PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF SPECTRUM DRIVE AND LOWES LANE IN FREDERICK COUNTY. STREET LIGHTING, PAVEMENT MARKINGS AND STREET NAME SIGNS WILL BE INSTALLED AT THE INTERSECTION.

SPECTRUM DRIVE IS ASSUMED TO RUN IN A EAST-WEST DIRECTION AT LOWES LANE.

INTERSECTION OPERATION

THE INTERSECTION SHALL OPERATE IN A NEMA (8) EIGHT PHASE, FULL- TRAFFIC-ACTUATED MODE, WITH A PUSHBUTTON ACTUATED PEDESTRIAN MOVEMENT TO CROSS THE EAST LEG OF SPECTRUM DRIVE AND NORTH LEG OF LOWES LANE.

A NEMA EIGHT- PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER HOUSED IN A SIZE '6' BASE-MOUNTED CABINET WITH ALL NECESSARY EQUIPMENT FOR AN UNDERGROUND FEED BY ALLEGHENY POWER WILL ALSO BE INSTALLED ATSPECTRUM DRIVE AND LOWES LANE.

SPECIAL NOTES:

1. UPON THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY MR ROBERT SNYDER, OF THE SHA 410- 787-7631 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST ADDRESS, ZIP CODE, AND PHONE NUMBER.

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY THE COUNTY

QUANTITY		DESCRIPTION
1	EA	[UPDATED] (CONT/CAB/ADD) DETECTOR RACK POWER SUPPLY
1	EA	(CONT/CAB/ADD) DETECTOR AMPLIFIER 4-CH RACK MT
1	EA	(CONT/CAB/ADD) DETECTOR RACK POWER SUPPLY
3	EA	[UPDATED] 4 CHANNEL DETECTOR AMPLIFIER
1	EA	CONTROLLER ASC II W/ TELEMETRY
1	EA	CABINET W/ TELEMETRY (SYSTEM CAB), SIZE 6
27	SF	[UPDATED] SHEET ALUMINUM GROUND MOUNTED SIGN
3	EA	W3-3 (New Signal Ahead) (36"X36") GROUND MOUNTED
52	SF	[UPDATED] SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN
2	EA	D-3(1) (Spectrum Dr) (VAR.X16") MAST ARM MOUNTED
2	EA	D-3(1) (Lowes Ln) (VAR.X16") MAST ARM MOUNTED

EQUIPMENT LISTS
(cont.)
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

QUANTITY		DESCRIPTION
2	EA	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
4	CY	TEST PIT EXCAVATION
285	LF	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
135	LF	24 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
28	EA	12 INCH RED OR GREEN LED SIGNAL HEAD SECTION
1	EA	2 WIRE CENTRAL CONTROL UNIT
8	EA	8 INCH LED SIGNAL R,Y,G HEAD SECTION
4	EA	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
2	EA	BREAKAWAY PEDESTAL POLE - ANY SIZE
1	EA	EMBEDDED METERED SERVICE PEDESTAL
4	EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
95	LF	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
390	LF	ELECTRICAL CABLE - 2 CONDUCTOR NO 12 AWG - TRAY CABLE
12	CY	CONCRETE FOR SIGNAL FOUNDATION
99	LF	WOOD SIGN SUPPORTS 4 INCH X 4 INCH
890	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
470	LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
22	LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
62	LF	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
306	LF	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
60	LF	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
30	LF	ELECTRICAL CABLE 1 CONDUCTOR NO. 4 AWG THHN/THWN
4	EA	NONINVASIVE DETECTOR, 500 FOOT LEAD IN CABLE
12	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
27	SF	INSTALL GROUND MOUNTED SIGN
52	SF	INSTALL OVERHEAD SIGN
2	EA	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
5	EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
4	EA	8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
16	EA	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
1490	LF	ELECTRICAL CABLE - 2 CONDUCTOR ALUMINUM SHIELDED
535	LF	ELECTRICAL CABLE - 2 CONDUCTOR NO. 14 AWG
615	LF	ELECTRICAL CABLE - 5 CONDUCTOR NO 14 AWG
1570	LF	ELECTRICAL CABLE - 7 CONDUCTOR NO 14 AWG
3160	LF	LOOP WIRE ENCASED IN FLEXIBLE TUBING NO 14 AWG
833	LF	SAW CUT FOR SIGNAL - LOOP DETECTOR
1	EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT
2	EA	F & I Steel Pole With Twin 50' And 70' Mast Arms

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. DAVE COYNE
DISTRICT ENGINEER
PHONE: (301) 624-8140

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER
TRAFFIC
PHONE: (301) 624-8141

MR. LEON KERNS
ACTING ASSISTANT DISTRICT ENGINEER
MAINTENANCE
PHONE: (410) 624-8140

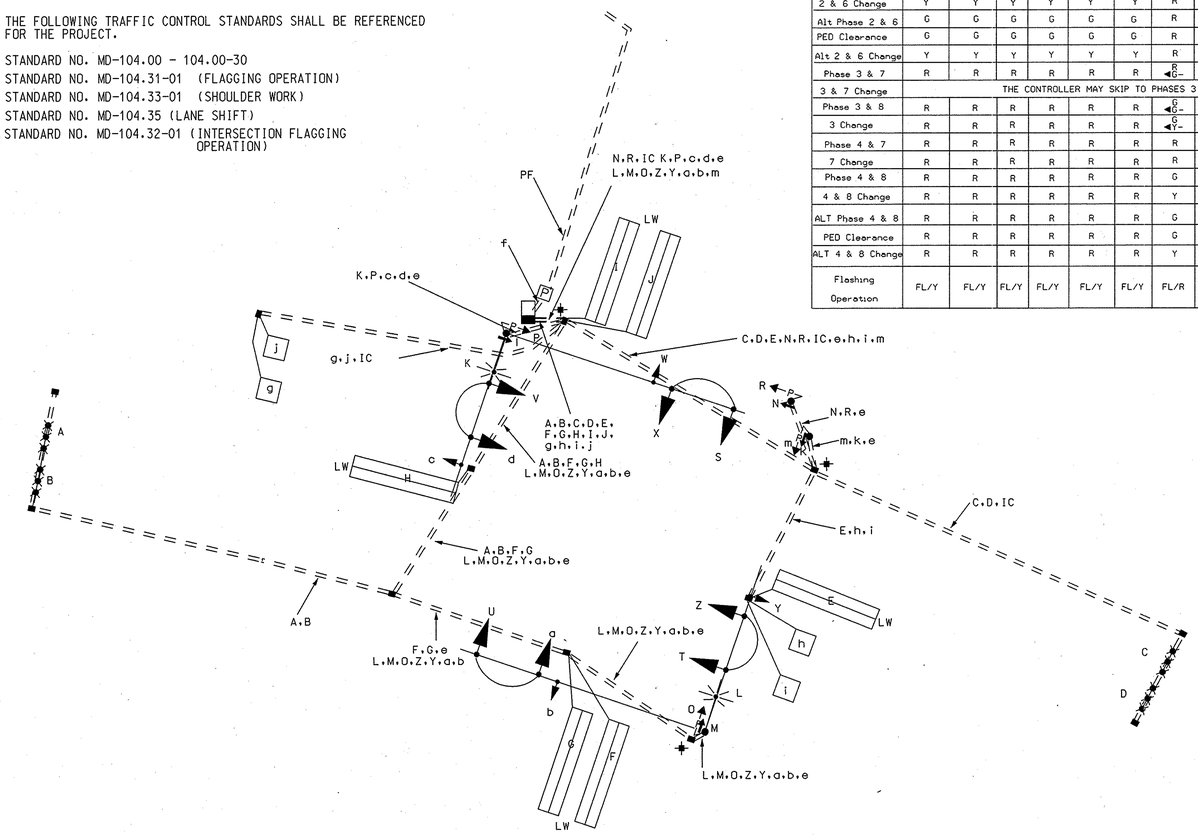
MS. ANDREA ABEND
DISTRICT UTILITIES ENGINEER
PHONE: (310) 624-8115

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

MAINTENANCE OF TRAFFIC

THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT.

STANDARD NO. MD-104.00 - 104.00-30
STANDARD NO. MD-104.31-01 (FLAGGING OPERATION)
STANDARD NO. MD-104.33-01 (SHOULDER WORK)
STANDARD NO. MD-104.35 (LANE SHIFT)
STANDARD NO. MD-104.32-01 (INTERSECTION FLAGGING OPERATION)



WIRING DIAGRAM

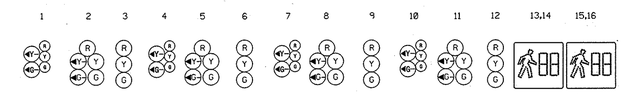
WIRING KEY

A,B,C,D — NON-INVASIVE PROBE LEAD IN CABLE
E - J,g,h,i,j — 2 CONDUCTOR (ALUMINUM SHIELDED) ELETRICAL CABLE
K,L — 2 CONDUCTOR TRAY CABLE (NO.12 AWG)
M,N,k,l — 2 CONDUCTOR (NO. 14 AWG)

O,P,R,S,T,U,V,m — 5 CONDUCTOR (NO.14 AWG)
W - d — 7 CONDUCTOR (NO. 14 AWG)
e — STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
PF — PROPOSED UNDERGROUND FEED-BY ALLEGHENY POWER
f — 3 WIRE (NO. 4 AWG) FOR TRAFFIC SIGNAL ELECTRICAL SERVICE

✱ — GROUND ROD

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13,14	15,16	
Phase 1 & 5	R ◄G-	R ◄G-	R	R ◄G-	R ◄G-	R	R	R	R	R	R	R	DW	DW	
1 & 5 Change	THE CONTROLLER MAY SKIP TO PHASES 1 & 6 OR 2 & 5 OR 2 & 6														
Phase 2 & 5	R	R	R	G ◄G-	G ◄G-	G	R	R	R	R	R	R	DW	DW	
5 Change	R	R	R	G ◄Y-	G ◄Y-	G	R	R	R	R	R	R	DW	DW	
Phase 1 & 6	G ◄G-	G ◄G-	G	R	R	R	R	R	R	R	R	R	DW	DW	
1 Change	G ◄Y-	G ◄Y-	G	R	R	R	R	R	R	R	R	R	DW	DW	
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	DW	
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	
Alt Phase 2 & 6	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	
Alt 2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	
Phase 3 & 7	R	R	R	R	R	R	R ◄G-	R ◄G-	R	R ◄G-	R ◄G-	R	DW	DW	
3 & 7 Change	THE CONTROLLER MAY SKIP TO PHASES 3 & 8 OR 4 & 7 OR 4 & 8														
Phase 3 & 8	R	R	R	R	R	R	G ◄G-	G ◄G-	G	R	R	R	DW	DW	
3 Change	R	R	R	R	R	R	G ◄Y-	G ◄Y-	G	R	R	R	DW	DW	
Phase 4 & 7	R	R	R	R	R	R	R	R	R	R ◄G-	G ◄G-	G	DW	DW	
7 Change	R	R	R	R	R	R	R	R	R	G ◄Y-	G ◄Y-	G	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	
ALT Phase 4 & 8	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	
ALT 4 & 8 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	

FREDERICK COUNTY DIVISION OF PUBLIC WOR

APPROVED: _____
PUBLIC WORKS DIRECTOR DA

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DA

APPROVED: _____
STORMWATER MANAGEMENT DA

APPROVAL IS VALID FOR TWO (2) [ONE YEAR IF THI COUNTY WATER AND SEWER IS INVOVED]YEARS AFTER LAST DATE SHOWN ABOVE. THE PROJECT MUST BE UNDER CONSTRUCTION BEFORE SAID DATE TO BE CONSIDERED ACTIVE. OTHERWISE, RESUBMITTAL OF PLANS MUST BE MADE TO DEVELOPMENT REVIEW FOR REAPPROVAL. REVIEW FEES NECESSARY FOR REAPPROVAL SHALL ACCOMPANY RESUBMITTAL. FEES CANNOT BE WAIVED.

REV #	DATE	REVISION DESCRIPTION *FILL IN THESE BLOCKS FOR REVISIONS ONLY	CONSULTANT DATE AND INITIAL	DEV. REV DATE AND INITIAL

BAI BRUDIS & ASSOCIATES, INC.
CONSULTING ENGINEERS
9220 RUMSEY ROAD; SUITE 110
COLUMBIA, MARYLAND 21045
(410)-884-3607

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

SPECTRUM DRIVE IMPROVEMENTS

SPECTRUM AND LOWES LANE
TRAFFIC SIGNAL GENERAL NOTES

DATE: 1/23/06 SCALE: 1" = 2

PROJECT NO:14-9899-C28385 DWG. 53 OF 62