PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 214 (CENTRAL AVENUE) AT KETTERING DRIVE / LAKE ARBOR WAY IN PRINCE GEORGE'S COUNTY. MD 214 (CENTRAL AVENUE) IS ASSUMED TO RUN IN AN EAST – WEST DIRECTION.

II. INTERSECTION OPERATION

THIS INTERSECTION OPERATES IN A NEMA SIX-PHASE FULLY-TRAFFIC-ACTUATED MODE. THERE IS AN EXCLUSIVE LEFT-TURN PHASE FOR THE EASTBOUND AND WESTBOUND MOVEMENTS OF MD 214. THE NORTHBOUND AND SOUTHBOUND MOVEMENTS OPERATE CONCURRENTLY. THERE IS AN ALTERNATE PEDESTRIAN PHASE ACROSS THE EAST AND WEST LEGS OF THE INTERSECTION.

III. PEDESTRIAN OPERATION

NAVIGATOR AUDIBLE PEDESTRIAN PUSHBUTTONS TO CROSS THE EAST AND WEST LEGS OF THE INTERSECTION ARE TO BE PROVIDED. WHEN THE PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED PERIOD OF TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE:

NORTH: "WAIT TO CROSS LAKE ARBOR AT CENTRAL. WAIT."
SOUTH: "WAIT TO CROSS KETTERING AT CENTRAL. WAIT."
EAST: "WAIT TO CROSS CENTRAL AT KETTERING / LAKE ARBOR. WAIT."
WEST: "WAIT TO CROSS CENTRAL AT KETTERING / LAKE ARBOR. WAIT."

WHEN THE WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

1. CONTACT PERSONS

THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

DISTRICT 3

MR. VENU NEMANI
ASSISTANT DISTRICT ENGINEER – TRAFFIC (PG)
301-513-7404

MR. VICTOR GRAFTON
UTILITY ENGINEER
301-513-7350

MR. TOM FOUNTAIN
ASSISTANT DISTRICT ENGINEER – MAINTENANCE
301-513-7304

MR. DUANE BERNARD
ASSISTANT DISTRICT ENGINEER – CONSTRUCTION
301-513-7385

POTOMAC ELECTRIC POWER COMPANY

MR. RICHARD CHILCOAT
202-872-2000

OFFICE OF TRAFFIC AND SAFETY

MS. CORREN JOHNSON,
CHIEF, TRAFFIC OPERATIONS
410-787-7630

VACANT
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7630

MR. ED RODENHIZER
MANAGER SIGNAL OPERATIONS
410-787-7650

MR. EUGENE BAILEY
MANAGER SIGN OPERATIONS
410-787-7670

MR. MIKE STOCKER
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7668

MAINTENANCE OF TRAFFIC WILL BE HANDLED BY THE CONTRACTOR UTILIZING THE FOLLOWING STANDARD PLATES FOR TRAFFIC CONTROL: MD 104.03-11, MD 104.04-13 THROUGH MD 104.04-16.

2. EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
900000	103	SF	SHEET ALUMINUM GROUND MOUNTED SIGNS CONSISTING OF: W11-2, (36"X36"), POST MOUNT – 8 EA. 72 SF W16-7pL, (24"X12"), POST MOUNT – 6 EA. 12 SF W13-4(1), (36"X24"), POST MOUNT – 2 EA. 12 SF R3-7R, (30"X30"), POST MOUNT – 1 EA. 7 SF
900000	209	SF	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN R3-5L, (30"X36"), MAST ARM MOUNT, 2 EA. 15 SF R3-5R, (30"X36"), MAST ARM MOUNT, 1 EA. 8 SF D-3(1), (96"X32"), (DUAL FACED), MAST ARM MOUNT, 2 EA. 86 SF R10-12(2), (48"X36"), MAST ARM MOUNT, 2 EA. 24 SF M1-5(6), (30"X48"), POLE MOUNT – 2 EA. 20 SF M1-5(6), (48"X72"), POLE MOUNT – 2 EA. 48 SF R10-3(1), (9"X15"), POLE MOUNT – 8 EA. 8 SF
900000	1	EA	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAMERAS
900000	1	EA	UPS EQUIPMENT FOR "S" CABINET
900000	2	EA	4 CHANNEL DETECTOR AMPLIFIER

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

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
100000	1	EA	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
201032	10	CY	CLASS 2 EXCAVATION
203030	5	CY	TEST PIT EXCAVATION
585621	920	LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	165	LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585700	750	LF	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH
600000	370	LF	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	354	LF	TYPE A CURB ANY HEIGHT OR DEPTH
655105	1900	SF	5 INCH CONCRETE SIDEWALK
655120	195	SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
704345	11	SY	PLACING FURNISHED TOPSOIL 4 INCH DEPTH
705500	11	SY	TURFGRASS ESTABLISHMENT
800000	1	EA	2-WIRE APS CENTRAL CONTROL UNIT
800000	4	EA	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE
800000	8	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	8	EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	4	EA	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE
800000	7	EA	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	2	EA	MAST ARM POLE & 38' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD
800000	2	EA	MAST ARM POLE & 70' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD
800000	1	EA	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS
800000	8	EA	NONINVASIVE DETECTOR WITH ANY LENGTH LEAD-IN CABLE UP TO 1000'
800000	1	EA	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	1	EA	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD
800000	50	LF	1 – CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG, TYPE THHN
800000	950	LF	ELECTRICAL CABLE – 3 CONDUCTOR (NO. 12 AWG) (B,W,G) TYPE TC
800000	255	LF	DISCONNECT, PULL-BACK & REROUTE CABLES
800000	890	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT – BORED OR SLOTTED
800000	450	LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	213	LF	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH
800000	312	SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR (CONTINUED)

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
800000	1	EA	THIRD PARTY CONCRETE TESTING (PER INTERSECTION)
802501	640	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
810022	160	LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
811001	14	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813023	22	SF	RELOCATE EXISTING GROUND MOUNTED SIGNS
860284	42	EA	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
861105	1380	LF	ELECTRICAL CABLE – 2 CONDUCTOR (NO. 14 AWG)
861107	1530	LF	ELECTRICAL CABLE – 5 CONDUCTOR (NO. 14 AWG)
861108	2480	LF	ELECTRICAL CABLE – 7 CONDUCTOR (NO. 14 AWG)

C. 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.

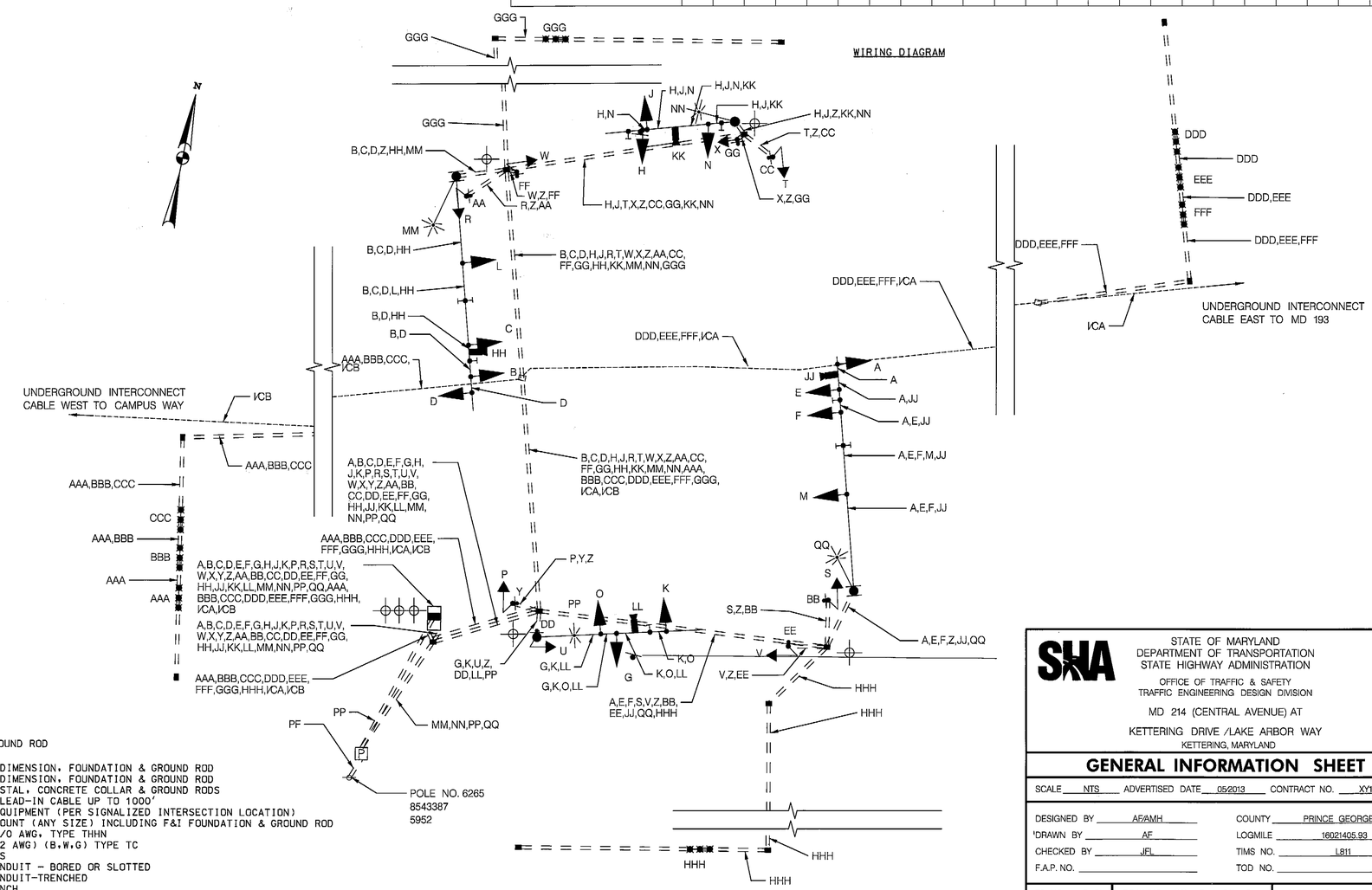
WIRING LEGEND

A,B,C,D,E,F,G,H,J,K – 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
L,M,N,O,P,R,S,T,U,V,W,X – 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
Y,AA,BB,CC,DD,EE,FF,GG – 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
HH,JJ,KK,LL – VIDEO DETECTION CONTROL CABLE
AAA,BBB,CCC,DDD,EEE,FFF,GGG,HHH – NONINVASIVE DETECTOR LEAD-IN
MM,NN,PP,QQ – ELECTRICAL CABLE – 3 CONDUCTOR (NO. 12 AWG) (B,W,G) TYPE TC
Z – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
PP – ELECTRICAL CABLE, 3 – 1-CONDUCTOR NO.8 AWG-THHN/THWN
PF – 3-1-CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG/THHN
I/CA, I/CB – EXISTING INTERCONNECT CABLE
– GROUND ROD

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	◁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	R Y G	R Y G	R Y G	R Y G	R Y G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 1 AND 5	◁G–	◁G–	R	R	◁G–	◁G–	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																						
PHASE 1 AND 6	◁G–	◁G–	G	G	◁R–	◁R–	R	R	R	R	R	R	R	R	DW	DW	DW	DW	WK	WK	DW	DW
1 AND 6 CHANGE	◁Y–	◁Y–	G	G	◁R–	◁R–	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	◁R–	◁R–	R	R	◁G–	◁G–	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	WK	WK
2 AND 5 CHANGE	◁R–	◁R–	R	R	◁Y–	◁Y–	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	◁FL/R	◁FL/R	G	G	◁FL/R	◁FL/R	G	G	R	R	R	R	R	R	DW	DW	DW	DW	WK	WK	WK	WK
PED CLEARANCE	◁FL/R	◁FL/R	G	G	◁FL/R	◁FL/R	G	G	R	R	R	R	R	R	DW	DW	DW	DW	FDW	FDW	FDW	FDW
2 AND 6 CHANGE	◁R–	◁R–	Y	Y	◁R–	◁R–	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8	◁R–	◁R–	R	R	◁R–	◁R–	R	R	G	G	G	G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 AND 8 CHANGE	◁R–	◁R–	R	R	◁R–	◁R–	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8 ALT	◁R–	◁R–	R	R	◁R–	◁R–	R	R	G	G	G	G	G	G	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEARANCE	◁R–	◁R–	R	R	◁R–	◁R–	R	R	G	G	G	G	G	G	FDW	FDW	FDW	FDW	FDW	FDW	FDW	FDW
4 AND 8 ALT CHANGE	◁R–	◁R–	R	R	◁R–	◁R–	R	R	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
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	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 214 (CENTRAL AVENUE) AT
KETTERING DRIVE /LAKE ARBOR WAY
KETTERING, MARYLAND

GENERAL INFORMATION SHEET

SCALE NTS ADVERTISED DATE 05/2013 CONTRACT NO. XY1515185

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DRILL HOLES