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PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF ROCKLEDGE DRIVE AND I-270 RAMP 'A'/ I-270 RAMP 'D' IN MONTGOMERY COUNTY. ROCKLEDGE DRIVE IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION

THE INTERSECTIONS WILL OPERATE AS A SINGLE INTERSECTION IN A NEMA THREE (3) PHASE, SEMI-TRAFFIC-ACTUATED MODE. THE ROCKLEDGE DRIVE THROUGH MOVEMENTS AND I-270 RAMP 'A' ARE TO OPERATE CONCURRENTLY. THE ROCKLEDGE DRIVE LEFT ONTO NB I-270 AND THE I-270 RAMP 'D' MOVEMENTS ARE TO OPERATE CONCURRENTLY. CONCURRENT PEDESTRIAN PHASES WILL BE PROVIDED ACROSS THE EAST LEGS OF I-270 RAMP 'D'. AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS THE EAST LEG OF I-270 RAMP 'A'.

A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH THREE (3) FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, AND L.A.U. PANEL WITH ASSOCIATED HARNESS HOUSED IN A NEMA SIZE '6' BASE MOUNTED CABINET WILL BE INSTALLED AT THIS LOCATION.

III. INTERCONNECTION

NEW 50 PAIR VOICE GRADE COMMUNICATION CABLE IS TO BE INSTALLED BETWEEN THE INTERSECTIONS OF ROCKLEDGE DRIVE @ I-270 RAMP 'A'/ I-270 RAMP 'D' AND MD 187 (OLD GEORGETOWN ROAD) @ I-270 RAMP 'A'/ I-270 RAMP 'D' AND THE INTERSECTION OF ROCKLEDGE DRIVE @ I-270 RAMP 'A'/ I-270 RAMP 'D' AND ROCKLEDGE DRIVE @ ROCK SPRING DRIVE AS SHOWN ON THE INTERCONNECT PLANS AND WIRING DIAGRAM.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE, EXCLUDING INTERCONNECT, TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE. DISCONNECTING AND SPLICING OF INTERCONNECT CABLE SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES. THE CONTRACTOR SHALL RUN THE INTERCONNECT CABLE INTO THE BASE OF CABINET AND PROPERLY TAG. CONTACT MR. BOB GONZALES AT (240) 777-8761 SEVENTY TWO HOURS IN ADVANCE OF THE INTENDED WORK.

IV. PROJECT CONTACTS

THE CONTACT PERSONS FOR DISTRICT THREE ARE AS FOLLOWS:

MR. CHARLIE WATKINS
DISTRICT ENGINEER
PHONE (301) 513-7311

MR. AUGUSTINE REBISH
UTILITY ENGINEER
PHONE: (301) 513-7350

MR. ROBERT GONZALES
TRAFFIC ENGINEER
MONTGOMERY COUNTY DPWT
PHONE: (240) 777-8761

MR. MAJID SHAKIB
ASSISTANT DISTRICT
ENGINEER-TRAFFIC
PHONE: (301) 513-7358

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

THE POWER COMPANY REPRESENTATIVE IS
POTOMAC ELECTRIC POWER COMPANY
MR. JIM SLAYTON
PHONE: (202) 872-2000

V. MAINTENANCE OF TRAFFIC

NO MAINTENANCE OF TRAFFIC IS REQUIRED AS THE SIGNAL IS TO BE INSTALLED PRIOR TO NEW ROADWAY OPENING TO TRAFFIC.

EQUIPMENT LIST 'A'

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

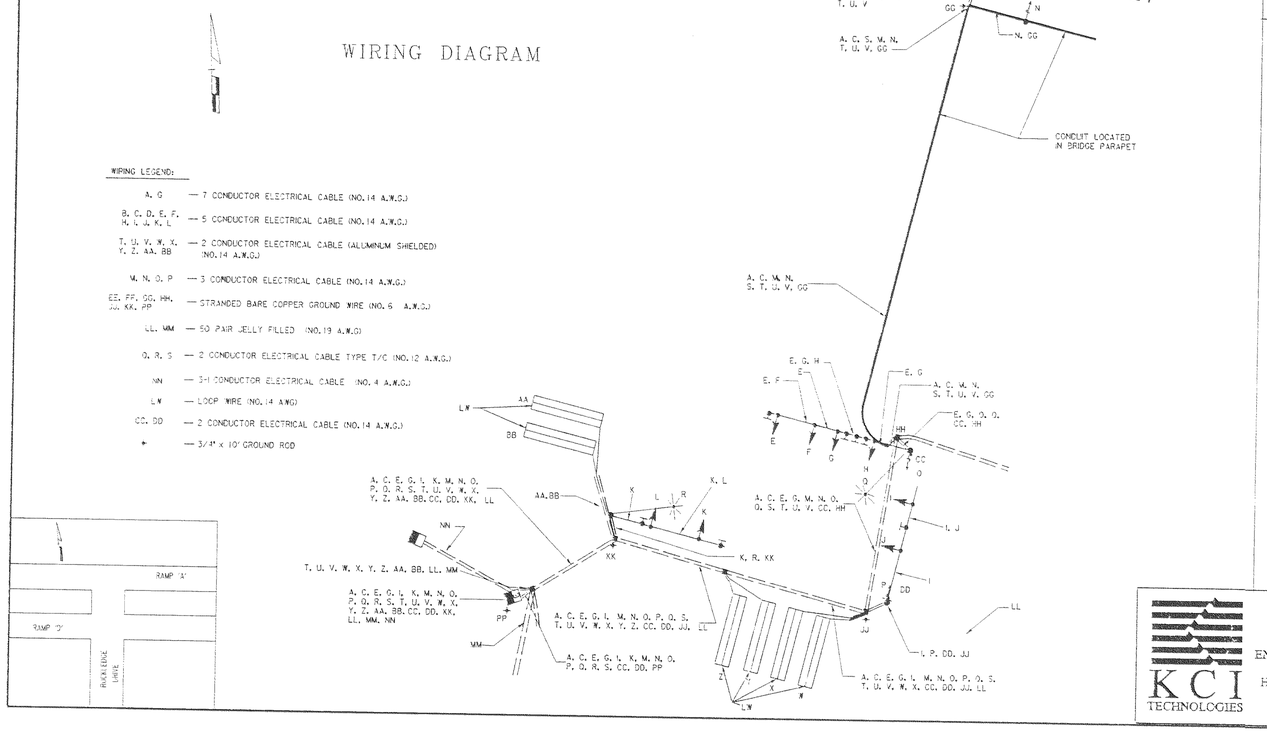
QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
1	EA	SP	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP, LAU PANEL HOUSED IN A NEMA SIZE '6' BASE MOUNTED CABINET
3	EA	SP	FOUR-CHANNEL, TIME DELAY OUTPUT, LOOP DETECTOR AMPLIFIER
2	EA	SP	PEDESTRIAN PUSHBUTTON AND SIGN
100	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: - 2 EACH R3-3B (30" X 30")-MAST ARM MOUNT - 2 EACH R3-5R (30" X 30")-MAST ARM MOUNT - 4 EACH R3-5L (30" X 36")-MAST ARM MOUNT - 1 EACH R10-11 (24" X 24")-MAST ARM MOUNT - 2 EACH R3-1 (30" X 30")-MAST ARM MOUNT - 2 EACH D-3(2) (VAR X 18")-MAST ARM MOUNT - 1 EACH R 3-2 (30" X 30")-MAST ARM MOUNT

EQUIPMENT LIST 'B'

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

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
4	CY	205	TEST PIT EXCAVATION
200	LF	556	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
200	LF	556	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING
20	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
[7] 810 ~~730~~	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
80	LF	805	FURNISH AND INSTALL 1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
210	EA	810	F & I ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 AWG)
[7] 9 ~~8~~	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
96	SF	813	INSTALL OVERHEAD SIGN
7	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH
[5] 37 ~~41~~	EA	814	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
4	EA	814	FURNISH AND INSTALL 12 INCH PEDESTRIAN SIGNAL HEAD SECTION PEDESTAL POLE MOUNT
4	EA	814	FURNISH AND INSTALL 12 INCH PEDESTRIAN SIGNAL HEAD SECTION POLE MOUNT
[7] 2900 ~~2150~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 2 CONDUCTOR (ALUMINUM SHIELDED)
[7] 650 ~~450~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 2 CONDUCTOR (NO 14 AWG)
[7] 1250 ~~1000~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE TYPE T/C (NO 12 AWG)
[7] 1900 ~~1550~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 3 CONDUCTOR (NO 14 AWG)
[7] 1900 ~~1550~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 5 CONDUCTOR (NO 14 AWG)
[7] 1250 ~~1250~~	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE- 7 CONDUCTOR (NO 14 AWG)
4550	LF	810	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO 14 AWG)
1200	LF	815	FURNISH AND INSTALL SAWCUT FOR SIGNAL (LOOP DETECTOR)
2	EA	SP	INSTALL PUSHBUTTON AND SIGN
3	EA	813	F & I 20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
1	EA	815	INSTALL CONTROLLER AND CABINET- BASE MOUNT
1	EA	SP	FURNISH AND INSTALL 27-FOOT STEEL POLE WITH A TWIN 50-FOOT MAST ARM
1	EA	SP	FURNISH AND INSTALL 27-FOOT STEEL POLE WITH A SINGLE 60-FOOT MAST ARM
1	EA	SP	FURNISH AND INSTALL 21-FOOT STEEL POLE WITH A SINGLE 50-FOOT MAST ARM
1	EA	SP	FURNISH AND INSTALL 27-FOOT STEEL POLE WITH A SINGLE 50-FOOT MAST ARM
2	EA	SP	FURNISH AND INSTALL 10-FOOT BREAKAWAY PEDESTAL POLE
375	LF	805	FURNISH AND INSTALL 3" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
[7] 350 ~~250~~	LF	805	FURNISH AND INSTALL 4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
6	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
3	EA	SP	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE WITH PHOTOCELL

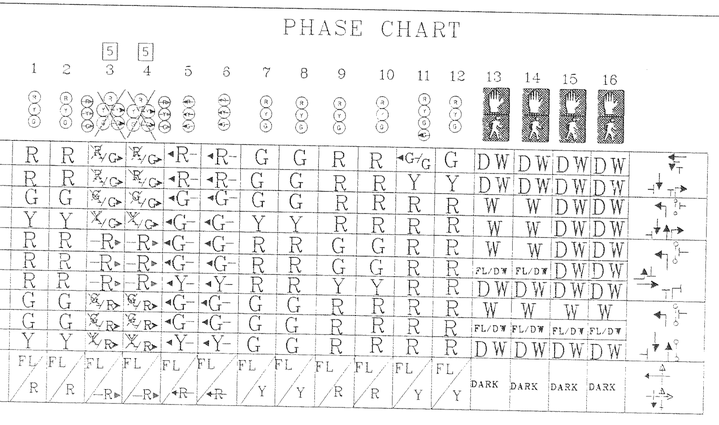
WIRING DIAGRAM



WIRING LEGEND:

A, G	— 7 CONDUCTOR ELECTRICAL CABLE (NO.14 A.W.G.)
B, C, D, E, F, H, I, J, K, L	— 5 CONDUCTOR ELECTRICAL CABLE (NO.14 A.W.G.)
T, U, V, W, X, Y, Z, AA, BB	— 2 CONDUCTOR ELECTRICAL CABLE (ALUMINUM SHIELDED) (NO.14 A.W.G.)
M, N, O, P	— 3 CONDUCTOR ELECTRICAL CABLE (NO.14 A.W.G.)
EE, FF, GG, HH, JJ, KK, PP	— STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
LL, MM	— 50 PAIR JELLY FILLED (NO.19 A.W.G)
Q, R, S	— 2 CONDUCTOR ELECTRICAL CABLE TYPE T/C (NO.12 A.W.G.)
NN	— 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
LW	— LOOP WIRE (NO.14 AWG)
CC, DD	— 2 CONDUCTOR ELECTRICAL CABLE (NO.14 A.W.G.)
⏚	— 3/4" x 10' GROUND ROD

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE 2	R	R	R/G	R/G	R	R	G	G	R	R	G/G	G	DW	DW	DW	DW
2 CHANGE	R	R	R/G	R/G	R	R	G	G	R	R	Y	Y	DW	DW	DW	DW
PHASE 3	G	G	R/G	R/G	G	G	G	G	R	R	R	R	W	W	DW	DW
3 CHANGE	Y	Y	R/G	R/G	G	G	Y	Y	R	R	R	R	W	W	DW	DW
PHASE 4	R	R	R	R	G	G	R	R	G	G	R	R	W	W	DW	DW
PED CLEAR	R	R	R	R	G	G	R	R	G	G	R	R	FL/DW	FL/DW	DW	DW
4 CHANGE	R	R	R	R	Y	Y	R	R	Y	Y	R	R	DW	DW	DW	DW
ALT PHASE 4	G	G	R/R	R/R	G	G	G	G	R	R	R	R	W	W	W	W
PED CLEAR	G	G	R/R	R/R	G	G	G	G	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW
ALT 4 CHANGE	Y	Y	R/R	R/R	Y	Y	G	G	R	R	R	R	DW	DW	DW	DW
FLASHING OPERATION	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/Y	FL/Y	DARK	DARK	DARK	DARK

TS-2

REVISIONS	APPROVALS
[5] REDLINE REVISION NO. 5 REPLACEMENT SHEET 9/4/2001 MP	TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION
[7] REDLINE REVISION NO. 7 REPLACEMENT SHEET 12/14/2001 MP	ASST. CHIEF TRAFFIC ENGINEERING DESIGN DIVISION
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, TRAFFIC & SAFETY

KCI TECHNOLOGIES

KCI TECHNOLOGIES INC.
ENGINEERS AND PLANNERS
10 NORTH PARK DRIVE
HUNT VALLEY, MARYLAND
21030-1888
(410) 316-7800

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
I-270 INTERCHANGES AT ROCKLEDGE DRIVE AND MD 187
GENERAL INFORMATION SHEET
I-270 AT ROCKLEDGE DRIVE AND RAMP 'A' / RAMP 'D'

DRAWN BY: M. PIERRE	F.A.P. NO.	TS NO. 3934	SHEET NO.
CHECKED BY: J. LAWRENCE	S.H.A. NO. M0899172		
SCALE: NONE	COUNTY: MONTGOMERY	T.I.M.S. NO. D 311	253 OF 404
DATE: 09/00	LOG MILE:		

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