



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

April 19, 2013

SUBJECT: FAP Route 330(US 45)
Project NHPP-HPP-2081(100)
Section 103R-5
Cook County
Contract No. 60M62
Item No. 116, April 26, 2013 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

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

1. Replaced the Schedule of Prices.
2. Revised the Table of Contents to the Special Provisions.
3. Revised pages 2-11, 18, 30-38, 54, 55, 113-143, 161-164, 177 and 180-200 of the Special Provisions.
4. Added pages 358-369 to the Special Provisions.
5. Revised sheets 5-7, 9-11, 19-21, 30, 30A, 30C, 30D, 30E, 30F, 38, 39, 41, 68, 368, 394-411, 413-416, 418-423, 425, 426, 428, 430, 441-448, 459-463 468, & 470 of the Plans.

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

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

Very truly yours,

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

A handwritten signature in black ink, appearing to read 'Ted B. Walschleger' followed by a small 'P.E.' monogram.

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

cc: John Fortmann, Region 1, District 1; Mike Renner; D. Carl Puzey,
Estimates

dp

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60M62

State Job # - C-91-146-11

County Name - COOK - -

Code - 31 - -

District - 1 - -

Section Number - 103R-5

Project Number
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*REVISED: APRIL 17, 2013

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
A2002020	T-AESCULUS GLA 2-1/2	EACH	5.000				
A2002920	T-CELTIS OCCID 2-1/2	EACH	9.000				
A2005020	T-GYMNOCLA DIO 2-1/2	EACH	5.000				
A2006416	T-QUERCUS ALBA 2	EACH	4.000				
A2006516	T-QUERCUS BICOL 2	EACH	9.000				
B2000766	T-AMEL X GF AB SF 6'	EACH	20.000				
B2001620	T-CRAT CRU-I TF 2-1/2	EACH	43.000				
B2005416	T-PRUN VR SH TF 2	EACH	15.000				
B2006220	T-SYRING RET TF 2-1/2	EACH	29.000				
B2006266	T-SYRING RET CL 6'	EACH	3.000				
C2C01424	S-CORNUS AMOMUM 2'C	EACH	70.000				
C2C05824	S-RHUS AROMA GRO 2'C	EACH	1,110.000				
C2C074G5	S-ROSA RADCON CG 5G	EACH	100.000				
C2001250	S-CHIONANTH VIRG 6'	EACH	6.000				
C2002048	S-CORYLUS AMER 4'	EACH	158.000				

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K0012970	PERENNIAL PLNT BULB T	UNIT	62.000				
K0012990	P PL ORNAMENT T GAL P	UNIT	58.000				
K0013030	P PL WETLND 2X4 DPPLG	UNIT	40.000				
K0026850	PERENNIAL PLANT CARE	SQ YD	2,919.000				
K0029629	WEED CONT BROADLF TRF	POUND	50.000				
K0029632	WEED CONT N SEL/N RES	GALLON	3.000				
K0029634	WEED CONTR PRE-EM GRN	POUND	123.000				
K1005465	SELECT MOWING STAKES	EACH	8.000				
XX005713	ORNAMENTAL RAILING	FOOT	3,691.000				
*REV XX005937	LED INT IL S-NAME SGN	EACH	14.000				
XX007559	GATE VALVE 8 VAULT 4	EACH	2.000				
X0322992	COARSE SAND PLACE 4	SQ YD	2,456.000				
X0324455	DRILL/SET SOLD P SOIL	CU FT	12,474.000				
X0325034	MH TA 6D W/2 T1FOL RP	EACH	4.000				
X0325110	BIAXIAL GEOGRID	SQ YD	9,534.000				

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X0326498	GFCI20A DX RECEPTACLE	EACH	54.000				
X0327004	TEMP WP 60 CL 4	EACH	5.000				
X0327353	STORMWTR TRTMT SYS L1	L SUM	1.000				
X0327354	STORMWTR TRTMT SYS L2	L SUM	1.000				
X0327374	REM TEMP SOIL RET SYS	SQ FT	1,180.000				
X0327579	GATE VALVE 12 VAULT 4	EACH	4.000				
X0329905	REL GATE POST & GATE	EACH	1.000				
X2502024	SEEDING CL 4B MOD	ACRE	1.000				
*DEL X2800400	PERIMETER EROS BAR SP	FOOT	1,102.000				
*ADD X2800520	ABOVE GRADE INLT FLTR	EACH	605.000				
X4021000	TEMP ACCESS- PRIV ENT	EACH	13.000				
X4022000	TEMP ACCESS- COM ENT	EACH	15.000				
X4023000	TEMP ACCESS- ROAD	EACH	5.000				
X4024000	TEMP ACCESS- FLD ENT	EACH	2.000				
X4024100	TEMP ACCESS WINTERIZE	SQ YD	3,642.000				

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X4200110	HES PCC PVT 10 JNTD	SQ YD	10,232.000				
*REV X4200501	PCC PVT 10 JOINTD SPL	SQ YD	914.000				
X4402805	ISLAND REMOVAL	SQ FT	2,857.000				
X4404000	PARKING LOT PAVT REM	SQ YD	155.000				
X5030285	FORM LINR TEX SURF TS	EACH	2.000				
X5121800	PERM STEEL SHT PILING	SQ FT	42,888.000				
X550A562	TEMP SS CL A 2 12	FOOT	443.000				
*REV X5860110	GRANULAR BACKFILL STR	CU YD	10,638.000				
X6020095	MAN TA 4D T1F CL R-P	EACH	1.000				
X6020295	MH TA 7D W/2 T1F0L RP	EACH	1.000				
X6020299	MH TA 8D W/2 T1F0L RP	EACH	1.000				
X6021193	TEMP CATCH BASINS	EACH	28.000				
X6330705	RUB RAIL	FOOT	1,069.000				
X6640200	TEMP CH LK FENCE	FOOT	2,302.000				
X6700410	ENGR FLD OFF A SPL	CAL MO	30.000				

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X7010216	TRAF CONT & PROT SPL	L SUM	1.000				
X7030025	WET REF TEM TP T3 L&S	SQ FT	1,870.000				
X7030030	WET REF TEM TAPE T3 4	FOOT	109,175.000				
*REV X7030040	WET REF TEM TAPE T3 6	FOOT	8,373.000				
*REV X7030050	WET REF TEM TPE T3 12	FOOT	3,874.000				
X7030055	WET REF TEM TPE T3 24	FOOT	599.000				
X7040650	REM TEMP CONC BARRIER	FOOT	800.000				
X8210015	TEMP LUM HPSV 400	EACH	53.000				
X8210305	PROT-MAIN UNPASS LTG	L SUM	1.000				
X8250060	TEMP LIGHT CONTROLLER	EACH	2.000				
X8250091	COMB LTG CONTROL	EACH	3.000				
X8250505	LIGHT CONTROLLER SPL	EACH	2.000				
X8300001	LIGHT POLE SPECIAL	EACH	54.000				
X8300005	LT P WD 60 CL4 SPL	EACH	54.000				
X8360215	LIGHT POLE FDN 24D OS	FOOT	45.000				

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X8510200	PAINT TRAF SIG EQUIP	L SUM	1.000				
X8570226	FAC T4 CAB SPL	EACH	4.000				
X8570231	FAC T5 CAB SPL	EACH	1.000				
X8600105	MASTER CONTROLLER SPL	EACH	1.000				
X8620200	UNINTER POWER SUP SPL	EACH	4.000				
X8710024	FOCC62.5/125 MM12SM24	FOOT	9,777.000				
X8730250	ELCBL C 20 3C TW SH	FOOT	3,353.000				
X8730800	ELCBL C VIDEO 20 4C	FOOT	170.000				
X8950075	REMOV EX LTG CONT SAL	EACH	1.000				
X8950600	REM RELOC EX LT STD	EACH	14.000				
Z0005305	BOX CUL TO BE CLEANED	FOOT	75.000				
*ADD Z0005870	BOND PREF JT SEAL 1	FOOT	100.000				
Z0007118	UNTREATED TIMBER LAG	SQ FT	3,303.000				
Z0013302	SEGMENT CONC BLK WALL	SQ FT	13,054.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				

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Z0022800	FENCE REMOVAL	FOOT	376.000				
Z0023500	FILL EXIST CULVERTS	CU YD	27.000				
Z0026404	FUR SOLDIER PILES WS	FOOT	1,514.000				
Z0027800	GEOTECH FABRIC	SQ YD	99,664.000				
Z0030850	TEMP INFO SIGNING	SQ FT	28.000				
Z0033028	MAINTAIN LIGHTING SYS	CAL MO	30.000				
Z0033040	ELEC SVC DSCNNCT L&TS	EACH	3.000				
Z0033056	OPTIM TRAF SIGNAL SYS	EACH	1.000				
Z0045100	PRESS CONNECT 12X12	EACH	1.000				
*REV Z0046304	P UNDR FOR STRUCT 4	FOOT	3,808.000				
*DEL Z0046306	P UNDR FOR STRUCT 6	FOOT	435.000				
Z0048510	RAILROAD EMBLEMS	L SUM	1.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
Z0056608	STORM SEW WM REQ 12	FOOT	788.000				
Z0056610	STORM SEW WM REQ 15	FOOT	279.000				

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Z0056612	STORM SEW WM REQ 18	FOOT	162.000				
Z0056616	STORM SEW WM REQ 24	FOOT	148.000				
Z0056624	STORM SEW WM REQ 42	FOOT	109.000				
Z0062456	TEMP PAVEMENT	SQ YD	36,916.000				
Z0062458	TEMP PAVEMT VAR DEPTH	TON	1,667.000				
Z0064800	SELECTIVE CLEARING	UNIT	19.000				
Z0067700	STEEL CASINGS 20	FOOT	119.000				
Z0073002	TEMP SOIL RETEN SYSTM	SQ FT	2,500.000				
Z0073510	TEMP TR SIGNAL TIMING	EACH	4.000				
Z0073700	TEMP WALL BRACING SYS	L SUM	1.000				
Z0076600	TRAINEES	HOUR	1,000.000		0.800		800.000
Z0076604	TRAINEES TPG	HOUR	1,000.000		10.000		10,000.000
Z0077700	WOOD FENCE REM & RE-E	FOOT	553.000				
20100110	TREE REMOV 6-15	UNIT	292.000				
20100210	TREE REMOV OVER 15	UNIT	277.000				

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20100500	TREE REMOV ACRES	ACRE	0.500				
*REV 20101000	TEMPORARY FENCE	FOOT	7,247.000				
20101100	TREE TRUNK PROTECTION	EACH	14.000				
20101200	TREE ROOT PRUNING	EACH	3.000				
20101300	TREE PRUN 1-10	EACH	2.000				
20101350	TREE PRUN OVER 10	EACH	6.000				
20200100	EARTH EXCAVATION	CU YD	37,843.000				
20201200	REM & DISP UNS MATL	CU YD	19,734.000				
20400800	FURNISHED EXCAVATION	CU YD	25,689.000				
20600200	GRAN EMBANK SPEC	CU YD	416.000				
20800150	TRENCH BACKFILL	CU YD	17,945.000				
21101625	TOPSOIL F & P 6	SQ YD	69,140.000				
21101685	TOPSOIL F & P 24	SQ YD	13,480.000				
21101805	COMPOST F & P 2	SQ YD	2,008.000				
25000210	SEEDING CL 2A	ACRE	8.250				

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25000310	SEEDING CL 4	ACRE	2.750				
25000400	NITROGEN FERT NUTR	POUND	915.000				
25000500	PHOSPHORUS FERT NUTR	POUND	915.000				
25000600	POTASSIUM FERT NUTR	POUND	915.000				
25000750	MOWING	ACRE	45.000				
25100115	MULCH METHOD 2	ACRE	7.250				
*DEL 25100125	MULCH METHOD 3	ACRE	9.750				
*ADD 25100127	MULCH METHOD 3A	ACRE	10.500				
*REV 25100630	EROSION CONTR BLANKET	SQ YD	21,826.000				
*ADD 25100635	HD EROS CONTR BLANKET	SQ YD	1,907.000				
*REV 25200110	SODDING SALT TOLERANT	SQ YD	33,057.000				
25200200	SUPPLE WATERING	UNIT	246.000				
*REV 28000200	EARTH EXC - EROS CONT	CU YD	2,075.000				
*REV 28000250	TEMP EROS CONTR SEED	POUND	1,062.000				
*REV 28000305	TEMP DITCH CHECKS	FOOT	2,531.000				

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*REV 28000400	PERIMETER EROS BAR	FOOT	12,239.000				
28000500	INLET & PIPE PROTECT	EACH	64.000				
28000510	INLET FILTERS	EACH	309.000				
*REV 28001000	AGGREGATE - EROS CONT	TON	102.000				
*ADD 28100105	STONE RIPRAP CL A3	SQ YD	150.000				
*DEL 28100107	STONE RIPRAP CL A4	SQ YD	150.000				
28200200	FILTER FABRIC	SQ YD	150.000				
30300001	AGG SUBGRADE IMPROVE	CU YD	1,046.000				
30300112	AGG SUBGRADE IMPR 12	SQ YD	99,664.000				
31102000	SUB GRAN MAT C	CU YD	101.000				
35101582	AGG BASE CSE B 2	SQ YD	942.000				
35101800	AGG BASE CSE B 6	SQ YD	9,885.000				
35102000	AGG BASE CSE B 8	SQ YD	183.000				
35501308	HMA BASE CSE 6	SQ YD	889.000				
35501316	HMA BASE CSE 8	SQ YD	1,956.000				

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35501326	HMA BASE CSE 10 1/2	SQ YD	389.000				
35501329	HMA BASE CSE 11 1/4	SQ YD	93.000				
35600718	HMA BC WID 10 1/2	SQ YD	328.000				
35600721	HMA BC WID 11 1/4	SQ YD	91.000				
40600100	BIT MATLS PR CT	GALLON	12,422.000				
40600300	AGG PR CT	TON	3.000				
40600635	LEV BIND MM N70	TON	235.000				
40600895	CONSTRUC TEST STRIP	EACH	2.000				
40603335	HMA SC "D" N50	TON	2,391.000				
40603340	HMA SC "D" N70	TON	310.000				
40603595	P HMA SC "F" N90	TON	249.000				
40701931	HMA PAVT FD 12 1/2	SQ YD	12,411.000				
*REV 42000501	PCC PVT 10 JOINTED	SQ YD	74,204.000				
42001300	PROTECTIVE COAT	SQ YD	96,967.000				
42300200	PCC DRIVEWAY PAVT 6	SQ YD	122.000				

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42300400	PCC DRIVEWAY PAVT 8	SQ YD	569.000				
42400200	PC CONC SIDEWALK 5	SQ FT	54,263.000				
42400800	DETECTABLE WARNINGS	SQ FT	1,046.000				
44000100	PAVEMENT REM	SQ YD	117,697.000				
44000157	HMA SURF REM 2	SQ YD	4,147.000				
44000200	DRIVE PAVEMENT REM	SQ YD	5,395.000				
44000300	CURB REM	FOOT	5,417.000				
44000500	COMB CURB GUTTER REM	FOOT	37,920.000				
44000600	SIDEWALK REM	SQ FT	11,642.000				
44003100	MEDIAN REMOVAL	SQ FT	73,635.000				
44004250	PAVED SHLD REMOVAL	SQ YD	1,714.000				
44201761	CL D PATCH T1 10	SQ YD	161.000				
44201765	CL D PATCH T2 10	SQ YD	964.000				
44201769	CL D PATCH T3 10	SQ YD	482.000				
44300200	STRIP REF CR CON TR	FOOT	1,734.000				

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48203021	HMA SHOULDERS 6	SQ YD	67.000				
48203029	HMA SHOULDERS 8	SQ YD	689.000				
50102400	CONC REM	CU YD	412.000				
*REV 50200100	STRUCTURE EXCAVATION	CU YD	12,478.000				
50200450	REM/DISP UNS MATL-STR	CU YD	451.000				
50201101	COFFERDAM TYP 1 LOC 1	EACH	1.000				
*REV 50300225	CONC STRUCT	CU YD	5,330.700				
*REV 50300285	FORM LINER TEX SURF	SQ FT	37,959.000				
50500405	F & E STRUCT STEEL	POUND	5,500.000				
50500505	STUD SHEAR CONNECTORS	EACH	2,263.000				
50800105	REINFORCEMENT BARS	POUND	10,410.000				
*REV 50800205	REINF BARS, EPOXY CTD	POUND	584,340.000				
50901750	PARAPET RAILING	FOOT	2,129.000				
51200958	FUR M S PILE 14X0.250	FOOT	1,006.000				
51201400	FUR STL PILE HP10X42	FOOT	17,202.000				

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*REV 51201800	FUR STL PILE HP14X73	FOOT	28,498.000				
*REV 51202305	DRIVING PILES	FOOT	46,706.000				
51203200	TEST PILE MET SHELLS	EACH	1.000				
51203400	TEST PILE ST HP10X42	EACH	4.000				
51203800	TEST PILE ST HP14X73	EACH	6.000				
51204650	PILE SHOES	EACH	732.000				
*REV 51500100	NAME PLATES	EACH	6.000				
54010603	PCBC 6X3	FOOT	508.000				
542A0217	P CUL CL A 1 12	FOOT	215.000				
542A0220	P CUL CL A 1 15	FOOT	155.000				
542A0223	P CUL CL A 1 18	FOOT	48.000				
542A0229	P CUL CL A 1 24	FOOT	129.000				
542A1057	P CUL CL A 2 12	FOOT	232.000				
542A1069	P CUL CL A 2 24	FOOT	17.000				
542A1909	P CUL CL A 3 24	FOOT	313.000				

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542A2749	P CUL CL A 4 24	FOOT	143.000				
54213657	PRC FLAR END SEC 12	EACH	22.000				
54213660	PRC FLAR END SEC 15	EACH	6.000				
54213663	PRC FLAR END SEC 18	EACH	2.000				
54213669	PRC FLAR END SEC 24	EACH	3.000				
54213675	PRC FLAR END SEC 30	EACH	1.000				
550A0050	STORM SEW CL A 1 12	FOOT	283.000				
550A0070	STORM SEW CL A 1 15	FOOT	12.000				
550A0120	STORM SEW CL A 1 24	FOOT	23.000				
550A0340	STORM SEW CL A 2 12	FOOT	7,614.000				
550A0360	STORM SEW CL A 2 15	FOOT	1,278.000				
550A0380	STORM SEW CL A 2 18	FOOT	2,075.000				
550A0410	STORM SEW CL A 2 24	FOOT	854.000				
550A0430	STORM SEW CL A 2 30	FOOT	334.000				
550A0450	STORM SEW CL A 2 36	FOOT	710.000				

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550A0470	STORM SEW CL A 2 42	FOOT	9.000				
550A0480	STORM SEW CL A 2 48	FOOT	231.000				
550A0640	STORM SEW CL A 3 12	FOOT	26.000				
550A0680	STORM SEW CL A 3 18	FOOT	173.000				
550A0710	STORM SEW CL A 3 24	FOOT	182.000				
550A0750	STORM SEW CL A 3 36	FOOT	291.000				
550A0940	STORM SEW CL A 4 12	FOOT	21.000				
55100300	STORM SEWER REM 8	FOOT	39.000				
55100500	STORM SEWER REM 12	FOOT	5,622.000				
55100700	STORM SEWER REM 15	FOOT	1,911.000				
55100900	STORM SEWER REM 18	FOOT	1,101.000				
55101100	STORM SEWER REM 21	FOOT	20.000				
55101200	STORM SEWER REM 24	FOOT	1,455.000				
55101600	STORM SEWER REM 36	FOOT	113.000				
55101800	STORM SEWER REM 42	FOOT	706.000				

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55101900	STORM SEWER REM 48	FOOT	22.000				
56103100	D I WATER MAIN 8	FOOT	20.000				
56103300	D I WATER MAIN 12	FOOT	1,170.000				
56400400	FIRE HYDNITS RELOCATED	EACH	3.000				
56400825	FIRE HYD W/A V VB & T	EACH	2.000				
59100100	GEOCOMPOSITE WALL DR	SQ YD	3,614.000				
59300100	CONTR LOW-STRENG MATL	CU YD	40.000				
60107600	PIPE UNDERDRAINS 4	FOOT	6,201.000				
60200805	CB TA 4 DIA T8G	EACH	5.000				
60201330	CB TA 4 DIA T23F&G	EACH	39.000				
60201340	CB TA 4 DIA T24F&G	EACH	85.000				
60207605	CB TC T8G	EACH	13.000				
60208240	CB TC T24F&G	EACH	7.000				
60218400	MAN TA 4 DIA T1F CL	EACH	47.000				
60219000	MAN TA 4 DIA T8G	EACH	2.000				

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60221100	MAN TA 5 DIA T1F CL	EACH	13.000				
60221102	MAN TA 5D T1FCL R-PLT	EACH	1.000				
60223800	MAN TA 6 DIA T1F CL	EACH	14.000				
60224005	MAN TA 6 DIA T8G	EACH	3.000				
60224446	MAN TA 7 DIA T1F CL	EACH	1.000				
60237460	INLETS TA T23F&G	EACH	5.000				
60237470	INLETS TA T24F&G	EACH	67.000				
60240305	INLETS TB T10F&G	EACH	1.000				
60240327	INLETS TB T23F&G	EACH	23.000				
60240328	INLETS TB T24F&G	EACH	3.000				
60250200	CB ADJUST	EACH	24.000				
60250400	CB ADJ NEW T1F OL	EACH	17.000				
60251740	CB ADJ NEW T24F&G	EACH	20.000				
60254340	CB RECON NEW T24F&G	EACH	3.000				
60255500	MAN ADJUST	EACH	62.000				

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60257900	MAN RECONST	EACH	3.000				
60260100	INLETS ADJUST	EACH	19.000				
60260300	INLETS ADJ NEW T1F OL	EACH	14.000				
60262700	INLETS RECONST	EACH	1.000				
60264130	INL RECON NEW T23F&G	EACH	1.000				
60403700	LIDS T1 OL	EACH	20.000				
60403800	LIDS T1 CL	EACH	40.000				
60404940	FR & GRATES T23	EACH	41.000				
60404950	FR & GRATES T24	EACH	1.000				
60406000	FR & LIDS T1 OL	EACH	5.000				
60406100	FR & LIDS T1 CL	EACH	5.000				
60500040	REMOV MANHOLES	EACH	25.000				
60500050	REMOV CATCH BAS	EACH	67.000				
60500060	REMOV INLETS	EACH	39.000				
60500070	REMOV MAN - MAIN FLOW	EACH	1.000				

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60500080	REMOV CB - MAIN FLOW	EACH	5.000				
60500405	FILL VALVE VLTS	EACH	5.000				
60600095	CLASS SI CONC OUTLET	CU YD	15.000				
60600605	CONC CURB TB	FOOT	6,109.000				
60602800	CONC GUTTER TB	FOOT	590.000				
60603800	COMB CC&G TB6.12	FOOT	1,701.000				
60604700	COMB CC&G TB6.18 MOD	FOOT	15,185.000				
60605000	COMB CC&G TB6.24	FOOT	20,347.000				
60618300	CONC MEDIAN SURF 4	SQ FT	9,940.000				
60619910	CONC MED TSB6.18	SQ FT	19,508.000				
63000001	SPBGR TY A 6FT POSTS	FOOT	150.000				
63100045	TRAF BAR TERM T2	EACH	1.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	1.000				
63200310	GUARDRAIL REMOV	FOOT	3,251.000				
63700175	CONC BAR 1F 42HT	FOOT	971.000				

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63700900	CONC BARRIER BASE	FOOT	971.000				
66900200	NON SPL WASTE DISPOSL	CU YD	20,000.000				
66900450	SPL WASTE PLNS/REPORT	L SUM	1.000				
66900530	SOIL DISPOSAL ANALY	EACH	15.000				
66901000	BACKFILL PLUGS	CU YD	200.000				
67000600	ENGR FIELD LAB	CAL MO	30.000				
67100100	MOBILIZATION	L SUM	1.000				
70103815	TR CONT SURVEILLANCE	CAL DA	400.000				
70106800	CHANGEABLE MESSAGE SN	CAL MO	48.000				
*REV 70301000	WORK ZONE PAVT MK REM	SQ FT	12,440.000				
*REV 70400100	TEMP CONC BARRIER	FOOT	1,488.000				
*REV 70400200	REL TEMP CONC BARRIER	FOOT	713.000				
*REV 70600255	IMP ATTN TEMP FRN TL2	EACH	10.000				
*ADD 70600322	IMP ATTN REL FRN TL2	EACH	4.000				
72000100	SIGN PANEL T1	SQ FT	785.000				

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*REV 72000200	SIGN PANEL T2	SQ FT	123.000				
72400100	REMOV SIN PAN ASSY TA	EACH	36.000				
72400200	REMOV SIN PAN ASSY TB	EACH	10.000				
72400310	REMOV SIGN PANEL T1	SQ FT	262.000				
72400320	REMOV SIGN PANEL T2	SQ FT	125.000				
72400500	RELOC SIN PAN ASSY TA	EACH	10.000				
72400600	RELOC SIN PAN ASSY TB	EACH	2.000				
72900200	METAL POST TY B	FOOT	790.000				
73000100	WOOD SIN SUPPORT	FOOT	87.000				
78000100	THPL PVT MK LTR & SYM	SQ FT	474.000				
78000200	THPL PVT MK LINE 4	FOOT	11,336.000				
78000400	THPL PVT MK LINE 6	FOOT	2,047.000				
78000600	THPL PVT MK LINE 12	FOOT	405.000				
78000650	THPL PVT MK LINE 24	FOOT	25.000				
78005100	EPOXY PVT MK LTR-SYM	SQ FT	1,466.000				

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*REV 78005110	EPOXY PVT MK LINE 4	FOOT	56,491.000				
78005130	EPOXY PVT MK LINE 6	FOOT	4,505.000				
78005150	EPOXY PVT MK LINE 12	FOOT	1,504.000				
78005180	EPOXY PVT MK LINE 24	FOOT	414.000				
78008200	POLYUREA PM T1 LTR-SY	SQ FT	1,050.000				
78008210	POLYUREA PM T1 LN 4	FOOT	8,800.000				
78008230	POLYUREA PM T1 LN 6	FOOT	4,270.000				
78008250	POLYUREA PM T1 LN 12	FOOT	2,038.000				
78008270	POLYUREA PM T1 LN 24	FOOT	635.000				
78100100	RAISED REFL PAVT MKR	EACH	1,218.000				
78200300	PRISMATIC CURB REFL	EACH	244.000				
78200420	GUARDRAIL MKR TYPE B	EACH	4.000				
*REV 78200530	BAR WALL MKR TYPE C	EACH	75.000				
78201000	TERMINAL MARKER - DA	EACH	1.000				
78300100	PAVT MARKING REMOVAL	SQ FT	8,264.000				

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78300200	RAISED REF PVT MK REM	EACH	500.000				
80400100	ELECT SERV INSTALL	EACH	4.000				
80400200	ELECT UTIL SERV CONN	L SUM	1.000		25,000.000		25,000.000
80500010	SERV INSTALL GRND MT	EACH	2.000				
80500020	SERV INSTALL POLE MT	EACH	2.000				
81028200	UNDRGRD C GALVS 2	FOOT	10,989.000				
81028210	UNDRGRD C GALVS 2 1/2	FOOT	135.000				
81028220	UNDRGRD C GALVS 3	FOOT	349.000				
81028230	UNDRGRD C GALVS 3 1/2	FOOT	9.000				
81028240	UNDRGRD C GALVS 4	FOOT	6,065.000				
81028390	UNDRGRD C PVC 4	FOOT	9,081.000				
81100320	CON AT ST 1 PVC GS	FOOT	624.000				
81100805	CON AT ST 3 PVC GALVS	FOOT	50.000				
81200260	CON EMB STR 3.5 PVC	FOOT	1,020.000				
81300220	JUN BX SS AS 6X6X4	EACH	8.000				

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81300530	JUN BX SS AS 12X10X6	EACH	4.000				
81300945	JUN BX SS AS 24X24X8	EACH	8.000				
81400100	HANDHOLE	EACH	62.000				
81400200	HD HANDHOLE	EACH	15.000				
81400300	DBL HANDHOLE	EACH	9.000				
81603051	UD 3#6#8G XLP USE 1.25	FOOT	6,993.000				
81603060	UD 3#8 #10G XLP USE 1	FOOT	275.000				
81603063	UD 4#10 #10GXLP 1P	FOOT	1,396.000				
81603081	UD 3#2#4GXLP USE 1.5 P	FOOT	23,046.000				
81702110	EC C XLP USE 1C 10	FOOT	2,122.000				
81800300	A CBL 3-1C2 MESS WIRE	FOOT	7,236.000				
82102250	LUM SV HOR MT 250W	EACH	14.000				
82102400	LUM SV HOR MT 400W	EACH	65.000				
82107200	UNDERPAS LUM 100W HPS	EACH	8.000				
83600200	LIGHT POLE FDN 24D	FOOT	540.000				

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83800205	BKWY DEV TR B 15BC	EACH	15.000				
84100110	REM TEMP LIGHT UNIT	EACH	53.000				
84200500	REM LT UNIT SALV	EACH	43.000				
84200804	REM POLE FDN	EACH	44.000				
84500130	REMOV LTG CONTR FDN	EACH	1.000				
86400100	TRANSCEIVER - FIB OPT	EACH	5.000				
87300925	ELCBL C TRACER 14 1C	FOOT	9,777.000				
87301215	ELCBL C SIGNAL 14 2C	FOOT	5,632.000				
87301225	ELCBL C SIGNAL 14 3C	FOOT	9,181.000				
87301245	ELCBL C SIGNAL 14 5C	FOOT	15,505.000				
87301255	ELCBL C SIGNAL 14 7C	FOOT	3,426.000				
87301305	ELCBL C LEAD 14 1PR	FOOT	11,665.000				
87301805	ELCBL C SERV 6 2C	FOOT	658.000				
87301900	ELCBL C EGRDC 6 1C	FOOT	3,438.000				
87502480	TS POST GALVS 14	EACH	4.000				

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87502490	TS POST GALVS 15	EACH	1.000				
87502500	TS POST GALVS 16	EACH	5.000				
87700240	S MAA & P 40	EACH	1.000				
87700250	S MAA & P 42	EACH	1.000				
87700290	S MAA & P 50	EACH	1.000				
87700310	S MAA & P 54	EACH	1.000				
87702960	STL COMB MAA&P 46	EACH	3.000				
87702970	STL COMB MAA&P 48	EACH	2.000				
87702985	STL COMB MAA&P 52	EACH	1.000				
87702990	STL COMB MAA&P 54	EACH	3.000				
87703020	STL COMB MAA&P 58	EACH	1.000				
87703050	STL COMB MAA&P 64	EACH	1.000				
87800100	CONC FDN TY A	FOOT	40.000				
87800150	CONC FDN TY C	FOOT	16.000				
87800415	CONC FDN TY E 36D	FOOT	181.000				

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87800420	CONC FDN TY E 42D	FOOT	42.000				
87900200	DRILL EX HANDHOLE	EACH	7.000				
88030020	SH LED 1F 3S MAM	EACH	42.000				
88030050	SH LED 1F 3S BM	EACH	1.000				
88030070	SH LED 1F 4S BM	EACH	2.000				
88030080	SH LED 1F 4S MAM	EACH	2.000				
88030100	SH LED 1F 5S BM	EACH	1.000				
88030110	SH LED 1F 5S MAM	EACH	5.000				
88030210	SH LED 2F 3S BM	EACH	8.000				
88030240	SH LED 2F 1-3 1-5 BM	EACH	4.000				
88102717	PED SH LED 1F BM CDT	EACH	20.000				
88102747	PED SH LED 2F BM CDT	EACH	3.000				
88200210	TS BACKPLATE LOU ALUM	EACH	49.000				
88500100	INDUCTIVE LOOP DETECT	EACH	47.000				
88600100	DET LOOP T1	FOOT	562.000				

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88600700	PREFORM DETECT LOOP	FOOT	3,295.000				
88700200	LIGHT DETECTOR	EACH	13.000				
88700300	LIGHT DETECTOR AMP	EACH	4.000				
88800100	PED PUSH-BUTTON	EACH	26.000				
89000100	TEMP TR SIG INSTALL	EACH	4.000				
89502300	REM ELCBL FR CON	FOOT	5,474.000				
89502375	REMOV EX TS EQUIP	EACH	3.000				
89502380	REMOV EX HANDHOLE	EACH	39.000				
89502385	REMOV EX CONC FDN	EACH	26.000				

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COMPLETION DATE PLUS GUARANTEED WORKING DAYS

Effective: September 30, 1985

Revised: January 1, 2007

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

“When a completion date plus guaranteed working days is specified, the Contractor shall complete all contract items by 11:59 PM, July 31, 2015 except as specified herein.”

The Contractor will be allowed to complete remaining landscaping, remaining traffic signals, clean up, and punch list items within 10 guaranteed working days after the completion date. Under extenuating circumstances, the Engineer may direct that certain items of work may be completed within the guaranteed working days allowed for clean-up work and punch list items.

Temporary lane closures for this work may be allowed at the discretion of the Engineer.

Article 108.09 of the Standard Specifications 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.

FAILURE TO COMPLETE THE WORK ON TIME

Effective: September 30, 1985

Revised: January 1, 2007

Should the Contractor fail to complete the work on or before the completion date as specified in the Special Provision for “Completion Date Plus Working Days”, or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$ 6,000, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

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RESTRICTION ON WORKING DAYS AFTER A COMPLETION DATE

Effective: January 21, 2003

Revised: January 1, 2007

All temporary lane closures during the period governed by working days after a completion date will not be permitted during the hours of 2:30 p.m. to 6:30 p.m. Monday through Friday.

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

Failure to Open Traffic Lanes to Traffic: Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable and shall pay to the Department the amount of \$250 per lane blocked, not as a penalty but as liquidated and ascertained damages, for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. The Department may deduct such damages from any monies due the Contractor. These damages shall apply during the period governed by working days after a completion date and any extensions of that contract time.

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.

COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS

Effective: May 30, 2003

Revised: June 26, 2003

This contract abuts and/or overlaps with other concurrent contracts as listed below. Each contract includes work items requiring close coordination between the various Contractors regarding the sequence and timing for execution of such work items.

1. Contract 60M61: US 45 Roadway Widening and Reconstruction (159th St. to 143rd St.)
2. Village of Orland Park Landscape contract (171st Street to 131st Street)
3. Contract 60W09 US 45 Advanced Contract (159th Street to 131st Street)

Revised 4-19-2013

Add the following paragraph to the beginning of Article 105.08; "The Contractor shall identify all such work items at the beginning of the contract and coordinate the sequence and timing of their execution and completion with the other Contractor through the Engineer. All of these work items shall be identified as separate line items in the Contractor's proposed Construction Progress Schedule. The Contractor shall submit a daily work schedule to the Resident Engineer for the purpose of coordinating the Contractor's activities for the next working day. The daily schedule must be submitted by 3:00 PM the day before. This schedule is necessary and shall be used by the Engineer to schedule inspection, materials testing and layout checking for the following day's work. Failure to submit schedule may result in a work without inspection and therefore considered unacceptable.

The daily schedule shall include the contractor's or subcontractor's planned work for that day. The schedule shall include the location, the description, the scheduled work hours, and the pay items of work to be performed that day. The schedule shall also include any materials testing requests, layout check request and all traffic control measures to be implemented for that day's work. Additional compensation or the extension of contract time will not be allowed for the progress of work items affected by the lack of such coordination by the Contractor".

Method of Measurement:

This coordination will not be measured for payment.

Basis of Payment:

Preparation and submittal of the Contractor's Daily Work Schedule shall not be paid for separately, but shall be included in the cost of the contract items of work.

STATUS OF UTILITIES TO BE ADJUSTED

Effective: January 30, 1987

Revised: January 24, 2013

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

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Name & Address Of Utility Company	Type and Location	Estimated Duration of Time for the Completion of Relocation or Adjustments
<p>Commonwealth Edison Company 2 Lincoln Center 8th Floor Oakbrook Terrace, IL 60181 Attn: John Pribich (630) 437-2212</p>	<p>Underground electric cable on east side of US 45 from south project limits to Metra bridge, then from near Sta. 322+00 to 131st St Power poles on east side of US 45 from south project limits to Metra bridge Power poles on east side of US 45 from near Sta. 324+45 to near Sta. 327+50 Power poles on east side of US 45 from 131st St. to north project limits Underground cable crossing near Sta.333+40 Underground cable crossing near Sta. 336+05 Underground cable crossing near Sta. 339+70 Underground cable crossing near Sta. 343+10 Underground cable crossing near Sta. 353+85 Underground cable crossing near Sta. 367+40 Underground electric cable on south side of 131st St. from near Sta. 16+00 to near Sta. 22+00 Cable crossing 131st St. near Sta. 16+00 Power poles on south side of 131st St Aerial crossing near Sta. 296+50 Aerial crossing near Sta. 322+04 Aerial crossing near Sta. 323+60 Aerial crossing near Sta. 327+83 Aerial crossing near Sta. 353+89 Aerial crossing near Sta. 361+37 Aerial crossing near Sta. 362+35 Aerial crossing near Sta. 370+80 Aerial crossing near Sta. 378+12</p>	<p>90 days</p>
<p>ATT Legal Mandate Team 1000 Commerce Drive Oak Brook, IL 60523</p>	<p>Telephone cable on west side of US 45 from south project limit to near Sta. 297+00 Telephone cable on west side of US 45 from near Sta. 329+50 to Sta. 353+90 and then along the south side of 131st St. Telephone cable on north side of 131st St. from the east to west limit and crossing at Sta. 354+80. Telephone cable along the south side of 131st St. from near Sta. 19+40 to near Sta. 23+50 Telephone cable along the north side of 131st St. from near Sta. 19+20 to near Sta. 23+00 Cable crossing 131st St. near Sta. 16+80</p> <p>Telephone cable along the west side of US 45 from near Sta. 354+90 to near Sta. 365+65 Telephone cable along west side US 45 from near Sta. 355+00 to near Sta. 374+50. Fiber optic cable on east side of US 45 from</p>	<p>90 days</p> <p>Revised 4-19-2013</p>

Name & Address Of Utility Company	Type and Location	Estimated Duration of Time for the Completion of Relocation or Adjustments
OneOK North System, LLC 2001 South Highway 81 Medford, OK 73759 Attn: Chad Schneeberger Chief Engineer (630) 257-5404 ext. 2507	Pipeline skewed crossing near Sta. 322+20	No Conflict
Wide Open West ILL 1674 Frontenac Road Naperville, IL 60563 Attn: Brian Hurd Construction Manager	Underground cable on east side of US 45 near Sta. 380+50	2 weeks
Peoples Energy SNG Facility, Will County 21100 Noel Road Elwood, IL 60421 Attn: Scott Monday	Gas main crossing near Sta. 361+30 Gas main crossing near Sta. 362+60	Revised 4-19-2013

The above represents the best information available to the Department and is included for the convenience of the bidder. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

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

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

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PUBLIC CONVENIENCE AND SAFETY (DIST 1)

Effective: May 1, 2012

Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

“If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply.”

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

“The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After”

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

“On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.”

TRAFFIC CONTROL PLAN

Effective: September 30, 1985

Revised: January 1, 2007

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, the Traffic Specifications, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Traffic Control Supervisor at (847) 705-4470 at least 72 hours in advance of beginning work.

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STANDARDS:

701101	Off-Road Operations, Multilane, 15' to 24" From Pavement Edge
701106	Off-Road Operations, Multilane, More Than 4.5 m (15') Away
701301	Lane Closure, 2L, 2W, Short Time Operations
701311	Lane Closure, 2L, 2W, Moving Operations - Day Only
701427	Lane Closure, Intermittent or Moving Operations for Speeds < 40 MPH
701602	Urban Lane Closure, Multilane 2W with Bidirectional Left Turn Lane
701701	Urban Lane Closure, Multilane Intersection
701801	Sidewalk, Corner or Crosswalk Closure
701901	Traffic Control Devices
704001	Temporary Concrete Barrier

DETAILS:

TC10	Traffic Control & Protection for Side Roads, Intersections & Driveways
TC11	Raised Reflective Pavement Markers (Snow Plow Resistant)
TC13	District One Typical Pavement Markings
TC14	Traffic Control & Protection at Turn Bays (To Remain Open to Traffic)
TC16	Pavement Marking Letters & Symbols for Traffic Staging
TC21	Detour Signing for Closing State Highways
TC22	Arterial Road Information Sign
TC26	Driveway Entrance Signing

SPECIAL PROVISIONS:

Maintenance of Roadways
Public Convenience and Safety
Traffic Control Plan
Work Zone Traffic Control (Arterials)
Temporary Information Signing
Temporary Pavement
Aggregate Surface Course for Temporary Access
Type III Temporary Pavement Marking Tape for Wet Conditions
Work Zone Pavement Marking Removal
Combination Concrete Curb and Gutter (Special)
Temporary Catch Basins and Inlets
Restriction on Cross Street Construction
Lane Closure Restrictions
Winterized Temporary Access
Guardrail and Barrier Wall Delineation
Work Zone Public Information Signs
Pavement Marking Removal
Pavement Patching
Traffic Control Deficiency Deduction
Polyurea Pavement Markings

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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 items specified to be paid for separately) 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).

RESTRICTION ON CROSS STREET CONSTRUCTION

Cross streets shall remain open to traffic at all times during construction except as follows. The contractor will be allowed to close the following Cross streets;
Creek Road

Add the following paragraph to the beginning of Article 105.08; "The Contractor shall identify the approximate closure date the beginning of the contract and coordinate the sequence and timing of their execution and completion with the Engineer. All of these work items shall be identified as separate line items in the Contractor's proposed Construction Progress Schedule. The contractor shall advise the Resident Engineer 3 weeks prior to the exact closure date. The contractor shall complete all work items on the cross street, except landscaping, and reopen the cross street to traffic within 21 consecutive days of the closure date.

At 4 legged intersections, the contractor will be allowed separate 21 day closures for the east leg of the cross street and west leg of the cross street.

Closure of alternate Cross streets will be permitted. The contractor will not be allowed to close two adjacent cross streets at the same time. During closure of the side street, the contractor shall stage their operations such that driveway access shall remain open at all times. 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 for the duration of the detour.

Method of Measurement and Basis of Payment: All traffic control for cross street construction (including those closed to traffic and detoured) shall not be paid for separately but included in the lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

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Failure to Open Cross Streets to Traffic: Should the Contractor fail to completely open and keep open all the traffic lanes to traffic on the cross streets within 21 consecutive days in accordance with the limitations specified above, the Contractor shall be liable and shall pay to the Department the amount of \$3,000 per day, not as a penalty but as liquidated and ascertained damages, for each day or a portion thereof that the cross street is closed outside the allowable time limitations. The Department may deduct such damages from any monies due the Contractor.

LANE CLOSURE RESTRICTIONS

The Contractor will not be allowed permanent lane closures on US Route 45. All work under this contract must be completed with daily lane closures. Daily lane closures will not be allowed during the times indicated below;

DAY	LANES CLOSURE RESTRICTION TIMES	
	Northbound	Southbound
Monday	2:30 p.m. – 6:30 p.m.	2:30 p.m. – 6:30 p.m.
Tuesday	2:30 p.m. – 6:30 p.m.	2:30 p.m. – 6:30 p.m.
Wednesday	2:30 p.m. – 6:30 p.m.	2:30 p.m. – 6:30 p.m.
Thursday	2:30 p.m. – 6:30 p.m.	2:30 p.m. – 6:30 p.m.
Friday	2:30 p.m. – 6:30 p.m.	2:30 p.m. – 6:30 p.m.
Saturday	11:00 a.m. to 2:00 p.m.	11:00 a.m. to 2:00 p.m.
Sunday	No restrictions	No restrictions

The Contractor shall request and gain approval from the Resident Engineer seventy-two (72) hours in advance of all closures. In addition to the times indicated above, no lane closures will be allowed from Thanksgiving day to January 2nd.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog and as determined by the Engineer. Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events. All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above.' Also, these signs should be taken down within one-half (1/2) hour after the closure is removed. The Contractor will be required to cooperate with all other contractors and utility companies when erecting lane closures.

Failure to Open Traffic Lanes to Traffic: Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable and shall pay to the Department the amount of \$250 per lane blocked, not as a penalty but as liquidated and ascertained damages, for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations.

Unless reconstruction or adjustment of an existing manhole, catch basin, or inlet is called for in the contract plans or ordered by the Engineer, the proposed work should meet the existing elevations of these structures. Should reconstruction or adjustment of a drainage structure be required by the Engineer in the field, the necessary work and payment shall be done in accordance with Section 602 and Article 104.02 respectively, of the Standard Specifications.

Existing frames and grates are to remain unless otherwise noted in the contract plans or as directed by the Engineer. Frames and grates that are missing or damaged prior to construction shall be replaced. The type of replacement frame or grate shall be determined by the Engineer, and replacement and payment for same shall be in accordance with Section 604 and Article 104.02 respectively, of the Standard Specifications unless otherwise noted in the plans or Special Provisions.

The Contractor shall take the necessary precautions when working near or above existing sewers and culverts in order to protect these pipes during construction from any damage resulting from his operations. All work and materials necessary to repair or replace existing pipes damaged because of noncompliance with this provision shall be as directed by the Engineer in accordance with Section 542 or 550 of the Standard Specifications and at the Contractor's own expense, and no extra compensation will be allowed.

During construction, if the Contractor encounters or otherwise becomes aware of any sewers, culverts, or underdrains within the right-of-way other than those shown on the plans, he shall so inform the Engineer who shall direct the work necessary to maintain the facilities in service and to protect them from damage during construction. Complying with this requirement shall not be paid separately but included in the cost of the various drainage pay items.

Revise 1030.02(c) of the Standard Specifications to read:

“(c) RAP Materials (Note 3)1031”

Add the following note to 1030.02 of the Standard Specifications:

Note 3. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

HMA MIXTURE DESIGN REQUIREMENTS (D-1)

Effective: January 1, 2013.

Revised: January 16, 2013

1) Design Composition and Volumetric Requirements

Revise Article 1030.04(a)(1) of the Standard Specifications to read.

“(1)High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) ^{1/}										
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)		100								
1 in. (25 mm)	90	100		100						
3/4 in. (19 mm)		90	82	100		100				
1/2 in. (12.5 mm)	45	75	50	85	90	100		100		100
3/8 in. (9.5 mm)						89	90	100		100
#4 (4.75 mm)	24	42 ^{2/}	24	50 ^{2/}	28	65	28	65	90	100
#8 (2.36 mm)	16	31	20	36	28	48 ^{3/}	32	52 ^{3/}	70	90
#16 (1.18 mm)	10	22	10	25	10	32	10	32	50	65
#50 (300 μm)	4	12	4	12	4	15	4	15	15	30
#100 (150 μm)	3	9	3	9	3	10	3	10	10	18
#200 (75 μm)	3	6	3	6	4	6	4	6	7	9
Ratio Dust/Asphalt Binder		1.0		1.0		1.0		1.0		1.0 ^{4/}

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with Ndesign ≥ 90.

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- 3/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign ≥ 90.
- 4/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.”

Delete Article 1030.04(a)(4) of the Standard Specifications.

Revise Article 1030.04(b)(1) of the Standard Specifications to read.

“(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS						
High ESAL						
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
	IL-25.0	IL-19.0	IL-12.5	IL-9.5	IL-4.75 ^{1/}	
50	12.0	13.0	14.0	15	18.5	65 – 78 ^{2/}
70						
90						
105						

1/ Maximum Draindown for IL-4.75 shall be 0.3%

2/ VFA for IL-4.75 shall be 72-85%”

Delete Article 1030.04(b)(4) of the Standard Specifications.

Revise the Control Limits Table in Article 1030.05(d)(4) of the Standard Specifications to read.

"CONTROL LIMITS					
Parameter	High ESAL Low ESAL	High ESAL Low ESAL	All Other	IL-4.75	IL-4.75
	Individual Test	Moving Avg. of 4	Individual Test	Individual Test	Moving Avg. of 4
% Passing: ^{1/}					
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 15 %		
No. 4 (4.75 mm)	± 5 %	± 4 %	± 10 %		
No. 8 (2.36 mm)	± 5 %	± 3 %			
No. 16 (1.18 mm)				± 4 %	± 3 %
No. 30 (600 µm)	± 4 %	± 2.5 %			
Total Dust Content No. 200 (75 µm)	± 1.5 %	± 1.0 %	± 2.5 %	± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.5 %	± 0.3 %	± 0.2 %
Voids	± 1.2 %	± 1.0 %	± 1.2 %	± 1.2 %	± 1.0 %
VMA	-0.7 % ^{2/}	-0.5 % ^{2/}		-0.7 % ^{2/}	-0.5 % ^{2/}

1/ Based on washed ignition oven

2/ Allowable limit below minimum design VMA requirement"

2) Design Verification and Production

Description. The following states the requirements for Hamburg Wheel and Tensile Strength testing for High ESAL, IL-4.75, and SMA hot mix asphalt (HMA) mixes during mix design verification and production.

When the options of Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement are used by the Contractor, the Hamburg Wheel and tensile strength requirements in this special provision will be superseded by the special provisions for Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement as applicable.

Mix Design Testing. Add the following to Article 1030.04 of the Standard Specifications:

"(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department's verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification meeting the following requirements:

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(1)Hamburg Wheel Test criteria

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions. For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 415 kPa (60 psi) for non-polymer modified performance graded (PG) asphalt binder and 550 kPa (80 psi) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 1380 kPa (200 psi).”

Production Testing. Add the following to Article 1030.06 of the Standard Specifications:

“(c) Hamburg Wheel Test. All HMA mixtures shall be sampled within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day’s production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract. The Department may conduct additional Hamburg Wheel Tests on production material as determined by the Engineer. If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria”

Basis of Payment. Revise the seventh paragraph of Article 406.14 of the Standard Specifications to read:

“For all mixes designed and verified under the Hamburg Wheel criteria, the cost of furnishing and introducing anti-stripping additives in the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

No additional compensation will be awarded to the Contractor because of reduced production rates associated with the addition of the anti-stripping additive.”

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3. Prior to any work being performed by IDOT, or its contractors, on the Premises, IDOT, or its contractor, shall erect, install and maintain adequate barriers, shoring and sheeting which will meet IDOT specifications as approved by Edison, in such locations where in the reasonable opinion of Edison's Representative, such barriers, shoring and sheeting are required to protect its steel structures and other facilities; such barriers, shoring and sheeting shall be removed upon completion of the construction if so requested by Edison;
4. Upon request by Edison there shall be furnished to Edison prior to commencing the work of installing, repairing, replacing or removing any improvements on the Premises, a copy of each policy of insurance or a Certificate of Insurance issued pursuant to the requirements contained herein.

This work will not be paid for separately but shall be included for payment with the various work items involved.

SEEDING, CLASS 4B (MODIFIED)

All work, materials, and equipment shall conform to Section 250 and 1081 of the Standard Specifications except as modified herein.

The Class 4B (Modified) seed mix shall be supplied in pounds of Pure Live Seed. All native species will be local genotype and will be from a radius of 150 miles from the site. The Class 4B (Modified) seed mix shall be supplied with the appropriate inoculants. Fertilizer is not required.

Article 250.07 Seeding Mixtures – Add the following to Table 1:

Class 4B (Modified) – Wetland Grass and Forb Mixture

<u>Seeds</u>	<u>Kg/Hectare</u>	<u>Lb/Acre</u>
Panicum virgatum (Switch Grass)	0.5	(0.5)
Scirpus fluviatilis (River Bulrush)	1.0	(1.0)
Scirpus acutus (Hardstemmed Bulrush)	1.0	(1.0)
Asclepias incarnata (Swamp Milkweed)	0.5	(0.5)
Helenium autumnale (Autumn Sneezeweed)	0.5	(0.5)
Vernonia fasciculata (Ironweed)	0.5	(0.5)
Vernonia altissima (Tall Ironweed)	0.5	(0.5)
Verbena hastata (Blue Vervain)	0.5	(0.5)
Silphium perfoliatum (Cup Plant)	0.5	(0.5)
Oats, Spring (Temporary Cover)	30.0	(25.0)
Redtop (Temporary Cover)	30.0	(25.0)

Notes:

1. Temporary cover seed shall be kept separate from the wetland type mixture. It shall be mixed on site under the direction of the Engineer.
2. Germination tests no older than twelve months old must be submitted for all seed supplied to verify quantities of bulk seed required to achieve KG PLS (LB PLS) specified.

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If specified seed material is unavailable, the Engineer shall approve the substitutes. Adjustments will be made at no cost to the contract. Approval of substitutes shall in no way waive any requirements of the contract.

Article 250.09 – Add Seeding, Class 4B (Modified)

Article 250.10 – Add Seeding, Class 4B (Modified)

DETECTABLE WARNINGS

This work shall consist of the satisfactory installations of prefabricated detectable warnings for concrete sidewalk curb ramps, bituminous path, at areas where public walk blends with vehicular ways, at the locations shown in the plans and as directed by the Engineer. This work shall be completed according to the applicable portions of Section 424 of the Standard Specifications, the Americans with Disabilities Act Accessibility Guidelines and as noted herein.

Materials. Detectable warning shall be a prefabricated system. The color shall be brick red unless otherwise specified. The casting shall be Gray Iron ASTM A48 Class 35 B and/or AASHTO M105, Class 35 B gray iron. Casting shall contain a minimum of 85% recycled material. The following product is approved for use under this contract.

East Jordan – Duralast Detectable Warning Plate
Powder Coated – BRICK RED
HYPERLINK "<http://www.ejco.com>"
1-800-626-4653

Method of Measurement and Basis of Payment. The work shall be measured and paid for at the contract unit price per square foot for DETECTABLE WARNINGS.

REMOVE EXISTING DOUBLE HANDHOLE REMOVE EXISTING CONCRETE FOUNDATION

Removal of existing handholes, double handholes, and concrete foundations shall be according to Article 895.05 and 895.08 of the Standard Specifications.

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PARKING LOT PAVEMENT REMOVAL

This work shall consist of the satisfactory removal of existing parking lot pavements at locations shown in the plans or as directed by the Engineer. The existing asphalt surfaces are estimated to be 3 to 5 inches thick. This work shall be completed according to the applicable portions of Section 440 of the Standard Specifications and as noted herein.

Removal of all or portions of aggregate base course will not be paid for separately, but shall be included for payment as Earth Excavation.

Method of Measurement: This work shall be measured for payment in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for PARKING LOT PAVEMENT REMOVAL.

DRIVEWAY PAVEMENT REMOVAL AND REPLACEMENT FOR STAGING

This work shall consist of removing and replacing driveways in order to place temporary pavements for staged construction at locations shown on the plans in accordance with the applicable portions of Sections 355, 406, 423, and 440 of the Standard Specifications or as direct by the Engineer.

Removal of the existing driveways will be completed in stages. A portion of the driveways will be removed to install the temporary pavement and provide traversable ingress and regress. The remaining portion of the driveway will be removed prior to installation of the final driveway. No additional compensation will be made to the contractor for removal of the driveway in stages.

The portion of the driveway between the edge of the temporary pavement and the limit of removal required staging shall be replaced with Temporary Pavement. The contractor shall use either Portland cement concrete according to Sections 353 and 354 of the Standard Specifications or HMA according to Sections 355, 356, 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement shall be as described in the plans. The contractor shall have the option of constructing either material type if both Portland cement concrete and HMA are shown in the plans

Upon removal of temporary pavements, the driveways shall be replaced in-kind with either bituminous or concrete at the locations and widths shown in the plans.

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Method of Measurement: This work shall be measured for payment in square yards.

Basis of Payment: Removal of the existing driveway shall be paid for at the contract unit price per square yard for DRIVEWAY PAVEMENT REMOVAL. Replacement of the portion of the driveway between the edge of the temporary pavement and the limit of removal required shall be paid for at the contract unit price per square yard for TEMPORARY PAVEMENT. Removal of the portion of temporary driveway between the edge of the temporary pavement and the limit of the driveway removal shall be paid for at the contract unit price per square yard for PAVEMENT REMOVAL. Installation of the final driveway shall be paid at the contract unit price per square yard for PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT of the thickness specified or per the contract unit price per square yard for HMA BASE COURSE of the thickness specified and per the contract unit price per ton for HMA SURFACE COURSE.

COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)

Effective: November 1, 2011

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP materials shall be crushed and screened. Unprocessed RAP grindings will not be permitted. The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP.

GENERAL ELECTRICAL REQUIREMENTS

Effective: January 1, 2012

Add the following to Article 801 of the Standard Specifications:

“Maintenance transfer and Preconstruction Inspection:

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

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

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

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 304.8 mm (one (1) foot) to either side.. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition."

Add the following to the 1st paragraph of Article 801.05(a) of the Standard Specifications:

"Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations."

Revise the second sentence of the 5th paragraph of Article 801.05(a) of the Standard Specifications to read:

"The Engineer will stamp the submittals indicating their status as 'Approved', 'Approved as Noted', 'Disapproved', or 'Information Only'.

Revise the 6th paragraph of Article 801.05(a) of the Standard Specifications to read:

Resubmittals. All submitted items reviewed and marked 'Approved as Noted', or 'Disapproved' are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments."

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Revise Article 801.11(a) of the Standard Specifications to read:

“Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance the of existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.”

Add the following to Section 801 of the Standard Specifications:

“Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.”

“Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.”

Revise the 2nd paragraph of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven days before the request for a final inspection, the full-size set of contract drawings. Stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible.”

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Add the following to Article 801.16 of the Standard Specifications:

“In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following electrical components being installed, modified or being affected in other ways by this contract:

- Last light pole on each circuit
- Handholes
- Conduit roadway crossings
- Controllers
- Control Buildings
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations
- CCTV Camera installations
- Fiber Optic Splice Locations

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

5. Description of item
6. Designation or approximate station if the item is undesignated
7. Latitude
8. Longitude

Examples:

Equipment Description	Equipment Designation	Latitude	Longitude
CCTV Camera pole	ST42	41.580493	-87.793378
FO mainline splice handhole	HHL-ST31	41.558532	-87.792571
Handhole	HH at STA 234+35	41.765532	-87.543571
Electric Service	Elec Srv	41.602248	-87.794053
Conduit crossing	SB IL83 to EB I290 ramp SIDE A	41.584593	-87.793378
Conduit crossing	SB IL83 to EB I290 ramp SIDE B	41.584600	-87.793432
Light Pole	DA03	41.558532	-87.792571
Lighting Controller	X	41.651848	-87.762053
Sign Structure	FGD	41.580493	-87.793378
Video Collection Point	VCP-IK	41.558532	-87.789771
Fiber splice connection	Toll Plaza34	41.606928	-87.794053

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Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 100 feet. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 5 meter accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

ELECTRIC SERVICE INSTALLATION

Effective: January 1, 2012

Description. This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

Method Of Measurement. Electric Service Installation shall be counted, each.

Basis Of Payment. This work will be paid for at the contract unit price each for **ELECTRIC SERVICE INSTALLATION** which shall be payment in full for the work specified herein.

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ELECTRIC UTILITY SERVICE CONNECTION (COMED)

Effective: January 1, 2012

Description. This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

CONSTRUCTION REQUIREMENTS

General. It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by ComEd for its services. Work provided by the Contractor for electric service will be paid separately as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as \$ 25,000.00

Basis Of Payment. This work will be paid for at the contract lump sum price for ELECTRIC UTILITY SERVICE CONNECTION which shall be reimbursement in full for electric utility service charges.

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UNDERGROUND RACEWAYS

Effective: January 1, 2012

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduit shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.04 of the Standard Specifications:

“All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans.”

Add the following to Article 810.04 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped. The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap. The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125”) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

Add the following to Article 810.04(c) of the Standard Specifications:

“Coilable non-metallic conduit shall be machine straightened to remove the longitudinal curvature caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 6 mm (0.25”).” The longitudinal axis of the straightened conduit shall not deviate by more than 20 mm per meter (0.25” per foot” from a straight line. The HDPE and straightening mechanism manufacturer operating temperatures shall be followed.

UNIT DUCT

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

“The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer.”

Revise Article 1088.01(c) to read:

“(c) Coilable Nonmetallic Conduit.

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General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

Marking:

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests:

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

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Duct Diameter		Min. force required to deform sample 50%	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

WIRE AND CABLE

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

Phase Conductor			Messenger wire		
Size AWG	Stranding	Average Insulation Thickness	Minimum Size AWG	Stranding	
		mm	mils		
6	7	1.1	(45)	6	6/1
4	7	1.1	(45)	4	6/1
2	7	1.1	(45)	2	6/1
1/0	19	1.5	(60)	1/0	6/1
2/0	19	1.5	(60)	2/0	6/1
3/0	19	1.5	(60)	3/0	6/1
4/0	19	1.5	(60)	4/0	6/1

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

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Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

LUMINAIRE

Materials:

Luminaires shall be Hubbell Model RLCD of the type and wattage listed in pay items and shown in plans. Finishing for each fixture shall be black.

Effective: January 1, 2012

Add the following to first paragraph of Article 1067(c) of the Standard Specifications:

“The reflector shall not be altered by paint or other opaque coatings which would cover or coat the reflecting surface. Control of the light distribution by any method other than the reflecting material and the aforementioned clear protective coating that will alter the reflective properties of the reflecting surface is unacceptable”

Add the following to Article 1067(f) of the Standard Specifications:

“The ballast shall be a High Pressure Sodium, high power factor, constant wattage auto-regulator, lead type (CWA) for operation on a nominal 240 volt system.”

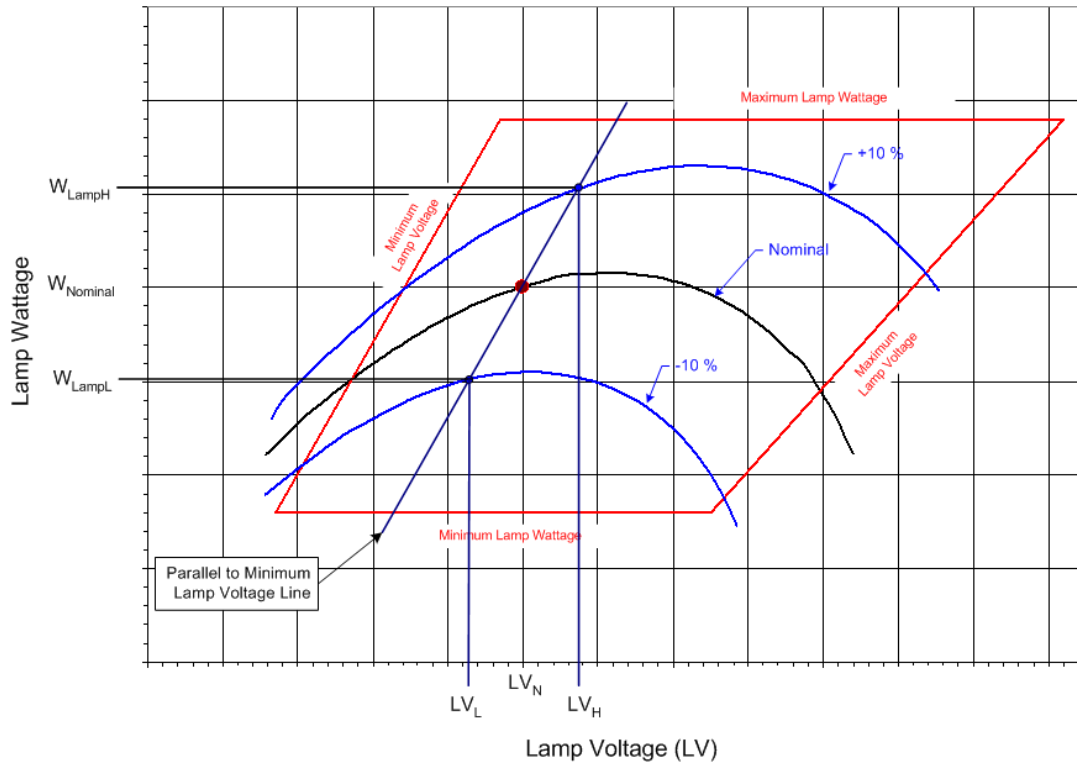
Revise Article 1067(f)(1) of the Standard Specifications to read:

“The high pressure sodium, auto-regulator, lead type (CWA) ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt system. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range. Operating characteristics shall produce output regulation not exceeding the following values:

Nominal Ballast Wattage	Maximum Ballast Regulation
750	25%
400	26%
310	26%
250	26%
150	24%
70	18%

For this measure, regulation shall be defined as the ratio of the lamp watt difference between the upper and lower operating curves to the nominal lamp watts; with the lamp watt difference taken within the ANSI trapezoid at the nominal lamp operating voltage point parallel to the minimum lamp volt line:

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$$\text{Ballast Regulation} = \frac{W_{LampH} - W_{LampL}}{W_{LampN}} \times 100$$

where:

W_{LampH} = lamp watts at +10% line voltage when Lamp voltage = LV_H

W_{LampL} = lamp watts at - 10% line voltage when lamp voltage = LV_L

W_{lampN} = lamp watts at nominal lamp operating voltage = LV_N

Wattage	Nominal Lamp Voltage, LV_N	LV_L	LV_H
750	120v	115v	125v
400	100v	95v	105v
310	100v	95v	105v
250	100v	95v	105v
150	55v	50v	60v
70	52v	47v	57v

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Ballast losses, based on cold bench tests, shall not exceed the following values:

Nominal Ballast Wattage	Maximum Ballast Losses
750	15%
400	20%
310	21%
250	24%
150	26%
70	34%

Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:

$$\text{Ballast Losses} = \frac{W_{Line} - W_{Lamp}}{W_{Lamp}} \times 100$$

where:

W_{line} = line watts at nominal system voltage

W_{lamp} = lamp watts at nominal system voltage

Ballast output to lamp. At nominal system voltage and nominal lamp voltage, the ballast shall deliver lamp wattage with the variation specified in the following table.

Nominal Ballast Wattage	Output to lamp variation
750	± 7.5%
400	± 7.5%
310	± 7.5%
250	± 7.5%
150	± 7.5%
70	± 7.5%

Example: For a 400w luminaire, the ballast shall deliver 400 watts ±7.5% at a lamp voltage of 100v for the nominal system voltage of 240v which is the range of 370w to 430w.

Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage (L_v) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings.

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Nominal Ballast Wattage	LV Readings begin at	Maximum Wattage Variation
750	110v	± 7.5%
400	90v	± 7.5%
310	90v	± 7.5%
250	90v	± 7.5%
150	50v	± 7.5%
70	45v	± 7.5%

Example: For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±7.5% which is 370w to 430w”

Add the following to Article 1067(h) of the Standard Specifications:

“Independent Testing. Independent testing of luminaires shall be required whenever the pay item quantity of luminaires of a given pay item, as indicated on the plans, is 50 or more. For each luminaire type to be so tested, one luminaire plus one luminaire for each 50 luminaires shall be tested. Example: *A plan pay item quantity of 75 luminaires for a specific pay item would dictate that 2 be tested; 135 luminaires would dictate that three be tested.*” If the luminaire performance table is missing from the contract documents, the luminaire(s) shall be tested and the test results shall be evaluated against the manufacturer’s data as provided in the approved material submittal. The test luminaire(s) results shall be equal to or better than the published data. If the test results indicated performance not meeting the published data, the test luminaire will be designated as failed and corrective action as described herein shall be performed.

The Contractor shall be responsible for all costs associated with the specified testing, including but not limited to shipping, travel and lodging costs as well as the costs of the tests themselves, all as part of the bid unit price for this item. Travel, lodging and other associated costs for travel by the Engineer shall be direct-billed to or shall be pre-paid by the Contractor, requiring no direct reimbursement to the Engineer or the independent witness, as applicable”

The Contractor shall select one of the following options for the required testing with the Engineer's approval:

a. Engineer Factory Selection for Independent Lab: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. The Contractor shall propose an independent test laboratory for approval by the Engineer. The selected luminaires shall be marked by the Engineer and shipped to the independent laboratory for tests.

b. Engineer Witness of Independent Lab Test: The Contractor may select this option if the independent testing laboratory is within the state of Illinois. The Engineer shall select, from the project luminaires at the manufacturer’s facility or at the Contractor's storage facility, luminaires for testing by the independent laboratory.

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c. Independent Witness of Manufacturer Testing: The independent witness shall select from the project luminaires at the manufacturers facility or at the Contractor's storage facility, the luminaires for testing. The Contractor shall propose a qualified independent agent, familiar with the luminaire requirements and test procedures, for approval by the Engineer, to witness the required tests as performed by the luminaire manufacturer. Revised 4-19-2013

The independent witness shall as a minimum meet the following requirements:

- ▶ Have been involved with roadway lighting design for at least 15 years.
- ▶ Not have been the employee of a luminaire or ballast manufacturer within the last 5 years.
- ▶ Not associated in any way (plan preparation, construction or supply) with the particular project being tested.
- ▶ Be a member of IESNA in good standing.
- ▶ Provide a list of professional references.

This list is not an all inclusive list and the Engineer will make the final determination as to the acceptability of the proposed independent witness.

d. Engineer Factory Selection and Witness of Manufacturer Testing: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. At the Manufacturer's facility, the Engineer shall select the luminaires to be tested and shall be present during the testing process. The Contractor shall schedule travel by the Engineer to and from the Manufacturer's laboratory to witness the performance of the required tests.

Should any of the tested luminaires fail to satisfy the specifications and perform according to approved submittal information, the luminaire shall be unacceptable and be replaced by alternate equipment meeting the specifications with the submittal and testing process repeated in their entirety; or corrections made to achieve required performance. In the case of corrections, the Contractor shall advise the Engineer of corrections made and shall request a repeat of the specified testing and, if the corrections are deemed reasonable by the Engineer, the testing process shall be repeated. The number of luminaires to be tested shall be the same quantity as originally tested; i.e. if three luminaires were tested originally, one, two or three failed, another three must be tested after corrective action is taken.

Revise Article 1067.06(a)(1) of the Standard Specifications to read:

"The lamps shall be of the clear type and shall have a color of 1900° to 2200° Kelvin."

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Add the following table(s) to Article 1067 of the Standard Specifications:

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE

Given Conditions				
Roadway Data	Pavement Width		North Bound	South Bound
			34 (ft)	34 (ft)
	Number of Lanes		3 (Note 1)	3 (Note 1)
	I.E.S. Surface Classification		R3	R3
	Q-Zero Value		.07	.07
	Median Width		28 (ft)	28 (ft)
Light Pole Data	Mounting Height		47.5 (ft)	47.5 (ft)
	Mast Arm Length		12 (ft)	12 (ft)
	Pole Set-Back	From Edge of Pavement	11 (ft)	11 (ft)
Luminaire Data	Lamp Type		HPS	HPS
	Lamp Lumens		50000	50000
	I.E.S. Vertical Distribution		Medium	Medium
	I.E.S. Control Of Distribution		Cutoff	Cutoff
	I.E.S. Lateral Distribution		Type III	Type III
	Total Light Loss Factor		0.7	0.7
Layout Data	Spacing		240 (ft)	240 (ft)
	Configuration		Opposite	Opposite
	Luminaire Overhang over edge of pavement		1 (ft)	1 (ft)

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

Performance Requirements		
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NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

Luminance	Average Luminance, L_{AVE}	<u>0.9 Cd/m²</u>
	Uniformity Ratio, L_{AVE}/L_{MIN}	<u>3 (Max)</u>
	Uniformity Ratio, L_{MAX}/L_{MIN}	<u>5 (Max)</u>
	Veiling Luminance Ratio, L_v/L_{AVE}	<u>0.3 (Max)</u>

Notes:

1. Divided highway geometry. There are three lanes in each direction of traffic plus median.

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TEMPORARY LUMINAIRE

Description: This item shall consist of furnishing material and labor necessary for installation temporary luminaires.

Materials: Materials shall be according to the following Articles 1067 of Standard Specifications, Section 1000 – Materials, and the requirements of Special Provision **LUMINAIRE** listed above.

Testing as listed in special Provision **LUMINAIRE** is not required.

Method of Measurement: This work shall be measured for each TEMPORARY LUMINAIRE of type and wattage installed complete.

Basis of Payment: This work shall be paid for at the contract unit price each TEMPORARY LUMINAIRE of type and wattage and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

MAINTENANCE OF LIGHTING SYSTEMS

Effective: January 1, 2012

Replace Article 801.11 and 801.12 of the Standard Specifications with the following:

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

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

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

Maintenance of Existing Lighting Systems

Existing lighting systems. Existing lighting systems shall be defined as any lighting system or part of a lighting system in service at the time of contract Letting. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

Extent of Maintenance.

Partial Maintenance. Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer.

Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits.

Maintenance of Proposed Lighting Systems

Proposed Lighting Systems. Proposed lighting systems shall be defined as any lighting system or part of a lighting system, temporary or permanent, which is to be constructed under this contract.

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The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, vandalism, or other means. The potential cost of replacing or repairing any malfunctioning, damaged, or vandalized equipment shall be included in the bid price of this item and will not be paid for separately.

Lighting System Maintenance Operations

The Contractor's responsibility shall include all applicable responsibilities of the Village of Orland Park. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the contractor within the time limits specified herein.

If the equipment damaged by normal vehicular traffic, not contractor operations, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

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INCIDENT OR PROBLEM	SERVICE RESPONSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	na	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	na
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive lights	1 hour	4 hours	na
Outage of 75% of lights on one tower	1 hour	4 hours	na
Outage of light nearest RR crossing approach, Islands and gores	1 hour	4 hours	na
Outage (single or multiple) found on night outage survey or reported to EMC	na	na	7 Calendar days
Navigation light outage	na	na	24 hours

- **Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- **Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- **Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Village of Orland Park reserves the right to assign any work not completed within this timeframe to the Village Maintenance Electrical Maintenance or their Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Village of Orland Park Electrical Maintenance or Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from any monies owed to the Contractor. Repeated failures and/or a gross failure of maintenance shall result in the Village's Electrical Maintenance or Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

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Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

Operation of Lighting

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods.

Method of Measurement

The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request. Months in which the lighting systems are not maintained and not operational will not be paid for. Payment shall not be made retroactively for months in which lighting systems were not operational.

Basis of Payment. Maintenance of lighting systems shall be paid for at the contract unit price per calendar month for MAINTENANCE OF LIGHTING SYSTEM, which shall include all work as described herein.

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REMOVE EXISTING HANDHOLE

Description: This work shall consist of removal and disposal of existing concrete or composite handhole.

CONSTRUCTION REQUIREMENTS:

Indicated handholes shall be completely removed with all removed materials disposed of according to Article 202.03. The void caused by the removal of the handholes shall be backfilled according to Article 819.04.

Method Of Measurement: Each handhole removed and disposed of shall be counted, each.

Basis Of Payment: This work will be paid at the contract unit price each for REMOVE EXISTING HANDHOLE which shall be payment in full for the removal and disposal of concrete or composite handholes as specified herein.

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TEMPORARY WOOD POLE

Description: This item shall consist of furnishing material and labor necessary for installation of a temporary wood pole complete with all hardware and accessories required for the intended temporary use of the poles as specified herein, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section
	(a) Wood Pole 1069.04
	(b) Grounding Materials 1087.01

CONSTRUCTION REQUIREMENTS

General: This item shall be constructed in full accord with Section 830 of the Standard Specifications and the details as indicated in the Contract Drawings.

Method of Measurement: This work shall be measured each for TEMPORARY WOOD POLE of mounting height and class, and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for TEMPORARY WOOD POLE of mounting height and class.

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LIGHT POLE WOOD

Description: This item shall consist of furnishing material and labor necessary for installation of a temporary wood pole complete with an aluminum mast arm of length shown in plans, all hardware and accessories required for the intended temporary use of the poles as specified herein, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section	
	(a) Wood Pole 1069.04	
	(b) Grounding Materials	1087.01

CONSTRUCTION REQUIREMENTS

General: This item shall be constructed in full accord with Section 830 of the Standard Specifications and the details as indicated in the Contract Drawings.

Method of Measurement: This work shall be measured for each LIGHT POLE WOOD of mounting height and class installed complete.

Basis of Payment: This work shall be paid for at the contract unit price each for LIGHT POLE WOOD of mounting height, class and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

LIGHT POLE SPECIAL

Description: This item shall consist of furnishing material and labor necessary for installation of Village of Orland Park Standard black aluminum light poles complete with mast arm, breakaway transformer base, banner arms, holiday bracket arm, festoon receptacle and all hardware accessories required, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section	
	(a) Aluminum Pole	1069.02
	(b) Grounding Materials	1087.01
	(c) Pole/Unit Identification	1069.06
	(d) Breakaway Devices	1070.04

Pole: Pole shall be a Valmont aluminum transformer base pole Model No.: 450260108T4C. Pole shall be have a “Valmont – Powder Black DBL” finish. Pole shall include a vibration damper. Provisions for a festoon outlet shall be included as shown on plans.

Mast Arm: Pole shall include a 12 foot mast arm with same finish as pole. Valmont Model No. 1TB1234C60ZB. Finish shall match the pole.

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Breakaway Transformer Base: Transformer base shall be a Valmont Model No. 10R145153B09 with the same finish (black) as the pole.

Banner Arms: The banner arms shall be 32" wide x 72" tall clamp on type. Finish (black) shall match the pole.

Holiday Bracket: The holiday bracket arm is a custom manufactured bracket to support the Village's Holiday Snowflake ornament. Finish (black) shall match the pole. Holiday Bracket is manufactured by:

Permalites
1305 Schoolhouse Road
New Lenox, IL
815-485-5530 or 815-953-7116

CONSTRUCTION REQUIREMENTS

General: This item shall be constructed in full accord with Section 830 of the Standard Specifications and the details as indicated in the Contract Drawings.

Method of Measurement: This work shall be measured for each LIGHT POLE SPECIAL of mounting height, class and arm (quantity and length) installed complete.

Basis of Payment: This work shall be paid for at the contract unit price each for LIGHT POLE SPECIAL of mounting height, class and arm (quantity and length) and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

TEMPORARY LIGHTING CONTROLLER

Description: This item shall consist of furnishing and installing a temporary lighting controller complete with the wood pole of the size indicated on the drawings and wiring for the control of highway lighting as specified herein, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 - Materials

Item	Article/Section
	(a) Lighting Controller 1068.01
	(b) Grounding for Lighting 1087.01
	(c) Transformer, General Purpose 1068.02
	(d) Lightning Protection - Lighting 1065.02
	(e) Wood Pole 1069.04

CONSTRUCTION REQUIREMENTS

General: This item shall be constructed in full accord with Section 825 of the Standard Specifications and the details as indicated in the Contract Drawings.

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Method of Measurement: This work shall be measured each for TEMPORARY LIGHTING CONTROLLER and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for TEMPORARY LIGHTING CONTROLLER.

LIGHTING CONTROLLER, SPECIAL

Description: This item shall consist of furnishing and installing a lighting controller complete with foundation and wiring for the control of highway lighting as specified herein, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section
	(a) Lighting Controller 1068.01
	(b) Grounding for Lighting 1087.01
	(c) Transformer, General Purpose 1068.02
	(d) Lightning Protection - Lighting 1065.02

CONSTRUCTION REQUIREMENTS:

General: This item shall be constructed in full accord with Section 825 of the Standard Specifications and the details as indicated in the Contract Drawings.

Lighting Controller Foundation: Lighting controller foundation shall be constructed in accordance with the drawings at the locations specified. The foundation shall extend no less than 42" below finished grade, and include anchor bolts cast in place for attaching the cabinet. Anchor bolt locating shall be set using a template for the specific controller to be located on that foundation. Sleeves or PVC conduit shall be cast into the foundation for all proposed lighting circuits and electric service. Two additional 4" diameter PVC conduit sleeves shall be provided as spare. The spare sleeves shall extend 3' horizontally beyond the foundation and be capped at the end. The lighting controller foundation shall be large enough to support the roadway lighting control cabinet and the step-down transformer for the festoon receptacles mounted next to the controller cabinet.

Method of Measurement: This work shall be measured each for LIGHTING CONTROLLER, SPECIAL and shall include furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for LIGHTING CONTROLLER, SPECIAL.

COMBINATION LIGHTING CONTROLLER

Description: This item shall consist of furnishing and installing a combination lighting controller complete with the enclosure indicated on the drawings and wiring for the control of highway lighting as specified herein, shown on the Contract Drawings and as directed by the Engineer.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section
	(a) Lighting Controller 1068.01
	(b) Grounding for Lighting 1087.01
	(c) Lightning Protection - Lighting 1065.02

CONSTRUCTION REQUIREMENTS:

General: This item shall be constructed in full accord with Section 825 of the Standard Specifications and the details as indicated in the Contract Drawings. Enclosure for the combination lighting Controller shall meet the requirements for “Wall Mount Enclosure” as stated in article 1068.01.

Method of Measurement: This work shall be measured each for COMBINATION LIGHTING CONTROLLER installed.

Basis of Payment: This work shall be paid for at the contract unit price each for COMBINATION LIGHTING CONTROLLER which price shall be payment in full for furnishing, installing, shipping, handling, tools and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the engineer

REMOVE EXISTING LIGHTING CONTROLLER AND SALVAGE

Description: This work shall consist of disconnecting, removing, and transportation to the Owner’s Electrical Maintenance facility of an existing lighting controller, or designated components thereof, as specified herein and as directed by the Engineer.

CONSTRUCTION REQUIREMENTS

General. Prior to the removal of any equipment, the Contractor shall arrange an inventory inspection with the Engineer. All equipment shall be inspected and logged as to type, size and condition. The Engineer will then direct the Contractor as to that portion of the controller which is deemed salvageable and this may range from the entire controller, complete to none of the controller. If, in the Engineer’s judgment, the bulk of the controller is not salvageable, the Contractor shall carefully disconnect and remove the designated salvageable components and those components shall be delivered as described. Items deemed not salvageable by the Engineer shall, upon removal become property of the Contractor and shall then be disposed of off the site.

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No removal work shall be permitted without approval from the Engineer. Direct buried underground electric cables need not be removed. Cables which are abandoned shall be cut one foot below ground level. Cables in unit duct may be removed from the duct and become property of the Contractor. Duct shall be abandoned and cut one foot below ground level.

Except as otherwise indicated, the cabinet, control equipment, and all associated hardware and appurtenances, including the breaker box and safety switch, shall remain the property of the Owner and shall be delivered to the Owner or the Owner's electrical maintenance facility.

Unless otherwise directed by the Engineer, the concrete foundation shall be removed to at least two feet below grade and shall become the property of the Contractor and disposed of off the job site. The underground conduits and cables shall be separated from the foundation at 2.5 feet below grade and abandoned. The space caused by the removal shall be backfilled with trench backfill in accordance the Standard Specifications.

Any damage resulting from the removal and/or transportation of the cabinet, control equipment, and associated hardware, shall be repaired to its original condition, or replaced in kind, at the Contractor's own expense, to the satisfaction of the Engineer. The Engineer shall be the sole judge to determine the extent of damage.

Method of Measurement. Each lighting controller, and all associated control equipment, which is removed and delivered to storage shall be counted as a unit for payment.

Basis of Payment: This item will be paid for at the contract unit price each for REMOVE EXISTING LIGHTING CONTROLLER, SALVAGE, which shall be payment in full for the work described herein.

REMOVE AND RELOCATE EXISTING LIGHT STANDARD

Description: This item consists of removing an existing light standard and reinstalling the unit on a proposed foundation in locations as directed by the Engineer. All appurtenant materials and work required for the relocation shall be included as part of this item.

Unless otherwise indicated, the existing light standard consists of an aluminum pole shaft, mast arm and luminaire.

CONSTRUCTION REQUIREMENTS

Removal and Reinstallation: The existing light standard shall be disconnected and removed from the existing foundation by way of removing the anchor bolt nuts and lifting the light standard from the foundation. Unless otherwise indicated, removal of existing foundation shall not be part of this pay item and will be paid separately.

Any damage sustained to the light standard during removal operations shall be repaired, or replaced in kind, to the satisfaction of the Engineer at contractor's own expense.

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Unless otherwise indicated, the light standard shall be installed immediately on the proposed foundation. The electric cables shall be connected to power supply cables so that the reinstalled light standard becomes operational the following evening without interruption. Temporary wiring may be permitted at the discretion of the Engineer.

This Item shall include wiring extensions, including conduit and/or duct, cable splicing and the furnishing and installing of standard or quick-disconnect type fuse holders as applicable, and fuses as specified under Article 1065.01. If a conduit or duct extension is required, the conduit and/or duct maybe spliced and a new span of cable shall be installed. The Engineer shall inspect all conduit and/or duct splices before backfilling.

Unless otherwise indicated, the existing pole wire shall be preserved and reconnected to the proposed underground wiring.

The anchor bolt covers of the lighting unit shall be removed and reinstalled. If during removal, the screws holding the cover break, a hole in the pole base shall be drilled and threaded to accept a new screw. The new screw shall be a nylon screw with a metal core.

The handhole cover of the lighting unit shall be removed and reinstalled. If during removal, the screws holding the cover break, a new hole shall be drilled and threaded to accept a new screw of the nylon-metal core type.

There shall be no need to remove the mast arm during removal and resetting operations of the light standard.

There shall be no need to remove the luminaire during the removal and resetting operations of the light standard unit, unless directed otherwise by the Engineer

The mast arm and/or luminaire may be removed and reinstalled, at the option of the Contractor, with the approval of the Engineer. No additional compensation will be paid for these operations

Any damage to the identification occurring prior to final acceptance shall then be repaired or replaced under this item, in conformance with the specifications under General Electrical Requirements elsewhere herein, at no additional cost to the State.

The existing circuit identification and the identification shown on the Drawings shall be compared and where the existing identification must be changed to conform to the Drawings, the removal and replacement of identification shall be included incidental to this item.

Method of Measurement: This work shall be measured for each REMOVE AND RELOCATE EXISTING LIGHT STANDARD removed and installed shall be counted as a unit for payment.

Basis of Payment: This work will be paid at the contract unit each for REMOVE AND RELOCATE EXISTING LIGHT STANDARD, which shall be payment in full for all material, labor, equipment, tools and all incidentals necessary for the completion of this work as described herein and elsewhere in the contract documents.

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LIGHT POLE FOUNDATION, OFFSET

Description: This work shall consist of furnishing and installing all materials to construct an offset light pole foundation where needed.

General: Work shall be according to IDOT standard specifications section 836. Foundation shall be constructed according to light pole foundation offset detail Drawing.

Method of Measurement: Each LIGHT POLE FOUNDATION, OFFSET will be measured for payment in feet in place. Offsets in the foundation will be measured along the vertical and horizontal centerlines of the foundation without overlap.

Basis of Payment: Concrete foundations will be paid for at the contract unit price per foot for LIGHT POLE FOUNDATION, OFFSET of the diameter specified.

GFCI RECEPTACLE

Description: This item shall consist of furnishing and installing a 20 amp ground fault circuit interrupting receptacle and outdoor box cover on a light pole. The work shall include furnishing and installing fuses and fuse blocks in pole and all wiring associated with the receptacle inside the pole.

Materials: Materials shall be according to the following Articles of Standard Specifications, Section 1000 – Materials.

Item	Article/Section	
	(a) Wire in the Pole	1066.09
	(b) Fuseholders and Fuses	1065.01

GFCI Receptacle: The receptacle shall be a 20 amp, 120 volt duplex ground fault interrupting premium specification grade. Receptacle shall be Black. The receptacle box shall be black weather resistant.

Outdoor Cover: The cover shall be designed for while in use. The cover shall be a rugged UV resistant polycarbonate cover and back protects devices without cracking or breaking and is non-corrosive and nonconductive.

CONSTRUCTION REQUIREMENTS:

General: Pole wire shall be provided for the receptacle. Included with the pole wiring shall be fusing located in the handhole. Wire shall be trained within the pole so as to avoid abrasion or damage to the insulation. Wires shall be terminated so all strands are extended to the full depth of the terminal lug with the insulation removed far enough so it abuts against the shoulder of the lug, but is not compressed as the lug is tightened.

Method of Measurement: This work shall be measured each for GFCI RECEPTACLE installed.

Basis of Payment: This work shall be paid for at the contract unit price each for GFCI RECEPTACLE which price shall be payment in full for furnishing, installing and appurtenances necessary for a complete and operational unit as indicated on the drawings and as approved by the Engineer.

PROTECTION AND MAINTENANCE OF EXISTING UNDERPASS LUMINAIRES

Description: This item shall consist of providing protection, temporary support, removal and reattachment as required, of the existing underpass lighting system. The system consists of, but not limited to, luminaires, junction boxes, raceways, support equipment and conductors. Any wiring required to maintain the operation of the underpass or other circuits feed through the underpass lighting system shall be included in this item.

Materials: Materials shall be according to the following Articles of Section 1000 – Materials

Item	Article/Section
(a) Electric Raceway Material.....	1088
(b) Conductors.....	1066.02
(c) Insulation.....	1066.03(b)

CONSTRUCTION REQUIREMENTS

General: Before performing any work, an inventory of all missing hardware of the existing lighting system shall be taken jointly by the Contractor and the Engineer.

Protection During Deck Reconstruction: Luminaires and conduit hangers attached to the bridge deck shall be removed prior to the removal of the existing bridge deck. The luminaires and the conduits shall be temporarily supported during bridge deck reconstruction. The method of support shall be structurally equivalent to the existing system and shall be approved by the Engineer. Existing vertical clearances shall be maintained at all times.

The underpass luminaires and hardware shall be protected from overhead debris during the removal and reconstruction of the bridge deck. The underpass luminaire protection shall be coordinated with the protective shield as described elsewhere in these Special Provisions.

The underpass lighting system shall be protected from spills and over-spray during any painting operations. Spills and over-spray shall be removed by the Contractor at no additional expense to the State. If spills or over-spray occur on the luminaire lens, the luminaire lens shall be replaced with new lens from the luminaire manufacturer at no additional cost to the State.

Prior to bridge deck removal the Contractor shall measure and log the location of all existing conduit and luminaire hangers for reattachment purposes. Upon completion of the bridge deck reconstruction, the existing underpass lighting system shall be permanently reattached at these locations. New heavy duty expansion anchors, as approved by the Engineer, shall be used. New hangers may be installed at the option of the Contractor. The new hangers shall be equivalent to the existing hangers or as approved by the Engineer. The cost of the new expansion anchors and hangers shall be included in this pay item.

Damage to Underpass Lighting System: Should the lighting system be damaged through the Contractor's operations, repairs shall be made by the Contractor at no additional cost to the State.

All repairs shall be performed expeditiously and shall be approved by the Engineer. The Contractor shall conduct his work in a manner as not to keep out of service any of the lighting between 4:00 PM and 8:00 AM. All lights shall be tested daily and any necessary repairs shall be made immediately without delay.

Damaged cable shall be replaced in complete spans, no underground splices will be allowed. Temporary aerial quadraplex cable may be used to maintain luminaires operational provided it does not interfere with traffic or other operations as determined by the Engineer.

Grounding of Existing Lighting System: As indicated on the plans, the Contractor shall furnish and install a grounding conductor for the underpass lighting system in all existing conduits, junction boxes and luminaires. The ground conductor shall be a 1/C #10 AWG EPR (Type-RHW) green insulated conductor. The new ground conductor shall be connected to the existing ground conductor in the main junction box. The cost of this work shall be included in this pay item.

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The continuity and continued operation of the adjacent lighting system shall be the responsibility of the Contractor. Any temporary wiring required to comply with this requirement shall be included in this item.

Basis of Payment: This work shall be paid for at the contract lump sum price for PROTECT AND MAINTAIN EXISTING UNDERPASS LUMINAIRE, which shall be payment for the work as described herein and as indicated in the plans.

PERMANENT STEEL SHEET PILING (LRFD)

Effective: January 31, 2012

Revised: August 17, 2012

Description. This work shall consist of furnishing and installing the permanent sheet piling to the limits and tolerances shown on the plans according to Section 512 of the Standard Specifications.

Material. The sheet piling shall be made of steel and shall be new material. Unless otherwise specified the sheeting shall have a minimum yield strength of 50 ksi (345 MPa) according to ASTM A 572. The sheeting shall be identifiable and free of bends and other structural defects. The Contractor shall furnish a copy of the published sheet pile section properties to the Engineer for verification purposes. The Engineer's approval will be required prior to driving any sheeting. All driven sheeting not approved by the Engineer shall be removed at the Contractor's expense.

The Contractor shall furnish a sheet pile section, to be used for each wall section, with a published section modulus equal to or larger than that specified on the plans.

The selection of the sheet pile section shall not relieve the Contractor of the responsibility to satisfy all details including minimum clearances, cover, reinforcement, shear stud locations, interlocking, and field cutting. Any modifications of the plans to accommodate the Contractor's selection shall be paid for by the Contractor and subject to the approval of the Engineer.

Construction. The Contractor shall verify locations of all underground utilities before driving any sheet piling. 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. The Contractor shall be responsible for determining the appropriate equipment necessary to drive the sheeting to the tip elevation(s) specified on the plans or according to the Contractor's approved design. The sheet piling shall be driven, as a minimum, to the tip elevation(s) specified, prior to commencing any related construction. If unable to reach the minimum tip elevation, the adequacy of the sheet piling design will require re-evaluation by the Department prior to allowing construction adjacent to the sheet piling in question.

Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, etc.) that cannot be driven through with normal driving procedures, but requires special equipment to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction.

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WEEP HOLE DRAINS FOR ABUTMENTS, WINGWALLS, RETAINING WALLS AND CULVERTS

Effective: April 19, 2012

Delete the last paragraphs of 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 title of 1040.07 to Geocomposite Wall Drains and Strip Drains.

BIAXIAL GEOGRID

This work shall consist of furnishing and installing Biaxial Geogrid at locations shown on the plans and in accordance with the manufacturer's recommendations.

The allowable tensile strength of the biaxial geogrid after all reductions shall meet or exceed the Required Tensile Strength (T_{rp}) shown on the plans. The tensile strength of the biaxial geogrid at 5% strain shall meet or exceed the "Tensile Strength at 5% Strain" requirement shown on the plans.

Biaxial Geogrid will be measured for payment in place and the area computed in square yards.

Biaxial Geogrid will be paid for the contract unit price per square yard for BIAXIAL GEOGRID.

ORNAMENTAL RAILING

Description. This work shall consist of designing, furnishing and installing new aluminum pedestrian railings as shown on the Plans. The work shall conform to the applicable portions of Section 509 of the IDOT Standard Specifications, except as specified herein.

General. The Contractor shall submit complete design calculations and shop drawings to the Engineer for review and approval prior to ordering of materials. The railing design shall be in accordance with the AASTHO LRFD Bridge Design Specifications, 2012. All submittals shall be sealed by an Illinois Licensed Structural Engineer.

Materials. Brackets, Flanges, and Anchors shall be of the same metal and finish as supported rails unless otherwise indicated.

Aluminum alloy and temper provided shall be recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below:

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- A. Extruded Bars and Shapes, Including Extruded Tubing: ASTM B 221, Alloy 6063-T5/T52.
- B. Extruded Structural Pipe and Round Tubing: ASTM B 429/B 429M, Alloy 6063-T6.
- C. Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- D. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.
- E. Castings: ASTM B 26/B 26M, Alloy A356-T6.

Fasteners. Unless otherwise indicated, the following shall be provided:

- 1. Aluminum Components: Type 304 stainless-steel fasteners.
- 2. Stainless-Steel Components: Type 304 stainless-steel fasteners.
- 3. Dissimilar Metals: Type 304 stainless-steel fasteners.

Anchors shall be capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

Post-Installed Anchors shall be torque-controlled expansion anchors.

Fabrication

General: Railings shall be fabricated to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

Connections: Railings shall be fabricated with welded or non-welded connections unless otherwise indicated.

Welded Connections: Components shall be coped at connections to provide close fit, or fittings designed for this purpose shall be used. Connections shall be welded all around, including at fittings. At exposed connections, welds shall be finished to comply with National Ornamental and Miscellaneous Metals Association (NOMMA) "Voluntary Joint Finish Standards" for Type 1 welds: no evidence of a welded joint.

Brazed Connections: Copper-alloy railings shall be connected by brazing. Components shall be coped at connections to provide close fit, or fittings designed for this purpose shall be used. Corners and seams shall be continuously brazed.

At exposed connections, exposed surfaces shall be finished smooth and blended so no roughness shows after finishing and brazed surface matches contours of adjoining surfaces.

Mechanical Connections: Members shall be connected with concealed mechanical fasteners and fittings.

Changes in direction shall be formed by bending or by inserting prefabricated elbow fittings.

Members shall be bent in jigs to produce uniform curvature for each configuration required; cross section of member shall be maintained throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

Exposed ends of hollow railing members shall be closed with prefabricated end fittings.

Brackets, Flanges, Fittings, and Anchors: Wall brackets, flanges, miscellaneous fittings, and anchors shall be provided to interconnect railing members to other work unless otherwise indicated.

Finish. The factory applied finish shall be a Black Powder Coat finish to match the existing railing installed elsewhere along the corridor at the intersection of US 45 at 143rd Street.

Installation. Cutting, drilling, and fitting shall be performed as required for installing railings. Railings shall be set accurately in location, alignment, and elevation; measured from established lines and levels and free of rack. Posts shall be set plumb within a tolerance of 1/16 inch in 3 feet. Rails shall be aligned so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet).

Corrosion Protection: Concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, shall be coated with a heavy coat of bituminous paint.

Posts shall be anchored to concrete and metal surfaces as indicated using fittings designed and engineered for this purpose.

Railing posts not mounted on top of concrete walls or walks shall be set in concrete footers having a minimum depth of 36 inches.

Basis of Payment:

This work will be measured and paid for at the contract unit price per foot for ORNAMENTAL RAILING which price shall include all labor, materials, equipment, tools and incidentals necessary to complete this item as specified.

WATERSTOPS

This work shall consist of furnishing and installing self-expanding strip waterstops at the locations shown on the plans or as directed by the Engineer. This work shall be completed according to the applicable portions of Section 503 of the Standard Specifications and following the selected manufacturer's recommendations.

Materials: Manufactured rectangular or trapezoidal strip, sodium bentonite or other hydrophilic material for adhesive bonding to concrete.

Manufacturers: Subject to compliance with requirements, products that may be incorporated into the work include:

- a) Volclay Waterstop-RX; Colloid Environmental Technologies Co.
- b) Conseal CS-231; Concrete Sealants Inc.
- c) Swellseal Joint; De Neef Construction Chemicals Inc.
- d) Hydrotite; Greenstreak
- e) Mirastop; Mirafi Moisture Protection
- f) Adeka Ultra Seal; Mitsubishi International Corporation
- g) Superstop; Progress Unlimited Inc.
- h) Hydro-Flex; Henry Company

Method of Measurement: This work shall not be measured.

Basis of Payment: This work will not be paid for separately but included in the cost of CONCRETE STRUCTURES.

BARRIER MEDIAN REMOVAL

This work shall consist of removing both the concrete curb and gutter and concrete median that has been poured monolithic at the locations shown on the plans that are adjacent to left turn lanes in accordance with the applicable portions of section 440 of the Standard Specifications. The removal shall end 5' prior to any traffic signal hand holes. The top portion of the 5' length of barrier median that is to remain shall be removed and transitioned to meet the elevation of the existing pavement. No additional compensation will be made for the height of the barrier median.

Method of Measurement and Basis of Payment: This work will be measured and paid for at the contract unit price per square foot for BARRIER MEDIAN REMOVAL.

CONCRETE MEDIAN REMOVAL

This work shall consist of the satisfactory removal of existing concrete median surface at locations shown in the plans and as directed by the Engineer. This work shall be completed according to the applicable portions of Section 440 of the Standard Specifications and as noted herein.

Curb and gutter removal around the perimeter of the islands will be measured and paid for separately.

Method of Measurement: This work shall be measured for payment in square feet.

Basis of Payment: This work will be paid for at the contract unit price per square foot for CONCRETE MEDIAN REMOVAL.

SLEEPER SLAB

Description:

This work shall consist of the construction of reinforced concrete sleeper slabs for pavement separation joints at locations shown in the plans and as directed by the Engineer. This work shall be completed according to the applicable portions of Section 420 of the Standard Specifications and District 1 Standard BD 52.

Method of Measurement: This work shall be measured in place by the lineal foot along the centerline of joint parallel to US 45.

Basis of Payment: This work will be paid for at the contract unit price per foot for SLEEPER SLAB, including bond breaker, joint sealer and reinforcing bars.

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(a) Upon construction of the winterized temporary access, sixty percent of the contract unit price per square yard will be paid.

(b) Subject to the approval of the Engineer for the adequate maintenance and removal of the winterized temporary access, the remaining forty percent of the pay item will be paid upon the permanent removal of the temporary access.

VILLAGE OF ORLAND PARK FIBER OPTIC CONDUIT

Description:

This work shall consist of furnishing and installing PVC and Galvanized Steel Conduit, Concrete Handholes and all necessary appurtenances of the required material as shown on the Drawings and in conformance with the applicable portions of these Special Provisions, and portions of the Illinois Department of Transportation (IDOT) "Standard Specifications For Road and Bridge Construction" Sections 810, and 814, where applicable, including Basis of Payment. All Conduit/appurtenance work shall be in conformance with the National Electric Code, State of Illinois Standards and the Village of Orland Park Ordinances. In case of conflict with any part, or parts, of said Specifications, the most stringent provisions shall take precedence and shall govern.

This work shall be done according to the specifications, Special Provisions and to the requirements of construction permits of the Illinois Department of Transportation. The Contractor shall be responsible for obtaining the Illinois Department of Transportation permit and Permit Bond for work performed in State right-of-way.

The Contractor shall provide all labor, material and equipment required to furnish and install Conduit, handholes and appurtenances, and all other improvements shown on the plans as required to perform the work and as specified herein.

The extent of conduit and handhole work as shown shall include the following: Conduit pushing or trench excavation, backfill and cleanup, conduit installation, handhole installation, connection of conduit to handholes, connecting to existing conduit/handholes, identification and protection of existing utilities, coordination with proposed utilities, cut offs and plugs if required, bedding, shoring and bracing.

At least 30 days prior to installation of pipe covered in these specifications, the Contractor is required to submit to the Village of Orland Park and the Engineer shop drawings/catalog descriptions of all items to be installed showing locations, dimensions, and details, including piping sizes, pipe materials, fittings, valves, basins, hydrants, and other appurtenances. Detailed drawings of any proposed deviation from the Contract Drawings due to actual field conditions or other causes shall be included with the foregoing submittal as soon as practical. The shop drawings shall have a bill of material on each drawing defining all items mentioned above. All catalog and descriptive data shall note where the specific item is to be installed and a cross reference made on the Contract Drawings. The manufacturer shall certify to a minimum 3 years experience specializing in manufacturing of products specified herein.

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The Contractor shall establish and maintain quality control of all equipment and construction operations involved under this item. To assure compliance with contract requirements, the Contractor shall maintain records of his quality control for all items listed below.

1. Check for damage to and defects in materials.
2. Check for proper storage of materials and provide a systematic listing of these items and their location.
3. Check to see that shop drawings on all conduit system items have been submitted and are approved.
4. Check to see that all conduit materials conform to approved shop drawings.
5. Review requirements of Drawings and specifications and check layouts.

A copy of these records shall be kept at the jobsite and shall be available at all times for the Engineer's review.

All manufactured items shall be standard commercial products of reputable manufacturers. Where materials are shown on the Drawings or listed but not specifically covered by a standard or specification, the Contractor shall furnish best commercial grades of material or articles subject to the approval of the Engineer. When two or more articles of the same material or equipment are required, similar articles of the same size shall be products of a single manufacturer.

The Contractor shall warrant the work constructed and specified herein to be free of material or workmanship defects for a period of one (1) year from the date of substantial completion established by the Owner.

Materials:

1. Conduit – Galvanized. Shall be per IDOT Standard Specification 1088.01 (a) (1)
2. Conduit – PVC. Shall be per IDOT Standard Specification 1088 (b)
3. Handholes. When located in the parkway area outside of roadway pavement or driveway pavement shall be PC CONCRETE per IDOT Standard Specification 814.02 and Standard 814001. When located in roadway pavements or driveway shall be PC CONCRETE – HEAVY DUTY per IDOT Standard Specification 814.02 and Standard 814001.
 - a. The frame for handholes shall be manufactured such that the lid contains the following words embossed in the surface: “VILLAGE OF ORLAND PARK – FIBER OPTIC”. The layout of the lid shall be submitted to the Village for approval prior to delivery to site.

General:

In addition to the Contract Documents, the installation of the conduit and handholes shall be in accordance with IEPA Standards and Specifications for Soil Erosion and Sediment Control, State of Illinois Electric Code and OSHA safety standards.

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The Contract Drawings show the general arrangement for the future fiber optic cable underground conduit systems. Whenever the Contractor deems it necessary to deviate from the arrangements shown, he shall submit to the Engineer in writing a request for the deviation, along with drawings showing the proposed new arrangement. Deviation shall not be made until approval of new arrangements is obtained. Wherever conduit arrangements are shown or required to be modified to accommodate the material approved for installation, the Contractor shall prepare and submit for approval detailed shop drawings of the new arrangement. Only new and unused materials shall be installed in the work specified herein.

The Contract Drawings are not intended to show every fitting, offset, or similar item. Conduit systems shall include all fittings, anchors, bracing, or other equipment necessary for the proper installation of the system, but shall include not less than that shown in the Contract Drawings. Conduit and handholes shall be arranged and installed approximately as indicated, straight, plumb, and as direct as possible. All changes in direction of conduit shall be made with fittings, or joint flex as approved by Engineer.

Proper and suitable tools and appliances for the safe and convenient handling and placing of the conduits and handholes shall be used. All pieces shall be carefully examined for defects and no piece shall be laid which is known to be defective. If any defective piece should be discovered after having been placed, it shall be removed and replaced with a sound piece, in a satisfactory manner, by the Contractor at his own expense. The conduit sections shall be thoroughly cleaned before they are placed, shall be kept clean until they are accepted in the completed work, and shall conform accurately to the lines and elevations shown on the Contract Drawings, or as specified.

Contractor shall coordinate the crossing of any existing or proposed piping with the Roadway contractor.

Installation:

Installation shall be per IDOT Standard Specification 814.04 and equipment shall be per IDOT Standard Specification 814.03. The depth of the proposed conduit shall generally be such that the proposed cover is between 24 and 30 inches, but it is up to the Contractor to verify all existing and proposed facilities, and to place this conduit to avoid all conflicts and damage to existing facilities. The Contractor may, if trenching method is utilized and IDOT concurs, use the trench in common with conduit installed for the proposed Traffic Signals and/or Street Lighting. The Conduit shall be installed from handhole to handhole containing a pre-installed rope, pulling tape or cable to be used to pull the future cable through the conduit. The installation shall also include a tracing tape for locating purposes. The tape shall be woven reinforced polyethylene tape with a metallic core or backing that is detectable.

Property Protection:

Trees, fences, poles and all other property shall be protected unless the removal is authorized. Any property damaged shall be satisfactorily restored by the Contractor at no additional compensation.

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Piling Excavated Material:

All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways. Fire hydrants under pressure, valve pit covers, valve boxes, manholes, electrical vaults, or other utility controls shall be left unobstructed and accessible until the work is completed. Natural watercourses shall not be obstructed. Surplus material and excavated material unsuitable for backfilling shall be transported and disposed of off the site in disposal areas obtained by the Contractor.

Dewatering:

The Contractor shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavations or other parts of the work until all work to be performed therein has been completed. No water containing suspended solids shall be discharged into storm sewers. The proposed method for controls of groundwater shall be submitted to the Engineer for approval.

Plugging Dead Ends:

Plugs shall be inserted into the ends of all dead end conduit. No ends shall be left open during construction activities.

Barricades, Guards and Safety Provisions:

To protect persons from injury and to avoid property damage, adequate barricades, construction signs, lights and guards as required shall be placed and maintained by the Contractor at his expense during the progress of the construction work and until it is safe for pedestrians or traffic to use the area. All material piles, equipment and conduit which may serve as obstructions shall be enclosed by fences or barricades and shall be protected by proper lights when the visibility is poor. The rules and regulations of OSHA and the appropriate authorities respecting safety provisions shall be observed.

Structure Protection:

Temporary support, adequate protection and maintenance of all underground and surface structures, drains, piping and other obstructions encountered in the progress of the work shall be furnished by the Contractor at his expense. The structures which may have been disturbed shall be restored upon completion of the work.

Cleaning Up:

Surplus pipe line materials, tools and temporary structures shall be removed by the Contractor; and all dirt, rubbish and excess earth from excavation shall be hauled to a landfill by the Contractor, and the construction site shall be left clean, to the satisfaction of the Engineer and the Owner.

Acceptance:

Once the Fiber optic conduit system has been completed according to the specifications set forth in this Section, the Engineer shall, upon the request of the Contractor, inspect the system and prepare a list of items for repair (punch list). The list shall be given or sent to the Contractor and when repairs have been made, the Engineer shall accept the conduit system for operational use only. During the time after the acceptance by the Engineer and the Village of Orland Park Village for maintenance, the Contractor shall be responsible for any delinquencies incurred within the system, including but not limited to conduit breaks, adjustment to handhole frames, and any other system damages.

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Measurement and Payment:

The items of work described in the Village of Orland Park Specifications shall be measured and paid for at the contract unit prices as specified in IDOT Standard Specifications Sections 810, and 814, which prices shall include payment in full for all work and incidentals required to complete the work as specified. Pay items for the fiber Optic Conduit system work shall be as follows:

Underground Conduit, Galvanized Steel, 4", per foot.

Underground Conduit, PVC, 4", per foot.

Handhole, per each.

HD Handhole, per each.

Measurement of all conduit shall be along its centerline on a lineal foot basis to the nearest 6" increment unless otherwise specified on the Drawings. No additions or deductions for fittings and bends will be made. Handholes, and Heavy Duty (HD) Handholes shall be supplied with a frame and lid with the words "VILLAGE OF ORLAND PARK – FIBER OPTIC" cast into the lid.

VILLAGE OF ORLAND PARK WATER AND SANITARY FORCE MAINS

Description:

This work shall consist of furnishing and installing water mains, valves, valve vaults, fittings, fire hydrants, service connections, sanitary force main and appurtenances of the required material as shown on the Drawings and in conformance with the applicable portions of these Special Provisions, as well as the "Standard Specifications for Water and Sewer Construction in Illinois", Sixth Edition, July 2009, and portions of the Illinois Department of Transportation (IDOT) "Standard Specifications For Road and Bridge Construction" Sections 561, 562, 563, 564, and 565, where applicable, including Basis of Payment. All water and force main work shall be in conformance with the Village of Orland Park Standard Specifications for Water Supply unless otherwise indicated in the Project Documents. In case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

This work shall also be done according to the specifications, Special Provisions and to the requirements of construction permits of Illinois Environmental Protection Agency and Illinois Department of Transportation. The Village of Orland Park shall be responsible for obtaining the Illinois Environmental Protection Agency permit. The Contractor shall be responsible for obtaining the Illinois Department of Transportation permit and Permit Bond for work performed in State right-of-way.

The Contractor shall provide all labor, material and equipment required to furnish and install water mains and appurtenances, and all other improvements shown on the plans as required to perform the work and as specified herein.

The extent of water and sanitary force main work as shown shall include the following: Trench excavation, backfill and cleanup, pipe installation, valves and fittings, connecting to existing water or sanitary force main, cut offs and plugs if required, bedding, testing, shoring and bracing.

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At least 30 days prior to installation of pipe covered in these specifications, the Contractor is required to submit to the Village of Orland Park and the Engineer shop drawings/catalog descriptions of all items to be installed showing locations, dimensions, and details, including piping sizes, pipe materials, fittings, valves, basins, hydrants, and other appurtenances. Detailed drawings of any proposed deviation from the Contract Drawings due to actual field conditions or other causes shall be included with the foregoing submittal as soon as practical. The shop drawings shall have a bill of material on each drawing defining all items mentioned above. All catalog and descriptive data shall note where the specific item is to be installed and a cross reference made on the Contract Drawings. The manufacturer shall certify to a minimum 3 years experience specializing in manufacturing of products specified herein.

The Contractor shall establish and maintain quality control of all equipment and construction operations involved under this item. To assure compliance with contract requirements, the Contractor shall maintain records of his quality control for all items listed below.

1. Check for damage to and defects in materials.
2. Check for proper storage of materials and provide a systematic listing of these items and their location.
3. Check to see that shop drawings on all piping systems have been submitted and are approved.
4. Check to see that all piping materials conform to approved shop drawings.
5. Review requirements of Drawings and specifications and check layouts.

A copy of these records shall be kept at the jobsite and shall be available at all times for the Engineer's review.

Specification references made herein for manufactured materials such as pipe, hydrants, valves and fittings refer to designation of the American Water Works Association (AWWA) or of the American National Standards Institute (ANSI).

All manufactured items shall be standard commercial products of reputable manufacturers. Where materials are shown on the Drawings or listed but not specifically covered by a standard or specification, the Contractor shall furnish best commercial grades of material or articles subject to the approval of the Engineer. When two or more articles of the same material or equipment are required, similar articles of the same size shall be products of a single manufacturer.

The Contractor shall warrant the equipment to be free of material or workmanship defects for a period of one (1) year from the date of substantial completion established by the Owner. The work specified herein shall be warranted to be free of material or workmanship defects for a period of one year from the date of substantial completion established by the Owner.

The Village of Orland Park has approved the following manufacturers for piping materials:

- A. U.S. Pipe & Foundry – Ductile Iron Pipe and Fittings
- B. American Ductile Iron Pipe Co. – Ductile Iron Pipe and Fittings
- C. Griffin – Ductile Iron Pipe and Fittings
- D. Clow Co. – Ductile Iron Pipe and Fittings, and Gate Valves
- E. Tapping Sleeves and Valves – American Flow Control

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- F. Mueller Co. – Corporation Connection Materials and Valves
- G. East Jordan Iron Works – Hydrants, castings
- H. Tyler Union – Valve Boxes
- I. Substitutions – Subject to approval by the Engineer

Materials:

1. Water Main Pipe - Ductile Iron
 - a. Pipe thickness shall be ANSI A21.50 (AWWA C150) minimum thickness Class 52.
 - b. Pipe – ANSI 21.51 (AWWA C151). Ductile iron pipe shall be push-on type.
 - c. Pipe lining - ANSI A21.4 (AWWA C104).
 - d. Joints - Push-On or Mechanical Joint - ANSI A21.11 (AWWA C111).
 - e. Fittings – ANSI 21.10 (AWWA C110) for standard body, or ANSI A21.53 (AWWA C153) for compact body. All bends, tees, and fittings must be restrained, mechanical joint type.
 - f. Bolts, nuts, and threaded rods shall be ASTM A307, Grade B.
 - g. Coatings - Asphaltic coated in accordance with ANSI A21.51 (AWWA C151) for pipe, ANSI A21.53 (AWWA C153) for compact fittings, and ANSI A21.10 (AWWA C110) for standard fittings.
 - h. Encasement – All buried ductile iron pipe and fittings shall be encased in polyethylene conforming to the requirements of ANSI A21.5 (AWWA C105). The polyethylene encasement shall be provided by the ductile iron pipe manufacturer and installed per the manufacturer's recommendation.
2. Water Main ValvesAll 12 inches and smaller valves shall be East Jordan, Mueller, or approved equal resilient wedge type abiding to AWWA C509 and AWWA C550. All proposed valves larger than 12 inches shall be Pratt butterfly type with extension stem and ground level position indicator, or approved equal iron body, rubber seat butterfly valve, Class 150B, counter clockwise to open, conforming to AWWA C504 and approved by the Village.
 - b. (12) inch and smaller - iron body, bronze mounted, double disc, parallel seat, non-rising stem gate valves, counter clockwise to open, AWWA C500.
 - c. End connections shall be restrained mechanical joint type meeting the requirements of AWWA C111.
 - d. The body and bonnet shall be coated with fusion bonded epoxy both interior and exterior, complying with AWWA C550 and be NSF 61 approved.
3. Fire Hydrants
 - a. All fire hydrants shall stand plumb, their nozzle pointing normal to the road. They shall conform to the established grade, with nozzles at twenty-four (24) inches above the finished ground. All hydrants shall include an auxiliary valve, valve box and valve box stabilizer supplied with the fire hydrant.
 - b. Hydrants shall be East Jordan Iron Works Inc., 5BR205, with brass liner, painted Safety yellow with a standard 5' length Rod-On: Hydrafinder.
 - c. Hydrants shall meet the requirements of AWWA C502.
 - d. Valve Size: 5 1/4-inch, counter clockwise to open.
 - e. Nozzles: 2 at 2 1/2-inch, 1 at 4 1/2-inch, with threads conforming to National Standard Specifications.
 - f. Hydrant shall be installed with MJ swivel tee with swivel MJ gland. Auxiliary to be flanged attachment to fire hydrant.
 - g. Hydrant shall incorporate frangible section (breakaway type) with the break line flange located one (1) inch above finished grade.
 - h. Hydrant Valve box shall be Tyler 664-S with the lid embossed "WATER" with stabilizer box.
4. Corporation connection taps

- a. valves, materials, and installations shall conform to AWWA C800. All taps shall be direct and shall not require saddles unless indicated otherwise on the Drawings. Corporation stops or Service valves shall be installed at locations indicated on the Drawings or as directed by the Engineer.
 - b. Corporation stops: Mueller H150000, 1" minimum (AWWA C800).
 - c. Curb Stops: Mueller H-15154.
 - d. Service pipe 2½" and smaller shall be copper tube, Type K, meeting the requirements of ASTM.
 - e. Services larger than 2½" shall be ductile iron pipe.
5. Pressure Connections
- a. Pressure connection sleeves shall have mechanical joint ends for use on ductile and cast iron pipe. Sleeve construction shall be ductile iron meeting the requirements of ASTM A536, Grade 65-45-12. Side flange seals shall be O-ring type. Sleeve shall be asphaltic coated in accordance with NSF 61.
 - b. Tapping valves shall be resilient seated and be of the same manufacturer as the tapping sleeve to ensure compatibility. Tapping valves shall be ductile iron construction rated at 250 psi and meeting the requirements of AWWA C515. The mating valve flange to the tapping outlet shall have a raised male face, conforming to MSS SP-60 to ensure alignment of valve to tapping sleeve. The valve body and bonnet shall be coated with fusion bonded epoxy both interior and exterior, complying with AWWA C550 and be NSF 61 approved.
6. Valve Vaults
- a. Valve Vaults shall be reinforced concrete type in accordance with ASTM C478 or ASTM C443, and be installed as indicated on the Drawings. Valve Vaults shall be provided with a frame and cover (lid) that shall be East Jordan Iron Works, 1022Z2 and 1020A HD embossed with words "WATER" and "VILLAGE OF ORLAND PARK."
7. Thrust Restraints or Megalugs (or approved equal)
- a. Material - precast or poured Class X concrete. (or Megalug)
 - b. Horizontal reactions - thrust restraints at all tees, plugged ends, hydrants, and bends between 11 1/4 degrees and 90 degrees shall conform to Exhibit No. WM-10.
 - c. Vertical reactions - the contractor shall submit individual designs for each location and comply with AWWA C600, Section 3.8.
 - d. Where undisturbed earth is not available or not likely to be available to back up pressure type concrete thrust blocks, the engineer shall specify tie rods with or without anchor type concrete thrust blocks and submit design data for such specifications. Care shall be taken when pouring concrete so that the mix will not interfere with access to joints or with hydrant drainage.
8. Controlled Low-Strength Material (Flowable Fill)
- a. The Contractor shall provide all materials and equipment per Section 1019 of the Illinois Standard Specifications in suitable and adequate quantity and quality as necessary to accomplish the work specified herein. Flowable fill shall consist of a mixture of portland cement, fly ash, water and fine aggregate proportioned to provide a non-segregating, free-flowing, self-consolidating material that will result in a dense backfill. The mix shall be Mix 1 or the Contractor shall prepare a mix design as specified.
9. Casing Pipes.

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- a. Steel pipe - ASTM A120, 0.375" minimum thickness.
 - b. Steel pipe casing spacers, stainless steel, Cascade Waterworks Mfg. (or approved equal).
 - c. Casing end caps by casing spacer manufacturer, or approved equal, shall be installed on the casing and connected to internal pipe per manufactures directions as part of the casing item
10. Sanitary Sewer Force Main Pipe.
- a. PVC – SDR 21 meeting ASTM 2241.
 - b. Joints and gaskets shall be per ASTM D3139 and F477.

General:

In addition to the Contract Documents, the installation of the pipe and pipe fittings shall be in accordance with IEPA Standards and Specifications for Soil Erosion and Sediment Control, State of Illinois Plumbing Code and OSHA safety standards.

The Contract Drawings show the general arrangement for underground piping systems. Whenever the Contractor deems it necessary to deviate from the arrangements shown, he shall submit to the Engineer in writing a request for the deviation, along with drawings showing the proposed new arrangement. Deviation shall not be made until approval of new arrangements is obtained. Wherever piping arrangements are shown or required to be modified to accommodate the equipment approved for installation, the Contractor shall prepare and submit for approval detailed shop drawings of the new arrangement. Only new and unused materials shall be installed in the work specified herein.

The Contract Drawings are not intended to show every fitting, offset, or similar item. Piping systems shall include all unions, fittings, anchors, valves, gaskets, bracing, or other equipment necessary for the proper installation of the various systems, but shall include not less than that shown in the Contract Drawings. Piping shall be arranged and installed approximately as indicated, straight, plumb, and as direct as possible. All changes in direction of piping shall be made with fittings, or joint flex as approved by Engineer. Reduction in sizes of pipes shall be made with reducing fittings. Bushings will not be permitted unless specifically detailed on the drawings.

Proper and suitable tools and appliances for the safe and convenient handling and placing of the pipes, specials and valves shall be used. All pieces shall be carefully examined for defects and no piece shall be laid which is known to be defective. If any defective piece should be discovered after having been laid, it shall be removed and replaced with a sound piece, in a satisfactory manner, by the Contractor at his own expense. The pipes, specials, and valves shall be thoroughly cleaned before they are placed, shall be kept clean until they are accepted in the completed work, and when laid shall conform accurately to the lines and elevations shown on the Contract Drawings, or as specified.

Contractor shall coordinate the crossing of any existing or proposed piping with the Roadway contractor.

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Excavation and Backfill:

Unless otherwise shown or directed, all pipe shall be laid to minimum depth of 5'-6" measured from the ground surface or established grade to the top of the pipe. In areas subject to subsequent excavation or fill, the pipes shall be laid to grades provided by the Engineer.

The trench shall be dug to the depth and alignment required for proper installation of the pipe. The trench shall be so braced and drained that workmen may work therein safely and efficiently. The Contractor shall note that excavations shall conform to the latest OSHA requirements for excavations. It is essential that the discharge from dewatering pumps be led to natural drainage channels or to drains. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures and piping, both known and unknown, may be determined, and he shall be held responsible for the repair of such structures and piping when broken or otherwise damaged by him.

The trench width may vary with and depend upon the depth of the trench and the nature of the excavated material encountered, but in any case shall be of ample width to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted properly. The minimum width of un-sheeted trench shall be as shown by the Contract Drawings.

All buried piping shall be backfilled with granular material. The types of granular backfill materials shall be as indicated on the Contract Drawings. The minimum compaction requirement for granular backfill shall be 98% Standard Proctor unless otherwise indicated in these Specifications or on the Contract Documents.

Granular backfill shall be used at all locations. For water pipe located under roadway pavement, granular backfill shall be used from the top of the gravel cradle to the bottom of the roadway base and shall be mechanically compacted. The Contractor shall notify the Engineer of the source of material he proposes to use for "Granular Backfill" and arrange for samples to be taken and tested prior to the time such material is ordered to the site. Material gradation results shall be submitted to the Engineer for approval prior to hauling to the site. All granular backfill material shall be compacted in maximum 8" lifts to a minimum of 98% Standard Proctor Density in accordance with ASTM D698 and at not more than 2% below nor more than 3% above the optimum moisture content. Care shall be taken during backfilling operations so that any adjacent newly placed concrete will not be disturbed as a result of vibration due to compaction equipment. No frozen materials shall be placed in pipe trenches as backfill materials.

The pipe shall be laid on compacted granular cradle so that the barrel of the pipe shall have a bearing for its full length. The type of granular cradle to be used shall be as shown in the plans or as designated by the Engineer. The granular cradle shall extend a minimum of 4" of below the pipe as shown on the drawings. Where the natural foundation soil, on which the pipe is to be bedded, consists of granular material suitable in its natural state for shaping and embedding a pipe, no granular cradle will be required, if approved by the Engineer. The cost of the granular cradle shall be considered incidental to the cost of the pipe runs, and separate payment will not be made thereof. The Contractor shall notify the Engineer of the source of material he proposes to use for "Granular Cradle Material" and arrange for samples to be taken and tested prior to the time such material is ordered to the site. Material graded to sizes other than those specified may be substituted for that specified, providing the gradation and samples are first submitted and approved for the intended purpose by the Engineer. All granular cradle materials shall be compacted to a minimum of 95% Standard Proctor Density in accordance with ASTM D698 and at not more than 2% below nor more than 3% above the optimum moisture content.

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Over Excavation Backfill Requirement:

In cases where the trench excavation is carried beyond or below the lines and grades given by the Engineer, the Contractor shall, at his own expense, backfill all such excavated space with granular cradle material in layers not to exceed eight (8) inches in thickness and compact each layer solidly in place. Where, in the opinion of the Engineer, the excavation has been carried excessively below the lines and grades given by the Engineer, the Contractor shall be required to have a minimum of one moisture density test, in accordance with ASTM D698 (Standard Proctor Test) made on the backfill material. The Contractor shall be responsible for all Standard Proctor Density Tests required for this backfill and costs for the tests shall be considered incidental to the work. Once the Standard Proctor Tests have been run, the Contractor shall, at his own expense, refill all such excessively excavated space. The backfill material shall be placed in 6 to 8 inch layers and then compacted to a minimum of 95% Standard Proctor density or that necessary to prevent settlement. Compaction of granular cradle materials within three feet of the walls of a structure shall be accomplished by the use of hand operated compaction equipment. Use of heavy compaction equipment within three feet of the walls of a structure will not be allowed. Compaction of backfill by jetting shall not be permitted under any circumstances.

Laying of Pipe:

Laying of pipe shall be accomplished to line and grade in the trench only after it has been dewatered and the foundation and/or bedding has been prepared. Mud, silt, gravel and other foreign material shall be kept out of the pipe and off the jointing the surface.

Contractor shall verify that excavations are required grade, dry and not over-excavated. Prior to installation ream pipe and tube ends and remove burrs, scale and dirt, on inside and outside before assembly.

All pipe laid shall be retained in position so as to maintain alignment and joint closure until sufficient backfill has been completed to adequately hold the pipe in place. All pipe shall be laid to conform to the prescribed lines and grades shown on the Drawings, with the limits that follow.

In making joints, all portions of the joining materials and the socket and spigot ends of the joining pipe shall be wiped clean of all foreign materials. The actual assembly of the jointing shall be in accordance with the manufacturer's installation instructions and/or as directed by the Engineer.

Horizontal Separation:

Water mains shall be installed at least ten (10) feet horizontally from any existing or proposed storm or sanitary sewer line.

Vertical Separation:

Whenever a water main must cross storm sewers, drain lines, or sanitary sewer; the water main shall be installed at such an elevation that the bottom of the water main is eighteen (18) inches above the top of the drain or sewer. This vertical separation shall be maintained for that portion of the water main located within ten (10) feet, horizontally, of any sewer or drain crossed. Said ten (10) feet is to be measured at the normal distance from the water main to the drain or sewer.

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Permissible Deflections of Joints:

Whenever necessary to deflect pipe from a straight line either in a vertical or horizontal plane to avoid obstructions, to plumb stems, or where long radius curves are permitted, the degree of deflection shall be no greater than recommended by AWWA C600 and shall be approved by the Engineer.

Cutting Pipe:

The cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to cement lining and so as to leave a smooth end at right angles to the axis of the pipe.

When machine cutting is not available for cutting pipe twenty (20) inches in diameter or larger, the electric-arc cutting method shall be permitted, using a carbon or steel rod. Only qualified and experienced workmen shall be allowed to perform this work.

Flame cutting of pipe by means of an oxyacetylene torch shall not be allowed.

Braced and Sheeted Trenches:

Whenever necessary to prevent caving, excavations in sand, gravel, sandy soil or other unstable materials shall be adequately sheeted and braced. Where sheeting and bracing are used, the trench width shall be increased accordingly. Trench sheeting shall remain in place until the pipe has been laid, tested for defects, and repaired if necessary, and the backfill around it compacted to a depth of two feet over the top of the pipe.

Trenching by Machine or by Hand:

The use of trench digging machinery will be permitted except in places where operation of same will cause damage to trees, buildings or existing structures above or below ground, in which case hand methods shall be employed.

Manner of Handling Pipe and Accessories in the Trench:

Proper implements, tools and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient completion of the work. All pipe fittings, valves and hydrants shall be carefully lowered into the trench, piece by piece, by means of derrick, ropes or other suitable tools or equipment in such manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.

Flow of Drains and Sewers Maintained:

Adequate provision shall be made for the flow of sewers, drains and water courses encountered during the construction and the structures which may have been disturbed shall be satisfactorily restored upon completion of the work.

Property Protection:

Trees, fences, poles and all other property shall be protected unless the removal is authorized. Any property damaged shall be satisfactorily restored by the Contractor at no additional compensation.

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Piling Excavated Material:

All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways. Fire hydrants under pressure, valve pit covers, valve boxes, manholes, electrical vaults, or other utility controls shall be left unobstructed and accessible until the work is completed. Natural watercourses shall not be obstructed. Surplus material and excavated material unsuitable for backfilling shall be transported and disposed of off the site in disposal areas obtained by the Contractor.

Dewatering:

The Contractor shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavations or other parts of the work until all work to be performed therein has been completed. No water containing suspended solids shall be discharged into storm sewers. The proposed method for controls of groundwater shall be submitted to the Engineer for approval.

Preventing Trench Water from Entering Pipe:

At times when the pipe laying is not in progress, the open ends of the pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe.

Protection of Pipe:

Adequate provision shall be made for the safety, storage and protection of all water pipe prior to actual installation in the trench. Care shall be taken to prevent damage to the pipe castings, both inside and out. Provisions shall be made to keep the inside of the pipe clean throughout its storage period and to keep mud and/or other debris from being deposited therein. All pipe shall be thoroughly cleaned on the inside before laying of the pipe. Proper equipment shall be used for the safe handling, conveying and laying of the pipe. All pipe shall be carefully lowered into the trench, piece by piece, by means of a derrick, ropes, or other suitable tools or equipment, in such manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

Plugging Dead Ends:

Plugs shall be inserted into the joints of all dead end pipes, tees or crosses. No ends shall be left open during construction activities.

Barricades, Guards and Safety Provisions:

To protect persons from injury and to avoid property damage, adequate barricades, construction signs, lights and guards as required shall be placed and maintained by the Contractor at his expense during the progress of the construction work and until it is safe for traffic to use the roadways. All material piles, equipment and pipe which may serve as obstructions to traffic shall be enclosed by fences or barricades and shall be protected by proper lights when the visibility is poor. The rules and regulations of OSHA and the appropriate authorities respecting safety provisions shall be observed.

Structure Protection:

Temporary support, adequate protection and maintenance of all underground and surface structures, drains, piping and other obstructions encountered in the progress of the work shall be furnished by the Contractor at his expense. The structures which may have been disturbed shall be restored upon completion of the work.

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Cleaning Up:

Surplus pipe line materials, tools and temporary structures shall be removed by the Contractor; and all dirt, rubbish and excess earth from excavation shall be hauled to a landfill by the Contractor, and the construction site shall be left clean, to the satisfaction of the Engineer and the Owner.

Concrete Cradle:

Where subgrade conditions, in the opinion of the Engineer, warrant extra precautions for the bedding of pipe, the Engineer may order the construction of a concrete cradle to be installed. The design requirements for a concrete cradle shall be furnished by the Design Consultant. Payment for the concrete cradle shall be by Change Order as extra work. Deep piping shall be tested prior to completing backfilling or covering with concrete.

Thrust Blocks (or MEGALUGS):

Where a fitting creates an alignment change greater than 11 degrees, concrete thrust blocks or MEGALUGS shall be installed. Concrete shall be 3,000 psi minimum.

Hydrants:

Fire hydrants shall be placed as specified on the Drawings. All hydrants shall stand plumb, with the nozzle pointing normal to the road. They shall conform to the established grade, with nozzles at twenty-four (24) inches above the finished ground.

A drainage pit two (2) feet in diameter and two (2) feet deep shall be excavated below each hydrant and filled completely a minimum of one cubic yard of crushed 1" river rock under and around the bowl of the hydrant and to a level six (6) inches above the waste opening. No hydrant drainage pit shall be connected to a sewer.

Hydrant leads and extensions shall be provided as needed in order to maintain adequate setback from the water main and to provide a minimum of twenty-four (24) inches distance from steamer port to final ground elevation.

Fire hydrants to be relocated shall be excavated around the hydrant and auxiliary valve. The auxiliary valve and water main shall be shut-off, the valve box shall be removed, the hydrant side bolts loosened and/or removed as necessary from the auxiliary valve and the fire hydrant and lead pipes carefully removed. The hydrant shall be reinstalled at the proposed location as indicated above, with new lead pipe installed from the water main tee to the original valve and from the original valve to the proposed hydrant location as part of this item. The excavation shall then be properly backfilled and compacted. All excess material from this operation shall be legally disposed of offsite as part of this item.

Fire hydrants to be removed shall be excavated around the hydrant and auxiliary valve. The auxiliary valve shall be shut-off, the valve box shall be removed, the hydrant side bolts removed from the valve and the firehydrant and lead carefully removed. If the line the hydrant is being removed from is to remain active, the valve shall be capped or plugged and a trust block or approved restraint shall be installed. The excavation shall them be properly backfilled and compacted and the removed hydrant and valve box shall be delivered to the Village of Orland Park Public Works. All excess material from this operation shall be legally disposed of offsite as part of this item.

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Water Services:

Water services are extended horizontally at right angles with the water main to the front line of a lot or single building which it is to serve. Services shall be provided with a brass curb stop or gate valve at the mid-point between the curb and the sidewalk unless otherwise specified by the Engineer. A cast iron curb box shall be installed over curb stops or four (4) inch and smaller gate valves. A valve vault shall be provided for gate valves larger than four (4) inches. All water service lines shall be located at the approximate center of each lot at a minimum depth of five (5) feet.

Temporary Caps and plugs:

The Contractor shall provide temporary caps and plugs where required for water main installations, testing and disinfecting. This work shall be considered incidental to the water main work requiring the plug or cap.

Water Line Stop:

In some situations and locations, existing water mains that are to be connected to directly at the beginning or end of the proposed water main cannot be removed from service. The contractor shall provide all labor, materials and equipment necessary to provide a "line stop" to allow the existing main to be worked upon in a "dry" non-active condition as required by the contract work. The work shall include all excavation and restoration of the area in addition to the equipment and materials needed for the line stop. The materials and methods must be approved by the Village of Orland Park prior to commencing the work.

Controlled Low-Strength Material (Flowable Fill)

This item shall consist of all work necessary to gain access to, prepare and place stabilized flowable fill in accordance with these Specifications and as directed by the Engineer. The flowable fill shall be used to fill abandoned water main pipe as shown on the plans or as directed by the Engineer.

Flowable fill shall be placed per paragraph one and 2 of Section 593.03 of the Standard Specifications. The Contractor shall verify, through site investigation, that the appropriate water main pipe is going to be filled. No functioning pipes, or pipes that are to be removed, shall be filled with flowable fill. The Contractor shall make a reasonable attempt, as determined by the Engineer, to ascertain if the abandoned water main pipe has positive grade.

If it is determined that the abandoned water pipe to be filled is sufficiently sloped to allow the flowable fill to gravity feed the entire length of the pipe, the Contractor shall seal the lower end of the pipe by means suitable to the Engineer. The seal shall be vented such that air voids do not form in the pipe when the flowable fill is placed. The flowable fill shall be discharged from a mixer into the high end of the abandoned water pipe by any means acceptable to the Engineer. No flowable fill shall be placed into the adjacent valve boxes or vaults to render these structures non-functional. After completing the work, both ends of the abandoned pipe should be sealed in a neat, workmanlike manner that is acceptable to the Engineer.

If it is determined that the abandoned water pipe cannot be filled from 1 end, the Contractor shall fill each end of the pipe, or any intermediate locations necessary, with flowable fill as indicated in Section 1 above.

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After completing the work, the Contractor shall remove from the project site any excess flowable fill that resulted from spillage, et cetera, and restore the project site to a condition that is acceptable to the Engineer. If excavation is required to reach the abandoned pipe, the contractor shall restore the area to its original condition as directed by the Engineer.

Testing and Disinfection:

1. Hydrostatic Testing

- a. As part of the construction, the water mains shall be pressure tested in accordance with this Section and Section 41-2.14 of the Standard Specifications for Water and Sewer Main Construction in Illinois, latest edition.
- b. All newly laid pipe shall be subjected to a hydrostatic pressure of one hundred fifty (150) pounds per square inch. The duration of each pressure test shall be for a period of not less than two (2) hours. Each valved section of pipe shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe. Before applying the specified test pressure, all air shall be expelled from the pipe. All leaks shall be repaired until tight. Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequence of this pressure test shall be removed and replaced and the test repeated until satisfactory results are obtained.
- c. All testing shall be done before the installation of service lines. Suitable means shall be provided for determining the quantity of water lost by leakage under the specified test pressure. Allowable leakage shall not be greater than that computed as follows:

$$L = \frac{(N) (D) (P)}{7400}$$

- L = Allowable leakage in (gallons per hour)
N = number of joints in length of pipeline tested
D = Nominal diameter of the pipe (inches)
P = Average test pressure during leakage test (psig)

Leakage is defined as the quantity of water required to be supplied to the newly laid pipe necessary to maintain the specified leakage test pressure.

- d. If the pipeline fails to meet the hydrostatic test, the Contractor shall find the cause for the failure and make repairs or replacement, and repeat the test.

2. Preliminary Flushing:

- a. Prior to disinfection, the main shall be flushed as thoroughly as possible with the water pressure and outlets available. Flushing shall be done after the pressure test is made. Because such flushing removes only the lighter solids, it cannot be relied upon to remove heavy material allowed to get into the main during laying. If no hydrant is installed at the end of the main, a tap should be provided large enough to affect a velocity in the main of at least two and one-half (2 1/2) feet per second.

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3. Disinfection:
 - a. The preferred point of application of the chlorinating agent shall be at the beginning of the pipeline extension or any valved section of it and through a corporation stop in the top of the newly laid pipe. The injector for delivering the chlorine-gas into the pipe should be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension.
 - b. Water from the existing distribution system or other source of supply shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine-gas. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall be at least fifty (50) ppm, or enough to meet the requirements during the retention period. This may require as much as one hundred (100) ppm of chlorine in the water left in the line after chlorination.
 - c. Valves shall be manipulated so that the strong chlorine solution in the line being treated shall not flow back into the line supplying the water.
 - d. Treated water shall be retained in the pipe long enough to destroy all spore-forming bacteria. This retention period shall be at least twenty-four (24) hours. After the chlorine-treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative points should be at least 10 pm.
 - e. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.
 - f. All water mains shall be disinfected and tested according to the requirements of the "Standards for Disinfecting Water Mains," AWWA C601, and as required by this Section. All disinfection, as required by this Section, shall be performed by an independent firm exhibiting experience in the methods and techniques of this operation, and shall be approved by the Engineer.
 - g. Procedures for disinfecting water mains shall be in accordance with AWWA C651, with at least one set of samples collected from every 1,200 feet of new water main plus one set from each end of the line. Satisfactory disinfection shall be demonstrated in accordance with the requirements of 35 Illinois Administrative Code 652.203.
4. Final Flushing and Testing
 - a. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water, throughout its length shall, upon test, be approved as safe water by the Engineer. This quality of water delivered by the new main should continue for a period of at least two (2) full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination. Samples should never be taken from an unsterilized hose or from a fire hydrant because such samples seldom meet current bacteriological standards.

- b. After disinfecting and flushing, a minimum of two (2) water samples shall be collected by the contractor on two successive days, with notice given, so that the collection may be witnessed by the Engineer. Bacteriological sampling and analysis of the samples shall be performed by a laboratory approved by the Illinois Department of Public Health, the Engineer, and the Village of Orland Park. Should the initial treatment result in an unsatisfactory bacterial test, the procedure shall be repeated until satisfactory results are obtained. The contractor or developer shall pay for the sampling and analysis. Results of the analysis shall be transmitted by the laboratory directly to the Engineer and the Village of Orland Park. Test results shall indicate the date the sample was collected, the date the analysis was made, the exact locations at which samples were taken, the firm submitting the sample, and the project at which the samples were collected. Sufficient samples shall be collected in order to insure that the system is bacteriologically safe.

5. Acceptance

- a. Once the water main has been completed according to the specifications set forth in this Section, the Engineer shall, upon the request of the Contractor, inspect the system and prepare a list of items for repair (punch list). The list shall be given or sent to the Contractor and when repairs have been made, the Engineer shall accept the water main for operational use only. During the time after the acceptance by the Engineer and the Village of Orland Park Village for maintenance, the Contractor shall be responsible for any delinquencies incurred within the system, including but not limited to water main leaks, adjustment to manhole frames, and bent curb boxes.
- b. The existing water main shall remain in service until all tests have passed and the new water main has been disinfected. Testing and disinfection are subject to approval by the Engineer and the Village of Orland Park.

6. Disposal of Water:

- a. The Contractor shall be responsible for properly disposing of flushed water during the pressure testing and disinfection of the water main. This work shall be coordinated with the Village of Orland Park. Flushed water shall have a chlorine residual that is satisfactory to the Village of Orland Park.

Measurement and Payment:

The items of work described in the Village of Orland Park Specifications shall be measured and paid for at the contract unit prices as specified in IDOT Standard Specifications Sections 561, 562, 563, 564 and 565, which prices shall include payment in full for all work and incidentals required to complete the work as specified. Pay items for water main work shall be as follows:

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Ductile Iron Water Main, 6", per foot.
Ductile Iron Water Main, 8", per foot.
Ductile Iron Water Main, 10", per foot.
Ductile Iron Water Main, 12", per foot.
Ductile Iron Water Main, 16", per foot.
Gate Valve, 6", With Vault, 4' Diameter, per each.
Gate Valve, 8", With Vault, 4' Diameter, per each.
Gate Valve, 10", With Vault, 4' Diameter, per each.
Gate Valve, 12", With Vault, 4' Diameter, per each.
Gate Valve, 16", With Vault, 5' Diameter, per each.
Fire Hydrant with 6" Auxiliary Valve and Valve Box, per each.
Fire Hydrant to be Removed, per each
Fire Hydrant to be Relocated, per each
Filling Vault, per each
Remove Existing Valve and Vault, per each
Controlled Low-Strength Material (Flowable Fill), per cubic yard
Pressure Connection, per each
Steel Casing, 20", per foot
2" or Larger Water Service w/B-Box (under 30'), per each
Sanitary Force Main, 4"
Sanitary Force Main, 6"

Measurement of all piping shall be along its centerline on a lineal foot basis to the nearest 6" increment unless otherwise specified on the Drawings. No additions or deductions for fittings and bends will be made.

Payment for water main shall be made at the contract unit price per lineal foot of DUCTILE IRON WATERMAIN, 6", DUCTILE IRON WATERMAIN, 8", DUCTILE IRON WATERMAIN, 10", DUCTILE IRON WATERMAIN, 12" or DUCTILE IRON WATERMAIN, 16". Payment shall be full compensation for excavation, removal of excavated material, polyethylene wrap per AWWA standard, installation of pipe, fittings, temporary caps and plugs, dewatering, CA-6 trench backfill and compaction, shut-downs, pressure testing, chlorination, abandonment of existing water mains, and for all labor materials, equipment, and incidentals as shown on the Drawings and as specified herein to construct a complete and operational water main.

Payment for gate valves shall be made at the contract unit price per each for GATE VALVE, 6" WITH VAULT, 4' DIAMETER, GATE VALVE, 8" WITH VAULT, 4' DIAMETER, GATE VALVE, 10" WITH VAULT, 4' DIAMETER, GATE VALVE, 12" WITH VAULT, 4' DIAMETER or GATE VALVE, 16" WITH VAULT, 5' DIAMETER. Payment shall be full compensation for all labor, materials (including type A vault, type 1 frame and closed lids with words VILLAGE OF ORLAND PARK and WATER cast onto lid), equipment, and incidentals as shown on the Drawings and as specified herein for a working system.

Payment for proposed fire hydrants shall be made at the contract unit price per each FIRE HYDRANT WITH 6" AUXILIARY VALVE AND VALVE BOX. Payment shall be full compensation for all labor, materials, equipment and incidentals including topsoil and seeding or sod to restore disturbed areas, at locations shown on the Drawings and as specified herein for a working system, including a 6" tee for connection on the mainline water pipe.

Revised 4-19-2013

Payment for removal of an existing fire hydrant identified on the plans or as directed by the Engineer to be removed, shall be made at the contract unit price per each for FIRE HYDRANT TO BE REMOVED. The Contractor shall close the auxiliary valve supplying the hydrant to be removed, carefully excavate around the hydrant, legally dispose of excavated material offsite, loosen bolts at base of hydrant to release from 6" feeder pipe or cut feeder pipe, remove hydrant and make available to the Village of Orland Park if they want it or salvage, remove the buffalo box and salvage, and backfill the excavated area with compacted CA6 aggregate. Payment shall be full compensation for all labor, materials including CA6 backfill, equipment, and incidentals as shown on the Drawings, as needed, and as specified herein.

Payment for relocation of an existing fire hydrant identified on the plans or as directed by the Engineer to be relocated, shall be made at the contract unit price per each for FIRE HYDRANT TO BE RELOCATED. The Contractor shall shut-off the auxiliary valve and water main supplying the hydrant to be relocated, carefully excavate around the hydrant and to proposed location and depth necessary for installation as if new, legally dispose of excavated material offsite, loosen bolts at base of hydrant to and from auxiliary valve and remove existing 6" feeder pipes or cut feeder pipes, remove hydrant and place in proposed location and grade, install necessary 6" DIP and fittings from the water main tee to the existing auxiliary valve and from the existing auxiliary valve to the relocated hydrant, adjust the buffalo box to proposed grade, and backfill the excavated area with compacted CA6 aggregate. Payment shall be full compensation for all labor, materials including CA6 backfill and 6" DIP and fittings, equipment, and incidentals as shown on the Drawings, as needed, and as specified herein.

Payment for valve vaults to be abandoned shall be made at the contract unit price per each FILLING VAULT. After the water main the vault is on has been removed from service, the contractor shall ensure the valve, if remaining in place is open. The Contractor shall then follow article 605.04 and 605.05 of the Standard Specs Payment shall be full compensation for all labor, materials, equipment, and incidentals as shown on the Drawings and as specified herein.

Payment for valves and vaults to be removed shall be made at the contract unit price per each REMOVE EXISTING VALVE AND VAULT. After the water main valve and vault are removed from service, the contractor shall remove the valve and make available to the Village of Orland Park if they want it or salvage. The Contractor shall legally dispose of excavated material and debris offsite. The excavated area shall be backfilled and compacted with CA6 aggregate. Payment shall be full compensation for all labor, materials including CA6 backfill, equipment, and incidentals as shown on the Drawings, as needed, and as specified herein.

Payment for controlled low strength material (flowable fill) to be used to fill abandoned in- place water mains at the locations shown on the plans or as directed by the Engineer shall be made at the contract unit price per cubic yard for CONTROLLED LOW STRENGTH MATERIAL (FLOWABLE FILL). Payment shall be full compensation for all labor, materials (including tapping vales and saddles), equipment, and incidentals as shown on the Drawings and as specified herein for a working system.

Payment for pressure connections shall be made at the contract unit price per each PRESSURE CONNECTION. Payment shall be full compensation for all labor, materials (including tapping vales and saddles), equipment, and incidentals as shown on the Drawings and as specified herein for a working system.

Payment for steel casing placed under proposed pavement for the installation of proposed water main pipe within it shall be made at the contract unit price per foot for STEEL CASING, 20". Payment shall be full compensation for all labor and materials necessary for the installation of the casing, installation of all casing spacers per manufacturer's requirements on the carrier pipe to be placed within the casing and filling of the annular spacing per the plan detail as shown on the drawings. The ductile iron mater main pipe to be placed into the casing is paid for separately. This work shall also include & filling of, which shall include

Payment for water service connections smaller than 6" shall be made at the contract unit price per each for 2" OR LARGER WATER SERVICE W/B-BOX (UNDER 30'). Payment shall be full compensation for all labor, materials (including corporation stops, curb boxes, service pipe, saddles if required and buffalo box), equipment, and incidentals as shown on the Drawings and as specified herein for a working system.

Payment for sanitary sewer force main shall be made at the contract unit price per foot for SANITARY FORCE MAIN, 4" and SANITARY FORCE MAIN, 6". Payment shall be full compensation for all labor (including saw cutting existing main at connections and safe removal of any sewerage entering the trench), materials, equipment, and incidentals as shown on the Drawings and as specified herein for a working system.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

Revise Article 669.01 of the Standard Specifications to read:

"669.01 Description. This work shall consist of the transportation and proper disposal of contaminated soil and water. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities."

Revise Article 669.08 of the Standard Specifications to read:

"669.08 Contaminated Soil and/or Groundwater Monitoring. The Contractor shall hire a qualified environmental firm to monitor the area containing the regulated substances. The affected area shall be monitored with a photoionization detector (PID) utilizing a lamp of 10.6eV or greater or a flame ionization detector (FID). Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. No excavated soils can be taken to a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation with detectable PID or FID meter readings. The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily. All testing shall be done by a qualified engineer/technician. Such testing and monitoring shall be included in the work. The Contractor shall identify the exact limits of removal of non-special waste, special waste, or hazardous waste. All limits shall be approved by the Engineer prior to excavation. The Contractor shall take all necessary precautions.

Revised 4-19-2013

STAMPED COLORED PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)

This work shall consist of the installation of stamped integrally colored portland cement concrete pavement at locations of crosswalks as shown in the plans. This work shall be completed in accordance with the applicable portions of Section 420 of the Standard Specifications. The pavement at the cross walk locations shall be gapped for a subsequent pour or saw cut and removed if poured continuously with the other pavement. During pavement removal operations the contract shall take care so as to not damage the underlying detector loops.

The pavement for the cross walk shall be tied to the surrounding Portland Cement Concrete Pavement in accordance with Article 420.05 of the Standard Specifications. The concrete shall be integrally colored for the full depth of the pavement. The color shall be Butterfield Color-Unimix Lagrange Dark Brown, or approved equal.

Do not add calcium chloride to the concrete design mix.

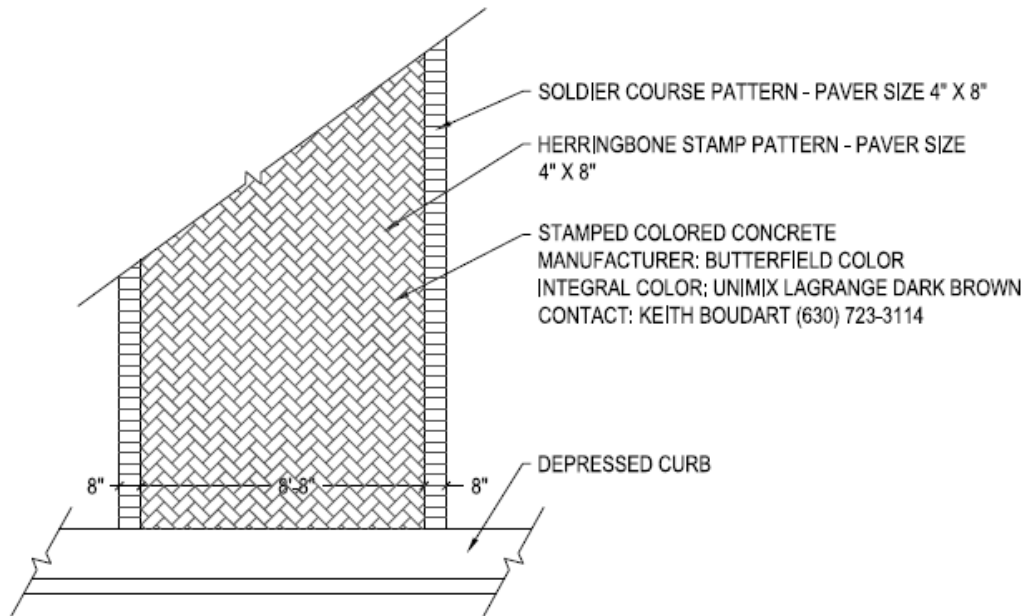
The stamped pattern shall be a 4"x8" paver brick placed in a herringbone pattern with a single soldier course pattern as shown in the detail. Vertical surface discontinuities shall be 0.5 in maximum. Vertical surface discontinuities between 0.25 in and 0.5 in shall be beveled with a slope not steeper than 50 percent. The bevel shall be applied across the entire vertical surface discontinuity.

Method of Measurement: This work shall be measured for payment in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED), SPECIAL.

FORM LINER TEXTURED SURFACE TEST SAMPLE will be paid for separately.

Added 4-19-2013



- NOTES:
1. CONTROL AND EXPANSION JOINTS TO ALIGN WITH ROADWAY JOINTS
 2. PROVIDE CONTINUOUS KEY INTO ADJACENT CONCRETE TO PREVENT DIFFERENTIAL SETTLEMENT
 3. REFER TO ENGINEERING PLANS FOR PAVEMENT PROFILE INFORMATION

Added 4-19-2013

WORK RESTRICTION AT HIGH SCHOOL ENTRANCE AND WITHIN EASEMENT

The contractor will not be allowed to store material or equipment on parcel 89 and associated temporary easements.

The contractor will install the temporary fence at the locations shown in the plans prior to beginning any work on the parcel. The fence shall be removed upon completion of work on the subject parcel with the exception of landscaping elements.

RAILROAD PROTECTIVE LIABILITY INSURANCE (5 AND 10) (BDE)

Revised: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be a minimum of \$5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of \$10,000,000 over the life of the policy. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
METRA over US 45 in Orland Park		
METRA** 547 West Jackson Blvd. Chicago, IL 60661	30 trains/day@ 79 mph	2 trains/day@ 40 mph
DOT/AAR No.: 478773P RR Division: CUS	RR Mile Post: 22.72 RR Sub-Division: South west	
For Right-of-entry Permit contact:	Dan Kneita	Phone: 312-322-8016
For Insurance Information Contact:	Nancy McIntosh	Phone: 312-322-7073

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
 Bureau of Design and Environment
 2300 South Dirksen Parkway, Room 326
 Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Added 4-19-2013

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

** The Commuter Rail Division of the Regional Transportation Authority, a division of an Illinois municipal corporation, and its affiliated separate Public corporation known as the Northeast Illinois Regional Commuter Railroad Corporation, both operating under the service mark Metra, as now exists or may hereafter be constituted or acquired, and the Regional Transportation Authority, an Illinois municipal corporation.

AGGREGATE FOR CONCRETE BARRIER (DISTRICT ONE)

Effective: February 11, 2004

Revised: January 24, 2008

Add the following paragraph to Article 637.02 of the Standard Specifications:

“The coarse aggregate to be used in the concrete barrier walls shall conform to the requirement for coarse aggregate used in Class BS concrete according to Article 1004.01(b), paragraph 2.”

FORM LINER TEXTURED SURFACE TEST SAMPLE

This work shall be done in accordance with Article 503.06(a) and as herein specified:

A 4-foot x 4-foot test sample for each individual form liner pattern specified in the plans will be required. The test samples shall include the proposed textured surface to be cast and shall be supplied to the Engineer for his/her approval a minimum of 30 days prior to pouring the cast-in-place concrete.

A test sample will be required for for the following:

1. STAMPED COLORED PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED) used for crosswalks and sidewalks.
2. FORM LINER TEXTURED SURFACE used for retaining walls.

The Contractor shall refinish the test sample or provide additional samples as required to obtain the Engineer's approval. General application to actual construction shall not proceed until the job test sample has been approved in writing. The accepted test sample provides visual standard for the work. The test sample shall remain through completion of the work for use as a quality standard for finished work. The Contractor shall remove the test sample when directed by the Engineer.

Method of Measurement. Form Liner Textured Surface Test Sample will be measured for payment in units of each for each individual form liner pattern specified in the plans. A separate measurement will not be made for any refinishing or providing additional samples required to obtain approval.

Added 4-19-2013

Basis of Payment. This work will be paid for at the contract unit price per each for FORM LINER TEXTURED SURFACE TEST SAMPLE which price shall include providing the test samples, constructing, modifying and removing and disposing the test samples.

TEMPORARY CHAIN LINK FENCE

Description: This item shall include all material, labor, and equipment necessary to furnish, install, relocate during construction, maintain, remove and dispose of outside the right-of-way Temporary Chain Link Fence at the locations shown in the plans or as directed by the Engineer.

The Temporary Chain Link Fence shall be a minimum of six (6) foot in height and shall be constructed in accordance with Section 664 of the Standard Specifications. The work shall conform to the applicable portions of Section 664 of the Standard Specifications except that concrete foundations for the fence posts will not be required.

Method of Measurement. This work shall be measured per foot of temporary fence installed.

Basis of Payment: This work shall be paid for at the contract unit price per FOOT for TEMPORARY CHAIN LINK FENCE, which price shall be payment in full for all materials, labor, and equipment necessary to furnish, install, relocate during construction, maintain, remove, and dispose of the Temporary Chain Link Fence.

RUB RAIL

Description. This work shall consist of constructing a rub rail on the back side of steel plate beam guardrail adjacent to bicycle paths at locations as shown on the plan drawings.

Materials. Structural steel shall conform to the requirements of AASHTO M 270 Grade 36. Wood rails shall conform to the requirements of Articles 1007.01, 1007.02, 1007.03 of the Standard Specifications. Fasteners and hardware shall meet the requirements of Article 1006.25 of the Standard Specifications.

Construction Requirements. Rub Rail shall be constructed in accordance with the plan detail drawings at location as shown on the plans. All hardware located on the bicycle path side of the rub rail shall be constructed with a button head post bolt.

Method of Measurement and Basis of Payment. This item will be measured and paid for at the contract unit price per foot for RUB RAIL which price shall include all materials, metal support angles, wood rub rails, preservative treatment, metal hardware, and all equipment, labor, miscellaneous and incidentals required to perform the work as specified above.

Steel plate beam guardrail and traffic barrier terminals will be measured and paid for separately.

Added 4-19-2013

PAINTING OF TRAFFIC SIGNAL EQUIPMENT

Description.

This work shall include surface preparation; powder type painted finish application; and packaging of new traffic signal poles, mast arm assemblies, signal/pedestrian heads and housings, mounting brackets/plates/bolts, pedestrian push buttons, and illuminated signs at the following intersections:

- US Route 45 (LaGrange Road) and 135th Street
- US Route 45 (LaGrange Road) and Southmoor Drive/Carl Sandburg High School Entrance
- US Route 45 (LaGrange Road) and 131st Street.

All work associated with applying the painted finish shall be performed at the manufacturing facility or at a painting facility approved by the Engineer. Traffic signal mast arm shrouds and post bases shall also be painted the same color as the pole assemblies and posts.

Surface Preparation.

All weld flux and other contaminants shall be mechanically removed. The traffic equipment shall be degreased, cleaned, and air dried to assure all moisture is removed.

Painted Finish.

All galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a dry film thickness of 2.0 mils. Prior to application, the surface shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450 °F for a minimum one (1) hour. The coating shall be electrostatically applied and cured by elevating the zinc-coated substrate temperature to a minimum of 400 °F.

The finish paint color shall be “Valmont – Powder Black DBL.”

Any damage to the finish after leaving the manufacturer’s facility shall be repaired to the satisfaction of the Engineer using a method recommended by the manufacturer and approved by the Engineer. If while at the manufacturer’s facility the finish is damaged, the finish shall be re-applied at no cost to the contract.

Warranty.

The Contractor shall furnish in writing to the Engineer, the paint manufacturer’s standard warranty and certification that the paint system has been properly applied.

Packaging.

Prior to shipping, the painted equipment shall be wrapped in ultraviolet-inhibiting plastic foam or rubberized foam.

Added 4-19-2013

Basis of Payment.

This work shall be paid for at the contract lump sum price for PAINT TRAFFIC SIGNAL EQUIPMENT, which shall be payment in full for painting and packaging the traffic signal equipment as described above for the locations noted above including all shrouds, bases and appurtenances.

RAILROAD EMBLEM

Description. This work shall consist of furnishing and installing the METRA railroad emblem at the location indicated on plans.

Submittals. Shop drawings shall be submitted to the Engineer for approval according to Article 505.03 of the Standard Specifications.

Materials. The materials shall be according to the following:

- (a) Letters: The individual letters for the METRA emblem shall be stainless steel conforming to Unified Numbering System, NUS S31603-Type 316L.
- (b) High-Strength Bolts: All bolts in structural connections shall be heavy hex high-strength structural bolts conforming to ASTM A 325, Type 1, mechanically galvanized. The bolts shall be lubricated prior to shipping.
- (c) Nuts: All nuts shall be heavy hex nuts conforming to ASTM F 436, mechanically galvanized. The nuts shall be wax dipped prior to shipping.
- (d) Washers: Washers shall be hardened washers conforming to ASTM F 436, mechanically galvanized.
- (e) Pipe Spacers: Pipe spacers shall be stainless steel conforming to Unified Numbering System, UNS S30403 Type 304L.
- (f) Threaded Rods: Threaded rods shall be stainless steel conforming to Unified Numbering System, UNS S30402 Type 304L.
- (g) Stainless Steel Hardware: Stainless steel nuts and washers shall conform to the requirements of Unified Numbering System, UNS S30403 Type 304L.
- (h) Paints: The mounting plate, connecting plates and angles shall be painted with inorganic zinc rich primer/acrylic/acrylic paint system matching the paint system of the existing bridge. The color will be brown as approved by METRA. At locations where the new connections plates and angle are connected to the existing bridge, all existing surfaces or bolts within 1' foot of the connections shall be painted with one coat of inorganic zinc rich primer/acrylic/acrylic paint system matching the paint system of the existing bridge
- (i) Structural Steel: All structural steel used in the emblem assemblies shall be according to AASHTO M270, Grade 50.

Fabrication. The METRA letters for the emblem shall be laser cut to the dimensions shown on the Plans and the edges ground smooth. The letters shall have an annealed and pickled plate finish meeting the approval of the Engineer. The connection plates and angles shall be welded to the back of the mounting plates shown on the Plans. The mounting plate shall be cleaned and painted as specified in this Specification. All painting shall be done in the shop. Any damage to the emblem during shipping or erection shall be repaired to the satisfaction of the Engineer.

Added 4-19-2013

Welding. Parts to be welded shall be free of loose/thick scale, moisture, grease or other foreign materials that could potentially influence weld quality. Welding procedures shall be prepared in accordance with the applicable requirements of ANSI/AWS D1.1, Structure Welding Code and submitted to the Engineer for approval. Flux-cored arc (FCAW), gas metal arc (GMAW) or shielded metal arc (SMAW) welding may be used for welding the steel connecting plates to the mounting plates. Weld heat input shall be limited to a maximum of 25 kJ / in to control grain growth in the heat affected zone.

Welding of stainless steel shall be in accordance with AWS D1.6 Structural Welding Code – Stainless Steel.

Installation. The Railroad Emblem shall be erected according to Article 505.08 of the Standard Specifications.

Exposed edges and other exposed portions of the structural steel plates shall be field painted as specified for Structural Steel.

Basis of Payment. This work will be paid for at the contract unit price lump sum for RAILROAD EMBLEM

PERENNIAL PLANT CARE CALENDAR

Activity	Time
Plant Perennials as per Plan	May 1 - June 15 August 15 - September 15
Mulch Perennial Beds	24 Hours After Planting
Install Selective Mow Stakes as per Plan or Direction of RE	Prior to Period of Establishment Inspection
Perennial Plant Period of Establishment - Water Once Every 7 Days for 4 Weeks	Within 30 Days After Planting
Replace Dead Plants	After Period of Establishment Inspection
Perennial Plant Care (First Cycle)	30 Days After Period of Establishment Inspection
Perennial Plant Care (Second Cycle)	60 Days After Period of Establishment Inspection
Perennial Plant Care (Third Cycle)	90 Days After Period of Establishment Inspection
Supplemental Watering	Use After Period of Est. Insp. As Directed by Resident Engineer

Added 4-19-2013

WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE

Effective: July 29, 2002

Revised: February 7, 2007

Description: This work shall consist of spreading a pre-emergent granular herbicide in place of weed barrier fabric in areas as shown on the plans or as directed by the Engineer. This item will be used in mulched plant beds and mulch rings.

Delete Article 253.11 and substitute the following:

Within 48 hours after planting, mulch shall be placed around all plants in the entire mulched bed or saucer area specified to a depth of 4 inches (100 mm). No weed barrier fabric will be required for tree and shrub planting. Pre-emergent Herbicide will be used instead of weed barrier fabric. The Pre-emergent Herbicide shall be applied prior to mulching. Mulch shall not be in contact with the base of the trunk.

Materials: The pre-emergent granular herbicide (Snapshot 2.5 TG or equivalent) shall contain the chemicals Trifluralin 2% active ingredient and Isoxaben with 0.5% active ingredient. The herbicide label shall be submitted to the Engineer for approval at least seventy-two (72) hours prior to application.

Method: The pre-emergent granular herbicide shall be used in accordance with the manufacturer's directions on the package. The granules are to be applied prior to mulching.

Apply the granular herbicide using a drop or rotary-type designed to apply granular herbicide or insecticides. Calibrate application equipment to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first. Apply the granular herbicide at the rate of 100 lbs/acre (112 kg/ha) or 2.3 lbs/1000 sq. ft. (11.2 kg/1000 sq. meters).

Method of Measurement: Pre-emergent granular herbicide will be measured in place in Pounds (Kilograms) of Pre-emergent Granular Herbicide applied. Areas treated after mulch placement shall not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price per pound (kilogram) of WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE.

Added 4-19-2013

SELECTIVE MOWING STAKES

This work shall be done in accordance with Article 250.08 of the Standard Specifications with the following addition:

On selective mowing stakes as shown on the plans and as directed by the Engineer, the Contractor shall furnish materials, labor and equipment to attach a 10" x 18" (250 mm x 450 mm) aluminum sign with the following text:

Prairie Plants
Wetlands

The text of the sign should be appropriate to the area being delineated with selective mowing stakes. The signs shall be permanently attached to the stakes by a method approved by the Engineer. The signs will be provided by the Department and shall be picked up by the Contractor from the District One Roadside Development Architect in Schaumburg, Illinois. Scheduling the pickup of the signs can be arranged by contacting the District One Roadside Development Unit at (847)705-4171. The cost of picking up and attaching the signs to the selective mowing stakes will not be paid for separately, but shall be included in the contract unit price for SELECTIVE MOWING STAKES.

EXISTING PAVEMENT THICKNESS

Wherever on the Existing Typical Section the existing concrete pavement is shown as 8" and varies the thickness shall be interpreted to be 13" of Asphalt Pavement. The 13" asphalt pavement shall be removed and paid for in accordance with Section 440 of the Standard Specifications.

Added 4-19-2013

HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010

Revised: April 1, 2012

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

“Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.
- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced ten feet apart longitudinally along the unconfined pavement edge and centered at the random density test location.”

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

“Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4%	91.0%
IL-9.5, IL-12.5	Ndesign ≥ 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L, IL-12.5	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0, IL-25.0	Ndesign ≥ 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L, IL-25.0	Ndesign < 90	93.0 – 97.4%	90.0%
SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0%
All Other	Ndesign = 30	93.0 - 97.4%	90.0%”

Added 4-19-2013