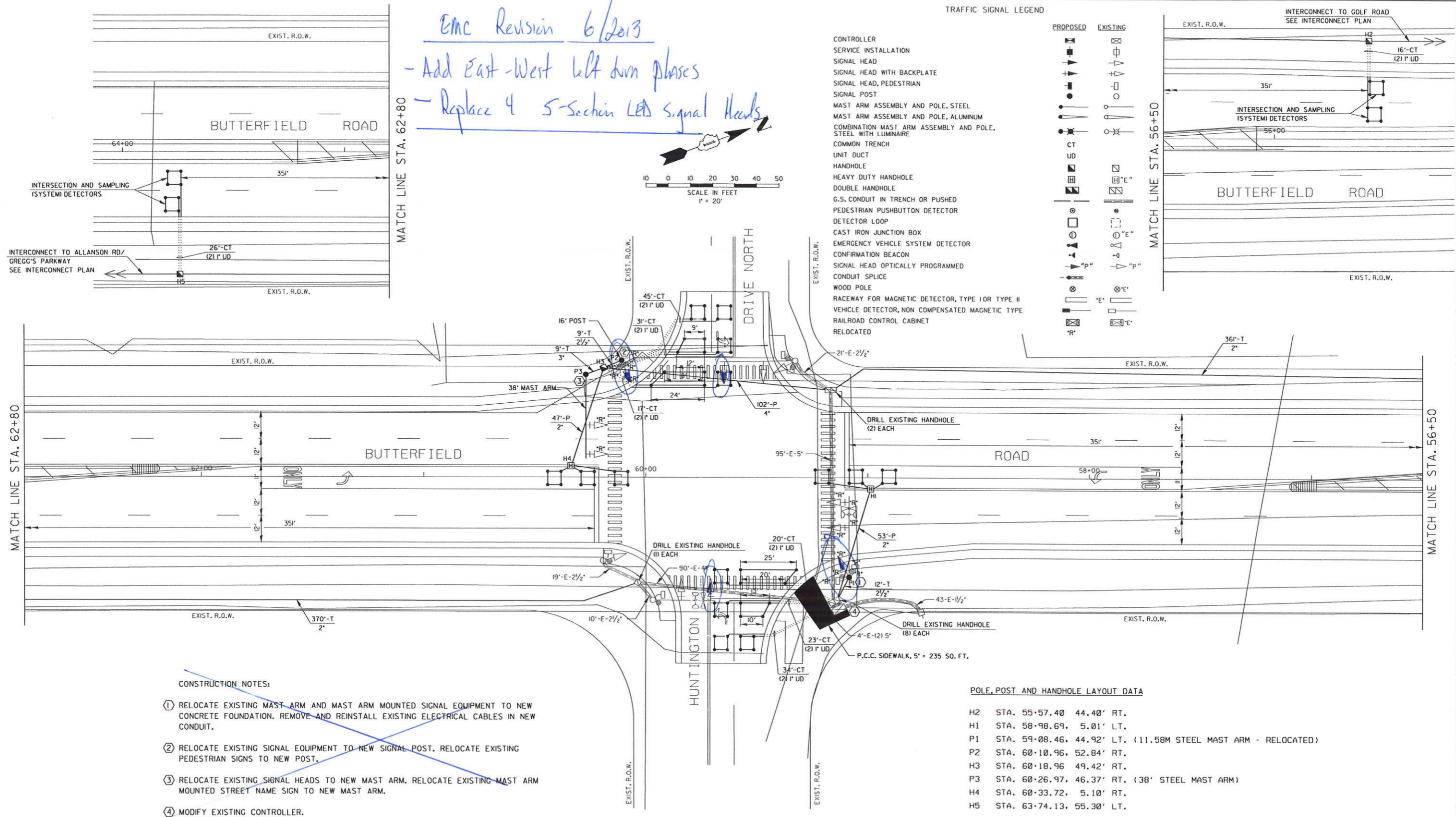
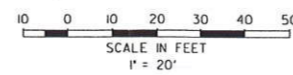


EMC Revision 6/2013
 - Add East-West left turn phases
 - Replace 4 5-section LED signal heads

TRAFFIC SIGNAL LEGEND

- | | | | |
|--|--|----------|--|
| CONTROLLER | | EXISTING | |
| SERVICE INSTALLATION | | EXISTING | |
| SIGNAL HEAD | | EXISTING | |
| SIGNAL HEAD WITH BACKPLATE | | EXISTING | |
| SIGNAL HEAD, PEDESTRIAN | | EXISTING | |
| SIGNAL POST | | EXISTING | |
| MAST ARM ASSEMBLY AND POLE, STEEL | | EXISTING | |
| MAST ARM ASSEMBLY AND POLE, ALUMINUM | | EXISTING | |
| COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE | | EXISTING | |
| COMMON TRENCH | | EXISTING | |
| UNIT DUCT | | EXISTING | |
| HANDHOLE | | EXISTING | |
| HEAVY DUTY HANDHOLE | | EXISTING | |
| DOUBLE HANDHOLE | | EXISTING | |
| G.S. CONDUIT IN TRENCH OR PUSHED | | EXISTING | |
| PEDESTRIAN PUSHBUTTON DETECTOR | | EXISTING | |
| DETECTOR LOOP | | EXISTING | |
| CAST IRON JUNCTION BOX | | EXISTING | |
| EMERGENCY VEHICLE SYSTEM DETECTOR | | EXISTING | |
| CONFIRMATION BEACON | | EXISTING | |
| SIGNAL HEAD OPTICALLY PROGRAMMED | | EXISTING | |
| CONDUIT SPLICE | | EXISTING | |
| WOOD POLE | | EXISTING | |
| RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II | | EXISTING | |
| VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE | | EXISTING | |
| RAILROAD CONTROL CABINET | | EXISTING | |
| RELOCATED | | EXISTING | |



CONSTRUCTION NOTES:

- ① RELOCATE EXISTING MAST ARM AND MAST ARM MOUNTED SIGNAL EQUIPMENT TO NEW CONCRETE FOUNDATION. REMOVE AND REINSTALL EXISTING ELECTRICAL CABLES IN NEW CONDUIT.
- ② RELOCATE EXISTING SIGNAL EQUIPMENT TO NEW SIGNAL POST. RELOCATE EXISTING PEDESTRIAN SIGNS TO NEW POST.
- ③ RELOCATE EXISTING SIGNAL HEADS TO NEW MAST ARM. RELOCATE EXISTING MAST ARM MOUNTED STREET NAME SIGN TO NEW MAST ARM.
- ④ MODIFY EXISTING CONTROLLER.

POLE, POST AND HANDHOLE LAYOUT DATA

H2	STA. 55+57.40	44.40' RT.
H1	STA. 58+98.69	5.01' LT.
P1	STA. 59+08.46	44.92' LT. (11.58M STEEL MAST ARM - RELOCATED)
P2	STA. 60+10.96	52.84' RT.
H3	STA. 60+18.96	49.42' RT.
P3	STA. 60+26.97	46.37' RT. (38' STEEL MAST ARM)
H4	STA. 60+33.72	5.10' RT.
H5	STA. 63+74.13	55.30' LT.

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500

CLIENT:

DESIGN	ABR
DRAWN	FPB
CHECKED	GMZ
SCALE	1" = 20'
DATE	11/02/2001

TITLE:
 TRAFFIC SIGNAL MODIFICATION PLAN
 BUTTERFIELD ROAD AT HUNTINGTON DRIVE NORTH

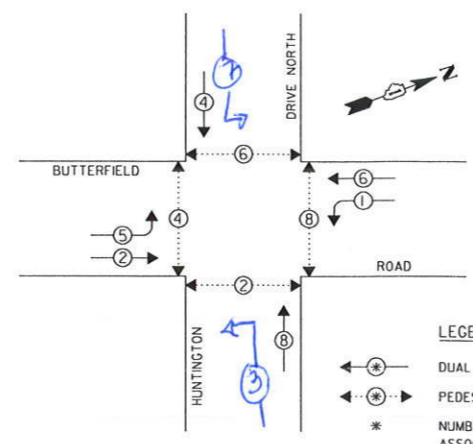
PROJECT NO. 99-455
 SHEET 104 OF 226
 DRAWING NO. TSD 4-3

Emc Addition 6/2013
East-West left turn phases
4 New 5-section LED signal Heads

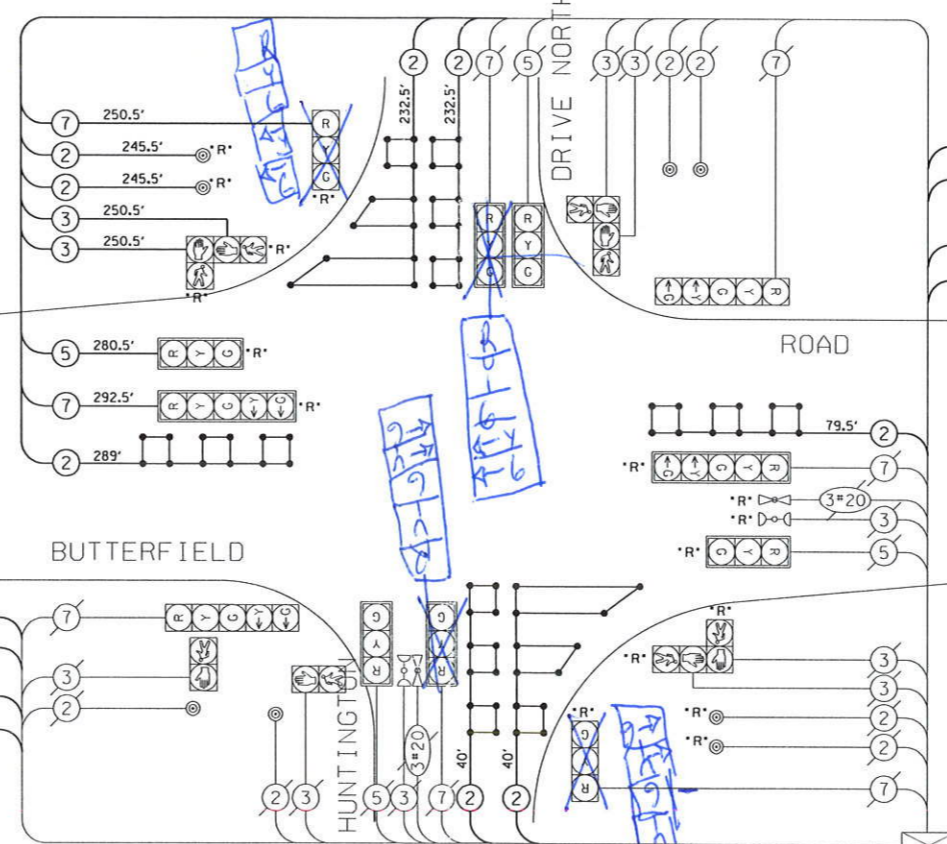
SCHEDULE OF QUANTITIES

PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SO FT	235
CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	731
CONDUIT IN TRENCH, 1 1/2" DIA., GALVANIZED STEEL	FOOT	21
CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	9
CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	100
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	102
HANDHOLE	EACH	3
HEAVY-DUTY HANDHOLE	EACH	2
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	509
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	525
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	288
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	561
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1-PAIR	FOOT	2870
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	4
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	30
DRILL EXISTING HANDHOLE	EACH	11
INDUCTIVE LOOP DETECTOR	EACH	2
DETECTOR LOOP, TYPE I	FOOT	885
TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	896
RELOCATE EXISTING MAST ARM	EACH	1
RELOCATE EXISTING SIGNAL HEAD	EACH	6
RELOCATE EXISTING PEDESTRIAN SIGNAL HEAD	EACH	4
RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON	EACH	4
MODIFY EXISTING CONTROLLER	EACH	1
REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	1785
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING HANDHOLE	EACH	5
REMOVE EXISTING CONCRETE FOUNDATION	EACH	3
REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT	FOOT	411

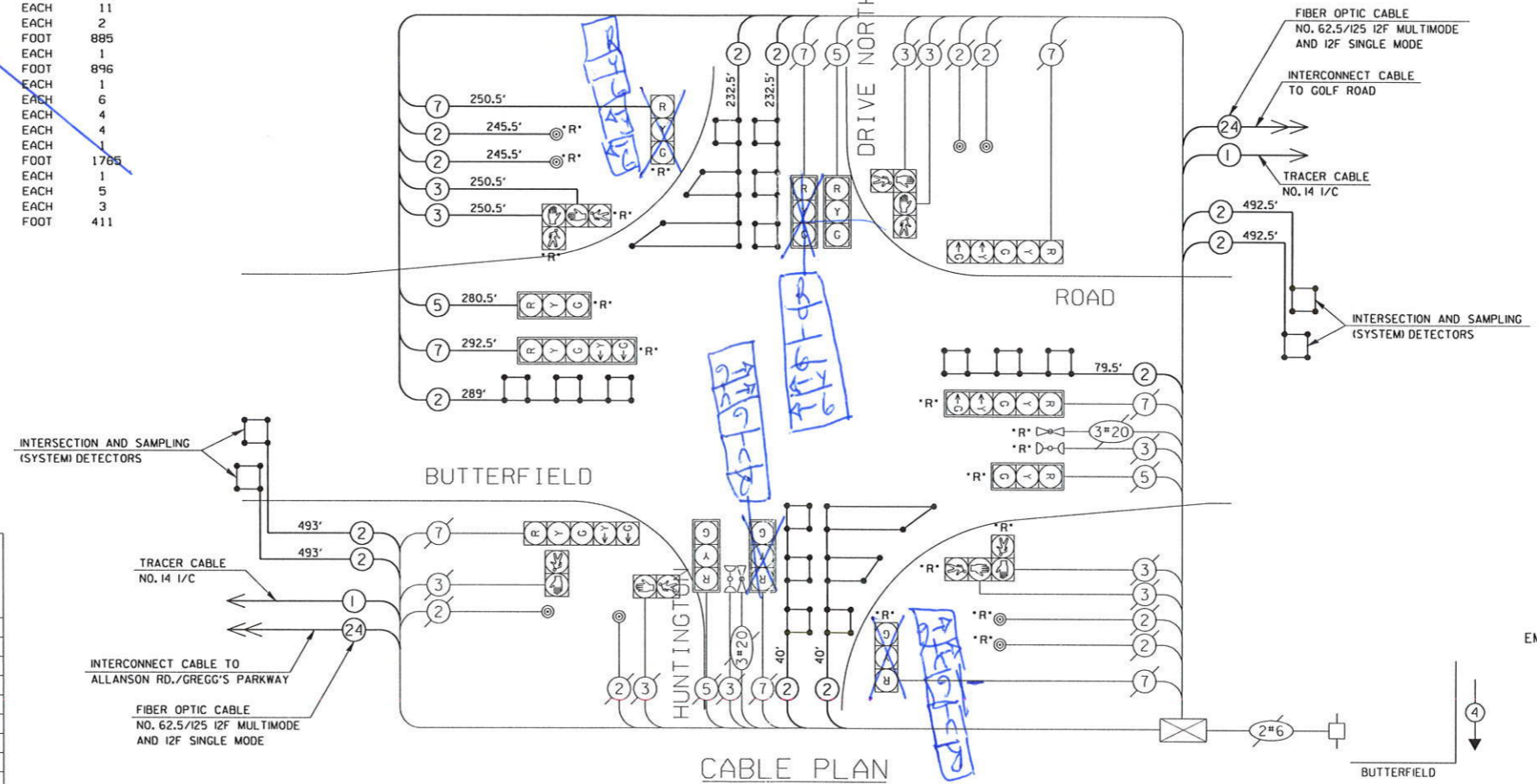
CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM



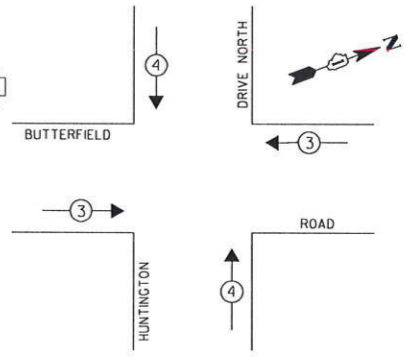
CABLE PLAN



CABLE PLAN LEGEND

EXISTING	PROPOSED	
		8' TRAFFIC SIGNAL SECTION
		12' TRAFFIC SIGNAL SECTION
		12' PEDESTRIAN SIGNAL SECTION
		12' 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
		DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
		GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
		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, FIBER OPTIC 'NO LEFT TURN'
		ILLUMINATED SIGN, FIBER OPTIC 'NO RIGHT TURN'
		GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER
		GROUND ROD AT POST OR MAST ARM POLE
		GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		RELOCATED

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTOR		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↓ ↑

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE	
TYPE	NO. OF LAMPS	WATTAGE	INCAND.	LED	% OPERATION	
SIGNAL (RED)	12	135			0.50	810
(YELLOW)	12	135			0.25	405
(GREEN)	12	135			0.25	405
ARROW	8	135			0.10	108
PED. SIGNAL	8	90			1.00	720
CONTROLLER	1	300			1.00	300

ENERGY COST TO: TOTAL = 2748
 LAKE COUNTY DIVISION OF TRANSPORTATION
 DIVISION OF TRAFFIC
 600 W. WINCHESTER ROAD/LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY: CONTACT: PAUL CRUZ
 PHONE: (847) 816-5331
 COMPANY: COMMONWEALTH EDISON

FOUNDATION (DEPTH)	(FT)	CABLE SLACK	(FT)	VERTICAL	(FT)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
D - FOUNDATION	4	DOUBLE HANDHOLE	13	MAST ARM (L) POLE	20'+L-2'
C - M. ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
24"	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30"	15	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

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 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
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CLIENT: Lake County Division of Transportation

DESIGN	ABR	FPB
DRAWN	FCP	FPB
CHECKED	GMZ	
SCALE	N.T.S.	
DATE	11/02/2001	

TITLE: SCHEDULE OF QUANTITIES
 CABLE PLAN AND
 PHASE DESIGNATION DIAGRAM
 BUTTERFIELD ROAD AT HUNTINGTON DRIVE (NORTH)

PROJECT NO. 99-455
 SHEET 105 OF 226
 DRAWING NO. TSD 4-4