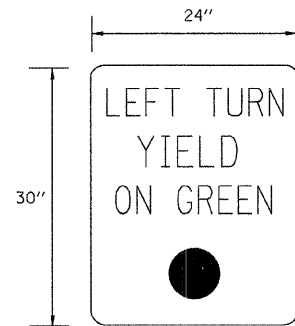


F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
592	121-1R, 121HVB	ST. CLAIR	239	127
TRAFFIC SIGNALS - RANGE LANE				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ELECTRICAL GENERAL NOTES

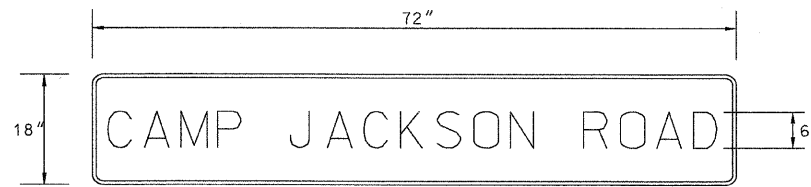
- ALL SIGNAL HEADS SHALL BE POLYCARBONATE AND SHALL HAVE 12" LENSES. MOUNTING HARDWARE SHALL BE UNPAINTED ALUMINUM. ALL BOLTS, SCREWS, NUTS AND WASHERS SHALL BE STAINLESS STEEL. ANTI-SEIZE PASTE COMPOUND SHALL BE USED ON ALL MOUNTING HARDWARE FIELD CONNECTIONS.
- BACKPLATES SHALL BE ABS PLASTIC.
- CONTROLLER CABINETS, SIGNAL POSTS AND BASES SHALL BE UNPAINTED ALUMINUM.
- 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 TEN (10) FEET FROM THE EDGE OF PAVEMENT OR TWO (2) FEET FROM THE EDGE OF SHOULDER, WHICHEVER DISTANCE IS GREATER. IN CURBED SECTIONS, THE MAST ARM POLES SHALL BE LOCATED A MINIMUM OF FIVE (5) FEET FROM THE FACE OF THE CURB. THESE DISTANCES ARE TO THE NEAR FACE OF THE MAST ARM POLE.
- ALL TRAFFIC SIGNAL CABLE SHALL BE #14 AWG STRANDED COPPER UNLESS OTHERWISE SPECIFIED. THERE SHALL BE FOUR (4) GROUND RODS IN THE CONTROLLER CABINET. GROUND WIRES SHALL BE #6 AWG STRANDED, BARE COPPER.
- ALL PROPOSED CONDUIT SHALL BE PVC UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL BE PLACED AND BACKFILLED PRIOR TO CONSTRUCTION OF NEW PAVEMENT, SHOULDER AND CURB. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR PUSHING CONDUIT AFTER SUCH WORK HAS BEEN COMPLETED.
- THE LOCATION OF ALL DETECTOR LOOPS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY SLOTS ARE SAWED IN THE PAVEMENT.
- THE OPTICAL UNIT OF ALL TRAFFIC AND PEDESTRIAN SIGNAL HEAD SHALL BE LIGHT EMITTING DIODES (LED).
- DETECTOR LOOP LEAD-IN SPLICES SHALL BE MADE IN A HANDHOLE PER SECTION 873 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION". CONDUCTORS SHALL BE SPLICED IN A RIGID MOLD. RESIN CORE SOLDER SHALL BE USED.
- CALL DELAY SHALL NOT FUNCTION WHEN THE RELATED PHASES ARE IN THE GREEN MODE.
- "CALL CARRY-OVER" SHALL FUNCTION ONLY WHEN THE RELATED PHASES ARE IN THE GREEN MODE.
- ALL INDUCTION LOOP DETECTOR AMPLIFIERS SUPPLIED FOR THIS INTERSECTION SHALL BE RACK MOUNTED AND SHALL HAVE THE CAPACITY OF OPERATING WITH BOTH DELAY AND EXTENSION MODES ACTIVE, IF A TIME SETTING IS PROGRAMMED.
- SLOPE HANDHOLE COVERS TO MATCH PROPOSED GRADE ELEVATIONS.
- ALL UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY ATTEMPT TO CONSTRUCT ANY COMPONENT OF THE VARIOUS TRAFFIC SIGNAL INSTALLATIONS. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE LIMITS OF THIS IMPROVEMENT ARE THE FOLLOWING:
 ATT (TELEPHONE)
 VILLAGE OF CAHOKIA (SANITARY & STORM SEWER)
 COMMONFIELDS OF CAHOKIA PUBLIC WATER (WATER)
 CITY OF COLUMBIA (WATER)
 ILLINOIS-AMERICAN WATER (WATER)
 AMERTEN IP (GAS & ELECTRIC)
 MARATHON OIL COMPANY (PETROLEUM PIPELINE)
 MISSISSIPPI RIVER GAS TRANSMISSION (GAS PIPELINE)
 PHILLIPS PIPELINE COMPANY (PETROLEUM PIPELINE)
 TCI OF ILLINOIS (CABLE TELEVISION)
 METROEAST SANITARY DISTRICT (SANITARY SEWER)
 THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS HAVE BEEN LOCATED AT THE TIME OF SURVEY, OR BASED ON AVAILABLE EXISTING INFORMATION. NO GUARANTEE IS IMPLIED THAT ALL UTILITIES HAVE BEEN LOCATED OR DEPICTED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UTILITIES. IT MAY BE NECESSARY TO HAND DIG TEST HOLES TO EXPOSE EXISTING UTILITIES AT SOME LOCATIONS.
- SEE "JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS" (JULIE) IN THE SPECIAL PROVISIONS. CALL (800) 892-0123 ONE WEEK BEFORE PLANNING TO DIG.
- CONDUIT SPLICES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED PART OF THE NEW CONDUIT INSTALLATION.

- THE CONTRACTOR SHALL INSTALL THE STREET NAME SIGNS ON THE MAST ARMS AS SHOWN ON THE PLANS AS FOLLOWS:
 ST. PAUL DRIVE INTERSECTION:
 ONE SIGN, N.W. QUAD., VISIBLE TO W.B. TRAFFIC (D)
 ONE SIGN, N.E. QUAD., VISIBLE TO S.B. TRAFFIC (B)
 ONE SIGN, S.E. QUAD., VISIBLE TO E.B. TRAFFIC (D)
 RANGE LANE INTERSECTION:
 ONE SIGN, N.W. QUAD., VISIBLE TO W.B. TRAFFIC (C)
 ONE SIGN, S.W. QUAD., VISIBLE TO S.B. TRAFFIC (B)
 ONE SIGN, S.E. QUAD., VISIBLE TO E.B. TRAFFIC (C)
 ONE SIGN, N.E. QUAD., VISIBLE TO N.B. TRAFFIC (B)
 THE CONTRACTOR SHALL FABRICATE, DELIVER AND INSTALL A STREET NAME SIGN AT EACH OF THE ABOVE SPECIFIED LOCATIONS. THE SIGNS AND INSTALLATION SHALL CONFORM TO SECTION T 201 OF THE "STANDARD SPECIFICATION FOR TRAFFIC CONTROL ITEMS" AND HIGHWAY STANDARD NOS. 720001, 720006 AND 720016.
- THE LOCATION OF SIGNAL HEADS ON MAST ARMS SHALL BE APPROVED BY THE ENGINEER BEFORE MAST ARMS ARE INSTALLED.
- SEE SPECIAL PROVISIONS FOR TRAFFIC CONTROL AND CONSTRUCTION STAGING REQUIREMENTS.
- THE ENGINEER WILL PROVIDE SOIL BORINGS TO DETERMINE ACTUAL MAST ARM FOUNDATION DEPTHS. THE CONTRACTOR SHALL VERIFY REQUIRED DEPTHS PRIOR TO STEEL FABRICATION AND CONSTRUCTION OF CONCRETE FOUNDATIONS.
- THE SERVICE POLES SHALL BE 30 FEET, CLASS 5 WOOD POLES.
- THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT MUST BE ECONOLITE TO MATCH THE EXISTING SYSTEM.

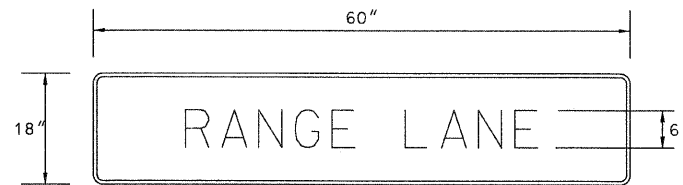


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TOTAL FIVE (5) SIGNS
R10-12

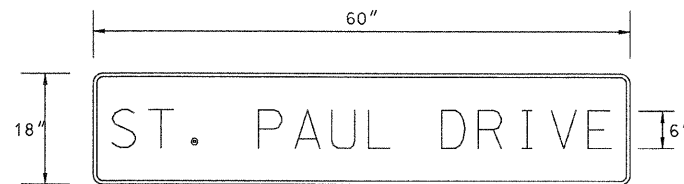
MOUNT SIGNS ON THE MAST ARMS, 2'-8" FROM THE CENTER OF THE SIGN TO THE CENTER OF THE 5-SECTION SIGNAL HEAD. (8" SPACING BETWEEN THE EDGE OF THE SIGN AND THE EDGE OF THE SIGNAL HEAD BACK PLATE)



Ⓖ
TOTAL TWO (2) SIGNS
STYLE (a)



Ⓖ
TOTAL TWO (2) SIGNS
STYLE (a)



Ⓖ
TOTAL TWO (2) SIGNS
STYLE (a)

DETAIL OF STREET NAME SIGNS
(NOT TO SCALE)

STREET NAME SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE HIGHWAY STANDARD 720016.

DETECTOR LOOP REQUIREMENTS & CALCULATIONS
IL ROUTE 157 & ST. PAUL DRIVE

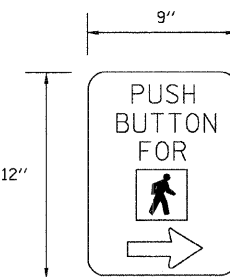
LOOP #	DIRECTION	PHASE	LOOP SIZE (FT)	REQUIRED NUMBER OF TURNS	CALCULATED INDUCTANCE (microhenries)	CALCULATED RESISTANCE (ohms)
1	EB RT/THRU	6	6' X 50'	3-6-3	821	2.4
2	EB THRU	6	6' X 50'	3-6-3	825	2.5
3	EB RT/THRU	6	6' X 6'	6	361	2.8
4	EB THRU	6	6' X 6'	6	364	2.8
5	WB THRU	2	6' X 50'	3-6-3	819	2.3
6	WB THRU	2	6' X 50'	3-6-3	822	2.4
7	WB LT	5	6' X 50'	3-6-3	824	2.5
8	WB THRU	2	6' X 6'	6	363	2.8
9	WB THRU	2	6' X 6'	6	366	2.9
10	NB RT	3	6' X 50'	3-6-3	806	2.1
11	NB LT	3	6' X 50'	3-6-3	809	2.1
12	NB LT	3	6' X 6'	5	225	1.6

THE ABOVE VALUES ARE CALCULATIONS OF COMBINED LOOP & LEAD-IN INDUCTANCE AND RESISTANCE. ACTUAL MEASURED VALUES SHOULD BE WITHIN ± 20% OF THESE VALUES.

DETECTOR LOOP REQUIREMENTS & CALCULATIONS
IL ROUTE 157 & RANGE LANE

LOOP #	DIRECTION	PHASE	LOOP SIZE (FT)	REQUIRED NUMBER OF TURNS	CALCULATED INDUCTANCE (microhenries)	CALCULATED RESISTANCE (ohms)
1	EB RT/THRU	6	6' X 50'	3-6-3	833	2.7
2	EB THRU	6	6' X 50'	3-6-3	836	2.7
3	EB LT	1	6' X 50'	3-6-3	839	2.8
4	EB RT/THRU	6	6' X 6'	6	350	2.5
5	EB THRU	6	6' X 6'	6	353	2.6
6	EB LT	1	6' X 6'	6	356	2.7
7	SB RT/THRU	4	6' X 50'	3-6-3	853	3.1
8	SB LT	7	6' X 50'	3-6-3	856	3.2
9	SB RT/THRU	4	6' X 6'	6	357	2.7
10	SB LT	7	6' X 6'	6	359	2.7
11	WB RT/THRU	2	6' X 50'	3-6-3	853	3.1
12	WB THRU	2	6' X 50'	3-6-3	856	3.2
13	WB LT	5	6' X 50'	3-6-3	859	3.2
14	WB RT/THRU	2	6' X 6'	6	373	3.1
15	WB THRU	2	6' X 6'	6	377	3.1
16	WB LT	5	6' X 6'	6	380	3.2
17	NB RT/THRU	8	6' X 50'	3-6-3	809	2.1
18	NB LT	3	6' X 50'	3-6-3	812	2.2
19	NB RT/THRU	8	6' X 6'	5	222	1.5
20	NB LT	3	6' X 6'	5	225	1.6

THE ABOVE VALUES ARE CALCULATIONS OF COMBINED LOOP & LEAD-IN INDUCTANCE AND RESISTANCE. ACTUAL MEASURED VALUES SHOULD BE WITHIN ± 20% OF THESE VALUES.



Ⓖ
TWO (2) EACH LOCATION
TOTAL EIGHT (8) SIGNS
R10-4b(R)

LOCATE PEDESTRIAN PUSH BUTTON AT RIGHT ANGLE TO CROSSWALK

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNALS

FAP ROUTE 592
SECTION 121-1R, 121HVB
ST. CLAIR COUNTY

DRAWN BY: