PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Intersection Control Beacon to a Pedestrian actuated Traffic Signal with interconnect at the intersection of MD 650 (New Hampshire Ave) and Quaint Acres Dr / Heartfield Dr in Montgomery County. MD 650 (New Hampshire Ave) is assumed to run in a north-south direction.

II. INTERSECTION OPERATION

a) This intersection is to operate as a pedestrian crossing signal with the MD 650 (New Hampshire Ave) approaches running concurrently in a flashing yellow mode. The Quaint Acres Dr / Heartfield Dr approaches shall operate in a flashing Red mode. A pushbutton actuated exclusive pedestrian phase shall be provided across the north leg of the intersection. Interconnect will be provided south to the intersection of US 29 Off ramp and MD 650 (New Hampshire Ave)

b) The existing NEMA size "6" base-mounted cabinet shall be utilized at this intersection. A full-traffic-actuated, eight-phase controller with one (1) four channel, rack mount loop detector amplifier, L.A.U. and L.A.U. Panel with all necessary equipment shall be installed into the existing cabinet.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.

2. Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Mr. Bob Gonzales at (240) 777-8761 seventy-two hours in advance of intended work

3. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor percieves that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

ITEM NO.	DESCRIPTION	QUANTITY
9001	Detector rack power supply (To be instaled by County forces)	1 EA
1 ~~9016~~	~~Detector amplifier 4 channel rack mount (To be installed into the existing cabinet by County Forces).~~	~~1 EA~~
9042	Controller ASC II with telemetry	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	~~8 SF~~ 20 SF 2
	R3-5(R) "RIGHT TURN ONLY" sign, (24" x 30") ground mounted.	1 EA
	R2-1(Mod.) "RIGHT TURN ONLY" sign (24"x18") ground mounted	1 EA
9571	Sheet aluminum signs to consist of: (mast arm mount)	1 7 ~~13~~ SF
	R10-11b "NO TURN ON RED" sign, (30" x 36") ground mounted.	1 EA
1	~~R3-2(2) "NO LEFT TURN (SYMBOL) FIBER OPTIC SIGN 7-9 AM, 4-6 PM" sign (24" x 36") mast arm.~~	~~1 EA~~
1 9086	Video detector interface equipment: 1-4 cameras (To be installed by signal shop)	1 EA
2	R9-1(3) "NOTICE STOP FOR PEDESTRIANS AT ALL CROSSWALKS STATE LAW" (36"X48")	1 EA

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of Traffic	1 EA
2002	Test Pit Excavation	5 CY
5002	F&I 5" Yellow Lead Free Reflective Therm. Pavement Markings	110 LF
5003	F&I 12" White Lead Free Reflective Therm. Pavement Markings	130 LF
5004	F&I 24" White Lead Free Reflective Therm. Pavement Markings	160 LF
5005	Removal of Existing Pavement Marking Line - Any Width	75 LF
5007	F&I White Heat Applied Thermo Pavement Marking Letters	4 EA
5008	F&I White Heat Applied Thermo Pavement Marking Arrows	1 EA
6003	F&I 4" Concrete Sidewalk	380 ~~150~~ SF 2
8009	F&I Breakaway Pedestal Pole (Any Size)	1 EA
8011	F&I Pushbutton and Sign	2 EA
8013	Remove & Dispose of Equipment (Per Assignment)	1 EA
8017	F&I 3" Elec. Conduit Sched. 80 PVC - Riser	50 LF
8020	Relocate Existing Sign	8 SF
8021	F&I Concrete for Signal Foundation	5 CY
8022	F&I 4"x 4" Wood Sign Supports	80 LF
8023	F&I No. 6 AWG Stranded Bare Copper Ground Wire	400 LF
8024	F&I 1" Elect. Conduit - Galv. Sleeve	15 LF
8028	F&I 4" Sched. 80 Rigid PVC Conduit - Bored	225 LF
8029	F&I 3" Sched. 80 Rigid PVC Conduit - Trenched	35 LF
8035	Electrical Utility Service Equipment 120/240 Volts 60 Amps	1 EA
8041	Furnish & Install Electrical Handhole	1 EA
8042	Install Ground Mounted Sign	20 ~~8~~ SF 2
8043	Install Overhead Sign	13 SF
8044	F&I Video Detection Camera	1 EA
8045	F&I Control Cable, 250, Video Detection Camera to Controller	1 EA
1 8049	F&I Cable - 1 conductor, No. 4 AWG, Type THHN, 600 V	345 LF
8050	F&I Ground Rod -3/4" Diameter x 10' Length	1 EA
8052	F&I 8" Vehicular Traffic Head Section	4 EA
8053	F&I 12" Vehicular Traffic Signal Head Section	26 EA
8056	F&I Electrical Cable 2-Conductor No. 14 AWG	245 LF
8057	F&I Electrical Cable 3-Conductor No. 14 AWG	1 400 LF
1 8058	F&I Electrical Cable 5-Conductor No. 14 AWG	335 LF
8059	F&I Electrical Cable 7-Conductor No. 14 AWG	850 LF
8062	Install 21' Steel Pole & Single 50' Mast Arm	2 EA
8068	F&I Controller and Cabinet - Base Mount	1 EA
8070	F&I Depressed curb & gutter	20 LF
NEG.	F & I 12-pair interconnect cable (overhead) lash to existing	1250 LF
1 NEG.	R3-2(2) "NO LEFT TURN (SYMBOL) FIBER OPTIC SIGN "7-9 AM, 4-6 PM" (24" x 36") mast arm.	1 EA

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Lee Starkloff
Assistant District Engineer - Traffic
Phone: (301 513-7318

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

SEQUENCE OF OPERATION SHEET

DIVISION OF OPERATIONS
TRAFFIC ENGINEERING & OPERATIONS SECTION
MONTGOMERY COUNTY, MARYLAND

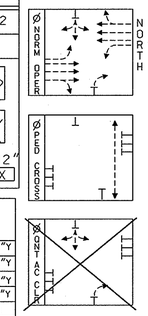
MD 650 RUNS IN A NORTH-SOUTH DIRECTION

INTERSECTION: MD 650 (NEW HAMPSHIRE AVE) AND QUAINT ACRES DR / HEARTFIELDS DR NO. _____

PHASING

SIGNAL NO.	5,6,7	8,9,10	1,2,3,4	11,12
TOTAL:	3	3	4	2
LEGEND	R, R, Y, Y 12"	R, R 12"	R 12", Y 12", Y 8"	9"or12" X

OPTICALLY LIMITED
R RED
Y YELLOW
G GREEN
ARROW
F FLASHING



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SEQUENCE OF OPERATION

SIGNAL NO.	1	2	3	4	5	6	7	8	9	10	FLASH
	INTERVAL										
1	FL/8"Y	12"Y	R	R	R	R	R	R	R	R	FL/12"Y
2	FL/8"Y	12"Y	R	R	R	R	R	R	R	R	FL/12"Y
3	FL/8"Y	12"Y	R	R	R	R	R	R	R	R	FL/12"Y
4	FL/8"Y	12"Y	R	R	R	R	R	R	R	R	FL/12"Y
5	FLR DARK	R	R	R	R	R	R	DARK FLR	DARK	R	FL/R
6	FLR DARK	R	R	R	R	R	R	DARK FLR	DARK	R	FL/R
7	FLR DARK	R	R	R	R	R	R	DARK FLR	DARK	R	FL/R
8	FLR DARK	R	R	R	R	R	R	R	R	R	FL/R
9	FLR DARK	R	R	R	R	R	R	R	R	R	FL/R
10	FLR DARK	R	R	R	R	R	R	R	R	R	FL/R
11	DW	DW	DW	WK	FL/DW	DW	DW	DW	DW	DW	DARK
12	DW	DW	DW	WK	FL/DW	DW	DW	DW	DW	DW	DARK
PHASE	NORMAL OPERATION		ALL RED	PED CROSSING			ALL RED	QUAINT ACRES CLEARANCE		ALL RED	

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NOTES:

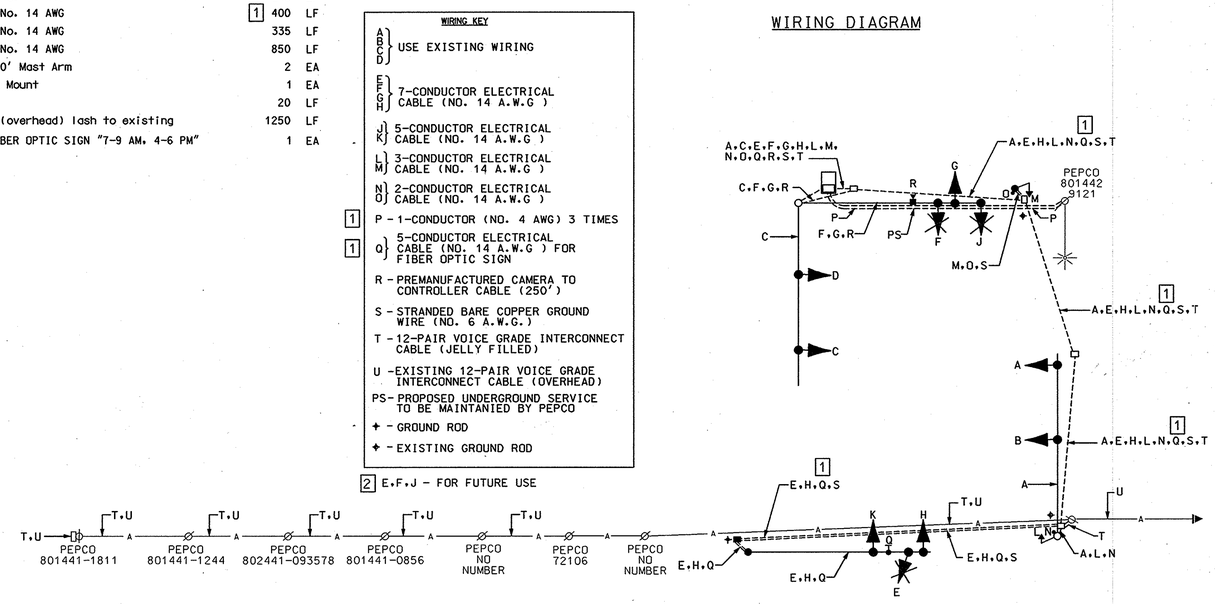
SUBMITTED:_____ CHECKED:_____ APPROVED:_____
IN SERVICE BY:_____ DATE:_____ TIME:_____

WIRING KEY

A, B, C, D } USE EXISTING WIRING
E, F, G, H } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
J, K } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
L, M } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
N, O } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
1 P - 1-CONDUCTOR (NO. 4 AWG) 3 TIMES
1 Q } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) FOR FIBER OPTIC SIGN
R - PREMANUFACTURED CAMERA TO CONTROLLER CABLE (250')
S - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
T - 12-PAIR VOICE GRADE INTERCONNECT CABLE (JELLY FILLED)
U - EXISTING 12-PAIR VOICE GRADE INTERCONNECT CABLE (OVERHEAD)
PS - PROPOSED UNDERGROUND SERVICE TO BE MAINTANIED BY PEPCO
+ - GROUND ROD
+ - EXISTING GROUND ROD

2 E,F,J - FOR FUTURE USE

WIRING DIAGRAM



1 REDLINE REVISION 2/23/04

2 REDLINE REVISION 9/1/04

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.NW.
Glen Burnie,MD 21061
Ph (410) 590-5500
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MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 650 (NEW HAMPSHIRE AVE) AND
QUAINT ACRES DR / HEARTFIELDS DR
White Oak, Maryland

DRAWN BY: J. ALLEN JR.	F.A.P. NO. N/A	TS NO. 4086A	SHEET NO. 3 OF 3
CHECKED BY:	S.H.A. NO. AT2885185		
SCALE: NTS	COUNTY: MONTGOMERY	T.I.M.S. NO. F938	
DATE: 01-05-04	LOG MILE: 15065005.40		

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