PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF MD 140 (WESMINSTER PIKE) AT MD 795 (BUTLER RD) / I-795 RAMPS. THE INSTALLATION INCLUDES LED TRAFFIC SIGNAL HEADS, IP-BASED VIDEO DETECTION CAMERAS AND SIGNS.
MD 140 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE. THE MD 140 NORTHBOUND AND SOUTHBOUND LEFT TURNS OPERATE IN EXCLUSIVE/PERMISSIVE PHASING.

CONTROLLER REQUIREMENTS

THE EXISTING TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE REMOVED. A NEW FULL-TRAFFIC-ACTUATED EIGHT-PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL BE FURNISHED BY SHA AND INSTALLED BY THE CONTRACTOR. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT, 4-CHANNEL DETECTOR AMPLIFIER AND UPS BATTERY BACKUP SHALL BE FURNISHED AND INSTALLED BY SHA. THIS INTERSECTION IS THE MASTER CONTROLLER FOR THIS SYSTEM.

EQUIPMENT LIST "A & C"

A. EQUIPMENT TO BE SUPPLIED BY SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
900000	SHEET ALUMINUM GROUND MOUNTED SIGN 4 - M4-5 24"X12" 2 - M6-3 21"X15" 2 - M6-1(1) 30"X24" 1 - M1-5 36"X30" 1 - M1-5 30"X24" 1 - M1-5 48"X36" 1 - M1-5(6) 48"X72" 1 - R4-7(1) 18"X30" 2 - M4-5 30"X15" 2 - M6-1 21"X15" 1 - M1-5 30"X30" 1 - M1-5 24"X24" 1 - M1-5 36"X36" 1 - M1-5(6) 30"X48" 2 - OM1-3 FY 18"X18"	SF	119
900000	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 4 - D-3(1) (DUAL FACE) 72"X16" 2 - M1-5(6) 30"X48" 4 - D-3(1) (DUAL FACE) 90"X16" 2 - M1-5(6) 48"X72"	SF	140
900000	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM	EA	1
900000	UPS EQUIPMENT FOR "S" CABINET	EA	1
900000	4 CHANNEL DETECTOR AMPLIFIER	EA	2

C. THE VIDEO DETECTION CAMERAS AND TRAFFIC SIGNAL CONTROLLER SHALL BE RETURNED TO SHA. ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

PHASING CHART

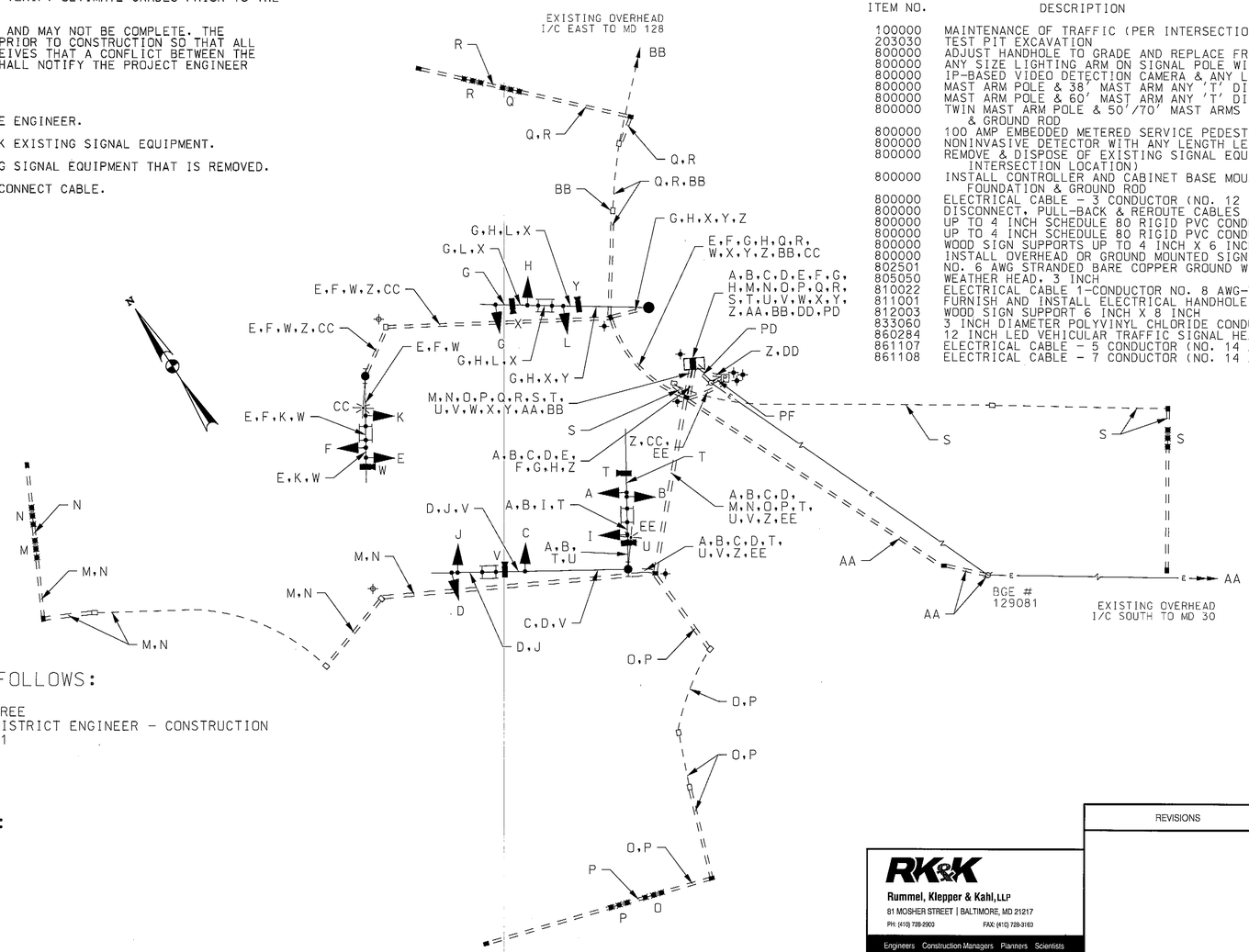
	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 1 AND 5	R ←G—	R ←G—	R	R ←G—	R ←G—	R	R	R	R	R	R	R
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6												
PHASE 1 AND 6	G ←G—	G ←G—	G	R	R	R	R	R	R	R	R	R
1 AND 6 CHANGE	G ←Y—	G ←Y—	G	R	R	R	R	R	R	R	R	R
PHASE 2 AND 5	R	R	R	G ←G—	G ←G—	G	R	R	R	R	R	R
2 AND 5 CHANGE	R	R	R	G ←Y—	G ←Y—	G	R	R	R	R	R	R
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	R	R
2 AND 6 CHANGE	G	G	G	G	G	G	R	R	R	R	R	R
PHASE 4 AND 8	R	R	R	R	R	R	G	G	G	G	G	G
4 AND 8 CHANGE	R	R	R	R	R	R	G	G	G	G	G	G
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

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
5. UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
6. PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCELL.
7. VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
8. DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
9. THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
10. 10 FEET OF SLACK SHALL BE PROVIDED IN EACH HANDHOLE FOR INTERCONNECT CABLE.

WIRING KEY

A,B,C,D, E,F,G,H	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
I,J,K,L	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
M,N,O,P,Q,R	MICROPROBE SET WITH 1000 FT. LEAD-IN CABLE
S	MICROPROBE SET WITH 500 FT. LEAD-IN CABLE
T,U,V,W,X,Y	IP-BASED VIDEO DETECTION CAMERA CABLE
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
AA,BB	DISCONNECT, PULLBACK AND REROUTE INTERCONNECT CABLE
CC,EE	3-CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG), TYPE TC
DD	1-CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG-THHN/THWN), 3 RUNS
PF	PROPOSED UNDERGROUND POWER FEED
PD	PROPOSED PHONE DROP
	EXISTING GROUND ROD
	PROPOSED GROUND ROD



EQUIPMENT LIST "B"

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)	EA	1
203030	TEST PIT EXCAVATION	CY	2
800000	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER	EA	8
800000	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH LED ROADWAY LUMINAIRE	EA	2
800000	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE	EA	6
800000	MAST ARM POLE & 38' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	TWIN MAST ARM POLE & 50'/70' MAST ARMS ANY 'T' DIMENSION, FOUNDATION & GROUND ROD	EA	1
800000	100 AMP EMBEDDED METERED SERVICE PEDESTAL, CONCRETE COLLAR & GROUND RODS	EA	1
800000	NONINVASIVE DETECTOR WITH ANY LENGTH LEAD-IN CABLE UP TO 1000'	EA	7
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)	EA	1
800000	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE) INCLUDING F&I FOUNDATION & GROUND ROD	EA	1
800000	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 12 AWG) (B,W,G) TYPE TC	LF	380
800000	DISCONNECT, PULL-BACK & REROUTE CABLES	LF	315
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED	LF	775
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	455
800000	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH	LF	181
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)	SF	259
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	320
805050	WEATHER HEAD, 3 INCH	EA	1
810022	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	LF	80
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	12
812003	WOOD SIGN SUPPORT 6 INCH X 8 INCH	LF	19
833060	3 INCH DIAMETER POLYVINYL CHLORIDE CONDUIT, SCHEDULE 80, RISER	LF	30
860284	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION	EA	44
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)	LF	100
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)	LF	1520

CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 140 (WESTMINSTER PIKE) AT
MD 795 (BUTLER RD) / I-795 RAMPS
REISTERSTOWN, MARYLAND

REVISIONS

GENERAL INFORMATION SHEET

SCALE NONE DATE JANUARY 2013 CONTRACT NO.

DESIGNED BY WFW
DRAWN BY WFW
CHECKED BY BJG
FAP NO.

COUNTY BALTIMORE
LOGMILE 03014010.36
TIMS NO.
TOD NO.

TS NO. 2023D-GI DRAWING SP-2 OF 4 SHEET NO. 2 OF 2

PLOTTED: Monday, January 07, 2013 AT 09:06 AM
FILE: \\rkm\v2008\2008\08148_toddes\Task 158_MD 140 at I-795 & MD 30 at MD 128\CADD\pSG-0002_MD140@MD795-GI.dgn