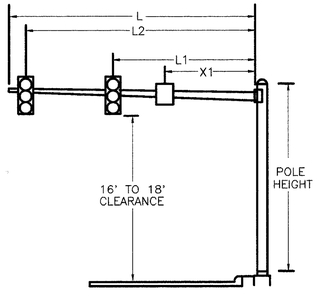
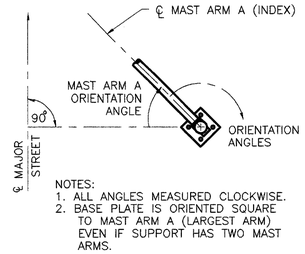
CALC. BY: DATE:	LAKE COUNTY LAK-20-2.70	OHIO
CHKD. BY: DATE:		FHWA REGION 5
		FEDERAL PROJECT

35/98





NOTES:
1. ALL ANGLES MEASURED CLOCKWISE.
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO MAST ARMS.

SUPPORT NO.	SIGNAL SUPPORT: POLE DESIGN NO. TC-16.20	POLE DESIGN NO. TC-81.20	POLE DESIGN NO. TC-12.30	ARM DESIGN NO.	POLE HEIGHT (FT)	FOUNDATION STATION	FOUNDATION OFFSET	L (FT.)	L 1 (FT.)	L 2 (FT.)	L 3 (FT.)		X 1 (FT.)	MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM "A": MAST ARM B	PEDESTRIAN SIGNALS	PEDESTRIAN PUSH BUTTONS	POWER SERVICE	CONTROLLER	LUMINAIRE BRACKET	HANDHOLE	CABLE ENTRANCE (12" FROM TOP)		
P1		1		1	20'	268+92	23'L	22	11	21				270		270	270				180			
P2		PED			8'	269+42	21'L							0		270	90				180			
P3		PED			8'	269+56	20'R							0		270	270				180			
P4		3		3	20'	269+32	33'R	32	19	31			14	0		0	0				180			
P5		PED			8'	268+98	33'R							0		0	0				180			
P6		2		2	20'	268+39	20'R	30	19	29				90		0	0				180	180		
P7		1		1	20'	268+42	22'L	22	9	21			4	0		180 270	180 270				180			
P8	5			5	21	269+49	21'L	15					13	0							180			
P9	5			5	21	264+10	20'R	15					13	0							180	90		

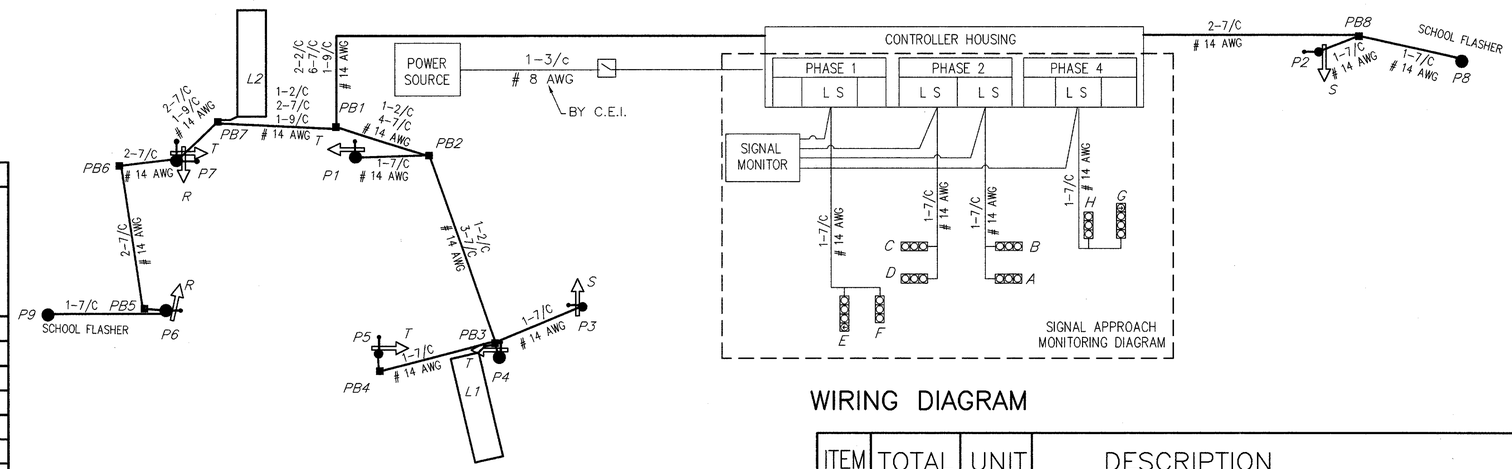
ORIENTATION ANGLE CHART

FUNCTION	ø1	ø2	ø4
MINIMUM GREEN	8	15	8
PED WALK	7	7	7
PED CLEARANCE	9	7	9
GREEN EXTENSION	3.5	–	3.5
MAXIMUM GREEN	20	40	20
YELLOW CLEARANCE	3.1	3.6	3.1
ALL RED CLEARANCE	1.9	1.8	1.9
RECALL	NONE	MAX	NONE

SIGNAL TIMING

SIGNAL HEAD	ø1 R/W		ø1 CLEAR		ø2 R/W		ø2 CLEAR		ø4 R/W		ø4 CLEAR		FLASH
A	R	R	R	R	G	G	Y	R	R	R	R	R	Y
B	R	R	R	R	G	G	Y	R	R	R	R	R	Y
C	R	R	R	R	G	G	Y	R	R	R	R	R	Y
D	R	R	R	R	G	G	Y	R	R	R	R	R	Y
E	G	G	Y	R	R	R	R	R	R	R	R	R	R
F	G	G	Y	R	R	R	R	R	R	R	R	R	R
G	R	R	R	R	R	R	R	R	G	G	Y	R	R
H	R	R	R	R	R	R	R	R	G	G	Y	R	R
R–R	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DARK
S–S	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DARK
T–T	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DARK

SIGNAL DISPLAY CHART



WIRING DIAGRAM

LOOP #	SIZE	# TURNS	MODE	DELAY	UNIT #	PHASE
L1	8' x 30'	2	PRESENCE	8	1	1
L2	8' x 30'	2	PRESENCE	8	2	4

LOOP DETECTOR CHART

N

ITEM	TOTAL	UNIT	DESCRIPTION
202	305	SQ FT	WALK REMOVED
608	305	SQ FT	4" CONCRETE WALK
625	10	EACH	GROUND ROD
625	8	EACH	PULLBOX, MISC; AS PER PLAN
625	210	LIN FT	CONDUIT, 2", 713.04
625	6	LIN FT	CONDUIT, 3", 713.04
625	163	LIN FT	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 3"
625	216	LIN FT	TRENCH
630	4.80	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
630	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-16.20, DES. 5, 15' ARM
630	2	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN
630	11	SQ. FT.	SIGN, FLAT SHEET, TYPE G
631	2	EACH	SCHOOL SPEED LIMIT SIGN ASSEMBLY 24" x 42"
632	429	LIN FT	MESSENGER WIRE, 3 STRAND, 1/4" DIA. WITH ACCESSORIES
632	6	EACH	VEHICULAR SIGNAL HEAD, 3 SECT., 12" LENS, 1-WAY, AS PER PLAN
632	2	EACH	VEHICULAR SIGNAL HEAD, 4 SECT., 12" LENS, 1-WAY, AS PER PLAN
632	8	EACH	PEDESTRIAN SIGNAL HEAD, TYPE D2
632	8	EACH	PEDESTRIAN PUSHBUTTON
632	2	EACH	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	7.28	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATION
632	2	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DES. 1, WITH 22' ARM, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DES. 2, WITH 30' ARM, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DES. 3, WITH 32' ARM, AS PER PLAN
632	3	EACH	PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN
632	6	EACH	CABLE SUPPORT ASSEMBLY
632	158	LIN FT	LOOP DETECTOR PAVEMENT CUTTING
632	2048	LIN FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	138	LIN FT	SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG
632	308	LIN FT	LOOP DETECTOR WIRE, TYPE E
632	153	LIN FT	LOOP DETECTOR LEAD-IN CABLE
632	86	LIN FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG
632	1	EACH	CONDUIT RISER, 1 1/2"
632	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
632	1	EACH	PHONE DROP
633	0.99	CU YD	CONCRETE FOR CABINET FOUNDATION
633	1	EACH	CONTROLLER, ACTUATED, 4 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN

EUCLID AVE., PARK AVENUE & WILSON AVENUE TRAFFIC CONTROL PLAN