

EJM ENGINEERING, INC.
411 South Wells Street Suite 800
Chicago, Illinois 60607



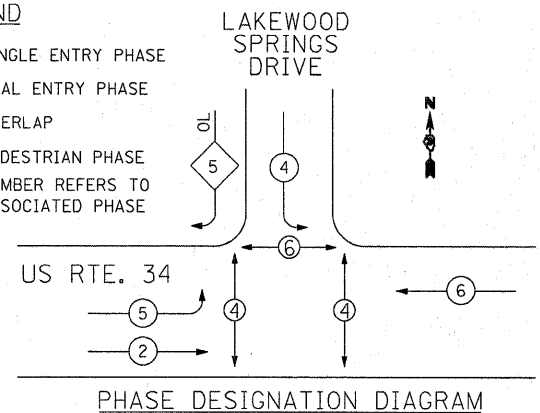
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DETECTOR LOOP INDUCTANCE CHART

LOOP SYSTEM	LABEL	NUMBER OF TURNS	INDUCTANCE (MH)	FREQUENCY (HERTZ)	J PIN STATUS
A	PHASE 6 WB STBR	3	347	35,672	OFF
B	PHASE 6 WB FAR	3	282	30,031	ON
C	PHASE 2 EB STBR	3	340	35,612	OFF
D	PHASE 2 EB FAR	3	271	30,031	ON
E	PHASE 5 EB STBR LL	3	496	21,329	ON
F	PHASE 7 SB STBR RL	3	513	24,037	ON
G	PHASE 7 SB STBR LL	3	390	23,975	ON

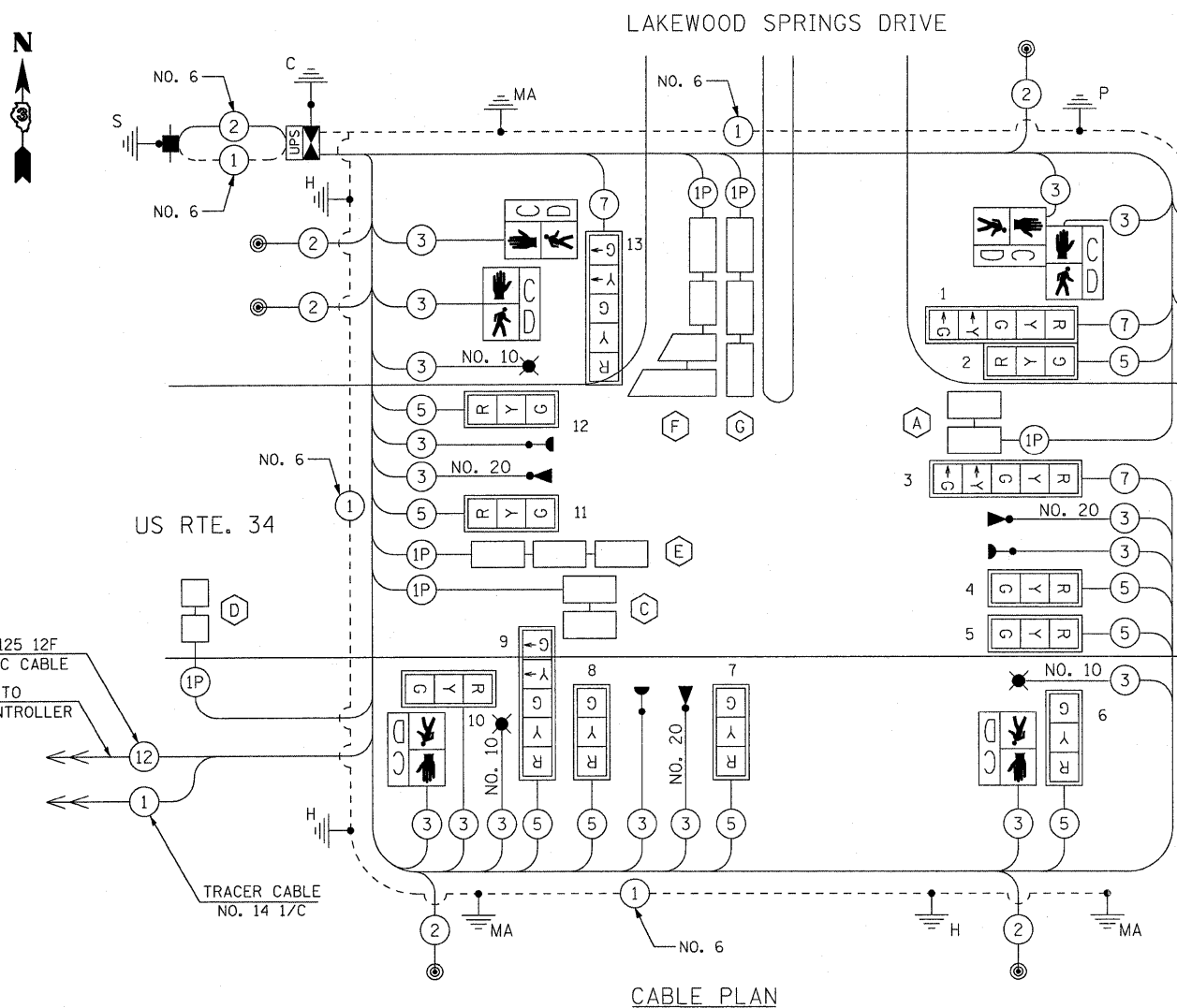
LEGEND

- ◻ SINGLE ENTRY PHASE
- ◻ DUAL ENTRY PHASE
- ◻ OVERLAP
- ◻ PEDESTRIAN PHASE
- * NUMBER REFERS TO ASSOCIATED PHASE



SCHEDULE OF QUANTITIES

DESCRIPTION	UNIT	QUANTITY
SIGN PANEL - TYPE 1	SQ FT	21.5
SIGN PANEL - TYPE 2	SQ FT	30
SERVICE INSTALLATION - GROUND MOUNTED	EACH	1
UNDERGROUND CONDUIT, PVC, 1" DIA.	FOOT	334
UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	922
UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	142
UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	238
HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	7
DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 3-1/C NO. 10	FOOT	587
LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 250 WATT	EACH	3
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL	EACH	1
UNINTERRUPTIBLE POWER SUPPLY, EXTENDED	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	849
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	891
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1732
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	717
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1778
ELECTRIC CABLE IN CONDUIT, SERVICE NO. 6 2C	FOOT	28
ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUND CONDUCTOR, NO. 6 1C	FOOT	436
TRAFFIC SIGNAL POST, 16FT	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 32 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 40 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 44 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	8
CONCRETE FOUNDATION, TYPE C	FOOT	4
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	43
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	3
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	6
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	2
PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	6
TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC	EACH	13
INDUCTIVE LOOP DETECTOR	EACH	7
DETECTOR LOOP, TYPE 1	FOOT	1062
LIGHT DETECTOR	EACH	3
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	6
TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING HANDHOLE	EACH	12
REMOVE EXISTING CONCRETE FOUNDATION	EACH	5
ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED, SHIELDED	FOOT	586



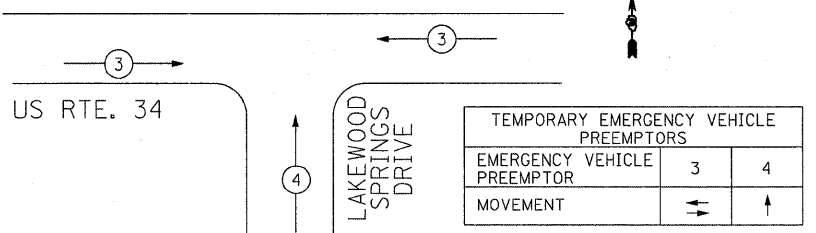
CABLE PLAN LEGEND

- | | | |
|----------|----------|--|
| EXISTING | PROPOSED | 8" (200mm) TRAFFIC SIGNAL SECTION |
| EXISTING | PROPOSED | 12" (300mm) TRAFFIC SIGNAL SECTION |
| EXISTING | PROPOSED | 12" (300mm) PEDESTRIAN SIGNAL SECTION |
| EXISTING | PROPOSED | 12" (300mm) PEDESTRIAN SIGNAL SECTION |
| EXISTING | PROPOSED | CONTROLLER CABINET |
| EXISTING | PROPOSED | UNINTERRUPTIBLE POWER SUPPLY |
| EXISTING | PROPOSED | SERVICE INSTALLATION |
| EXISTING | PROPOSED | TELEPHONE CONNECTION |
| EXISTING | PROPOSED | EMERGENCY VEHICLE LIGHT DETECTOR |
| EXISTING | PROPOSED | CONFIRMATION BEACON |
| EXISTING | PROPOSED | PUSHBUTTON DETECTOR |
| EXISTING | PROPOSED | VEHICLE DETECTOR, INDUCTION LOOP |
| EXISTING | PROPOSED | LUMINAIRE |
| EXISTING | PROPOSED | SIGNAL FACE WITH BACKPLATE |
| EXISTING | PROPOSED | GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER |
| EXISTING | PROPOSED | GROUND ROD AT POST OR MAST ARM POLE |
| EXISTING | PROPOSED | GROUND ROD AT ELECTRIC SERVICE INSTALLATION |
| EXISTING | PROPOSED | GROUND CABLE IN CONDUIT, NO.6 SOLID COPPER (GREEN) |
| EXISTING | PROPOSED | FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F & SM12F |
| EXISTING | PROPOSED | PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER |

ELECTRICAL LOAD CHART

US RTE. 34			
SIGNAL SECTION	NUMBER	WATTAGE EACH	BURN TIME (PERCENTAGE)
RED	7	17	27
YELLOW	7	25	7
GREEN	7	15	66
YELLOW ARROW	2	12	7
GREEN ARROW	2	12	7
WALK (SYMBOL)	2	25	50
HAND (SYMBOL)	2	25	50
LAKEWOOD DRIVE			
SIGNAL SECTION	NUMBER	WATTAGE EACH	BURN TIME (PERCENTAGE)
RED	5	17	77
YELLOW	5	25	4
GREEN	5	15	19
YELLOW ARROW	2	12	19
GREEN ARROW	2	12	19
WALK (SYMBOL)	2	25	50
HAND (SYMBOL)	2	25	50
TRAFFIC SIGNAL CABINET			
ITEM	NUMBER	WATTAGE EACH	BURN TIME (PERCENTAGE)
CONTROLLER	1	100	100
LOOP DETECTORS	10	4	100
LIGHTING			
ITEM	NUMBER	WATTAGE EACH	BURN TIME (PERCENTAGE)
LUMINAIRE	3	250	50

EMERGENCY VEHICLE PRE-EMPTION SEQUENCE



THE INDUCTION LOOP DETECTORS SHALL BE RACK MOUNTED AND THE REVISION NUMBER SHOULD BE 34 OR HIGHER.

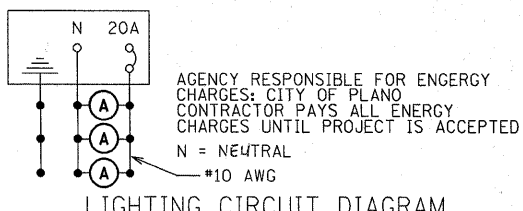
THE GROUNDING SYSTEM SHALL INCLUDE GROUND RODS AND CONNECTIONS IN HANDHOLES. ALL GROUND ROD CONNECTIONS SHALL BE AN IRREVERSIBLE COMPRESSION GROUND TAP INSTALLED WITH A HYDRAULIC 12 TON PRESS TOOL OR EQUAL.

ALL SIGNAL INDICATIONS SHALL BE L.E.D.

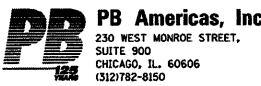
RESTORATION OF WORK AREA: RESTORATION OF THE TRAFFIC SIGNAL WORK SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATION 252 AND 250 RESPECTIVELY

CONTROLLER SHALL BE ECONOLITE BRAND EQUIPMENT

PEDESTRIAN PUSH-BUTTON DETECTOR SHALL BE 4EVER BRAND EQUIPMENT OR APPROVED EQUAL



LIGHTING CIRCUIT DIAGRAM



FILE NAME = dunoenbd
DESIGNED -
DRAWN -
CHECKED -
DATE -
PLOT SCALE = 20,0000' / 1" =
PLOT DATE = 9/27/2011

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CABLE PLAN AND SCHEDULE OF QUANTITIES
US RTE 34 AND LAKEWOOD SPRINGS DRIVE**

SCALE: NTS SHEET NO. 12 OF 14 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
591	13R-214R-1 & BR-11115R-1	KENDALL	429	246
				CONTRACT NO. 66985

ILLINOIS FED. AID PROJECT