PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF U.S. 1 AND ROWANBERRY ROAD/PINE AVENUE IN HOWARD COUNTY, MARYLAND. U.S. 1 IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA SIX-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE U.S. 1 APPROACHES OPERATING CONCURRENTLY AND THE ROWANBERRY DRIVE/PINE AVENUE APPROACHES OPERATING CONCURRENTLY.

EXCLUSIVE/PERMISSIVE LEFT-TURN PHASES WILL BE PROVIDED ON THE NORTHBOUND AND SOUTHBOUND U.S. 1 APPROACHES.

PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS THE ROWANBERRY DRIVE LEG.

CONTROLLER REQUIREMENTS

NSTALL A FULL-TRAFFIC-ACTUATED, EIGHT-PHASE CONTROLLER WITH TWO (2), FOUR-CHANNEL, TIME-DELAY-OUTPUT LOOP DETECTOR AMPLIFIERS, INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP AND ASSOCIATED HARNESSES HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET.

PHONE DROP

UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT (410) 787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

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-104.03-01 (SHOULDER WORK)

STANDARD NO. MD-104.03-03 (LEFT LANE CLOSURE)

STANDARD NO. MD-104.03-05 (RIGHT LANE CLOSURE)

STANDARD NO. MD-104.03-07 (PARTIAL ROADWAY CLOSURE)

STANDARD NO. MD-104.03-09 (INTERSECTION FAR-LEFT LANE CLOSURE)

STANDARD NO. MD-104.03-11 (INTERSECTON FAR RIGHT LANE CLOSURE)

STANDARD NO. MD-104.03-13 (INTERSECTON FAR SIDE CLOSURE)

PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

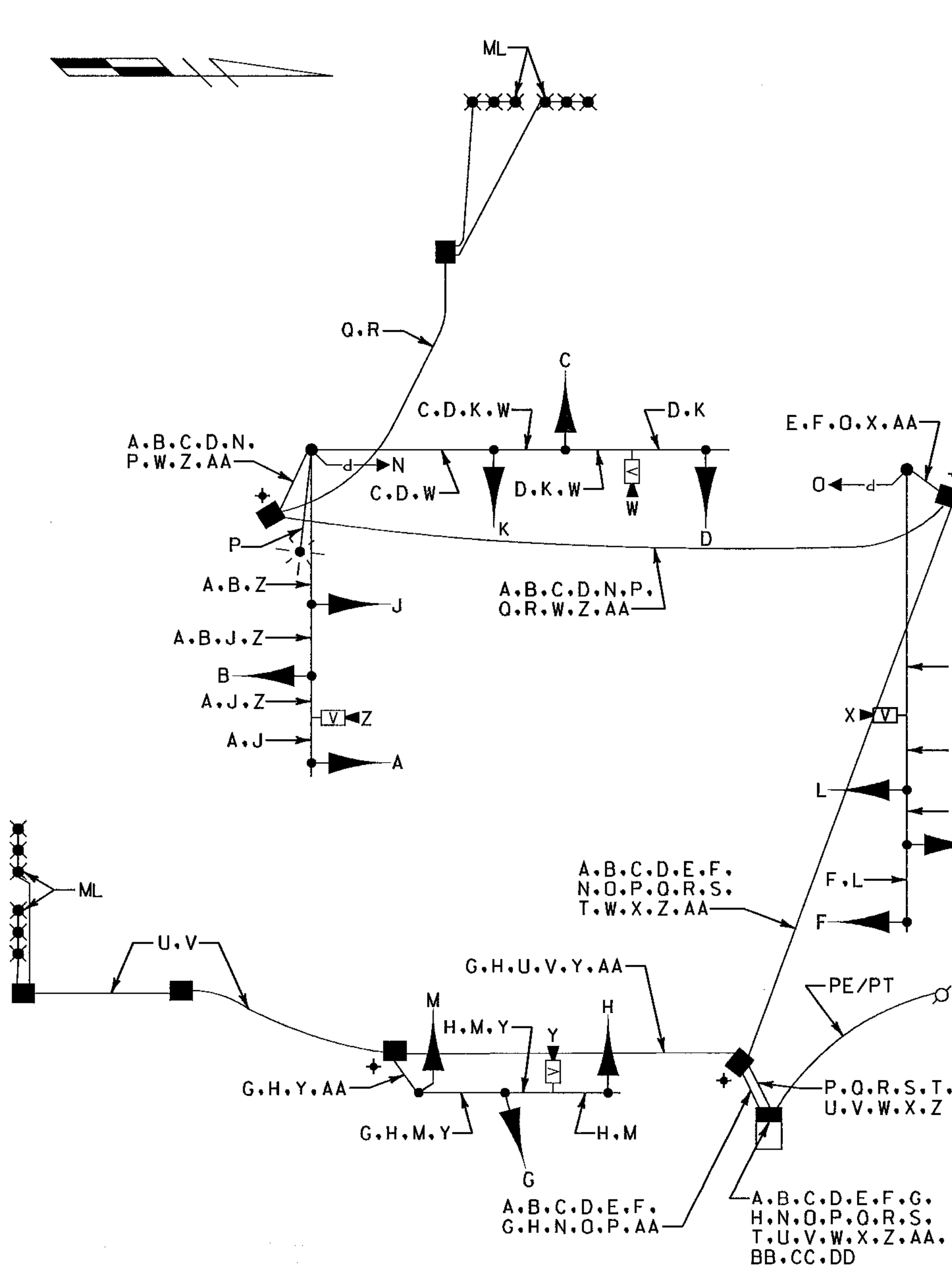
MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 624-8140/8141

MR. DAVE COYNE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 624-8105/8106

MR. JAMES BUCKALEW
DISTRICT UTILITY ENGINEER
PHONE: (301) 624-8115/8116

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

WIRING DIAGRAM



WIRING KEY

A B C D E F G H — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

J K L M — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

N O — 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

P — 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)

Q R S T U V — MICROLOOP PROBE LEAD-IN

W X Y Z — VIDEO CAMERA DETECTION LEAD-IN CABLE

AA — STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

BB CC DD — 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

ML - MICROLOOP PROBE SET

PE/PT - PROPOSED UNDERGROUND ELECTRICAL AND TELEPHONE SERVICE

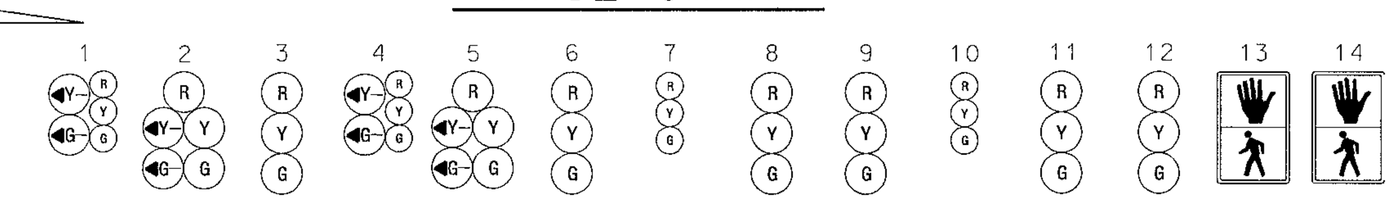
+ - 3/4 IN. X 10 FT. GROUND ROD

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9016	2 EACH	FOUR-CHANNEL, TIME-DELAY-OUTPUT, LOOP-DETECTOR AMPLIFIER (RACK MOUNT)
9044	1 EACH	EIGHT-PHASE, FULL-TRAFFIC-ACTUATED CONTROLLER WITH INTERSECTION MONITOR HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET
9086	1 EACH	VIDEO INTERFACE EQUIPMENT: 1-4 CAMERAS
9571	166 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF :
		- 1 EACH R3-5(R) SIGN (36 IN. x 42 IN.) - MAST ARM MOUNT
		- 2 EACH R10-12 SIGN (36 IN. x 42 IN.) - MAST ARM MOUNT
		- 4 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT
		- 2 EACH GM-1, GM-2 SIGN (72 IN. x 36 IN.) - GROUND MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, U.S. 1, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "NORTH, U.S. 1, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, U.S. 1, RIGHT ARROW" (24 IN. x 51 IN.) - POLE MOUNT
		- 1 EACH ASSOCIATED SHIELD ASSEMBLY "SOUTH, U.S. 1, LEFT ARROW" (36 IN. x 75 IN.) - POLE MOUNT

PHASE CHART

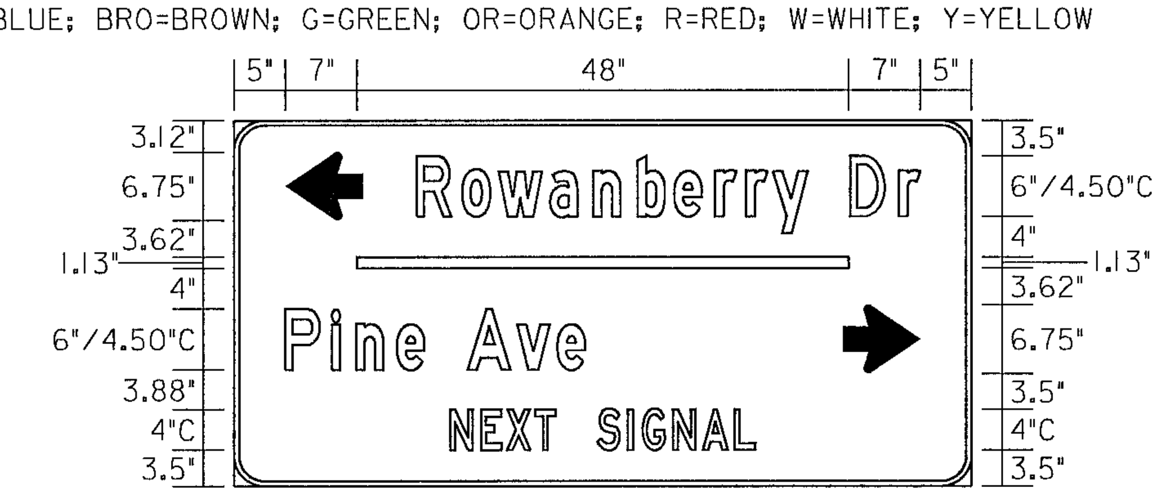


	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 + 5	R ←G	R ←G	R	R ←G	R ←G	R	R	R	R	R	R	R	DW	DW
1 + 5 CHANGE	PHASE 1 + 5 MAY CHANGE TO PHASE 1 + 6, PHASE 2 + 5 OR PHASE 2 + 6													
PHASE 1 + 6	G ←G	G ←G	G	R	R	R	R	R	R	R	R	R	DW	DW
1 + 6 CHANGE	G ←Y	G ←Y	G	R	R	R	R	R	R	R	R	R	DW	DW
PHASE 2 + 5	R	R	R	G ←G	G ←G	G	R	R	R	R	R	R	WK	WK
2 + 5 CHANGE	R	R	R	G ←Y	G ←Y	G	R	R	R	R	R	R	WK	WK
PHASE 2 + 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	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
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

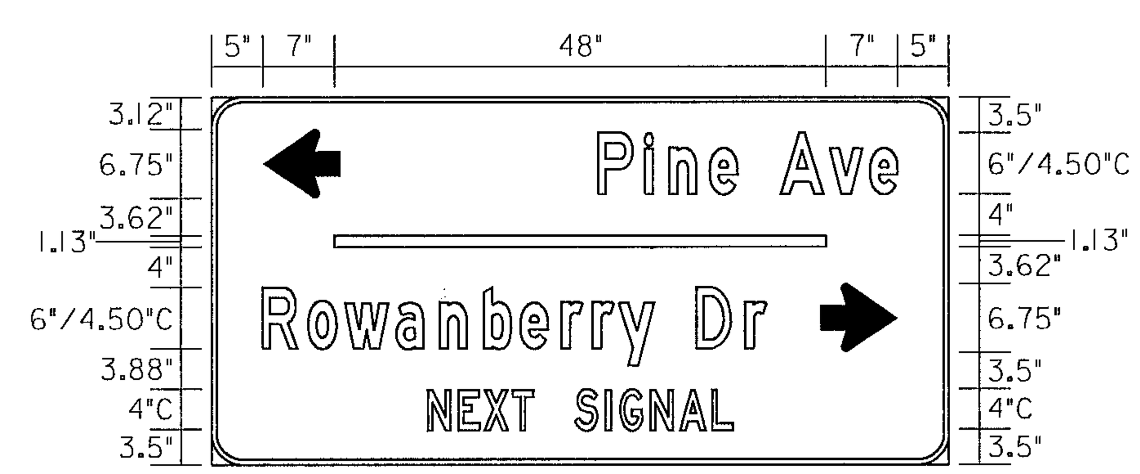
SIGN DETAILS

PANEL NO.	QUANTITY	AREA (SQ.FT.)	WIDTH	HEIGHT	COLOR		BORDER		ARROW	SHIELD
					LEG.	BKGD	WIDTH	RADIUS		
GM-1, GM-2	2	18	6'-0"	3'-0"	W	G	1/2"	3"	DET-1	---
	REMARKS: SHEET ALUMINUM									

BLK=BLACK; BLU=BLUE; BRO=BROWN; G=GREEN; OR=ORANGE; R=RED; W=WHITE; Y=YELLOW



GM-1



GM-2

EQUIPMENT LIST "B"

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	3 EACH	MAINTENANCE OF TRAFFIC
2002	4 C.Y.	TEST PIT EXCAVATION
5001	315 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5003	100 L.F.	5 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5004	200 L.F.	5 INCH HEAT APPLIED YELLOW PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5005	180 L.F.	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5006	150 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
6004	20 S.F.	4 INCH CONCRETE SIDEWALK
8001	15 C.Y.	CONCRETE FOUNDATION
8002	4 EACH	12 IN PED SIG HEAD SECTION
8014	1 EACH	REM AND DISPOSE MAT AND EQUIP PER ASSIGN
8021	148 L.F.	WOOD SIGN SUPPORTS 4 INCH x 6 INCH
8022	375 L.F.	NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8030	40 L.F.	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8031	740 L.F.	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8032	50 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8035	265 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8036	40 L.F.	1 INCH LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR WIRE SLEEVE
8038	1 EACH	ELECTRICAL UTILITY SERVICE EQUIPMENT 120/240 VOLTS 60 AMPS
8039	45 L.F.	ELECTRICAL CABLE - 1 CONDUCTOR NO. 4 A.W.G - THHN/THWN
8041	2 EACH	MICROLOOP PROBE SET WITH 500 FOOT LEAD-IN CABLE
8042	4 EACH	MICROLOOP PROBE SET WITH 1000 FOOT LEAD-IN CABLE
8045	8 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8047	92 S.F.	INSTALL GROUND MOUNTED SIGN
8048	74 S.F.	INSTALL OVERHEAD SIGN
8049	4 EACH	VIDEO DETECTION CAMERA
8050	2 EACH	CONTROL CABLE, 250 FT. VIDEO DETECTION CAMERA TO CONTROLLER
8051	2 EACH	CONTROL CABLE, 500 FT. VIDEO DETECTION CAMERA TO CONTROLLER
8056	1 EACH	STEEL POLE WITH A SINGLE 38 FT. MAST ARM
8060	1 EACH	STEEL POLE WITH A TWIN 50 FT. AND 70 MAST ARMS
8061	1 EACH	STEEL POLE WITH A SINGLE 70 FT. MAST ARM
8064	1 EACH	250 WATT HPS LUMINAIRE WITH PHOTOCELL
8069	4 EACH	GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
8070	12 EACH	8 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8071	32 EACH	12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION
8074	1 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8078	430 L.F.	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G)
8079	110 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G)
8080	1500 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G)
8081	300 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G) TC
8083	405 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8085	1 EACH	15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
8090	1 EACH	INSTALL CONTROLLER AND CABINET - BASE MOUNT

EQUIPMENT LIST "C"

C. EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

ALL REMOVED SIGNAL MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR

WR&A
Whitman, Requardt and Associates, LLP
801 South Caroline Street
Baltimore, Maryland 21231
(410) 235-3450

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
U.S. 1 AND ROWANBERRY DR./PINE AVE.
SHA#: HO195A5D/85D/M5D TOD#: AT358-38M

DRAWN BY:	S. BLOSS	F.A.P. NO.		TS NO. 3939	SHEET NO.
CHECKED BY:	N. LEARY	S.H.A. NO.	AT3585185		2 OF 2
SCALE:	NONE	COUNTY:	HOWARD	T.I.M.S. NO.	
DATE:	7/21/2004	LOG MILE:	1301009.03	G047	

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