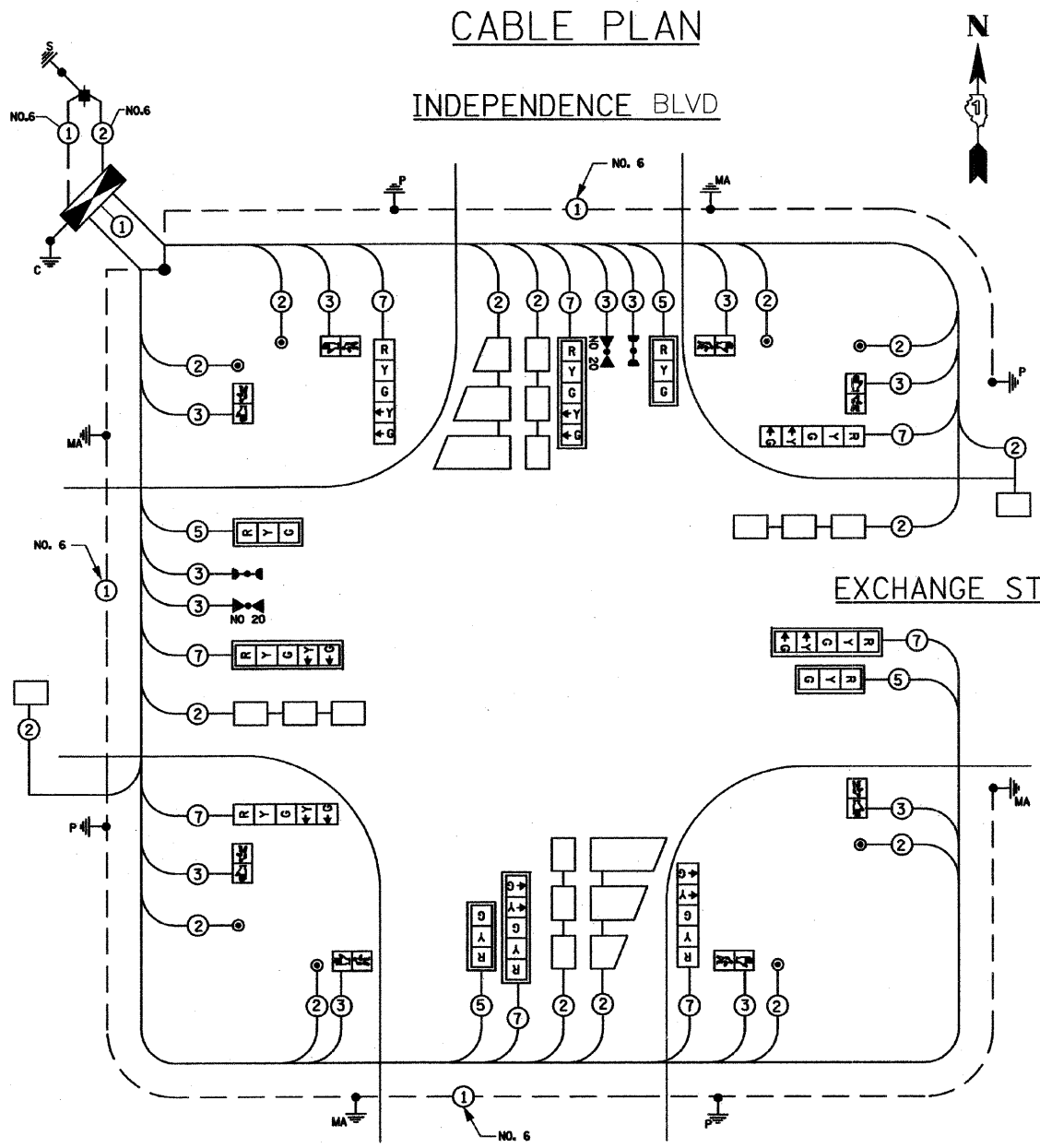


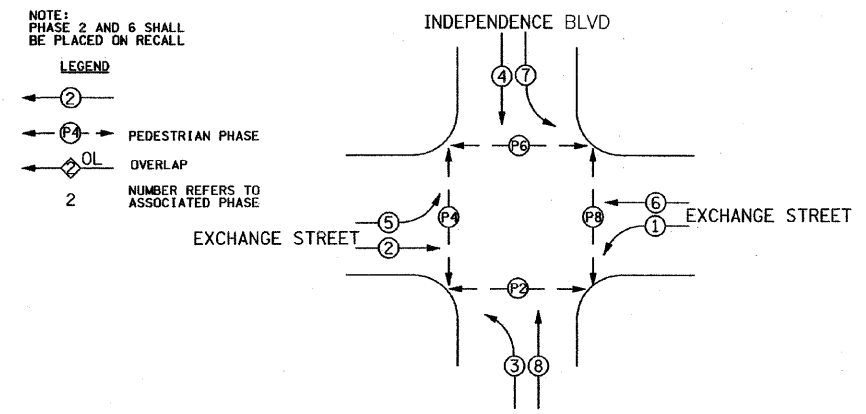
**CABLE PLAN LEGEND**

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

**CABLE PLAN**



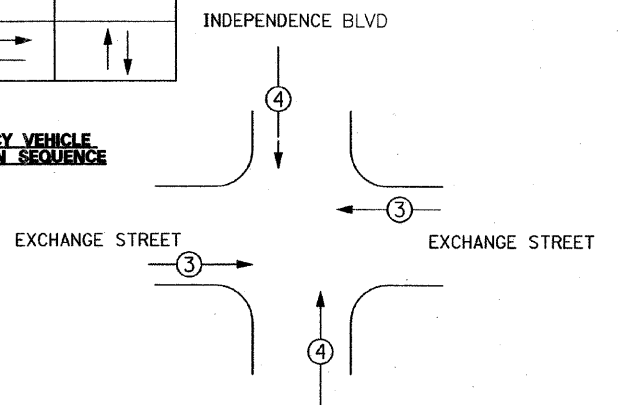
**CONTROLLER SEQUENCE PHASE DESIGNATION DIAGRAM**



Pay Item	Unit	Quantity
Traffic Control and Protection, Special	Lump Sum	1
Sign Panel, Type 2	Square Foot	45
Conduit in Trench 2" Dia., Galvanized Steel	Foot	531
Conduit in Trench 2 1/2" Dia., Galvanized Steel	Foot	66
Conduit in Trench 4" Dia., Galvanized Steel	Foot	164
Conduit Pushed 2" Dia., Galvanized Steel	Foot	25
Conduit Pushed 4" Dia., Galvanized Steel	Foot	167
Handhole	Each	8
Heavy-Duty Handhole	Each	4
Double Handhole	Each	1
Full-Actuated Controller and Type IV Cabinet (Special)	Each	1
Electric Cable in Conduit Signal No. 14 2C	Foot	1133
Electric Cable in Conduit Signal No. 14 3C	Foot	1310
Electric Cable in Conduit Signal No. 14 5C	Foot	1273
Electric Cable in Conduit Signal No. 14 7C	Foot	717
Electric Cable in Conduit, Service No. 14 1P	Foot	1546
Electric Cable in Conduit, Service No. 8 2C	Foot	21
Traffic Signal Post, Galvanized Steel 18 Ft.	Each	4
Steel Mast Arm Assembly and Pole, 28 Ft.	Each	2
Steel Mast Arm Assembly and Pole, 32 Ft.	Each	1
Steel Mast Arm Assembly and Pole, 38 Ft.	Each	1
Concrete Foundation Type A	Foot	10
Concrete Foundation Type D	Foot	4
Concrete Foundation Type E 30" Diameter	Foot	60
Traffic Signal Backplate, Louvered, Aluminum	Each	8
Inductive Loop Detector	Each	8
Loop Detector, Type I	Foot	627
Light Detector	Each	2
Light Detector Amplifier	Each	1
Pedestrian Push Buttons	Each	8
Electric Cable in Conduit, Grounding No. 6 1C (Green)	Lineal Foot	1500
Traffic Signal Battery Back Up	Each	1
Service Installation, Pole Mounted	Each	1
Signal Head, L.E.D., 1-Face, 3 Section Mast Arm Mounted	Each	4
Signal Head, L.E.D., 1-Face, 5 Section Bracket Mounted	Each	4
Signal Head, L.E.D., 1-Face, 5 Section Mast Arm Mounted	Each	4
Pedestrian Signal Head, L.E.D. 1 Face Bracket Mounted	Each	8
Electric Cable in Conduit, No. 20 3/C Twisted, Shielded	Lineal Foot	1519

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**



NOTE:  
EQUIPMENT GROUND CONDUCTOR (GREEN COLOR CODED) SPLICE TO FRAME AND COVER IS REQUIRED FOR ALL HANDHOLES OR DOUBLE HANDHOLES THAT CARRY SIGNAL CABLES AND SERVICE CABLES.

TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					
TYPE	NO. LAMPS	WATTAGE (INCAND.)	WATTAGE (LED)	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	135	17	0.50	102.00
(YELLOW)	12	135	25	0.25	75.00
(GREEN)	12	135	15	0.25	45.00
ARROW	16	135	12	0.10	19.20
PED. SIGNAL	8	90	25	1.00	200.00
CONTROLLER	1	100	100	1.00	100.00
ILLUM. SIGN				0.05	
FLASHER				0.50	
TOTAL =					541.20

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	20'4L-2" (6m+L-0.6m)
E - M. ARM POLE	10 (3.0)	SIGNAL POST	2 (0.6)	BRACKET MOUNTED	13 (4.0)
24" (750mm)	15 (4.6)	CONTROLLER CAB.	1 (0.5)	PED. PUSHBUTTON	4 (1.2)
		FIBER OPTIC	13 (4.0)	ELECTRIC SERVICE	13.5 (4.1)
		ELECTRIC SERVICE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
		GROUND CABLE	1 (0.5)	POST MOUNTED	6 (1.8)

ENERGY COSTS TO:  
Crete-Monee CUSD 201-U  
1400 Sagamon Street  
Crete, IL 60417

ENERGY SUPPLY CONTACT: Mr. Jim Werner  
PHONE: 708 235-2694  
COMPANY: COM. ED.

COLBY ZEMAITIS, P.E. ; ROBERT E. HAMILTON CONSULTING ENGINEERS, P.C. ; 815-730-3444

ROBERT E. HAMILTON  
CONSULTING ENGINEERS P.C.  
3230 EXECUTIVE DRIVE  
JOLIET, ILLINOIS 60431  
PHONE: 815-730-3444  
FAX: 815-730-6703

REVISIONS		
NO.	NAME	DATE
1	PER IDOT	8-13-09
2	PER IDOT	10-29-09

MCBRIDE ENGINEERING, INC.  
CIVIL ENGINEERS & SURVEYORS  
ILLINOIS PROFESSIONAL DESIGN FIRM #014-000803

3649 W. 183rd Street Suite 124  
Hazel Crest, IL 60429-2409  
708-799-1350

ARLINGTON HEIGHTS DIVISION  
320 S. Belmont Avenue  
Arlington Heights, IL 60005-2038  
847-394-4810

VILLAGE OF CRETE  
EXCHANGE STREET IMPROVEMENTS  
CRETE, WILL COUNTY, ILLINOIS

TRAFFIC SIGNAL CABLE PLAN  
& CONTROLLER SEQUENCE DIAGRAMS

DRAWN BY: PG/ADM  
CHECKED BY: LGB  
DATE: 7-3-09

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