PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 212 (POWDER MILL ROAD) AND CHERRY HILL ROAD IN PRINCE GEORGE'S COUNTY. THE EXISTING STRAIN POLES AND SPAN WIRE SHALL BE REPLACED WITH NEW MAST ARM POLES, LED HEADS, VIDEO DETECTION CAMERAS, APS, CPS AND A NEW CABINET AND CONTROLLER. MD 212 IS ASSUMED TO RUN IN AN EAST/WEST DIRECTION.

II. INTERSECTION OPERATION

THE SIGNAL OPERATES IN A NEMA EIGHT-PHASE, FULLY-ACTUATED MODE WITH THE MD 212 APPROACHES OPERATING CONCURRENTLY AND THE CHERRY HILL ROAD APPROACHES OPERATING CONCURRENTLY. EXCLUSIVE LEADING LEFT-TURN PHASES EXIST FOR BOTH EASTBOUND AND WESTBOUND MD 212. EXCLUSIVE LEADING LEFT-TURN PHASES EXIST FOR BOTH NORTHBOUND AND SOUTHBOUND CHERRY HILL ROAD. AN ALTERNATE PEDESTRIAN PHASE WITH AUDIBLE PEDESTRIAN SIGNALS SHALL BE INSTALLED ACROSS MD 212 AND ACTUATED AUDIBLE PEDESTRIAN PHASES SHALL BE INSTALLED ACROSS THE CHERRY HILL RD APPROACHES

A FULL-TRAFFIC ACTUATED, EIGHT PHASE, CONTROLLER WITH VIDEO INTERFACE EQUIPMENT, TELEMETRY CABLE, UPS BATTERY BACKUP AND ALL NECESSARY EQUIPMENT HOUSED IN A NEMA SIZE 'S' BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS INTERSECTION

III. APS NOTE

TO CROSS MD 212 (POWDER MILL RD)

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON WILL ANNOUNCE "WAIT TO CROSS POWDER MILL AT CHERRY HILL. WAIT."

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

TO CROSS CHERRY HILL RD

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON WILL ANNOUNCE "WAIT TO CROSS CHERRY HILL AT POWDER MILL. WAIT."

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

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADIMISTRATION

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
900000	2	EA	4 CHANNEL DETECTER AMPLIFIER
900000	1	EA	CONTROLLER CABINET, SIZE 'S' W/ CONTROLLER, VIDED INTERFACE EQUIP. 1-8 CAMERAS
900000	1	EA	UPS BATTERY BACK UP SYSTEM
900000	43	SF	SHEET ALUMINUM GROUND MOUNTED SIGN 1 EA M3-4 "WEST" (24"X12"), M5-1 "MD212" (30"X24"); M6-1 "RIGHT ARROW" (21"X15") 1 EA M3-2 "EAST" (24"X12"), M5-1 "MD212" (30"X24"); M6-1 "RIGHT ARROW" (21"X15") 1 EA SHIELD ASSEMBLY (48"X72"); M3-2 "EAST" (24"X12"), M1-5 "MD212" (48"X36"), M6-1 "LEFT ARROW" (21"X15")
900000	80	SF	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN 4 EA R10-3(1) "PUSH BUTTON TO CROSS "POWDER MILL RD" (9"X15") 4 EA R10-3(1) "PUSH BUTTON TO CROSS 'CHERRY HILL RD" (9"X15") 2 EA D-3(1) DUAL FACE (VAR"X16") "POWDER MILL RD" STREET SIGN 1 EA R10-11b "NO TURN ON RED" (24"X24") 1 EA SHIELD ASSEMBLY (48"X72"); M3-4 "WEST" (24"X12"), M5-1 "MD212" (48"X36") M6-1 "LEFT ARROW" (21"X15") 2 EA D-3(1) DUAL FACE (VAR"X16") "CHERRY HILL RD" STREET SIGN 4 EA R3-5L "LEFT ONLY" SIGN (24"X30") 1 EA R3-5R "RIGHT ONLY" SIGN (24"X30")

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

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
120500	3	EA	MAINTENANCE OF TRAFFIC
203030	6	CY	TEST PIT EXCAVATION
585405	130	LF	5" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC MARKINGS
585621	950	LF	12" WHITE PREFORMED THERMOPLASTIC MARKING LINES
585625	200	LF	24" WHITE PREFORMED THERMOPLASTIC MARKING LINES
634100	145	LF	STANDARD TYPE A CURB 8"x16"
634300	270	LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12" GUTTER PAN 8" DEPTH
655105	1150	SF	5" CONCRETE SIDEWALK
655120	120	SF	DETECTABLE WARNING SURFACES
800000	1	EA	2 WIRE CENTRAL CONTROL UNIT
800000	3	EA	280 WATT LED LUMINAIRE
800000	8	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGN
800000	8	EA	LED 16" COUNTDOWN PEDESTRIAN SIGNAL HEADS
800000	1	EA	REMOVE & DISPOSE MATERIAL AND EXISTING EQUIPMENT PER ASSIGNMENT
800000	6	EA	VIDEO DETECTION CAMERA AND CABLE UP TO 500'
800000	150	LF	1-CONDUCTOR, 250 KCMIL, CU USE
800000	60	LF	DISCONNECT, PULL-BACK & REROUTE CABLES
801001	18	CY	CONCRETE FOR SIGNAL FOUNDATION
801106	138	LF	WOOD SIGN SUPPORTS 4" x 6"
802501	850	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805115	185	LF	3" SCHEDULE 80 RIGID PVC CONDUIT - BORED
805125	10	LF	2" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805135	440	LF	3" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805140	10	LF	4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805150	120	LF	3" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805155	505	LF	4" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
807500	1	EA	EMBEDDED METERED SERVICE PEDESTAL 100 AMP
810605	8	EA	NONINVASIVE DETECTOR LEAD IN CABLE UP TO 1000'
811001	14	EA	ELECTRICAL HANDHOLE
813014	43	SF	INSTALL GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
813015	80	SF	INSTALL OVERHEAD SIGN (INCLUDING ALL HARDWARE)
818004	4	EA	10 FOOT BREAKAWAY PEDESTAL POLE
818036	1	EA	MAST ARM POLE & 50' MAST ARM ANY 'T' DIMENSION
818041	1	EA	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION
818052	2	EA	MAST ARM POLE & 70' MAST ARM ANY 'T' DIMENSION
832017	45	LF	ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 AWG - THHN/THWN
837001	8	EA	GROUND ROD - $\frac{3}{4}$ IN. DIA. x 10 FT. LENGTH
860284	54	EA	12" LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860292	2	EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
861105	1370	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	1510	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
861108	3040	LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
861116	780	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TC
866103	3	EA	15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
871202	1	EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT

C. IF THE CABINET IS TO BE REMOVED 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.

CONTACTS

DISTRICT (DISTRICT 3 - PRINCE GEORGE'S)

MR. BRIAN YOUNG
DISTRICT ENGINEER
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MR. VENU NEMANI
ASSISTANT DISTRICT ENGINEER - TRAFFIC
301-513-7404

MR. VICTOR GRAFTON
DISTRICT UTILITY ENGINEER
301-513-7350

MR. KEVIN NOWAK & MR. DUANE BERNARD
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
301-513-7336

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

OFFICE OF TRAFFIC AND SAFETY

MR. AVIJIT MAJI
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410-787-7630

MR. ROBERT SNYDER
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410-787-7630

MR. EDWARD RODENHIZER
CHIEF, SIGNAL OPERATIONS SECTION
410-787-7650

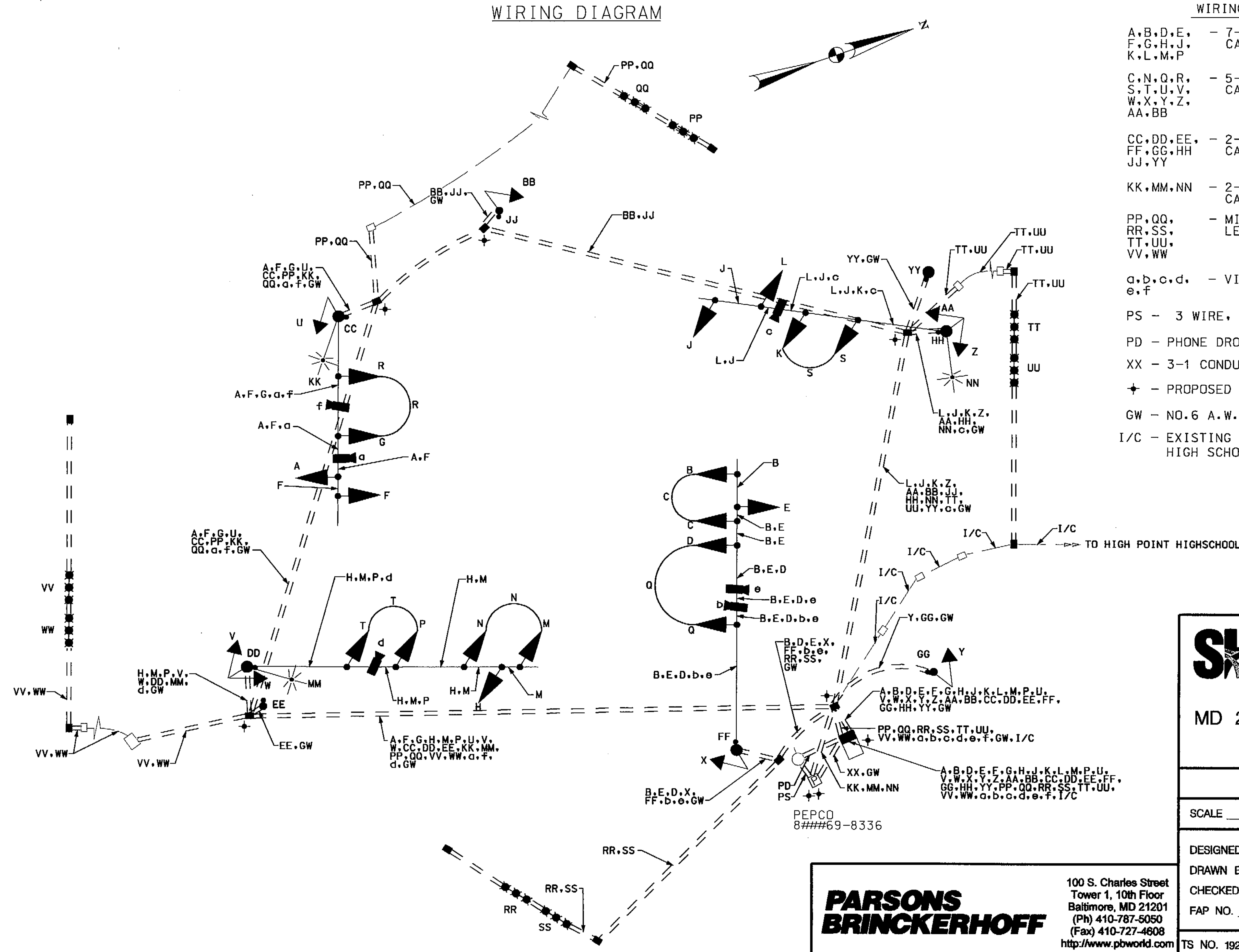
MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS SECTION
410-787-7670

MR. MICHAEL STOCKER
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7696

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	←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	←R ←Y ←G	←R ←Y ←G	R Y G	R Y G								
PHASE 1 + 5	←G	←G	←G	R	R	←G	←G	R	R	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 + 5 CHANGE	1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5, OR PHASE 2 + 6																									
PHASE 1 + 6	←G	←G	←G	G	G	←R	←R	R	R	←R	←R	R	R	←R	←R	←R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 + 6 CHANGE	←Y	←Y	←Y	G	G	←R	←R	R	R	←R	←R	R	R	←R	←R	←R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 + 5	←R	←R	←R	R	R	←G	←G	G	G	←R	←R	R	R	←R	←R	←R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
2 + 5 CHANGE	←R	←R	←R	R	R	←Y	←Y	G	G	←R	←R	R	R	←R	←R	←R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 + 6	←R	←R	←R	G	G	←R	←R	G	G	←R	←R	R	R	←R	←R	←R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED. CLEARANCE	←R	←R	←R	G	G	←R	←R	G	G	←R	←R	R	R	←R	←R	←R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	DW	DW	DW	DW
PHASE 3 + 7	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	R	R	←G	←G	←G	R	R	DW	DW	DW	DW	DW	DW	DW	DW
3 + 7 CHANGE	3 + 7 MAY CHANGE TO PHASE 3 + 8, PHASE 4 + 7, PHASE 4 + 8, PHASE 3 + 8 ALT, PHASE 4 ALT + 7 OR PHASE 4 ALT + 8 ALT																									
PHASE 3 + 8	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	R	R	←G	←G	←G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
3 + 8 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	←Y	G	G	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 + 7	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	G	←R	←R	←R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
4 + 7 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	G	G	←R	←R	←R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 + 8	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	G	G	←R	←R	←R	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 + 8 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	Y	Y	←R	←R	←R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 3 + 8 ALT	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	R	R	←G	←G	←G	G	G	DW	DW	DW	DW	WK	DW	DW	WK
3 + 8 ALT CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	←Y	G	G	DW	DW	DW	DW	WK	DW	DW	WK
PHASE 4 ALT + 7	←R	←R	←R	R	R	←R	←R	R	R	←G	←G	G	G	←R	←R	←R	R	R	DW	DW	DW	DW	DW	WK	WK	DW
4 ALT + 7 CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←Y	←Y	G	G	←R	←R	←R	R	R	DW	DW	DW	DW	DW	WK	WK	DW
PHASE 4 ALT + 8 ALT	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	G	G	←R	←R	←R	G	G	DW	DW	DW	DW	WK	WK	WK	WK
PED. CLEARANCE	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	G	G	←R	←R	←R	G	G	DW	DW	DW	DW	FL/DW	FL/DW	FL/DW	FL/DW
4 ALT + 8 ALT CHANGE	←R	←R	←R	R	R	←R	←R	R	R	←R	←R	Y	Y	←R	←R	←R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/←R	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	FL/←R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A,B,D,E, F,G,H,J, K,L,M,P - 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

C,N,Q,R, S,T,U,V, W,X,Y,Z, AA,BB - 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

CC,DD,EE, FF,GG,HH JJ,YY - 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

KK,MM,NN - 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)

PP,QQ, RR,SS, TT,UU, VV,WW - MICROLOOP PROBE LEAD-IN CABLE

a,b,c,d, e,f - VIDEO DETECTION LEAD-IN CABLE

PS - 3 WIRE, 1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)

PD - PHONE DROP

XX - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G. THHN/THWN)

✦ - PROPOSED 3/4 IN. X 10 FT. GROUND ROD

GW - NO.6 A.W.G STRANDED BARE COPPER GROUND WIRE

I/C - EXISTING INTERCONNECT CABLE TO HIGH POINT HIGH SCHOOL

PARSONS BRINCKERHOFF
100 S. Charles Street
Tower 1, 10th Floor
Baltimore, MD 21201
(Ph) 410-787-5050
(Fax) 410-727-4608
http://www.pbworld.com

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

MD 212 (POWDER MILL RD) AND CHERRY HILL RD
BELTSVILLE, MARYLAND

GENERAL INFORMATION PLAN

SCALE N.T.S DATE 12-13-12 CONTRACT NO. PG7865477

DESIGNED BY MAW
DRAWN BY MAW
CHECKED BY KMP
FAP NO.

COUNTY PRINCE GEORGE'S
LOGMILE 16021206.87
TIMS NO. I741
TOD NO.

TS NO. 1923F GI
DRAWING SG - 03 OF 05
SHEET NO. 3 OF 3

PLOTTED: Friday, December 14, 2012 AT 08:59 AM
FILE: T:\173124A-TrafficDesignServices\TRF\89\plans\pSG-N001_MD212CherryHill.dgn