PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT MD 355 AND PLUMMER DRIVE IN MONTGOMERY COUNTY. MD 355 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION IS TO OPERATE IN A NEMA FOUR-PHASE, FULL-TRAFFIC-ACTUATED MODE. THE NORTHBOUND AND SOUTHBOUND MD 355 MOVEMENTS WILL OPERATE CONCURRENTLY AND HAVE AN ACTUATED PEDESTRIAN PHASE ACROSS BOTH EAST AND WEST LEGS OF THE INTERSECTION.

THE EASTBOUND AND WESTBOUND PLUMMER DRIVE MOVEMENTS WILL OPERATE CONCURRENTLY AND HAVE AN ACTUATED PEDESTRIAN PHASE ACROSS AND AT MEDIANS OF BOTH NORTH AND SOUTH LEGS OF THE INTERSECTION.

THE INTERSECTION IS TO BE INTERCONNECTED WITH THE ADJACENT SIGNALIZED INTERSECTIONS ALONG MD 355.

AN EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH SIX (6), FOUR-CHANNEL, TIME DELAY OUTPUT LOOP DETECTOR AMPLIFIERS, HOUSED IN A NEMA SIZE '6' BASE MOUNTED CABINET ARE TO BE INSTALLED AT THIS LOCATION.

PROJECT CONTACTS

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MR. MAJID SHAKIB
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MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATION
DIVISION
(410) 787-7630

MR. RANDY BROWN
ASSISTANT DISTRICT ENGINEER
- MAINTENANCE
(301) 513-7304

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM	QUANTITY	UNIT	DESCRIPTION
9001	12	EA	12 IN., ONE-WAY, THREE SECTION (R,Y,G,) ADJUSTABLE TRAFFIC SIGNAL HEAD - SPAN WIRE MOUNT
9001	6	EA	12 IN., TWO-WAY, TWO SECTION (DW, WK) ADJUSTABLE PEDESTRIAN SIGNAL HEAD - POLE MOUNT
9004	4	EA	PEDESTRIAN PUSH BUTTON AND R10-4(I) SIGN (9"x12"), "PUSH BUTTON TO CROSS PLUMMER DR."
9004	8	EA	PEDESTRIAN PUSH BUTTON AND R10-4(I) SIGN (9"x12"), "PUSH BUTTON TO CROSS FREDERICK RD."
9007	1	EA	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER AND CABINET - BASE MOUNT
9010	6	EA	FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFER
9012	200	SF	SHEET ALUMINUM SIGN TO CONSIST OF:
	- 2	EA	R3-5(L) SIGN (30" X 36") - SPAN WIRE MOUNT
	- 4	EA	D3-2 SIGN (16" X VARIABLE), "PLUMMER DR (XXXXXX)" (SEE SIGNS DETAIL) - SPAN WIRE MOUNT
	- 4	EA	D3-2 SIGN (16" X VARIABLE), "FREDERICK RD (XXXXXX)" (SEE SIGNS DETAIL) - SPAN WIRE MOUNT
	- 2	EA	W3-3 SIGN (36" X 36") - GROUND MOUNT
	- 4	EA	W3-3 SIGN (48" X 48") - GROUND MOUNT
	- 1	EA	M3-3 (24" X 12"), M1-6 (30" X 24") AND M6-1 (21" X 15") SIGNS, "SOUTH, MD 355, (RIGHT ARROW)" - GROUND MOUNT
	- 1	EA	M3-1 (24" X 12"), M1-6 (36" X 30") AND M1-6L (21" X 15") SIGNS, "NORTH, MD 355, (LEFT ARROW)" - GROUND MOUNT
	- 1	EA	M3-1 (24" X 12"), M1-6 (30" X 24") AND M6-1 (21" X 15") SIGNS, "NORTH, MD 355, (RIGHT ARROW)" - GROUND MOUNT
	- 1	EA	M3-3 (24" X 12"), M1-6 (36" X 30") AND M6-1L (21" X 15") SIGNS, "SOUTH, MD 355, (LEFT ARROW)" - GROUND MOUNT

EQUIPMENT LIST "B"

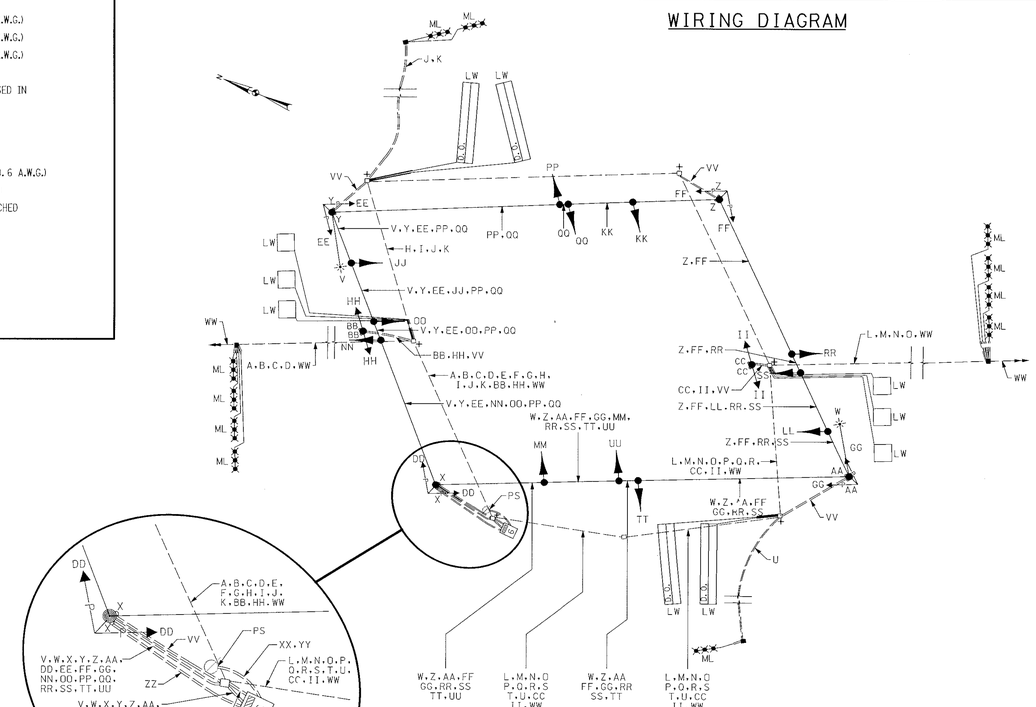
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM	QUANTITY	UNIT	DESCRIPTION
2006	4	CY	TEST PIT EXCAVATION
5014	160	LF	5 IN. WHITE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
5020	1500	LF	12 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
5022	200	LF	24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
5023	4	EA	PERMANENT PREFORMED PAVEMENT MARKING LETTER
5025	2	EA	PERMANENT PREFORMED PAVEMENT MARKING ARROW
5000	200	LF	REMOVE EXISTING PAVEMENT MARKINGS - ANY WIDTH
8001	70	LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. X 4 IN.)
8002	200	LF	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. X 6 IN.)
8005	37	SF	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS
8011	300	LF	FURNISH AND INSTALL 2 IN. (SCHEDULE 80) PVC CONDUIT - TRENCHED
8015	4	EA	FURNISH AND INSTALL 12 IN. X 30 FT. STRAIN POLE (ANCHOR BOLTS WILL BE 1¾ IN. X 90 IN.)
8019	2	EA	FURNISH AND INSTALL 20 FT. LUMINAIRE WITH 250 WATT HPS LUMINAIRE
8020	470	LF	FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL TRAY CABLE (NO. 12 A.W.G.)
8021	12	EA	INSTALL TRAFFIC SIGNAL HEAD - SPAN WIRE MOUNT.
8022	12	EA	INSTALL PEDESTRIAN SIGNAL HEAD - POLE MOUNT
8024	70	SF	INSTALL SHEET ALUMINUM SIGN - OVERHEAD MOUNT.
8026	12	CY	FURNISH AND INSTALL CONCRETE SIGNAL FOUNDATION
8027	140	LF	FURNISH AND INSTALL 1 IN. GALVANIZED STEEL CONDUIT FOR DETECTOR SLEEVE
8040	4	EA	FURNISH AND INSTALL HAND HOLE
8041	130	SF	INSTALL SHEET ALUMINUM SIGN - GROUND MOUNT
8045	6	EA	FURNISH AND INSTALL GROUND ROD - ¾ IN. DIAMETER X 10 FT. LENGTH
8046	1	EA	CONTROL AND DISTRIBUTION EQUIPMENT
8048	1350	LF	FURNISH AND INSTALL 2-CONDUCTOR (ALUMINUM SHIELDED) ELECTRICAL CABLE (NO. 14 A.W.G.)
8049	2320	LF	FURNISH AND INSTALL 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
8051	2470	LF	FURNISH AND INSTALL 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
8052	1780	LF	FURNISH AND INSTALL 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
8053	390	LF	FURNISH AND INSTALL ELECTRICAL CABLE 3-WIRE (NO. 4 A.W.G.)
8054	3310	LF	FURNISH AND INSTALL LOOP DETECTOR WIRE (NO. 14 A.W.G.) ENCASED IN FLEXIBLE TUBING
8055	1240	LF	FURNISH AND INSTALL SAWCUT FOR LOOP DETECTOR
8057	600	LF	FURNISH AND INSTALL ⅜ IN. STEEL SPAN WIRE
8059	1	EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT
8000	120	LF	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
8000	1	EA	FURNISH AND INSTALL INTERCONNECT CABLE SPLICE (SEE NOTES)
8000	60	LF	FURNISH AND INSTALL 4 IN. (SCHEDULE 80) PVC CONDUIT - TRENCHED
8000	12	EA	INSTALL PEDESTRIAN PUSH BUTTON AND SIGN
8000	3	EA	MICRO-LOOP PROBE SET WITH 500 FT. LEAD-IN
8000	8	EA	MICRO-LOOP PROBE SET WITH 1000 FT. LEAD-IN
8000	2	EA	FURNISH AND INSTALL 10 FT. BREAKAWAY PEDESTAL POLE

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13-16	17-24
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 2 ALT. & 6 ALT.	G	G	G	G	G	G	R	R	R	R	R	R	WK	DW
PED. CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	DW
2 ALT. & 6 ALT. CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	G	G	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
PHASE 4 ALT. & 8 ALT.	R	R	R	R	R	R	G	G	G	G	G	G	DW	WK
PED. CLEARANCE	R	R	R	R	R	R	G	G	G	G	G	G	DW	FL/DW
4 ALT. & 8 ALT. CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A E I M Q U / B F J N R / C G K O S / D H L P T	2-CONDUCTOR CABLE (ALUMINUM SHIELD)
V / W	2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
X Z BB / Y AA CC	2-CONDUCTOR CABLE (NO. 14 A.W.G.)
DD GG JJ MM / EE HH KK / FF II LL	5-CONDUCTOR CABLE (NO. 14 A.W.G.)
NN QQ TT / OO RR UU / PP SS	7-CONDUCTOR CABLE (NO. 14 A.W.G.)
VV –	BARE COPPER STRANDED GROUND WIRE (NO. 6 A.W.G.)
WW –	EXISTING 50-PAIR JELLY FILLED TELEMETRY CABLE
XX –	3-WIRE #4 FOR TRAFFIC SIGNAL ELECTRICAL SERVICE
YY –	3-WIRE #4 FOR INTERSECTION LIGHTING ELECTRICAL SERVICE
ZZ –	(SPARE/NOT USED)
LW –	LOOP WIRE (NO. 14 A.W.G.)
ML –	MICRO-LOOP PROBE
PS –	PROPOSED ELECTRICAL SERVICE BY PEPCO
+ –	¾ IN. X 10 FT. GROUND ROD

LOG MILE NO. 1503351746

REVISIONS	APPROVALS
NEW SHEET RED LINE REVISION NO. 5 9/ /98	ASST. DIVISION CHIEF, TEDD
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY

PREPARED BY
Greiner, Inc.
Engineers/Architects/Planners/Surveyors
TIMONIUM, MARYLAND

MDOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic and Safety
TRAFFIC ENGINEERING DESIGN DIVISION

DRAWN BY: H.W.C.	MD 355 at Plummer Drive		PLAN SHEET NO.:
DES. BY: J.S.Y.	COUNTY: MONTGOMERY		
CHK. BY: M.W.M.			
DATE: 7/31/98	F.A.P. NO. AC-NH-G-5113 (10) C	TS NO.:	SHEET NO.
SCALE: N/A	S.H.A. NO. M 611-501-371	TS 3801	OF