PROJECT DESCRIPTION

GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL DUE TO THE GEOMETRIC IMPROVEMENTS AT THE INTERSECTION OF US 40 ALT. AND MD ROUTE 658 IN ALLEGANY COUNTY. THE SIGNAL IMPROVEMENTS INCLUDES NEW MAST ARMS, SIGNAL HEADS, SIGNS, PAVEMENT MARKINGS,DETECTORS AND THE INSTALLATION OF NEW CONDUIT AND NEW INTERCONNECT CABLE ALONG MD 658 TO I-68 OFF RAMP/MD 49.

US 40 ALT. RUNS IN A EAST-WEST DIRECTION.

NOTE: SEE INTERCONNECT PLAN SHEET

INTERSECTION OPERATION

1. NORMAL OPERATION

   THE INTERSECTION WILL OPERATE IN A NEMA SIX PHASE, FULL TRAFFIC ACTUATED MODE. THE US 40 ALT. APPROACHES WILL OPERATE CONCURRENTLY AND THE MD 658/CULPER DR. WILL OPERATE IN A SPLIT PHASE OPERATION.

   EAST AND WESTBOUND US 40 ALT. WILL HAVE AN EXCLUSIVE LEFT TURN PHASE WITH A NORTH TO EASTBOUND RIGHT TURN OVERLAP ALONG MD ROUTE 658.

2. SPECIAL OPERATION

   THE INTERSECTION WILL OPERATE AS INDICATED ABOVE UNLESS THE OPTICOM DETECTOR IS ACTUATED ON THE WESTBOUND US40 ALT. APPROACH WHICH WILL PRE-EMPT THE TRAFFIC SIGNAL AND STOP ALL APPROACHES EXCEPT WESTBOUND US 40 ALT.

UPON COMPLETION OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY MR. ROBERT SYNDER OF SHA AT 410 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SYNDER WITH THE NEAREST STREET ADDRESS, ZIP CODE AND PHONE NUMBER.

PROJECT CONTACTS

THE CONTACT PERSONS FOR DISTRICT #6 ARE AS FOLLOWS:

MR. FRED CROZIER
DISTRICT ENGINEER
PHONE: 301-729-8486

MR. LARRY HUMBERTSON
DISTRICT UTILITY ENGINEER
PHONE: 301-729-8439

MR. GEORGE SMALL
ASSISTANCE DISTRICT ENGINEER-TRAFFIC
PHONE: 301-729-8444

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

MR. GEORGE FRANKENBERRY
ASSISTANT DISTRICT ENGINEER-MAINTENANCE
PHONE: 301-729-8457

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

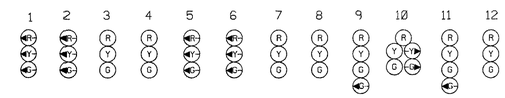
CAT CODE	ITEM	QUANTITY	DESCRIPTION
900000		1 EA	(CONT/CAB/ADD) 360 OPTICOM RACK
900000		4 EA	(CONT/CAB/ADD) DETECTOR AMPLIFIER 4-CH RACK MT
900000		1 EA	(CONT/CAB/ADD) DETECTOR PANEL
900000		1 EA	(CONT/CAB/ADD) DETECTOR RACK POWER SUPPLY
900000		1 EA	TELEMETRY MODULE WITH HARNESS
900000		1 EA	CABINET INTERSECTION MONITOR, SIZE 6
900000		1 EA	CONTROLLER ASC II W/ TELEMETRY
900000		16 SF	R3-5L (LEFT TURN ONLY) (30"X36") 2 EACH MAST ARM MOUNTED
900000		8 SF	R3-5R (RIGHT TURN ONLY) (30"X36") 1 EACH MAST ARM MOUNTED
900000		8 SF	R3-6L (LEFT THRU) (30"X36") 1 EACH MAST ARM MOUNTED
900000		54 SF	D-3(1) (NATIONAL HWY) (VAR.X16") 4 EACH MAST ARM MOUNTED
900000		14 SF	D-3(1) (← CAMPGROUND RD) (VAR.X16") 1 EACH MAST ARM MOUNTED
900000		14 SF	D-3(1) (← CUPLER DR) (VAR.X16") 1 EACH MAST ARM MOUNTED
900000		14 SF	D-3(1) (CAMPGROUND RD →) (VAR.X16") 1 EACH MAST ARM MOUNTED
900000		14 SF	D-3(1) (CUPLER DR →) (VAR.X16") 1 EACH MAST ARM MOUNTED
900000		11 SF	SHIELD ASWSEMBLEY (M3-2,M1-9,M6-1) (30"X51")1 EACH MAST ARM MOUNTED
900000		25 SF	SHIELD ASWSEMBLEY (M3-2,M1-9,M6-1) (48"X75")1 EACH MAST ARM MOUNTED

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

CAT CODE	ITEM	QUANTITY	DESCRIPTION
203030		2 CY	TEST PIT EXCAVATION
585624		46 LF	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
585626		8 EA	HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTER
585630		6 EA	HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW
801004		13 CY	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
860272		40 EA	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
800000		1 EA	FURNISH AND INSTALL 3M OPTICOM #721 DETECTOR EYE
800000		1 EA	FURNISH AND INSTALL 3M OPTICOM #760 CARD RACK
800000		1 EA	FURNISH AND INSTALL 3M OPTICOM #762 DISCRIMINATOR MODULE
800000		3 EA	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FT LEAD-IN
860292		3 EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
800000		1 EA	FURNISH AND INSTALL 1 INCH WEATHERHEAD
871202		1 EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT
862102		760 LF	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
805010		35 LF	FURNISH AND INSTALL 1" RIGID METAL ELECTRICAL CONDUIT - GALVANIZED RISER
805160		48 LF	FURNISH AND INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON METALLIC CONDUIT FOR DETECTOR SLEEVE
800000		10 LF	FURNISH AND INSTALL 2 INCH SCH 80 RIGID PVC CONDUIT - TRENCHED
800000		45 LF	FURNISH AND INSTALL 3 INCH SCH 80 RIGID PVC CONDUIT - TRENCHED
805150		125 LF	FURNISH AND INSTALL 3 INCH SCH 80 RIGID PVC CONDUIT - SLOTTED
800000		40 LF	FURNISH AND INSTALL 4 INCH SCH 80 RIGID PVC CONDUIT - TRENCHED
805118		70 LF	FURNISH AND INSTALL 4 INCH SCH 80 RIGID PVC CONDUIT - BORED
805155		95 LF	FURNISH AND INSTALL 4 INCH SCH 80 RIGID PVC CONDUIT - SLOTTED
811001		3 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
837001		4 EA	FURNISH AND INSTALL GROUND ROD -3/4INCH DIAMETER X 10 FOOT LENGTH
860288		100 LF	FURNISH AND INSTALL 4 CONDUCTOR OPTICOM DETECTOR CABLE
862101		2352 LF	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14 AWG)
861104		1432 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHIELDED)
861107		78 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO 14 AWG)
861108		1440 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO 14 AWG)
802501		270 LF	FURNISH AND INSTALL NO 6 AWG STRANDED BARE COPPER GROUND WIRE
810010		30 LF	FURNISH AND INSTALL ELECTRICAL CABLE - 3 WIRE NO 4 AWG THHN/THWN
813015		176 SF	INSTALL OVERHEAD SIGN
838003		1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT (120/240V 1PHASE 3 WIRE SYSTEM)
818030		1 EA	FURNISH AND INSTALL MAST ARM POLE AND 38 FOOT MAST ARM
818041		1 EA	FURNISH AND INSTALL MAST ARM POLE AND 60 FOOT MAST ARM
818051		1 EA	FURNISH AND INSTALL MAST ARM POLE AND TWIN (50 FT / 70 FT) OR 70 FT / 50 FT) MAST ARMS
800000		265 LF	PULL BACK EXISTING CABLE/WIRE AND RE-INSTALL INTO CONDUIT RUN
800000		5 EA	REMOVE AND DISPOSE OF EXISTING FOUNDATION 12 INCHES BELOW GRADE
873001		1 LS	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
802501		270 LF	FURNISH AND INSTALL NO 6 AWG STRANDED BARE COPPER GROUND WIRE

NOTE: EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND BECOME THE PROPERTY OF THE OF THE CONTRACTOR.

PHASE CHART

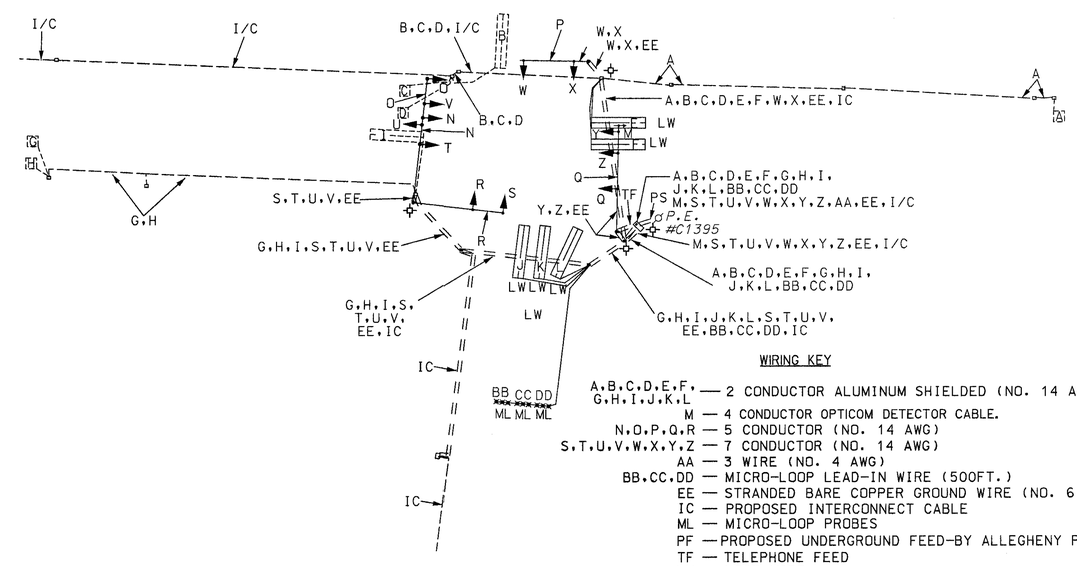


	1	2	3	4	5	6	7	8	9	10	11	12
Phase 1 & 5	◄G-	◄G-	R	R	◄G-	◄G-	R	R	R	R -G►	R	R
1 & 5 change	THIS PHASE MAY CHANGE TO PHASE 1+6, 2+5 OR 2+6											
Phase 1 & 6	◄G-	◄G-	G	G	◄R-	◄R-	R	R	R	R	R	R
1 & 6 change	◄Y-	◄Y-	G	G	◄R-	◄R-	R	R	R	R	R	R
Phase 2 & 5	◄R-	◄R-	R	R	◄G-	◄G-	G	G	R	R -G►	R	R
2 & 5 change	◄R-	◄R-	R	R	◄Y-	◄Y-	G	G	R	R -Y►	R	R
Phase 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	G	G	R	R	R	R
2 & 6 change	◄R-	◄R-	Y	Y	◄R-	◄R-	Y	Y	R	R	R	R
Phase 3	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	G ◄G-	G
3 change	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	Y	Y
Phase 4	◄R-	◄R-	R	R	◄R-	◄R-	R	R	G ◄G-	G	R	R
4 change	◄R-	◄R-	R	R	◄R-	◄R-	R	R	Y	Y	R	R
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

FIREHOUSE PRE-EMPTION

Pre-emption Phase 2 & 5	◄R-	◄R-	R	R	◄G-	◄G-	G	G	R	R	R	R
Pre-emption Clearance	◄Y-	◄Y-	R	R	◄Y-	◄Y-	Y	Y	R	R	R	R
Normal Operation Phase 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	G	G	R	R	R	R

WIRING DIAGRAM



WIRING KEY

A,B,C,D,E,F, G,H,I,J,K,L — 2 CONDUCTOR ALUMINUM SHIELDED (NO. 14 AWG)
M — 4 CONDUCTOR OPTICOM DETECTOR CABLE.
N,O,P,Q,R — 5 CONDUCTOR (NO. 14 AWG)
S,T,U,V,W,X,Y,Z — 7 CONDUCTOR (NO. 14 AWG)
AA — 3 WIRE (NO. 4 AWG)
BB,CC,DD — MICRO-LOOP LEAD-IN WIRE (500FT.)
EE — STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
IC — PROPOSED INTERCONNECT CABLE
ML — MICRO-LOOP PROBES
PF — PROPOSED UNDERGROUND FEED-BY ALLEGHENY POWER
TF — TELEPHONE FEED
LW — LOOP WIRE
⏚ — GROUND ROD

SG-2

BAI BRUDIS & ASSOCIATES, INC.
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9220 RUMSEY ROAD; SUITE 210
COLUMBIA, MARYLAND 21045
(410)-884-3607

REVISIONS	APPROVALS
(H) GEOMETRIC IMPROVEMENTS FOR A DOUBLE LEFT ON MD 658. 07/2001 SHA No.: AL8415176	TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION
RJM (G) ADD EMERGENCY SERVICES SIGNAL PRE-EMPTION (OPTICOM) FOR WESTBOUND US 40 ALT. 05/2000 SHA No.: XX1005785	ASST. CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
MK (F) INSTALL INTERCONNECT CABLE AND LOOP DETECTORS 04/1998	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
MR DAZ BRK TH	DIRECTOR, TRAFFIC & SAFETY

ORIGINAL ON FILE

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
US 40 ALT. & MD 658 (CAMPGROUND ROAD) - CUPLER DRIVE

DRAWN BY: S.A.	F.A.P. NO.		TS NO. TS-312 H	SHEET NO.	
CHECKED BY: R.D.	S.H.A. NO.				
SCALE: N.T.S.	COUNTY:	ALLEGANY	T.I.M.S. NO. E-097	31 OF 56	
DATE: APRIL 1998	LOG MILE:	01A04007.46			