PROJECT DESCRIPTION

I GENERAL

THIS PORTION OF THE PROJECT INVOLVES THE RECONSTRUCTION OF AN EXISTING TRAFFIC CONTROL SIGNAL WITH STREET LIGHTING AT MD 174 (QUARTERFIELD ROAD) AND I-97 NORTHBOUND RAMPS IN ANNE ARUNDEL COUNTY. MD 174 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II INTERSECTION OPERATION

1. THE INTERSECTION IS TO OPERATE IN A NEMA FOUR-PHASE, FULLY ACTUATED MODE, WITH THE MD 174 APPROACHES RUNNING CONCURRENTLY. AN EXCLUSIVE/PERMISSIVE LEFT TURN PHASE SHALL BE PROVIDED FOR WESTBOUND MD 174.

   THIS SIGNAL SHALL BE INCLUDED IN A SIGNAL SYSTEM. INTERCONNECT CABLE SHALL BE INSTALLED UNDERGROUND FROM OLD STAGE ROAD TO PARKE WEST DRIVE.

2. A FULL TRAFFIC ACTUATED, EIGHT-PHASE LOCAL CONTROLLER WITH ONE ~~THREE~~ (X) [5] 1 FOUR CHANNEL, RACK MOUNTED LOOP DETECTOR AMPLIFIERS AND ASSOCIATED HARNESS HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS SITE.

CONTACT PERSONS FOR DISTRICT 5 ARE AS FOLLOWS:

MR. LARRY ELLIOTT
ASSISTANT DISTRICT ENGINEER - TRAFFIC
410-841-1003

MR. MARK COBLENTZ
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
410-841-1004

MR. CHARLES GEORGE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
410-841-1002

MR. JOHN MAYS
ASSISTANT DISTRICT ENGINEER - UTILITIES
410-841-1005

CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY:

MR. RICHARD DAFF SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
410-787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS DIVISION
410-787-7630

MR. ED RODENHIZER
TEAM LEADER - SIGNAL OPERATIONS
410-787-7650

MR. EUGENE BAILEY
TEAM LEADER - SIGN OPERATIONS
410-787-7676

MR. DAVE SCHWARTZ
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7668

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE STATE HIGHWAY ADMINISTRATION

CAT. CODE NO.	QUANTITY		DESCRIPTION
971017	1	EA	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL LOCAL CONTROLLER WITH ONE ~~THREE~~ 1(X) [5] 4-CHANNEL, RACK MOUNT LOOP DETECTOR AMPLIFIERS AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
973023	59	SF	OVERHEAD MOUNTED SHEET ALUMINUM SIGNS TO CONSIST OF:
			1 EA D3-2 "Quaterfield Rd." SIGN. (VARIABLE X 16") MAST ARM MOUNTED.
			1 EA R10-12 "LEFT TURN YIELD ON GREEN" SIGN (36" X 42") MAST ARM MOUNTED.
			1 EA "ASSOCIATED SHIELD ASSEMBLY" SIGN (48" X 75") POLE MOUNTED.
			1 EA "ASSOCIATED SHIELD ASSEMBLY" SIGN (36" X 51") POLE MOUNTED.
[5] 900000	1	EA	VIDEO INTERFACE EQUIPMENT

EQUIPMENT LIST (CON'T)

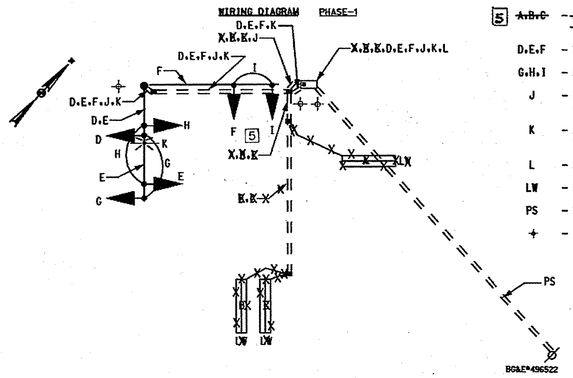
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

CAT. CODE NO.	QUANTITY		DESCRIPTION
203030	2	CY	TEST PIT EXCAVATION
585624	70	LF	FURNISH AND INSTALL 24 INCH HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS.
818050	1	EA	FURNISH AND INSTALL 27' STEEL POLE WITH TWIN 50'-60' MAST ARMS.
801004	9	CY	FURNISH AND INSTALL CONCRETE FOUNDATION.
837001	4	EA	FURNISH AND INSTALL GROUND ROD, 3/4" DIAMETER X 10' LENGTH.
805032	30	LF	FURNISH AND INSTALL 3 INCH ELECTRICAL CONDUIT-PVC RISER.
871202	1	EA	INSTALL BASE-MOUNTED CABINET AND CONTROLLER.
813015	59	SF	INSTALL OVERHEAD MOUNTED SHEET ALUMINUM SIGN.
862102	[5] 0 ~~700~~	LF	~~FURNISH AND INSTALL SAW CUT.~~
805011	[5] 10 ~~60~~	LF	FURNISH AND INSTALL 1" GALVANIZED STEEL ELECTRICAL CONDUIT-DETECTOR WIRE SLEEVE.
870135	560	LF	FURNISH AND INSTALL 3" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (TRENCHED).
870140	20	LF	FURNISH AND INSTALL 4" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (TRENCHED).
805118	205	LF	FURNISH AND INSTALL 4" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (BORED).
807400	1	EA	FURNISH AND INSTALL ELECTRICAL UTILILITY SERVICE EQUIPMENT (120/240V, 1 PHASE 3 WIRE SYSTEM).
811001	10	EA	FURNISH AND INSTALL HANDHOLE (FRAME AND COVER).
802501	200	LF	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.).
862101	[5] 0 ~~2500~~	LF	~~FURNISH AND INSTALL LOOP WIRE (NO. 14 A.W.G.) ENCASED IN 1/4" FLEXIBLE TUBING.~~
861104	[5] 0 ~~375~~	LF	~~FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) (ALUMINUM SHIELDED).~~
861107	210	LF	FURNISH AND INSTALL 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.).
861108	750	LF	FURNISH AND INSTALL 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.).
861116	280	LF	FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TYPE THHN TRAY CABLE.
861117	30	LF	FURNISH AND INSTALL 3 WIRE ELECTRICAL CABLE (NO. 4 A.W.G.).
831010	2	EA	FURNISH AND INSTALL 250 W-HPS LUMINAIRE.
866103	2	EA	FURNISH AND INSTALL 15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE.
860272	31	EA	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION.
860270	3	EA	FURNISH AND INSTALL 8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION.
800000		LS	REMOVE AND DISPOSAL OF EXISTING EQUIPMENT.
810550	4	EA	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN.
818030	1	EA	FURNISH AND INSTALL 27' STEEL POLE WITH SINGLE 38' MAST ARM.
822002	850	LF	FURNISH AND INSTALL 12 PAIR, VOICE GRADE INTERCONNECT CABLE (NO. 19 A.W.G.) (JELLY FILLED).
860265	2	EA	RELOCATE EXISTING SIGNAL HEAD
813006	11	SF	RELOCATE SIGN FROM EXISTING OVERHEAD STRUCTURE
[5] 816001	3	EA	VIDEO DETECTION CAMERA
[5] 816005	3	EA	PREMANUFACTURED CAMERA TO CONTROLLER CABLE (250 FT)

C. MATERIAL TO BE REMOVED AND RETURNED TO THE STATE HIGHWAY ADMINISTRATION

SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

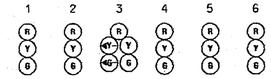
WIRING DIAGRAM PHASE-1



WIRING KEY

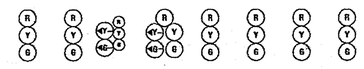
[5] ~~A,B,C~~	~~- 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) (ALUMINUM SHIELDED)~~
D,E,F	- 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
G,H,I	- 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
J	- 1-CONDUCTOR (NO. 6 A.W.G.) STRANDED BARE COPPER GROUND WIRE
K	- 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) COPPER TYPE T/C
L	- 3 WIRE ELECTRICAL CABLE (NO.4 A.W.G.)
LW	- LOOP WIRE
PS	- POWER SERVICE
⏚	- GROUND ROD

PHASE CHART (PHASE-1)



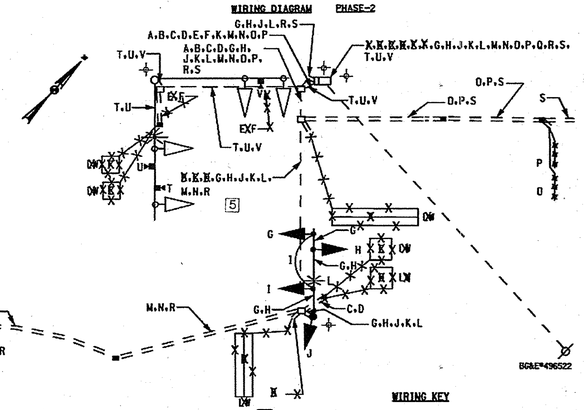
	1	2	3	4	5	6	
PHASE 2 & 5	R	R	G	G	R	R	← ↓
2 & 5 CHANGE	R	R	Y	G	R	R	
PHASE 2 & 6	G	G	G	G	R	R	← →
2 & 6 CHANGE	Y	Y	Y	Y	R	R	
PHASE 4	R	R	R	R	G	G	↑
4 CHANGE	R	R	R	R	Y	Y	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	← →

PHASE CHART (PHASE-2)



	1	2	3	4	5	6	7	8	
PHASE 2 & 5	R	R	G	G	R	R	R	R	←
2 & 5 CHANGE	R	R	Y	Y	G	R	R	R	↓
PHASE 2 & 6	G	G	G	G	G	R	R	R	←
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	→
PHASE 4	R	R	R	R	R	G	G	G	↑
4 CHANGE	R	R	R	R	R	Y	Y	Y	
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	← →

WIRING DIAGRAM PHASE-2



WIRING KEY

[5] ~~A,B,C,D,E,F~~	~~- 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) (ALUMINUM SHIELDED)~~
G,H	- 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
I,J	- 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
K	- 1-CONDUCTOR (NO. 6 A.W.G.) STRANDED BARE COPPER GROUND WIRE
L	- 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) COPPER TYPE T/C
M,N,O,P	- MICROLOOP WIRE
Q	- 3 WIRE ELECTRICAL CABLE (NO.4 A.W.G.)
R,S	- 12 PAIR, VOICE GRADE TELEMETRY CABLE (NO. 19 A.W.G.) (JELLY FILED).
[5] T,U,V	- VIDEO DETECTION CABLE (250 FT LEAD-IN
LW	- LOOP WIRE
PS	- POWER SERVICE
⏚	- GROUND ROD

[5] REDLINE REVISION 10/27/03

REVISION "B"

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy. NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
Fax (410) 590-6537

4507bg1.dgn

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 174 AND NORTHBOUND RAMPS FROM I-97
GLEN BURNIE, MARYLAND

DRAWN BY:	J. ALLEM Jr.	F.A.P. NO.		TS NO. 3420 B	SHEET NO.
CHECKED BY:		S.H.A. NO.	AA6295171		
SCALE:	1"= 20'	COUNTY:	ANNE AURNDEL	T.I.M.S. NO. D727	160 OF 195
DATE:	10/03/03	LOG MILE:	02017405.04		