PROJECT DESCRIPTION

I GENERAL

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

II INTERSECTION OPERATION

MD 174 AND SB I-97 RAMPS

1. THE INTERSECTION IS TO OPERATE IN A NEMA EIGHT-PHASE, FULLY ACTUATED MODE, WITH THE MD 174 APPROACHES RUNNING CONCURRENTLY. AN EXCLUSIVE LEFT TURN PHASE SHALL BE PROVIDED FOR THE EASTBOUND AND WESTBOUND APPROACHES OF MD 174. THE SOUTHBOUND I-97 RAMP EGRESS AND NORTH LEG OF THE INTERSECTION SHALL OPERATE IN SPLIT PHASING.

   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 ~~FIVE~~ $(\frac{1}{8})$ [S] 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 ~~FIVE~~ $(\frac{1}{8})$ [S] 4-CHANNEL, RACK MOUNT LOOP DETECTOR AMPLIFIERS AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.
973023	150	SF	OVERHEAD MOUNTED SHEET ALUMINUM SIGNS TO CONSIST OF:
	2	EA	D3-2 "Quaterfield Rd." DUAL-FACE SIGN. (VARIABLE X 16") MAST ARM MOUNTED.
	7	EA	R3-5L "LEFT TURN ONLY" SYMBOL SIGN (30" X 36") MAST ARM MOUNTED.
	2	EA	"ASSOCIATED SHIELD ASSEMBLY" SIGN (48" X 75") POLE MOUNTED.
	2	EA	"ASSOCIATED SHIELD ASSEMBLY" SIGN (36" X 51") POLE MOUNTED.
[S] 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	3	CY	TEST PIT EXCAVATION
585624	160	LF	FURNISH AND INSTALL 24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
818036	3	EA	FURNISH AND INSTALL 27' STEEL POLE WITH SINGLE 50' MAST ARMS.
818041	1	EA	FURNISH AND INSTALL 27' STEEL POLE WITH SINGLE 60' MAST ARMS.
801004	20	CY	FURNISH AND INSTALL CONCRETE FOUNDATION.
837001	6	EA	FURNISH AND INSTALL GROUND ROD, 3/4" DIAMETER X 10' LENGTH.
871202	1	EA	INSTALL BASE-MOUNTED CABINET AND CONTROLLER.
813015	150	SF	INSTALL OVERHEAD MOUNTED SHEET ALUMINUM SIGN.
862102	100	~~1350~~ LF	FURNISH AND INSTALL SAW CUT.
[S] 805011	20	~~60~~ LF	FURNISH AND INSTALL 1" GALVANIZED STEEL ELECTRICAL CONDUIT-DETECTOR WIRE SLEEVE.
* 805135	1900	LF	FURNISH AND INSTALL 3" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (TRENCHED).
805140	30	LF	FURNISH AND INSTALL 4" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (TRENCHED).
* 805118	840	LF	FURNISH AND INSTALL 4" POLYVINYL CHLORIDE ELECTRICAL CONDUIT (SCHEDULE 80) (BORED).
807400	1	EA	FURNISH AND INSTALL ELECTRICAL UTILITY SERVICE EQUIPMENT (120/240V, 1 PHASE, 3 WIRE SYSTEM).
* 811001	29	EA	FURNISH AND INSTALL HANDHOLE (FRAME AND COVER).
802501	450	LF	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.).
[S] ~~862101~~	~~5000~~	~~LF~~	~~FURNISH AND INSTALL LOOP WIRE (NO. 14 A.W.G.) ENCASED IN FLEXIBLE TUBING.~~
[S] ~~861104~~	~~2550~~	~~LF~~	~~FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) (ALUMINUM SHIELDED).~~
861107	1050	LF	FURNISH AND INSTALL 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.).
861108	1750	LF	FURNISH AND INSTALL 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.).
861116	1000	LF	FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) TYPE THHN TRAY CABLE.
861117	40	LF	FURNISH AND INSTALL 3 WIRE ELECTRICAL CABLE (NO. 4 A.W.G.).
831010	4	EA	FURNISH AND INSTALL 250 W-HPS LUMINAIRE.
866103	4	EA	FURNISH AND INSTALL 15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE.
860272	46	EA	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION.
810550	2	EA	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN.
810555	2	EA	FURNISH AND INSTALL MICROLOOP PROBE SET WITH 1000 FOOT LEAD-IN.
* 822002	3800	LF	FURNISH AND INSTALL 12-PAIR, VOICE GRADE INTERCONNECT CABLE (NO. 19 A.W.G.) (JELLY FILLED)
[S] 816001	4	EA	VIDEO DETECTOR CAMERA
816005	2	EA	PREMANUFACTURED CAMERA TO CONTROLLER CABLE (250')
816010	2	EA	PREMANUFACTURED CAMERA TO CONTROLLER CABLE (500')

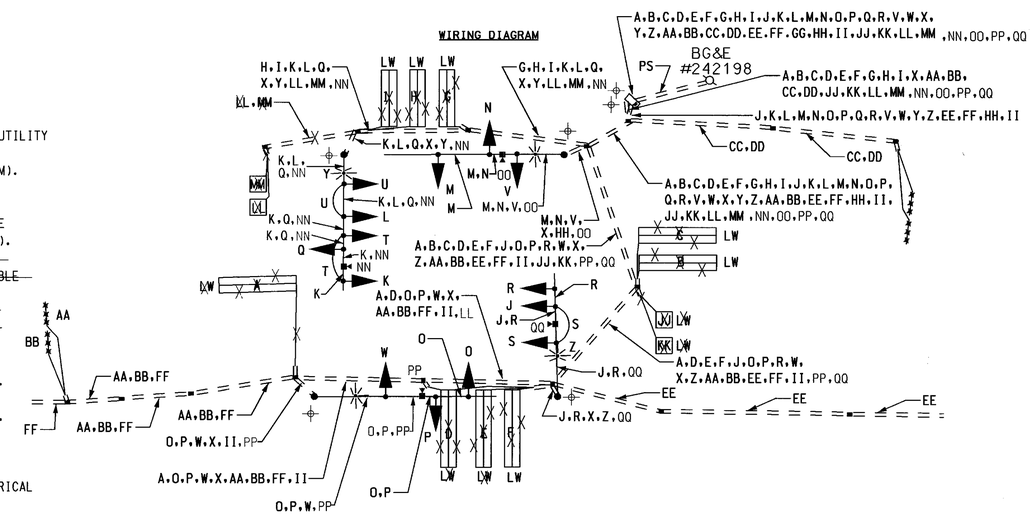
C. MATERIAL TO BE REMOVED AND RETURNED TO THE STATE HIGHWAY ADMINISTRATION
ALL REMOVED SIGNAL MATERIALS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

* THE QUANTITIES FOR THE INSTALLATION OF THE INTERCONNECT CABLE, HANDHOLES AND CONDUIT THAT ARE NOT SHOWN ON THE THREE SIGNALIZED INTERSECTION PLAN SHEETS ASSOCIATED WITH THIS PROJECT ARE INCORPORATED WITHIN THE INTERSECTION QUANTITIES.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	◄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 ◄G-	R Y G ◄G-	R Y G	R Y G ◄G-	R Y G ◄G-	R Y G
PHASE 1 & 5	◄G-	◄G-	R	R	◄G-	◄G-	R	R	R	R	R	R	R	R
1 & 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 1 & 6, 2 & 5, OR 2 & 6													
PHASE 1 & 6	◄G-	◄G-	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R
1 & 6 CHANGE	◄Y-	◄Y-	G	G	◄R-	◄R-	R	R	R	R	R	R	R	R
PHASE 2 & 5	◄R-	◄R-	R	R	◄G-	◄G-	G	G	R	R	R	R	R	R
2 & 5 CHANGE	◄R-	◄R-	R	R	◄Y-	◄Y-	G	G	R	R	R	R	R	R
PHASE 2 & 6	◄R-	◄R-	G	G	◄R-	◄R-	G	G	R	R	R	R	R	R
2 & 6 CHANGE	◄R-	◄R-	Y	Y	◄R-	◄R-	Y	Y	R	R	R	R	R	R
PHASE 3 & 8	◄R-	◄R-	R	R	◄R-	◄R-	R	R	◄G-G	◄G-G	G	R	R	R
3 & 8 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	R	R	◄Y-Y	◄Y-Y	Y	R	R	R
PHASE 4 & 7	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	R	◄G-G	◄G-G	G
4 & 7 CHANGE	◄R-	◄R-	R	R	◄R-	◄R-	R	R	R	R	R	◄Y-Y	◄Y-Y	Y
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

WIRING DIAGRAM



WIRING KEY

[S] ~~A,B,C,D,E,F,G,H,I,J,K,L,MM~~	~~- 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.) (ALUMINUM SHIELDED)~~
J,K,L,M,N,O,P	- 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Q,R,S,T,U,V,W	- 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
X	- 1-CONDUCTOR (NO. 6 A.W.G.) STRANDED BARE COPPER GROUND WIRE
Y,Z,HH,II	- 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.) COPPER TYPE T/C
AA,BB,CC,DD	- MICRO LOOP PROBE WIRE
EE,FF	- 12 PAIR, VOICE GRADE TELEMETRY CABLE (NO. 19 A.W.G.) (JELLY FILLED)
GG	- 3 WIRE ELECTRICAL CABLE (NO. 4 A.W.G.)
LW	- LOOP WIRE
PS	- POWER SERVICE
⏚	- GROUND ROD
[S] NN,OO	- VIDEO DETECTOR PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (250')
PP,QQ	- VIDEO DETECTOR PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (500')

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 174 AT I-97 SOUTHBOUND RAMPS
GLEN BURNIE, MARYLAND

DRAWN BY: J.R.H. JR.	F.A.P. NO. SEE TITLE SHEET	TS NO. TS 4171	SHEET NO. ___ OF ___
CHECKED BY: T HOLLOWAY	S.H.A. NO. AA629B21		
SCALE: N.T.S.	COUNTY: ANNE ARUNDEL	T.I.M.S. NO. D727	
DATE: 6/01	LOG MILE: 02017404.77		

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