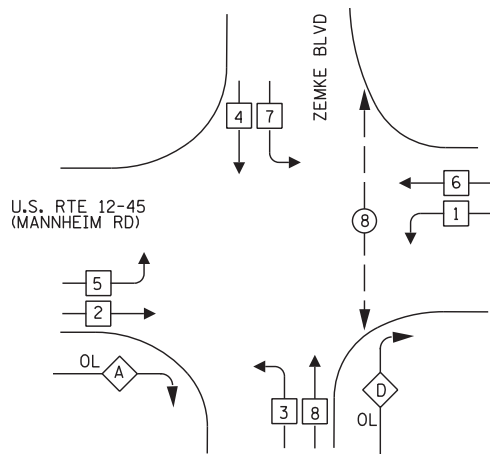


CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

LEGEND

- ⊛ DUAL ENTRY PHASE
- ⊙ SINGLE ENTRY PHASE
- ◊ OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

PHASE DESIGNATION DIAGRAM

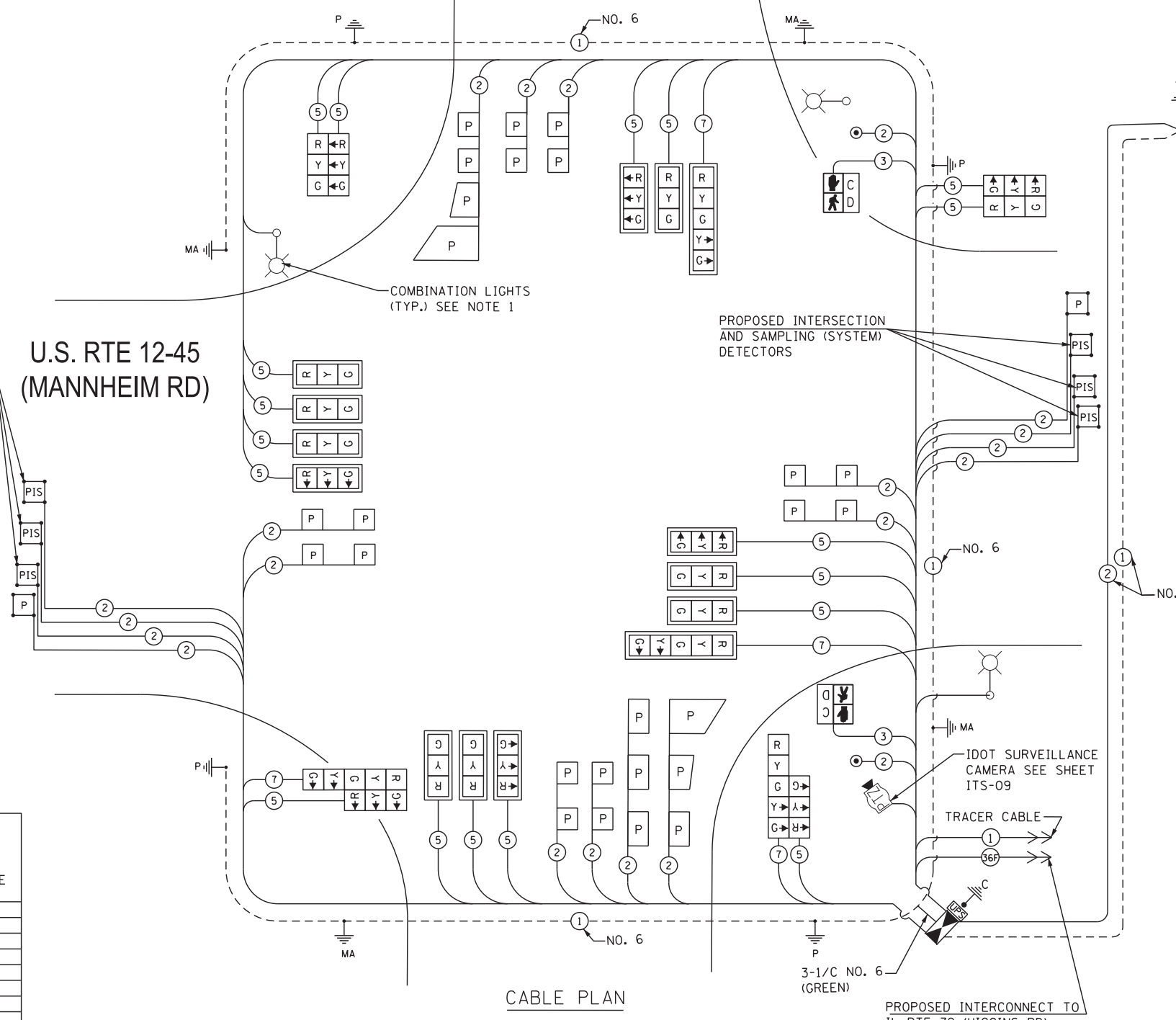
| OVERLAP LETTER | PERMISSIVE PHASE | PROTECTED PHASE |
|----------------|------------------|-----------------|
| A | = 2 + | 3 |
| D | = 8 + | 1 |

PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTORS

U.S. RTE 12-45 (MANNHEIM RD)

ZEMKE BLVD

THE END OF THE TRACER CABLE SHALL BE CONTINUOUS AND EXTEND INTO THE CONTROLLER CABINET.



CABLE PLAN

PROPOSED INTERCONNECT TO IL RTE 72 (HIGGINS RD)

SCHEDULE OF QUANTITIES

| NO. | PAY ITEM DESCRIPTION | UNT | MANHEIM RD / ZEMKE BLVD |
|-----|---|-------|-------------------------|
| 1 | SIGN PANEL - TYPE 1 | SQ FT | 76.50 |
| 2 | SIGN PANEL - TYPE 2 | SQ FT | 33.00 |
| 3 | UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA. | FOOT | 882 |
| 4 | UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA. | FOOT | 61 |
| 5 | UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA. | FOOT | 127 |
| 6 | UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA. | FOOT | 619 |
| 7 | HANDHOLE | EACH | 5 |
| 8 | HEAVY-DUTY HANDHOLE | EACH | 4 |
| 9 | DOUBLE HANDHOLE | EACH | 2 |
| 10 | TRANSCEIVER - FIBER OPTIC | EACH | 1 |
| 11 | ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C | FOOT | 234 |
| 12 | ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C | FOOT | 248 |
| 13 | ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C | FOOT | 4095 |
| 14 | ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C | FOOT | 1,201 |
| 15 | ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR | FOOT | 5,319 |
| 16 | ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C | FOOT | 190 |
| 17 | ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C | FOOT | 1,562 |
| 18 | TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT. | EACH | 4 |
| 19 | STEEL MAST ARM ASSEMBLY AND POLE, 54 FT. | EACH | 1 |
| 20 | STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 46 FT. | EACH | 2 |
| 21 | STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 60 FT. | EACH | 1 |
| 22 | CONCRETE FOUNDATION, TYPE A | FOOT | 20 |
| 23 | CONCRETE FOUNDATION, TYPE C | FOOT | 4 |
| 24 | CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER | FOOT | 41 |
| 25 | CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER | FOOT | 21 |
| 26 | SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED | EACH | 12 |
| 27 | SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED | EACH | 2 |
| 28 | SIGNAL HEAD, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED | EACH | 2 |
| 29 | SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED | EACH | 2 |
| 30 | PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER | EACH | 2 |
| 31 | TRAFFIC SIGNAL BACKPLATE LOUVERED, ALUMINUM | EACH | 14 |
| 32 | INDUCTIVE LOOP DETECTOR | EACH | 19 |
| 33 | PREFORMED DETECTOR LOOP | FOOT | 1,443 |
| 34 | PEDESTRIAN PUSH-BUTTON | EACH | 2 |
| 35 | TEMPORARY TRAFFIC SIGNAL INSTALLATION | EACH | 1 |
| 36 | REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT | EACH | 1 |
| 37 | REMOVE EXISTING HANDHOLE | EACH | 12 |
| 38 | REMOVE EXISTING CONCRETE FOUNDATION | EACH | 7 |
| 39 | SERVICE INSTALLATION (SPECIAL) | EACH | 1 |
| 40 | FULL-ACTUATED CONTROLLER AND TYPE 'N' CABINET, SPECIAL | EACH | 1 |
| 41 | UNINTERRUPTIBLE POWER SUPPLY, SPECIAL | EACH | 1 |
| 42 | TEMPORARY TRAFFIC SIGNAL TIMING | EACH | 1 |

| I.D.O.T TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS | | | | | TOTAL WATTAGE |
|---|-----------|-----------------|-------------|-------------|----------------|
| TYPE | NO. LAMPS | WATTAGE INCAND. | WATTAGE LED | % OPERATION | |
| SIGNAL (RED) | 22 | 17 | 0.50 | 187.00 | |
| (YELLOW) | 22 | 25 | 0.25 | 137.50 | |
| (GREEN) | 22 | 15 | 0.25 | 82.50 | |
| ARROW | 8 | 12 | 0.10 | 9.60 | |
| PED. SIGNAL | 2 | 25 | 1.00 | 50.00 | |
| CONTROLLER | 1 | 100 | 1.00 | 100 | |
| ILLUM. SIGN | - | 25 | 0.50 | - | |
| VIDEO SYSTEM | - | - | 1.00 | - | |
| FLASHER | | | | | |
| ENERGY COSTS TO: ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY/DISTRICT 1 201 WEST CENTER COURT/SCHAUMBURG, ILLINOIS 60196-1096 | | | | | TOTAL = 566.60 |
| ENERGY SUPPLY CONTACT: STEVE FITZGERALD PHONE: (708) 235-2327 COMPANY: ComEd | | | | | |

| TRAFFIC SIGNAL CONTROLLER LOAD | | | |
|--------------------------------|---------------------|-----------------|--------|
| LOCATION | TRAFFIC SIGNAL LOAD | CCTV CONTROLLER | TOTAL |
| MANHEIM RD / ZEMKE BLVD | 0.56KW | 0.5KW | 1.06KW |

NOTE:
1. INTERSECTION COMBINATION LIGHTS MAINTAINED BY IDOT. SEE LIGHTING PLANS FOR DETAILS.

NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

DELTA ENGINEERING GROUP, LLC
 USER NAME = rmanucod
 DESIGNED JA
 DRAWN RM
 CHECKED HS
 DATE 10/19/2012
 PLOT SCALE = *SCALE*
 PLOT DATE = 11/29/2012
 FILE NAME = c:\cadd\lib\pwr\manucod2\pwr\great.lakes\dms47849\0160P35-sht.tsl4.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN AND PHASE DESIGNATION DIAGRAM
 US RTE 12-45 (MANNHEIM RD) AND ZEMKE BLVD
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 330 0105-WRS COOK 537 247
 CONTRACT NO. 60P35
 ILLINOIS FED. AID PROJECT

TS-14