DRILL HOLES

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MD 178 IS CONSIDERED TO RUN IN A NORTH-SOUTH DIRECTION.

EXISTING SIGNALS & SIGNS

1,4 · 2,5 · 3,6,9,10,14,15 · 7,8,11-13 · a-d · 16 · 17 · 18

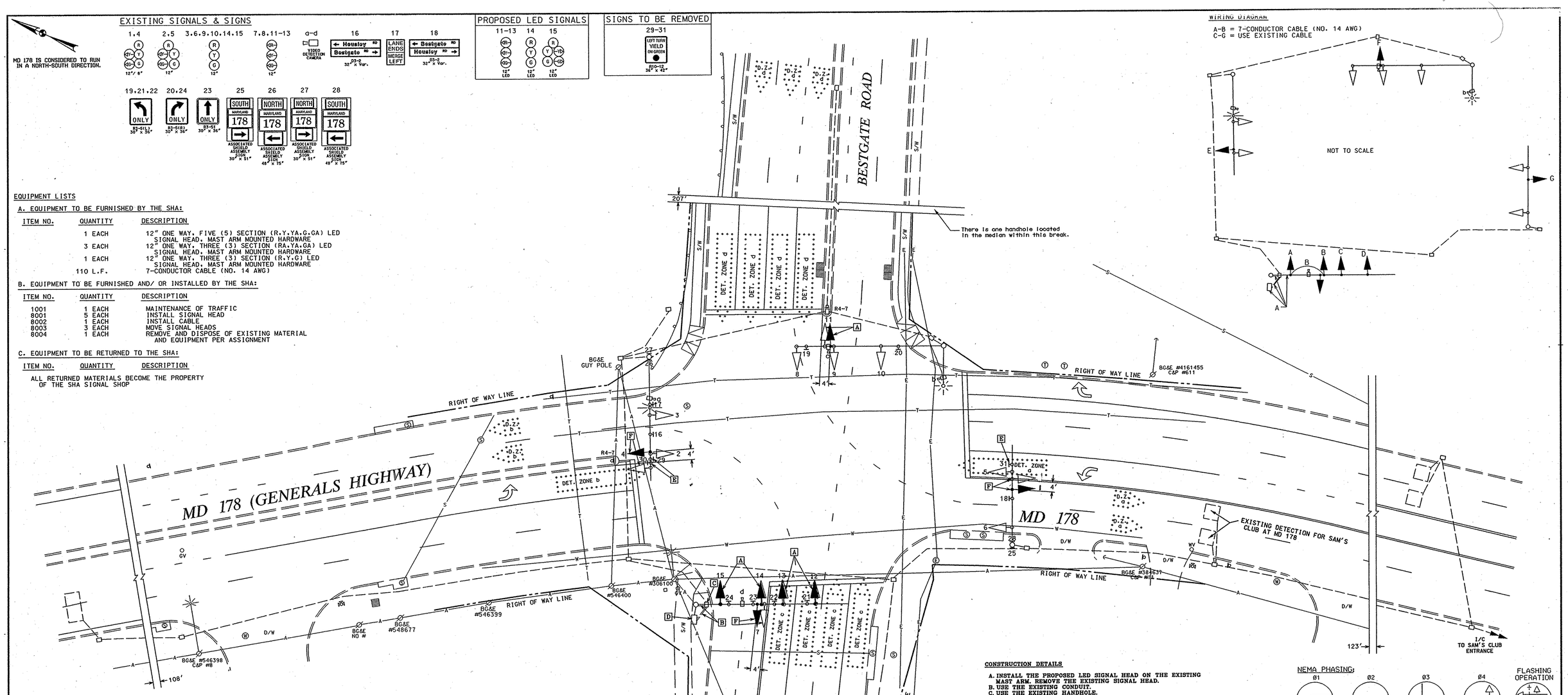
19,21,22 · 20,24 · 23 · 25 · 26 · 27 · 28

PROPOSED LED SIGNALS

11-13 · 14 · 15

SIGNS TO BE REMOVED

29-31



WIRING DIAGRAM

A-B = 7-CONDUCTOR CABLE (NO. 14 AWG)
C-G = USE EXISTING CABLE

EQUIPMENT LISTS

A. EQUIPMENT TO BE FURNISHED BY THE SHA:

ITEM NO.	QUANTITY	DESCRIPTION
	1 EACH	12" ONE WAY, FIVE (5) SECTION (R,Y,YA,G,GA) LED SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	3 EACH	12" ONE WAY, THREE (3) SECTION (RA,YA,GA) LED SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	1 EACH	12" ONE WAY, THREE (3) SECTION (R,Y,G) LED SIGNAL HEAD, MAST ARM MOUNTED HARDWARE
	110 L.F.	7-CONDUCTOR CABLE (NO. 14 AWG)

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EACH	MAINTENANCE OF TRAFFIC
8001	5 EACH	INSTALL SIGNAL HEAD
8002	1 EACH	INSTALL CABLE
8003	3 EACH	MOVE SIGNAL HEADS
8004	1 EACH	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT PER ASSIGNMENT

C. EQUIPMENT TO BE RETURNED TO THE SHA:

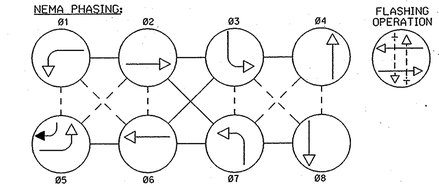
ITEM NO.	QUANTITY	DESCRIPTION

ALL RETURNED MATERIALS BECOME THE PROPERTY OF THE SHA SIGNAL SHOP

CONSTRUCTION DETAILS

A. INSTALL THE PROPOSED LED SIGNAL HEAD ON THE EXISTING MAST ARM. REMOVE THE EXISTING SIGNAL HEAD.
B. USE THE EXISTING CONDUIT.
C. USE THE EXISTING HANDHOLE.
D. USE THE CONTROLLER CABINET.
E. REMOVE THE EXISTING R10-12 SIGN.
F. MOVE THE EXISTING SIGNAL HEAD.

NEMA PHASING:



NEMA NOTES:
1. PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PHASE 1 & 5	◄G-R	◄G- R	R	◄G- R	◄G-R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R -G►
1 & 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 1 & 6, OR 2 & 5, OR 2 & 6														
PHASE 1 & 6	◄G- G	◄G- G	G	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R
1 CHANGE	◄Y- G	◄Y- G	G	R	R	R	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R
PHASE 2 & 5	R	R	R	◄G- G	◄G- G	G	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R -G►
5 CHANGE	R	R	R	◄Y- G	◄Y- G	G	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R -Y►
PHASE 2 & 6	G	G	G	G	G	G	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	◄R-	◄R-	R	R	◄R-	◄R-	◄R-	R	R
PHASE 3 & 7	R	R	R	R	R	R	◄G-	◄G-	R	R	◄G-	◄G-	◄G-	R	R
3 & 7 CHANGE	THE CONTROLLER MAY SKIP TO PHASES 3 & 8, OR 4 & 7, OR 4 & 8														
PHASE 3 & 8	R	R	R	R	R	R	◄R-	◄R-	R	R	◄G-	◄G-	◄G-	G	G
3 CHANGE	R	R	R	R	R	R	◄R-	◄R-	R	R	◄Y-	◄Y-	◄Y-	G	G
PHASE 4 & 7	R	R	R	R	R	R	◄G-	◄G-	G	G	◄R-	◄R-	◄R-	R	R
7 CHANGE	R	R	R	R	R	R	◄Y-	◄Y-	G	G	◄R-	◄R-	◄R-	R	R
PHASE 4 & 8	R	R	R	R	R	R	◄R-	◄R-	G	G	◄R-	◄R-	◄R-	G	G
4 & 8 CHANGE	R	R	R	R	R	R	◄R-	◄R-	Y	Y	◄R-	◄R-	◄R-	Y	Y
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/RA	FL/RA	FL/R	FL/R	FL/RA	FL/RA	FL/RA	FL/R	FL/R

NOTES TO THE CONTRACTOR:

1. ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES 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 EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PROJECT ENGINEER IMMEDIATELY.
2. ALL UNUSED CABLES SHALL BE REMOVED FROM THE EXISTING CONDUITS.

PROJECT CONTACTS

THE PROJECT CONTACTS ARE AS FOLLOWS:

MS. KIMBERLY TRAN
ASSISTANT DISTRICT ENGINEER- TRAFFIC
PHONE: (410) 841-1003

MR. CHUCK GEORGE
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (410) 841-1013

MR. JOHN MAYS
ASSISTANT DISTRICT ENGINEER - UTILITIES
PHONE: (410) 841-1039

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

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7631

MR. EDWARD RODENHIZER
CHIEF, SIGNAL OPERATIONS SECTION
PHONE: (410) 787-7652

UTILITY LEGEND

G	GAS MAIN
W	WATER MAIN
S	SEWER MAIN
E	ELECTRIC CABLES
A	AERIAL CABLES
T	TELEPHONE CABLES
D	STORM DRAIN
TV	CABLE TV

APPROVALS

TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

ORIGINAL ON FILE

REVISIONS

⓪. 06/01/2003 - SIGNAL RECONSTRUCTION DUE TO IMPROVEMENTS TO HOUSLEY ROAD:
SHA NO. RW996W82 TIMS NO. F856
WLM | CD | MAR | DAZ | BEK | JW

①. 07/13/2001 - AS BUILT & SYSTEMIZATION:
SHA NO. XX1005885 TIMS NO. D828
CMW | LAM | MAR | DAZ | BEK | JW

②. 01/06/2000 - REPLACED S/B MD 178 DETECTION:
SHA NO. RW996W82 TIMS NO. D721
JC | MAR | DAZ | BEK | JW

③. 08/2006 - INSTALL RIGHT TURN OVERLAP FOR W/B BESTGATE ROAD:
SHA NO. SE-SIGNAL TIMS NO. H986
WMC | JGM | MAR | DAZ | BEK | JW

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 178 (GENERALS HIGHWAY) AND HOUSLEY ROAD/ BESTGATE ROAD

ANNAPOLIS, MARYLAND

SCALE 1"= 20' DATE 08/09/1993 CONTRACT NO.

DESIGNED BY: J. Direndorfer
DRAWN BY:
CHECKED BY:
F.A.P. NO.:

COUNTY: ANNE ARUNDEL
LOGMILE: 02017800.34
TIMS: H986

DRAWING NO. 3319E - OF

SHEET NO. 1 OF 1