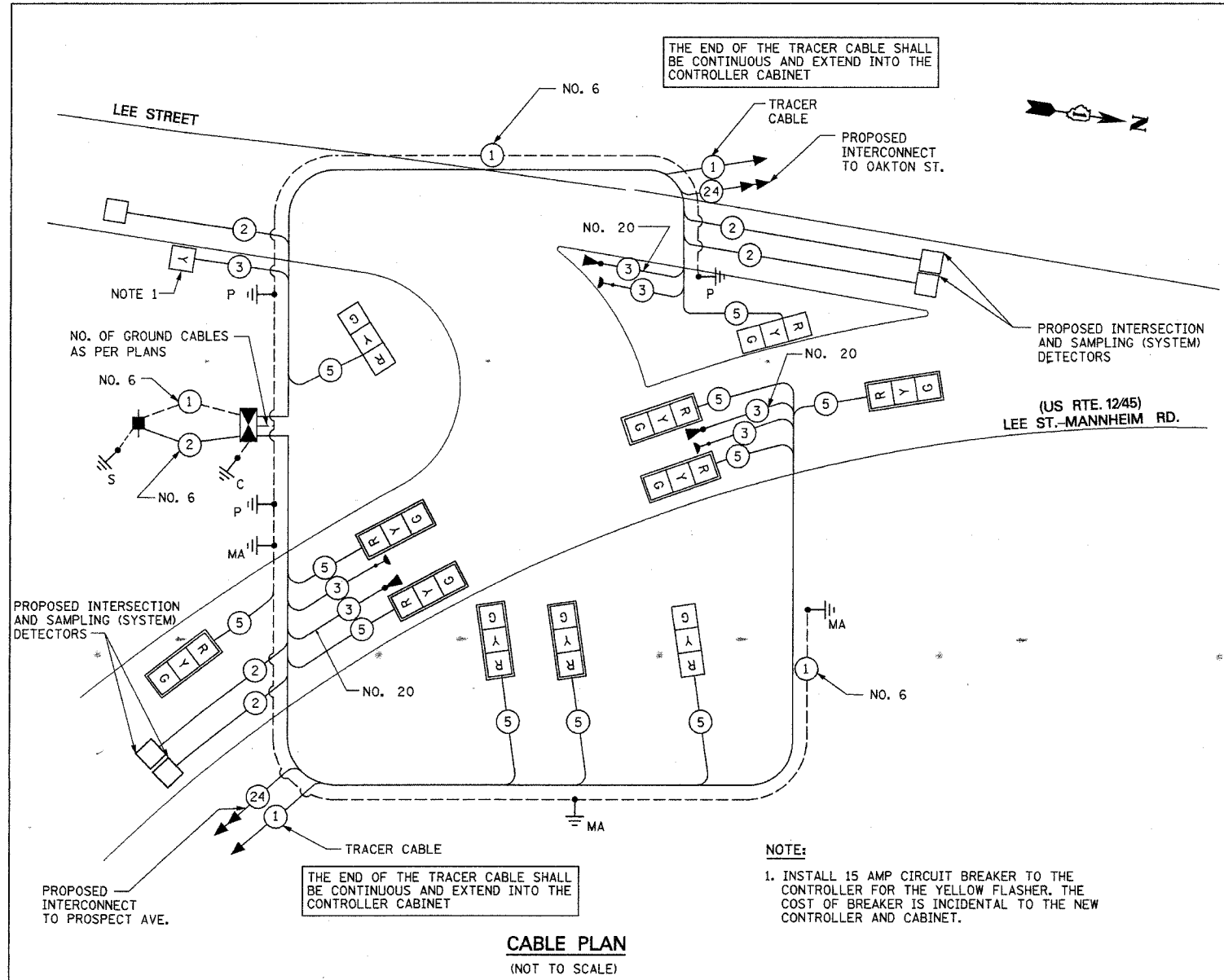


| F.A.P. RTE.        | SECTION    | COUNTY  | TOTAL SHEETS | SHEET NO. |
|--------------------|------------|---|--------------|-----------|
| 330                | 2004-018TS | COOK  | 28           | 16        |
| STA. TO STA.       |            | FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT |              |           |
| CONTRACT NO. 62737 |            |   |              |           |



### CABLE PLAN LEGEND

| EXISTING | PROPOSED | DESCRIPTION   |
|----------|----------|---|
|          |          | 8" (200mm) TRAFFIC SIGNAL SECTION   |
|          |          | 12" (300mm) TRAFFIC SIGNAL SECTION  |
|          |          | 12" (300mm) PEDESTRIAN SIGNAL SECTION   |
|          |          | RAILROAD CONTROL CABINET  |
|          |          | CONTROLLER CABINET  |
|          |          | SERVICE INSTALLATION  |
|          |          | VEHICLE DETECTOR, INDUCTION LOOP  |
|          |          | TELEPHONE INSTALLATION  |
|          |          | MAGNETIC DETECTOR   |
|          |          | EMERGENCY VEHICLE LIGHT DETECTOR  |
|          |          | CONFIRMATION BEACON   |
|          |          | PUSHBUTTON DETECTOR   |
|          |          | 2 DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED. |
|          |          | 1 GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)  |
|          |          | 24 FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM12F SM12F  |
|          |          | SIGNAL FACE WITH BACKPLATE "P" INDICATES PROGRAMMED HEAD.   |
|          |          | RAILROAD CONTROL CABINET  |
|          |          | ILLUMINATED SIGN "NO LEFT TURN"   |
|          |          | ILLUMINATED SIGN "NO RIGHT TURN"  |
|          |          | H/C GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (HH), OR CONTROLLER (C)                                       |
|          |          | P GROUND ROD AT POST (P) OR MAST ARM POLE (MA)  |
|          |          | S GROUND ROD AT ELECTRIC SERVICE INSTALLATION   |

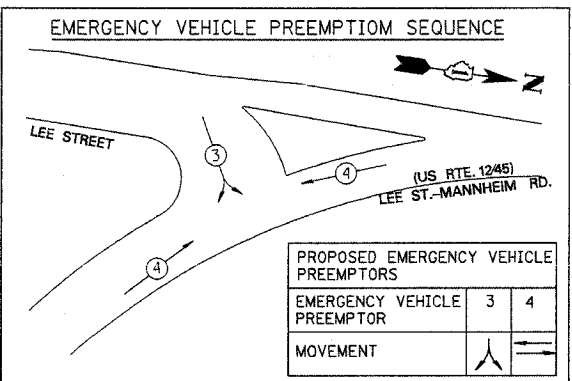
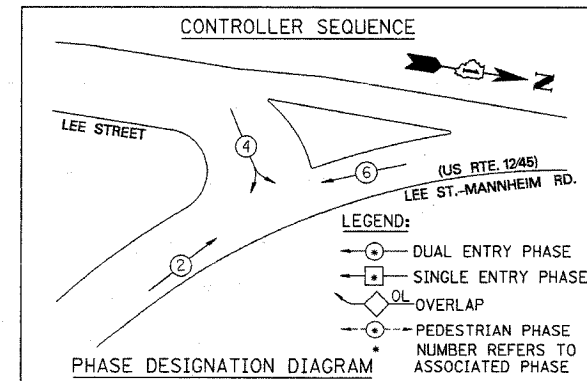
### SCHEDULE OF QUANTITIES

| ITEM  | UNIT  | QNTY. |
|---|-------|-------|
| TREE PRUNING (OVER 10 INCH DIA)                               | EACH  | 3     |
| MEDIAN REMOVAL  | SQ FT | 140   |
| CLASS D PATCHES TYPE III, 12 INCH                             | SQ YD | 15.5  |
| TRAFFIC CONTROL AND PROTECTION, STANDARD 701501               | L SUM | 0.2   |
| TRAFFIC CONTROL AND PROTECTION, STANDARD 701606               | L SUM | 0.2   |
| TRAFFIC CONTROL AND PROTECTION, STANDARD 701701               | L SUM | 0.2   |
| TRAFFIC CONTROL AND PROTECTION, STANDARD 701801               | L SUM | 0.2   |
| SIGN PANEL - TYPE 1   | SQ FT | 9     |
| SIGN PANEL - TYPE 2   | SQ FT | 27.5  |
| THERMOPLASTIC PAVEMENT MARKING LETTERS AND SYMBOLS            | SQ FT | 73    |
| THERMOPLASTIC PAVEMENT MARKING LINE 4"                        | FOOT  | 28    |
| THERMOPLASTIC PAVEMENT MARKING LINE 12"                       | FOOT  | 58    |
| THERMOPLASTIC PAVEMENT MARKING LINE 24"                       | FOOT  | 60    |
| CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL                  | FOOT  | 596   |
| CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL              | FOOT  | 77    |
| CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL                  | FOOT  | 35    |
| CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL                     | FOOT  | 139   |
| CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL                 | FOOT  | 16    |
| CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL                     | FOOT  | 194   |
| HANDHOLE  | EACH  | 7     |
| DOUBLE HANDHOLE   | EACH  | 1     |
| TRENCH AND BACKFILL FOR ELECTRICAL WORK                       | FOOT  | 708   |
| MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION           | EACH  | 1     |
| FULL-ACTUATED CONTROLLER AND TYPE IV CABINET                  | EACH  | 1     |
| TRANSCIEIVER - FIBER OPTIC                                    | EACH  | 1     |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C                   | FOOT  | 745   |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C                   | FOOT  | 1730  |
| ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR             | FOOT  | 1900  |
| ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C                 | FOOT  | 40    |
| TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.                  | EACH  | 2     |
| TRAFFIC SIGNAL POST, GALVANIZED STEEL 18 FT.                  | EACH  | 1     |
| STEEL MAST ARM ASSEMBLY AND POLE, 24 FT.                      | EACH  | 1     |
| STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.                      | EACH  | 1     |
| STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.                      | EACH  | 1     |
| CONCRETE FOUNDATION, TYPE A                                   | FOOT  | 12    |
| CONCRETE FOUNDATION, TYPE D                                   | FOOT  | 4     |
| CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER                  | FOOT  | 45    |
| TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM                  | EACH  | 8     |
| INDUCTIVE LOOP DETECTOR                                       | EACH  | 5     |
| DETECTOR LOOP, TYPE I   | FOOT  | 120   |
| LIGHT DETECTOR  | EACH  | 3     |
| LIGHT DETECTOR AMPLIFIER                                      | EACH  | 1     |
| TEMPORARY TRAFFIC SIGNAL INSTALLATION                         | EACH  | 1     |
| REMOVE ELECTRIC CABLE FROM CONDUIT                            | FOOT  | 1650  |
| REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT                      | EACH  | 1     |
| REMOVE EXISTING HANDHOLE                                      | EACH  | 10    |
| REMOVE EXISTING CONCRETE FOUNDATION                           | EACH  | 4     |
| POST MOUNTED FLASHING BEACON INSTALLATION (SPECIAL)           | EACH  | 1     |
| SERVICE INSTALLATION, POLE MOUNTED                            | EACH  | 1     |
| ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C                | FOOT  | 1025  |
| ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 20 3C TWISTED, SHIELDED | FOOT  | 455   |
| SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED      | EACH  | 8     |
| SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED       | EACH  | 3     |

**CABLE PLAN**  
(NOT TO SCALE)

**NOTE:**  
1. INSTALL 15 AMP CIRCUIT BREAKER TO THE CONTROLLER FOR THE YELLOW FLASHER. THE COST OF BREAKER IS INCIDENTAL TO THE NEW CONTROLLER AND CABINET.

| I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS |           |                |             |             | TOTAL WATTAGE |
|--|-----------|----------------|-------------|-------------|---------------|
| TYPE   | NO. LAMPS | WATTAGE INCAND | WATTAGE LED | % OPERATION |               |
| SIGNAL (RED)   | 11        | 135            | 17          | 0.50        | 93.5          |
| (YELLOW)   | 11        | 135            | 25          | 0.25        | 68.75         |
| (GREEN)  | 11        | 135            | 15          | 0.25        | 41.25         |
| ARROW  |           |                |             |             |               |
| PED. SIGNAL  |           | 90             | 25          | 1.00        |               |
| CONTROLLER   | 1         | 100            | 100         | 1.00        | 100           |
| ILLUM. SIGN  |           | 84             | 35          | 0.05        |               |
| FLASHER (YELLOW)   | 1         | 135            | 25          | 0.50        | 12.5          |
| TOTAL =  |           |                |             |             | 316           |



| FOUNDATION (DEPTH) | (FT.) (m) | CABLE SLACK (FT.) (m) | CABLE SLACK (FT.) (m) | CABLE SLACK (FT.) (m) |                      |
|--------------------|-----------|-----------------------|-----------------------|-----------------------|----------------------|
| TYPE A - POST      | 4 (1.2)   | HANDHOLE              | 6.5 (2.0)             | ALL FOUNDATIONS       | 3.5 (1.0)            |
| D - CONTROLLER     | 4 (1.2)   | DOUBLE HANDHOLE       | 13 (4.0)              | MAST ARM (L) POLE     | 20'H-2'=(6m+L-0.6m)= |
| E - M. ARM POLE    |           | SIGNAL POST           | 2 (1.0)               | BRACKET MOUNTED       | 13 (4.0)             |
|                    |           | 24" (600mm)           | 10 (3.0)              | FIBER OPTIC           | 4 (1.2)              |
|                    |           | 30" (750mm)           | 15 (4.6)              | ELECTRIC SERVICE      | 13.5 (4.1)           |
|                    |           |                       |                       | ELECTRIC SERVICE      | 13.5 (4.1)           |
|                    |           |                       |                       | SERVICE TO GROUND     | 6 (1.8)              |
|                    |           |                       |                       | POST MOUNTED          |                      |

ENERGY COST TO: Illinois Department of Transportation  
Division of Highways / District 1  
201 W Center Court/Schaumburg, Illinois 60196-1096

ENERGY SUPPLY: CONTACT: **Mr. Sam Thomas**  
PHONE: **(630)-691-4456**  
COMPANY: ComEd

**KAM ENGINEERING, INC.**  
CONSULTING ENGINEERS  
707A Davis Road, Suite 205  
Eglin, Illinois 60123-1369

| REVISIONS |      | ILLINOIS DEPARTMENT OF TRANSPORTATION  |
|-----------|------|--|
| NAME      | DATE |  |
|           |      | CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES, US RTE. 12/45 (MANNHEIM RD.) AND LEE ST. |
|           |      |  |
|           |      |  |
|           |      |  |
|           |      |  |

SCALE: NONE  
DATE: FEBRUARY, 2005

DRAWN BY: RV/MD  
DESIGNED BY: DS  
CHECKED BY: AS/KG

G:\projects\JOB 337\SHIT\Mannheim\LeeMann cbl.sht 02/16/2005