PROJECT DESCRIPTION

GENERAL

This project involves the modification of an existing traffic signal at the intersection of MD 24 (Vietnam Veterans Memorial Highway) at West MacPhail Road in Harford County, Maryland. MD 24 is considered to run in a north/south direction.

Modifications include adding video detection cameras, double left turn to eastbound West MacPhail Road and left turn lane for westbound W. MacPhail Road into existing access for the Upper Chesapeake Health Center.

INTERSECTION OPERATION

The intersection is to operate in a NEMA 8 phase, full-traffic-actuated mode. There will be an exclusive left turn phases both north and southbound movement of MD 24 (Vietnam Veterans Memorial Highway). The through movements will operate concurrently with a actuated audible pedestrian movement across the north leg of the intersection. There will be an exclusive left turn phase for the east and westbound movements of W. MacPhail Road. The through movements will operate concurrently with an actuated pedestrian movement across the west leg of the intersection. Utilize existing cabinet and controller, add video interface and APS 2-wire central control unit to be installed in cabinet.

EQUIPMENT LIST

A. Equipment to be supplied by the administration.

None.

B. Equipment to be furnished and/or installed by the contractor.

Quantity	Units	Specification Section	Description
Lump Sum	LS		Mobilization
Lump Sum	LS		Maintenance of traffic
2	EA		10 ft. steel pedestal pole with breakaway base
1	EA		Rack mounted video detection retrofit (SHA installed)
1	EA		Video detector retro-pack w/power
1	EA		Video detector interface panel (1 for every 4 cameras)
2	EA		Video detector camera
2	EA		100 ft. Video camera detection cable
10	EA		12 in. 3-section signal head - span
2	EA		16 in. 1-section, 1-way LED countdown ped signal head - pole
2	EA		16 in. 1-section, 1-way LED countdown ped signal head - post
4	EA		9 in.x 15 in. R 10-3e pedestrian education sign - pole
1	EA		30 in.x 36 in. R3-5(L) sign - span
1	EA		30 in.x 36 in. R3-5(R) sign - span
4	EA		Audible Pedestrian pushbutton assembly
1	EA		Central control unit for audible pedestrian pushbutton
3	CY		Test pit excavation
2	EA		Handhole
360	LF		2-conductor tray cable (No.12 AWG)
915	LF		2-conductor cable (No. 14 AWG)
1800	LF		5-conductor cable (No. 14 AWG)
1600	LF		7-conductor cable (No. 14 AWG)
300	LF		1/4 in. steel tether wire
300	LF		3/8 in. steel span wire
220	LF		Bare copper ground wire (No. 6 AWG)
85	LF		2 in. PVC conduit [Schedule 80] - trenched
165	LF		3 in. PVC conduit [Schedule 80] - trenched
30	LF		4 in. PVC conduit [Schedule 80] - trenched
345	LF		4 in. PVC conduit [Schedule 80] - bored
8	CY		Concrete foundation for traffic signal equipment
5	EA		Ground rod - 3/4 in. x 10 ft. length
320	LF		5 in. white pavement marking thermoplastic - lane line
400	LF		5 in. yellow pavement marking thermoplastic - lane line
3	EA		Thermoplastic pavement marking symbol - white (L or R Arrow)
2	EA		Relocate existing sign - span
2	EA		Back guy
150	LF		Removal of existing pavement markings
100	LF		Relocate existing signal cable (aluminum shielded)
Lump Sum	LS		Relocated existing underground interconnect cable (2.50 /LF)
1	EA		Rewire existing controller
9	EA		12 in. 3-section signal head (RA,YA,GA) - span
400	LF		12 in. white thermoplastic pavement marking - cross walk HAPPTPM
100	LF		24 in. white thermoplastic pavement marking - stop line HAPPTPM
1	EA		12 in. x 32 ft. 2-ply steel strain pole
2	EA		5 ft. steel pedestal pole with breakaway base

SPECIAL NOTES

PROJECT CONTACTS:

1. The following contact persons for this project are as follows:

Erin Kuhn, Assistant District Engineer - Traffic
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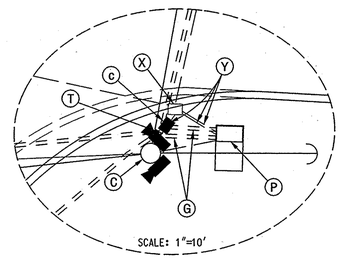
DETAIL A

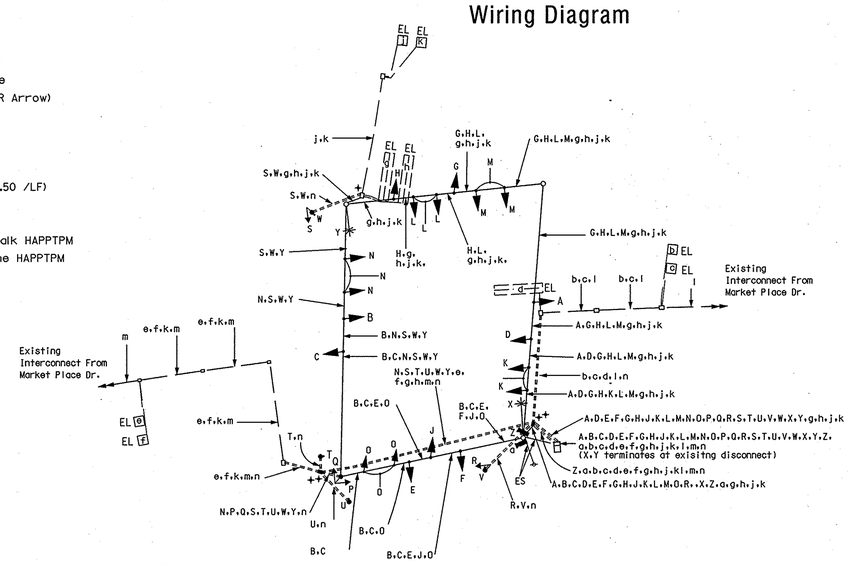


SEE SHEET 1 OF 2 FOR CONSTRUCTION NOTES

Phase Chart

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G	←R ←Y ←G	R Y G	←R ←Y ←G	R Y G	R Y G	←R ←Y ←G	R Y G	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G				
PHASE 1 AND 5	←G–	←G–	R	R	←G–	←G–	R	R	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																							
PHASE 1 AND 6	←G–	←G–	G	G	←R–	←R–	R	R	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
1 CHANGE	←Y–	←Y–	G	G	←R–	←R–	R	R	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 2 AND 5	←R–	←R–	R	R	←G–	←G–	G	G	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
5 CHANGE	←R–	←R–	R	R	←Y–	←Y–	G	G	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 2 AND 6	←R–	←R–	G	G	←R–	←R–	G	G	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	WK	WK	DW	DW
PED CLEARANCE	←R–	←R–	G	G	←R–	←R–	G	G	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	FL/DW	FL/DW	DW	DW
2 AND 6 CHANGE	←R–	←R–	Y	Y	←R–	←R–	Y	Y	←R–	R	←R–	R	R	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 3 AND 7	←R–	←R–	R	R	←R–	←R–	R	R	←G–	R	←G–	R	R	←G–	R	←G–	←G–	R	R	DW	DW	DW	DW
3 AND 7 CHANGE TO 3 AND 8, 4 AND 7, OR 4 AND 8																							
PHASE 3 AND 8	←R–	←R–	R	R	←R–	←R–	R	R	←R–	R	←R–	R	R	←G–	G	←G–	←G–	G	G	DW	DW	DW	DW
3 CHANGE	←R–	←R–	R	R	←R–	←R–	R	R	←R–	R	←R–	R	R	←Y–	G	←Y–	←Y–	G	G	DW	DW	DW	DW
PHASE 4 AND 7	←R–	←R–	R	R	←R–	←R–	R	R	←G–	G	←G–	G	G	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
7 CHANGE	←R–	←R–	R	R	←R–	←R–	R	R	←Y–	G	←Y–	G	G	←R–	R	←R–	←R–	R	R	DW	DW	DW	DW
PHASE 4 AND 8	←R–	←R–	R	R	←R–	←R–	R	R	←R–	G	←R–	G	G	←R–	G	←R–	←R–	G	G	DW	DW	DW	DW
4 AND 8 CHANGE	←R–	←R–	R	R	←R–	←R–	R	R	←R–	Y	←R–	Y	Y	←R–	G	←R–	←R–	Y	Y	DW	DW	DW	DW
PHASE ALT 4 AND 8	←R–	←R–	R	R	←R–	←R–	R	R	←R–	G	←R–	G	G	←R–	G	←R–	←R–	G	G	DW	DW	WK	WK
PED CLEARANCE	←R–	←R–	R	R	←R–	←R–	R	R	←R–	G	←R–	G	G	←R–	G	←R–	←R–	G	G	DW	DW	FL/DW	FL/DW
ALT 4 AND 8 CHANGE	←R–	←R–	R	R	←R–	←R–	R	R	←R–	Y	←R–	Y	Y	←R–	Y	←R–	←R–	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL\ ←R–	FL\ ←R–	FL/Y	FL/Y	FL\ ←R–	FL\ ←R–	FL/Y	FL/Y	FL\ ←R–	FL/R	FL\ ←R–	FL/R	FL/R	FL\ ←R–	FL/R	FL\ ←R–	FL\ ←R–	FL/R	FL/R	DARK	DARK	DARK	DARK

Wiring Diagram



A, B, C, D, E, F, G, H, J — 7-Conductor Electrical Cable (No. 14 A.W.G.)

K, L, M, N, O, P, R, S — 5-Conductor Electrical Cable (No. 14 A.W.G.)

T, U, V, W — 2-Conductor Electrical Cable (No. 14 A.W.G.)

Y — 2-Conductor Tray Cable (No. 12 A.W.G.)

Z, a — VIDEO DETECTION CABLE

n — Bare Copper Ground Wire (No. 6 A.W.G.)

l,m — Existing Interconnect Cable

b,c,d,e,f,g,h,j,k — Existing Loop Detector Wire

A,D,K,X — Existing signal cable

ES — Existing overhead Electrical Service

— Grounding Rod

These plans are approved for construction for a period of 1 year from the date of approval. Should construction not begin within this time frame these plans shall be null and void without a review from the Traffic Engineering Design Division.

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 24 (Vietnam Veterans Highway) at MacPhail Road

GENERAL INFORMATION SHEET

SCALE N.T.S. DATE September 21, 2007 CONTRACT NO. BW-573-802-412

DESIGNED BY F. Brownley
DRAWN BY F. Brownley
CHECKED BY
FAP NO. N/A

COUNTY Harford
LOGMILE I2002408.53
TIMS NO. H984
TOD NO. -

TS NO. 3333D | DRAWING - OF | SHEET NO. 2 OF 2

PLOTTED: Tuesday, September 25, 2007 AT 10:31 AM
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