DRILL HOLES

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BORDER REV: DATE: June 1, 2004

## PROJECT DESCRIPTION

### I. GENERAL

This project involves the installation of a part time Traffic Control Signal with street lighting at the intersection of MD 193 (University Blvd) and Northwood High School in Montgomery County. The westbound approach of MD 193 (University Blvd) and the Northwood High School driveway shall be signalized. MD 193 (University Blvd) is assumed to run an east-west direction.

### II. INTERSECTION OPERATION

1. This intersection shall operate in a flashing mode unless a predetermined number of vehicles queue in MD 193 eastbound left turn lane. When operating in flashing mode, the westbound MD 193 (University Blvd) approach will flash "Yellow" while the Northwood High School Driveway approach will Flash "Red". When the predetermined number of vehicles queue in MD 193 eastbound left turn lane, the intersection is to operate in a NEMA two-phase, semi-actuated mode with the westbound MD 193 (University Blvd) approach running in it own phase. Exclusive left turn phases shall be provided for the eastbound approach of MD 193 (University Blvd) and the southbound approach of the Northwood High School driveway. The Exclusive left turn phases shall operate concurrently.
2. A full-traffic-actuated, eight-phase controller with video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
3. Montgomery County Forces shall install video interface inot the cabinet.

### III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, to the appropriate terminals and shall properly label each cable.
2. All controller cabinet wiring will be performed by Montgomery County Forces. Contact Kamal Hamud at (240) 777-8761 seventy-two hours in advance of intended work.
3. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility 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 will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Jeff Wentz
Assistant District Engineer - Traffic
Phone: (301) 513-7358

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7676

The power company representative is:

Mr. Steve Custer
PEPCO Customer Design
201 W Guide Dr.,
Rockville, MD 20850
Phone: 301 548-4333

## EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION AND INSTALLED BY THE CONTRACTOR.

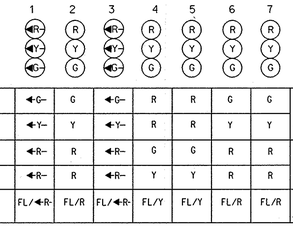
| ITEM NO. | DESCRIPTION | QUANTITY |
|---|---|---|
| 8088 | D3-2 "(arrow) Northwood H. S. " sign, (variable x 18") mast arm mounted. | 1 Each |
| 8088 | R3-1 "NO RIGHT TURN (symbolic)" sign, (30"x30") mast arm mounted. | 1 Each |
| 8088 | R1-1 "STOP" sign, (30"x30") mast arm mounted. | 2 Each |
| 8088 | R10-12(4) "LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP" sign, (36"X42") pole mounted. | 1 Each |
| 8088 | R3-1 "NO LEFT TURN (symbolic)" sign, (30"x30") mast arm mounted. | 2 Each |
| 8088 | R6-1(1) "ONE WAY" sign, (36"x30") ground mounted with hardware. | 3 Each |
| 8088 | W4-1 "Merge (Symbolic)" sign, (30" x 30") ground mounted with hardware. | 1 Each |
| 8088 | W3-3 NEW "SIGNAL AHEAD" sign, (48" x 48") ground mounted with hardware. | 1 Each |

## EQUIPMENT LIST (cont.)

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

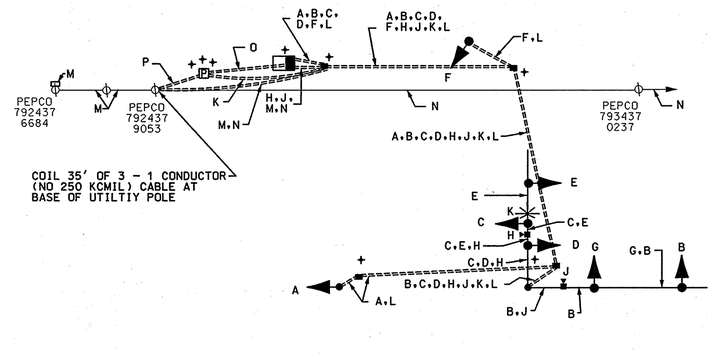
| ITEM NO. | DESCRIPTION | QUANTITY |
|---|---|---|
| 1001 | Maintenance of Traffic | 2 Day |
| 2002 | Test pit excavation. | 5 C.Y. |
| 8001 | Concrete foundation. | 7 C.Y. |
| 8019 | 2" polyvinyl chloride electrical conduit (Schedule 80) (trenched). | 30 L.F. |
| 8023 | 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched). | 115 L.F. |
| 8027 | 4" polyvinyl chloride electrical conduit (Schedule 80) (trenched). | 25 L.F. |
| 8028 | 4" polyvinyl chloride electrical conduit (Schedule 80) (pushed). (To be bored). | 140 L.F. |
| 8043 | Ground rod, 3/4" diameter x 10' length with clamp. | 7 Each |
| 8049 | 12-pair telemetry cable - self-supporting (overhead). | 515 L.F. |
| 8066 | 5-conductor electrical cable (No. 14 A.W.G.). | 200 L.F. |
| 8067 | 7-conductor electrical cable (No. 14 A.W.G.). | 890 L.F. |
| 8070 | 2-conductor electrical cable (No. 12 A.W.G.) copper type TC. | 210 L.F. |
| 8075 | 1-conductor electrical cable (No. 6 A.W.G.) stranded bare copper ground wire. | 280 L.F. |
| 8078 | 3-wire electrical cable (No. 4 A.W.G.) | 50 L.F. |
| 8081 | Wood sign supports (4" x 4"). | 32 L.F. |
| 8082 | Wood sign supports (4" x 6"). | 48 L.F. |
| 8095 | 20' lighting arm. | 1 Each |
| 8097 | 250W-HPS luminaire. | 1 Each |
| 8106 | Furnish and install NEMA size "6" traffic signal controller cabinet. | 1 Each |
| 8107 | Furnish and install ASC 2 controller. | 1 Each |
| 8114 | 3" weatherhead. | 1 Each |
| 8136 | Traffic signal handbox (pullbox). | 4 Each |
| 8172 | Furnish and install MSHA Standard 14' pedestal pole with transformer base. | 2 Each |
| 9001 | Signal technician labor. reroute cable | 2 HRS |
| Neg. | Furnish and install white heat applied thermoplastic pavement marking arrows (merge). | 1 Each |
| Neg. | 12" white heat applied permanent preformed thermoplastic pavement marking. | 565 L.F. |
| Neg. | 12" white heat applied permanent preformed thermoplastic pavement marking (concrete color). | 120 L.F. |
| Neg. | 24" white heat applied permanent preformed thermoplastic pavement marking. | 115 L.F. |
| Neg. | Video interface equipment. | 1 Each |
| | 27' steel pole with twin 50'-50' (cut to 40') mast arms. (Note: Anchor bolts will be 1 3/4" x 66".) | 1 EA |
| | Furnish and install 12" vehicular LED traffic signal head (R.Y.G) | 5 Each |
| | Furnish and install 12" vehicular LED traffic signal head (RA.YA.GA) | 2 Each |
| Neg. | Video detector camera w/ coaxial cable (to be installed by County Forces) | 2 Each |
| Neg. | Control cable, 250', video detection camera to controller | 2 Each |
| Neg. | 3" polyvinyl chloride electrical conduit (Schedule 80) (riser). | 30 L.F. |
| Neg. | Furnish and install electrical cable - 1 conductor (No. 250 KCMIL) | 210 L.F. |
| Neg. | 4" concrete sidewalk, mix No. 2. | 450 S.F. |
| | Metered service pedestal. | 1 Each |

## PHASE CHART




Note: This intersection shall operate in a flashing mode unless a predetermined number of vehicles queue in MD 193 eastbound left turn lane

## WIRING DIAGRAM




WIRING KEY

A, B, C, D } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G )

E, F, G } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G )

H, J } CONTROL CABLE (CAMERA TO CONTROLLER) 250'

K - 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G )

L - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

M - 12-PAIR INTERCONNECT CABLE (SELF SUPPORTING) WEST TO SPLICE CABINET ON MD 193 / ARCOLA AVE

N - EXISTING 12-PAIR INTERCONNECT CABLE (SELF SUPPORTING) FROM MD 193 / CADDINGTON AVE

O - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

P - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)

+ - GROUND ROD

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.NW.
Glen Burnie,MD 21061
Ph (410) 590-5500
Fax (410) 590-6637
5488AGI.DGN

PLOTTED: #DATETIME#
FILE: #FILE#

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 193 (UNIVERSITY BLVD) AND NORTHWOOD HS

GENERAL INFORMATION SHEET

SCALE NONE DATE 5-16-08 CONTRACT NO.

DESIGNED BY R.R.Z. COUNTY MONTGOMERY
DRAWN BY R.C. LOGMILE 15019303.08
CHECKED BY Bruce Thompson TSB TIMS NO.
F.A.P. NO. TOD NO.

TS NO. 4655 | DRAWING NO. 2 OF 2 | SHEET NO. OF

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