LOOP	SIZE	Ø	AMPLIFIER NO.	DELAY KEYSTROKE	DELAY	MODE	TERM #'S
L-1	6' x 6'	2	1			PRESENCE	2 - D,E
L-2	6' x 6'	2	1			PRESENCE	2 - D,E
L-3	6' x 6'	2	2			PRESENCE	2 - J,K
L-4	6' x 6'	2	2			PRESENCE	2 - J,K
L-5	25' x 6'	4	3	D-2-9	8.0 Sec.	PRESENCE	4 - D,E
L-6	25' x 6'	4	4	D-2-A	8.0 Sec.	PRESENCE	4 - J,K
L-7	6' x 6'	6	5			PRESENCE	6 - J,K
L-8	6' x 6'	6	5			PRESENCE	6 - J,K
L-9	6' x 6'	6	6			PRESENCE	6 - D,E
L-10	6' x 6'	6	6			PRESENCE	6 - D,E

Materials Required	
Quantity	Description
2 Each	2-Way, 3 Unit Signal Heads, 12" Lens
2 Each	1-Way, 3 Unit Signal Heads, 12" Lens
2 Each	TC-81.10, Design No. 10, 32' Steel Poles
5.83 CU.YD.	Concrete for Strain Pole Foundations
182 Lin.Ft.	Messenger Wire, with Accessories
3 Each	Ground Rod
6 Each	Loop Detector Unit
286 Lin.Ft.	Signal Cable, 4 Conductor, No. 14 AWG
140 Lin.Ft.	Signal Cable, 6 Conductor, No. 14 AWG
1766 Lin.Ft.	Loop Detector Wire
1924 Lin.Ft.	Loop Detector Lead-In Cable
1 Each	Conflict Monitor, Model 2010
1 Each	Model 170E Controller w/ Model 336 Cabinet
3 Each	Load Switch
2 Each	Cable Support Assembly
40 Lin.Ft.	Power Cable, 2-Conductor, No. 8 AWG.
50 Lin.Ft.	Service Cable, 3-Conductor, No. 8 AWG.
1 Each	Power Service
1 Each	Pull Box, 24", 713.08
7 Each	Pull Box, 18", 713.08
844 Lin.Ft.	Conduit, 713.07, 1½"
50 Lin.Ft.	Conduit, 713.04, 3"

SIGNAL INDICATIONS
ALL 12" LENS

R
Y
G

SIGNALS
A,B,C,D,E,F

FLASHER OPERATIONS
Yellow to U.S. 40
Red to DILLON FALLS ROAD

Signal shall flash intermittently not less than 50 nor more than 60 times per minute.

This installation activated 08/13/01

DATE	REVISIONS	DATE INSTALLED

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 5

ELECTRICAL INSTALLATION

U.S. 40 AND DILLON FALLS ROAD

DIVISION: 5 COUNTY: MUSKINGUM SCALE: 1" = 20'

APPROVED _____ DATE _____
DISTRICT TRAFFIC ENGINEER

PRIORITY No. _____

DESIGNED	DRAWN	REVISED	CHECKED	REVIEWED

SHEET _____ OF _____

1/3

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED BFB
CHECKED

U.S. 40 & DILLON FALLS ROAD
SIGNAL DETAIL SHEET

MUS-40-7.89

08/14/01

M0400789.sds

HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

U.S. 40 & DILLON FALLS ROAD
SIGNAL DESIGN SHEET

MUS-40-7.89

2/3

M040078a.sds 08/13/01

TABLE 1 - PHASE FUNCTION, PHASE TIMING

0 + Key

FUNCTION	KEY	PHASE NUMBER USE CAD LIGHTS 1	2	3	4	5	6	7	8
Vehicle Recall	0		X				X		
Ped. Recall	1								
Red Lock	2								
Yellow Lock	3								
Permit Phase	4		X		X		X		
Ped. Phase	5								
Lead Phase	6	X		X		X		X	
Double Entry	7								
Seq. Timing	8								
Start-Up Green	9		X				X		
Overlap A	A								
Overlap B	B								
Overlap C	C								
Overlap D	D								
Exclusive Phase	E								
Simultaneous Gap	F								

Phase + Key

FUNCTION	KEY	PHASE 1	2	3	4	5	6	7	8
MAX. I	0		29		20		29		
MAX. II/HFDW	1								
Walk	2								
Flash DW	3								
Maximum Initial	4		18		13		18		
Minimum Green	5		12		12		12		
Time Before Reduc.	6								
Time To Reduce	7								
Gap Observe	8	///	///	///	///	///	///	///	///
Passage	9		2.5		3.0		2.5		
Minimum Gap	A								
Added Actuation	B		1.0		1.5		1.0		
Yellow	C		5.0		4.0		5.0		
Red Clear	D		1.0		1.0		1.0		
Red Revert	E								
Walk II	F								

TABLE 2 - MISCELLANEOUS

9 + key

FUNCTION	K	VALUE
Short Power Down	0	
Long Power Down	1	
RR Delay Type	6	
Ped. Inhibit	7	
OLA Green	8	
OLA Yellow	9	
OLB Green	A	
OLB Yellow	B	
OLC Green	C	
OLC Yellow	D	
OLD Green	E	
OLD Yellow	F	

C + F + key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Page ID	0									
OLA Red	4									
OLB Red	5									
OLC Red	6									
OLD Red	7									
Overlap E	8									
Overlap F	9									
Red Rest	A									
Maximum Recall	B									
Flash Green	C									
Flash Walk	D									
Advance Walk	E									
Restrictive Phase	F									

TABLE 3

E + Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
OL Red Revert	8									
RR Delay	9									
RR Clear	A									
RR Clear Phase	B									
RR Permit	C									
RR OL Permit	D									
NEMA Hold Phase	E									

C+ Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Trigs on Flash	8									
Start Up Yellow	9									
Handicap Ped	E									

TABLE 4 - MODEL 336 CABINET DETECTOR MAP

The 336 cabinet has one input files. NOTE: The "key" column numbers are not sequential, the channel (slots) are.

D+ column + key

DETECTOR TYPE		DELAY				CARRYOVER			
COLUMN NO.		2		3		4		5	
KEY	CHANNEL	PHASE	TIME	PHASE	TIME	PHASE	TIME	PHASE	TIME
0	Upper 1	1 E/C		/////	/////	1 E/C		/////	/////
6	Lower 1	2 Call		/////	/////	-----		/////	/////
2	Upper 2	2 E/C		/////	/////	2 E/C		/////	/////
3	Lower 2	2 E/C		/////	/////	2 E/C		/////	/////
7	Upper 3	3 E/C		/////	/////	3 E/C		/////	/////
B	Lower 3	4 Call		/////	/////	-----		/////	/////
9	Upper 4	4 E/C	8.0	/////	/////	4 E/C		/////	/////
A	Lower 4	4 E/C	8.0	/////	/////	4 E/C		/////	/////
0	Upper 5	/////	/////	7 E/C		/////	/////	7 E/C	
6	Lower 5	/////	/////	6 Call		/////	/////	-----	
2	Upper 6	/////	/////	6 E/C		/////	/////	6 E/C	
3	Lower 6	/////	/////	6 E/C		/////	/////	6 E/C	
7	Upper 7	/////	/////	7 E/C		/////	/////	7 E/C	
B	Lower 7	/////	/////	8 Call		/////	/////	-----	
9	Upper 8	/////	/////	8 E/C		/////	/////	8 E/C	
A	Lower 8	/////	/////	8 E/C		/////	/////	8 E/C	

E/C = Extend and Call

D + 9 + 4 + 0	DETECTOR FAIL ON	
D + 9 + 4 + 1	DETECTOR FAIL OFF	

TABLE 5 - TIME CLOCK CONTROL

A + CODE

EVENT NO.	S 1	M 2	T 3	W 4	T 5	F 6	S 7	HR	MIN	FUNC
								80		
								81	82	83
								84		
								85	86	87
								88		
								89	8A	8B
								8C		
								8D	8E	8F
								90		
								91	92	93
								94		
								95	96	97
								98		
								99	9A	9B
								9C		
								9D	9E	9F
								A0		
								A1	A2	A3
								A4		
								A5	A6	A7

TABLE 6

B +0 + Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Mode (0 - 4)	4									
Master (0 = OFF)	5									
Future	C									
NEMA CNA Phase	D									
Adv Warning Phase	E									
MRI Phase	F									

D+ Key 1 + Key 2

FUNCTION	K	V
Floating Ped	2E	
ID Number	2F	163
No Coord Ped Recall	3E	
Rest in Walk	3F	
Adv Warn EoG	4E	
Adv Warn SoG	4F	
RR Red Clear	5E	
RR Clear Color	5F	

TABLE 7 - COORDINATION TIMING

B + Plan + Key

FUNCTION	K	PLAN 1	2	3	4
Cycle Length	0				
Forceoff 01	1				
Forceoff 02	2				
Forceoff 03	3				
Forceoff 04	4				
Forceoff 05	5				
Forceoff 06	6				
Forceoff 07	7				
Forceoff 08	8				
Offset	9				
Perm. Length	A				
Max Dwell	B				

FUNCTION	K	1	2	3	4	5	6	7	8
PLAN 1									
Lead Ph. S	C								
Coord. Ph. S	D								
Perm. 2 Ph. S	E								
Min. Recall	F								
PLAN 2									
Lead Ph. S	C								
Coord. Ph. S	D								
Perm. 2 Ph. S	E								
Min. Recall	F								
PLAN 3									
Lead Ph. S	C								
Coord. Ph. S	D								
Perm. 2 Ph. S	E								
Min. Recall	F								
PLAN 4									
Lead Ph. S	C								
Coord. Ph. S	D								
Perm. 2 Ph. S	E								
Min. Recall	F								

Phase No. Use CAD Lts.

TABLE 8

B +A + Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Perm. 2 P1	9									
Perm. 2 P2	A									
Perm. 2 P3	B									
Flash Yellow	C									
Flash Circuit	D									
TOD/DOW Ped	E									
OLB Switchpack	F									

B +B + Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Perm. 2 P4	9									
Perm. 2 P5	A									
Perm. 2 P6	B									
OL Flash Yel.	C									
OL Flash Clear	D									
TOD/DOW Ped	E									
OLC Switchpack	F									

B +C + Key

FUNCTION	K	V	Phase No. Use CAD Lts. 1	2	3	4	5	6	7	8
Perm. 2 P7	9									
Perm. 2 P8	A									
Perm. 2 P9	B									
Coord Max	C									
TOD Red Rest	D									
OLA Switchpack	E									
OLD Switchpack	F									

TABLE 9 - INPUT REASSIGNMENT

A+ 4 + Key CI PIN	K	CODE	A+ 5 + Key CI PIN	K	CODE	A+ 6 + Key CI PIN	K	CODE
39	0		55	0		67	0	
40	1		56	1		68	1	
41	2		57	2		69	2	
42	3		58	3		70	3	
43	4		59	4		71	4	
44	5		60	5		72	5	
45	6		61	6		73	6	
46	7		62	7		74	7	
47	8			8		75	8	
48	9			9		76	9	
49	A			A		77	A	
50	B			B		78	B	
51	C		63	C		79	C	
52	D		64	D		80	D	
53	E		65	E		81	E	
54	F		66	F		82	F	

TABLE 10 - OUTPUT REASSIGNMENT

A+ 0 + Key FUNCTION	K	CODE	A+ 1 + Key FUNCTION	K	CODE
04 D/W	0		08 D/W	0	
04 WALK	1		08 WALK	1	
04 RED	2		08 RED	2	
04 YEL	3		08 YEL	3	
04 GRN	4		08 GRN	4	
03 RED	5		07 RED	5	
03 YEL	6		07 YEL	6	
03 GRN	7		07 GRN	7	
02 D/W	8		06 D/W	8	
02 WALK	9		06 WALK	9	
02 RED	A		06 RED	A	
02 YEL	B		06 YEL	B	
02 GRN	C		06 GRN	C	
01 RED	D		05 RED	D	
01 YEL	E		05 YEL	E	
01 GRN	F		05 GRN	F	

A+ 2 + Key FUNCTION	K	CODE	A+ 3 + Key FUNCTION	K	CODE
02 PED Y	0		01 D/W	0	
06 PED Y	1		01 WALK	1	
04 PED Y	2		OLB RED	2	
08 PED Y	3		OLB YEL	3	
03 PED Y	4		OLB GRN	4	
01 PED Y	5		OLA RED	5	
FLASH	6		OLA YEL	6	
WATCHDOG	7		OLA GRN	7	
03 D/W	8			8	
03 WALK	9		SD	9	
OLD RED	A		LTT	A	
OLD YEL	B				
OLD GRN	C				
OLC RED	D				
OLC YEL	E				
OLC GRN	F				

TABLE 11 - EXTENDED OUTPUT REASSIGNMENT

D+ B + 0 + Key

FUNCTION	K	V
05 D/W	0	
05 WALK	1	
OLL RED	2	
OLL YELLOW	3	
OLL GREEN	4	
OLK RED	5	
OLK YELLOW	6	
OLK GREEN	7	
07 D/W	8	
07 WALK	9	
OLJ RED	A	
OLJ YELLOW	B	
OLJ GREEN	C	
OLH RED	D	
OLH YELLOW	E	
OLH GREEN	F	

D+ B + 1 + Key

FUNCTION	K	V
OLE GREEN	0	
OLF GREEN	1	
OLE YELLOW	2	
OLF YELLOW	3	
ADV WARNING	4	
RR FL YELLOW	5	
DET. RESET	6	
RR ON	7	

D+ B + 2 + Key

FUNCTION	K	V
CYCLE 2	0	
CYCLE 3	1	
OFFSET 1	2	
OFFSET 2	3	
OFFSET 3	4	
---------	5	
FREE	6	
FLASH	7	

TABLE 13 - PED. PERMISSIVE

E + F + Key

FUNCTION	K	V
RR MAX II	0	
PED PERM PI 1	1	
PED PERM PI 2	2	
PED PERM PI 3	3	
PED PERM PI 4	4	
PED PERM PI 5	5	
PED PERM PI 6	6	
PED PERM PI 7	7	
PED PERM PI 8	8	
PED PERM PI 9	9	

TABLE 14 - COMMAND BOX

KEYSTROKES

D + 9 +Key1 + Key2

K1 = 8 K2	V	K1 = 9 K2	V
0		0	
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
A		A	
B		B	
C		C	
D		D	
E		E	
F		F	

TABLE 15 - COMMAND BOX OUTPUT

D +B + 3 + Key

FUNCTION	K	V
CB OUTPUT #1	0	
CB OUTPUT #2	1	
CB OUTPUT #3	2	
CB OUTPUT #4	3	
CB OUTPUT #5	4	
CB OUTPUT #6	5	
CB OUTPUT #7	6	
CB OUTPUT #8	7	
CB FLSH OUTPUT #9	8	
CB FLSH OUTPUT #10	9	
CB FLSH OUTPUT #11	A	
CB FLSH OUTPUT #12	B	

CALCULATED | CHECKED | DATE 08/06/01

WAPITI SOFTWARE INTERSECTION TIMING - 336 CABINET

DISTRICT: 05 INTERSECTION NO.: MUS600789

LOCATION: US 40 & Dillion Falls Rd.

MUS-40-7.89

3/3

M40789 time.dgn 08/14/01