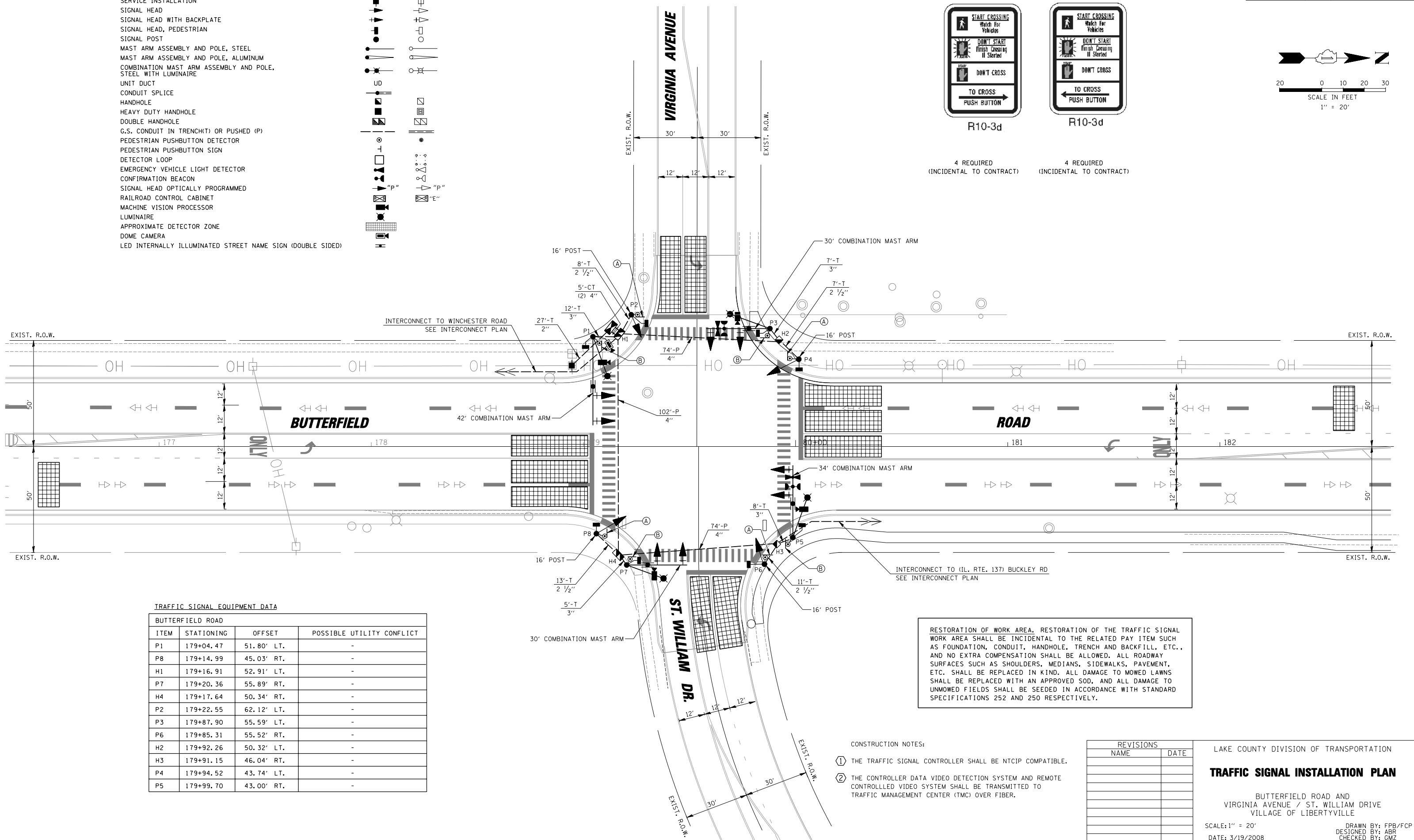
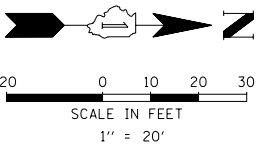
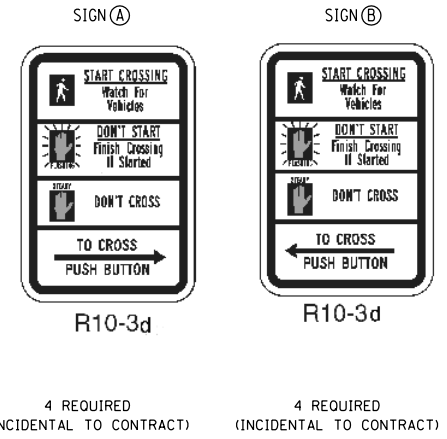
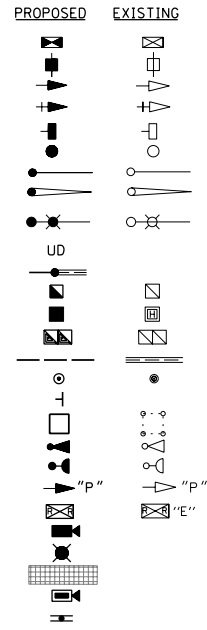


TRAFFIC SIGNAL LEGEND

- CONTROLLER
- SERVICE INSTALLATION
- SIGNAL HEAD
- SIGNAL HEAD WITH BACKPLATE
- SIGNAL HEAD, PEDESTRIAN
- SIGNAL POST
- MAST ARM ASSEMBLY AND POLE, STEEL
- MAST ARM ASSEMBLY AND POLE, ALUMINUM
- COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE
- UNIT DUCT
- CONDUIT SPLICE
- HANDHOLE
- HEAVY DUTY HANDHOLE
- DOUBLE HANDHOLE
- G.S. CONDUIT IN TRENCH(T) OR PUSHED (P)
- PEDESTRIAN PUSHBUTTON DETECTOR
- PEDESTRIAN PUSHBUTTON SIGN
- DETECTOR LOOP
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- SIGNAL HEAD OPTICALLY PROGRAMMED
- RAILROAD CONTROL CABINET
- MACHINE VISION PROCESSOR
- LUMINAIRE
- APPROXIMATE DETECTOR ZONE
- DOME CAMERA
- LED INTERNALLY ILLUMINATED STREET NAME SIGN (DOUBLE SIDED)



TRAFFIC SIGNAL EQUIPMENT DATA

BUTTERFIELD ROAD			
ITEM	STATIONING	OFFSET	POSSIBLE UTILITY CONFLICT
P1	179+04.47	51.80' LT.	-
P8	179+14.99	45.03' RT.	-
H1	179+16.91	52.91' LT.	-
P7	179+20.36	55.89' RT.	-
H4	179+17.64	50.34' RT.	-
P2	179+22.55	62.12' LT.	-
P3	179+87.90	55.59' LT.	-
P6	179+85.31	55.52' RT.	-
H2	179+92.26	50.32' LT.	-
H3	179+91.15	46.04' RT.	-
P4	179+94.52	43.74' LT.	-
P5	179+99.70	43.00' RT.	-

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA 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 SPECIFICATIONS 252 AND 250 RESPECTIVELY.

- CONSTRUCTION NOTES:
- ① THE TRAFFIC SIGNAL CONTROLLER SHALL BE NTCIP COMPATIBLE.
 - ② THE CONTROLLER DATA VIDEO DETECTION SYSTEM AND REMOTE CONTROLLED VIDEO SYSTEM SHALL BE TRANSMITTED TO TRAFFIC MANAGEMENT CENTER (TMC) OVER FIBER.

REVISIONS	
NAME	DATE

LAKE COUNTY DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL INSTALLATION PLAN

BUTTERFIELD ROAD AND VIRGINIA AVENUE / ST. WILLIAM DRIVE VILLAGE OF LIBERTYVILLE

SCALE: 1" = 20'

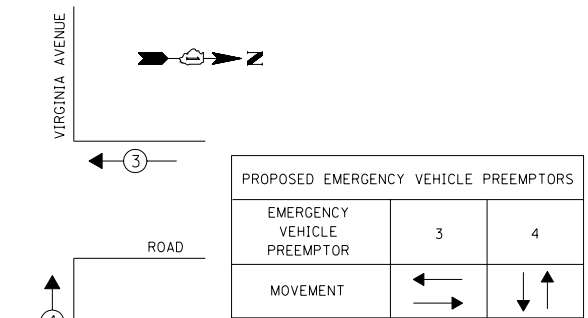
DATE: 3/19/2008

DRAWN BY: FFB/FCP
DESIGNED BY: ABR
CHECKED BY: GMZ

CABLE PLAN LEGEND

- | EXISTING | PROPOSED | |
|----------|----------|---|
| | | 8" (200mm) TRAFFIC SIGNAL SECTION |
| | | 12" (300mm) TRAFFIC SIGNAL SECTION |
| | | 12" (300mm) PEDESTRIAN SIGNAL SECTION |
| | | 12" (300mm) PEDESTRIAN SIGNAL SECTION WITH COUNTDOWN TIMER |
| | | CONTROLLER CABINET |
| | | SERVICE INSTALLATION |
| | | TELEPHONE INSTALLATION |
| | | VEHICLE DETECTOR, INDUCTION LOOP |
| | | 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 |
| | | 36 FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM24F SM12F |
| | | SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD. |
| | | RAILROAD CONTROL CABINET |
| | | ILLUMINATED SIGN "NO LEFT TURN" |
| | | ILLUMINATED SIGN "NO RIGHT TURN" |
| | | C GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C) |
| | | P GROUND ROD AT POST (P) OR MAST ARM POLE (MA) |
| | | S GROUND ROD AT ELECTRIC SERVICE INSTALLATION |
| | | LUMINAIRE |
| | | MACHINE VISION PROCESSOR |
| | | DOME CAMERA |
| | | UNINTERRUPTIBLE POWER SUPPLY |

EMERGENCY VEHICLE PREEMPTION SEQUENCE



LAKE COUNTY DIVISION OF TRANSPORTATION

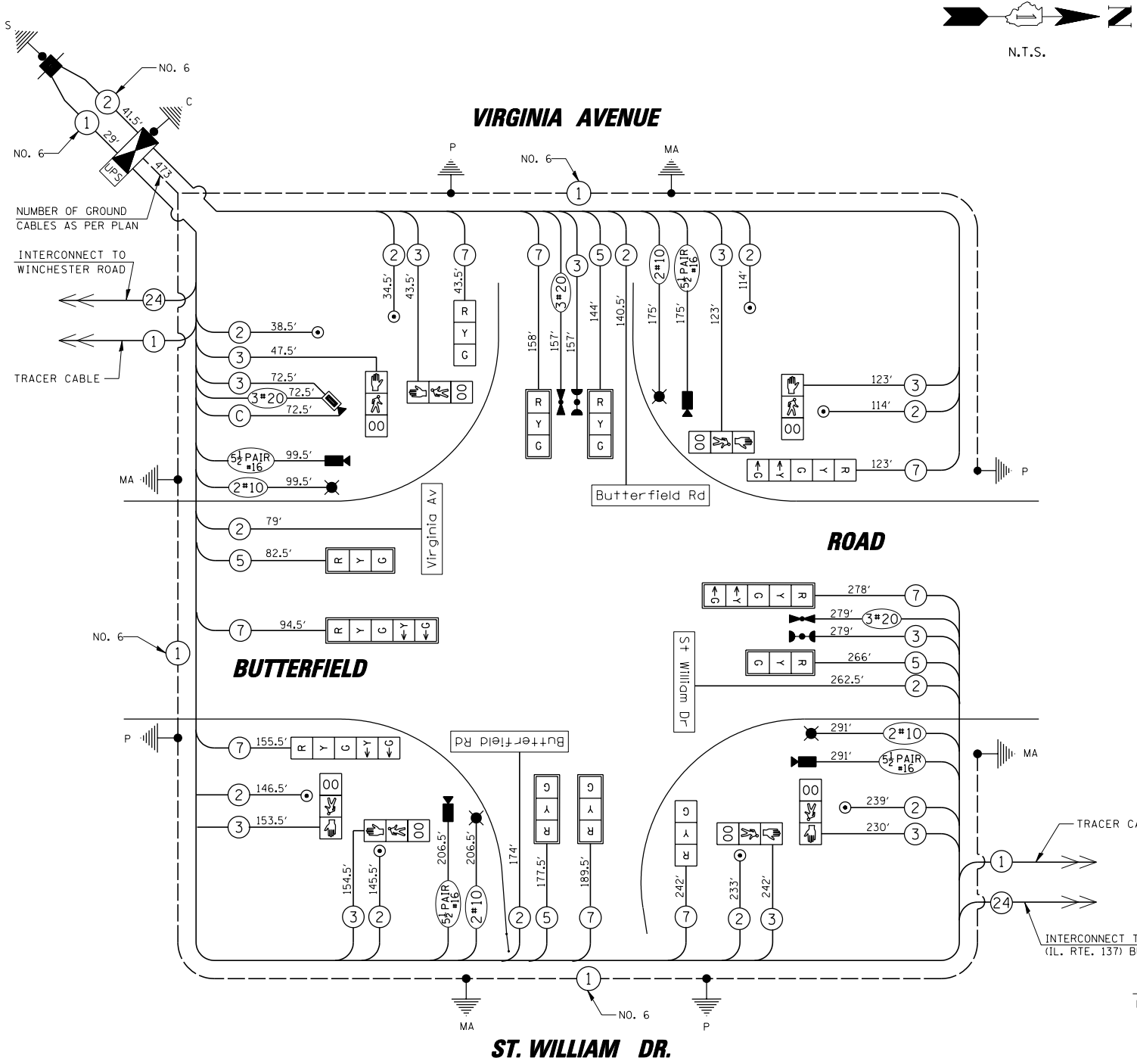
SCHEDULE OF QUANTITIES, CABLE PLAN AND PHASE DESIGNATION DIAGRAM

BUTTERFIELD ROAD AND VIRGINIA AVENUE / ST. WILLIAM DRIVE VILLAGE OF LIBERTYVILLE

SCALE: N.T.S. DATE: 3/19/2008
DRAWN BY: FFB/FCP
DESIGNED BY: ABR
CHECKED BY: GMZ

REVISIONS	
NAME	DATE

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA 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 SPECIFICATIONS 252 AND 250 RESPECTIVELY.



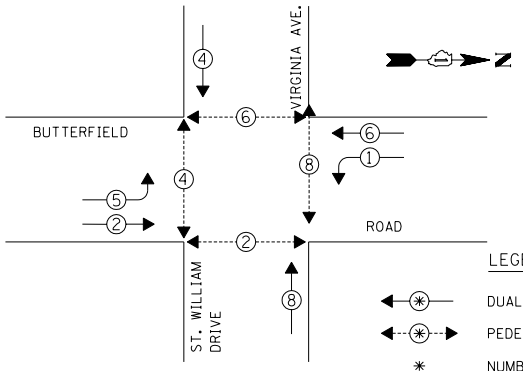
ST. WILLIAM DR.

CABLE PLAN

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	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'+L-2'
E - M. ARM POLE	2 (1.0)	SIGNAL POST	2 (1.0)		(6m+L-0.6m)=
24" (600mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)	BRACKET MOUNTED	13 (4.0)
30" (750mm)	15 (4.6)	FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
36" (900mm)	15 (4.6)	ELECTRIC SERVICE	1 (0.5)	ELECTRIC SERVICE	13.5 (4.1)
		GROUND CABLE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)

SCHEDULE OF QUANTITIES		
ITEM	UNIT	TOTAL
CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	27
CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	31
CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	31
CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	10
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	250
HANDHOLE	EACH	2
DOUBLE HANDHOLE	EACH	2
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	99
ELECTRIC CABLE IN CONDUIT, 600V (EPR-TYPE RHW) 2-1/C NO. 10	FOOT	772
LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, PHOTO-CELL CONTROL, 250 WATT	EACH	4
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET (SPECIAL)	EACH	1
TRANSCEIVER - FIBER OPTIC	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	2054
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1636
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	670
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	1284
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	42
ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6 1C	FOOT	473
ELECTRIC CABLE IN CONDUIT NO. 20 3C, TWISTED, SHIELDED	FOOT	415
CONCRETE FOUNDATION, TYPE A	FOOT	16
CONCRETE FOUNDATION, TYPE D	FOOT	4
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	60
TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	8
LIGHT DETECTOR	EACH	2
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	8
ELECTRIC CABLE IN CONDUIT, COAXIAL	FOOT	73
VIDEO DETECTION SYSTEM (COMPLETE INTERSECTION)	L SUM	1
REMOTE-CONTROLLED VIDEO SYSTEM	EACH	1
ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16, 5 1/2 PAIR	FOOT	772
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	6
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	2
SERVICE INSTALLATION, POLE MOUNT	EACH	1
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT. (SPECIAL)	EACH	4
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 30 FT. (SPECIAL)	EACH	2
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 42 FT. (SPECIAL)	EACH	1
L.E.D. INTERNALLY ILLUMINATED STREET NAME SIGN	EACH	4
PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED WITH COUNT DOWN TIMER	EACH	8
UNINTERRUPTIBLE POWER SUPPLY	EACH	1
LAYER II (DATALINK) SWITCH	EACH	1

CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

L. C. D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. OF LAMPS	WATTAGE X INCAND.	LED	% OPERATION	
SIGNAL (RED)	12		10	0.50	60.00
(YELLOW)	12		19	0.25	57.00
(GREEN)	12		11	0.25	33.00
ARROW	8		9	0.10	7.20
PED. SIGNAL	8		9	1.00	72.00
CONTROLLER	1	100		1.00	100.00
ILLUM. ST. NAME SIGN	4		60	0.50	120.00
VIDEO SYSTEM	1	150		1.00	150.00
LUMINAIRE	4	250		0.50	500.00
BATTERY BACK UP SYSTEM	1	25	-	1.00	25.00
FLASHER				0.50	
ENERGY COSTS TO:				TOTAL =	1124.20

LAKE COUNTY DIVISION OF TRANSPORTATION

600 WEST WINCHESTER ROAD
LIBERTYVILLE, ILLINOIS 60048-1381

ENERGY SUPPLY: CONTACT: MIKE TYSON
PHONE: (847) 816-5500
COMPANY: COMED