

ELECTRICAL GENERAL NOTES

1. ALL VEHICLE SIGNAL HEADS SHALL HAVE 12" SECTIONS. MOUNTING HARDWARE SHALL BE UNPAINTED ALUMINUM. ALL BOLTS, SCREWS, NUTS AND WASHERS SHALL BE STAINLESS STEEL. ANTI-SEIZE PASTE COMPOUND SHALL BE USED ON ALL MOUNTING HARDWARE FIELD CONNECTIONS.
2. BACKPLATES SHALL BE ABS PLASTIC.
3. THE CONTROLLER CABINET SHALL BE UNPAINTED ALUMINUM.
4. THE LOCATION OF MAST ARM SUPPORTS SHALL BE APPROVED BY THE ENGINEER BEFORE FOUNDATIONS ARE CONSTRUCTED. MAST ARM POLES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM THE EDGE OF PAVEMENT OR 2 FEET FROM THE EDGE OF SHOULDER, WHICHEVER DISTANCE IS GREATER. IN CURBED SECTIONS, THE MAST ARM POLES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM THE FACE OF THE CURB. THESE DISTANCES ARE TO THE NEAR FACE OF THE MAST ARM POLE.
5. ALL TRAFFIC SIGNAL CABLES SHALL BE #14 AWG STRANDED COPPER UNLESS OTHERWISE SPECIFIED.
6. THE LOCATION OF ALL DETECTOR LOOPS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY SLOTS ARE SAWED IN THE PAVEMENT.
7. DETECTOR LOOP LEAD-IN SPLICES SHALL BE MADE IN A HANDHOLE PER SECTION 873 OF THE STANDARD SPECIFICATIONS. CONDUCTORS SHALL BE SPLICED IN A RIGID MOLD FILLED WITH NON-HARDENING EPOXY FILLER. ROSIN-CORE SOLDER SHALL BE USED.
8. CALL DELAY SHALL NOT FUNCTION WHEN THE RELATED PHASES ARE IN THE GREEN MODE.
9. CALL CARRY-OVER SHALL FUNCTION ONLY WHEN THE RELATED PHASES ARE IN THE GREEN MODE.
10. ALL INDUCTIVE LOOP DETECTORS SUPPLIED FOR THIS PROJECT SHALL HAVE THE CAPACITY OF OPERATING WITH BOTH DELAY AND EXTENSION MODES ACTIVE, IF A TIME SETTING IS PROGRAMMED. THEY SHALL BE RACK MOUNTED.
11. ALL HANDHOLES SHALL BE CAST-IN-PLACE PORTLAND CEMENT CONCRETE (PER ARTICLE 814.03(b)). THE CAST IN PLACE LEGEND IN THE COVER SHALL BE "TRAFFIC SIGNALS". SLOPE HANDHOLE COVERS TO MATCH PROPOSED GRADE ELEVATIONS.
12. ILLINOIS STATE LAW REQUIRES A 48 HOUR NOTICE BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS LISTED IN THE GENERAL NOTES. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
13. LOCATE UNDERGROUND CABLES PRIOR TO ATTEMPTING TO CONSTRUCT THIS PROJECT.
14. THE LOCATIONS OF THE SIGNAL HEADS ON MAST ARMS SHALL BE APPROVED BY THE ENGINEER BEFORE MAST ARMS ARE INSTALLED.
15. SEE SPECIAL PROVISIONS FOR TRAFFIC CONTROL AND CONSTRUCTION SEQUENCING REQUIREMENTS.
16. DEPTHS OF THE 36" CONCRETE FOUNDATIONS FOR THE MAST ARM SUPPORT POLES ARE AS FOLLOWS:
 1. N-W CORNER: 13'-0" DEEP
 2. S-E CORNER: 15'-0" DEEP
 3. S-W CORNER: 13'-0" DEEP

SCHEDULE OF QUANTITIES

CODE NO.	ITEM	ABBREVIATED ITEM NAME	UNIT	TOTAL QUANTITIES
44003900	MEDIAN SURFACE REMOVAL AND REPLACEMENT	MED SURF REM & REPL	SQ FT	1003
80300100	LOCATING UNDERGROUND CABLE	LOCATE UNDERGR CABLE	FOOT	200
80400105	ELECTRIC SERVICE INSTALLATION, SPECIAL	ELECT SERV INSTALL SP	EACH	1
81000300	CONDUIT IN TRENCH, 1" DIA., GALVANIZED STEEL	CON T 1 GALVS	FOOT	14
81000500	CONDUIT IN TRENCH, 1 1/2" DIA., GALVANIZED STEEL	CON T 1 1/2 GALVS	FOOT	14
81012300	CONDUIT IN TRENCH, 1" DIA., PVC	CON T 1 PVC	FOOT	1250
81012400	CONDUIT IN TRENCH, 1 1/4" DIA., PVC	CON T 1 1/4 PVC	FOOT	13
81012600	CONDUIT IN TRENCH, 2" DIA., PVC	CON T 2 PVC	FOOT	61
81012800	CONDUIT IN TRENCH, 3" DIA., PVC	CON T 3 PVC	FOOT	28
81012900	CONDUIT IN TRENCH, 3 1/2" DIA., PVC	CON T 3 1/2 PVC	FOOT	70
81013000	CONDUIT IN TRENCH, 4" DIA., PVC	CON T 4 PVC	FOOT	8
81013100	CONDUIT IN TRENCH, 5" DIA., PVC	CON T 5 PVC	FOOT	23
81013200	CONDUIT PUSHED, 1" DIA., GALVANIZED STEEL	CON P 1 GALVS	FOOT	48
81013500	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	CON P 2 GALVS	FOOT	235
81013700	CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL	CON P 3 GALVS	FOOT	40
81013800	CONDUIT PUSHED, 3 1/2" DIA., GALVANIZED STEEL	CON P 3 1/2 GALVS	FOOT	149
81013900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	CON P 4 GALVS	FOOT	62
81019000	CONDUIT PUSHED, 5" DIA., GALVANIZED STEEL	CON P 5 GALVS	FOOT	95
81400100	HANDHOLE	HANDHOLE	EACH	11
81400300	DOUBLE HANDHOLE	DBL HANDHOLE	EACH	1
81900205	TRENCH AND BACKFILL FOR ELECTRICAL WORK (SPECIAL)	TR & BKFIL ELEC W SPL	FOOT	1481
85700200	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	FAC T4 CAB	EACH	1
85706000	INTERSECTION MONITOR UNIT	INTERSEC MONITOR UNIT	EACH	1
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	ELCBL C SIGNAL 14 5C	FOOT	6433
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	ELCBL C SIGNAL 14 7C	FOOT	1702
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	ELCBL C LEAD 14 1PR	FOOT	6661
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	ELCBL C SERV 6 2C	FOOT	14
87502680	TRAFFIC SIGNAL POST, ALUMINUM 14 FT.	TS POST A 14	EACH	1
87700210	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT.	S MAA & P 34	EACH	1
87700230	STEEL MAST ARM ASSEMBLY AND POLE, 42 FT.	S MAA & P 42	EACH	1
87700250	STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	S MAA & P 50	EACH	1
87800100	CONCRETE FOUNDATION, TYPE A	CONC FDN TY A	FOOT	3
87800200	CONCRETE FOUNDATION, TYPE D	CONC FDN TY D	FOOT	3
87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	CONC FDN TY E 36D	FOOT	41
87900200	DRILL EXISTING HANDHOLE	DRILL EX HANDHOLE	EACH	4
88040070	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	SH P LED 1F 3S BM	EACH	7
88040090	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	SH P LED 1F 3S MAM	EACH	6
88040150	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	SH P LED 1F 5S BM	EACH	2
88040160	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	SH P LED 1F 5S MAM	EACH	2
88200100	TRAFFIC SIGNAL BACKPLATE	TS BACKPLATE	EACH	8
88500100	INDUCTIVE LOOP DETECTOR	INDUCTIVE LOOP DETECT	EACH	17
88600100	DETECTOR LOOP, TYPE I	DET LOOP T1	FOOT	1466
89000105	TEMPORARY TRAFFIC SIGNAL INSTALLATION (SPECIAL)	TEMP TR SIG INSTAL SP	EACH	1
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	REMOV EX TS EQUIP	EACH	1
89502380	REMOVE EXISTING HANDHOLE	REMOV EX HANDHOLE	EACH	9
89502385	REMOVE EXISTING CONCRETE FOUNDATION	REMOV EX CONC FDN	EACH	8
X7240500	RELOCATE EXISTING SIGNS	RELOC EX SIGNS	EACH	3

DETECTOR LOOP REQUIREMENTS AND CALCULATIONS

NUMBER	LOOP	PHASE	SIZE	TURNS	INDUCTANCE (Microhenries)	RESISTANCE (Ohms)
1	EB LT	7	6 X 50	3,6,3	988.06	4.07
2	EB TH #1	4	6 X 50	3,6,3	985.75	4.04
3	EB TH #2	4	6 X 50	3,6,3	983.44	4.01
4	EB RT	4	6 X 50	3,6,3	979.03	3.95
5	NB LT	5	6 X 50	3,6,3	953.62	3.59
6	WB LT	3	6 X 50	3,6,3	907.63	2.96
11	WB TH #1	8	6 X 50	3,6,3	912.25	3.02
12	WB TH #2	8	6 X 50	3,6,3	914.77	3.06