F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	SEE TITLE SHEET	83	182

PROJECT DESCRIPTION

I. GENERAL
THIS PROJECT INVOLVES THE RECONSTUCTION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 140 AND CENTER STREET IN CARROLL COUNTY. MD 140 IS CONSIDERED TO RUN IN AN EAST/WEST DIRECTION.

II. INTERSECTION OPERATION
THE EXISTING PHASING WILL BE UTILIZED.

III. SPECIAL NOTES
ANY DOWN TIME OF THE TRAFFIC SIGNAL SHALL BE DONE DURING THE ASSIGNED WORK HOURS OF 9 P.M. TO 5 A.M. AND SHALL BE ASSISTED BY STATE POLICE PRESENT ON THE JOB SITE. THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR CONTACTING THE STATE POLICE.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE S.H.A.

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
6	EA.	814	(MAST ARM MOUNT) 12" 1 WAY 3 SECTION SIGNAL (R,Y,G)
5	EA.	814	(MAST ARM MOUNT) 12" 1 WAY 3 SECTION SIGNAL (RA,YA,GA)
4	EA.	814	(MAST ARM MOUNT) 12" 1 WAY 4 SECTION SIGNAL (R,Y,G,GA)
15	S.F.	813	30"x36" R3-6L SIGN WITH MAST ARM MOUNTING HARDWARE
72	S.F.	813	VARIABLE x 16" D3-2 SIGN WITH MAST ARM MOUNTING HARDWARE
30	S.F.	813	30"x36" R3-5L SIGN WITH MAST ARM MOUNTING HARDWARE
10.6	S.F.	813	ASSOCIATED SHIELD ASSEMBLY (EAST,ROUTE 140,RIGHT ARROW - 51" X 30")
10.6	S.F.	813	ASSOCIATED SHIELD ASSEMBLY (WEST,ROUTE 140,RIGHT ARROW - 51" X 30")
10.6	S.F.	813	ASSOCIATED SHIELD ASSEMBLY (EAST,ROUTE 140,LEFT ARROW - 51" X 30")
17.5	S.F.	813	ASSOCIATED SHIELD ASSEMBLY (WEST,ROUTE 140,LEFT ARROW - 75" X 36")
6.25	S.F.	813	30" X30" R3-2 SIGN WITH MAST ARM MOUNTING HARDWARE
2	EA.	814	(POLE MOUNT) 12" 1 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD
1	EA.	814	(POLE MOUNT) 12" 2 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD
3	EA.	814	PUSH BUTTON AND R10-3C SIGN
1	EA.	816	EIGHT PHASE, FULL-TRAFFIC ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH SYSTEM PACKAGE AND RACK MOUNT AMPLIFIER IN A NEMA SIZE "6" BASE MOUNTED CABINET.

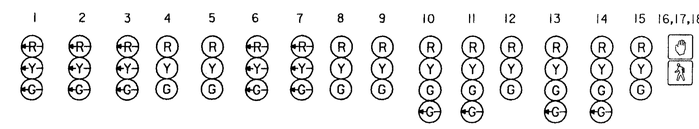
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
7	EA.	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
9	EA	810	MICRO LOOP PROBES (SET OF 3) WITH 500 L.F. LEAD-IN
3980	L.F.	810	LOOP DETECTOR WIRE (No.14 A.W.G.) ENCASED IN FLEXIBLE TUBING
1442	L.F.	810	2-CONDUCTOR (ALUM. SHIELDED) ELECTRICAL CABLE (No.14 A.W.G.)
361	L.F.	810	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
386	L.F.	810	3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
1166	L.F.	810	5-CONDUCTOR ELECTRICAL CABLE (No.14 A.W.G.)
1971	L.F.	810	7-CONDUCTOR ELECTRICAL CABLE (No.14 A.W.G.)
410	L.F.	810	2-CONDUCTOR ELECTRICAL TRAY CABLE (No.12 A.W.G.)
456	L.F.	810	BARE COPPER GROUND WIRE (No.6 A.W.G.)
127	L.F.	805	1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR LOOP DETECTOR SLEEVE
65	L.F.	805	F & I 2" SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
31	L.F.	805	F & I 2" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
259	L.F.	805	F & I 3" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
80	L.F.	805	F & I 4" SCHEDULE 40 RIGID PVC CONDUIT - TRENCHED
152	L.F.	805	F & I 4" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
2	EA.	806	250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE
16	C.Y.	801	CONCRETE FOR SIGNAL FOUNDATION
2	EA.	808	FURNISH AND INSTALL 15 FOOT LIGHTING ARM ON SIGNAL STRUCTURE
949	L.F.	815	SAWCUT FOR SIGNAL (LOOP DETECTOR)
1	EA.	818	FURNISH & INSTALL STEEL POLE WITH A SINGLE 50' MAST ARM, 1¾" x 90", ANCHOR BOLTS
1	EA.	818	FURNISH & INSTALL STEEL POLE WITH 50'/60' TWIN MAST ARMS, 2" x 90" ANCHOR BOLTS
1	EA.	818	FURNISH & INSTALL STEEL POLE WITH TRIPLE 38'/50'/70' MAST ARMS, 2" X 90" ANCHOR BOLTS
1	EA.	807	CONTROL AND DISTRIBUTION
5	EA.	804	FURNISH & INSTALL GROUND ROD
1	LUMP SUM	SP	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT
3	EA.	SP	CUT, CLEAN AND CAP MAST ARM
1	EA.	816	INSTALL CABINET AND CABINET-BASE MOUNT
198	L.F.	XXX	DISCONNECT, PULL BACK AND RERUN EXISTING INTECONNECT CABLE TO NEW CONTROLLER
34	L.F.	818	FURNISH AND INSTALL WOOD SIGN SUPPORTS (4 IN. x 4 IN.)
49.3	S.F.	813	INSTALL GROUND MOUNTED SIGNS
99.25	S.F.	813	INSTALL OVERHEAD SIGN
1	EA.	SP	REMOVAL AND SALVAGE OF EXISTING MATERIAL AND EQUIPMENT
1	EA.		CONTROLLER AND CABINET
2	EA.	821	FURNISH AND INSTALL 14 FOOT BREAKAWAY PEDESTAL
17	EA.	814	INSTALL SIGNAL HEAD
3	EA.	817	INSTALL PUSH BUTTON AND SIGN

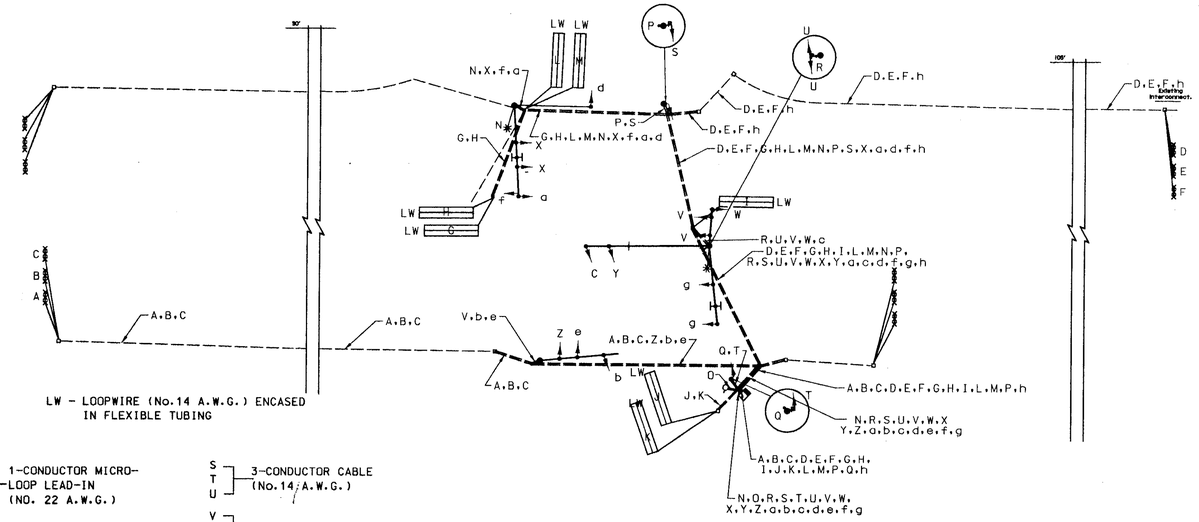
CONSTRUCTION DETAILS (FOR SHEET 1)

A. INSTALL 38'/50'/70' TRIPLE MAST ARM POLE, SIGNAL HEADS, PUSH BUTTON, SIGNS AND 15' LIGHTING ARM WITH 250 WATT HPS LUMINAIRE (NOTE: 1-2" 90 DEGREE PVC BEND)
B. INSTALL 50'/60' TWIN MAST ARM POLE, SIGNAL HEADS, SIGNS AND 15' LIGHTING ARM WITH 250 WATT HPS LUMINAIRE (NOTE: 1-2" 90 DEGREE PVC BEND)
C. INSTALL 14' PEDESTAL POLE, SIGNAL HEAD, PUSH BUTTON AND SIGNS (NOTE: 1-2" 90 DEGREE PVC BEND)
D. INSTALL 50' SINGLE MAST ARM POLE, SIGNAL HEADS, AND SIGNS (NOTE: 1-2" 90 DEGREE PVC BEND)
E. DISCONNECT, PULL BACK TO HANDHOLE THEN RERUN EXISTING INTERCONNECT CABLE TO NEW CONTROLLER.
F. INSTALL HANDHOLE
G. USE EXISTING HANDHOLE.
H. USE EXISTING CONDUIT.
I. REMOVE EXISTING STEEL POLE AND ALL ATTACHED EQUIPMENT.
J. INSTALL MICRO LOOP PROBES
K. INSTALL 6'x30' QUADRUPLE TYPE LOOP DETECTOR (3-6-3 TURNS).
L. ABANDON AND DISCONNECT EXISTING LOOP DETECTOR.
M. INSTALL NEW CABINET, CONTROLLER AND AMPLIFIERS.
N. REMOVE EXISTING HANDHOLE.
O. USE EXISTING MICRO LOOP PROBES
P. CAP AND ABANDON EXISTING CONDUIT.
Q. INSTALL 1" FLEXIBLE NON-METALLIC ELECTRICAL CONDUIT FOR DETECTOR LEAD-IN
R. INSTALL 2" POLYVINYL CHLORIDE (SCHEDULE 40) ELECTRICAL CONDUIT - TRENCHED.
S. INSTALL 2" POLYVINYL CHLORIDE (SCHEDULE 80) ELECTRICAL CONDUIT - SLOTTED IN ROADWAY
T. INSTALL 3" POLYVINYL CHLORIDE (SCHEDULE 40) ELECTRICAL CONDUIT - TRENCHED
U. INSTALL 3" POLYVINYL CHLORIDE (SCHEDULE 80) ELECTRICAL CONDUIT - SLOTTED IN ROADWAY
V. INSTALL 4" POLYVINYL CHLORIDE (SCHEDULE 40) ELECTRICAL CONDUIT - TRENCHED
W. INSTALL 4" POLYVINYL CHLORIDE (SCHEDULE 80) ELECTRICAL CONDUIT - SLOTTED IN ROADWAY
X. REMOVE EXISTING CABINET, CONTROLLER, AND AMPLIFIERS.
Y. ELECTRICAL FEED BY B.G.& E.

PHASE CHART



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16,17,18
PHASE 1 & 5	◄G	◄G	◄G	R	R	◄G	◄G	R	R	R	R	R	R	R	R	DW
CHANGE TO 1 & 6, 2 & 5, OR 2 & 6																
PHASE 1 & 6	◄G	◄G	◄G	G	G	◄R	◄R	R	R	R	R	R	R	R	R	DW
1 CHANGE	◄Y	◄Y	◄Y	G	G	◄R	◄R	R	R	R	R	R	R	R	R	DW
PHASE 2 & 5	◄R	◄R	◄R	R	R	◄G	◄G	G	G	R	R	R	R	R	R	DW
5 CHANGE	◄R	◄R	◄R	R	R	◄Y	◄Y	G	G	R	R	R	R	R	R	DW
PHASE 2 & 6	◄R	◄R	◄R	G	G	◄R	◄R	G	G	R	R	R	R	R	R	DW
2 & 6 CHANGE	◄R	◄R	◄R	Y	Y	◄R	◄R	Y	Y	R	R	R	R	R	R	DW
PHASE 3	◄R	◄R	◄R	R	R	◄R	◄R	R	R	◄G G	G	G	R	R	R	DW
3 CHANGE	◄R	◄R	◄R	R	R	◄R	◄R	R	R	Y	Y	Y	R	R	R	DW
PHASE 3 ALT.	◄R	◄R	◄R	R	R	◄R	◄R	R	R	◄G G	◄G G	G	R	R	R	WK
PED. CLEARANCE	◄R	◄R	◄R	R	R	◄R	◄R	R	R	◄G G	◄G G	G	R	R	R	FL/DW
3 ALT. CHANGE	◄R	◄R	◄R	R	R	◄R	◄R	R	R	Y	Y	Y	R	R	R	DW
PHASE 4	◄R	◄R	◄R	R	R	◄R	◄R	R	R	R	R	R	◄G G	G	◄G G	DW
4 CHANGE	◄R	◄R	◄R	R	R	◄R	◄R	R	R	R	R	R	Y	Y	Y	DW
FLASHING OPERATION	FL/◄R	FL/◄R	FL/◄R	FL/Y	FL/Y	FL/◄R	FL/◄R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK



A B C D E F — 1-CONDUCTOR MICRO-LOOP LEAD-IN (NO. 22 A.W.G.)

G H I J K L M — 2-CONDUCTOR CABLE (ALUMINUM SHIELDED)

N O — 2-CONDUCTOR TRAY CABLE (No.12 A.W.G.)

P Q R — 2-CONDUCTOR CABLE (No.14 A.W.G.)

S T U — 3-CONDUCTOR CABLE (No.14 A.W.G.)

V W X Y Z — 5-CONDUCTOR CABLE (No.14 A.W.G.)

a b c d e f g — 7-CONDUCTOR CABLE (No.14 A.W.G.)

h — EXISTING INTERCONNECT CABLE

REVISION "G"

REVISIONS
G SEPT., 1997 RECONSTRUCT SIGNAL FOR NEW GEOMETRICS
F APRIL 15, 1996 LENGTHEN LT. TURN LANE ALONG MD 140 (W.B.) S.H.A. BW881M82 M.A.M. S.R. 4/96

APPROVALS
ASST. DIVISION CHIEF, TEDD
ASST. DISTRICT ENGINEER, TRAFFIC
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, OFFICE OF TRAFFIC & SAFETY
ORIGINAL ON FILE

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

TRAFFIC SIGNAL PLAN
M.D. RTE.140 AT CENTER STREET

LOG MILE #06014008.93 DATE / /

DRAWN BY: R.L.L.	F.A.P. NO. SEE TITLE SHEET	TS/STD. NO. 535F-P	SHEET NO. TS-2 OF TS-8
CHECK BY: R.D.C.	S.H.A. NO. CL7845176		
SCALE: 1" = 40'	COUNTY CARROLL		