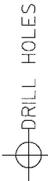
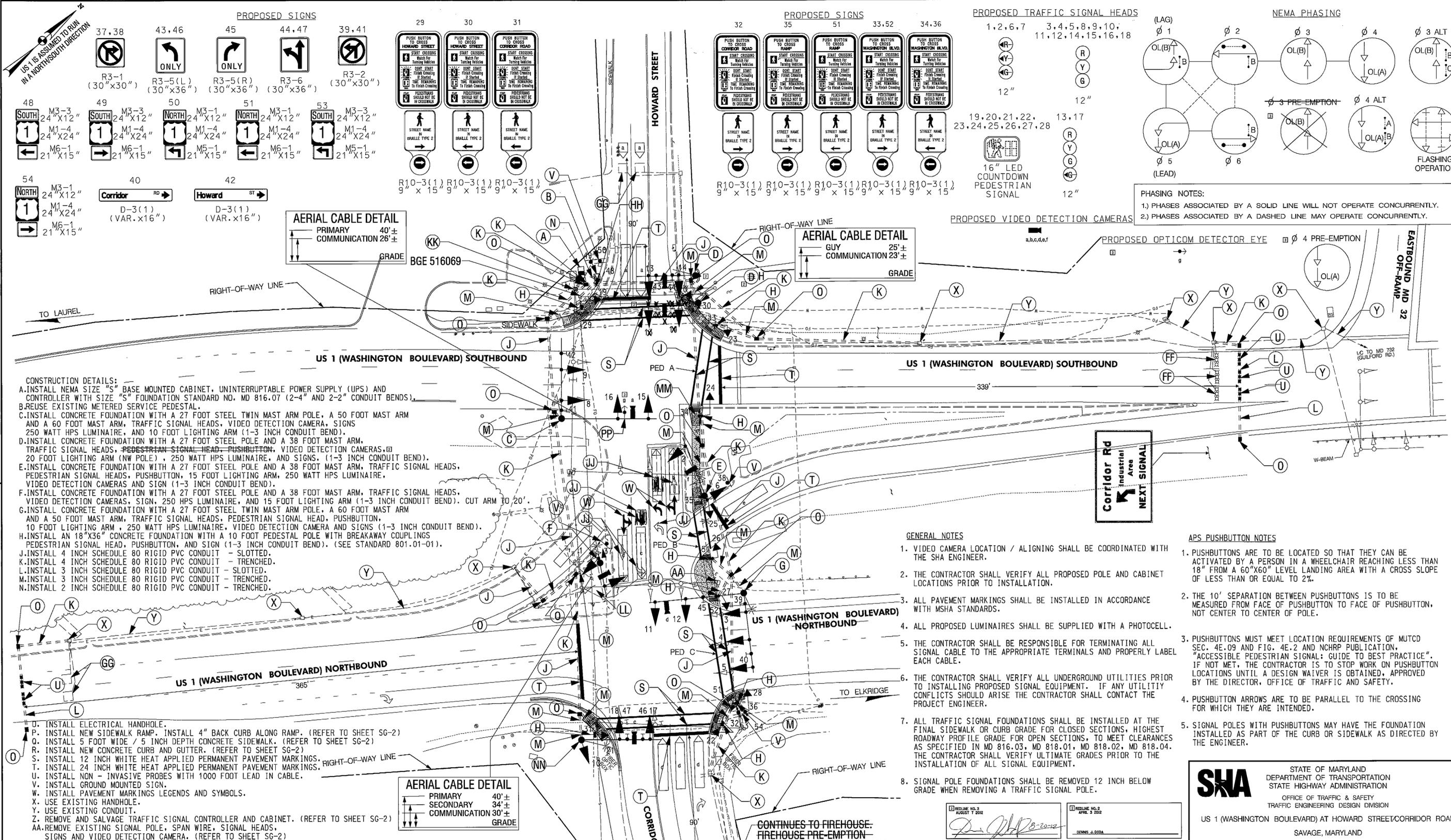


BORDER REV. DATE: June 1, 2004



BY: Aaron Hottenstein Division: P068 Highway Traffic/GMA Emp



- CONSTRUCTION DETAILS:**
- A. INSTALL NEMA SIZE "S" BASE MOUNTED CABINET, UNINTERRUPTABLE POWER SUPPLY (UPS) AND CONTROLLER WITH SIZE "S" FOUNDATION STANDARD NO. MD 816.07 (2-4" AND 2-2" CONDUIT BENDS).
 - B. REUSE EXISTING METERED SERVICE PEDESTAL.
 - C. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL TWIN MAST ARM POLE, A 50 FOOT MAST ARM AND A 60 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, VIDEO DETECTION CAMERA, SIGNS 250 WATT HPS LUMINAIRE, AND 10 FOOT LIGHTING ARM (1-3 INCH CONDUIT BEND).
 - D. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL POLE AND A 38 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, PEDESTRIAN SIGNAL HEAD, PUSHBUTTON, VIDEO DETECTION CAMERAS, 20 FOOT LIGHTING ARM (NW POLE), 250 WATT HPS LUMINAIRE, AND SIGNS (1-3 INCH CONDUIT BEND).
 - E. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL POLE AND A 38 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PUSHBUTTON, 15 FOOT LIGHTING ARM, 250 WATT HPS LUMINAIRE, VIDEO DETECTION CAMERAS AND SIGN (1-3 INCH CONDUIT BEND).
 - F. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL POLE AND A 38 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, VIDEO DETECTION CAMERAS, SIGN, 250 HPS LUMINAIRE, AND 15 FOOT LIGHTING ARM (1-3 INCH CONDUIT BEND). CUT ARM TO 20'.
 - G. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL TWIN MAST ARM POLE, A 60 FOOT MAST ARM AND A 50 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, PEDESTRIAN SIGNAL HEAD, PUSHBUTTON, 10 FOOT LIGHTING ARM, 250 WATT HPS LUMINAIRE, VIDEO DETECTION CAMERA AND SIGNS (1-3 INCH CONDUIT BEND).
 - H. INSTALL AN 18"x36" CONCRETE FOUNDATION WITH A 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS PEDESTRIAN SIGNAL HEAD, PUSHBUTTON, AND SIGN (1-3 INCH CONDUIT BEND). (SEE STANDARD 801.01-01).
 - J. INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED.
 - K. INSTALL 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED.
 - L. INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED.
 - M. INSTALL 3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED.
 - N. INSTALL 2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED.
 - O. INSTALL ELECTRICAL HANDHOLE.
 - P. INSTALL NEW SIDEWALK RAMP. INSTALL 4" BACK CURB ALONG RAMP. (REFER TO SHEET SG-2)
 - Q. INSTALL 5 FOOT WIDE / 5 INCH DEPTH CONCRETE SIDEWALK. (REFER TO SHEET SG-2)
 - R. INSTALL NEW CONCRETE CURB AND GUTTER. (REFER TO SHEET SG-2)
 - S. INSTALL 12 INCH WHITE HEAT APPLIED PERMANENT PAVEMENT MARKINGS.
 - T. INSTALL 24 INCH WHITE HEAT APPLIED PERMANENT PAVEMENT MARKINGS.
 - U. INSTALL NON - INVASIVE PROBES WITH 1000 FOOT LEAD IN CABLE.
 - V. INSTALL GROUND MOUNTED SIGN.
 - W. INSTALL PAVEMENT MARKINGS LEGENDS AND SYMBOLS.
 - X. USE EXISTING HANDHOLE.
 - Y. USE EXISTING CONDUIT.
 - Z. REMOVE AND SALVAGE TRAFFIC SIGNAL CONTROLLER AND CABINET. (REFER TO SHEET SG-2)
 - AA. REMOVE EXISTING SIGNAL POLE, SPAN WIRE, SIGNAL HEADS, SIGNS AND VIDEO DETECTION CAMERA. (REFER TO SHEET SG-2)
 - BB. REMOVE EXISTING SIGNAL POLE, AND SIGNAL HEAD. (REFER TO SHEET SG-2)
 - CC. REMOVE EXISTING HANDHOLE. (REFER TO SHEET SG-2)
 - DD. CAP AND ABANDON EXISTING CONDUIT. (REFER TO SHEET SG-2)
 - EE. REMOVE EXISTING PAVEMENT MARKINGS. (REFER TO SHEET SG-2)
 - FF. ABANDON EXISTING MICROLOOP PROBES.
 - GG. ABANDON EXISTING LOOP DETECTORS. (REFER TO SHEETS SG-1, SG-2)
 - HH. REMOVE GROUND MOUNTED SIGN
 - JJ. REMOVE EXISTING PAVEMENT MARKINGS LEGENDS AND SYMBOLS.
 - KK. REMOVE EXISTING LIGHT POLE
 - LL. INSTALL 5' SIDEWALK IN AREAS THAT ARE DISTURBED WHEN REMOVING AND INSTALLING TRAFFIC SIGNAL POLES, CONDUIT AND HANDHOLES, IN THIS ISLAND.
 - MM. RELOCATE EXISTING "ONE-WAY" SIGNS OUTSIDE OF SIDEWALK.
 - NN. INSTALL CONCRETE FOUNDATION WITH A 27 FOOT STEEL POLE AND A 50 FOOT MAST ARM, TRAFFIC SIGNAL HEADS, VIDEO DETECTION CAMERA, 20 FOOT LIGHTING ARM, 250 WATT HPS LUMINAIRE, AND SIGNS (1-3 INCH CONDUIT BEND).
 - PP. INSTALL OPTICOM DETECTOR EYE.

KCI TECHNOLOGIES

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818

PROPOSED SIGNS

37,38 R3-1 (30"x30")
43,46 ONLY R3-5(L) (30"x36")
45 ONLY R3-5(R) (30"x36")
44,47 R3-6 (30"x36")
39,41 R3-2 (30"x30")

48 SOUTH M3-3 24"x12"
M1-4 24"x24"
M6-1 21"x15"

49 SOUTH M3-3 24"x12"
M1-4 24"x24"
M6-1 21"x15"

50 NORTH M3-1 24"x12"
M1-4 24"x24"
M6-1 21"x15"

51 NORTH M3-1 24"x12"
M1-4 24"x24"
M6-1 21"x15"

53 SOUTH M3-3 24"x12"
M1-4 24"x24"
M6-1 21"x15"

40 Corridor RD D-3(1) (VAR. x16")

42 Howard ST D-3(1) (VAR. x16")

PROPOSED SIGNS

29 R10-3(1) 9' x 15'

30 R10-3(1) 9' x 15'

31 R10-3(1) 9' x 15'

32 R10-3(1) 9' x 15'

35 R10-3(1) 9' x 15'

51 R10-3(1) 9' x 15'

33,52 R10-3(1) 9' x 15'

34,36 R10-3(1) 9' x 15'

12" 12" 12" 12" 12"

16" LED COUNTDOWN PEDESTRIAN SIGNAL 12"

PROPOSED TRAFFIC SIGNAL HEADS

1,2,6,7 3,4,5,8,9,10, 11,12,14,15,16,18

(LAG) φ 1 φ 2 φ 3 φ 4 φ 3 ALT

φ 5 (LEAD) φ 6 φ 4 ALT φ 4

FLASHING OPERATION

PHASING NOTES:

1) PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.
2) PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.

AERIAL CABLE DETAIL

PRIMARY 40'±
COMMUNICATION 26'±

GRADE

AERIAL CABLE DETAIL

GUY 25'±
COMMUNICATION 23'±

GRADE

- GENERAL NOTES**
- VIDEO CAMERA LOCATION / ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.
 - THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
 - ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH MSHA STANDARDS.
 - ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCELL.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
 - THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
 - 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.
 - SIGNAL POLE FOUNDATIONS SHALL BE REMOVED 12 INCH BELOW GRADE WHEN REMOVING A TRAFFIC SIGNAL POLE.

- APS PUSHBUTTON NOTES**
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60"x60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
 - THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
 - PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.09 AND FIG. 4E.2 AND NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNAL: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
 - PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
 - SIGNAL POLES WITH PUSHBUTTONS MAY HAVE THE FOUNDATION INSTALLED AS PART OF THE CURB OR SIDEWALK AS DIRECTED BY THE ENGINEER.

AERIAL CABLE DETAIL

PRIMARY 40'±
SECONDARY 34'±
COMMUNICATION 30'±

GRADE

AERIAL CABLE DETAIL

PRIMARY 42'±
SECONDARY 37'±
COMMUNICATION 28'±

GRADE

CONTINUES TO FIREHOUSE.
FIREHOUSE PRE-EMPTION
PUSHBUTTON-PULL BACK AND
REROUTE CABLES FROM THE
NEW SIGNAL CONTROLLER.

DESIGNED BY: J. GORDON
DRAWN BY: J. GORDON
CHECKED BY: N/A
F.A.P. NO.: N/A

APPROVALS	REVISIONS
<p>TEAM LEADER</p> <p>ASST. DIV. CHIEF</p> <p>DIVISION CHIEF</p> <p>OFFICE DIRECTOR</p>	<p>RECONSTRUCT SIGNAL CONTRACT NO. X0680165 TMS NO. K974 11/2011</p> <p>H. 01-12-2011 - REPLACE DETECTION AND INSTALL WB FIREHOUSE PRE-EMPTION; SHA NO. SW82008; TMS NO. K939</p> <p>UP TO 2007 - UPGRADE SIGNAL HEADS TO BLACK FACED LED; ADD SIGNAL HEAD TO NB US 1; SHA NO. AT280085; TMS NO. G375 - NEVER COMPLETED.</p> <p>KJM MJC JR MAR WLN JLU</p>

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

US 1 (WASHINGTON BOULEVARD) AT HOWARD STREET/CORRIDOR ROAD
SAVAGE, MARYLAND

TRAFFIC SIGNAL PLAN

SCALE 1" = 30' CONTRACT NO. HO-292-033-770

DESIGNED BY	COUNTY	HOWARD
DRAWN BY	LOGMILE	13000102.60
CHECKED BY	TMS NO.	K974
F.A.P. NO.	TOD NO.	

TS NO. 1685 I DRAWING SG-1 OF 3 SHEET NO. 1 OF 3