PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES MODIFICATION OF A TRAFFIC SIGNAL AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AT MD 355 (WORMANS MILL ROAD/ROUTZAHNS WAY) IN CONJUNCTION WITH PROPOSED GEOMETRIC IMPROVEMENTS. ACCESSIBLE PEDESTRIAN SIGNAL EQUIPMENT WILL BE INSTALLED TO SERVE THE NORTH LEG CROSSING . THE PROJECT IS LOCATED IN FREDERICK COUNTY, MARYLAND. MD 26 (LIBERTY ROAD) IS ASSUMED TO RUN IN AN EAST - WEST DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION OPERATES IN A NEMA EIGHT-PHASE, FULLY ACTUATED MODE. THE MD 26 (LIBERTY ROAD) APPROACHES WILL CONTINUE TO OPERATE CONCURRENTLY, WITH EXCLUSIVE LEFT TURN PHASES FOR THE EASTBOUND AND WESTBOUND APPROACHES. THE NORTHBOUND AND SOUTHBOUND APPROACHES WILL BE MODIFIED TO OPERATE CONCURRENTLY WITH EXCLUSIVE LEFT TURN PHASES. THE EXISTING SOUTHBOUND RIGHT TURN WILL CONTINUE TO OPERATE AS AN OVERLAP WITH THE EASTBOUND LEFT TURN PHASE. THE PEDESTRIAN PHASE ACROSS THE WEST LEG OF MD 26 (LIBERTY ROAD) SHALL REMAIN IN OPERATION.

CONTROLLER REQUIREMENTS

USE EXISTING BASE MOUNTED CONTROLLER ASSEMBLY.

SPECIAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC 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 ENGINEER IN THE FIELD IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE SO THAT SHA FORCES CAN MAKE THE FINAL CONNECTIONS. ALL UNUSED SIGNAL CABLES SHALL BE REMOVED AND DISPOSED. CONTACT THE TRAFFIC SIGNAL OPERATIONS SUPERVISOR AT LEAST 72 HOURS PRIOR TO INSTALLATION.
3. THE FOLLOWING CONTACT PERSONS FOR THIS PROJECT IN DISTRICT #7 ARE AS FOLLOWS:

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

MS. ANDREA ABEND
DISTRICT UTILITY ENGINEER
PHONE: (301) 624-8115

MS. SUSAN PALMER
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8106

MR. JOHN HUCHROWSKI
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
PHONE: (301) 624-8201

OFFICE OF TRAFFIC & SAFETY

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

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
PHONE: (410) 787-7630

MR. EDWARD RODENHIZER
MANAGER SIGNAL SHOP
PHONE: (410) 787-7650

MR. EUGENE BAILEY
MANAGER SIGN SHOP
PHONE: (410) 787-7670

THE POWER COMPANY REPRESENTATIVES IS:
ALLEGHANY POWER
800 CABIN HILL DRIVE
GREENSBURG, PA 15601
PHONE: (800) 255-3443

MESSAGES FOR ACCESSIBLE PEDESTRIAN SIGNAL

LEG	WAIT MESSAGE WHEN PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE:	WALK MESSAGE WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE EITHER (1) A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE OR (2) THE FOLLOWING MESSAGE:
NORTH	"WAIT TO CROSS WORMANS MILL AT LIBERTY WAIT"	RAPID TICK

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY STATE HIGHWAY ADMINISTRATION
NONE

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

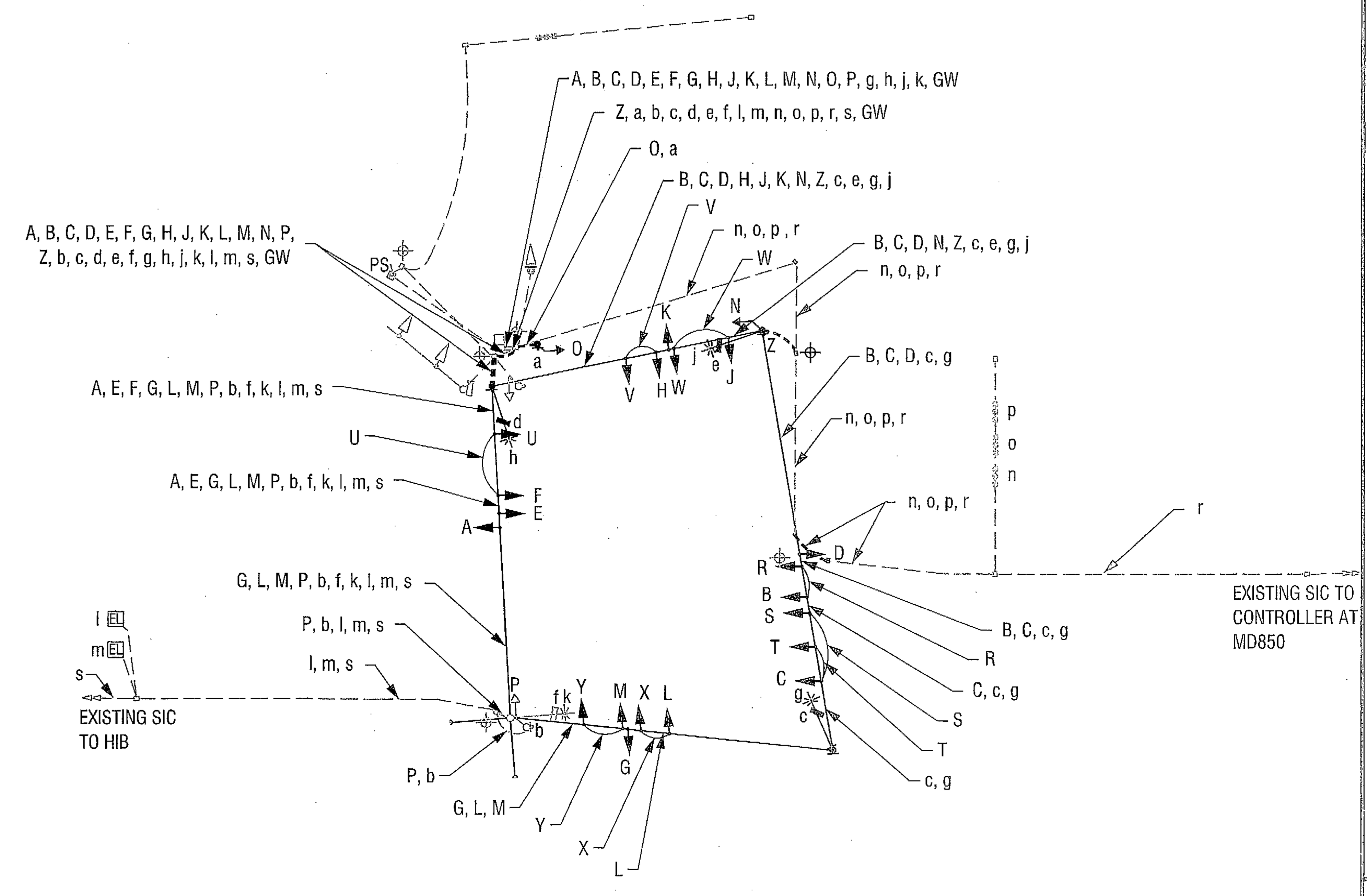
CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
120500	MAINTENANCE OF TRAFFIC	LS	1
130850	MOBILIZATION	LS	1
203030	TEST PIT EXCAVATION	CY	6
585621	12" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	170
585625	24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	LF	120
800000	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON AND SIGN	EA	2
800000	16" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD	EA	2
800000	TEMPORARY GUY WIRE FOR EXISTING STRAIN POLE	LS	1
800000	ELECTRICAL HANDHOLE FRAME AND COVER	EA	1
816001	RELOCATE VIDEO DETECTION CAMERA	EA	3
801004	CONCRETE FOR SIGNAL FOUNDATION	CY	11
801605	SHEET ALUMINUM SIGNS	SF	120
	1 EA D-3(1) OVERHEAD STREET NAME PANEL (VAR. x 16") MAST ARM MOUNTED (ROUTZAHNS WAY) 1 EA D-3(1) OVERHEAD STREET NAME PANEL (VAR. x 16") MAST ARM MOUNTED (WORMANS MILL RD) 2 EA D-3(1) OVERHEAD STREET NAME PANEL (VAR. x 16") MAST ARM MOUNTED (LIBERTY RD) 7 EA R3-5L MANDATORY LANE CONTROL (30" x 36") SPANWIRE MOUNTED (LEFT TURN ONLY) 1EA R3-6R MANDATORY LANE CONTROL (30" x 36") SPANWIRE MOUNTED (RIGHT-THROUGH)		
802145	ADJUST EXISTING HANDHOLE	EA	1
802501	STRANDED BARE COPPER GROUND WIRE (No. 6 AWG)	LF	150
803016	REMOVE STEEL POST & FOUNDATION	EA	3
805050	WEATHER HEAD, 3 INCH	EA	3
805140	4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	25
805135	3" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	70
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	2
811002	REMOVE ELECTRICAL HANDHOLE	EA	2
813006	RELOCATE SIGN	SF	80
816005	CONTROL CABLE, 250', VIDEO DETECTION CAMERA TO CONTROLLER	EA	2
816010	CONTROL CABLE, 500', VIDEO DETECTION CAMERA TO CONTROLLER	EA	1
818004	10' BREAKAWAY PEDESTAL POLE	EA	1
831010	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE	EA	3
837001	GROUND ROD - 3/4 " DIAMETER x 10' LENGTH	EA	1
860284	12" VEHICULAR SIGNAL HEAD SECTION	EA	60
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)	LF	200
861107	ELECTRICAL CABLE - 5 CONDUCTOR (No. 14 AWG)	LF	170
861108	ELECTRICAL CABLE - 7 CONDUCTOR (No. 14 AWG)	LF	2800
866104	20' LIGHTING ARM ON SIGNAL STRUCTURE	EA	3
867105	12" X 32' STRAIN POLE	EA	3
867204	INSTALL STRAIN POLE, ANY SIZE	EA	3
869101	STEEL SPAN WIRE - 1/4" DIAMETER	LF	650
869102	STEEL SPAN WIRE - 3/8" DIAMETER	LF	650
873001	REMOVE EXISTING SIGNAL EQUIPMENT	LS	1

C. EQUIPMENT TO BE REMOVED AND RETURNED TO STATE HIGHWAY ADMINISTRATION
NONE

PHASE CHART

	1 (◄R- ◄Y- ◄G-)	2 (◄R- ◄Y- ◄G-)	3 (◄R- ◄Y- ◄G-)	4 (R Y G)	5 (R Y G)	6 (R Y G)	7 (◄R- ◄Y- ◄G-)	8 (◄R- ◄Y- ◄G-)	9 (R Y G)	10 (R Y G)	11 (◄R- ◄Y- ◄G-)	12 (◄R- ◄Y- ◄G-)	13 (◄R- ◄Y- ◄G-)	14 (R Y G)	15 (R Y G)	16 (◄R- ◄Y- ◄G-)	17 (◄R- ◄Y- ◄G-)	18 (◄R- ◄Y- ◄G-)	19 (R Y G)	20 (R Y G)	21 (-R► -Y► -G►)	22 (-R► -Y► -G►)	23 (-R► -Y► -G►)	24	25	26	27
PHASE 1 + 5	◄G-	◄G-	◄G-	R	R	R	◄G-	◄G-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-G►	-G►	-G►	DW	DW	DW	DW
PHASE 1 + 5 CHANGE	1 + 5 CHANGE TO PHASE 1 + 6, 2 + 5 OR 2 + 6																										
PHASE 1 + 6	◄G-	◄G-	◄G-	G	G	G	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-G►	-G►	-G►	DW	DW	DW	DW
PHASE 1 CHANGE	◄Y-	◄Y-	◄Y-	G	G	G	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-Y►	-Y►	-Y►	DW	DW	DW	DW
PHASE 2 + 5	◄R-	◄R-	◄R-	R	R	R	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	W	W	DW	DW
PHASE 5 CHANGE	◄R-	◄R-	◄R-	R	R	R	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	W	W	DW	DW
PHASE 2 + 6	◄R-	◄R-	◄R-	G	G	G	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	W	W	DW	DW
PED CLEAR	◄R-	◄R-	◄R-	G	G	G	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	FL/DW	FL/DW	DW	DW
PHASE 2 + 6 CHANGE	◄R-	◄R-	◄R-	Y	Y	Y	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	DW	DW	DW	DW
PHASE 3 + 7	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R	-R►	-R►	-R►	DW	DW	DW	DW
PHASE 3 + 7 CHANGE	3 + 7 CHANGE TO PHASE 3 + 8 OR PHASE 4 + 7 OR PHASE 4 + 8																										
PHASE 3 + 8	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	DW	DW	DW	DW
PHASE 3 CHANGE	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R	-R►	-R►	-R►	DW	DW	DW	DW
PHASE 4 + 7	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G	-G►	-G►	-G►	DW	DW	DW	DW
PHASE 7 CHANGE	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄Y-	◄Y-	◄Y-	G	G	-Y►	-Y►	-Y►	DW	DW	DW	DW
PHASE 4 + 8	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	-G►	-G►	-G►	DW	DW	DW	DW
PHASE 4 + 8 CHANGE	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	-Y►	-Y►	-Y►	DW	DW	DW	DW
ALT PHASE 4 + 8	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	-G►	-G►	-G►	DW	DW	W	W
PED CLEAR	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G	-G►	-G►	-G►	DW	DW	FL/DW	FL/DW
ALT PHASE 4 + 8 CHANGE	◄R-	◄R-	◄R-	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y	-Y►	-Y►	-Y►	DW	DW	DW	DW
FLASHING OPERATION	FL/◄R-	FL/◄R-	FL/◄R-	FL/Y	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	FL/R	FL/-R►	FL/-R►	FL/-R►	DARK	DARK	DARK	DARK

WIRING DIAGRAM



WIRING DIAGRAM LEGEND

A, B, C, D, E, F, G, H, J, K, L, M, N, O, P	7 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG)
R, S, T, U, V, W, X, Y	5 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG) (JUMPER)
Z, a, b	2 CONDUCTOR ELECTRICAL CABLE (No. 14 AWG) (PUSH BUTTON)
c, d, e, f	VIDEO DETECTION CAMERA CONTROL CABLE
g, h, j, k	2 CONDUCTOR ELECTRICAL CABLE (No. 12 AWG) (LUMINAIRE)
l, m	2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) (SHIELDED)
n, o, p	EXISTING MICROLOOP LEAD-IN CABLE
r, s	EXISTING SIGNAL INTERCONNECT CABLE (ROUTE THROUGH NEW CONDUIT OR SPAN WIRE)
GW	STRANDED BARE COPPER GROUND WIRE (No. 6 AWG)
PS	POWER SOURCE
⌖	GROUND ROD

DRILL HOLES

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WELLS + ASSOCIATES, INC.

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TRANSPORTATION, TRAFFIC AND PARKING CONSULTANTS
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APPROVALS
TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

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

MD 26 (LIBERTY ROAD) AT
MD 355 (WORMANS MILL ROAD/ROUTZAHNS WAY)
FREDERICK, MARYLAND

GENERAL INFORMATION SHEET

SCALE 1" = 40' DATE 22 NOV 2011 CONTRACT NO. BW996M82

DESIGNED BY	N. GEORGE	COUNTY	FREDERICK
DRAWN BY	J. SEE	LOGMILE	10002600.53
CHECKED BY	C. TURNBULL	T.I.M.S. NO.	L070
F.A.P. NO.	N/A	TOD NO.	-

DRAWING NO. TS-1424-H SHEET NO. 2 OF 2

PLOTTED: --
FILE: L:\Projects\5001-5500\5094 - MD 26 - Signals\Design\Traffic Signal Plans\MD 26 at Routzahn_Wormans Mill GI.dgn