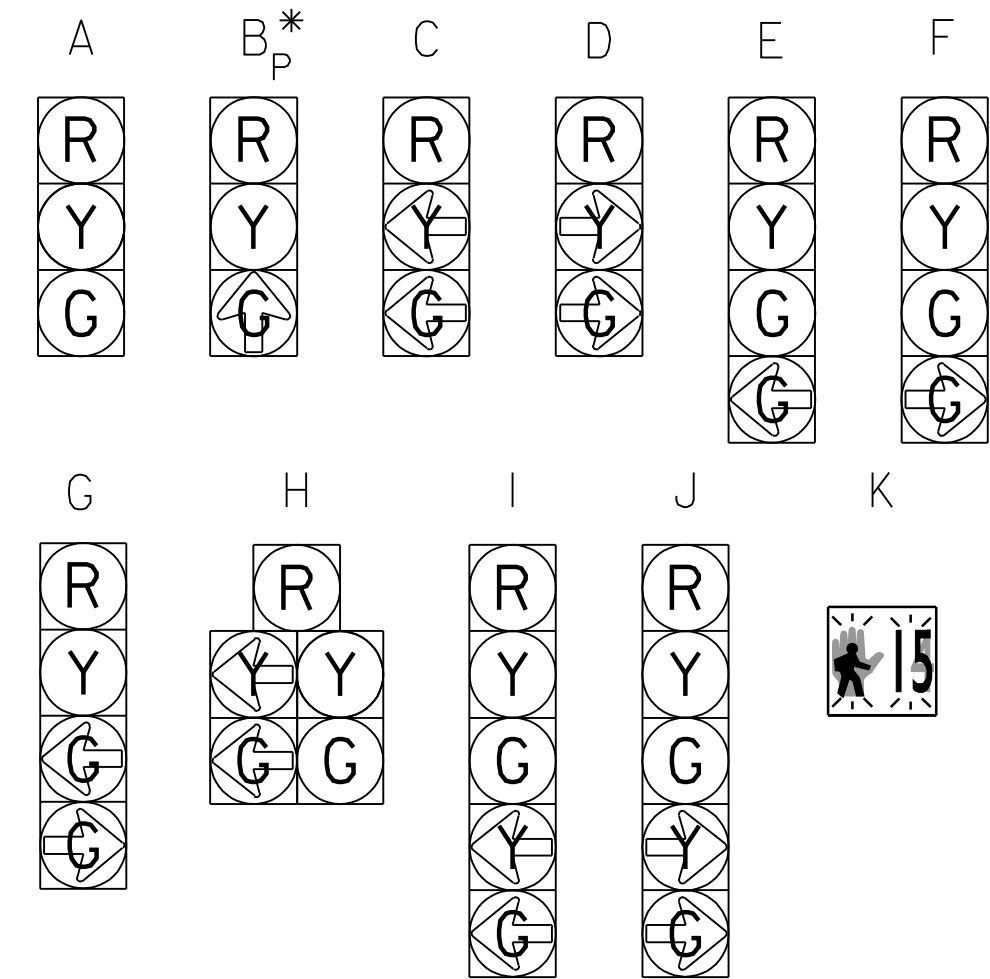


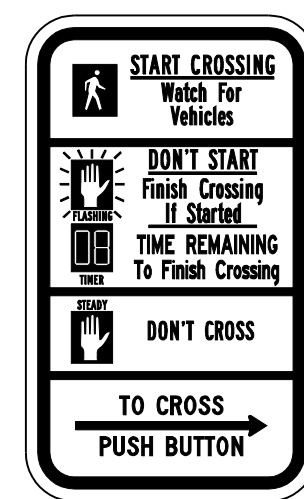
CHART A SIGNAL SUMMARY			
SIGNAL FACE ARRANGEMENT	NO. SECTIONS (PER FACE)	SIGNAL MOUNTING TYPE	QUANTITY
A	3	MAST ARM W/BACKPLATE	7
		MAST ARM W/BACKPLATE	
A	3	SIDE-OF-POLE	4
K	1	SIDE-OF-POLE	6



- \* SUBSCRIPT "P" INDICATES PROGRAMMED SIGNALS;  
 1. ALL LENSES SHALL BE L.E.D.  
 2. ALL LENSES SHALL BE 12".  
 3. ALL PEDESTRIAN SIGNALS SHALL BE COUNTDOWN

CHART B TRAFFIC SIGNAL POLES							
POLE HEIGHT	SIGNAL ARM LENGTH	SIGNAL ARM MOUNTING HEIGHT	NO. OF SIGNALS ON ARM	SIGNAL SPACING	LED LUMINAIRE ARM LENGTH	LED LUMINAIRE MOUNTING HEIGHT	QUANT.
25'	32'	19'	1	30'	8'	25'	1
22'	30'	19'	2	17', 28'	-	-	1
25'	36'	19'	2	23', 34.0'	8'	25'	1
22'	24'	19'	2	11', 22'	-	-	1

CHART C OVERHEAD STREET NAME SIGNS			
SIGN	LEGEND	LENGTH	QUANTITY
1, 3	MARKET	54"	2
2, 4	21ST ST N	72"	2



RIO-3E

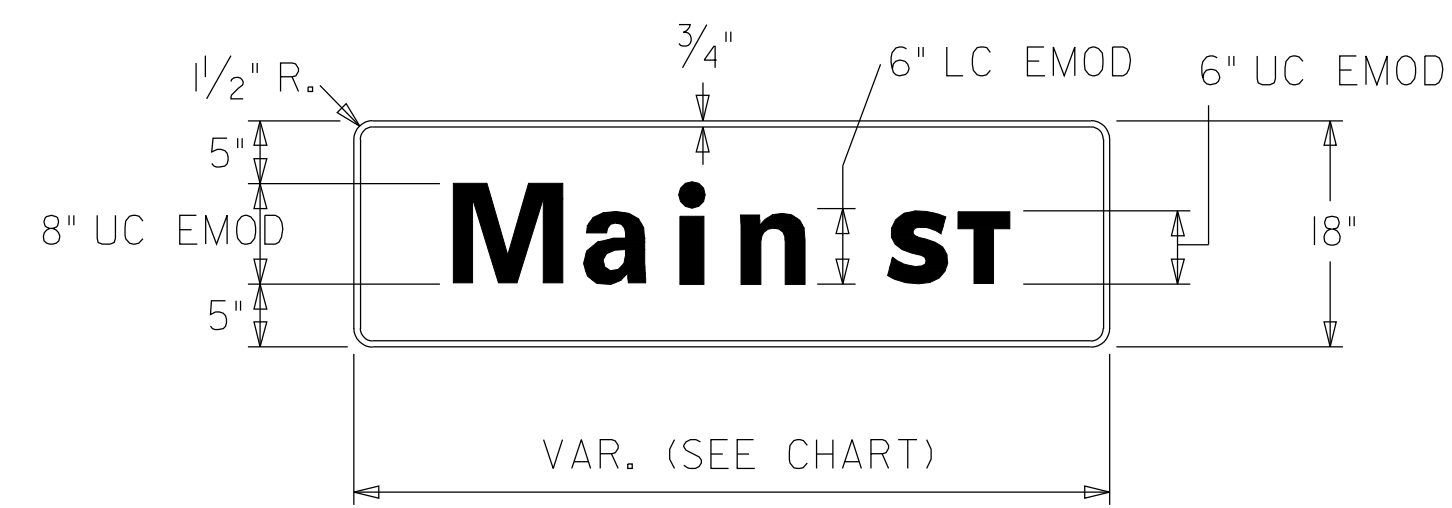


Table of distances between letter and object lefts.

M	a	r	k	e	t		
7.3	9.6	7.5	5.4	6.4	6.5	4.0	7.3



Table of distances between letter and object lefts.

2	1	s	t	S	t	N	
6.8	8.4	4.9	6.7	12.0	8.0	6.4	6.8

NOTE :  
 THE TRAFFIC SIGNAL SYSTEM SHALL BE COMPLETE AND THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS NECESSARY FOR THE SATISFACTORY OPERATION OF ELECTRICAL APPARATUS AND FOR COMPLETE OPERATION OF THE TRAFFIC SIGNAL SYSTEM WHETHER SPECIFICALLY MENTIONED OR NOT.

BILL OF MATERIALS

ITEM	QUANT.	UNIT	NOTE
CONTROLLER UNIT	1	EACH	
PROGRAM MODULE	1	EACH	
CONFLICT MONITOR	1	EACH	
FLASHER	2	EACH	
LOAD SWITCH	7	EACH	
FLASH TRANSFER RELAY	4	EACH	
SURGE PROTECTOR	1	EACH	
DC ISOLATOR	3	EACH	
AC ISOLATOR		EACH	
DETECTOR, 2-CHANNEL		EACH	
DETECTOR, 4-CHANNEL		EACH	
ISOLATION MODULE		EACH	
PAD MOUNTED CABINET	1	EACH	
TRAFFIC SIGNAL HEAD	CHART A	EACH	
SIGNAL HEAD MOUNTING BRACKET	CHART A	EACH	
BACK PLATE	CHART A	EACH	
VEHICLE TRAFFIC SIGNAL LAMP		EACH	
PEDESTRIAN TRAFFIC SIGNAL LAMP		EACH	
L.E.D. LENS	CHART A	EACH	
PEDESTRIAN PUSHBUTTON & SIGN (RIO-3E)(9"x12")	6	EACH	
TRAFFIC SIGNAL POLE	CHART B	EACH	
TRAFFIC SIGNAL PEDESTAL ALUMINUM		EACH	
TERMINAL BLOCK	4	EACH	
JUNCTION BOX		EACH	
SERVICE BOX	4	EACH	
LUMINAIRE (LED) & LUMINAIRE ARM	4	EACH	
LUMINAIRE LAMP 250 WATT		EACH	
PHOTOCELL		EACH	
UNFUSED STREET LIGHT CONNECTOR KIT		EACH	
FUSED STREET LIGHT CONNECTOR KIT		EACH	
OVERHEAD STREET NAME SIGN	CHART C	EACH	
RIO-10 SIGN (24" X 30")		EACH	
RIO-12 SIGN (24" X 30")		EACH	
BLANK OUT SIGN		EACH	
ENTRANCE HEAD		EACH	
SERVICE ENCLOSURE, 100 AMP.	1	EACH	
CIRCUIT BREAKER, TRAFFIC SIGNAL, 30 AMP.	1	EACH	
CIRCUIT BREAKER, LUMINAIRE, 20 AMP.		EACH	
GROUND ROD & CLAMP	10	EACH	
SERVICE WIRE NO. 8 AWG 1/C	290	LIN FT	
LIGHTING DISTRIBUTION WIRE NO. 8 AWG 1/C		LIN FT	
POLE & BRACKET WIRE NO. 12 AWG 3/C	300	LIN FT	
GROUND WIRE NO. 6 AWG 1/C	570	LIN FT	
MULTI-CONDUCTOR CABLE NO. 14 AWG 5/C	1230	LIN FT	
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/C	1310	LIN FT	
MULTI-CONDUCTOR CABLE NO. 14 AWG 9/C		LIN FT	
MULTI-CONDUCTOR CABLE NO. 14 AWG 3/C	780	LIN FT	
MULTI-CONDUCTOR CABLE NO. 12 AWG 5/C		LIN FT	
COAXIAL CABLE	780	LIN FT	
3 PAIR NO. 16 AWG		LIN FT	
CONDUIT, 1" & FITTINGS	20	LIN FT	
CONDUIT, 1 1/2" & FITTINGS		LIN FT	
CONDUIT, 2" & FITTINGS	39	LIN FT	
CONDUIT, 3" FITTINGS	282	LIN FT	
CONDUIT, 4" & FITTINGS	53	LIN FT	

- QUANTITIES SHOWN ARE FOR MARKET SIGNAL.
- CONDUIT SHALL BE BORED UNDER EXISTING PAVEMENT TO REMAIN.
- THE TRAFFIC SIGNAL SYSTEM SHALL BE FOR THE COMPLETE INSTALLATION OF ALL CONTROLLERS, CAMARAS, WIRE, CONNECTIONS, ETC. NEEDED FOR THE SATISFACTORY OPERATION OF THE TRAFFIC SIGNAL SYSTEM.
- THE CONFLICT MONITORS SUPPLIED SHALL BE 2010 ECL CONFLICT MONITORS AND SHALL MEET THE REQUIREMENTS OUTLINED IN CALTRANS TEES 2002 (LATEST VERSION).
- SUPPLIED CONTROLLER UNIT SHALL BE A 2070 CONTROLLER, IN ADDITION THE FOLLOWING EQUIPMENT SHALL BE REQUIRED
  - THE 2070L CONTROLLERS SHALL HAVE A 19" EIA RACK MOUNTABLE CHASSIS (MATED TO THE I70 CABINET).
  - 2070-IB CPU MODULE WITH RJ-45 ETHERNET PORT.
  - 2070-2A CIFIELD I/O MODULES FOR COMPATIBLIT WITH CALTRANS STYLE CICONNECTOR.
  - 2070-3B 8X40 FRONT PANEL WITH LCD DISPLAY.
  - 2070-4A 10 AMP POWER SUPPLY.
  - 2070-7A ASYNCHRONOUS SERIAL COMMUNICATIONS MODULE (RS-232).
  - ANY UNUSED SLOT POSITION SHALL HAVE A COVER PLATE.
  - SHALL BE COMPATIBLE WITH OTHER VENDOR FIRMWARE.
- SEE LIGHTING DETAILS (SHEETS I29-I34) FOR MORE INFORMATION REGARDING LIGHTING.

-QUANTITIES FOR INFORMATION ONLY-

KANSAS DEPARTMENT OF TRANSPORTATION  
 TYPE 170E SYSTEM  
 TRAFFIC SIGNAL QUANTITIES SHEET

FHWA APPROVAL		04/29/03	APP'D	Linda G. Voss, P.E.
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES
DESIGN CK.	G.J.O.	DETAIL CK.	G.J.O.	QUAN. CK.
				TRACE CK.

Plotted By : donovano  
 Plot File : g:\W05\0001\ROAD\Del 30d2.shf  
 Plot Date : 1/8/2010  
 \$\$\$KDOT GRP \$\$\$ 6th Floor