

FAI ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
255	60-8-1TS	MADISON	11	3
STA.	TO STA.			
CONTRACT NO.: 76799				

ELECTRICAL GENERAL NOTES

- ALL VEHICLE AND PEDESTRIAN 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.
- BACKPLATES SHALL BE ABS PLASTIC.
- THE CONTROLLER CABINET 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 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.
- ALL TRAFFIC SIGNAL CABLES SHALL BE #14 AWG STRANDED COPPER UNLESS OTHERWISE SPECIFIED. TERMINAL ENDS SHALL HAVE CRIMPED-ON RING TONGUE CONNECTORS.
- THE LOCATION OF ALL DETECTOR LOOPS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY SLOTS ARE SAWED IN THE PAVEMENT. THE NUMBER OF TURNS OF WIRE FOR INDUCTIVE LOOP DETECTOR INSTALLATION SHALL BE AS SHOWN ON THE PLANS.
- 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.
- 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 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.
- 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.
- ILLINOIS STATE LAW REQUIRES A 48 HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY ALSO 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 FOLLOWS:
 - AT&T (COMMUNICATIONS)
 - CHARTER COMMUNICATION (CABLE TV)
 - COLLINSVILLE (CITY OF WATER)
 - ILLINOIS AMERICAN WATER COMPANY (WATER)
 - ILLINOIS POWER COMPANY (GAS)
 - SOUTHWESTERN BELL COMMUNICATION (COMMUNICATION)
 - SOUTHWESTERN ELECTRIC COOPERATIVE, INCORPORATED (ELECTRIC)
 - TOUCH AMERICA, INCORPORATED (COMMUNICATION)

(MEMBERS OF J.U.L.I.E. PHONE (800) - 892-0123 ARE INDICATED BY *)
NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
- LOCATE UNDERGROUND CABLES PRIOR TO ATTEMPTING TO CONSTRUCT THIS PROJECT.
- ACTUAL DEPTHS OF THE CONCRETE FOUNDATIONS FOR THE MAST ARM SUPPORT POLES ARE AS FOLLOWS:

44' MAA & P: 13'-0" DEEP, 36" DIA.
40' MAA & P: 13'-0" DEEP, 36" DIA.
38' MAA & P: 11'-0" DEEP, 36" DIA.

THESE DEPTHS ARE DETERMINED BY THE DEPARTMENT FROM THE SOIL BORING DATA.
- A 9-1-1 ADDRESS MUST BE OBTAINED FROM THE MADISON COUNTY 9-1-1 COORDINATOR PRIOR TO OBTAINING NEW ELECTRICAL/TELEPHONE SERVICE AT THIS LOCATION. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER/TECHNICIAN A MINIMUM OF SIX WEEKS IN ADVANCE OF THE ANTICIPATED DATE ELECTRICAL/TELEPHONE SERVICE WILL BE REQUIRED IN ORDER THAT THE NECESSARY ADDRESS CAN BE OBTAINED. IF THERE ARE ANY QUESTIONS REGARDING THE ABOVE, CONTACT Mr. Ray Romine AT (618) 692-7040 x-5911.
- THE CONTRACTOR SHALL FABRICATE, DELIVER AND INSTALL ONE (1) STREET NAME SIGNS AT THE SPECIFIED LOCATIONS. THE SIGNS AND INSTALLATION SHALL CONFORM TO SECTION 720 OF THE STANDARD SPECIFICATIONS AND STANDARDS 720016 AND 720001.
- NO SERVICE POLE SHALL BE LOCATED CLOSER THAN 10' FROM THE EDGE OF PAVEMENT FROM HORSESHOE LAKE ROAD (CH 35).
- ANCHOR BOLTS, NUTS, AND WASHERS REQUIRED WITH TYPE D FOUNDATION SHALL BE INCLUDED IN THE PAY ITEM "FULL-ACTUATED CONTROLLER AND TYPE IV CABINET".
- THE CONTRACTOR SHALL INSTALL FOUR (4) GROUND RODS (3/4" x 12' LONG) AND #6 AWG BARE COPPER GROUND CONDUCTORS IN THE CONTROLLER FOUNDATION AS PER THE SPECIAL PROVISION, "CONCRETE FOUNDATION, TYPE D".

- THE LOAD SWITCHES AND FLASHER PROVIDED WITH THE TRAFFIC SIGNAL CONTROLLER SHALL BE "MODULAR TYPE".
- THE AREAS THAT ARE DISTURBED DUE TO THE DIGGING OR TRENCHING SHALL BE COMPLETED ON A WEEKLY BASIS USING SEEDING, CLASS 2 AND MULCH METHOD 1 AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 251 OF THE STANDARD SPECIFICATIONS EXCEPT THAT NO EMULSIFIED ASPHALT SHALL BE USED. THE COST SHALL BE INCLUDED IN THE CONTRACT.
- THE UNDERGROUND "CABLE MARKING TAPE" SHALL BE INSTALLED WITH ALL TRENCH & BACKFILL FOR ELECTRICAL WORK IN ACCORDANCE WITH THE ARTICLES 815.03(d) & 1066.05 OF THE STANDARD SPECIFICATIONS.
- IN EVENT OF NEW TRAFFIC SIGNAL CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ONE CHANGEABLE MESSAGE SIGN (CMS) ON EACH STATE ROUTE LEG OF THE INTERSECTION AT LOCATIONS APPROVED BY THE ENGINEER AND SHALL REMAIN IN OPERATION 72 HOURS PRIOR TO AND 72 HOURS AFTER THE TRAFFIC SIGNAL TURN-ON.

AN EXAMPLE OF THE MESSAGE DISPLAYED ON THE SIGN FOR THE 72 HOURS PRIOR TO SIGNAL TURN-ON FOLLOWS:

SCREEN 1- "TRAFFIC SIGNAL TURN-ON" ; SCREEN 2- "TUESDAY, DATE, 10:00 A.M."

THE MESSAGE DISPLAYED ON THE SIGN FOR THE 72 HOURS AFTER THE SIGNAL TURN-ON FOLLOWS:



















SCREEN 1- "TRAFFIC SIGNAL AHEAD"

EACH SCREEN SHALL BE DISPLAY FOR 1.5 SECONDS. THE MESSAGE DISPLAYED ON THE SIGN SHALL BE APPROVED BY THE ENGINEER.

COMMITMENTS

NONE

TRAFFIC SIGNALS LEGEND

- GSC GALVANIZED STEEL CONDUIT
- RREC REMOVE & REINSTALL ELECTRIC CABLES FROM CODUIT
- PVCC POLYVINYL CHLORIDE CONDUIT
-  EXISTING SIGNAL POST
-  EXISTING TRAFFIC SIGNAL, MAST ARM
-  EXISTING HANDHOLE
-  EXISTING DOUBLE HANDHOLE
-  EXISTING DETECTOR LOOP
-  EXISTING CONTROLLER
-  EXISTING STREET NAME SIGN/TRAFFIC SIGN
-  EXISTING SERVICE INSTALLATION
-  EXISTING GALVANIZED STEEL CONDUIT
-  PROPOSED SIGNAL HEAD WITH BACKPLATE, MAST ARM MOUNTED
-  PROPOSED HANDHOLE
-  PROPOSED DOUBLE HANDHOLE
-  PROPOSED DETECTOR LOOP
-  PROPOSED CONTROLLER
-  PROPOSED CONDUIT: "T" TRENCH, "P" PUSH, SIZE SPECIFIED
-  PROPOSED STREET NAME SIGN/TRAFFIC SIGN
-  PROPOSED SERVICE INSTALLATION
-  PROPOSED SIGNAL POST

DETECTOR LOOP REQUIREMENTS AND CALCULATIONS FOR FAI 255 AND HORSESHOE LAKE ROAD (CH 35)

LOOP	PHASE (Φ)	LOOP SIZE(FT)	REQUIRED # OF TURNS	CALCULATED INDUCTANCE MICROHENRIES (μH)	CALCULATED RESISTANCE OHMS (Ω)
1. SB CCO	8	6 x 12	5	340	2.41
2. SB LT	8	6 x 50	3-6-3	833	2.6
3 SB RT	8	6 x 50	3-6-3	830	2.6
4. EB CCO	1	6 x 6	7	506	3.6
5. EB LT	1	6 x 50	3-6-3	848	1.6
6. EB RT	1	6 x 50	3-6-3	848	1.6
7. EB THRU	6	6 x 50	3-6-3	845	1.6
8. WB CCO	2	6 x 6	6	351	2.6
9. WB THRU	2	6 x 50	3-6-3	274	1.6
10. WB RT	2	6 x 25	6	419	0.84

THE ABOVE VALUES ARE CALCULATED OF COMBINED LOOP AND LEAD-IN INDUCTANCE AND RESISTANCE. ACTUAL MEASURED VALUES SHOULD BE WITHIN +/- 20% OF THESE VALUES.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
**NOTES, LEGEND,
DETECTOR LOOP TABLE**

FAI ROUTE 255
SECTION 60-8-1TS
MADISON COUNTY

DRAWN BY:

9/27/2004
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