

**PROJECT DESCRIPTION**

**GENERAL**  
THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AND JOHNSVILLE ROAD IN CARROLL COUNTY, MARYLAND. APS (ACCESSIBLE PEDESTRIAN SIGNALS)/CPS (COUNTDOWN PEDESTRIAN SIGNALS) AND THE SIDEWALK RAMPS ALONG THE WEST LEG TO BE INSTALLED. MD 26 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

**INTERSECTION OPERATION**

THE INTERSECTION OPERATES IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 26 APPROACHES OPERATING CONCURRENTLY AND THE JOHNSVILLE ROAD APPROACHES OPERATING CONCURRENTLY.

~~THE EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING ON EASTBOUND AND WESTBOUND MD 26 APPROACH IS BEING CHANGED TO FLASHING RED ARROW OPERATION. EXCLUSIVE/PERMISSIVE LEFT-TURN PHASING WILL REMAIN ON EASTBOUND MD 26.~~

THE CONCURRENT OPERATIONS ON THE NORTHBOUND AND SOUTHBOUND JOHNSVILLE ROAD APPROACHES WILL REMAIN UNCHANGED.

THE PEDESTRIAN PHASE ACROSS THE WEST LEG WILL REMAIN UNCHANGED.

**TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS**

MD 26 (LIBERTY ROAD) AND JOHNSVILLE ROAD - WEST LEG

**STREETS AT 90 DEGREES**

WAIT: "WAIT TO CROSS LIBERTY AT JOHNSVILLE, WAIT." \*

WALK: RAPID TICK

\* MESSAGE USED IF DISTANCE FROM NEAREST PUSHBUTTON FOR PERPENDICULAR CROSSING IS < 10'  
\*\* MESSAGE USED IF CROSSWALK DIVERGES FROM OR CONVERGES WITH PARALLEL TRAFFIC

NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

**PHONE DROP**

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7631 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

**CONTROLLER REQUIREMENTS**

INSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH ONE (1) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, VIDEO INTERFACE EQUIPMENT (1-4 CAMERAS), INTERSECTION MONITOR WITH BATTERY BACKUP FOR PHONE DROP AND ASSOCIATED HARNESSSES HOUSED IN A NEMA SIZE <sup>2</sup>/<sub>6</sub> BASE MOUNTED CABINET.

**PROJECT CONTACTS**

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. JOHN CONCANNON  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (301) 624-8140

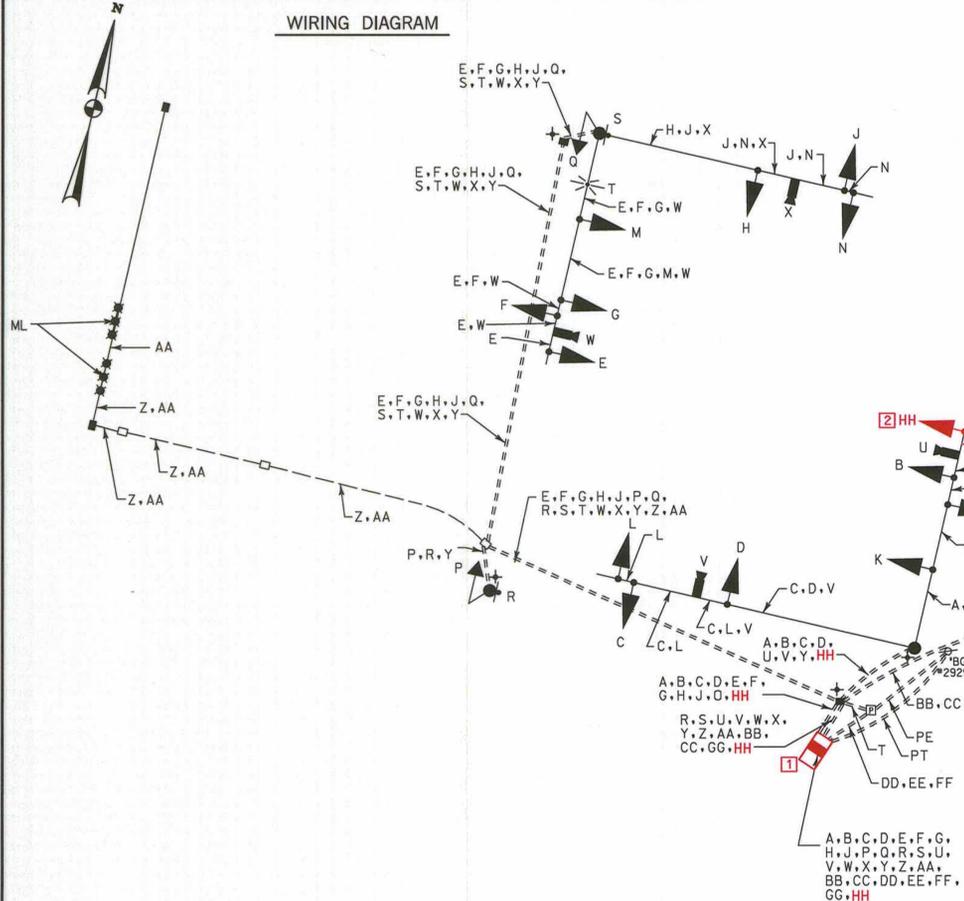
MR. ROBERT SYNDER  
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7631

MR. RAYMOND F. JOHNSON  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (301) 624-8105

MR. RICHARD L. DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7630

MS. ANDREA ABEND  
DISTRICT UTILITY ENGINEER  
PHONE: (301) 624-8115

**WIRING DIAGRAM**



**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9016	1 EACH	4 CHANNEL DETECTOR AMPLIFIER
<sup>1</sup> / <sub>1</sub> 9042-9000	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR, TELEMETRY VIDEO INTERFACE EQUIPMENT 1-8 CAMERAS AND HOUSED IN A NEMA SIZE <sup>2</sup> / <sub>6</sub> BASE MOUNTED CABINET
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-8 CAMERAS
9571	<sup>2</sup> / <sub>105-93</sub> S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		<sup>2</sup> / <sub>2</sub> - 2 + EACH R10-12(2) SIGN (48 IN. x 36 IN.) - MAST ARM MOUNT
		- 2 EACH R3-5(L) (30 IN. x 36 IN.) - MAST ARM MOUNT
		- 4 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
		- 2 EACH R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS LIBERTY ROAD"
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, MD 26, RIGHT ARROW" (24 IN. x 48 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 26, LEFT ARROW" (36 IN. x 72 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "WEST, MD 26, RIGHT ARROW" (24 IN. x 48 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "EAST, MD 26, LEFT ARROW" (36 IN. x 72 IN.) - POLE MOUNT

**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

EXISTING CONTROLLER AND AUXILIARY EQUIPMENT FROM THE CABINET WILL BE REMOVED AND BECOME PROPERTY OF SHA. ANY ADDITIONAL SIGNAL MATERIALS REMOVED SHALL BECOME PROPERTY OF THE CONTRACTOR

**MAINTENANCE OF TRAFFIC**

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

STANDARD NO. MD-104.03-01 (SHOULDER CLOSURE)	STANDARD NO. MD-104.03-09 (INTERSECTION, FAR-LEFT LANE CLOSURE)
STANDARD NO. MD-104.03-03 (LEFT LANE CLOSURE)	STANDARD NO. MD-104.04-15 (INTERSECTION FAR-RIGHT LANE CLOSURE)
STANDARD NO. MD-104.03-05 (RIGHT LANE CLOSURE)	

**PHASE CHART**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1 + 5	G	G	R	R	G	R	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	G	G	R	R	G	R	R	R	R	R	R	R	R	DW	DW
PHASE 1 + 6	G	G	R	R	G	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	G	G	R	R	G	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	R	R	G	G	R	R	R	R	R	R	R	R	R	DW	DW
2 + 5 CHANGE	R	R	G	G	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 6	FLR	FLR	G	G	FLR	FLR	G	G	R	R	R	R	R	DW	DW
2 + 6 CHANGE	FLR	FLR	Y	Y	FLR	FLR	Y	Y	R	R	R	R	R	DW	DW
PHASE 4 + 8	R	R	R	R	R	R	G	G	G	G	G	G	G	DW	DW
4 + 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW
PHASE 4ALT + 8	R	R	R	R	R	R	G	G	G	G	G	G	G	WK	WK
PED CLEARANCE	R	R	R	R	R	R	G	G	G	G	G	G	G	FLOW	FLOW
4 + 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLR	FLR	FLY	FLR	FLR	FLR	FLR	FLR	FLR	DARK	DARK

**WIRING KEY**

A	F	Z	AA	BB	CC
B	G	AA	BB	CC	
C	H	AA	BB	CC	
D	I	AA	BB	CC	
E	J	AA	BB	CC	
F	K	AA	BB	CC	
G	L	AA	BB	CC	
H	M	AA	BB	CC	
I	N	AA	BB	CC	
J	O	AA	BB	CC	
K	P	AA	BB	CC	
L	Q	AA	BB	CC	
M	R	AA	BB	CC	
N	S	AA	BB	CC	
O	T	AA	BB	CC	
P	U	AA	BB	CC	
Q	V	AA	BB	CC	
R	W	AA	BB	CC	
S	X	AA	BB	CC	
T	Y	AA	BB	CC	
U	Z	AA	BB	CC	
V	AA	AA	BB	CC	
W	BB	AA	BB	CC	
X	CC	AA	BB	CC	
Y	DD	AA	BB	CC	
Z	EE	AA	BB	CC	
AA	FF	AA	BB	CC	
BB	GG	AA	BB	CC	
CC	GG	AA	BB	CC	
DD	GG	AA	BB	CC	
EE	GG	AA	BB	CC	
FF	GG	AA	BB	CC	
GG	GG	AA	BB	CC	
HH	GG	AA	BB	CC	
II	GG	AA	BB	CC	
JJ	GG	AA	BB	CC	
KK	GG	AA	BB	CC	
LL	GG	AA	BB	CC	
MM	GG	AA	BB	CC	
NN	GG	AA	BB	CC	
OO	GG	AA	BB	CC	
PP	GG	AA	BB	CC	
QQ	GG	AA	BB	CC	
RR	GG	AA	BB	CC	
SS	GG	AA	BB	CC	
TT	GG	AA	BB	CC	
UU	GG	AA	BB	CC	
VV	GG	AA	BB	CC	
WW	GG	AA	BB	CC	
XX	GG	AA	BB	CC	
YY	GG	AA	BB	CC	
ZZ	GG	AA	BB	CC	
AAA	GG	AA	BB	CC	
BBB	GG	AA	BB	CC	
CCC	GG	AA	BB	CC	
DDD	GG	AA	BB	CC	
EEE	GG	AA	BB	CC	
FFF	GG	AA	BB	CC	
GGG	GG	AA	BB	CC	
HHH	GG	AA	BB	CC	
III	GG	AA	BB	CC	
JJJ	GG	AA	BB	CC	
KKK	GG	AA	BB	CC	
LLL	GG	AA	BB	CC	
MMM	GG	AA	BB	CC	
NNN	GG	AA	BB	CC	
OOO	GG	AA	BB	CC	
PPP	GG	AA	BB	CC	
QQQ	GG	AA	BB	CC	
RRR	GG	AA	BB	CC	
SSS	GG	AA	BB	CC	
TTT	GG	AA	BB	CC	
UUU	GG	AA	BB	CC	
VVV	GG	AA	BB	CC	
WWW	GG	AA	BB	CC	
XXX	GG	AA	BB	CC	
YYY	GG	AA	BB	CC	
ZZZ	GG	AA	BB	CC	
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III	GG	AA	BB	CC	
JJJ	GG	AA	BB	CC	
KKK	GG	AA	BB	CC	
LLL	GG	AA	BB	CC	
MMM	GG	AA	BB	CC	
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OOO	GG	AA	BB	CC	
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QQQ	GG	AA	BB	CC	
RRR	GG	AA	BB	CC	
SSS	GG	AA	BB	CC	
TTT	GG	AA	BB	CC	
UUU	GG	AA	BB	CC	
VVV	GG	AA	BB	CC	
WWW	GG	AA	BB	CC	
XXX	GG	AA	BB	CC	
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ZZZ	GG	AA	BB	CC	
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LLL	GG	AA	BB	CC	
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RRR	GG	AA	BB	CC	
SSS	GG	AA	BB	CC	
TTT	GG	AA	BB	CC	
UUU	GG	AA	BB	CC	
VVV	GG	AA	BB	CC	
WWW	GG	AA	BB	CC	
XXX	GG	AA	BB	CC	
YYY	GG	AA	BB	CC	
ZZZ	GG	AA	BB	CC	
AAA	GG	AA	BB	CC	
BBB	GG	AA	BB	CC	
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JJJ	GG	AA	BB	CC	
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