSTRUCTION

Description. Work under this item shall consist of furnishing all labor, equipment and materials necessary for reconstruction of the sewer siphon lines as detailed in this specification. The work and removal and disposal of the existing sewer lines and water tunnels shall be performed according to Section 602 of the Standard Specifications, except as herein modified. The work to remove the existing siphon outlet junction chamber shall be performed and paid for according to the specification REMOVAL OF EXISTING STRUCTURES in the contract specifications. The work to remove the existing 54" concrete siphon pipe shall be performed and paid for according to the special provision COMBINED SEWER REMOVAL in the contract specifications.

Revised 2/20/14

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing and installing CONCRETE (CTA).

Basis of Payment. This work will be paid for at the contract lump sum price for CONCRETE (CTA) which will be payment in full for cast-in place concrete and concrete reinforcement work as required by the CTA specifications and as indicated on the drawings.

DEMOLITION (CTA)

Description. This item consists of providing all labor and materials required for demolition, removal and disposal of the structural boarding platform, platform canopy and station level components as indicated on the drawings including but not limited to: platform slab, longitudinal and transverse concrete beams, a steel stair, and aluminum canopy columns, portion of platform canopy and station structural elements and finish materials. Included are existing furniture, existing stationhouse skylights, exterior glass wall panels, and mechanical, plumbing, electrical and communications items to be removed, salvaged or relocated as a result of the demolition work.

All materials and work must comply with the CTA Master Specifications.

Materials and Installation. The work includes the removals of the portions of the platform, platform canopy and the station as described in CTA MASTER SPECIFICATIONS:

SECTION 02 05 00 – DEMOLITION
SECTION 02 15 00 – TEMPORARY SHORING
SECTION 02 61 00 - CONTAMINATED SOIL REMOVAL AND DISPOSAL

and as indicated on the drawings.

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing and installing DEMOLITION (CTA).

Basis of Payment. This work will be paid for at the contract lump sum price for DEMOLITION (CTA) which will be payment in full for labor and materials for demolition work as required by the CTA specifications and as indicated on the drawings.

STRUCTURAL STEEL AND METAL DECK (CTA)

Description. This item consists of providing all labor and materials required for installation of structural steel and metal deck for expansion of stationhouse and elevator hoistway, and where indicated on the drawings. Removal and replacement of existing steel members that have 25 percent or more section loss is also included in this work.

Revised 2/20/14

All materials and work must comply with the CTA Master Specifications.

Materials and Installation. The materials and installation of the structural steel and metal deck shall be as described in CTA MASTER SPECIFICATIONS

SECTION 05 10 30 - STRUCTURAL STEEL
SECTION 05 31 00 – METAL DECK

and as indicated on the drawings.

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing and installing STRUCTURAL STEEL AND METAL DECK (CTA).

Basis of Payment. This work will be paid for at the contract lump sum price for STRUCTURAL STEEL AND METAL DECK (CTA) which will be payment in full for structural steel and metal deck work as required by the CTA specifications and as indicated on the drawings. The removal and replacement of existing steel members that have 25 percent or more section loss will be paid for according to Article 109.04 of the Standard Specifications.

STATION RENOVATION (CTA)

Description. This item consists of the renovation of the existing stationhouse, new stair/elevator landing, including exterior roof and wall enclosure and interior walls, ceilings, restoration of floor; and providing all labor and materials required for installation of masonry, metals, wood, plastics and composites, thermal and moisture protection, openings, finishes, specialties, equipment, furnishings and special construction work where indicated on the drawings.

All materials and work must comply with the CTA Master Specifications.

Materials and Installation. The materials and installation of the masonry, metals, wood, plastics and composites, thermal and moisture protection, openings, finishes, specialties, equipment, furnishings and special construction work shall be as described in CTA MASTER SPECIFICATIONS:

DIVISION 4 – MASONRY WORK
DIVISION 5 – METALS WORK (excluding structural steel and metal deck indicated above)
DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES WORK
DIVISION 7 – THERMAL AND MOISTURE PROTECTION WORK
DIVISION 8 – OPENINGS WORK
DIVISION 9 – FINISHES WORK
DIVISION 10 – SPECIALTIES WORK
DIVISION 11 – EQUIPMENT WORK
DIVISION 12 – FURNISHINGS WORK
DIVISION 13 – SPECIAL CONSTRUCTION WORK

and as indicated on the drawings.

Revised 2/20/14

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing and installing EARTHWORK, MICROPILES AND DRILLED SHAFTS (CTA).

Basis of Payment. This work will be paid for at the contract lump sum price for EARTHWORK, MICROPILES AND DRILLED SHAFTS (CTA) which will be payment in full for earthwork, micropiles and drilled shafts work as required by the CTA specifications and as indicated on the drawings.

RELOCATE DUCT BANK (CTA)

Description. This item consists of providing all labor and materials required for relocation of duct bank where indicated on the drawings. This pay item also provides for the labor and materials required for the removal and replacement of the CTA track to perform the relocation of the duct bank.

All materials and work must comply with the CTA Master Specifications.

Materials and Installation. The materials and installation of the earthwork, exterior improvements and utilities work shall be as described in CTA MASTER SPECIFICATIONS:

SECTION 27 08 43 – UNDERGROUND DUCTS AND RACEWAYS FOR COMMUNICAITON SYSTEMS
SECTION 34 11 08 – BALLASTED TRACK CONSTRUCTION

and as indicated on the drawings.

Method of Measurement. This item of work will be measured on a lump sum basis for RELOCATE DUCT BANK (CTA).

Basis of Payment. This work will be paid for at the contract lump sum price for RELOCATE DUCT BANK (CTA) which will be payment in full for relocation of duct bank work as required by the CTA specifications and as indicated on the drawings.

BALLASTED TRACK CONSTRUCTION (CTA)

Description. This item consists of providing all labor and materials required for removal and replacement of certain sections of the CTA track to perform the new foundation work.

All materials and work must comply with the CTA Master Specifications.

Materials and Installation. The materials and installation of removal and replacement of certain sections of the CTA track work shall be as described in CTA MASTER SPECIFICATIONS:

SECTION 34 11 00 – BALLASTED TRACK CONSTRUCTION (CTA)

and as indicated on the drawings.

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APPENDIX C – CHICAGO TRANSIT AUTHORITY CTA STATION SPECIFICATIONS

The description of the scope of work, method of measurement and basis of payment for the CTA Station are included in the main sections of the Special Provisions. The following CTA standard specifications are specifically utilized for the CTA Station related items.

INDEX OF SPECIFICATIONS FOR CTA STATION

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INDEX OF SPECIFICATIONS FOR CTA STATION (continued)

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DIVISION 11 - EQUIPMENT
11 24 24_ACCESS SUPPORT EQUIPMENT AND FALL RESTRAINT EQUIPMENT

INDEX OF SPECIFICATIONS FOR CTA STATION (continued)

DIVISION 12 - FURNISHINGS
12 87 20_STATION TRASH RECEPTACLES

DIVISION 13 - SPECIAL CONSTRUCTION
13 06 00_CUSTOMER ASSISTANT'S SHELTER

DIVISION 14 - CONVEYING EQUIPMENT
14 21 00_ELECTRIC TRACTION ELEVATORS

DIVISION 22 - PLUMBING
22 00 00_MECHANICAL GENERAL PROVISIONS
22 05 00_BASIC PLUMBING MATERIALS AND METHODS
22 07 00_PIPE INSULATION
22 40 00_PLUMBING
22 40 10_PREFABRICATED TRENCH DRAIN SYSTEM

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING
23 00 00_HEATING, VENTILATING AND AIR CONDITIONING
23 07 00_MECHANICAL INSULATION
23 83 13_ELECTRIC HEAT TRACING SYSTEM
23 83 33_RADIANT HEATING UNITS

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INDEX OF SPECIFICATIONS FOR CTA STATION (continued)

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INDEX OF SPECIFICATIONS FOR CTA STATION (continued)

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SECTION 05 10 30
STRUCTURAL STEEL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and other specification sections apply to this section.

1.02 SUMMARY

A. This Section specifies requirements for structural steel used in the project including columns, beams, canopy and roof framing, framing for new stair opening, framing for elevator shaft, framing for escalator opening and support, etc. This work includes furnishing all labor, materials, accessories, tools and equipment required to furnish and install all structural steel including, but not limited to, fabrication, galvanizing, field erection, field preparation for painting and any other work required for a complete project.

B. This Section specifies requirements for the removal and replacement of existing deteriorated steel members.

1. Remove and replace the deteriorated portion (25% or more section loss) of the HSS, Bent Plates and Channels indicated on the drawings to be removed and replaced. Seal weld all around replacement members.
2. Remove and replace the deteriorated portion of existing steel members that have 25% or more section loss as identified and reported by the contractor and confirmed by the engineer after inspection of the bare sandblasted metal or inspection after the application of the epoxy primer. Seal weld all around replacement members.

C. Unless noted otherwise, all new structural steel shall be galvanized. New structural steel exposed after installation shall also be coated with protective and finish coats in the field. Existing structural steel shall be field prepared and cleaned and also coated with protective and finish coats in the field.

D. All new and existing steel shall be prepared and painted per Section 09 90 10 Cleaning and Protective Coatings.

1.03 STANDARDS

A. The structural steel work required herein, except as otherwise shown, shall comply with the provisions of the following codes, specifications and standards:

B. "Code of Standard Practice of Steel Buildings and Bridges", AISC.

C. "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", AISC.

D. "Structural Welding Code", AWS D1.1.

E. "Specifications for Assembly of Structural Joints Using High Strength Steel Bolts" as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.

F. "Handbook on Bolt, Nut and Rivet Standards", Industrial Fasteners Institute.

1.04 QUALITY ASSURANCE

A. The Contractor is solely responsible for quality control of all the structural steel work. The Contractor shall employ, at his own expense, a qualified independent testing laboratory to conduct specified Source Quality Control and Field Quality Control and provide reports to the Authority. Information regarding the testing agency shall be submitted to the Authority for approval prior to being hired by the Contractor.

B. Contractor shall comply with all applicable governmental codes and regulations.

C. Structural Welding Qualification: Weld Procedures and Welding Operators shall be qualified in accordance with ANSI/AWS D1.1, using the same type of equipment and welds to be used in the work.

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

D. Galvanize Coating Applicator’s Qualifications: Company specializing in hot dip galvanizing after fabrication and following the procedures of “Quality Assurance Manual” of the American Galvanizers Association.

1.05 TESTING

A. The testing agency to inspect all bolted connections and welds as well as perform all other required tests.

B. The Contractor shall employ AISC Category III Fabricator’s Testing Laboratory, in addition to the requirements of the Contractor’s Quality Control Plan. Reports and test results shall be supplied for the inspections and tests listed in this specification.

C. Bolted connections shall be inspected by the Testing Agency in accordance with AISC Specifications for "Structural Joints Using ASTM A 325 or A 490 Bolts".

D. Welding will be inspected and tested by the Testing Agency during fabrication and erection of structural steel as follows:

1. Certify all welders and make inspections and tests as required. Record types and locations of all defects found in the work, and measures required and performed to correct such defects.
2. In addition to visual inspection of all welds, magnetic particle, ultra-sonic and radio-graphic inspection shall be made of all welds. Magnetic particle inspection shall be made on the root pass and finished weld.
3. The method of magnetic particle inspection shall be in accordance with ASTM E-709. Any type of crack or zone of incomplete fusion or penetration will not be acceptable.
4. Radio-graphic inspection technique and standards of acceptance shall be in accordance with AWS D1.1.
5. Ultra-sonic inspection shall be performed in accordance with AWS D1.1.

E. Each bolting crew and welder shall be assigned an identifying symbol or mark and all shop and field connections shall be so identified that the inspector can refer back to the crew or person making the connection.

F. Access to locations where material for this contract is being fabricated or produced shall be provided for the purpose of inspection and testing, including scaffolding.

G. The Authority may inspect structural steel at the plant before shipment; however, the Authority reserves the right to reject any material, at any time before final acceptance, which does not conform to all of the requirements of the drawings and specifications.

H. The Testing Agency shall perform the specified tests. Corrective measures, including additional and more complete testing, which may result from these tests shall be the Contractor's responsibility; all costs of which shall be paid for by the Contractor.

I. Approved shop drawings are to be submitted to the galvanizer for his review and approval.

1.06 SUBMITTALS

A. Shop Drawings: Submit to the Authority in accordance with the requirements of the Submittal Section of these specifications, the following:

1. Complete details and schedules for the fabrication of each member, and for shop assembly of members, including connections.
2. Complete details, schedules, procedures and diagrams showing the sequence of erection.
3. Complete shop drawings to indicate actual field-verified dimensions, elevations and details for all structural steel for this project. Shop drawings to be prepared and certified by a structural engineer licensed in the State of Illinois. Shop drawings to identify the size, location and erection details of all structural steel, connections, and all other details.

B. Structural Calculations: Prior to fabrication of steel, furnish structural calculations with connection detail drawings for all structural steel and connections for the actual loading and conditions. Calculations shall be prepared by and sealed by the licensed structural engineer.

C. Report indicating location and quantities of replacement of deteriorated steel members:

1. Indicate the quantity of removal and replacement of the deteriorated portion of HSS, Bent Plates and Channels indicated on the drawings to be removed and replaced.
2. Indicate the quantity of the deteriorated portion of existing steel members that have 25% or more section loss as identified by the contractor and to be confirmed by the engineer after inspection of the bare sandblasted metal or inspection after the application of the epoxy primer.

D. Manufacturer's Literature: Submit to the Authority, copies of manufacturer's specifications and installation instructions for the products being supplied as well as for the welding, galvanizing, and any shop applied coats of paint; including laboratory test reports and such other data as may be required to show compliance with these specifications and specified standards.

E. Surveys: If applicable, submit to the Authority, copies of certified survey(s) by the Contractor's registered professional engineer, showing elevations and locations of base plates and anchor bolts to receive structural steel, and showing final elevations and locations for all major members.

F. Mill Affidavits and Certifications: Prior to fabrication of Structural Steel, the Contractor shall submit to the Authority the following certified reports for the steel for the permanent structure:

1. Mill heat analysis of chemical composition.
2. Tension, bend and notch toughness test reports.
3. Mill certification that all supplementary requirements have been complied with.
4. Certification that bolts meet all ASTM requirements for the grade specified.

G. Submit weld procedures and qualifications for approval prior to fabrication.

H. Provide certification from the galvanizer indicating that he has reviewed the approved shop drawings and certifies that he is capable of hot dip galvanizing all members and fabrications according to all requirements.

I. Submit to the Engineer for approval all proposed galvanizing repair work, including materials and methods.

1.07 PRODUCT HANDLING

A. Do not deliver material to the project site until the proposed method and sequence of erection has been reviewed by the Authority. Method and sequence shall be planned so as to avoid delay or damage to the work of other trades.

B. Storage of fabricated steel at the job site shall be the responsibility of the Contractor. Material stored at the job site shall not exceed design loads on existing or newly-constructed structures so that members will not be distorted or otherwise damaged; and shall be protected against corrosion or deterioration.

PART 2 PRODUCTS

2.01 STRUCTURAL STEEL

A. Structural steel including beams, columns, angles, channels, plates, etc. shall comply with the provisions of the ASTM specifications for A 36 material unless noted otherwise on the Drawings.

B. Structural steel tubes shall comply with ASTM A 500 Grade B.

C. Provide and install all miscellaneous structural steel members required for this project including lintels, leveling, plates, base plates, setting plates, etc.

2.02 WELDING ELECTRODES

A. Welding electrodes shall comply with the provisions of AWS specifications A 5.1, A 5.5, A 5.17, A 5.18, and A 5.20. Weld electrodes shall be E70XX unless required otherwise.

2.03 BOLTS

A. All high strength bolts, nuts and washers shall comply with the provision of ASTM A 325.

B. All anchor bolts, nuts and washers shall conform to the requirements of ASTM F 1554, GR 36.

2.04 GALVANIZING, SHOP PRIMING AND FINISHING

A. All new structural steel members and fabrications to be hot dip galvanized, conforming to ASTM A123. Galvanized steel exposed to view after installation shall also be finished with protective and finish coats in the field. See painting section of these specifications.

B. Existing structural steel members and fabrications will be prepared and field finished with protective and finish coats according to painting section of these specifications.

C. Galvanizing Repair Paint: High zinc dust content paint for regalvanizing welds and abraded areas in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight,complying with DOD-P-21035 or SSPC-Paint-20.

D. Steel for Temporary Shoring need not be galvanized.

2.05 MISCELLANEOUS MATERIAL

A. Miscellaneous material, accessories, grout, etc. not listed above shall be provided as specified hereinafter under the various items of work and/or as indicated on the drawings, or required for a complete structure according to specified standards.

B. Provide supplemental structural steel support framing for metal deck where normal deck bearing is precluded by other framing members and around openings.

PART 3 EXECUTION

3.01 GENERAL

A. Contractor must verify all dimensions and conditions in the field prior to fabricating and erecting structural steel. Notify the Authority of any major discrepancies.

B. Field modification of structural steel is prohibited without prior written approval of the Engineer.

3.02 FABRICATION

A. Material shall be properly marked and match-marked where field assembly is required. The sequence of shipments shall be such as to expedite erection and minimize the field handling of material.

B. Fabricate and assemble structural steel in shop to greatest extent possible. Assemblies shall conform to the dimensions shown on the approved shop drawings.

C. Beams shall be cambered where indicated on the Drawings.

D. Beam connections shall be as shown or noted on the Drawings. Unless noted otherwise, standard connections shall be used.

E. No combination of bolts and welds shall be used for stress transmission in the same face of any connection.

F. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on shop drawings.

1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning; ream holes that must be enlarged to admit bolts. Drill holes in bearing plates.
2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.

3.03 WELDING

A. Welding, filler metal, welding techniques and procedures shall be in accordance with AISC specification for the "Design, Fabrication and Erection of Structural Steel for Buildings", and AWS "Structural Welding Code" and "Filler Metal Specifications".

B. Welding processes other than shielded metal arc and submerged arc may be used provided procedure qualification tests in accordance with the American Welding Society are made for the intended application of any such process.

C. Built-up sections assembled by welding shall be free of warpage and all axes shall have true alignment.

D. Welds not specified shall be continuous fillet welds, using not less than the minimum fillet as specified by AWS.

E. All welding sequences shall be such as to reduce the residual stresses due to welding to a minimum value. If high residual stresses are present, stress relieving of joints may be required.

F. The toughness and notch sensitivity of the steel shall be considered in the formation of all welding procedures to prevent brittle and premature fracture during fabrication and erection.

G. Welded connections shall be detailed and designed to minimize the accumulation and concentration of thru-thickness strains due to weld shrinkage.

3.04 PREPARATION OF STEEL

A. Perform all inspections prior to galvanizing or field finishing. For contact surfaces, roughen galvanized surfaces by means of hand wire brushing per ASTM A123. Power wire brushing is not permitted.

B. All non-galvanized existing structural steel surfaces shall be prepared and cleaned as specified in Section 09 90 10 of these specifications.

C. Paint application shall be in accordance with paint manufacturer’s printed instructions and recommendations. The fabricator shall submit paint system to be used for approval by the Authority prior to purchasing. All paint products shall be compatible products from the same manufacturer.

3.05 APPLICATION OF GALVANIZING

A. Galvanize steel members, fabrications, and assemblies to the greatest extent possible after fabrication by the hot dip process in accordance with ASTM A 123 or A 153. All structural steel members shall have all pieces attached by welding to the greatest extent possible as shown on drawings before galvanizing. All bolted pieces shall be bolted together after galvanizing. Ream all holes as necessary prior to galvanizing.

B. Prior to galvanizing, structural steel shall be cleaned of all mill scale, rust, spatter, slag or flux deposit, oil, dirt and other foreign material.

C. Dip all structural steel members and metal fabrications assuring a sufficient coating of all surfaces, including corners, joints, holes, and other surfaces.

D. Long steel members and large fabrications too large for a single dip in the galvanizing vat, shall be dipped in two applications to assure all surfaces are thoroughly and fully coated.

E. Galvanize bolts, nuts and washers and iron and steel hardware components in accordance with ASTM A 153. Oversize components, threads or otherwise allow for additional thickness of galvanizing.

F. Safeguard products against steel embrittlement in conformance with ASTM A 143.

G. Handle all articles to be galvanized in such a manner as to avoid any mechanical damage or any distortion.

3.06 GALVANIZING COATING REQUIREMENTS

A. Coating Weight: Conform with paragraph 5.1 of ASTM A 123, Table 1 of A 767, or Table 1 of ASTM A 153, as applicable.

B. Surface Finish: Continuous, adherent, as smooth and evenly distributed as possible and free from any defect detrimental to the stated end use of the coated article.

C. Adhesion: Withstand normal handling consistent with the nature and thickness of the coating and normal use of the article.

3.07 TESTS FOR GALVANIZING

A. Galvanizer shall inspect the entire galvanized surface to ensure compliance with ASTM requirements.

B. Inspection and testing of hot dip galvanized coatings shall be done under the guidelines provided in the AGA publication “Inspection of Products Hot Dip Galvanized After Fabrication”.

C. Include visual examination and tests in accordance with ASTM A 123, A 767 or A 153 as applicable to determine the thickness of the zinc coating on the metal surfaces.

D. Furnish a certificate indicating compliance with ASTM Standards and Specifications herein listed. The certificate must be signed by the galvanizer and contain a detailed description of the material processed as well as information as to the ASTM standard used for the coating.

3.08 PAINTING

A. See Section 09 90 10 of these specifications.

B. Perform all inspections prior to finishing.

C. Galvanized steel is to be prepared per ASTM D6386 for painting.

D. Metal fabrications may have protective and finish coats installed in the shop if approved by the Authority. Do not provide finish coats to shop or field contact surfaces or within 2" of field welds. See painting section for description of protective and finish coats for steel.

3.09 BENCH MARKS

A. The Contractor shall employ the services of a registered professional engineer who shall establish permanent bench marks, field check all elevations, of concrete on which structural steel is to be placed and locations of anchor bolts, reporting any discrepancies to the Authority before the work proceeds.

3.10 ERECTION

A. The Contractor shall be responsible for the accurate setting and leveling of all bearing plates or setting plates. Bearing plates or setting plates shall be leveled on steel wedges or shims unless otherwise detailed.

B. Furnish templates, where shown, specified or called for on the drawings. Furnish shim plates or developed fills where required to obtain proper fit and alignment.

3.11 ERECTION TOLERANCE

A. The Contractor alone shall be responsible for the correct fitting of all structural members and for the elevation and alignment of the finished structure. Any adjustments necessary in the steel frame because of discrepancies in elevations and alignment shall be the responsibility of the Contractor.

B. Unless otherwise noted, individual members of the structure shall be leveled and plumbed to an accuracy of 1 to 500, but not to exceed 1/2" in columns for their full height, except exterior columns and columns adjacent to elevator beams shall be accurate to 1 to 1,000 but not to exceed 1/2" for their full height. All leveling and plumbing shall be done based on the mean operating temperature of the structure. Allowances shall be made for the difference in temperature at time of erection and the mean temperature at which the structure will be when completed and in service.

3.12 CONNECTIONS

A. Connections between members and corners shall be mitered unless approved otherwise.

B. No welding or bolting shall be done until as much of the structure as will be stiffened by the welding or bolting has been properly aligned.

C. Drift pins shall not be used to enlarge unfair holes in main material. Holes that must be enlarged to admit bolts shall be reamed. Burning and drifting may be used to align unfair holes in secondary bracing members only, when acceptable to the Authority.

D. When high strength bolts or high strength bearing bolts are used, the AISC specifications shall apply including values as noted therein, and installation by either "turn of nut tightening" or with torque wrenches. In using manual torque wrenches, the required torque can be read from the wrench dial. Care should be taken that the wrench is properly calibrated. Nuts shall be in motion when torque is measured. In using power wrenches, follow the recommendations of the wrench manufacturer.

3.13 FIELD ALTERATIONS

A. Modifications required to structural steel fabrications to facilitate proper installation including cutting, drilling or welding shall be submitted to the Authority for written approval. Provide shop drawings of the proposed modifications certified by a licensed structural engineer.

B. Repair and touch up galvanizing upon completion of alterations, bolting, welding, etc. of fabrications of existing steel as specified in the painting section.

3.14 SOURCE QUALITY CONTROL

A. Connection Inspection: Perform 100% visual inspection of bolted and welded connections. Examine the surfaces, size, quality and placement of each connection to verify installation in accordance with Contract documents and approved shop drawings. Measure weld length and profile for 15% of welds, selected at random.

B. Testing of High-Strength Bolted Connections: Test with calibrated torque wrench on at least 25% of the bolts in each bolted connection, but not less than 2 bolts.

C. Magnetic Particle Testing of Welds: Test in accordance with ASTM E 709 and include not less than the following items:

1. 20% of continuity plate, end plate, and bracing gusset plate fillet welds, selected at random, final pass only.
2. 100% of tension member fillet welds, e. g. hanger rod connections and other similar connections, root and final passes.
3. 100% of partial penetration welds, e.g. built-up members and other similar members, root and final passes.
4. 100% of built-up member fillet welds in zones of moment connections, root and final passes.
5. 20% of other built-up member fillet welds, selected at random, final pass only.
6. 10% of other miscellaneous fillet welds, selected at random, final pass only.

3.15 FIELD CLEANING AND PAINTING

A. Field cleaning and painting shall conform to the requirements of Section 09 90 10 of these specifications, including preparation of existing surfaces, preparation of galvanized surfaces, touch-up of galvanizing and application of prime and finish coats at field welds, bolted connections, abraded areas and other areas of the exposed steel.

3.16 REMOVAL AND REPLACEMENT OF DETERIORATED STEEL MEMBERS

A. Remove the deteriorated portion (25% or more section loss) of the indicated steel members.

B. Remove the deteriorated portion (25% or more section loss) of steel members identified by inspection after sandblasting.

C. Replace deteriorated steel members in kind and weld/seal weld all around.

D. Prep and paint all replaced steel members per Section 09 90 10.

END OF SECTION 05 10 30

SECTION 05 70 00
DECORATIVE METAL PANELS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and other specification sections apply to this section.

1.02 SUMMARY

A. This section includes decorative metal fabrications including:

1. Exterior Insulated Stainless Steel Infill Panels.
2. Exterior Insulated Stainless Steel Wall Panel Systems including panel framing.
3. Exterior Stainless Steel Cladding of steel framing members.

1.03 RELATED WORK

A. Section 05 50 00, Metal Fabrications

B. Section 07 21 00, Building Insulation

1.04 REFERENCES

A. AAMA 501.2 - Hose Testing - Methods of Test for Exterior Walls (part of AAMA 501).

B. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.

C. ANSI/DHI A115.IG - Installation Guide for Doors and Hardware.

D. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.

E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

F. ASTM A554 - Standard Specification for Welded Stainless Steel Mechanical Tubing.

G. AWS D1.1 - Structural Welding Code—Steel.

H. AWS D1.3 - Structural Welding Code--Sheet Steel.

I. AWS D1.6 - Structural Welding Code--Stainless Steel.

1.05 PERFORMANCE REQUIREMENTS

A. General: Provide wall panel systems, including anchorage, capable of withstanding, without failure the effects of the following:

1. Structural loads.
2. Thermal Movements.
3. Movements of supporting structure indicated on Drawings including, but not

limited to, story drift and deflection from uniformly distributed and concentrated live loads.

4. Dimensional tolerances of building frame and other adjacent construction.
5. Failure includes the following

    a. Deflection exceeding specified limits
    b. Thermal stresses transferred to building structure.
    c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
    d. Noise or vibration created by wind and thermal and structural movements.
    e. Loosening or weakening of fasteners, attachments, and other components.
    f. Failure of operating units to function properly.

B. Structural Loads:

1. Wind Loads: In accordance with latest Chicago Building Code requirements, and ASCE 7, Minimum Design Loads for Buildings and Other Structures, Current Edition.

C. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual panels to 3/4 inch, whichever is less.
2. Deflection Parallel to Panels: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.

D. Thermal Movements: Provide stainless steel wall panel system, windbreaks, and other decorative metals that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 degrees Fahrenheit ambient; 180 degrees Fahrenheit, material surfaces.
2. Test performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.

    a. Test High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 degrees Fahrenheit.
    b. Test Low Exterior Ambient-Air Temperature: 0 degrees Fahrenheit.

1.06 SUBMITTALS

A. Product Data: For each type of product indicated, including finishing materials.

B. Shop Drawings: For decorative metal. Include plans, elevations, component details, and attachments to other work. Indicate materials and profiles of each decorative metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.

1. Provide templates for anchors and bolts specified for installation under other Sections.

C. Samples for Initial Selection: For products involving selection of color, texture, or design

D. Mill Certificates: Signed by manufacturers of stainless-steel products certifying that products furnished comply with requirements.

E. Welding certificates.

F. Qualification Data: For Installer and fabricator.

G. Furnish engineering calculations for wall panels systems, guardrails, windbreaks, and other decorative metals where performance requirements are given as prepared by a structural engineer licensed in the State of Illinois and as required by IDOT, showing that maximum stresses and deflections do not exceed specified performance requirements under full design loading. Calculations shall be prepared and sealed by a structural engineer licensed in the State of Illinois.

1.07 QUALITY ASSURANCE

A. Installer Qualifications: Arrange for installation of decorative metal specified in this Section by the same firm that fabricated it.

B. Fabricator Qualifications: A firm experienced in producing decorative metal similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Welding: Qualify procedures and personnel according to AWS Specifications.

D. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Section 01200, Project Meetings.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Store decorative metal inside a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

1.09 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with decorative metal by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 COORDINATION

A. Coordinate installation of anchorages for decorative metal items. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete. Deliver such items to Project site in time for installation.

PART 2 PRODUCTS

2.01 METALS, GENERAL

A. Recycled Content of Steel Products: Provide products with average recycled content of steel products so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 20 percent.

B. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

2.02 HOT DIP GALVANIZING, GENERAL

A. Provide and install hot dip galvanized decorative metal ceiling panels where indicated on drawings.

B. The fabricator shall comply with detailing recommendations contained in the American Galvanizers Association publication, “The Design of Products to be Hot Dip Galvanized After Fabrication.”

C. Detailing shall eliminate the need for field welding of hot dip galvanized fabrications.

2.03 INSULATED WALL PANEL SYSTEM

A. Galvanized Channel and Hat Shaped Framing:

1. Typical size: As indicated on the Drawings.
2. Refer to drawing for exact configuration and location.

B. Insert Panels:

1. Insulated stainless steel metal panels.
2. Refer to Drawings for panel configurations and locations.
3. Refer to Wall Panel Schedule on the Drawings for description of panel materials and assemblies.

C. Stainless-Steel-Wrapped Steel Members

1. Wrap steel members with stainless steel of gauge metal as indicated on drawings,

2.04 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:

1. Type 304 stainless-steel fasteners.

B. Fasteners for Anchoring to Other Construction: Unless otherwise indicated, select fasteners of type, grade, and class required to produce connections suitable for anchoring indicated items to other types of construction indicated.

C. Provide concealed fasteners for interconnecting components and for attaching decorative metal items to other work, unless otherwise indicated.

1. Provide tamper-resistant flat-head machine screws for exposed fasteners, unless otherwise indicated.

D. Anchors: Provide cast-in-place anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

2.05 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.06 FABRICATION, GENERAL

A. Assemble items in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly, mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

B. Form decorative metal to required shapes and sizes, true to line and level with true curves and accurate angles and surfaces. Finish exposed surfaces to smooth, sharp, well-defined lines and arris.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form simple and compound curves in bars and extruded shapes by bending members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces.

E. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

F. Mill joints to a tight, hairline fit. Cope or miter corner joints. Fabricate connections that will be exposed to weather in a manner to exclude water.

G. Provide weep holes where water may accumulate.

H. Provide necessary rebates, lugs, and brackets to assemble units and to attach to other work. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items, unless otherwise indicated.

2.07 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

A. Provide anchorage devices and fasteners where needed to secure decorative metal to in-place construction.

B. Perform cutting, drilling, and fitting required to install decorative metal. Set products accurately in location, alignment, and elevation; measured from established lines and levels. Provide temporary bracing or anchors in formwork for items to be built into concrete, masonry, or similar construction.

C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or similar construction.

D. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers. Where cutting, welding, and grinding are required for proper shop fitting and jointing of decorative metal, restore finishes to eliminate evidence of such corrective work.

E. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

F. Install concealed gaskets, joint fillers, and flashings as work progresses.

G. Restore protective coverings that have been damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at same location.

1. Retain protective coverings intact; remove coverings simultaneously from similarly finished items to preclude non-uniform oxidation and discoloration.

H. Field Welding: Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Grind exposed welded joints smooth and restore finish to match finish of adjacent surfaces. Comply with applicable AWS specification for procedures of manual shielded metal arc welding, for appearance and quality of welds, and for methods used in correcting welding work and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base materials.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

I. Provide separation between dissimilar materials, if required.

3.03 ADJUSTING AND CLEANING

A. Final Adjustments for Doors (Gates)

1. Check and readjust operating hardware items just before final inspection.
2. Leave work in complete and proper operating condition.
3. Remove and replace defective work, including doors or frames that are warped, bowed, or otherwise unacceptable.

B. Unless otherwise indicated, clean metals by washing thoroughly with clean water and soap, rinsing with clean water, and drying with soft cloths.

3.04 PROTECTION

A. Protect finishes of decorative metal from damage during construction period with temporary protective coverings approved by decorative metal fabricator. Remove protective covering at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 70 00

SEGMENTAL CONCRETE BLOCK WALL
Effective: January 7, 1999
Revised: October 30, 2012

Description. This work shall consist of furnishing the design computations, shop plans, materials, equipment and labor to construct a Segmental Concrete Block Retaining Wall to the limits shown on the plans.

General. The wall shall consist of a leveling pad, precast concrete blocks (either dry-cast or wet cast), select fill and, if required by the design, soil reinforcement. The wall shall be designed and constructed according to the lines, grades, and dimensions shown on the contract plans and approved shop plans.

Submittals. The wall supplier shall submit design computations and shop plans to the Engineer according to Article 1042.03(b) of the Standard Specifications. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer. The shop plans shall be sealed by an Illinois Licensed Structural Engineer and shall include all details, dimensions, quantities, and cross sections necessary to construct the wall and shall include, but not be limited to, the following items:

(a) Plan, elevation, and cross section sheet(s) for each wall showing the following:

(1) A plan view of the wall indicating the offsets from the construction centerline to the first course of blocks at all changes in horizontal alignment. These shall be calculated using the offsets to the front face of the block shown on the contract plans and the suppliers proposed wall batter. The plan view shall indicate bottom (and top course of block when battered), the excavation and select fill limits as well as any soil reinforcing required by the design. The centerline of any drainage structure or pipe behind or passing through/under the wall shall also be shown.

(2) An elevation view of the wall, indicating the elevation and all steps in the top course of blocks along the length of the wall. The top of these blocks shall be at or above the theoretical top of block line shown on the contract plans. This view shall also show the steps and proposed top of leveling pad elevations as well as the finished grade line at the wall face specified on the contract plans. These leveling pad elevations shall be located at or below the theoretical top of leveling line shown on the contract plans. The location, size, and length of any soil reinforcing connected to the blocks shall be indicated.

(3) Typical cross section(s) showing the limits of the select fill, soil reinforcement if used in the design. The right-of-way limits shall be indicated as well as the proposed excavation, cut slopes, and the elevation relationship between existing ground conditions and proposed grades.

(4) All general notes required for constructing the wall.

Added 2/20/14

(b) All details for the leveling pads, including the steps, shall be shown. The theoretical top of the leveling pad shall either be below the anticipated frost depth or 1.5 ft. (450 mm) below the finished grade line at the wall face, whichever is greater; unless otherwise shown on the plans. The minimum leveling pad thickness shall be 6 in. (152 mm)

(c) Cap blocks shall be used to cover the top of the standard block units. The top course of blocks and cap blocks shall be stepped to satisfy the top of block line shown on the contract plans.

(d) All details of the block and/or soil reinforcement placement around all appurtenances located behind, on top of, or passing through the wall shall be clearly indicated. Any modifications to the design of these appurtenances to accommodate a particular design arrangement shall also be submitted.

(e) All details of the blocks, including color and texture shall be shown. The exterior face shall preferably be straight, textured with a “split rock face” pattern, and dark gray in color unless otherwise stated on the plans.

(f) All block types (standard, cap, corner, and radius turning blocks) shall be detailed showing all dimensions.

(g) All blocks shall have alignment/connection devices such as shear keys, leading/trailing lips, or pins. The details for the connection devices between adjacent blocks and the block to soil reinforcement shall be shown. The block set back or face batter shall be limited to 20 degrees from vertical, unless otherwise shown by the plans.

Materials. The materials shall meet the following requirements:

(a) Dry-Cast Concrete Block: Dry-cast concrete block proposed for use shall be pre-cast and produced according Article 1042.02 and the requirements of ASTM C1372 except as follows:

1. Fly ash shall be according to Articles 1010.01 and 1010.02(b).

2. Ground granulated blast-furnace slag shall be according to Articles 1010.01 and 1010.05.

3. Aggregate shall be according to Articles 1003.02 and 1004.02, with the exception of gradation.

4. Water shall be according to Section 1002.

5. Testing for freeze-thaw durability will not be required. However, unsatisfactory field performance as determined by the Department will be cause to prohibit the use of the block on Department projects.

Added 2/20/14

(b) Wet-cast Concrete Block: Wet-cast concrete block proposed for use shall be pre-cast and produced according to Section 1020 and Article 1042.02. The concrete shall be Class PC with a minimum compressive strength of at least 3000 psi (31 MPa) at 28 days.

(c) Select fill: The select fill, defined as the material placed in the reinforced volume behind the wall, shall be according to Sections 1003 and 1004 of the Standard Specifications and the following:

(1) Select Fill Gradation. Either a coarse aggregate or a fine aggregate may be used. For coarse aggregate, gradations CA 6 thru CA 16 may be used. For fine aggregate, gradations FA 1, FA 2, or FA 20 may be used.

(2) Select Fill Quality. The coarse or fine aggregate shall have a maximum sodium sulfate (Na_2SO_4) loss of 15 percent according to Illinois Modified AASHTO T 104.

(3) Select Fill Internal Friction Angle. The effective internal friction angle for the coarse or fine aggregate shall be a minimum 34 degrees according to AASHTO T 236 on samples compacted to 95 percent density according to Illinois Modified AASHTO T 99. The AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236. If the vendor's design uses a friction angle higher than 34 degrees, as indicated on the approved shop drawings, this higher value shall be taken as the minimum required.

(4) Select Fill and Geosynthetic Reinforcing. When geosynthetic reinforcing is used, the select fill pH shall be 4.5 to 9.0 according to Illinois Modified AASHTO T 289.

(5) Test Frequency. Prior to start of construction, the Contractor shall provide internal friction angle and pH test results to show the select fill material meets the specification requirements. However, the pH will be required only when geosynthetic reinforcing is used. All test results shall not be older than 12 months. In addition, a sample of select fill material will be obtained for testing and approval by the Department. Thereafter, the minimum frequency of sampling and testing at the jobsite will be one per 40,000 tons (36,300 metric tons) of select fill material. Testing to verify the internal friction angle will only be required when the wall design utilizes a minimum effective internal friction angle greater than 34 degrees, or when crushed coarse aggregate is not used.

When a fine aggregate is selected, the rear of all block joints shall be covered by a non-woven needle punch geotextile filter material according to Article 1080.05 of the Standard Specifications and shall have a minimum permeability according to ASTM D4491 of 0.008 cm/sec. All fabric overlaps shall be 6 in. (150 mm) and non-sewn. As an alternative to the geotextile, a coarse aggregate shall be placed against the back face of the blocks to create a minimum 12 in. (300 mm) wide continuous gradation filter to prevent the select fill material from passing through the block joints.

(d) Leveling pad: The material shall be either Class SI concrete according to Article 1020.04 or compacted coarse aggregate according to Articles 1004.04, (a) and (b). The compacted coarse aggregate gradation shall be CA 6 or CA 10.

Added 2/20/14

(e) Soil Reinforcement: If soil reinforcement is required by the approved design, the Contractor shall submit a manufacturer's certification for the soil reinforcement properties which equals or exceeds those required in the design computations. The soil reinforcement shall be manufactured from high density polyethylene (HDPE) uniaxial or polypropylene biaxial resins or high tenacity polyester fibers with a PVC coating, stored between -20 and 140° F (-29 and 60° C). The following standards shall be used in determining and demonstrating the soil reinforcement capacities:

ASTM D638 Test Method for Tensile Properties of Plastic
ASTM D1248 Specification for Polyethylene Plastics Molding and Extrusion Materials
ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds
ASTM D5262 Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
GG1-Standard Test Method for Geogrid Rib Tensile Strength
GG2-Standard Test Method for Geogrid Junction Strength
GG4-Standard Practice for Determination of the Long Term Design Strength of Geogrid
GG5-Standard Practice for Evaluating Geogrid Pullout Behavior

Design Criteria. The design shall be according to AASHTO Specifications and commentaries for Earth Retaining Walls or FHWA Publication No. HI-95-038, SA-96-071 and SA-96-072. The wall supplier shall be responsible for all internal stability aspects of the wall design.

Internal stability design shall insure that adequate factors of safety against overturning and sliding are present at each level of block. If required by design, soil reinforcement shall be utilized and the loading at the block/soil reinforcement connection as well as the failure surface must be indicated. The calculations to determine the allowable load of the soil reinforcement and the factor of safety against pullout shall also be included. The analysis of settlement, bearing capacity, and overall slope stability are the responsibility of the Department.

External loads such as those applied through structure foundations, from traffic or railroads, slope surcharge etc., shall be accounted for in the internal stability design. The presence of all appurtenances behind, in front of, mounted upon, or passing through the wall volume such as drainage structures, utilities, structure foundation elements, or other items shall be accounted for in the internal stability design of the wall.

Construction Requirements. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include all costs related to this technical assistance in the unit price bid for this item.

The foundation material for the leveling pad and select fill volume shall be graded to the design elevation and compacted according to Article 205.05, except the minimum required compaction shall be 95 percent of the standard laboratory density. The Engineer will perform one density test per 1500 ft (450 m) of the entire length of foundation material through both cut and fill areas. Any foundation soils found to be unsuitable shall be removed and replaced as directed by the Engineer and shall be paid for according to Article 109.04.

Added 2/20/14

The select fill lift placement shall closely follow the erection of each course of blocks. All aggregate shall be swept from the top of the block prior to placing the next block lift. If soil reinforcement is used, the select fill material shall be leveled and compacted before placing and attaching the soil reinforcement to the blocks. The soil reinforcement shall be pulled taut, staked in place, and select fill placed from the rear face of the blocks outward. The lift thickness shall be the lesser of 10 in. (255 mm) loose measurement or the proposed block height.

The select fill shall be compacted according to Article 205.05, except the minimum required compaction shall be 95 percent of the standard laboratory density. Compaction shall be achieved using a minimum of 3 passes of a lightweight mechanical tamper, roller, or vibratory system. The Engineer will perform one density test per 5000 cu yd (3800 cu m) and not less than one test per 2 ft (0.6m) of lift. The top 12 in. (300 mm) of backfill shall be a cohesive, impervious material capable of supporting vegetation, unless other details are specified on the plans.

The blocks shall be maintained in position as successive lifts are compacted along the rear face of the block. Vertical, horizontal, and rotational alignment tolerances shall not exceed 0.5 in. (12 mm) when measured along a 10 ft. (3 m) straight edge.

Method of Measurement. Segmental Concrete Block Wall will be measured by the square foot (square meter) of wall face from the top of block line to the theoretical top of the leveling pad for the length of the wall in a vertical plane, as shown on the contract plans.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for SEGMENTAL CONCRETE BLOCK WALL.

WEEP HOLE DRAINS FOR ABUTMENTS, WINGWALLS, RETAINING WALLS AND CULVERTS
Effective: April 19, 2012
Revised: October 22, 2013

Delete the last paragraphs of Articles 205.05 and 502.10 and replace with the following.

“If a geocomposite wall drain according to Section 591 is not specified, a prefabricated geocomposite strip drain according to Section 1040.07 shall be placed at the back of each drain hole. The strip drain shall be 24 inches (600 mm) wide and 48 inches (1.220 m) tall. The strip drain shall be centered over the drain hole with the bottom located 12 inches (300 mm) below the bottom of the drain hole. All form boards or other obstructions shall be removed from the drain holes before placing any geocomposite strip drain.”

Revise the last sentence of the first paragraph of Article 503.11 to read as follows.

“Drain holes shall be covered to prevent the leakage of backfill material according to Article 502.10.”

Revise the title of Article 1040.07 to Geocomposite Wall Drains and Strip Drains.

Added 2/20/14

PEORIA STREET BRIDGE SUBSTRUCTURE WORK REQUIREMENTS

As a requirement for this project, foundation work for the north abutment of the Peoria Street Bridge and reconstruction of the siphon shall not begin until the existing five foot water tunnel that runs adjacent to the north I-290 right-of-way line as shown in the plans has been filled per Contract 60W26. It is anticipated that the tunnel will be filled by approximately March 31, 2014. For Contract 60W29, the contractor shall take into account this requirement in the progress schedule accordingly. There shall be no direct or indirect compensation for complying with this requirement. Refer to the specification CONTRACTOR COOPERATION for additional information.

UIC-HALSTED BLUE LINE PEORIA STREET CTA STATION ENTRANCE CLOSURE REQUIREMENTS

As a requirement for this project, the UIC-Halsted Blue Line Peoria Street CTA Station entrance shall not be closed to users traffic and shall remain fully operational until the UIC-Halsted Blue Line Morgan Street CTA Station entrance is fully restored, open, operational and accessible to users. It is anticipated that the UIC-Halsted Blue Line Morgan Street CTA Station entrance will be operational by approximately May 15, 2014 as a result of the stage construction of the Morgan Street bridge deck west side. Access to the UIC-Halsted Blue Line Morgan Street CTA Station entrance is defined as a crossing from the east side of Morgan Street (where the CTA station entrance currently exists) to the west side of the Morgan Street Bridge and access to the north and south along Morgan Street. For Contract 60W29, the contractor shall take into account this requirement in the progress schedule accordingly. There shall be no direct or indirect compensation for complying with this requirement. Refer to the specification CONTRACTOR COOPERATION for additional information.

Added 2/20/14

TEMPORARY FENCE (SPECIAL)

Description. This work shall consist of furnishing all labor, tools, equipment, and materials required to design, furnish and install a temporary fence to provide security and access control to the Chicago Transit Authority Blue Line railroad as shown in the plans and as described herein. The work shall be done in accordance with the applicable portions of Section 664 of the Standard Specifications, CTA and the Chicago Building code and the details in the plans.

General Requirements. The Temporary Fence (Special) shall be designed and integrated with the approved demolition and construction schedule of Peoria Street bridge construction sequencing. Upon completion of the work, the Temporary Fence (Special) shall be removed and disposed of by the Contractor. The cost of the removal and disposal is included with this item.

The Temporary Fence (Special) shall be designed and constructed to resist a horizontal wind pressure of not less than 30 pounds per square foot in addition to all other forces to which the Temporary Fence (Special) may be subjected; or, designed and constructed to resist a simultaneous vertical and horizontal thrust of 50 pounds per linear foot applied to each rail or a simultaneous vertical and horizontal concentrated load of 200 pounds in any direction applied to each rail, whichever loading produces the greatest stress.

Wood shall be pressure treated Southern Yellow Pine, #2 or better, minimum Fb = 1500 psi.

Wood Post size shall be 4” X 4” spaced a maximum of 8 feet on center.

Wood Rail size shall be minimum 4” X 4” spaced a maximum 24” center to center.

Support 4” X 4” posts with pre-engineered hot-dip galvanized steel ground anchors

a. If larger wood posts are required by the Contractor’s Illinois licensed Structural Engineer, provide steel ground anchor model type that is compatible with wood post size required and provided.
b. Submit certifications and independent load tests from manufacturer that post anchors. Posts shall be capable of resisting a minimum 120 mile per hour wind load for a minimum of 5 minutes.
c. The top of the steel ground anchors shall be set a minimum of 4” below grade and backfilled to match existing adjacent area.

Wood to wood connections shall be made with hot-dip galvanized or stainless steel nails or hot-dip galvanized or stainless steel connectors. Galvanizing shall conform to ASTM A653, G185 coating protection.

Fabric material shall be attached to the 4” X 4” posts. Fabric shall consist of plywood, snow fence, fiberglass or windscreen, as designed by Contractor and approved by Engineer and CTA.

Design calculations and details for the Temporary Fence (Special) adjacent to the CTA tracks and/or CTA Right of Way proposed by Contractor must also be submitted to the CTA for approval. This approval will not relieve the Contractor of responsibility for the safety of the installation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

The design shall consider the restrictions on the installation of all components of the Temporary Fence (Special). These installation restrictions are listed in the next section of this special provision and in the "CONSTRUCTION VIBRATION MONITORING" special provision.

Submittals. The Contractor shall submit shop drawings of the proposed Temporary Fence (Special) to the Engineer and CTA for review. The shop drawings shall consist of the minimum information:

1. Layout of the Temporary Fence (Special) including dimensions and elevation.
2. Foundation locations.
3. Design calculations for members and connections, drawings and details.
4. Installation and removal reinstallation methods and details.

Additional information may be requested to complete the review of the submittal by the Engineer. No additional compensation will be made for the additional requested information. The submittal and design calculations shall be sealed and signed by an Illinois licensed Structural Engineer employed by the Contractor for review and comment by the Engineer and the Chicago Transit Authority (CTA). Review and comment by Engineer and CTA shall not relieve the Contractor of his responsibility for the design of the Temporary Fence (Special). The cost of preparing the submittals for approval is included with this item.

Method of Measurement. Temporary Fence (Special) will be measured for payment in feet (meters), along the top of the fence from center to center of end posts.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for TEMPORARY FENCE (SPECIAL). The cost of any relocations and the cost of the removal and disposal of the TEMPORARY FENCE (SPECIAL) shall be included in the cost and will not be paid for separately.

REMOVE AERIAL CABLE

Description. This item consists of removing existing aerial cables completely from the lighting units including all associated apparatus, mounting hardware and connections as shown on the plans and as directed by the Engineer.

All equipment and material removed as part of this item shall become property of the Contractor and shall be removed from the site.

Method of Measurement. Removal of existing aerial cable will be measured for payment at the contract unit price per foot, regardless of the quantity and size of the aerial cables.

Basis of Payment. This work will be paid for at the Contract unit price per foot for REMOVE AERIAL CABLE.

SECTION 09 54 70
LINEAR METAL CEILING SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes providing all labor, materials, and equipment necessary to provide and install a complete metal suspended ceiling system including linear metal ceiling panels with concealed grid suspension system including wire hangers, fasteners, main runners, cross tees, wall angle moldings, and any other accessories necessary for a complete system as shown on the drawings and specified herein.

1. Material for ceiling system components and panels to be aluminum, pre-finished with a powder coat finish. Panels to be perforated.

1.02 RELATED DOCUMENTS

A. Drawings and other Specification Sections apply to this Section.

1.03 REFERENCES

A. ASTM A641 – Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

B. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. ASTM C423 – Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

D. ASTM C635 – Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings

E. ASTM C636 – Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels

F. ASTM E84 -Standard Test Method for Surface Burning Characteristics of Building Materials

G. ASTM E580 -Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint

1.04 SUBMITTALS

A. Product data and technical literature for each type of product specified including panels, trim, and suspension system components.

B. Layout and coordination drawings for reflected ceiling drawn accurately to scale and coordinating penetrations and ceiling-mounted items. Show the following:

1. Ceiling suspension members.
2. Method of attaching hangers to building structure.
3. Size and location of access panels.
4. Size, location, and method of attachment for all ceiling-mounted items including recessed light fixtures; vents; pendant mounted security cameras; and special moldings at walls and other junctures with adjoining construction.
5. Ceiling panel layout; location of various types of panels (flush, perforated, etc.); and location of panel joints.
6. Scale: 1/4 inch = 1 foot-0 inch.

C. Large scale detail drawings indicating method of attachment of panels, ceiling mounted items, trim, and other items.

D. Samples for selection of each type of exposed finish required, prepared on samples of size indicated below and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected.

1. Color samples of manufacturer’s standard colors, gloss, finishes, and texture.
2. Samples of perforation sizes, spacings, and patterns.
3. After initial selection, full size samples of each panel type, profile, pattern, finish and color.
4. Set of 12-inch long samples of concealed suspension system members for each type.
5. Set of 12-inch long samples of exposed moldings for each color, finish and system type required.

E. Certifications: Manufacturer’s certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

F. Provide for review installation instructions for suspension system and panels.

G. Provide qualification data for installer as required herein.

H. Provide copy of warranties for system, panels, and finish.

I. Provide operation and maintenance manuals for suspended ceiling system and panels.

1.05 QUALITY ASSURANCE

A. Installer Qualifications:

1. Engage a qualified and experienced installer who has successfully completed metal panel ceiling systems similar in material, design, and extent to that indicated for Project for no less than a period of 5 years.

B. Single-Source Responsibility for ceiling system: Obtain entire ceiling system (support, panels, trim) from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.

C. Coordination of Work: Coordinate layout and installation of complete ceiling and suspension system components with other construction that the ceiling system is supported by and other construction that penetrates or is supported by the ceiling system including light fixtures, vents and security cameras.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver metal ceiling panels and trim units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against exposure to moisture, direct sunlight, surface contamination, and other unacceptable conditions.

B. Handle metal ceiling panel and trim units carefully to avoid bending edges, scratching or damaging units in any way.

1.07 PROJECT CONDITIONS

A. Install metal ceiling panel system after the area of installation is complete, work above the ceiling is complete, wet work in area is completed and nominally dry, and ambient conditions of temperature and humidity will be at values near those recommended by the manufacturer for installation of the ceiling system. Concrete repair, masonry work and other dust creating construction in the area must be complete.

B. No materials should rest against, or wrap around, the ceiling suspension components or connecting hangers.

1.08 WARRANTY

A. Manufacturer and installer shall both provide a signed warranty for all the materials and work of this section warranting the materials and installation against defects in materials or installation for a period of ten years from the date of Final Acceptance. The warranty shall include a warranty against buckling, bending, sagging, or other imperfection of the installed system.

B. Special Finish Warranty: Manufacturer’s standard form in which manufacturer agrees to repair or replace components on which finishes fail, other than normal weathering, within specified warranty period; including, but not limited to, rusting, fading, pitting, streaking, flaking, peeling, chalking, discoloration, chipping or other above normal deterioration.

1. Warranty Period: Twenty (20) years from the date of final acceptance.

1.09 ATTIC STOCK

A. Provide additional panels of each type and finish, edge mouldings, suspension members, hangers and other materials for future replacement.

1. Provide 10% attic stock for each item.

B. Deliver extra stock to the Authority, per the Authority’s direction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Arcadia Corp.

B. Armstrong World Industries, Inc.

C. Hunter/Douglas.

D. Linder USA, Inc.

E. Or approved equal.

2.02 LINEAR METAL PANELS

A. Panel Width: Standard width, 6", as shown on the drawings.

B. Panel Lengths: 16'-0" standard lengths, as shown on the drawings, and cut to size as required.

C. Panel Depth: 1 1/2 inch nominal.

D. Material: Aluminum.

E. Thickness: 0.028 inches (aluminum); 0.024 inches (steel).

F. Finish: Factory electrostatically applied polyester powder coat applied to panel after forming.

G. Edge Detail: Square edge.

H. Surface Texture: Smooth/unperforated and smooth/microperforated.

I. Color: As selected by the Authority from manufacturer's standards.

J. Flame Spread: (ASTM E 84) Class A.

K. Acoustical Design: NCR up to 0.90 as per ASTM C 423.

L. Type: Hook on type, both sides of panel. Entire ceiling plenum to be accessible by removal of any panel.

2.03 METAL SUSPENSION SYSTEM

A. Standard for Metal Suspension Systems: Provide manufacturer's standard limited access metal suspension systems of types and structural classifications indicated that comply with applicable ASTM C635 requirements.

1. Components to be manufactured from cold rolled zinc-galvanized steel or aluminum.

B. Finishes and Colors: Unexposed suspension and support members to be galvanized. Provide manufacturer's standard factory-applied powder coat finish for exposed moldings. Comply with ASTM C635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C635, Table 1, Direct Hung, unless otherwise indicated.

D. Wire for Hangers and Ties: ASTM A641, Class 1 zinc coating, soft temper. Provide wire sized so that stress at 3 times hanger design load (ASTM C635, Table 1, Direct-Hung) will be less than yield stress of wire, but provide not less than 0.106-inch diameter (12-gauge).

E. Hanger Rods: Mild steel, zinc coated, or protected with rust-inhibitive paint.

F. Edge Moldings and Trim: Types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling that fits with type of edge detail and suspension system indicated. Finish to be powder coated to match ceiling finish.

G. Hold-Down Clips: Manufacturer's standard hold-down clips spaced to secure acoustical metal panels in place.

H. Accessories:

1. Galvanized steel hook-on suspension bar to be 10 feet long or as required for application. End caps and other exposed suspension materials shall be post powder coated silver grey to match panels.
2. Panel alignment clips to be spring steel.
3. Gasket material used between panels for alignment shall be black polyester fabric.
4. Attachment screws where required shall be stainless steel.

2.04 CEILING SYSTEM

A. Metal ceiling panel and suspension support system must be designed to create a safe and stable system capable of withstanding any vibration, wind or other forces. Individual ceiling panels must also be removable and replaceable easily without the use of tools, by a single workman, without bending, affording full accessibility to the ceiling area above the suspended ceiling. Panels to “hook on” to the primary grid.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this section that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. All work above the ceiling system is to be satisfactorily completed prior to start of the ceiling installation.

C. All unsatisfactory conditions potentially affecting the ceiling system are to be corrected prior to the start of ceiling installation.

D. Do not proceed with installation until all wet work such as concrete and painting has been completed and thoroughly dried out.

3.02 PREPARATION

A. Measure ceiling area and establish layout of ceiling system. Comply with approved shop drawings.

B. Coordination: Coordinate ceiling installation with installation of light fixtures, vents, security cameras, and other items and accessories at the ceiling.

3.03 INSTALLATION

A. General: Install ceiling system to comply with manufacturer's printed instructions and current recommendations. Comply with ASTM C636 and ASTM E580 as applicable to installation of ceiling system.

B. Suspend ceiling hangers from building structural members and as follows:

1. Install hangers plumb and free from contact with light fixtures, speaker boxes, conduit, electrical boxes or other objects within ceiling space that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of light fixtures and other construction within ceiling produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Secure wire hangers by looping and wire-tying directly to structure or to anchors secured into the structure in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
4. Drill and use expansion anchors to secure rod hangers to the underside of the concrete canopy structure as required to secure the anchors in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
5. Space hangers not more than 4 foot-0 inch on center along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.
6. Light Fixture Suspensions: Electrical and other major installations must be supported independently of the ceiling system.

C. Install edge moldings of type indicated at perimeter of ceiling area, at openings in ceiling panels, and at other locations where necessary to conceal edges of units. Screw-attach moldings to substrate at intervals not over 16 inches on center and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12 foot-0 inch. Maximum deviation shall not exceed 1/4 inch from level in any area. Miter corners accurately and connect securely.

D. Metal Panel Installation: Install metal ceiling panels in coordination with suspension system. Install according to approved shop drawings. Place splines or flanges of suspension system into kerfed edges. Cut all perimeter panels and place on the molding at walls or ceiling openings.

E. Install hold-down clips as recommended by panel manufacturer. Panels shall be held down flush against the face of the wall moulding with manufacturer’s pressure springs.

3.04 FIELD QUALITY CONTROL

A. Deflection of any grid components shall not exceed 1/360 of the span.

3.05 CLEANING

A. Metal Ceiling Systems: Clean exposed surfaces of metal panel ceiling, including trim, edge moldings, and suspension members. Clean of all dirt, grease, fingerprints and marks. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 54 70