

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
789		MADISON	42	28
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

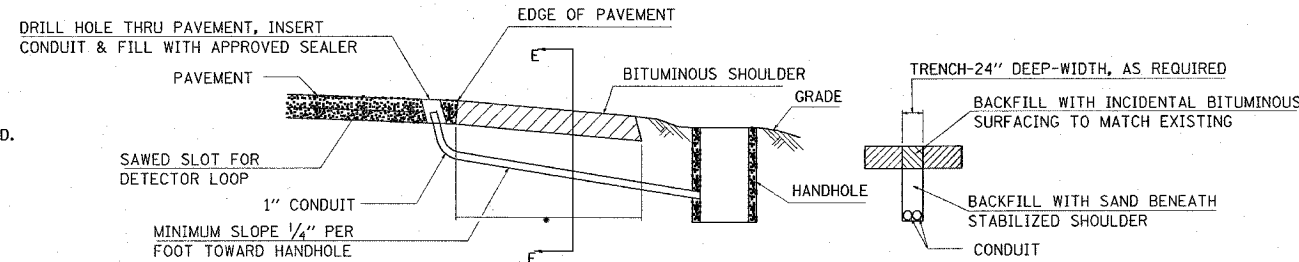
DETECTOR LOOP REQUIREMENTS AND CALCULATIONS

LOOP	PHASE (Ø)	LOOP SIZE (FT)	REQUIRED # OF TURNS	CALCULATED INDUCTANCE MICROHENRIES (µH)	CALCULATED RESISTANCE OHMS (Ω)
EB_CCO	6	6 X 6	7	494	3.32
EB_THRU LN	6	6 X 50	3-6-3	853	3.11
EB_LT	1	6 X 50	3-6-3	853	3.11
EB_BT	6	6 X 30	3-6-3	557	2.60
SB_THRU LN	8	6 X 50	3-6-3	803	1.97
SB_BT LN	8	6 X 40	3-6-3	647	1.55
WB_CCO THRU	2	6 X 6	7	525	4.00
WB_CCO LT	5	6 X 6	7	525	4.00
WB_THRU LN	2	6 X 50	3-6-3	827	2.52
WB_LT LN	5	6 X 50	3-6-3	827	2.52
WB_BT LN	2	6 X 30	3-6-3	519	1.74
NB_THRU	4	6 X 50	3-6-3	855	3.16
NB_BT	4	6 X 40	3-6-3	702	2.79

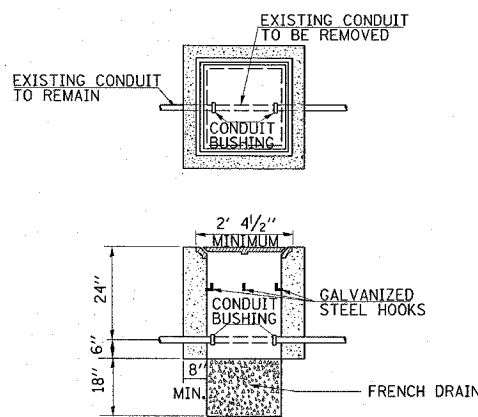
THE ABOVE VALUES ARE CALCULATED OF COMBINED LOOP AND LEAD-IN INDUCTANCE AND RESISTANCE. ACTUAL MEASURED VALUES SHOULD BE WITHIN +/- 20% OF THESE VALUES.

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.
- BACK PLATES 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.
- DETECTOR LOOP LEAD-IN SPLICES SHALL BE MADE IN A HAND HOLE 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 CARRYOVER 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 HAND HOLES 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 HAND HOLE COVERS TO MATCH PROPOSED GRADE ELEVATIONS.
- ACTUAL DEPTHS OF THE CONCRETE FOUNDATIONS FOR THE MAST ARM SUPPORT POLES ARE AS FOLLOWS:
 - NE CORNER, 32' M.A.: 11'-0" DEEP
 - NW CORNER, 42' M.A.: 13'-0" DEEP
 - SE CORNER, 32' M.A.: 11'-0" DEEP
 - SW CORNER, 32' M.A.: 11'-0" DEEP
 THESE DEPTHS ARE DETERMINED BY THE DEPARTMENT FROM THE SOIL BORING DATA.
- DETECTORS LOOPS SHALL BE PLACED IN THE BINDER COURSE PRIOR TO INSTALLING BITUMINOUS SURFACE COURSE.
- THE CONTRACTOR SHALL INSTALL FOUR (4) GROUND RODS (3/4" X 12') AND #6 AWG BARE COPPER GROUND CONDUCTORS IN THE CONTROLLER FOUNDATION AS PER THE SPECIAL PROVISION, "CONCRETE FOUNDATION, TYPE D".
- NO SERVICE POLE SHALL BE LOCATED CLOSER THAN 10' MEASURED FROM THE EDGE OF PAVEMENT FROM FAP ROUTE 789 (IL-143).
- ANCHOR BOLTS, NUTS, AND WASHER REQUIRED WITH TYPE D FOUNDATION SHALL BE INCLUDED IN THE PAY ITEM, "CONCRETE FOUNDATION, TYPE D".
- AN UNDERGROUND "CABLE MARKING TAPE" SHALL BE INSTALLED WITH ALL TRENCH & BACK FILL FOR ELECTRICAL WORK IN ACCORDANCE WITH THE ARTICLES 815.03 (d) & 1066.05 OF THE STANDARD SPECIFICATIONS.
- CENTER TO CENTER DISTANCE BETWEEN THE CONDUITS, WHERE TWO OR MORE LOOP LEAD-IN CONDUITS ARE INSTALLED FROM THE EDGE OF THE PAVEMENT TO THE NEAREST HAND HOLE, SHALL BE SIX INCHES MINIMUM AT THE EDGE OF THE PAVEMENT.
- LOCATE UNDERGROUND CABLES PRIOR TO ATTEMPTING TO CONSTRUCT THIS PROJECT.
- A 9-1-1 ADDRESS TO OBTAIN THE ELECTRICAL SERVICE AT THIS LOCATION IS "15-1-09-31-00-000-001.003. FOR FURTHER ASSISTANCE, PLEASE CALL MR. WILLIAM H. GAMBLIN, 9-1-1 COORDINATOR, MADISON COUNTY. HIS CONTACT NUMBER IS (618) 296-5900.
- PORTABLE CHANGEABLE MESSAGE SIGNS SHALL REMAIN IN OPERATION 72 HOURS PRIOR TO AND 72 HOURS AFTER THE TRAFFIC SIGNAL TURN ON.



SEC. E-E
 LIMITS OF "TRENCH AND BACKFILL FOR ELECTRICAL WORK (SPECIAL)"
 DETAIL
 TRENCH AND BACKFILL FOR ELECTRICAL WORK (SPECIAL)
 (NO SCALE)



DETAIL
 HANDHOLE TO INTERCEPT EXISTING CONDUIT*
 * NOT A PAY ITEM

NOTES:

- REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHING SHALL BE INCIDENTAL TO THE HANDHOLE.
- THE CONTRACTOR SHALL BE PAID TO LOCATE THE CONDUIT UNDER OTHER PROVISIONS OF THIS CONTRACT. SEE LOCATING UNDERGROUND CABLE IN THE STANDARD SPECIFICATIONS.

TRAFFIC SIGNALS LEGEND

- EVPS EMERGENCY VEHICLE PRIORITY SYSTEM
- GSC GALVANIZED STEEL CONDUIT
- PVCC POLYVINYL CHLORIDE CONDUIT
- UD UNIT-DUCT
- EXISTING SIGNAL POST
- EXISTING SIGNAL POST WITH BACKPLATE
- EXISTING TRAFFIC SIGNAL MAST ARM
- EXISTING HANDHOLE
- EXISTING DOUBLE HANDHOLE
- EXISTING HEAVY DUTY HANDHOLE
- EXISTING DETECTOR LOOP
- EXISTING CONTROLLER
- EXISTING STREET NAME SIGN/TRAFFIC SIGN
- EXISTING ILLUMINATED SIGN
- EXISTING SERVICE INSTALLATION
- EXISTING EMERGENCY VEHICLE SYSTEM DETECTOR (E.V.P.S.)
- EXISTING (E.V.P.S.) CONFIRMATION BEACON
- EXISTING SIGNAL HEAD, PEDESTRIAN
- EXISTING PEDESTRIAN PUSHBUTTON DETECTOR
- EXISTING GALVANIZED STEEL CONDUIT
- PROPOSED SIGNAL HEAD WITH BACKPLATE, MAST ARM MOUNTED
- PROPOSED EMERGENCY VEHICLE SYSTEM DETECTOR (E.V.P.S.)
- PROPOSED (E.V.P.S.) CONFIRMATION BEACON
- PROPOSED HANDHOLE
- PROPOSED DOUBLE HANDHOLE
- PROPOSED HEAVY DUTY HANDHOLE
- PROPOSED DETECTOR LOOP
- PROPOSED CONTROLLER
- PROPOSED PEDESTRIAN PUSHBUTTON DETECTOR
- PROPOSED SIGNAL HEAD, PEDESTRIAN
- PROPOSED CONDUIT: "T" TRENCH, "P" PUSH, SIZE SPECIFIED
- PROPOSED STREET NAME SIGN/TRAFFIC SIGN
- PROPOSED ILLUMINATED SIGN
- PROPOSED SERVICE INSTALLATION
- PROPOSED SIGNAL POST
- PROPOSED SIGNAL POST WITH BACKPLATE

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION ELECTRICAL GENERAL NOTES, LEGEND, AND DETAILS FAP ROUTE 789 SECTION 125RS-1, 1251-2TS-2 COUNTY MADISON
NAME	DATE	
		SCALE: VERT. HORIZ. DATE DRAWN BY CHECKED BY

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