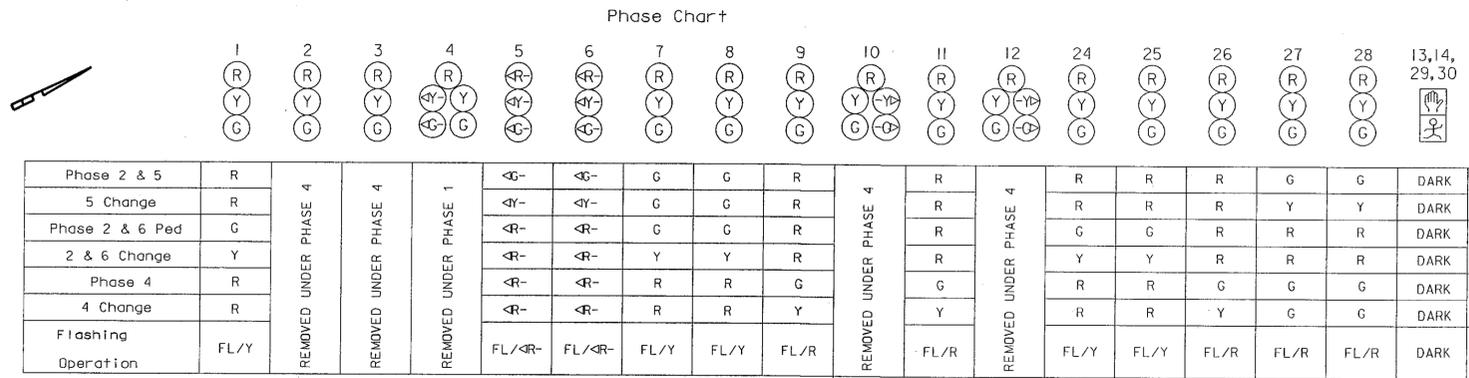


**CONSTRUCTION DETAILS**

- A. INSTALL 27 FT. STEEL POLE WITH TWIN 50 FT. AND 60 FT. MAST ARMS, TRAFFIC SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, SIGNS, VIDEO DETECTION CAMERA, AND 20 FT. LIGHTING ARM WITH 250 WATT HIGH PRESSURE SODIUM LUMINAIRE WITH PHOTOCCELL (NOTE: 1-4 IN. SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND). VIDEO DETECTION CAMERA 'C' SHALL BE RELOCATED ONTO THE 20 FT. LIGHTING ARM. INSTALL CENTER OF 27 FT. STEEL POLE AT STA. 598+96.5, OFFSET 52.5 FT. RT. THE 20 FT. LIGHTING ARM SHALL BE INSTALLED PERPENDICULAR TO THE BASELINE OF MD 139.
- B. INSTALL HANDHOLE.
- C. INSTALL AND CAP 1 IN. LIQUID-TIGHT, NON-METALLIC ELECTRICAL CONDUIT (DETECTOR WIRE-SLEEVE).
- D. INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED.
- E. INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED.
- F. INSTALL 24 IN. WHITE REMOVABLE PREFORMED PAVEMENT MARKING TAPE (STOP LINE).
- G. INSTALL 6 FT. X 6 FT. LOOP DETECTOR.
- H. INSTALL SIGNAL HEAD ONTO EXISTING MAST ARM.
- J. PROPOSED VIDEO DETECTION ZONE.
- K. REMOVE EXISTING 24 IN. WHITE REMOVABLE PREFORMED PAVEMENT MARKING TAPE (STOP LINE).
- L. REMOVE EXISTING TRAFFIC SIGNAL HEAD FROM EXISTING SPAN WIRE.
- M. REMOVE EXISTING SIGN FROM EXISTING SPAN WIRE.
- N. REMOVE EXISTING SIGNAL HEAD FROM MAST ARM.
- P. REMOVE EXISTING PAVEMENT MARKINGS.
- R. REMOVE EXISTING 15 FT. LIGHTING ARM AND LUMINAIRE FROM EXISTING SIGNAL STRAIN POLE.
- S. USE EXISTING MAST ARM AND RELOCATE EXISTING SIGNAL HEADS, AND SIGNS, AS DIRECTED BY THE ENGINEER.
- T. USE EXISTING 24 IN. REMOVABLE PREFORMED PAVEMENT MARKING (STOP LINE).
- U. ABANDON EXISTING LOOP DETECTOR
- V. RELOCATE EXISTING SIGNAL HEAD ALONG EXISTING SPAN WIRE.
- W. RELOCATE EXISTING VIDEO DETECTION CAMERA 'C' FROM EXISTING 15 FT. LIGHTING ARM TO THE PROPOSED 20 FT. LIGHTING ARM AT STA. 598+96.5.



**PROJECT DESCRIPTION**

THIS PORTION OF THE PROJECT INVOLVES THE COMPLETE RECONSTRUCTION OF THE TRAFFIC SIGNAL AT MD 139 (CHARLES STREET) AND TOWSONTOWN BOULEVARD IN BALTIMORE COUNTY. MD 139 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

**INTERSECTION OPERATION**

**I. NORMAL OPERATION**

THE INTERSECTION WILL OPERATE IN A FOUR PHASE FULL-TRAFFIC-ACTUATED MODE WITH THE MD 139 APPROACHES RUNNING CONCURRENTLY. THE TOWSONTOWN BLVD. APPROACH WILL OPERATE ALONE. EXCLUSIVE LEFT TURN PHASING WILL BE PROVIDED FOR THE SOUTHBOUND MD 139 APPROACH AND WILL RUN CONCURRENTLY WITH THE TOWSONTOWN BLVD. RIGHT TURN. PEDESTRIAN PHASING WILL BE PROVIDED ACROSS THE EAST LEG OF THE INTERSECTION.

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 WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND TELEPHONE NUMBER.

**CONTROLLER REQUIREMENTS**

A FULLY-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH A VIDEO DETECTION SYSTEM, INTERSECTION MONITOR WITH BATTERY BACK-UP FOR PHONE DROP, TELEMETRY MODULE, ISOLATION BOARD, SPECIAL RELAY, LOOP DETECTOR AMPLIFIER AND ASSOCIATED HARNESSSES HOUSED IN A NEMA SIZE '6" BASE MOUNTED CABINET WILL BE UTILIZED.

**PROJECT CONTACTS**

CONTACT PERSONS FOR DISTRICT 4 ARE AS FOLLOWS

MR. RANDALL SCOTT  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
410-321-2781 OR 410-321-2885

MS. SUENETTE POPE  
UTILITIES ENGINEER  
410-321-2841

MR. STEVE MARCISZEWSKI  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
410-321-2764

THE POWER COMPANY REPRESENTATIVE:

MR. HENRY SMIT  
BGE  
410-859-9064  
WMS #948109

CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY

MR. RICHARD DAFF SR.  
CHIEF, TRAFFIC OPERATIONS  
410-787-7630

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS  
410-787-7630

MR. ED RODENHIZER  
CHIEF, SIGNAL OPERATIONS  
410-787-7650

MR. EUGENE BAILEY  
CHIEF, SIGN OPERATIONS  
410-787-7676

MR. MIKE STOCKER  
SIGNAL SHOP WAREHOUSE  
410-787-7696

**EQUIPMENT LIST "A"**

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

SPEC. NO.	CATEGORY CODE NO.	QUANTITY	DESCRIPTION
813	973023	11 S.F.	SHEET ALUMINUM SIGN
		- 1 EACH	ASSOCIATED SHIELD ASSEMBLY (30" x 51")
			M3-2 (24" x 12")
			M1-5 (30" x 24")
			M6-1 (21" x 15")

**EQUIPMENT LIST "B"**

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

SPEC. NO.	CATEGORY CODE NO.	QUANTITY	DESCRIPTION
104.11	114245	100 L.F.	24 INCH WHITE REMOVABLE PREFORMED PAVEMENT LINE MARKINGS (STOP LINE)
104.11	114275	50 L.F.	REMOVAL OF REMOVABLE PREFORMED PAVEMENT MARKINGS - ANY WIDTH
104	120500	L.S.	MAINTENANCE OF TRAFFIC
---	199020	50 L.F.	REMOVAL OF EXISTING PAVEMENT MARKINGS - ANY WIDTH
205	203030	1 C.Y.	TEST PIT EXCAVATION
801	801004	7 C.Y.	CONCRETE FOR SIGNAL FOUNDATION
810	802501	275 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805	805140	50 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805	805155	225 L.F.	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
805	805160	10 L.F.	1 INCH LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
811	811001	2 EA.	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813	813010	1 EA.	BAND SIGN TO SUPPORT
816	816005	1 EA.	CONTROL CABLE, 250 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER
818	818050	1 EA.	STEEL POLE WITH TWIN 50 FOOT AND 60 FOOT MAST ARMS
806	831010	1 EA.	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
804	837001	2 EA.	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
814	860265	4 EA.	RELOCATE EXISTING SIGNAL HEAD
814	860272	15 EA.	12 INCH VEHICULAR SIGNAL HEAD SECTION
814	860278	4 EA.	12 INCH PEDESTRIAN SIGNAL HEAD SECTION POLE MOUNT
810	861106	1800 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINIUM SHIELDED: NO. 14 A.W.G.)
810	861106	725 L.F.	ELECTRICAL CABLE - 3 CONDUCTOR (NO. 14 A.W.G.)
810	861107	525 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)
810	861116	250 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.)
810	862101	475 L.F.	LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO.14 A.W.G.)
815	862102	200 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
818	866104	1 EA.	20 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
---	800000	L.S.	REMOVE AND DISPOSE OF EXISTING MATERIALS AND EQUIPMENT
---	800000	2 EA.	RELOCATE EXISTING SIGN ON MAST ARM
---	800000	1 EA.	RELOCATE VIDEO DETECTION CAMERA

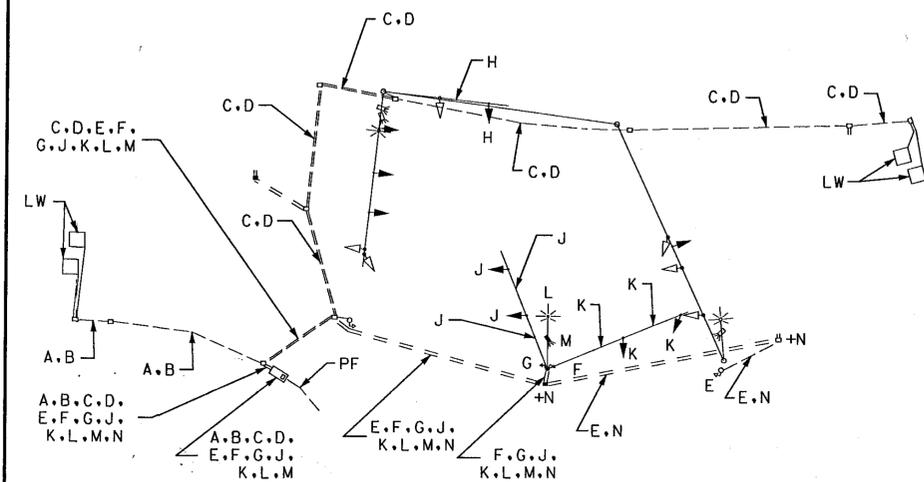
**EQUIPMENT LIST "C"**

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076.

**QUANTITY DESCRIPTION**

ALL REMOVED SIGNAL MATERIALS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR

**WIRE DIAGRAM**



NOTE: THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL UNUSED ELECTRICAL CABLES.

**WIRING LEGEND**

- A,B,C,D } 2-CONDUCTOR ELECTRICAL CABLE (ALUMINIUM SHIELDED: NO. 14 A.W.G.)
- E,F,G } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- H,J,K } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- L } 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- M } VIDEO DETECTION CAMERA TO CONTROLLER CABLE
- N } STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- + } 3/4" x 10' GROUND ROD
- PF - EXISTING POWER FEED
- LW - LOOP WIRE (NO. 14 A.W.G.)

PHASE 4  
TEMPORARY TRAFFIC SIGNAL SG-9 OF SG-11

**RK & K**  
RUMMEL, KLEPPER & KAHL, LLP

CONSULTING ENGINEERS  
81 MOSHER STREET  
BALTIMORE, MARYLAND 21217  
TELE: 410-728-2900 FAX: 410-728-3160

**MARYLAND DOT - STATE HIGHWAY ADMINISTRATION**  
*Office of Traffic & Safety*  
**TRAFFIC ENGINEERING DESIGN DIVISION**  
MD 139 (CHARLES STREET) AND TOWSONTOWN BLVD.  
TOWSON, MARYLAND  
GENERAL INFORMATION SHEET

DRAWN BY: S.M.H.	F.A.P. NO. BA 3065176	SEE TITLE SHEET	TS NO. 1842 B
CHECKED BY: B.L.B.	S.H.A. NO. COUNTY: BALTIMORE	LOG MILE: 03013901.81	T.I.M.S. NO. E546
SCALE: NO SCALE	DATE: NOVEMBER 2002		SHEET NO. 42 OF 59