Appendix A-4

SAMPLE PROJECTS

SIGNING AND MARKING PLANS

Signing and Marking

US 15 at Monocacy Blvd Signing & Marking Plans*..... SN-1
SN-2.5
SN-2.6
SN-2.7
SN-2.8
SN-3.1
SN-3.2
SN-4.1
SN-9
SN-11.1

Sign Structure Replacement

MD 32 at US 1 Signing..... SN-2.1
SN-2.2
SN-8.1

Specific Service Signing

Specific Service Signing for I-95 at MD 272 (Exit 100)*..... General Notes & Quantities
Signing Plan
Sign Details
Sign Support Details

SIGNAL PLANS

Signal Modification

MD 174 at Thelma Avenue..... Signalization Plan Sheet
General Information Sheet

Signal Reconstruct

MD 182 at Longmead Crossing Dr/Norvale Rd*..... Signalization Plan Sheet
Interconnect Plan Sheet
Geometric Detail Sheet
General Information Sheet

New Construction

MD 28 at Wintergate Drive..... Signalization Plan Sheet
Interconnect Plan Sheet
General Information Sheet

LIGHTING PLANS

Interchange Lighting

I-70 at Marriottsville Rd Interchange Lighting……	Project Information and Quantities
	Sheet Layout
	Lighting Plan
	Lighting Plan
	Lighting Plan
	Lighting Plan
	Panel and Pole Schedule

Intersection Lighting

MD 41 at Satyr Hill Rd and Waltham Woods Rd……	Title Sheet
	Lighting Plan
	Lighting Plan

Underpass Lighting

MD 26 at I-695 Interchange……	Project Information and Quantities
	Lighting Plan
	Lighting Plan
	Underpass Lighting Layout
	Underpass Lighting Details
	Underpass Lighting Details

*Complete plan set is not included

SN-1 REV. DATE: April 02, 2012

CRITERIA

THE CONTRACTOR SHALL BE GOVERNED BY THE STANDARDS AND REQUIREMENTS OF THE FOLLOWING PUBLICATIONS, EXCEPT AS MODIFIED BY THE SPECIAL PROVISIONS OF THIS CONTRACT:

DESIGN

MDSHA - "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2011 EDITION AND SUBSEQUENT REVISIONS. (MdMUTCD)

A A S H T O - "HIGHWAY SAFETY DESIGN AND OPERATIONS GUIDE" -1997

A A S H T O - "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS LUMINAIRES AND TRAFFIC SIGNALS", 2001 EDITION (CATEGORY II FOR ALL OVERHEAD AND CANTILEVER SIGN STRUCTURES).

MATERIALS AND CONSTRUCTION

MDSHA - "STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS", 2008 EDITION AND SUBSEQUENT SUPPLEMENTS.

DESIGN WIND

100 MPH - WOOD SUPPORTS
10 YEAR RECURRENCE INTERVAL

100 MPH - GROUND MOUNT SIGN STEEL SUPPORTS
10 YEAR RECURRENCE INTERVAL

100 MPH - OVERHEAD AND CANTILEVER STRUCTURES
50 YEAR RECURRENCE INTERVAL

} ALL DISTRICTS

DESIGN STRESS

SOIL BEARING PRESSURE - S = 3,000 P.S.F. (ASSUMED)
SEE MATERIAL & CONSTRUCTION ABOVE AND SPECIAL PROVISIONS FOR DESIGN STRESSES FOR STRUCTURAL STEEL, ALUMINUM, REINFORCING STEEL AND CONCRETE.

CHAMFER

ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4" X 3/4" CHAMFER.

CLASSIFICATION OF SIGNS

SIGNS ARE DIVIDED INTO TWO (2) GENERAL CATEGORIES.

1. GUIDE SIGNS
   - A) STRUCTURAL TYPES
     - OH - OVERHEAD
     - C - CANTILEVER
     - GM - GROUND MOUNT, BREAKAWAY OR NON-BREAKWAY
     - BM - BRIDGE MOUNTED
   - B) PANELS
     - MATERIAL - EXTRUDED ALUMINUM
     - COPY - DIRECT APPLIED
       - I) HIGH INTENSITY (NEW SIGNS AND REVISIONS TO EXISTING SIGNS)
2. STANDARD SIGNS (REGULATORY, WARNING, ETC.)
   - A) STRUCTURAL TYPES
     - WOOD SUPPORTS
     - SQUARE TUBE
   - B) PANELS
     - MATERIAL - SHEET ALUMINUM
     - COPY - DIRECT APPLIED

IDENTIFICATION OF SIGNS AND PANELS

GUIDE SIGNS

EACH GUIDE SIGN IS IDENTIFIED BY A SIGN NUMBER ON THE PLANS AND IN THE TABULATIONS. (GM-1, GM-2, GM-3, etc)
SIGNS ON STRUCTURES ARE IDENTIFIED WITH A NUMBER AND WHERE VARIATIONS OCCUR, A LOWER CASE LETTER. (OH-1a, OH-1b, OH-1c)

STANDARD SIGNS

STANDARD SIGNS ARE IDENTIFIED BY PANEL NUMBERS AND ARE CLASSIFIED AS FOLLOWS
- R - REGULATORY
- W - WARNING
- M - ROUTE MARKERS AND ACCESSORIES
- D - DESTINATION AND MILEAGE PANELS
- S - SCHOOL

PANELS SHALL BE DESIGNATED TO AGREE WITH MARYLAND STANDARD SIGN BOOK. EACH STANDARD SIGN IS IDENTIFIED FIRST BY THE SHEET NUMBER, THEN BY THE NUMERICAL ORDER OF THE SIGN AS IT APPEARS ON THE PLAN.
FOR EXAMPLE SHEET SN 2.1-101,102,103, ETC. SHEET SN 2.2-201,202,203,ETC.

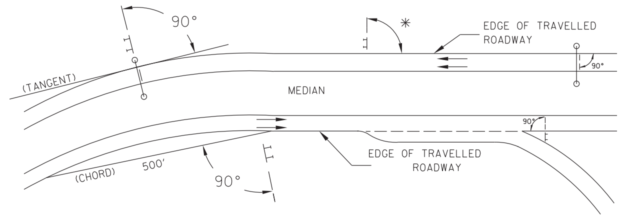
PANEL LAYOUT AND ALPHABETS

1. GUIDE SIGN PANEL LAYOUTS ARE BASED ON THE A.A.S.H.T.O. MANUALS NOTED ABOVE.
2. STANDARD SIGN PANEL LAYOUTS ARE BASED ON THE MdMUTCD WITH SPECIFICATIONS DETAILED IN THE MARYLAND STATE HIGHWAY ADMINISTRATION PUBLICATION, "STANDARD SIGN BOOK", AVAILABLE ONLINE @ https:/www.marylandroads.com/businesswithsha/bizStdsSpecs/desManualStdPub/publicationsonline/oots/internet_signbook.asp

REFLECTORIZATION

BACKGROUNDS, BORDERS, TEXTS AND ALL OTHER ELEMENTS OF SIGN PANELS SHALL BE REFLECTORIZED EXCEPT WHERE NOTED. REFER TO PROJECT REQUIREMENTS FOR MORE DETAIL.

ORIENTATION OF SIGN FACES



* UNDER 30 FEET FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - 93° AWAY FROM THE ROAD TO AVOID SPECULAR REFLECTION AS INDICATED IN 813.03 OF THE MARYLAND STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

OVER 30 FEET FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - 90°

SIGN LOCATIONS

1. GUIDE SIGNS ARE LOCATED ON THE PLANS BY DIMENSION TO SURVEY STATIONS, OR WHEN NECESSARY, TO IDENTIFIABLE PHYSICAL FEATURES.
2. ALL CHANGES IN THE LOCATIONS OF SIGNS AS SHOWN ON THE PLAN SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

EXISTING UTILITIES

THE ENGINEER DOES NOT WARRANT OR GUARANTEE THE ACCURACY OR COMPLETENESS OF UTILITY INFORMATION SHOWN ON THE PLAN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND PROTECT ALL EXISTING FACILITIES WHICH MIGHT BE AFFECTED BY THIS WORK OR HIS OPERATION.

ROADSIDE SIGNS

1. VERTICAL ALIGNMENT
   POSITION PANEL SO FACE IS PLUMB.
2. HORIZONTAL ALIGNMENT (SEE DIAGRAM ABOVE)
   - A) ON STRAIGHT ROADWAY SECTIONS, ANGLE OF SIGN FACE TO ROADWAY VARIES WITH DISTANCE FROM TRAVELLED ROADWAY TO NEAR EDGE OF SIGN - SEE DIAGRAM.
   - B) ON THE INSIDE OF HORIZONTAL CURVES, POSITION SIGN SO FACE OF PANEL MAKES AN ANGLE OF 90° WITH A CHORD BETWEEN A POINT ON NEAR EDGE OF PAVEMENT AT SIGN LOCATION AND A POINT ON EDGE OF PAVEMENT 500' IN ADVANCE OF SIGN.
   - C) ON THE OUTSIDE OF HORIZONTAL CURVES, POSITION SIGN SO FACE OF PANEL IS AT RIGHT ANGLES TO THE TANGENT OF THE CURVE AT THE SIGN LOCATION.
   - D) POSITIONING OF SIGNS AT GORES AND RAMP SEPARATIONS IS REFERRED TO THE NORMAL EDGE OF THE MAINLINE ROADWAY.

OVERHEAD SIGNS

1. VERTICAL ALIGNMENT
   POSITION PANELS FOR ALL OVERHEAD STRUCTURES SO THAT PANEL FACE IS PLUMB.
2. OVERHEAD SIGN STRUCTURES SHALL NOT BE ERECTED WITHOUT ATTACHING LUMINAIRES, SUPPORTS, AND/OR SIGNS.
3. HORIZONTAL ALIGNMENT
   - A) POSITION ALL OVERHEAD SIGNS SO THAT THE FACE OF THE PANEL IS AT RIGHT ANGLES TO THE NORMAL EDGE OF ROADWAY, IF ON A STRAIGHT ROADWAY SECTION.
   - B) POSITION ALL OVERHEAD SIGNS SO THAT THE FACE OF THE PANEL IS AT RIGHT ANGLES TO THE TANGENT OF THE CURVE AT SIGN LOCATION, IF ON A HORIZONTAL CURVE.
   - C) POSITIONING OF SIGNS AT GORES AND RAMP SEPARATIONS IS REFERRED TO THE NORMAL EDGE OF THE MAINLINE ROADWAY.
4. VERTICAL CLEARANCE
   - A) OVERHEAD SIGNS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 17'-9" FROM ROADWAY TO THE BOTTOM OF LIGHT FIXTURES. ALL LIGHT FIXTURES ARE TO BE AT THE SAME ELEVATION.
   - B) IF THE CONTRACTOR CANNOT OBTAIN 17'-9" (SEE 3A) CLEARANCE, HE IS TO CEASE WORK AND CONTACT THE PROJECT ENGINEER FOR FURTHER INSTRUCTIONS. THE PROJECT ENGINEER MAY CONTACT THE TRAFFIC ENGINEERING DESIGN DIVISION FOR ASSISTANCE.
   - C) ON ALL OVERHEAD SIGNS, THE MINIMUM CLEARANCE TO BOTTOM OF SIGN: 20'-9".

PROJECT REQUIREMENTS

ALL NEW SIGNS ON THIS PROJECT SHALL BE FABRICATED FROM SHEETING WHICH MEETS ALL OF THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER:

1. SHEETING SHALL MEET THE REQUIREMENTS OF SECTIONS 813 AND 950.03 OF MDSHA'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JULY 2008) AND SUBSEQUENT REVISIONS
2. LISTED ON MDSHA OFFICE OF TRAFFIC AND SAFETY'S QUALIFIED PRODUCTS LIST (QPL)

PROJECT REQUIREMENTS CONT'D

3. THE FOLLOWING TYPES OF SHEETING SHALL BE USED FOR THE SPECIFIED SIGN CLASSIFICATIONS

A) **GUIDE, EXIT GORE, AND GENERAL INFORMATION SIGNS-** RETROREFLECTIVE SHEETING FOR GUIDE SIGNS, EXIT GORE, AND GENERAL INFORMATION (INCLUDES WHITE ON GREEN, WHITE ON BLUE, WHITE ON BROWN AND THE REVERSE OF THESE COLORS) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX LEGEND ON ASTM TYPE IX BACKGROUND. REGULATORY AND WARNING MESSAGES WITHIN GUIDE SIGNS SHALL BE NON-REFLECTIVE BLACK LEGEND ON BACKGROUND SHEETING WHICH MEETS OR EXCEEDS THE REQUIREMENTS FOR ASTM TYPE IX SHEETING.

B) **WARNING SIGNS** - RETROREFLECTIVE SHEETING FOR BLACK ON FLUORESCENT YELLOW WARNING SIGNS SHALL BE NON-REFLECTIVE BLACK LEGEND ON BACKGROUND SHEETING WHICH MEETS OR EXCEEDS THE REQUIREMENTS FOR ASTM TYPE IX SHEETING. REGULATORY MESSAGES WITHIN WARNING SIGNS SHALL FOLLOW THE GUIDELINES FOR REGULATORY SIGNS.

C) **SCHOOL SIGNS** - RETROREFLECTIVE SHEETING FOR SCHOOL SIGNS (BLACK ON FLUORESCENT YELLOW AND BLACK ON FLUORESCENT YELLOW GREEN) SHALL BE NON-REFLECTIVE BLACK LEGEND ON BACKGROUND SHEETING WHICH MEETS OR EXCEEDS THE REQUIREMENTS FOR ASTM TYPE IX SHEETING. REGULATORY MESSAGES WITHIN SCHOOL SIGNS SHALL FOLLOW THE REQUIREMENTS FOR REGULATORY SIGNS.

D) **REGULATORY SIGNS** - FALL INTO THREE SUBCATEGORIES:

i. "RED" REGULATORY SIGNS (STOP, YIELD, DO NOT ENTER AND WRONG WAY) RETROREFLECTIVE SHEETING FOR THESE SIGNS AND THEIR SUPPLEMENTAL PANELS (INCLUDES WHITE ON RED AND RED ON WHITE) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX SHEETING.

ii. ALL R7 AND R8 SERIES PARKING RELATED SIGNS AND THEIR SUPPLEMENTAL PANELS, NO TRESPASSING SIGNS, AND SIGNS DIRECTED AT PEDESTRIANS AND BICYCLISTS ONLY (INCLUDES RED ON WHITE, GREEN ON WHITE, BLUE ON WHITE, BLACK ON WHITE AND THE REVERSE OF THESE COLORS) SHALL BE ASTM TYPE I LEGEND ON ASTM TYPE I BACKGROUND.

iii. ALL OTHER REGULATORY SIGNS - RETROREFLECTIVE SHEETING FOR THESE SIGNS AND THEIR SUPPLEMENTAL PANELS (INCLUDES BLACK ON WHITE) SHALL BE NON-REFLECTIVE BLACK LEGEND ON ASTM TYPE IV BACKGROUND. WHERE RED IS SPECIFIED, OR WHERE THE COLOR OF THE SIGN IS WHITE ON BLACK, THE LEGEND SHALL BE ASTM TYPE IV RETROREFLECTIVE SHEETING ON NON-REFLECTIVE BLACK BACKGROUND. WARNING MESSAGES WITHIN REGULATORY SIGNS SHALL FOLLOW THE GUIDELINES FOR WARNING SIGNS.

E) **ROUTE MARKERS** - RETROREFLECTIVE SHEETING FOR ROUTE MARKERS (INCLUDES BLACK ON WHITE , GREEN ON WHITE, WHITE ON GREEN, WHITE ON RED/BLUE) SHALL MEET THE REQUIREMENTS OF GUIDE SIGNS ABOVE WHEN SPECIFIED AS THE LEGEND OF A GUIDE SIGN. RETROREFLECTIVE SHEETING FOR ALL INDEPENDENT ROUTE MARKERS AND THEIR AUXILIARY PANELS SHALL BE ASTM TYPE IV AND/OR NON-REFLECTIVE BLACK LEGEND ON ASTM TYPE IV BACKGROUND.

F) **LOGOS AND/OR GRAPHICS** - WITHIN SIGNS SHALL FOLLOW THE GUIDELINES FOR THE RESPECTIVE SIGN CLASSIFICATION UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER.

G) **CIVIL DEFENSE SIGNS AND OTHER SIGNS** - NOT SPECIFICALLY FALLING INTO ONE OF THE CATEGORIES ABOVE, SHALL FOLLOW THE GUIDELINES FOR THE SIGN CLASSIFICATION THAT MOST CLOSELY MATCHES THE COLOR(S) OF THE PROPOSED SIGN.

H) **SIGN LIGHTING** - ALL OVERHEAD EXIT DIRECTIONS SIGNS SHALL BE LIT. SEE THE LIGHTING PLANS FOR DETAILS.

4. THE FOLLOWING MINIMUM THICKNESS SHALL BE USED FOR THE APPROPRIATE WIDTH OF SHEET ALUMINUM BLANKS.

LONGEST DIMENSION	MINIMUM THICKNESS
UP TO 12"	0.040"
GREATER THAN 12" TO 24"	0.063"
GREATER THAN 24" TO 36"	0.080"
GREATER THAN 36" TO 48"	0.100"
OVER 48"	0.125"

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APPROVALS: TEAM LEADER / ASST. DIV. CHIEF / DIVISION CHIEF / OFFICE DIRECTOR

REVISIONS

SHA
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

GENERAL NOTES AND PROPOSALS

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-1 OF 1 SHEET NO. 456 OF 532

PLOTTED: Sunday, February 09, 2014 AT 10:39 AM
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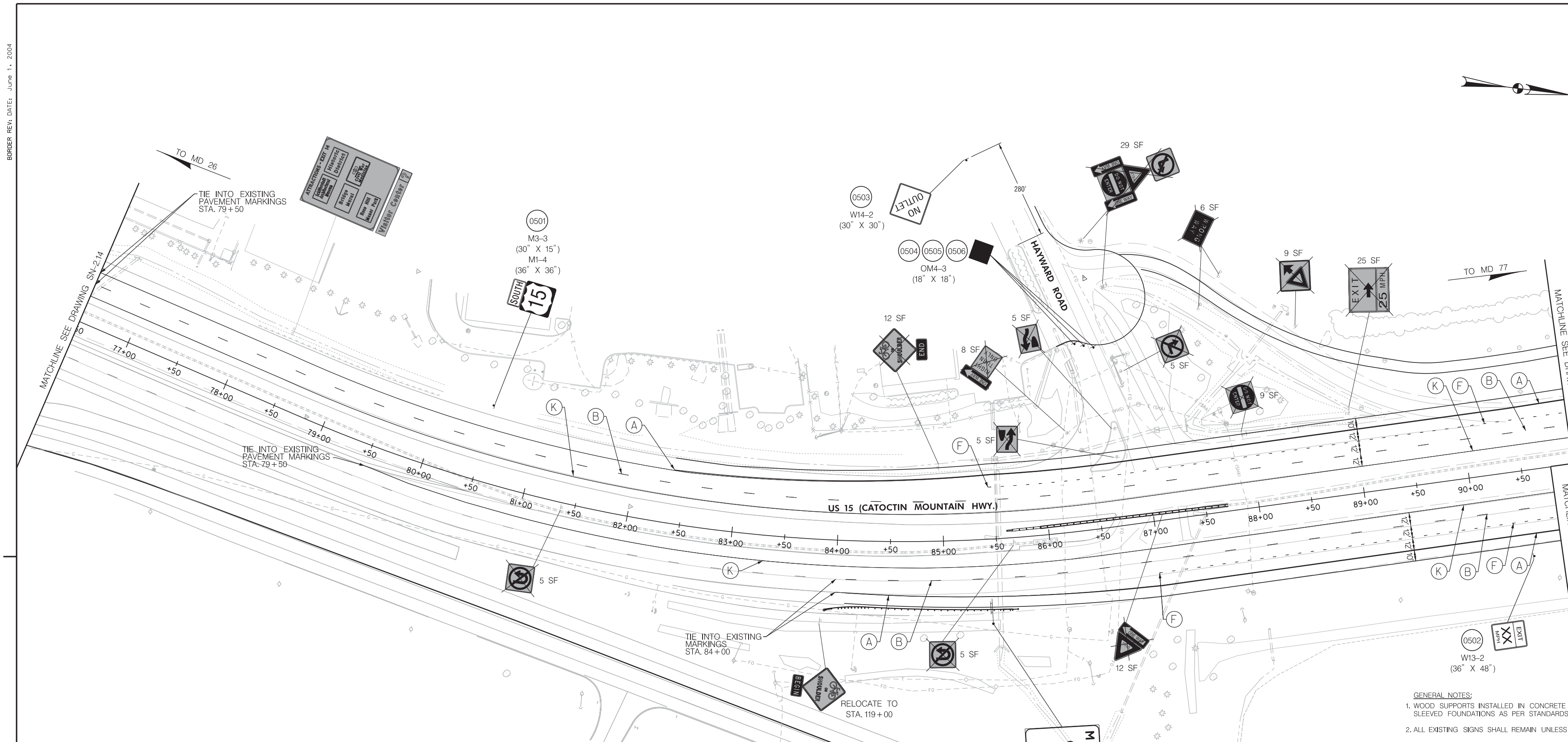
BY: Kurgansky -



GENERAL NOTES:

1. WOOD SUPPORTS INSTALLED IN CONCRETE SHALL BE INSTALLED WITH SLEEVED FOUNDATIONS AS PER STANDARDS MD812.05-01 AND MD812.05-02.
2. ALL EXISTING SIGNS SHALL REMAIN UNLESS NOTED ON THE PLAN.
3. PAVEMENT MARKING LANE WIDTHS ARE MEASURED FROM THE CENTER OF THE PAVEMENT MARKING.
4. ALL PREFORMED PATTERNED REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS SHALL BE INLAID.
5. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH ADMINISTRATION STANDARDS.
6. THE CONTRACTOR SHALL INSTALL PLOWABLE RAISED PAVEMENT MARKINGS IN ACCORDANCE WITH THE MDMUTCD AND MARYLAND BOOK OF STANDARDS.
7. ALL CROSSWALK AND STOP LINE PAVEMENT MARKINGS SHALL BE INSTALLED PER THE SIGNAL PLANS UNLESS NOTED ON THESE PLANS.
8. RAMP ADVISORY SPEEDS TO BE DETERMINED AT A LATER DATE IN TIME.

PAVEMENT MARKING LEGEND

- (A) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (B) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (C) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (D) 5" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (E) 10" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (F) 10" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (G) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
- (H) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
- (J) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
- (K) 5" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (L) 4" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (M) 4" BROKEN (10' LINE, 30' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (N) 4" DOTTED (3' LINE, 9' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (P) 4" DOTTED (3' LINE, 3' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Q) 4" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (R) 8" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (S) 10" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (T) HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEGENDS/SYMBOLS
- (U) 12" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR CROSSWALK)
- (V) 24" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR STOP LINE)
- (W) 15" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (X) 5" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Y) 5" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Z) 10" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS

SIGNING LEGEND

PROPOSED SIGN	PROPOSED OVERHEAD (OH) STRUCTURE AND SIGN
EXISTING SIGN AND SUPPORT TO REMAIN	PROPOSED CANTILEVER (C) STRUCTURE AND SIGN
EXISTING SIGN TO BE REMOVED	PROPOSED GROUND MOUNTED (GM) SIGN
	EXISTING GROUND MOUNTED SIGN
	SIGN NUMBER

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US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

REVISIONS

SIGNING AND MARKING PLAN

SCALE 1" = 50' DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-2.5 OF 2.19 SHEET NO. 463 OF 532

PLOTTED: Sunday, February 09, 2014 AT 10:42 AM
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BY: Kurgansky -

BORDER REV. DATE: June 1, 2004

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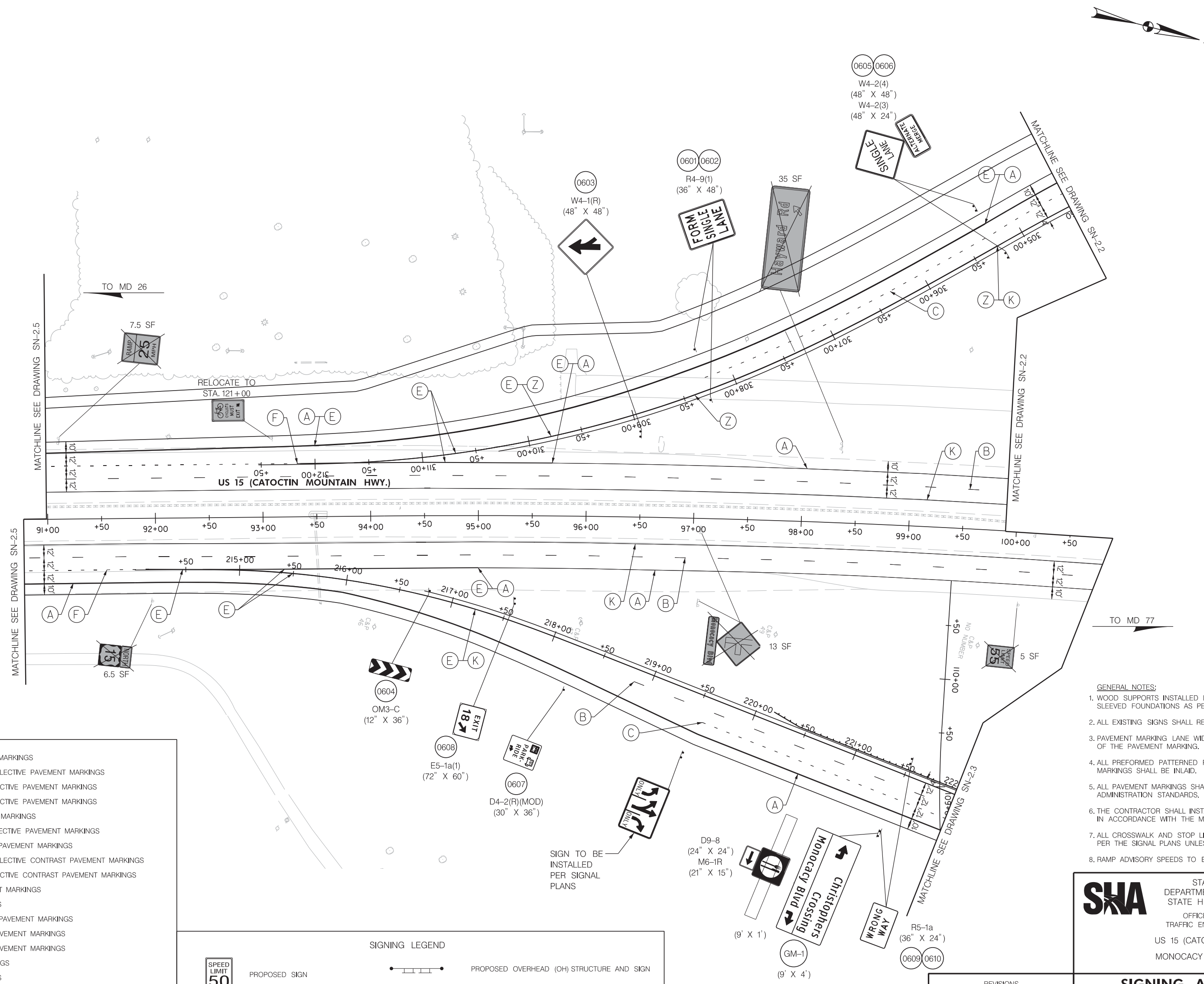

GENERAL NOTES:

1. WOOD SUPPORTS INSTALLED IN CONCRETE SHALL BE INSTALLED WITH SLEEVED FOUNDATIONS AS PER STANDARDS MD812.05-01 AND MD812.05-02.
2. ALL EXISTING SIGNS SHALL REMAIN UNLESS NOTED ON THE PLAN.
3. PAVEMENT MARKING LANE WIDTHS ARE MEASURED FROM THE CENTER OF THE PAVEMENT MARKING.
4. ALL PREFORMED PATTERNED REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS SHALL BE INLAID.
5. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH ADMINISTRATION STANDARDS.
6. THE CONTRACTOR SHALL INSTALL PLOWABLE RAISED PAVEMENT MARKINGS IN ACCORDANCE WITH THE MDMUTCD AND MARYLAND BOOK OF STANDARDS.
7. ALL CROSSWALK AND STOP LINE PAVEMENT MARKINGS SHALL BE INSTALLED PER THE SIGNAL PLANS UNLESS NOTED ON THESE PLANS.
8. RAMP ADVISORY SPEEDS TO BE DETERMINED AT A LATER DATE IN TIME.

PAVEMENT MARKING LEGEND

- (A) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (B) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (C) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (D) 5" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (E) 10" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (F) 10" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (G) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
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- (Q) 4" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (R) 8" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (S) 10" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (T) HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEGENDS/SYMBOLS
- (U) 12" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR CROSSWALK)
- (V) 24" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR STOP LINE)
- (W) 15" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (X) 5" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Y) 5" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Z) 10" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS

SIGNING LEGEND

- PROPOSED SIGN
- EXISTING SIGN AND SUPPORT TO REMAIN
- EXISTING SIGN TO BE REMOVED
- PROPOSED OVERHEAD (OH) STRUCTURE AND SIGN
- PROPOSED CANTILEVER (C) STRUCTURE AND SIGN
- PROPOSED GROUND MOUNTED (GM) SIGN
- EXISTING GROUND MOUNTED SIGN
- (###) SIGN NUMBER

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US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

SIGNING AND MARKING PLAN

REVISIONS

SCALE 1" = 50' DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-2.6 OF 2.19 SHEET NO. 464 OF 532

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BY: Kurgansky -

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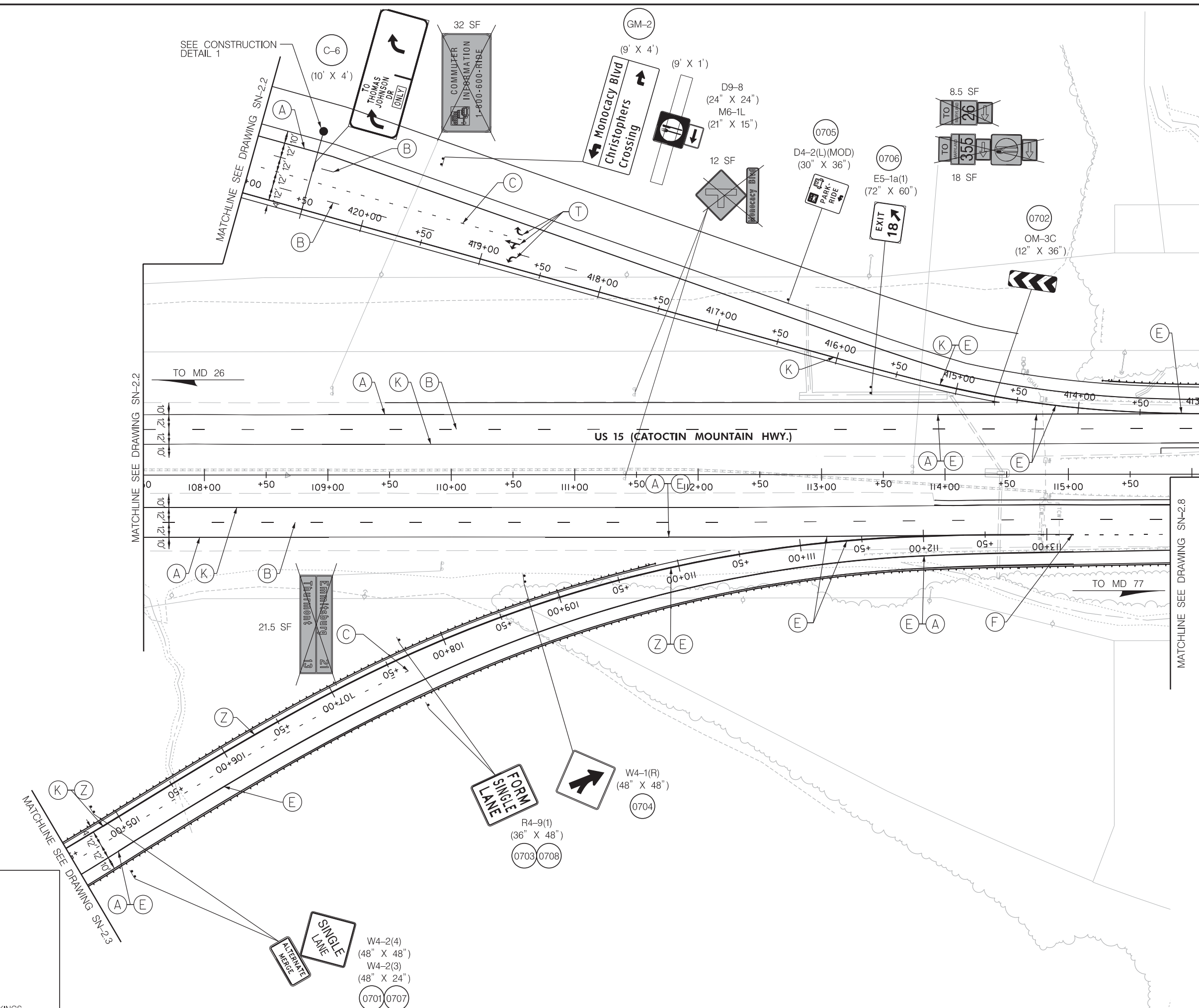
DRILL HOLES
DRILL HOLES



GENERAL NOTES:

1. WOOD SUPPORTS INSTALLED IN CONCRETE SHALL BE INSTALLED WITH SLEEVED FOUNDATIONS AS PER STANDARDS MD812.05-01 AND MD812.05-02.
2. ALL EXISTING SIGNS SHALL REMAIN UNLESS NOTED ON THE PLAN.
3. PAVEMENT MARKING LANE WIDTHS ARE MEASURED FROM THE CENTER OF THE PAVEMENT MARKING.
4. ALL PREFORMED PATTERNED REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS SHALL BE INLAID.
5. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH ADMINISTRATION STANDARDS.
6. THE CONTRACTOR SHALL INSTALL PLOWABLE RAISED PAVEMENT MARKINGS IN ACCORDANCE WITH THE MDMUTCD AND MARYLAND BOOK OF STANDARDS.
7. ALL CROSSWALK AND STOP LINE PAVEMENT MARKINGS SHALL BE INSTALLED PER THE SIGNAL PLANS UNLESS NOTED ON THESE PLANS.
8. RAMP ADVISORY SPEEDS TO BE DETERMINED AT A LATER DATE IN TIME.

PAVEMENT MARKING LEGEND

(A) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(B) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(C) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(D) 5" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(E) 10" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(F) 10" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(G) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
(H) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
(J) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
(K) 5" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(L) 4" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(M) 4" BROKEN (10' LINE, 30' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(N) 4" DOTTED (3' LINE, 9' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(P) 4" DOTTED (3' LINE, 3' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(Q) 4" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(R) 8" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(S) 10" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
(T) HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEGENDS/SYMBOLS
(U) 12" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR CROSSWALK)
(V) 24" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR STOP LINE)
(W) 15" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(X) 5" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(Y) 5" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
(Z) 10" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS

CONSTRUCTION DETAILS:

1. INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH A 60 FT. MAST ARM WITH SHEET ALUMINUM SIGN. CENTER THE SIGN OVER THE 2 RIGHT TURN LANES. CUT THE MAST ARM FROM 60 FT. TO 38 FT. CLEAN, GALVANIZE AND CAP THE MAST ARM.

SIGNING LEGEND

PROPOSED SIGN	PROPOSED OVERHEAD (OH) STRUCTURE AND SIGN
EXISTING SIGN AND SUPPORT TO REMAIN	PROPOSED CANTILEVER (C) STRUCTURE AND SIGN
EXISTING SIGN TO BE REMOVED	PROPOSED GROUND MOUNTED (GM) SIGN
	EXISTING GROUND MOUNTED SIGN
	SIGN NUMBER

PARSONS BRINCKERHOFF
100 S. Charles Street
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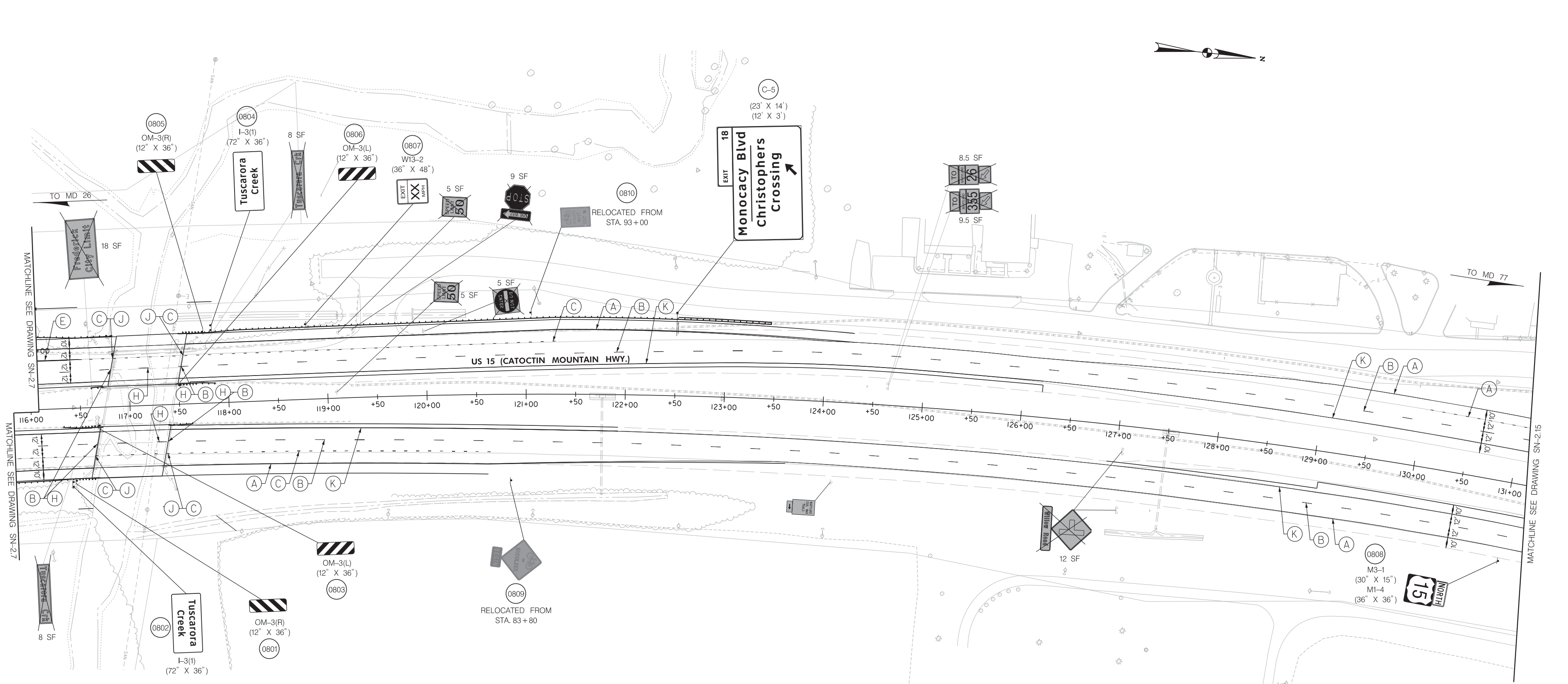
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

SIGNING AND MARKING PLAN

SCALE 1" = 50' DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-2.7 OF 2.19 SHEET NO. 465 OF 532



PAVEMENT MARKING LEGEND

- (A) 5" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (B) 5" BROKEN (10' LINE, 30' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (C) 5" DOTTED (3' LINE, 9' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (D) 5" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (E) 10" SOLID WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
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- (K) 5" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (L) 4" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (M) 4" BROKEN (10' LINE, 30' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (N) 4" DOTTED (3' LINE, 9' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (P) 4" DOTTED (3' LINE, 3' GAP) WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Q) 4" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (R) 8" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (S) 10" DOTTED (3' LINE, 3' GAP) WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS
- (T) HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEGENDS/SYMBOLS
- (U) 12" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR CROSSWALK)
- (V) 24" SOLID WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR STOP LINE)
- (W) 15" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (X) 5" SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Y) 5" SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (Z) 10" SOLID YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKINGS

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8. RAMP ADVISORY SPEEDS TO BE DETERMINED AT A LATER DATE IN TIME.

SIGNING LEGEND

SPEED LIMIT 50	PROPOSED SIGN
SPEED LIMIT 50	EXISTING SIGN AND SUPPORT TO REMAIN
SPEED LIMIT 50	EXISTING SIGN TO BE REMOVED
	PROPOSED OVERHEAD (OH) STRUCTURE AND SIGN
	PROPOSED CANTILEVER (C) STRUCTURE AND SIGN
	PROPOSED GROUND MOUNTED (GM) SIGN
	EXISTING GROUND MOUNTED SIGN
###	SIGN NUMBER

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US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

REVISIONS

SIGNING AND MARKING PLAN

SCALE 1" = 50' DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

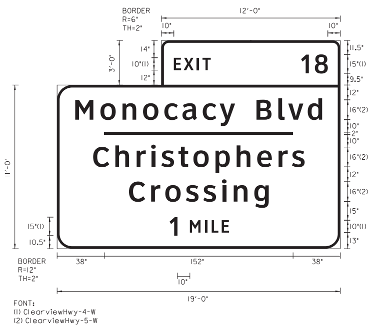
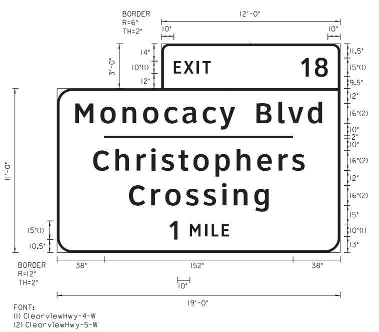
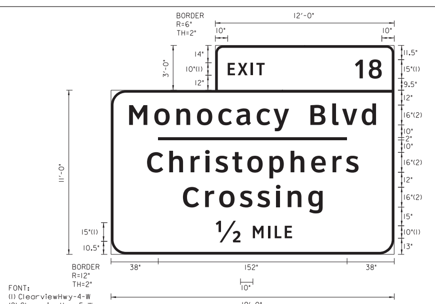
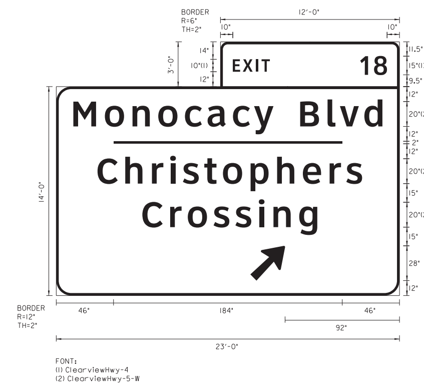
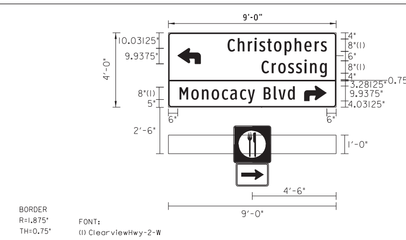
DRAWING SN-2.8 OF 2.19 SHEET NO. 466 OF 532

PLOTTED: Sunday, February 09, 2014 AT 10:43 AM
FILE: T:\173124A-TrafficDesignServices\TRF\100\Plans\gSN-P008_US15.dgn

BORDER REV. DATE: June 1, 2004

BY: Kurgansky -

DRILL HOLES
DRILL HOLES
DRILL HOLES

PANEL DESIGNATION	SHEET NO.	QUANTITY	LEGEND	AREA	WIDTH	HEIGHT	LEGEND	BCKGRND	BORDER WIDTH	BORDER RADIUS	ARROW	SHIELD	REMARKS
C-3	SN-2.17	1		36 SF	12'	3'	W	G	2"	6"	-	-	EXTRUDED ALUMINUM
				209 SF	19'	11'	W	G	2"	12"	-	-	EXTRUDED ALUMINUM
TS-1	SN-2.12	1		36 SF	12'	3'	W	G	2"	6"	-	-	EXTRUDED ALUMINUM
				209 SF	19'	11'	W	G	2"	12"	-	-	EXTRUDED ALUMINUM THIS DETAIL IS FOR THE TEMPORARY GROUND MOUNTED SIGN IN THE CASE THAT FR5715170 IS COMPLETED BEFORE FR5785178
C-1 C-4	SN-2.14 SN-2.15	2		36 SF	12'	3'	W	G	2"	6"	-	-	EXTRUDED ALUMINUM
				209 SF	19'	11'	W	G	2"	12"	-	-	EXTRUDED ALUMINUM
C-2 C-5	SN-2.5 SN-2.8	2		36 SF	12'	3'	W	G	2"	6"	-	-	EXTRUDED ALUMINUM
				322 SF	23'	14'	W	G	2"	12"	A-3 @ 45°	-	EXTRUDED ALUMINUM
GM-1	SN-2.6	1		36 SF	9'	4'	W	G	3/4"	1 7/8"	ARROWDET-2 @ 0°, 180°	-	EXTRUDED ALUMINUM
				9 SF	9'	1'	-	BLU	-	-	-	D9-8 24" X 24" M6-1R 21" X 15"	EXTRUDED ALUMINUM

LEGEND & BACKGROUND COLORS: BLK=BLACK, BLU=BLUE, BRO=BROWN, G=GREEN, R=RED, W=WHITE/SILVER, FLY=FLUORESCENT YELLOW

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MONOCACY BOULEVARD INTERCHANGE

SIGNING DETAIL SHEET

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY JEK — COUNTY FREDERICK
DRAWN BY JEK — LOGMILE 15.8-18
CHECKED BY KMP — TIMS NO. K420
F.A.P. NO. SEE TITLE SHEET — TOD NO.

DRAWING SN-3.1 OF 3.3 — SHEET NO. 478 OF 532

REVISIONS

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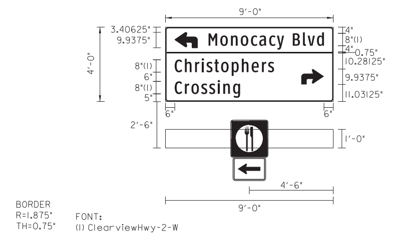
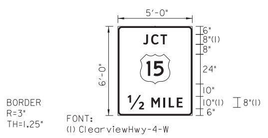
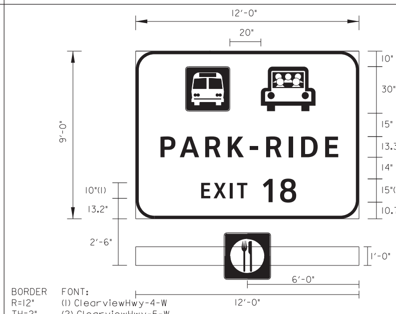
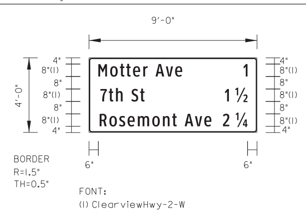
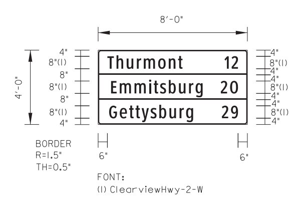
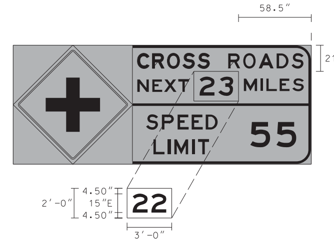
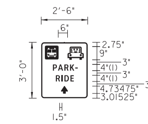
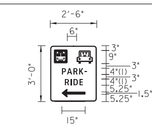
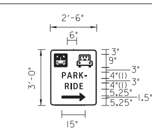
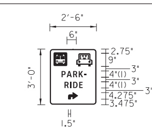
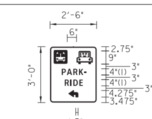
PLOTTED: Sunday, February 09, 2014 AT 10:47 AM
FILE: T:\173124A-TrafficDesignServices\TRF\100\Plans\pSN-D001_US15.dgn
BORDER REV. DATE: June 1, 2004
BY: Kurgansky –

DRILL HOLES DRILL HOLES DRILL HOLES

PANEL DESIGNATION	SHEET NO.	QUANTITY	LEGEND	SIZE: AREA	SIZE: WIDTH	SIZE: HEIGHT	COLOR: LEGEND	COLOR: BCKGRND	BORDER: WIDTH	BORDER: RADIUS	ARROW	SHIELD	REMARKS
GM-2	SN-2.7	1		36 SF	9'	4'	W	G	3/4"	1-7/8"	ARROWDET-2 @ 0°, 180°	-	EXTRUDED ALUMINUM
				9 SF	9'	1'	-	BLU	-	-	-	D9-8 24" X 24" M6-1L 21" X 15"	EXTRUDED ALUMINUM
GM-3 GM-4	SN-2.10 SN-2.11	2		30 SF	5'	6'	W	G	1.25"	3"	-	M1-4 24"x24"	EXTRUDED ALUMINUM
GM-5 GM-8	SN-2.13 SN-2.16	2		108 SF	12'	9'	W	G	2"	12"	-	I-6 30"X30" PARK-RIDE 30"X30"	EXTRUDED ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)
				12 SF	12'	1'	-	BLU	-	-	-	D9-8 30" X 30"	EXTRUDED ALUMINUM
GM-6	SN-2.14	1		36 SF	9'	4'	W	G	0.5"	1.5"	-	-	EXTRUDED ALUMINUM
GM-7	SN-2.16	1		32 SF	8'	4'	W	G	0.5"	1.5"	-	-	SHEET ALUMINUM

PANEL DESIGNATION	SHEET NO.	QUANTITY	LEGEND	SIZE: AREA	SIZE: WIDTH	SIZE: HEIGHT	COLOR: LEGEND	COLOR: BCKGRND	BORDER: WIDTH	BORDER: RADIUS	ARROW	SHIELD	REMARKS
GM-9	SN-2.15	1											RELOCATED EXISTING SIGN
				6 SF	3'	2'	BLK	FLY	-	-	-	-	SHEET ALUMINUM OVERLAY
0216	SN-2.2	2		7.5 SF	2.5'	3'	W	G	0.75"	1.875"	ARROWDET-1	I-6 9"X9" PARK-RIDE 9"X9"	SHEET ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)
0317 0318	SN-2.3 SN-2.3	2		7.5 SF	2.5'	3'	W	G	0.75"	1.875"	TYPE D	I-6 9"X9" PARK-RIDE 9"X9"	SHEET ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)
0401	SN-2.4	1		7.5 SF	2.5'	3'	W	G	0.75"	1.875"	TYPE D	I-6 9"X9" PARK-RIDE 9"X9"	SHEET ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)
0607	SN-2.6	1		7.5 SF	2.5'	3'	W	G	0.75"	1.875"	ARROWDET-2(R)	I-6 9"X9" PARK-RIDE 9"X9"	SHEET ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)
0705	SN-2.7	1		7.5 SF	2.5'	3'	W	G	0.75"	1.875"	ARROWDET-2(L)	I-6 9"X9" PARK-RIDE 9"X9"	SHEET ALUMINUM (FOR PARK-RIDE LOGO REFER TO THE APPENDIX-GRID SECTION FROM FHWA'S STANDARD HIGHWAY SIGNS BOOK-APPENDIX SECTION)

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SIGNING DETAIL SHEET

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-3.2 OF 3.3 SHEET NO. 479 OF 532

GUIDE SIGN STEEL SUPPORT CHART

SIGN NO.	SIGN SIZE (WXH)	EXIT/AUX. PANELS	SHEET NO.	POST SIZE	*BW OR NBW	SUPPORT L - 1	SUPPORT L - 2	SUPPORT L - 3	LATERAL CLEARANCE OFFSET	LATERAL CLEARANCE OBJECT **	SUPPORT SPACING FROM LEFT EDGE OF SIGN	C TO C OF SUPPORTS
GM-1	9'x4'	9'x1'	SN-2.6	W6x16	NBW	15'-9"	17'-4"	-	6'	W	1',8'	7'
GM-2	9'x4'	9'x1'	SN-2.7	W6x16	BW	15'-10"	17'-5"	-	6'	ES	1',8'	7'
GM-3	5'x6'	-	SN-2.10	W6x9	BW	12'-10"	12'-10"	-	3'-6"	CM	0'-6",4'-6"	4'
GM-4	5'x6'	-	SN-2.11	W6x9	BW	12'-8"	12'-8"	-	4'-6"	CM	0'-6",4'-6"	4'
GM-5	12'x9'	12'x1'	SN-2.13	W10x22	BW	21'-0"	19'-7"	-	15'	ES	2'-5",9'-7"	7'-2"
GM-6	9'x4'	-	SN-2.14	W6x9	NBW	11'-6"	11'-0"	-	15'	ES	1',8'	7'
GM-8	12'x9'	12'x1'	SN-2.16	W10x22	BW	21'-10"	21'-10"	-	10'	ES	2'-5",9'-7"	7'-2"
GM-9	20'x8'	-	SN-2.15	W8x18	BW	16'-4"	13'-7"	-	15'	ES	4',16'	12'
0608	6'x5'	-	SN-2.6	W6x9	BW	14'-8"	15'-6"	-	13'-0"	CG	0'-6",5'-6"	5'
0706	6'x5'	-	SN-2.7	W6x9	BW	12'-11"	12'-6"	-	6'	ES	0'-6",5'-6"	5'

* BW = BREAKAWAY NBW = NON-BREAKAWAY

NOTES:
1. THE CONTRACTOR SHALL VERIFY THE FINAL FOUNDATION TYPE TO BE USED SO THAT THE FOUNDATION DOES NOT EXCEED A 4" PROJECTION ABOVE THE GROUND.
2. ALL NON-BREAKAWAY FOUNDATIONS SHALL BE TYPE A

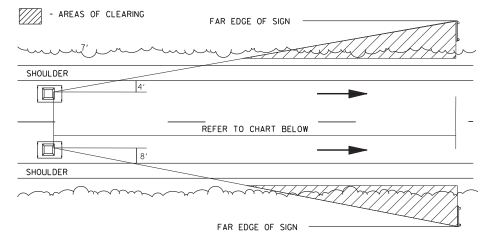
GUIDE SIGN WOOD SUPPORT CHART

SIGN NO.	SIGN SIZE (WXH)	SHEET NO.	POST SIZE	*BW OR NBW	SUPPORT L - 1	SUPPORT L - 2	SUPPORT L - 3	LATERAL CLEARANCE OFFSET	LATERAL CLEARANCE OBJECT **	SUPPORT SPACING FROM LEFT EDGE OF SIGN
0802	6'x3'	SN-2.8	4"x6"	NBW	17'-5"	18'-2"	-	6'	W	0'-6",5'-6"
0804	6'x3'	SN-2.8	4"x6"	NBW	17'-2"	17'-11"	-	6'	W	0'-6",5'-6"
GM-7	8'x4'	SN-2.16	6"x6"	BW	19'-3"	20'-6"	-	10'	ES	0'-6",7'-6"

* BW = BREAKAWAY NBW = NON-BREAKAWAY

NOTE: SEE MARYLAND STANDARDS 812.01, 812.04, AND 813.02 FOR WARNING AND REGULATORY SIGN INSTALLATION

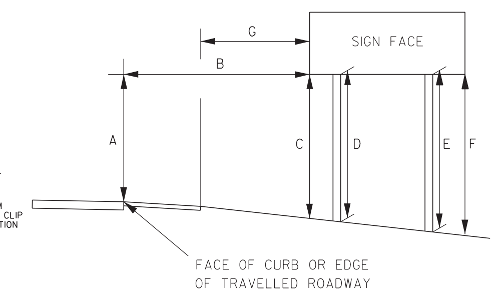
FOLIAGE CLEARING FOR SIGN INSTALLATIONS



Acceptable Viewing Distance for Sign

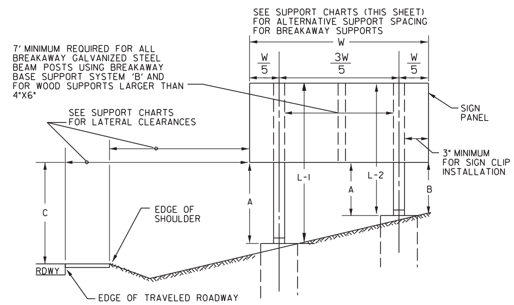
Copy Size	Distance
20" u.c.	1000 ft
16" u.c.	800 ft
13.3" u.c.	675 ft
10.67" u.c.	550 ft

SIGN STAKEOUT DIMENSIONS



NOTE: SEE SECTION 802 IN THE CONTRACT DOCUMENTS FOR SIGN STAKEOUT LOCATIONS.

SIGN CLEARANCE



VERTICAL CLEARANCE OF SIGNS

A. 7'6" MINIMUM FOR BREAKAWAY SUPPORTS OR 5'-0" FOR NON-BREAKAWAY SUPPORTS.
B. 2.0' MINIMUM
C. 7'6" MINIMUM & PREFERABLE, THIS DIMENSION IS TO BE INCREASED ONLY WHEN REQUIRED TO MEET A = 7'-6" FOR BREAKAWAY OR A (MIN.) = 5'-0" FOR NON-BREAKAWAY AND B (MIN) = 2'-0"
ALL DIMENSIONS ARE TO BOTTOM OF SIGN

•TOTAL WEIGHT BELOW THE HINGES SHOULD BE LESS THAN 600 POUNDS

LATERAL CLEARANCE

SEE SUPPORT CHARTS

STEEL BREAKAWAY SUPPORT FOUNDATION SELECTION MATRIX

POST SIZE	FOUNDATION DIAMETER	ROADWAY CUT / FILL SLOPE ≥2:1	3:1	4:1	5:1	6:1	7:1	8:1	9:1	10:1	12:1	≤13:1
W6x9	30"	*	C	C	C	C	B	B	B	A	A	A
W6x12 or TS 5"X5"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W6x15 or TS 6"X6"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W8x18	30"	*	C	C	C	C	B	B	B	A	A	A
W8x21 or TS 7"X7"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W10x22 or TS 8"X8"X5/16"	36"	*	*	C	C	C	C	B	B	B	A	A
W10x26	36"	*	*	C	C	C	C	B	B	B	A	A
W12x26	36"	*	*	C	C	C	C	B	B	B	A	A
W14x30	36"	*	*	C	C	C	C	B	B	B	A	A
W16x31	36"	*	*	C	C	C	C	B	B	B	A	A
W18x35 or W18x40	36"	*	*	C	C	C	C	B	B	B	A	A
W21x44	42"	*	*	C	C	C	C	C	B	B	B	A

* IF A FOUNDATION EXCEEDS THE 4" AASHTO CRITERIA, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR APPROPRIATE GUIDANCE.

SEE MARYLAND STANDARD DRAWINGS FOR FOUNDATION DETAILS:

TYPE A = STANDARD MD 801.04
TYPE B = STANDARD MD 801.04-01
TYPE C = STANDARD MD 801.04-02

STEEL POST BREAKAWAY SYSTEM SELECTION CHART

SYSTEM TYPE	ASSOCIATED POST SIZE
A16	W6X9
B525	TS 5"X5"X1/4", TS 6"X6"X1/4", W6X12, W6X15, W8X18, W8X21
B650	7"X7" & 8"X8" SQUARE AND ALL I-BEAMS LARGER THAN W8X21

**OBJECT CODES

W = FACE OF W-BEAM TRAFFIC BARRIER
FOC = FACE OF CURB
ES = EDGE OF SHOULDER
ETR = EDGE OF TRAVELED ROADWAY
CM = CENTERED IN MEDIAN
CG = CENTERED IN GORE (6' MINIMUM FROM EDGE OF PAVEMENT)

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TRAFFIC ENGINEERING DESIGN DIVISION
US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

REVISIONS

GUIDE SIGN SUPPORT DETAILS

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

DESIGNED BY JEK COUNTY FREDERICK
DRAWN BY JEK LOGMILE 15.8-18
CHECKED BY KMP TIMS NO. K420
F.A.P. NO. SEE TITLE SHEET TOD NO.

DRAWING SN-4.1 OF 4.1 SHEET NO. 481 OF 532

PLOTTED: Sunday, February 09, 2014 AT 10:48 AM
FILE: T:\173124A-TrafficDesignServices\TRF\100\Plans\pSN-4001_US15.dgn

SN-4 REV. DATE: July 21, 2009 BORDER REV. DATE: June 1, 2004

DRILL HOLES DRILL HOLES DRILL HOLES

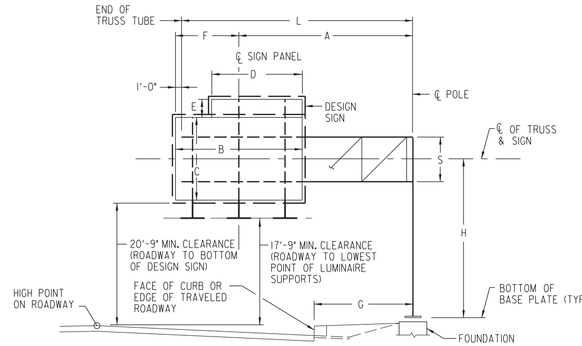
BY: Kurgansky -

CANTILEVER SIGN SUPPORT – SINGLE PANEL

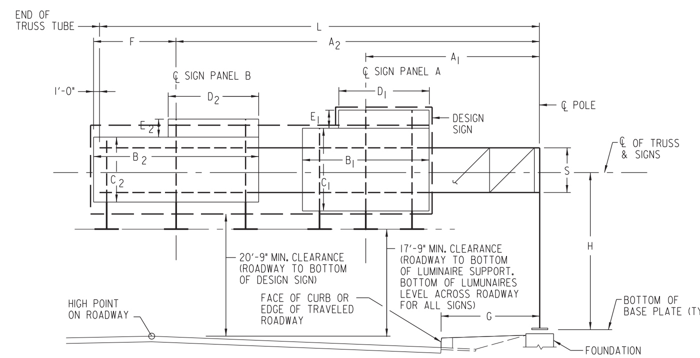
SIGN STRUCTURE NO.	STRUCTURE MARK	STRUCTURE DIMENSIONS			SIGN PANEL							DESIGN SIGN SIZE W x H	FOUNDATION			LOCATION	REMARKS
		H	S	L	A	B	C	D	E	F	G		MARK	TYPE	C.Y. CONC.		
C-1	C-35-32-C	31'-6"	4'-0"	35'-0"	26'-6"	19'-0"	11'-0"	12'-0"	3'-0"	9'-6"	17'-0"	22' (W) X 16' (H) + *	CF-20	A	14.4	NB US 15 APPROX. STA. 65+40	
C-2	C-35-32-E	30'-10"	6'-0"	32'-10"	22'-4"	23'-0"	14'-0"	12'-0"	3'-0"	11'-6"	17'-0"	26' (W) X 16' (H) + *	CF-22	A	15.0	NB US 15 APPROX. STA. 85+45	
C-3	C-35-32-C	30'-11"	4'-0"	35'-0"	26'-6"	19'-0"	11'-0"	12'-0"	3'-0"	9'-6"	17'-0"	22' (W) X 16' (H) + *	CF-20	A	14.4	SB US 15 APPROX. STA. 164+60	
C-4	C-35-32-C	30'-10"	4'-0"	35'-0"	26'-6"	19'-0"	11'-0"	12'-0"	3'-0"	9'-6"	17'-0"	22' (W) X 161' (H) + *	CF-20	A	14.4	SB US 15 APPROX. STA. 141+95	
C-5	C-40-32-E	29'-5"	6'-0"	39'-0"	28'-5"	23'-0"	14'-0"	12'-0"	3'-0"	11'-6"	17'-0"	26' (W) X 16' (H) + *	CF-22	A	15.0	SB US 15 APPROX. STA. 407+45	

CANTILEVER SIGN SUPPORT – DOUBLE PANEL

SIGN STRUCTURE NO.	STRUCTURE MARK	STRUCTURE DIMENSIONS			SIGN PANEL												DESIGN SIGN SIZE W x H	FOUNDATION			LOCATION	REMARKS
					PANEL A					PANEL B												
		H	S	L	A_1	B_1	C_1	D_1	E_1	A_2	B_2	C_2	D_2	E_2	F	G		MARK	TYPE	C.Y. CONC.		



ELEVATION OF CANTILEVER SIGN SUPPORT – SINGLE PANEL
DIRECTION OF TRAFFIC



ELEVATION OF CANTILEVER SIGN SUPPORT – DOUBLE PANEL
DIRECTION OF TRAFFIC

GENERAL NOTES:

1. REFER TO CONTRACT PROPOSAL AND MD. STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS FOR MATERIAL, CONSTRUCTION SPECIFICATIONS AND DETAILS.
2. REFER TO ROADWAY LIGHTING PLANS FOR LIGHTING CHARTS.
3. ANY ALTERNATE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND SUBJECT TO APPROVAL BY THE ENGINEER.
4. ALL ALTERNATE DESIGNS MUST BE SIMILAR TO THE DESIGN SHOWN ON THE PLANS.
5. ALTERNATE DESIGNS MAY BE REJECTED BY THE ENGINEER FOR ANY REASON, INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY.
6. ACTUAL STRUCTURE HEIGHT "H" SHALL NOT BE LESS THAN 20'-9" + 1/2 x DESIGN SIGN HEIGHT + ELEVATION DIFFERENCE BETWEEN HIGH POINT OF ROADWAY AND TOP OF FOUNDATION.
7. ALL SIGN STRUCTURE SUPPORTS SHALL BE LOCATED BEHIND PHYSICAL TRAFFIC BARRIERS.
8. ALL ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF F1554, GRADE 55 SI.
9. STEEL TEMPLATES SHALL BE USED TO SET ANCHOR BOLTS PLUMB WHEN POURING THE FOUNDATION.
10. ALL ANCHOR BOLTS SHALL BE PLUMB AFTER FOUNDATION INSTALLATION.
11. ALL CONNECTION BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A325 (BOLTS OVER 1 1/2" DIA. ASTM A449), WASHERS F436 AND NUTS A194 GRADE 2 OR 2H. THE BOLTS SHALL HAVE A FLAT WASHER UNDER THE ELEMENT TO BE TURNED.
12. USE LOCK NUTS AND FLAT WASHERS FOR ALL "U" BOLTS (A307 OR EQUIVALENT).
13. BASE PLATE SHALL BE IN FULL CONTACT WITH ALL FLAT WASHERS.
14. GROUT SHALL NOT BE PLACED BETWEEN THE BASE PLATE AND CONCRETE TOP.
15. FOR ALL STRUCTURAL DETAILS, SEE STANDARDS NO. MD-803.04 THRU. MD-803.08-23.

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TRAFFIC ENGINEERING DESIGN DIVISION
US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

CANTILEVER SIGN STRUCUTRE – ERECTION DETAILS

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170
DESIGNED BY JEK
DRAWN BY JEK
CHECKED BY KMP
F.A.P. NO. SEE TITLE SHEET
COUNTY FREDERICK
LOGMILE 15.8-18
TIMS NO. K420
TOD NO.
DRAWING SN-9 OF 1
SHEET NO. 482 OF 532
PLOTTED: Sunday, February 09, 2014 AT 10:48 AM
FILE: T:\173124A-TrafficDesignServices\TRF\100\Plans\pSN-9_US15.dgn
BORDER REV. DATE: June 1, 2004
BY: Kurgansky –

DRILL HOLES
DRILL HOLES
DRILL HOLES

CODE NUMBERS *

SHEET NO.	REMARKS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
SN-2.1																																			
0101	R4-7 (24" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	5																																	1
0102	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0103	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0104	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0105	W11-2 (30" × 30"); W16-7pL (24" × 12") 2 - 3 LB/FT U-CHANNEL SUPPORTS	8.25																																	2
0106	R4-7 (24" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	5																																	1
0107	R3-17 (24" × 18"); R3-17b MOD. (24" × 8") 1 - 3 LB/FT U-CHANNEL SUPPORT	4.33																																	1
0108	R2-1 (24" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	5																																	1
0109	R2-1 (24" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	5																																	1
0110	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0111	R3-17 (24" × 18"); R3-17b MOD. (24" × 8") 1 - 3 LB/FT U-CHANNEL SUPPORT	4.33																																	1
0112	R3-17 (24" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	3																																	1
0113	R3-7R (30" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	6.25																																	1
0114	R3-7R (30" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	6.25																																	1
0115	R3-17 (24" × 18"); R3-17bP (24" × 8") 1 - 3 LB/FT U-CHANNEL SUPPORT	4.33																																	1
0116	R3-17 (24" × 18"); R3-17bP (24" × 8") 1 - 3 LB/FT U-CHANNEL SUPPORT	4.33																																	1
0117	R3-7R (30" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	6.25																																	1
	PAVEMENT MARKINGS																						294								2625	2665	975	115	
SN-2.2						190																													
0201	R5-1a (36" × 24") 2 - 4" × 4" WOOD SUPPORTS	6						30																											
0202	R6-1(L) (36" × 12"); R6-1(R) (36" × 12"); R5-1 (30" × 30") 1 - 4" × 6" WOOD SUPPORT	12.25							16.5																										
0203	OM1-3 (18" × 18") 1 - 4" × 4" WOOD SUPPORT	2.25						11.5																											
0204	R6-1(L) (36" × 12"); R6-1(R) (36" × 12"); R5-1 (30" × 30") 1 - 4" × 6" WOOD SUPPORT	12.25							16.5																										
0205	M4-5 (24" × 12"); M1-5 (24" × 24"); M5-1(1)(L) (21" × 15"); R5-1a (36" × 24") 1 - 4" × 6" WOOD SUPPORT	14.1875							17																										
0206	W4-2(4) (48" × 48"); W16-2P (30" × 24") 2 - 6" × 6" WOOD SUPPORTS (NBW)	21								40																									
0207	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0208	R4-7 (24" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	5																																	1
0209	OM-3(R) (12" × 36") 1 - 3 LB/FT U-CHANNEL SUPPORT	3																																	1
0210	W4-2(4) (48" × 48"); W16-2P (30" × 24") 2 - 6" × 6" WOOD SUPPORTS (NBW)	21								40																									
0211	R1-2 (36" × 36" × 36")) 1 - 4" × 4" WOOD SUPPORT	4.5						16																											
0212	OM1-3 (18" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	2.25																																	1
0213	W11-2 (30" × 30"); W16-7pL (24" × 12") 2 - 3 LB/FT U-CHANNEL SUPPORTS	8.25																																	2
0214	M3-3 (24" × 12"); M1-4 (24" × 24"); M6-2(R) (21" × 15") 1 - 3 LB/FT U-CHANNEL SUPPORT	8.1875																																	1
0215	R5-10b (30" × 18") 1 - 4" × 4" WOOD SUPPORT	3.125						14.5																					2.2	2					
0216	D4-2(MOD) (30" × 36") 1 - 3 LB/FT U-CHANNEL SUPPORT	7.5																																	1
0217	R3-17 (24" × 18") 1 - 3 LB/FT U-CHANNEL SUPPORT	3																																	1
0218	M3-3 (24" × 12"); M1-4 (24" × 24"); M6-2(R) (21" x15") 2 - 3 LB/FT U-CHANNEL SUPPORTS	8.1875																																	2
0219	R3-7(1)(R) (30" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	6.25																																	1
0220	M3-1 (24" × 12"); M1-4 (24" × 24"); M5-1(L) (21" x15") 2 - 3 LB/FT U-CHANNEL SUPPORTS	8.1875																																	2
0221	R4-4 (36" × 30") 1 - 3 LB/FT U-CHANNEL SUPPORT	7.5																																	1
0222	D3-2(1) (86" × 24") 2 - 4" × 6" WOOD SUPPORT	14.33							31																										
	PAVEMENT MARKINGS														4125	2305	475	75					352			25					3665	2100	395		
	SUBTOTAL THIS SHEET	256.775	0	0	0	190	0	72	81	80	0	0	0	0	4125	2305	475	75	0	0	0	0	646	0	0	25	0	0	2.2	2	6290	4765	1370	115	33

* CODE NUMBER DESCRIPTION & UNIT

CODE NUMBERS	DESCRIPTION	UNIT	CODE NUMBERS	DESCRIPTION	UNIT
1	FURNISH & INSTALL SHEET ALUMINUM GROUND MOUNTED SIGN	S.F.	19	5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
2	FURNISH & INSTALL EXTRUDED ALUMINUM GROUND MOUNTED SIGN	S.F.	20	10 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
3	FURNISH & INSTALL EXTRUDED ALUMINUM OVERHEAD SIGN	S.F.	21	10 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
4	RELOCATE EXISTING GROUND MOUNTED SIGN	S.F.	22	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS LEGENDS/SYMBOLS	S.F.
5	REMOVE EXISTING GROUND MOUNTED SIGN AND SUPPORTS	S.F.	23	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING	L.F.
6	REMOVE EXISTING OVERHEAD SIGN STRUCTURE AND SIGNS AND SUPPORTS	S.F.	24	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING	L.F.
7	FURNISH & INSTALL WOOD SIGN SUPPORTS 4"x4"	L.F.	25	SNOWPLOWABLE RAISED PAVEMENT MARKINGS	E.A.
8	FURNISH & INSTALL WOOD SIGN SUPPORTS 4"x6"	L.F.	26	OVERHEAD SIGN STRUCTURE	E.A.
9	FURNISH & INSTALL WOOD SIGN SUPPORTS 6"x6"	L.F.	27	CANTILEVER SIGN STRUCTURE	E.A.
10	FURNISH & INSTALL STEEL SIGN SUPPORTS W6x9	L.F.	28	CONCRETE FOR SIGN FOUNDATION	C.Y.
11	FURNISH & INSTALL STEEL SIGN SUPPORTS W6x16	L.F.	29	BREAKAWAY BASE SUPPORT FOR STEEL BEAMS	E.A.
12	FURNISH & INSTALL STEEL SIGN SUPPORTS W8x18	L.F.	30	4 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
13	FURNISH & INSTALL STEEL SIGN SUPPORTS W10x22	L.F.	31	4 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F
14	5 INCH WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKING	L.F.	32	8 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
15	5 INCH YELLOW PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKING	L.F.	33	15 IN YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.
16	10 INCH WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE PAVEMENT MARKING	L.F.	34	3 LB/FT U-CHANNEL SIGN SUPPORT	E.A.
17	5 INCH WHITE PERMANENT PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKING	L.F.			
18	5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS	L.F.			

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TRAFFIC ENGINEERING DESIGN DIVISION

US 15 (CATOCTIN MOUNTAIN HIGHWAY)
MONOCACY BOULEVARD INTERCHANGE

INDEX OF QUANTITES

SCALE N.T.S. DATE FEBRUARY 10, 2014 CONTRACT NO. FR5715170

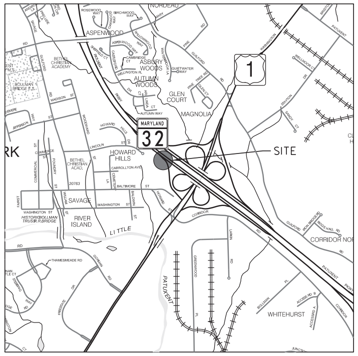
DESIGNED BY	JEK	COUNTY	FREDERICK
DRAWN BY	JEK	LOGMILE	15.8-18
CHECKED BY	KMP	TIMS NO.	K420
F.A.P. NO.	SEE TITLE SHEET	TOD NO.	

DRAWING SN-11.1 OF 11.4 SHEET NO. 483 OF 532

PLOTTED: Sunday, February 09, 2014 AT 10:49 AM
FILE: T:\173124A-TrafficDesignServices\TRF\100\Plans\pSN-1101_US15.dgn

PROJECT DESCRIPTION

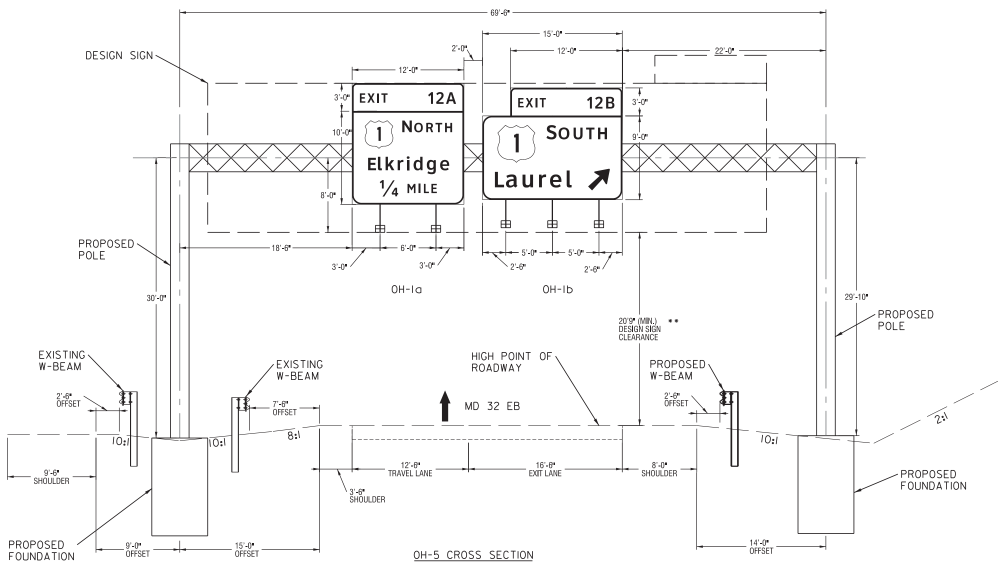
THIS PROJECT WILL REPLACE THE EXISTING OVERHEAD SIGN STRUCTURE #13067 ALONG MD 32 (PATUXENT FWY) EASTBOUND AT THE CD RAMP TO US 1 (WASHINGTON BLVD) AND WILL UPGRADE THE EXISTING EXIT DIRECTION SIGNING. MD 32 AT US 1 IS LOCATED IN HOWARD COUNTY.



PROJECT LOCATION

B. EQUIPMENT TO BE FURNISHED BY CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EA	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
6001	2 EA	REMOVE EXISTING END TREATMENT
6006	440 LF	TRAFFIC BARRIER W BEAM USING 6 FOOT POST
6007	20 EA	TRAFFIC BARRIER W BEAM 6 FOOT POST
6010	2 EA	TYPE C TRAFFIC BARRIER END TREATMENT
6011	1 EA	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION
8001	69.6 CY	CONCRETE FOUNDATION - OVERHEAD SIGN STRUCTURES
8006	1 EA	BOX TRUSS OVERHEAD SIGN STRUCTURE, 60' TO 80'
8009	2 EA	CONCRETE TESTING
8014	110 LF	1 INCH RIGID STEEL CONDUIT, SCHEDULE 80
8016	500 LF	CABLE-1 CONDUCTOR, NO 4 AWG, TYPE THHN/THWN, 600V
8018	185 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCH-BORED
8019	115 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCH-TRENCHED
8020	327 SF	EXTRUDED ALUMINUM SIGN & ALL HARDWARE, TYPE IX ON TYPE IX OR GREATER
8022	15 UD	PROTECTION VEHICLE - TRUCK MOUNTED ATTENUATOR
8023	130 LF	NO. 4 AWG STRANDED BARE COPPER GROUND WIRE
8025	1 EA	REMOVE EXISTING OVERHEAD STRUCTURE AND SIGNS AND SUPPORTS
8029	1 EA	FURNISH AND INSTALL ELECTRICAL MANHOLE
8030	750 LF	CABLE - 1 CONDUCTOR NO. 10 AWG, TYPE THWN/THHN, 600V
8031	25 LF	1 INCH LIQUID DIAMETER FLEXIBLE STEEL CONDUIT LIQUID TIGHT
8032	8 EA	CONNECTOR KIT - TYPE I
8033	4 EA	CONNECTOR KIT - TYPE II
8036	2 EA	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH
NEG	5 EA	LED LUMINAIRE
NEG	4 EA	W BEAM BARRIER REFLECTIVE DELINEATORS
NEG	970 LF	DISCONNECT, PULL-BACK & REROUTE CABLES

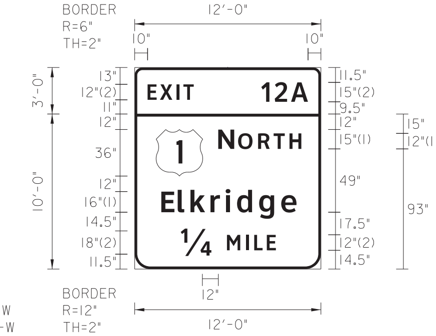


OH-5 CROSS SECTION

MD 32 EB - 95' WEST OF EXISTING STRUCTURE NO. 13067

(N.T.S.)

REPLACES EXISTING SIGN STRUCTURE #13067
DESIGN SIGN: 60'(W) X 16'(H) + 12'(W) X 3'(H) EP
SPAN LENGTH: 69'-6"
STRUCTURE MARK: OH-80-32B
FOOTING MARK: OF-625
(*DIMENSION ASSUMED)
(**THIS DIMENSION ACCOUNTS FOR THE 17'-9" MIN. CLEARANCE REQUIRED TO BOTTOM OF LUMINAIRE)

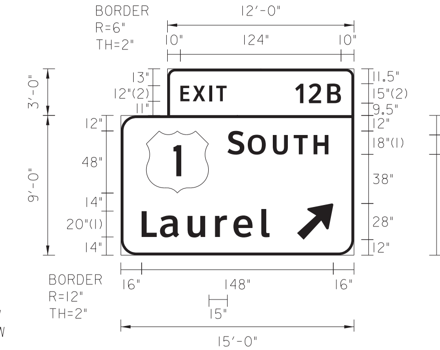


FONT:
(1) ClearviewHwy-5-W
(2) ClearviewHwy-4-W

OH-1a SIGN DETAILS CHART

PANEL NO.	QUANTITY	AREA (SF)	WIDTH	HEIGHT	COLOR		BORDER		ARROW	SHIELD	REMARKS
					LEG.	BKGD	WIDTH	RADIUS			
OH-5a	1	120	12'-0"	10'-0"	W	G	2"	12"	---	M1-4 (36"x36")	EXTRUDED PANEL
	1	36	12'-0"	3'-0"	W	G	2"	6"	---	---	EXTRUDED PANEL

COLORS: BLK=BLACK; BLU=BLUE; BRO=BROWN; G=GREEN; OR=ORANGE; R=RED; W=WHITE; FY=FLUORESCENT YELLOW



FONT:
(1) ClearviewHwy-5-W
(2) ClearviewHwy-4-W

OH-1b SIGN DETAILS CHART

PANEL NO.	QUANTITY	AREA (SF)	WIDTH	HEIGHT	COLOR		BORDER		ARROW	SHIELD	REMARKS
					LEG.	BKGD	WIDTH	RADIUS			
OH-5b	1	135	15'-0"	9'-0"	W	G	2"	12"	A-3 @ 45°	M1-4 (48"x48")	EXTRUDED PANEL
	1	36	12'-0"	3'-0"	W	G	2"	6"	---	---	EXTRUDED PANEL

COLORS: BLK=BLACK; BLU=BLUE; BRO=BROWN; G=GREEN; OR=ORANGE; R=RED; W=WHITE; FY=FLUORESCENT YELLOW

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

MD 32 (PATUXENT FWY) AT US 1 (WASHINGTON BLVD) SIGNING
OVERHEAD SIGN STRUCTURE NO. 03067 REPLACEMENT
JESSUP, MD

APPROVALS: TEAM LEADER / ASST. DIV. CHIEF / DIVISION CHIEF / OFFICE DIRECTOR

REVISIONS

PROJECT INFORMATION AND QUANTITIES

SCALE N.T.S. DATE JANUARY 2014 CONTRACT NO. XY1445185

DESIGNED BY EML COUNTY HOWARD
DRAWN BY EML LOGMILE 13003201.50
CHECKED BY LFW TIMS NO. M383
F.A.P. NO. TOD NO.

DRAWING SN-2.1 OF 2 SHEET NO. 1 OF 3

PLOTTED: Monday, February 17, 2014 AT 05:16 PM
FILE: T:\173124A-TrafficDesignServices\TRF\168\Plans\pSN-2.1.dgn

BORDER REV. DATE: June 1, 2004

BY: littleton -

DRILL HOLES
DRILL HOLES
DRILL HOLES

CONSTRUCTION DETAILS

A. INSTALL OVERHEAD SIGN STRUCTURE OH-5 WITH PROPOSED SIGNS, LUMINAIRES AND SUPPORTS.
B. REMOVE EXISTING OVERHEAD SIGN STRUCTURE, SIGNS, LUMINAIRES, AND SUPPORTS. REMOVE BOTH FOUNDATIONS 12 IN. BELOW GRADE AND BACKFILL.
C. INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - BORED WITH 4-1 CONDUCTOR #4 AWG AND 1-NO. 4 AWG STRANDED BARE COPPER GROUND WIRE REROUTED FROM EXISTING MANHOLE TO PROPOSED MANHOLE.
D. USE EXISTING ELECTRICAL MANHOLE. PULL BACK EXISTING CABLES FROM STRUCTURE NO. 13067 AND REROUTE TO PROPOSED MANHOLE. EXISTING CONNECTOR KITS AND CABLE TO EXISTING LIGHT POLES TO REMAIN.
E. ABANDON EXISTING CONDUIT FOR EXISTING STRUCTURE NO. 13067.
F. INSTALL (4) TYPE II CONNECTOR KITS IN PROPOSED OVERHEAD SIGN STRUCTURE POLE WITH 4-1 CONDUCTOR NO. 10 AWG TYPE THWN/THHN.
G. INSTALL SINGLE FACED TRAFFIC BARRIER W-BEAM PER STD. NOS. MD 605.21, 605.22, AND 605.23. INSTALL TRAFFIC BARRIER W-BEAM DELINEATORS AS PER STD. NOS. MD 656.03 AND MD 656.04.
H. TIE PROPOSED TRAFFIC BARRIER INTO EXISTING TRAFFIC BARRIER.
J. INSTALL TYPE K TRAFFIC BARRIER END TREATMENT AS PER STD NOS. MD 605.10, MD 605.10-01, AND MD 605.10-02.
K. INSTALL TYPE C TRAFFIC BARRIER END TREATMENT AS PER STD NOS. MD 605.02-01 AND 605.03.
L. REMOVE EXISTING END TREATMENT.
M. INSTALL 4 IN. SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED WITH 4-1 CONDUCTOR #4 AWG AND 1-NO. 4 AWG STRANDED BARE COPPER GROUND WIRE FROM PROPOSED MANHOLE TO PROPOSED OVERHEAD SIGN STRUCTURE.
N. INSTALL ELECTRICAL MANHOLE WITH FOUR (4) TYPE I CONNECTOR KITS.
P. DOUBLE POST EXISTING W-BEAM BEGINNING 25' IN ADVANCE OF PROPOSED SIGN STRUCTURE FOUNDATION AND CONTINUING TO THE END OF THE FOUNDATION.

GENERAL NOTES

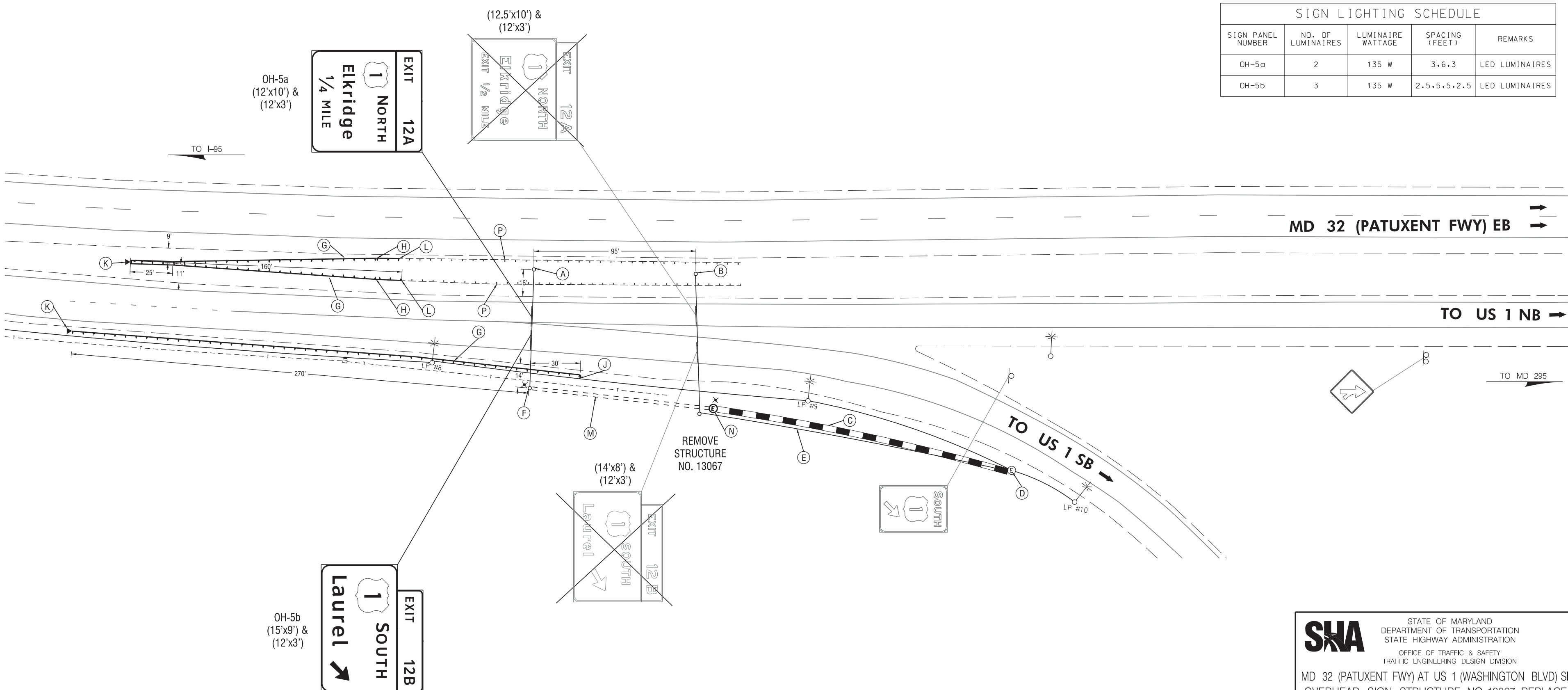
1. AT A MINIMUM, THE FOLLOWING MDSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS ARE RECOMMENDED FOR THE WORK SHOWN ON THIS PLAN: MD 104.05-18 AND MD 104.05-19.
2. SINGLE LANE CLOSURES AND SHOULDER WORK ALONG MD 32 AND RAMP GORE WORK ALONG THE CD ROAD SHALL BE PERMITTED MONDAY THROUGH FRIDAY BETWEEN 10:00 AM AND 3:00 PM.
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 SIGN STRUCTURE WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
4. PROPOSED LUMINAIRES SHALL BE WIRED IN ALTERNATING CIRCUITS SO THAT NO TWO ADJACENT LUMINAIRES ARE ON THE SAME CIRCUIT.
5. THE CONTRACTOR SHALL INVENTORY THE OPERATING CONDITION OF EXISTING LIGHTS AND CIRCUITS PRIOR TO BEGINNING ANY WORK.

SIGNING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	
	EXISTING OVERHEAD SIGN AND SUPPORTS		EXISTING LIGHTING STRUCTURE
	PROPOSED CANTILEVER SIGN AND SUPPORT	Ⓔ	EXISTING ELECTRICAL MANHOLE
	EXISTING GROUND MOUNTED SIGN AND SUPPORT(S)	Ⓔ	PROPOSED ELECTRICAL MANHOLE
	PROPOSED GROUND MOUNTED SIGN AND SUPPORT(S)		EXISTING CABLE RUN
	EXISTING SIGN TO REMAIN		EXISTING TRAFFIC BARRIER W-BEAM
	EXISTING SIGN TO BE REMOVED		PROPOSED TRAFFIC BARRIER W-BEAM
	PROPOSED SIGN TO BE INSTALLED	+	PROPOSED GROUND ROD
	TRAFFIC FLOW ARROW		

SIGN LIGHTING SCHEDULE

SIGN PANEL NUMBER	NO. OF LUMINAIRES	LUMINAIRE WATTAGE	SPACING (FEET)	REMARKS
OH-5a	2	135 W	3,6,3	LED LUMINAIRES
OH-5b	3	135 W	2.5,5,5,2.5	LED LUMINAIRES



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MD 32 (PATUXENT FWY) AT US 1 (WASHINGTON BLVD) SIGNING
OVERHEAD SIGN STRUCTURE NO. 13067 REPLACEMENT
JESSUP, MD

REVISIONS

SIGNING ELECTRICAL AND STRUCTURE PLAN

SCALE 1" = 30' DATE JANUARY 2014 CONTRACT NO. XY1445185

DESIGNED BY EML COUNTY HOWARD
DRAWN BY EML LOGMILE 13003201.50
CHECKED BY LFW TIMS NO. M383
F.A.P. NO. TOD NO.

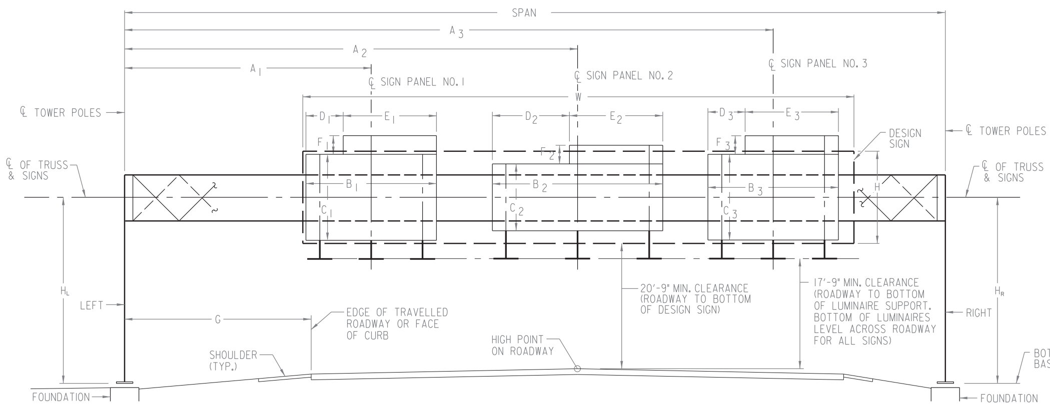
DRAWING SN-2.2 OF 2 SHEET NO. 2 OF 3

PLOTTED: Monday, February 17, 2014 AT 04:33 PM
FILE: T:\173124A-TrafficDesignServices\TRF\168\Plans\pSN-2.2.dgn

BORDER REV. DATE: June 1, 2004

BY: littleton -

DRILL HOLES
DRILL HOLES
DRILL HOLES



ELEVATION OF OVERHEAD SIGN STRUCTURE
DIRECTION OF TRAFFIC

OVERHEAD SIGN STRUCTURE

SIGN STRUCTURE NO.	STRUCTURE MARK	SPAN	SIGN PANEL LOCATIONS																		TOWER DIMENSION			DESIGN SIGN SIZE W x H	FOUNDATION			C.Y. CONC.	LOCATION	REMARKS
			PANEL NO. 1						PANEL NO. 2						PANEL NO. 3										MARK	FOOTING TYPE				
			A_1	B_1	C_1	D_1	E_1	F_1	A_2	B_2	C_2	D_2	E_2	F_2	A_3	B_3	C_3	D_3	E_3	F_3	H_L	H_R	G			LEFT TOWER	RIGHT TOWER			
OH-5	OH-80-32B	69'-6"	24'6"	12'	10'	0'	12'	3'	40'	15'	9'	3'	12'	3'	-	-	-	-	-	-	30'-0" TO EB	29'10"	18'-6"	60'x16' + 12'x3' EP	OF-625	A	A	69.6	MD 32 EB AT US 1	REPLACES STR. #13067

GENERAL NOTES:

1. REFER TO CONTRACT PROPOSAL AND MD. STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS FOR MATERIAL, CONSTRUCTION SPECIFICATIONS AND DETAILS.
2. REFER TO SIGNING PLANS FOR LIGHTING CHARTS.
3. ANY ALTERNATE DESIGN SHALL BE STRUCTURALLY EQUIVALENT AND SUBJECT TO APPROVAL BY THE ENGINEER.
4. ALL ALTERNATE DESIGNS MUST BE SIMILAR TO THE DESIGN SHOWN ON THE PLANS.
5. ALTERNATE DESIGNS MAY BE REJECTED BY THE ENGINEER FOR ANY REASON, INCLUDING REASONS NOT RELATED TO STRUCTURAL EQUIVALENCY.
6. ACTUAL STRUCTURE HEIGHT "H" SHALL NOT BE LESS THAN 20'-9" + 1/2 x DESIGN SIGN HEIGHT ± ELEVATION DIFFERENCE BETWEEN HIGH POINT OF ROADWAY AND TOP OF FOUNDATION.
7. ALL SIGN SUPPORTS SHALL BE LOCATED BEHIND PHYSICAL TRAFFIC BARRIERS.
8. ALL ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF F1554, GRADE 55 SI.
9. STEEL TEMPLATES SHALL BE USED TO SET ANCHOR BOLTS PLUMB WHEN POURING THE FOUNDATION.
10. ALL ANCHOR BOLTS SHALL BE PLUMB AFTER FOUNDATION INSTALLATION.
11. ALL CONNECTION BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A325 (BOLTS OVER 1 1/2" DIA. ASTM A449), WASHERS F436 AND NUTS A194 GRADE 2 OR 2H. THE BOLTS SHALL HAVE A FLAT WASHER UNDER THE ELEMENT TO BE TURNED.
12. USE LOCK NUTS AND FLAT WASHERS FOR ALL "U" BOLTS (A307 OR EQUIVALENT).
13. BASE PLATE SHALL BE IN FULL CONTACT WITH ALL FLAT WASHERS.
14. GROUT SHALL NOT BE PLACED BETWEEN THE BASE PLATE AND CONCRETE TOP.
15. FOR ALL STRUCTURAL DETAILS, SINGLE SPAN LENGTHS UP TO 140 FEET, SEE STANDARDS NO. MD-803.04 THRU. MD-803.08-23.

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TRAFFIC ENGINEERING DESIGN DIVISION

MD 32 (PATUXENT FWY) AT US 1 (WASHINGTON BLVD) SIGNING
OVERHEAD SIGN STRUCTURE NO. 13067 REPLACEMENT
JESSUP, MD

REVISIONS

OVERHEAD SIGN STRUCTURE – DETAILS

SCALE N.T.S. DATE JANUARY 2014 CONTRACT NO. XY1445185

DESIGNED BY EML — COUNTY HOWARD
DRAWN BY EML — LOGMILE 13003201.50
CHECKED BY LFW — TIMS NO. M383
F.A.P. NO. — TOD NO.

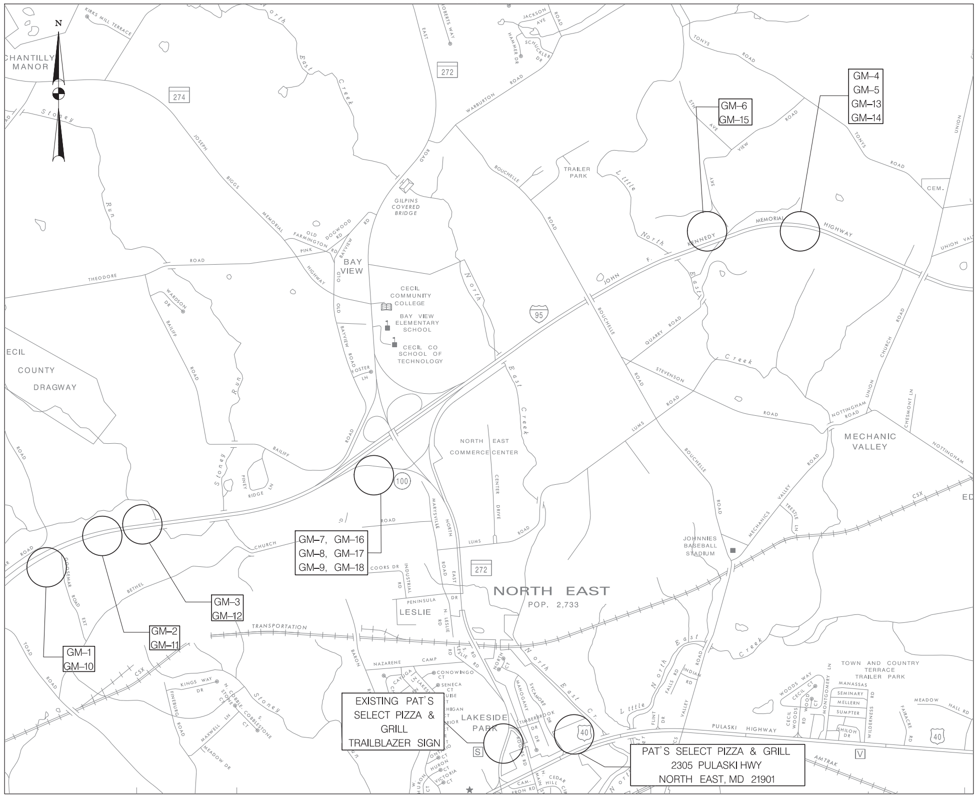
DRAWING SN-08.1 OF 1 — SHEET NO. 3 OF 3

PLOTTED: Monday, February 17, 2014 AT 03:26 PM
FILE: T:\173124A-TrafficDesignServices\TRF\168\Plans\pSN-08.dgn

BORDER REV. DATE: June 1, 2004
DRILL HOLES
DRILL HOLES
DRILL HOLES
BY: littleton -

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF SPECIFIC SERVICE SIGNING FOR PAT'S SELECT PIZZA & GRILL AT I-95 AND MD 272 (EXIT 100) IN CECIL COUNTY, MARYLAND.



PROJECT LOCATION:
I-95 at MD 272 (EXIT 100)
NOT TO SCALE

GENERAL NOTES:

1. PAT'S SELECT PIZZA & GRILL VENDOR LOGO SIGN PANELS TO BE FABRICATED BY VENDOR. THE LOGO PANELS WILL BE DELIVERED TO MARYLAND STATE HIGHWAY SIGN OPERATIONS. THE LOGO SIGN PANELS ARE TO BE INSTALLED ON PROPOSED SIGN PANELS BY CONTRACTOR AS SHOWN. CONTACT MR. SONNY BAILEY AT (410)787-7676 TO ARRANGE PICKUP.
2. EXISTING HOLIDAY INN EXPRESS, COMFORT INN, BEST WESTERN INN & SUITES, WOODY'S CRAB HOUSE, BURGER KING, MCDONALD'S, DUNKIN DONUTS, DENNY'S, WAFFLE HOUSE, WENDY'S, PAT'S SELECT PIZZA & GRILL, SUNOCO, FLYING J, AND HIGH'S LOGO SIGN PANELS ARE TO BE REUSED AND RELOCATED BY CONTRACTOR TO NEW SIGN AND SUPPORTS AT NEW LOCATION AS SHOWN.
3. IN THE EVENT THAT EXISTING SIGN PANELS CANNOT BE REUSED AND RELOCATED; VENDOR LOGOS TO BE PROVIDED BY VENDORS. THESE LOGO SIGN PANEL DESIGNS WILL BE DELIVERED TO MARYLAND STATE HIGHWAY SIGN OPERATIONS. THE LOGO SIGN PANELS ARE TO BE INSTALLED ON PROPOSED SIGN PANELS BY CONTRACTOR AS SHOWN. CONTACT MR. SONNY BAILEY AT (410)787-7676 AT ARRANGE PICKUP.
4. THE SIGN SHOP SHALL CONTACT MR. DAVID MAY AT (410)787-7607 AT THE TRAFFIC DEVELOPMENT AND SUPPORT DIVISION (TDSD) AT THE OFFICE OF TRAFFIC AND SAFETY (OOTS) UPON COMPLETION OF THE PROJECT SO THE LOGO DATABASE CAN BE UPDATED.
5. SIGN MESSAGE DETAILS ARE ON SHEET AW-5, AW-6, AW-7, AW-8, AND AW-9 OF THIS PLAN SET.
6. SIGN SUPPORT DETAILS ARE ON SHEET AW-10 OF THIS PLAN SET.
7. THE CONTRACTOR SHALL ATTEMPT TO BUILD SIGN SUPPORTS PER PLAN. SHOULD THE CONTRACTOR EXPERIENCE ROCK CONDITIONS IN THE FIELD, THEY SHALL CONTACT THE PROJECT ENGINEER FOR TOD TO DISCUSS THE USE OF SPREAD FOOTER SIGN FOUNDATIONS.
8. THE CONTRACTOR IS RESPONSIBLE TO VERIFYING ALL EXISTING CONDITIONS IN THE FIELD, INCLUDING UTILITY CONFLICTS, PRIOR TO CONSTRUCTION.
9. UNDERGROUND 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 SIGNS WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
10. THE CONTRACTOR SHALL BE AWARE OF WORKING WITHIN MDTA RIGHT OF WAY IN AND AROUND THE I-95 CORRIDOR. WORK PERMITS AS WELL AS TRAFFIC CONTROL PERMITS MAY NEED TO BE OBTAINED FROM MDTA. CONTACT MDTA TRAFFIC MANAGER AT 410-537-7848 AND THE FACILITY ADMINISTRATOR AT 410-537-1101 3 WEEKS PRIOR TO THE START OF CONSTRUCTION. ACCEPTABLE LANE CLOSURE HOURS WILL BE DETERMINED BY MDTA.
11. ALL OVERLAY BORDERS, WORDS AND ARROWS SHALL BE ASSEMBLED AT THE FABRICATOR AND DELIVERED TO THE FIELD LOCATION FULLY ASSEMBLED AND FABRICATED. ONLY THE LOGOS SHALL BE FIELD INSTALLED. OVERLAY ARROWS, BORDERS AND WORDS WILL BE MEASURED AND PAID FOR USING THE SHEET ALUMINUM SIGN ITEMS PER SQUARE FOOT.

T3 design
T3 DESIGN CORP
10340 DEMOCRACY LN
SUITE 305
FAIRFAX, VA 22030
PHONE: 703-359-5861
www.t3design.us

BY: atimm -

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY ADMINISTRATION (SHA)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
9000	SHEET ALUMINUM SIGNS 1 EA PAT'S SELECT PIZZA & GRILL" LOGO (60" X 36")	15	SF

B. EQUIPMENT TO BE FURNISHED BY CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1006	PROTECTION VEHICLE	24	UD
6007	TRAFFIC BARRIER W BEAM USING 6 FOOT POST	488	LF
6016	TYPE C TRAFFIC BARRIER END TREATMENT	2	EA
6020	TYPE K TRAFFIC BARRIER END TREATMENT, ANY OPTION	1	EA
6021	SHOULDER GRADING ADJUSTMENT FOR TRAFFIC BARRIER END TREATMENT	10	CY
6022	REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	125	LF
6023	REMOVE EXISTING END TREATMENT	1	EA
6024	W BEAM BARRIER REFLECTIVE DELINEATORS	5	EA
8013	EXTRUDED ALUMINUM SIGN AND ALL HARDWARE, TYPE IX OR GREATER	1,573	SF
8015	SHEET ALUMINUM SIGN AND ALL HARDWARE, TYPE IX OR GREATER	154	SF
8016	CONCRETE FOUNDATION FOR GROUND MOUNTED SIGNS	36	CY
8021	INSTALL SHEET ALUMINUM SIGN	15	SF
8024	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS	1,389	SF
8044	RELOCATE EXISTING GROUND MOUNTED SIGNS	458	SF
8046	BREAKAWAY BASE SUPPORT SYSTEM 'B' FOR STEEL BEAMS AND STEEL TUBING SUPPORTS	6	EA
8067	GALVANIZED STEEL BEAMS (W10X26)	93	LF
8068	GALVANIZED STEEL BEAMS (W14X30)	100	LF
8069	GALVANIZED STEEL BEAMS (W18X40)	106	LF

C. EQUIPMENT TO BE RETURNED TO THE ADMINISTRATION (SHA)
NONE

SIGN NUMBER	SIGN DESIGNATION	POST	1	2	3	4	5	6	7	8	9	10	11
GM-1	INSTALL GROUND MOUNTED SIGN	USE EXISTING	1	195	24.7				75				
GM-2	INSTALL GROUND MOUNTED SIGN	2 – W14x30	2	182	10.5	5.8			90			47.5	
GM-3	INSTALL GROUND MOUNTED SIGN	2 – W14x30	2	195	12.2	5.8			45			52.3	
GM-4	INSTALL GROUND MOUNTED SIGN	2 – W18X40	2	234	39.4	7	15		60	2			53.5
GM-5	INSTALL GROUND MOUNTED SIGN	2 – W10X26	2	182	11	4.8			90	2	45.3		
GM-6	INSTALL GROUND MOUNTED SIGN	2 – W18X40	2	234	24.2	7			45				52.5
GM-7	INSTALL GROUND MOUNTED SIGN	USE EXISTING	1	117	13.7				18.8				
GM-8	INSTALL GROUND MOUNTED SIGN	2 – W10X26	2	117	11	4.8			22.5	2	47.1		
GM-9	INSTALL GROUND MOUNTED SIGN	USE EXISTING	1	117	6.5				11.3				
GM-10	REMOVE GROUND MOUNTED SIGN		1					182					
GM-11	REMOVE GROUND MOUNTED SIGN		1					182					
GM-12	REMOVE GROUND MOUNTED SIGN		1					150					
GM-13	REMOVE GROUND MOUNTED SIGN		1					182					
GM-14	REMOVE GROUND MOUNTED SIGN		1					182					
GM-15	REMOVE GROUND MOUNTED SIGN		1					169					
GM-16	REMOVE GROUND MOUNTED SIGN		1					117					
GM-17	REMOVE GROUND MOUNTED SIGN		1					117					
GM-18	REMOVE GROUND MOUNTED SIGN		1					108					
	TOTALS		24	1,573	154	36	15	1,389	458	6	93	100	106

ITEM NO.	DESCRIPTION	UNIT
1	PROTECTION VEHICLE	UD
2	EXTRUDED ALUMINUM SIGN AND ALL HARDWARE, TYPE IX OR GREATER	SF
3	SHEET ALUMINUM SIGN AND ALL HARDWARE, TYPE IX OR GREATER	SF
4	CONCRETE FOUNDATION FOR GROUND MOUNTED SIGNS	CY
5	INSTALL SHEET ALUMINUM SIGN	SF
6	REMOVE EXISTING GROUND MOUNTED SIGNS AND SUPPORTS	SF
7	RELOCATE EXISTING GROUND MOUNTED SIGNS	SF
8	BREAKAWAY BASE SUPPORT SYSTEM 'B' FOR STEEL BEAMS AND STEEL TUBING SUPPORTS	EA
9	GALVANIZED STEEL BEAMS (W10X26)	LF
10	GALVANIZED STEEL BEAMS (W14X30)	LF
11	GALVANIZED STEEL BEAMS (W18X40)	LF

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OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

SPECIFIC SERVICE SIGNING FOR I-95 AT MD 272 (EXIT 100)

NORTH EAST, MD

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

GENERAL NOTES AND QUANTITIES

SCALE NONE DATE SEPTEMBER, 2016 CONTRACT NO. XY1705185

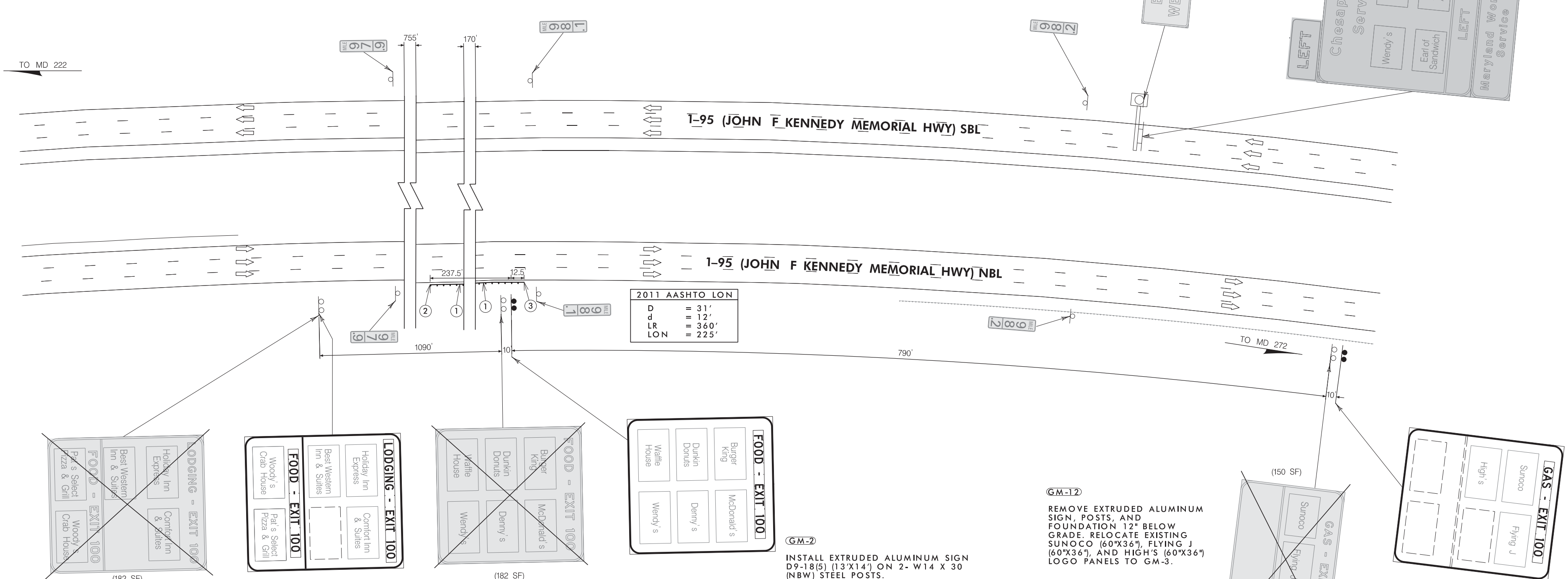
DESIGNED BY	MG	COUNTY	CECIL
DRAWN BY	MG	LOGMILE	MULTIPLE
CHECKED BY	SJW	T.I.M.S. NO.	N509
F.A.P. NO.		TOD NO.	

DRAWING NO. AW- 1 OF 10 SHEET NO. 1 OF 10

PLOTTED: Friday, September 09, 2016 AT 10:33 AM
FILE: Y:\0732-299-16 I-95 at MD 272 logo signing\CADD\pSN-P001_I-95 AT MD272.dgn

CONSTRUCTION NOTES

1. INSTALL PROPOSED W-BEAM TRAFFIC BARRIER AS PER MD STD. NO.'S 605.21, 605.22, AND 605.23. INSTALL TRAFFIC BARRIER DELINEATORS PER MD. STD. NO.'S 665.01-665.04.
2. INSTALL PROPOSED TYPE C END TREATMENT AS PER MD STD NO. 605.03. PROVIDE SHOULDER GRADING AS NECCESARY.
3. INSTALL PROPOSED TYPE K END TREATMENT AS PER MD STD NO. 605.10. PROVIDE SHOULDER GRADING AS NECESSARY.



GM-10

REMOVE EXTRUDED ALUMINUM SIGN. POSTS TO REMAIN. RELOCATE EXISTING HOLIDAY INN EXPRESS (60"X36"), COMFORT INN & SUITES (60"X36"), AND BEST WESTERN INN & SUITES (60"X36"), WOODY'S CRAB HOUSE (60"X36"), AND PAT'S SELECT PIZZA & GRILL (60"X36")LOGO PANELS TO GM-1.

GM-1

INSTALL EXTRUDED ALUMINUM SIGN D9-18(6) (13'X15'). USE EXISTING W14X30 SUPPORTS, INSTALL NEW SIGN 6" ABOVE BREAKAWAY HINGE VERTICALLY CENTERED ON EXISTING SUPPORTS (SEE NOTE 1). INSTALL RELOCATED EXISTING HOLIDAY INN EXPRESS (60"X36"), COMFORT INN & SUITES (60"X36"), BEST WESTERN INN & SUITES (60"X36"), WOODY'S CRAB HOUSE (60"X36"), AND PAT'S SELECT PIZZA & GRILL (60"X36") LOGO PANEL FROM GM-10.

GM-11

REMOVE EXTRUDED ALUMINUM SIGN, POSTS, AND FOUNDATION 12" BELOW GRADE. RELOCATE EXISTING BURGER KING (60"X36"), MCDONALD'S (60"X36"), DUNKIN DONUTS (60"X36"), DENNY'S (60"X36"), WAFFLE HOUSE (60"X36"), AND WENDY'S (60"X36") LOGO PANELS TO GM-2.

GM-2

INSTALL EXTRUDED ALUMINUM SIGN D9-18(5) (13'X14') ON 2- W14 X 30 (NBW) STEEL POSTS. INSTALL LEFT EDGE OF SIGN 6' FROM THE FACE OF PROPOSED W-BEAM BARRIER. INSTALL RELOCATED EXISTING BURGER KING (60"X36"), MCDONALD'S (60"X36"), DUNKIN DONUTS (60"X36"), DENNY'S (60"X36"), WAFFLE HOUSE (60"X36"), AND WENDY'S (60"X36") LOGO PANELS FROM GM-11.

GM-12

REMOVE EXTRUDED ALUMINUM SIGN, POSTS, AND FOUNDATION 12" BELOW GRADE. RELOCATE EXISTING SUNOCO (60"X36"), FLYING J (60"X36"), AND HIGH'S (60"X36") LOGO PANELS TO GM-3.

GM-3

INSTALL EXTRUDED ALUMINUM SIGN D9-18(6) (13'X15') ON 2- W14 X 30 (NBW) STEEL POSTS. INSTALL LEFT EDGE OF SIGN 6.5' FROM THE FACE OF W-BEAM. INSTALL RELOCATED EXISTING SUNOCO (60"X36"), FLYING J (60"X36"), AND HIGH'S (60"X36") LOGO PANELS FROM GM-12.

NOTE 1: PROPOSED LOGO SIGN SHALL BE MOUNTED ON THE EXISTING W-BEAM SUPPORTS PER STD. MD 813.05. ALL SIGN MOUNTING ITEMS AND ALUMINUM ANGLES REQUIRED ARE INCIDENTAL TO THE COST OF THE EXTRUDED ALUMINUM SIGN PANEL.

SIGN LEGEND

- PROPOSED GROUND MOUNTED SIGN
- EXISTING GROUND MOUNTED SIGN
- EXISTING SIGN TO REMAIN
- EXISTING SIGN TO BE REMOVED
- SIGN PROPOSED UNDER SEPERATE CONTRACT
- PROPOSED SIGN
- EXISTING CANTILEVER STRUCTURE
- TRAFFIC FLOW ARROW

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

SPECIFIC SERVICE SIGNING FOR I-95 AT MD 272 (EXIT 100)

NORTH EAST, MD

REVISIONS

SPECIFIC SERVICE SIGNING PLAN

SCALE 1" = 50'	DATE SEPTEMBER, 2016	CONTRACT NO. XY1705185	
DESIGNED BY MG		COUNTY CECIL	
DRAWN BY MG		LOGMILE 07009507.28	
CHECKED BY SJW		T.I.M.S. NO. N509	
F.A.P. NO.		TOD NO.	
DRAWING NO. AW- 2 OF 10		SHEET NO. 2 OF 10	

PLOTTED: Friday, September 09, 2016 AT 10:33 AM
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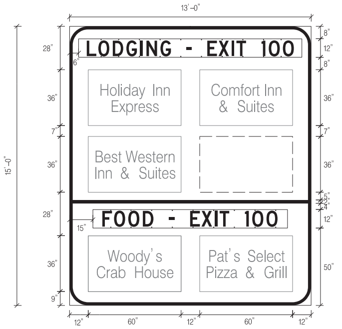
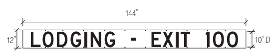
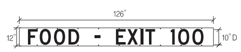
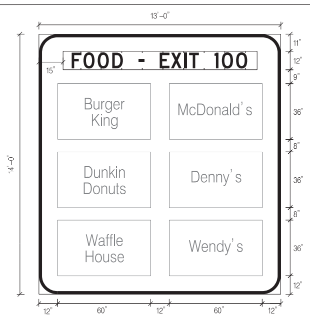
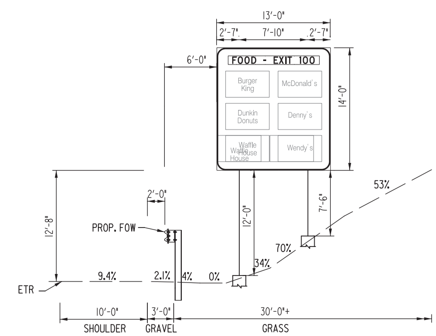
BY: atimm -

PANEL DESIGNATION	SHEET NO.	QUANTITY	LEGEND	SIZE AREA	SIZE WIDTH	SIZE HEIGHT	COLOR LEGEND	COLOR BCKGRND	BORDER WIDTH	BORDER RADIUS	ARROW	SHIELD	REMARKS
GM-1	AW-2	1		195	13'-0"	15'-0"	W	BLU	2"	12"	-	HOLIDAY INN EXPRESS (60"X36") (RELOCATED) COMFORT INN & SUITES (60"X36") (RELOCATED) BEST WESTERN INN & SUITES (60"X36") (RELOCATED) WOODY'S CRAB HOUSE (60"X36") (RELOCATED) PATS SELECT PIZZA & GRILL (60"X36") (RELOCATED) LODGING - EXIT 100, FOOD - EXIT 100, & DIVIDER BAR TO BE OVERLAY PANELS	EXTRUDED ALUMINUM D9-18(6) OL-1, OL-2, AND OL-3 TO BE INSTALLED BY FABRICATOR.
OL-1	AW-2	1		12	12'-0"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-1 WITH 1/8" ALUM. POP RIVETS
OL-2	AW-2	2		10.5	10'-6"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-1 AND GM-2 WITH 1/8" ALUM. POP RIVETS
OL-3	AW-2, AW-3, AW-4	5		2.17	13'-0"	0'-2"	W	-	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-1, GM-3, (2) GM-4, & GM-6 WITH 1/8" ALUM. POP RIVETS
GM-2	AW-2	1		182	13'-0"	14'-0"	W	BLU	2"	12"	-	BURGER KING (60"X36") (RELOCATED) MCDONALD'S (60"X36") (RELOCATED) DUNKIN' DONUTS (60"X36") (RELOCATED) DENNY'S (60"X36") (RELOCATED) WAFFLE HOUSE (60"X36") (RELOCATED) WENDY'S (60"X36") (RELOCATED) FOOD - EXIT 100 TO BE OVERLAY PANEL	EXTRUDED ALUMINUM D9-18(5) OL-2 TO BE INSTALLED BY FABRICATOR.

LEGEND & BACKGROUND COLORS: BLK=BLACK, BLU=BLUE, BRO=BROWN, G=GREEN, R=RED, W=WHITE/SILVER, Y=YELLOW



SIGN NO. GM-2
SHEET NO. AW-2
2-W14X30 (NBW)
N.T.S.

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10340 DEMOCRACY LN
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BY: atimm -

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

SPECIFIC SERVICE SIGNING FOR I-95 AT MD 272 (EXIT 100)

NORTH EAST, MD

REVISIONS

SPECIFIC SERVICE SIGN DETAILS

SCALE NONE DATE SEPTEMBER, 2016 CONTRACT NO. XY1705185

DESIGNED BY	MG	COUNTY	CECIL
DRAWN BY	MG	LOGMILE	MULTIPLE
CHECKED BY	SJW	T.I.M.S. NO.	N509
F.A.P. NO.		TOD NO.	

DRAWING NO. AW- 5 OF 10 SHEET NO. 5 OF 10

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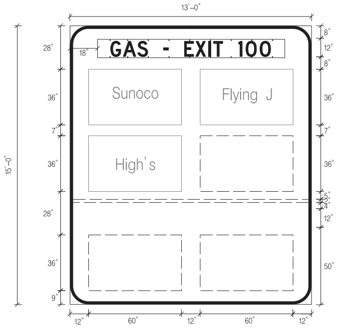
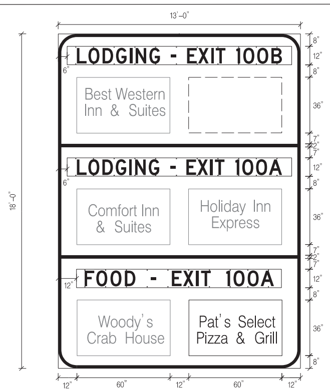
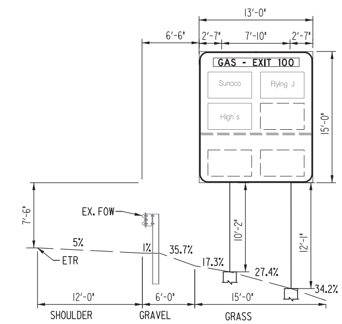
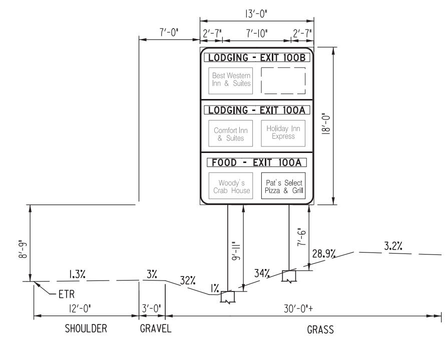
PANEL DESIGNATION	SHEET NO.	QUANTITY	LEGEND	SIZE: AREA	SIZE: WIDTH	SIZE: HEIGHT	COLOR: LEGEND	COLOR: BCKGRND	BORDER: WIDTH	BORDER: RADIUS	ARROW	SHIELD	REMARKS
GM-3	AW-2	1		195	13'-0"	15'-0"	W	BLU	2"	12"	-	SUNOCO (60"X36") (RELOCATED) FLYING J (60"X36") (RELOCATED) HIGH'S (60"X36") (RELOCATED) GAS - EXIT 100 TO BE OVERLAY PANEL	EXTRUDED ALUMINUM D9-18(6) OL-3 AND OL-4 TO BE INSTALLED BY FABRICATOR.
OL-4	AW-2	1	GAS - EXIT 100 (120", 12", 10"D)	10	10'-0"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-3 WITH 1/8" ALUM. POP RIVETS
GM-4	AW-3	1		234	13'-0"	18'-0"	W	BLU	2"	12"	-	BEST WESTERN INN & SUITES (60"X36") (RELOCATED) COMFORT INN & SUITES (60"X36") (RELOCATED) HOLIDAY INN EXPRESS (60"X36") (RELOCATED) WOODY'S CRAB HOUSE (60"X36") (RELOCATED) PAT'S SELECT PIZZA & GRILL (60"X36") (PROPOSED) LODGING - EXIT 100B, LODGING - EXIT 100A, FOOD - EXIT 100A, & DIVIDER BARS TO BE OVERLAY PANELS	EXTRUDED ALUMINUM D9-18(6) MOD OL-3, OL-5, OL-6, AND OL-7 TO BE INSTALLED BY FABRICATOR.
OL-5	AW-3	1	LODGING - EXIT 100B (144", 12", 10"D)	12	12'-0"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-4 WITH 1/8" ALUM. POP RIVETS
OL-6	AW-3	1	LODGING - EXIT 100A (144", 12", 10"D)	12	12'-0"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-4 WITH 1/8" ALUM. POP RIVETS
OL-7	AW-3	2	FOOD - EXIT 100A (132", 12", 10"D)	11	11'-0"	1'-0"	W	BLU	-	-	-	-	0.050" OVERLAY TYPE IX SHEETING FABRICATOR TO INSTALL ON GM-4 AND GM-5 WITH 1/8" ALUM. POP RIVETS

LEGEND & BACKGROUND COLORS: BLK=BLACK, BLU=BLUE, BRO=BROWN, G=GREEN, R=RED, W=WHITE/SILVER, Y=YELLOW



SIGN NO. GM-3
SHEET NO. AW-2
2-W14X30 (NBW)
N.T.S.



SIGN NO. GM-4
SHEET NO. AW-3
2-W18X40 (BW)
N.T.S.

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BY: atimm -

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

SPECIFIC SERVICE SIGNING FOR I-95 AT MD 272 (EXIT 100)

NORTH EAST, MD

REVISIONS

SPECIFIC SERVICE SIGN DETAILS

SCALE NONE DATE SEPTEMBER, 2016 CONTRACT NO. XY1705185

DESIGNED BY MG COUNTY CECIL
DRAWN BY MG LOGMILE MULTIPLE
CHECKED BY SJW T.I.M.S. NO. N509
F.A.P. NO. TOD NO.

DRAWING NO. AW- 6 OF 10 SHEET NO. 6 OF 10

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GUIDE SIGN STEEL SUPPORT CHART

SIGN NO.	SIGN SIZE (WXH)	SHEET NO.	POST SIZE	*BW OR NBW	SUPPORT L - 1	SUPPORT L - 2	SUPPORT L - 3	LATERAL CLEARANCE		SUPPORT SPACING FROM LEFT EDGE OF SIGN	C TO C OF SUPPORTS
								OFFSET	OBJECT **		
GM-2	13'x14'	AW-2	W14X30	NBW	26'-0"	21'-6"	-	6'-0"	FOW	2'-7"; 10'-5"	7'-10"
GM-3	13'x15'	AW-2	W14X30	NBW	25'-2"	27'-1"	-	6'-6"	FOW	2'-7"; 10'-5"	7'-10"
GM-4	13'x18'	AW-3	W18X40	BW	27'-11"	25'-6"	-	7'-0"	ES	2'-7"; 10'-5"	7'-10"
GM-5	13'x14'	AW-3	W10X26	BW	23'-10"	21'-6"	-	10'-6"	FOW	2'-7"; 10'-5"	7'-10"
GM-6	13'x18'	AW-3	W18X40	NBW	28'-11"	23'-6"	-	6'-6"	FOW	2'-7"; 10'-5"	7'-10"
GM-8	9'x13'	AW-4	W10X26	BW	20'-6"	26'-7"	-	14'-0"	ES	0'-9"; 8'-3"	7'-6"

* BW = BREAKAWAY NBW = NON-BREAKAWAY

NOTES:

1. THE CONTRACTOR SHALL VERIFY THE FINAL FOUNDATION TYPE TO BE USED SO THAT THE FOUNDATION DOES NOT EXCEED A 4" PROJECTION ABOVE THE GROUND.
2. ALL NON-BREAKAWAY FOUNDATIONS SHALL BE TYPE A

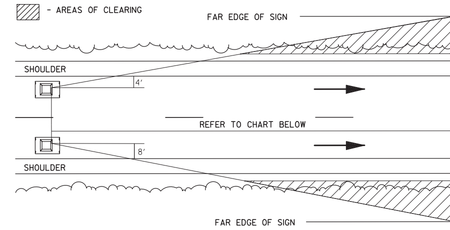
GUIDE SIGN WOOD SUPPORT CHART

SIGN NO.	SIGN SIZE (WXH)	SHEET NO.	POST SIZE	*BW OR NBW	SUPPORT L - 1	SUPPORT L - 2	SUPPORT L - 3	LATERAL CLEARANCE		SUPPORT SPACING FROM LEFT EDGE OF SIGN
								OFFSET	OBJECT **	

* BW = BREAKAWAY NBW = NON-BREAKAWAY

NOTE: SEE MARYLAND STANDARDS 812.01, 812.04, AND 813.02 FOR WARNING AND REGULATORY SIGN INSTALLATION

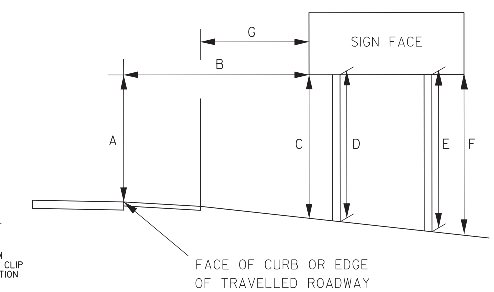
FOLIAGE CLEARING FOR SIGN INSTALLATIONS



Acceptable Viewing Distance for Sign

Copy Size	Distance
20" u.c.	1000 ft
16" u.c.	800 ft
13.3" u.c.	675 ft
10.67" u.c.	550 ft

SIGN STAKEOUT DIMENSIONS



NOTE: SEE SECTION 802 IN THE CONTRACT DOCUMENTS FOR SIGN STAKEOUT LOCATIONS.

STEEL BREAKAWAY SUPPORT FOUNDATION SELECTION MATRIX

POST SIZE	FOUNDATION DIAMETER	ROADWAY CUT / FILL SLOPE										
		≥2:1	3:1	4:1	5:1	6:1	7:1	8:1	9:1	10:1	12:1	≤13:1
W6x9	30"	*	C	C	C	C	B	B	B	A	A	A
W6x12 or TS 5"X5"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W6x15 or TS 6"X6"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W8x18	30"	*	C	C	C	C	B	B	B	A	A	A
W8x21 or TS 7"X7"X1/4"	30"	*	C	C	C	C	B	B	B	A	A	A
W10x22 or TS 8"X8"X5/16"	36"	*	*	C	C	C	C	B	B	B	A	A
W10x26	36"	*	*	C	C	C	C	B	B	B	A	A
W12x26	36"	*	*	C	C	C	C	B	B	B	A	A
W14x30	36"	*	*	C	C	C	C	B	B	B	A	A
W16x31	36"	*	*	C	C	C	C	B	B	B	A	A
W18x35 or W18x40	36"	*	*	C	C	C	C	B	B	B	A	A
W21x44	42"	*	*	C	C	C	C	C	B	B	B	A

* IF A FOUNDATION EXCEEDS THE 4" AASHTO CRITERIA, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR APPROPRIATE GUIDANCE.

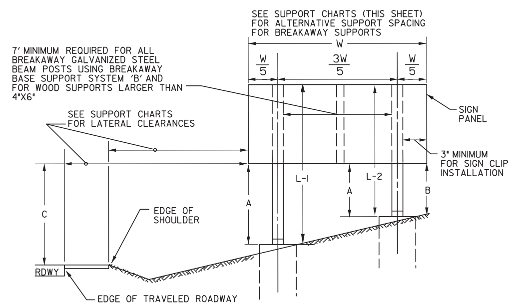
SEE MARYLAND STANDARD DRAWINGS FOR FOUNDATION DETAILS:

TYPE A = STANDARD MD 801.04
TYPE B = STANDARD MD 801.04-01
TYPE C = STANDARD MD 801.04-02

STEEL POST BREAKAWAY SYSTEM SELECTION CHART

SYSTEM TYPE	ASSOCIATED POST SIZE
A16	W6X9
B525	TS 5"X5"X1/4", TS 6"X6"X1/4", W6X12, W6X15, W8X18, W8X21
B650	7"X7" & 8"X8" SQUARE AND ALL I-BEAMS LARGER THAN W8X21

SIGN CLEARANCE



VERTICAL CLEARANCE OF SIGNS

A. 7'6" MINIMUM FOR BREAKAWAY SUPPORTS OR 5'-0" FOR NON-BREAKAWAY SUPPORTS.
B. 2.0' MINIMUM
C. 7'6" MINIMUM & PREFERABLE. THIS DIMENSION IS TO BE INCREASED ONLY WHEN REQUIRED TO MEET A = 7'-6" FOR BREAKAWAY OR A (MIN.) = 5'-0" FOR NON-BREAKAWAY AND B (MIN) = 2'-0"
ALL DIMENSIONS ARE TO BOTTOM OF SIGN

•TOTAL WEIGHT BELOW THE HINGES SHOULD BE LESS THAN 600 POUNDS

LATERAL CLEARANCE

SEE SUPPORT CHARTS

**OBJECT CODES

FOW = FACE OF W-BEAM TRAFFIC BARRIER
FOC = FACE OF CURB
ES = EDGE OF SHOULDER
ETR = EDGE OF TRAVELED ROADWAY
CM = CENTERED IN MEDIAN
CG = CENTERED IN GORE (6' MINIMUM FROM EDGE OF PAVEMENT)

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PHONE: 703-359-5861
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BY: atimm -

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

SPECIFIC SERVICE SIGNING
FOR I-95 AT MD 272 (EXIT 100)
NORTH EAST, MD

REVISIONS

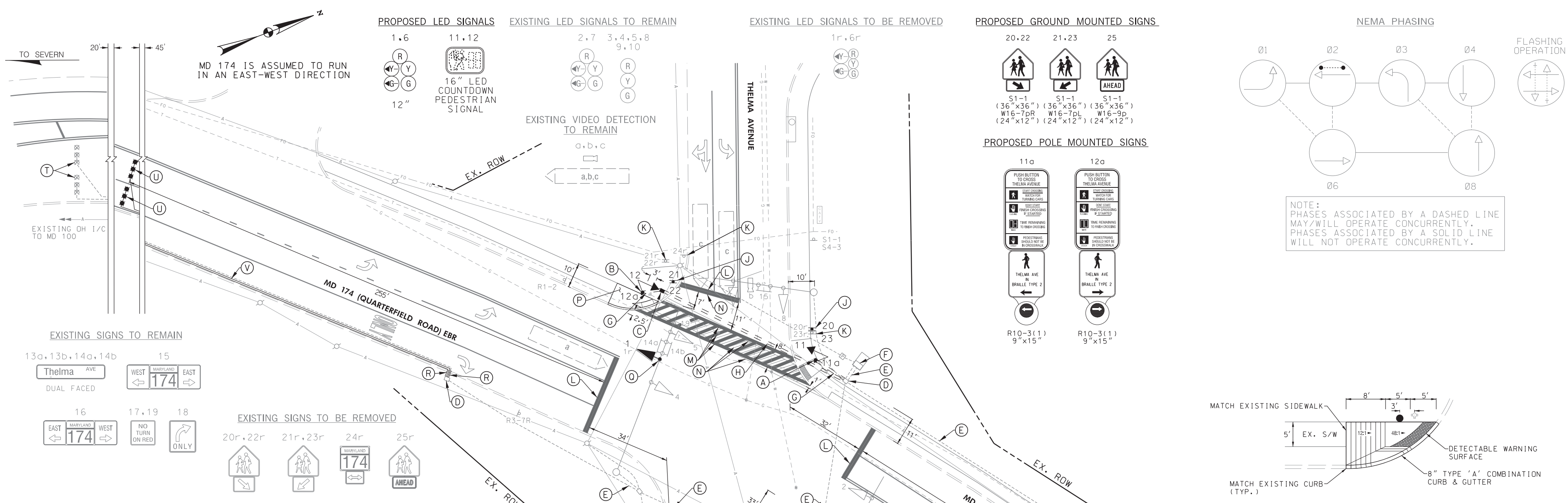
SIGN SUPPORTS DETAILS

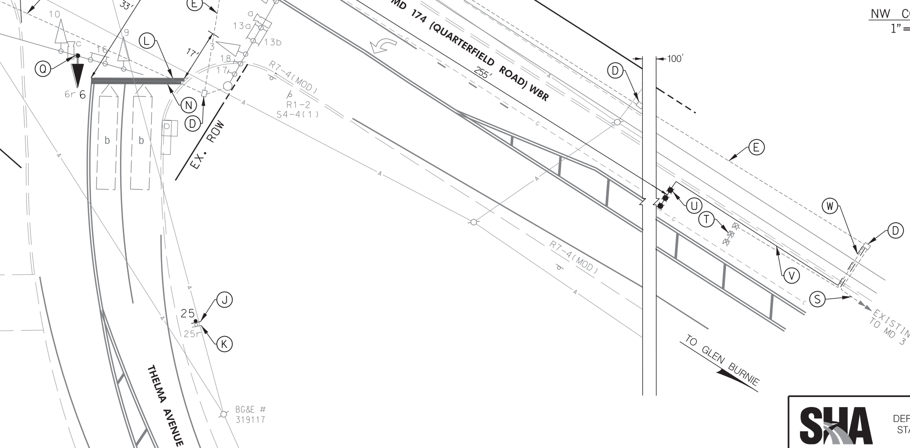
SCALE NONE DATE SEPTEMBER, 2016 CONTRACT NO. XY1705185

DESIGNED BY MG COUNTY CECIL
DRAWN BY MG LOGMILE MULTIPLE
CHECKED BY SJW T.I.M.S. NO. N509
F.A.P. NO. TOD NO.

DRAWING NO. AW- 10 OF 10 SHEET NO. 10 OF 10

PLOTTED: Friday, September 09, 2016 AT 10:26 AM
FILE: Y:\0732-299-46 I-95 at MD 272 logo signing\CADD\pSN-P010_I-95 AT MD272.dgn





CONSTRUCTION DETAILS

A. INSTALL 10 FT. BREAKAWAY PEDESTAL POLE (MD 818.16-01) ON MODIFIED BASE WITH BREAKAWAY COUPLINGS (MD 801.01-01), COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN, FOUNDATION SHALL BE INSTALLED IN THE FLAT LANDING AREA, FLUSH WITH SIDEWALK GRADE. (NOTE: INSTALL 1-2" (SCHEDULE 80), 90 DEGREES CONDUIT BEND.)
B. INSTALL 10 FT. BREAKAWAY PEDESTAL POLE (MD 818.16-01) ON MODIFIED BASE WITH BREAKAWAY COUPLINGS (MD 801.01-01), COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN. (NOTE: INSTALL 1-2" (SCHEDULE 80), 90 DEGREES CONDUIT BEND.)
C. INSTALL ELECTRICAL HANDHOLE.
D. USE EXISTING HANDHOLE
E. USE EXISTING CONDUIT
F. USE EXISTING CABINET. INSTALLATION OF THE 2-WIRE CENTRAL CONTROL UNIT WILL BE PERFORMED BY SHA FORCES.
G. INSTALL 2 IN. PVC (SCHEDULE 80) ELECTRICAL CONDUIT - TRENCHED
H. INSTALL 4 IN. PVC (SCHEDULE 80) ELECTRICAL CONDUIT - BORED
J. INSTALL GROUND MOUNTED SIGN ON 4"x6" WOOD SUPPORT
K. REMOVE GROUND MOUNTED SIGN AND SUPPORT
L. INSTALL 24 IN. WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINE - STOP LINE
M. INSTALL 12 IN. WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINE - CROSSWALK
N. REMOVE EXISTING PAVEMENT MARKING LINE, ANY WIDTH
P. INSTALL 5 IN. CONCRETE SIDEWALK, ADA RAMP AND DETECTABLE WARNING SURFACE (MD 655.40). SEE DETAIL THIS SHEET
Q. REMOVE EXISTING SIGNAL HEAD. INSTALL PROPOSED LED SIGNAL HEAD IN SAME LOCATION. USE EXISTING SIGNAL CABLE
R. INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
S. EXISTING INTERCONNECT CONDUIT SLOTTED IN ROADWAY SHALL BE MAINTAINED DURING ROADWAY RESURFACING
T. ABANDON PROBES. REMOVE ALL WIRING
U. INSTALL MICROLOOP PROBE WITH 1000 FT. LEAD IN CABLE
V. INSTALL SAWCUT FOR DETECTOR LEAD IN CABLE
W. INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE

GENERAL NOTES

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH SHA STANDARDS AFTER FINAL ROADWAY RESURFACING IS COMPLETE.
2. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
3. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BE COME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL UNUSED CABLE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE. ALL INTERNAL CABINET WIRING SHALL BE PERFORMED BY SHA FORCES.
5. 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.
6. 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.
7. THE CONTRACTOR SHALL MAINTAIN THE CONTINUOUS OPERATION OF ALL INTERCONNECT (OVERHEAD AND UNDERGROUND SLOTTED IN THE ROADWAY) DURING CONSTRUCTION. IF ANY DEVICE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPAIRED WITHIN 72 HOURS BY THE CONTRACTOR AT NO COST TO THE ADMINISTRATION AFTER NOTIFICATION BY THE ENGINEER.
8. ALL EXISTING SIGNS SHALL REMAIN UNLESS NOTED ON THE PLAN.
9. FOR HATCHED CROSSWALK DETAIL, REFER TO MDMUTCD FIGURE 3B-20a.
10. THE CONTRACTOR SHALL DELIVER APS PUSHBUTTONS AND CENTRAL CONTROL UNIT TO THE SHA SIGNAL SHOP AT LEAST 3 WEEKS PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL HAVE THE APS MESSAGE PROGRAMMED FROM THE FACTORY AND DELIVER THE APS WAVE FILES TO MR. ED RODENHIZER.
11. THE CONTRACTOR SHALL UTILIZE SHA STANDARD TYPICALS FOR TRAFFIC CONTROL (SECTION 104) FOR THE INSTALLATION OF PROPOSED TRAFFIC CONTROL DEVICES, UNLESS APPROVED BY THE ENGINEER.

APS NOTES:

1. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN WHEELCHAIR REACHING LESS THAN 18 IN. FROM A 60 IN.X60 IN. LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
2. THE 10' MINIMUM SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
3. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
4. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTIONS 4E.08 AND 4E.10, FIGURES 4E-3 AND 4E-4 AND THE NCHRP PUBLICATION, ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE. IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

GEOMETRIC LEGEND	
═ ═ ═	EXISTING
══════	PROPOSED

UTILITY LEGEND	
—SD—SD—	STORM DRAIN
—G—G—	GAS MAIN
—W—W—	WATER MAIN
—S—S—	SEWER MAIN
—E—E—	ELECTRIC CABLES
—A—A—	AERIAL CABLES
—T—T—	TELEPHONE CABLES
—F—F—	FIBER-OPTIC

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http://www.pbworld.com

APPROVALS
TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR
ORIGINAL ON FILE

REVISIONS

(D) INSTALL APS/CPS ON THE NORTH LEG					
SHA NO. AA8965177	TIMS NO. N793				12/23/16
KMP					
C ADD E/P PHASE FOR EB APPROACH					06 /2011
SHA NO. XX3475185					TIMS# K714
STV SDY	JT	DJD	DJD RB	MLP	TH
B COMPLETE RECONSTRUCTION; ADDITION OF E/P LEFT TURN PHASE FOR N/B THELMA AVENUE SHA NO. AT6045185					9-7-2004
M.O.	W.M.	M.A.R.	D.A.Z.		B.R.K.

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

MD 174 (QUARTERFIELD ROAD) at THELMA AVENUE

GLEN BURNIE, MD

SIGNALIZATION PLAN SHEET

SCALE 1" = 20' DATE 11-17-1975 CONTRACT NO.

DESIGNED BY
DRAWN BY D. DODA
CHECKED BY
MDE/PRD

COUNTY ANNE ARUNDEL
LOGMILE 02017405.78
TIMS NO.
TOD NO.

TS NO. 1274D | DRAWING SG-01 OF 02 | SHEET NO. 01 OF 02

PLOTTED: Thursday, December 22, 2016 AT 01:36 PM
FILE: T:\173124A-TrafficDesignServices\TRF\247\Plans\pSG-P001_MD174.dgn

BY: WagnerM -

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL WITH INTERCONNECT AT THE INTERSECTION OF MD 174 (QUARTERFIELD RD) AND THELMA AVE. IN ANNE ARUNDEL COUNTY. THIS PROJECT CONSISTS OF INSTALLING APS AND CPS FOR THE NORTH LEG OF THE INTERSECTION. MD 174 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

1. THE INTERSECTION OPERATES IN A NEMA SIX (6) PHASE, FULLY-ACTUATED MODE. EASTBOUND AND NORTHBOUND OPERATE WITH A EXCLUSIVE/PERMISSIVE LEFT TURN PHASE.
2. AN EXISTING NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER IN A NEMA SIZE "S" BASE MOUNTED CABINET SHALL BE CONTINUE TO BE UTILIZED AT THIS LOCATION. A 2-WIRE APS CENTRAL CONTROL UNIT SHALL BE INSTALLED IN THE CABINET BY SHA FORCES.

III. SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:
TO CROSS THELMA AVENUE

1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS THELMA AT QUARTERFIELD, WAIT".
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACTS

<u>DISTRICT (DISTRICT 5)</u>

MR. TIM SMITH
DISTRICT ENGINEER
410-841-1001

MS. KIMBERLY TRAN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
410-841-1019

MR. AARON JONES
DISTRICT UTILITY ENGINEER
410-841-1039

MR. PETER KEKE
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
410-841-1031

MR. WILLIAM MCFARLAND
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
410-841-1013

<u>OFFICE OF TRAFFIC AND SAFETY</u>

MS. CORREN JOHNSON
CHIEF, TRAFFIC OPERATIONS
410-787-7630

MS. KELLY CALDWELL-HARPER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7625

MR. EDWARD RODENHIZER
CHIEF, SIGNAL OPERATIONS SECTION
410-787-7650

MR. TODD JONES, ACTING
CHIEF, SIGN OPERATIONS SECTION
410-787-7670

MR. MICHAEL BOYLE
SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE)
410-787-7673

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY		DESCRIPTION
973024	55	SF	SHEET ALUMINUM GROUND MOUNTED SIGN 2 EA S1-1 (36"x36"): W16-7pR (24"x12") 2 EA S1-1 (36"x36"): W16-7pL (24"x12") 1 EA S1-1 (36"x36"): W16-9p (24"x12")
973025	2	SF	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN 2 EA R10-3(1) (9"x15")

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

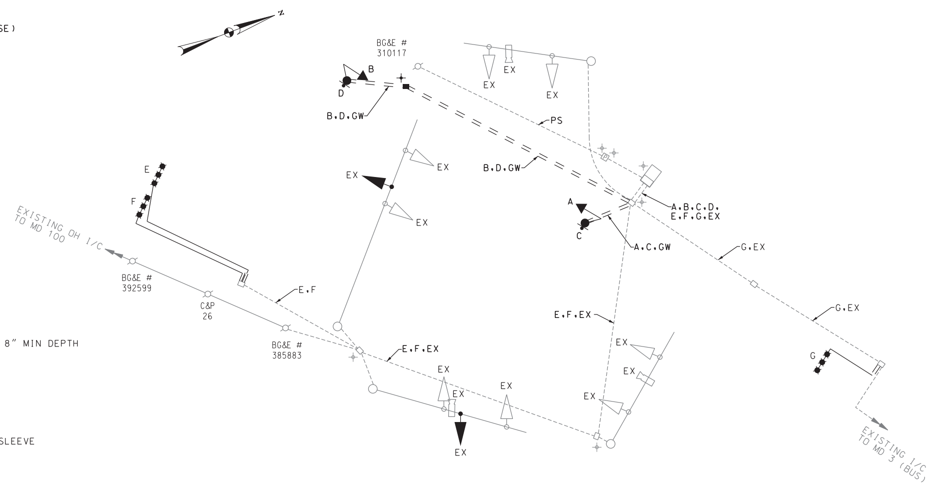
ITEM NO.	QUANTITY		DESCRIPTION
203030	1	CY	TEST PIT EXCAVATION
585621	300	LF	12" WHITE PREFORMED THERMOPLASTIC MARKING LINES
585625	115	LF	24" WHITE PREFORMED THERMOPLASTIC MARKING LINES
585700	415	LF	REMOVAL OF EXISTING PAVMENT MARKING LINES, ANY WIDTH
634301	25	LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12" GUTTER PAN, 8" MIN DEPTH
655105	120	SF	5" CONCRETE SIDEWALK
655120	20	SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
801001	1	CY	CONCRETE FOR SIGNAL FOUNDATION
801106	50	LF	WOOD SIGN SUPPORTS 4"x6"
802501	100	LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805011	10	LF	1" ELECTRICAL CONDUIT - GALVANIZED SLEEVE
805118	90	LF	4" SCHEDULE 80 RIGID PVC CONDUIT - BORED
805125	30	LF	2" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805160	20	LF	1" LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
810555	3	EA	MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE
811001	1	EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813014	55	SF	INSTALL GROUND MOUNTED SIGN
813015	2	SF	INSTALL OVERHEAD SIGN
813022	61	SF	REMOVE GROUND MOUNTED SIGNS AND SUPPORTS
818004	2	EA	10 FOOT BREAKAWAY PEDESTAL POLE
837001	1	EA	GROUND ROD - 3/4 INCH DIAMETER x 10 FOOT LENGTH
860284	10	EA	12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION
860285	2	EA	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
861105	200	LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	215	LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
862102	500	LF	SAW CUT FOR SIGNAL
865210	2	EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGN
865300	1	EA	2-WIRE APS CENTRAL CONTROL UNIT
873002	1	LS	REMOVE AND DISPOSE OF EXISTING SIGNAL EQUIPMENT

C. ANY MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE SIGNAL MODIFICATION.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 1 AND 6	←G / G	←G / G	G	R	R	R	R	R	R	R	DW	DW
PHASE 1 CHANGE	←Y / G	←Y / G	G	R	R	R	R	R	R	R	DW	DW
PHASE 2 AND 6	G	G	G	G	G	R	R	R	R	R	W	W
PED CLEARANCE	G	G	G	G	G	R	R	R	R	R	FL/DW	FL/DW
PHASE 2 AND 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	DW	DW
PHASE 3 AND 8	R	R	R	R	R	←G / G	←G / G	G	R	R	DW	DW
PHASE 3 CHANGE	R	R	R	R	R	←Y / G	←Y / G	G	R	R	DW	DW
PHASE 4 AND 8	R	R	R	R	R	G	G	G	G	G	DW	DW
PHASE 4 AND 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY

A,B	- 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
C,D	- 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
E,F,G	- MICRLOOP PROBE 1000 FT. LEAD-IN CABLE
PS	- EXISTING POWER SERVICE
GW	- 1 CONDUCTOR STRANDED COPPER GROUND WIRE (NO. 6 AWG)
EX	- EXISTING SIGNAL CABLE
+	- PROPOSED GROUND ROD
+	- EXISTING GROUND ROD

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

MD 174 (QUARTERFIELD ROAD) at THELMA AVENUE

GLEN BURNIE, MD

GENERAL INFORMATION SHEET

SCALE N.T.S. DATE 12/23/2016 CONTRACT NO. AA8965177

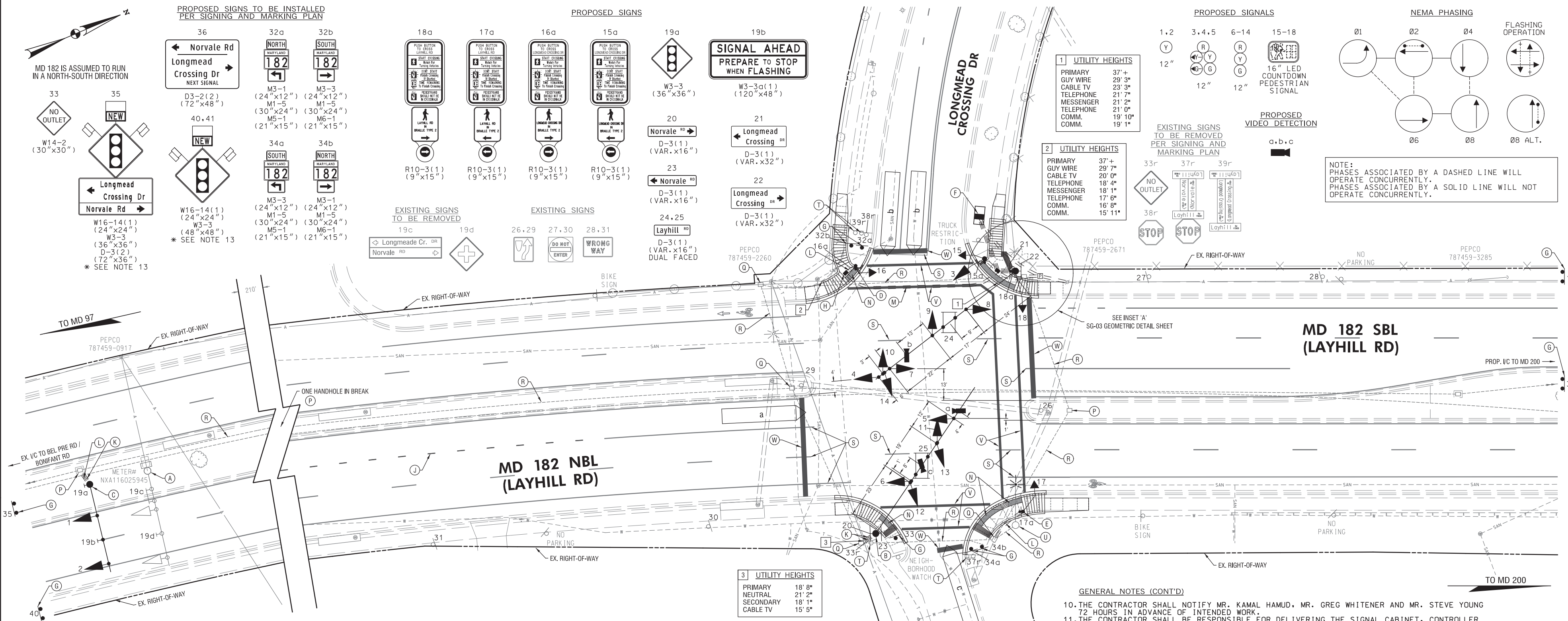
DESIGNED BY MAW
DRAWN BY MAW
CHECKED BY MF
MDE/PRD SEE TITLE SHEET

COUNTY ANNE ARUNDEL
LOGMILE 02017405.79
TIMS NO. N793
TOD NO.

TS NO.1274D-GI DRAWING SG-02 OF 02 SHEET NO. 02 OF 02

PLOTTED: Thursday, December 22, 2016 AT 01:38 PM
FILE: T:\173124A-TrafficDesignServices\TRF\247\Plans\pSG-N002_MD174.dgn

BY: WagnerM -



CONSTRUCTION DETAILS

A. REMOVE EXISTING SIGNAL POLE AND ALL ASSOCIATED EQUIPMENT. EXISTING OVERHEAD SERVICE FEED TO BE REMOVED BY PEPCO FORCES. CAP AND ABANDON EXISTING CONDUIT, REMOVE EXISTING FOUNDATION 12 IN. BELOW GRADE AND BACKFILL.
B. INSTALL 16.5 FT. MAST ARM POLE WITH A 15 FT. 'T' DIMENSION AND A SINGLE 70 FT. MAST ARM ON CONCRETE FOUNDATION WITH SIGNAL HEADS, VIDEO DETECTION CAMERAS AND SIGNS (NOTE: INSTALL 2-3 IN. 90° PVC CONDUIT BEND).
C. INSTALL 27 FT. MAST ARM POLE WITH A SINGLE 60 FT. MAST ARM WITH SIGNAL HEADS AND SIGNS (NOTE: INSTALL 1-3 IN. AND 1-2 IN. 90° PVC CONDUIT BEND). INSTALL ONLY THE BUTT SECTION OF THE MAST ARM AT 35 FT.
D. INSTALL 10 FT. PEDESTAL POLE (MD 818.16-01) ON MODIFIED BASE WITH BREAKAWAY COUPLINGS (MD 801.01-01), COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN (NOTE: INSTALL 1-2 IN. 90° PVC CONDUIT BEND). INCORPORATE CONCRETE FOUNDATION INTO PROPOSED CURB.
E. INSTALL 10 FT. PEDESTAL POLE (MD 818.16-01) ON MODIFIED BASE WITH BREAKAWAY COUPLINGS (MD 801.01-01), COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN (NOTE: INSTALL 1-2 IN. 90° PVC CONDUIT BEND). FOUNDATION SHALL BE FLUSH WITH SIDEWALK GRADE.
F. INSTALL A NEMA SIZE 'S' BASE MOUNTED CABINET WITH BATTERY BACKUP AND ALL NECESSARY EQUIPMENT (NOTE: INSTALL 2-2 IN. AND 2-4 IN. 90° PVC CONDUIT BEND).
G. PROPOSED SIGN TO BE INSTALLED PER SIGNING AND MARKING PLANS.
H. INSTALL ELECTRICAL HANDHOLE.
J. PROPOSED PAVEMENT MARKING TO BE INSTALLED PER SIGNING AND MARKING PLANS.
K. INSTALL 3 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).
L. INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).
M. INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (SLOTTED), UNDER PROPOSED CROSSWALK MARKING.
N. INSTALL RAMP PER DETAIL SHEET SG-03.
P. USE EXISTING HANDHOLE.
Q. USE EXISTING HANDHOLE. ADJUST HANDHOLE TO GRADE WITH NEW FRAME AND COVER.
R. USE EXISTING CONDUIT.
S. REMOVE EXISTING PAVEMENT MARKING.
T. EXISTING SIGN TO BE REMOVED PER SIGNING AND MARKING PLANS.
U. REMOVE EXISTING LUMINAIRE FROM EXISTING LIGHTING POLE AND INSTALL PROPOSED LED LUMINAIRE ON EXISTING LIGHTING ARM. REPLACE LIGHTING CABLE PER WIRING DIAGRAM.
V. INSTALL 12 IN. WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR CROSSWALK).
W. INSTALL 24 IN. WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING (FOR STOP LINE).

GEOMETRIC LEGEND

EXISTING
PROPOSED

UTILITY LEGEND

SD	STORM DRAIN
G	GAS MAIN
W	WATER MAIN
S	SEWER MAIN
E	ELECTRIC CABLES
A	AERIAL CABLES
T	TELEPHONE CABLES
F	FIBER-OPTIC

GENERAL NOTES

1. VIDEO CAMERA LOCATION / ALIGNING SHALL BE COORDINATED WITH THE MONTGOMERY COUNTY ENGINEER.
2. ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCELL.
3. FOR FINAL PAVEMENT MARKINGS, REFER TO THE PAVEMENT MARKING PLANS, AS APPLICABLE; OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH SHA STANDARDS.
4. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
5. 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 THE APPROPRIATE 800 SERIES STANDARD PLATES. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
6. MONTGOMERY COUNTY FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL UNUSED CABLES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE. DISCONNECTING AND SPLICING OF INTERCONNECT CABLE SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES. THE CONTRACTOR SHALL RUN THE INTERCONNECT CABLE INTO THE BASE OF THE CABINET AND PROPERLY LABEL EACH CABLE. ALL INTERNAL CABINET WIRING SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES.
8. 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.
9. THE CONTRACTOR SHALL MAINTAIN THE CONTINUOUS OPERATION OF ALL INTERCONNECT, VEHICULAR, PEDESTRIAN DETECTORS, AND LIGHTING DEVICES. IF ANY DEVICE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPAIRED WITHIN 72 HOURS BY THE CONTRACTOR AT NO COST TO THE SHA AFTER NOTIFICATION BY THE ENGINEER.

GENERAL NOTES (CONT'D)

10. THE CONTRACTOR SHALL NOTIFY MR. KAMAL HAMUD, MR. GREG WHITENER AND MR. STEVE YOUNG 72 HOURS IN ADVANCE OF INTENDED WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERING THE SIGNAL CABINET, CONTROLLER AND VIDEO INTERFACE EQUIPMENT TO THE MONTGOMERY COUNTY SIGNAL SHOP. THE CONTRACTOR SHALL INSTALL APS PUSHBUTTONS AND CENTRAL CONTROL UNIT AND MONTGOMERY COUNTY FORCES SHALL PROGRAM THE APS MESSAGES IN THE FIELD.
12. FOR INTERCONNECT CONSTRUCTION AND ROUTING, AS APPLICABLE; OTHER THAN THOSE DETAILED ON THE PLAN, REFER TO THE INTERCONNECT PLANS.
13. FOR THE REMOVAL OF W3-3 NEW ASSEMBLIES AND FLAGS, REFER TO THE SIGNING AND MARKING PLAN.

APS NOTES

1. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18 IN. FROM A 60 IN.X60 IN. LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
2. THE 10' MINIMUM SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
3. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
4. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTIONS 4E.08 AND 4E.10, FIGURES 4E-3 AND 4E-4 AND THE NCHRP PUBLICATION, ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE. IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

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APPROVALS — ORIGINAL ON FILE

REVISIONS

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

MD 182 AT LONGMEAD CROSSING DR /NORVALE RD
TRAFFIC SIGNAL INSTALLATION
ASPEN HILL, MD

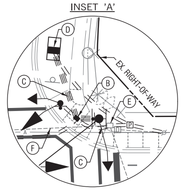
SIGNALIZATION PLAN SHEET

SCALE 1" = 20' DATE OCTOBER, 1996 CONTRACT NO.
DESIGNED BY
DRAWN BY
CHECKED BY D. DODA
F.A.P. NO.
COUNTY MONTGOMERY
LOGMILE 15018202.59
TIMS NO.
TOD NO.
TS NO. 3630A DRAWING SG-01 OF 04 SHEET NO. 01 OF 05

BY: Fukui-

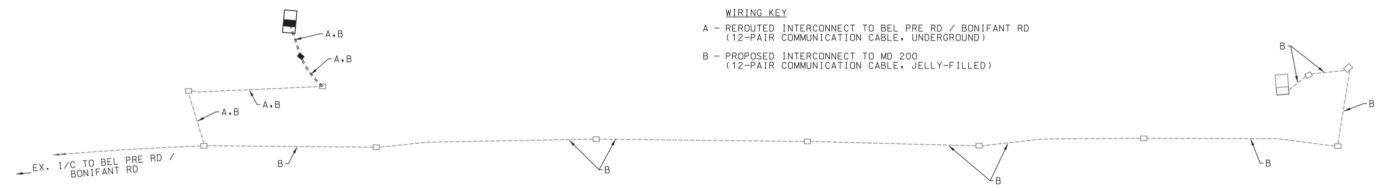
MD 182 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION

INSET 'A'



SCALE: 1" = 20'

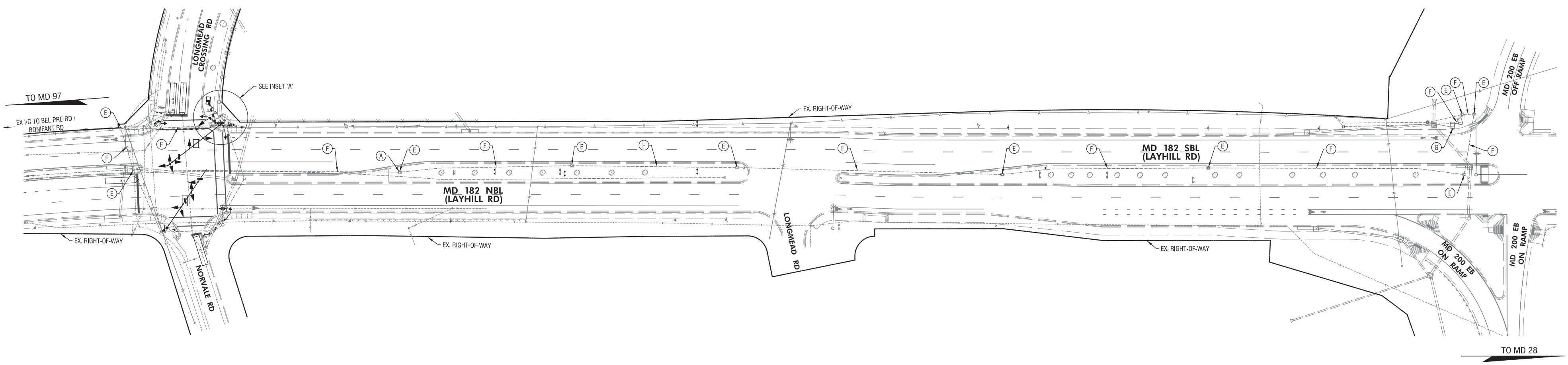
WIRING DIAGRAM



WIRING KEY

A – REROUTED INTERCONNECT TO BEL PRE RD / BONIFANT RD (12-PAIR COMMUNICATION CABLE, UNDERGROUND)

B – PROPOSED INTERCONNECT TO MD 200 (12-PAIR COMMUNICATION CABLE, JELLY-FILLED)



CONSTRUCTION DETAILS

A. DISCONNECT EXISTING INTERCONNECT CABLE AT MD 200 RAMPS THAT CONNECTS TO BEL PRE RD / BONIFANT RD. CUT EXISTING INTERCONNECT CABLE AT THE LOCATION SHOWN, PULL BACK AND REROUTE EXISTING INTERCONNECT CABLE TO THE PROPOSED CABINET AT LONGMEAD CROSSING DR / NORVALE RD. REMOVE REMAINING INTERCONNECT CABLE FROM EXISTING CONDUIT.
B. USE PROPOSED HANDHOLE.
C. USE PROPOSED CONDUIT.
D. USE PROPOSED CABINET AND CONTROLLER.
E. USE EXISTING HANDHOLE.
F. USE EXISTING CONDUIT.
G. USE EXISTING CABINET AND CONTROLLER.

GENERAL NOTES

1. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL UNUSED CABLES. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE SIGNAL MODIFICATION.
2. 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.
3. THE CONTRACTOR SHALL MAINTAIN THE CONTINUOUS OPERATION OF ALL INTERCONNECT, VEHICULAR, PEDESTRIAN DETECTORS, AND LIGHTING DEVICES. IF ANY DEVICE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPAIRED WITHIN 72 HOURS BY THE CONTRACTOR AT NO COST TO THE SHA AFTER NOTIFICATION BY THE ENGINEER.
4. DISCONNECTING AND SPLICING OF INTERCONNECT CABLE SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES. THE CONTRACTOR SHALL RUN THE INTERCONNECT CABLE INTO THE BASE OF EACH CABINET AND PROPERLY TAG THE CABLE. ALL INTERNAL CABINET WIRING SHALL BE PERFORMED BY MONTGOMERY COUNTY FORCES.
5. THE CONTRACTOR SHALL NOTIFY MR. KAMAL HAMUD AND CHIEF, MONTGOMERY COUNTY SIGNAL SHOP 72 HOURS IN ADVANCE OF INTENDED WORK.

GEOMETRIC LEGEND

— — —	EXISTING
———	PROPOSED

UTILITY LEGEND

—SD—SD—	STORM DRAIN
—G—G—	GAS MAIN
—W—W—	WATER MAIN
—S—S—	SEWER MAIN
—E—E—	ELECTRIC CABLES
—A—A—	AERIAL CABLES
—T—T—	TELEPHONE CABLES
—F—F—	FIBER-OPTIC

BY: Fukui–

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APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

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

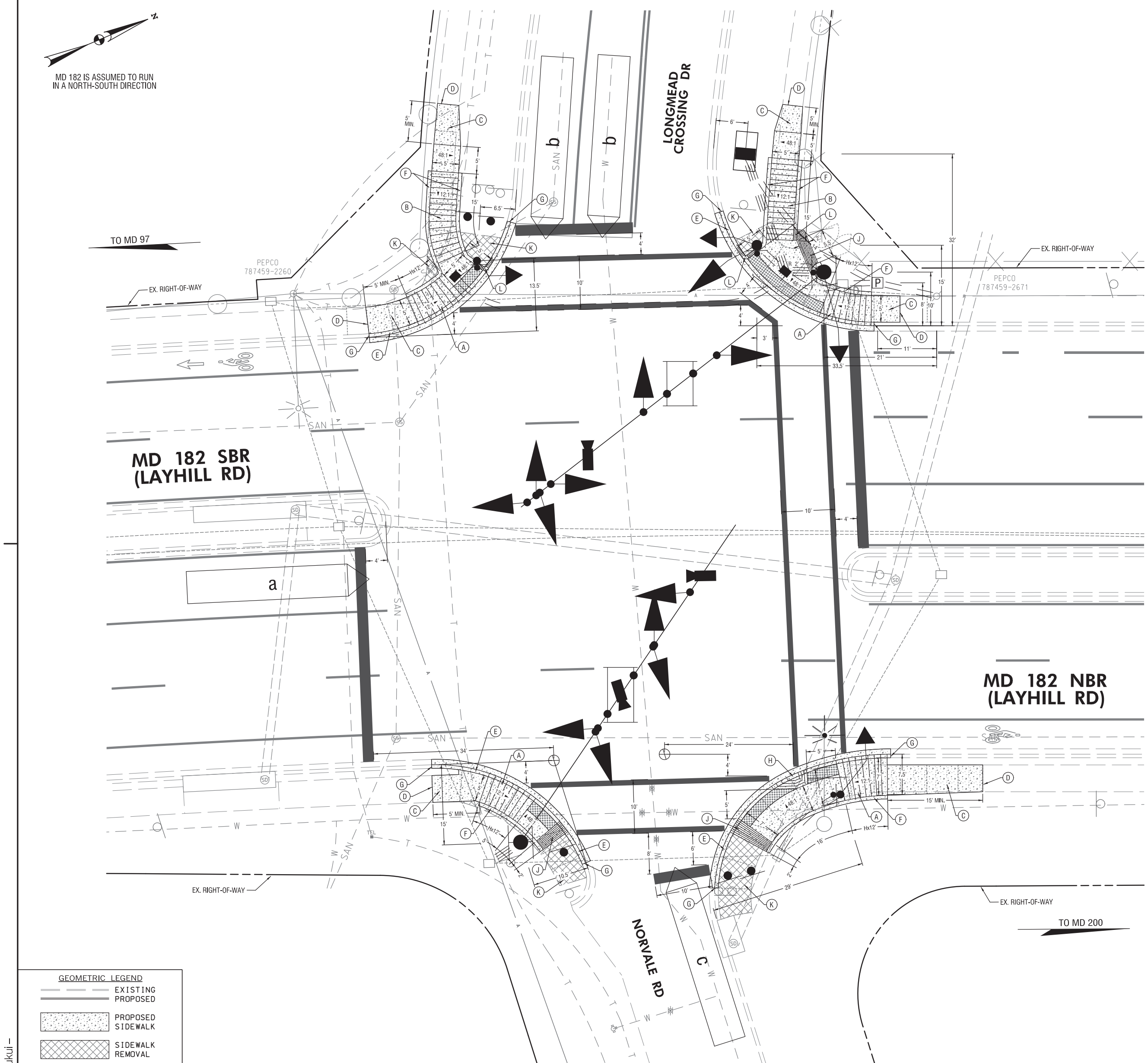
MD 182 FROM LONGMEAD CROSSING DR TO MD 200 INTERCONNECT INSTALLATION

ASPEN HILL, MD

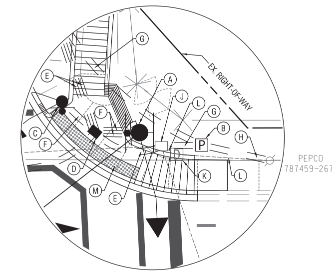
INTERCONNECT PLAN SHEET

SCALE 1" = 50'	DATE JUNE 20, 2014	CONTRACT NO. XY1285185	
DESIGNED BY MF		COUNTY MONTGOMERY	
DRAWN BY MF		LOGMILE 15018202.59 TO 15018202.84	
CHECKED BY KMP		TIMS NO. L915	
F.A.P. NO. AC-STPG-000A(832)E		TOD NO.	
TS NO.3630A-IC	DRAWING SG-02 OF 04	SHEET NO. 02 OF 05	

PLOTTED: Friday, June 20, 2014 AT 09:53 AM
FILE: T:\173124A-TrafficDesignServices\TRF\172\Plans\pSG_C001-MD 182 @ Longmead Crossing.dgn



INSET 'A'
(FROM SG-01 SIGNALIZATION PLAN SHEET)



SCALE: 1"=10'

CONSTRUCTION DETAILS (INSET 'A')

A. INSTALL 16.5 FT. MAST ARM POLE WITH A 15 FT. 'T' DIMENSION AND A SINGLE 70 FT. MAST ARM ON CONCRETE FOUNDATION WITH SIGNAL HEADS, VIDEO DETECTION CAMERA, SIGNS, COUNTDOWN PEDESTRIAN SIGNAL AND AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN (NOTE: INSTALL 2-3 IN. 90° PVC CONDUIT BEND).
B. INSTALL 100 AMP EMBEDDED METERED SERVICE PEDESTAL (NOTE: INSTALL 3-2 IN. AND 1-4 IN. 90° PVC CONDUIT BEND).
C. INSTALL 14 FT. PEDESTAL POLE (MD 818.17) ON TRANSFORMER BASE (MD 821.01) AND STANDARD CONCRETE FOUNDATION WITH SIGNAL HEAD (MOUNTED PER MD 814.01), COUNTDOWN PEDESTRIAN SIGNAL HEAD (MOUNTED PER MD 814.03), AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN (NOTE: INSTALL 1-3 IN. 90° PVC CONDUIT BEND). INCORPORATE CONCRETE FOUNDATION INTO PROPOSED CURB.
D. INSTALL ELECTRICAL HANDHOLE.
E. INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).
F. INSTALL 3 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).
G. INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).
H. INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED), WORK WITH PEPCO TO STUB UP AT THE BASE OF PEPCO POLE 787459-2671 IN THE PLACE OF THE EXISTING STUB UP FOR THE EXISTING LIGHTING POWER FEED. COIL 35 FT OF CABLE EACH AT THE BASE OF THE POLE.
J. USE EXISTING HANDHOLE. ADJUST HANDHOLE TO GRADE WITH NEW FRAME AND COVER.
K. REMOVE EXISTING DISCONNECT FOR STREET LIGHTING. EXISTING UNDERGROUND SERVICE FEED TO BE REMOVED BY PEPCO FORCES. CAP AND ABANDON EXISTING CONDUIT.
L. CAP AND ABANDON EXISTING CONDUIT.
M. INSTALL RAMP PER THIS SHEET.

CONSTRUCTION DETAILS (GEOMETRIC DETAIL SHEET)

A. INSTALL PARALLEL SIDEWALK RAMP (MD 655.12) WITH DETECTABLE WARNING SURFACE (MD 655.40).
B. INSTALL PERPENDICULAR SIDEWALK RAMP (MD 655.11) EXTENDING FROM THE BACK OF THE PROPOSED PARALLEL SIDEWALK RAMP AS SHOWN.
C. INSTALL 5 IN. SIDEWALK.
D. MATCH EXISTING SIDEWALK.
E. INSTALL TYPE 'A' COMBINATION CURB AND GUTTER.
F. INSTALL TYPE 'A' CURB.
G. MATCH EXISTING CURB.
H. INSTALL 3 IN. TYPE 'A' CURB AND GUTTER WITH SIDEWALK SLOPED TOWARDS LANDING AREA.
J. INSTALL SIDEWALK FLARE.
K. REMOVE EXISTING SIDEWALK, BACKFILL WITH SUITABLE MATERIAL AND INSTALL TURFGRASS SOD.
L. CURB TO BE NOSED DOWN.

GENERAL NOTES

1. ALL CURB FILLETS ARE 1' RADII UNLESS OTHERWISE DIMENSIONED.
2. ALL DETECTABLE WARNING SURFACES SHALL BE BRICK RED.

GEOMETRIC LEGEND
EXISTING
PROPOSED
PROPOSED SIDEWALK
SIDEWALK REMOVAL
NOTE:
SIDEWALK JOINTS IF SHOWN ARE APPROXIMATE.

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MD 182 AT LONGMEAD CROSSING DR /NORVALE RD
TRAFFIC SIGNAL INSTALLATION
ASPEN HILL, MD

GEOMETRIC DETAIL SHEET

SCALE 1"=10'	DATE JUNE 20, 2014	CONTRACT NO. XY1285185	
DESIGNED BY MF		COUNTY MONTGOMERY	
DRAWN BY MF		LOGMILE 15018202.59	
CHECKED BY KMP		TIMS NO. L915	
F.A.P. NO. AC-STPG-000A(832)E		TOD NO.	
TS NO.3630A-DE	DRAWING SG-03 OF 04	SHEET NO. 03 OF 05	

PLOTTED: Friday, June 20, 2014 AT 09:53 AM
FILE: T:\173124A-TrafficDesignServices\TRF\172\Plans\pSG_D001-MD 182 @ Longmead Crossing.dgn

BY: Fukui-

PROJECT DESCRIPTION

I. GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A PROPOSED PART TIME TRAFFIC CONTROL SIGNAL WITH INTERCONNECT AT THE INTERSECTION OF MD 182 (LAYHILL RD) AND LONGMEAD CROSSING DR / NORVALE RD IN MONTGOMERY COUNTY. SIGNALIZED PEDESTRIAN CROSSINGS WITH APS/CPS WILL BE INSTALLED ACROSS THE NORTH AND WEST LEGS. THE NORTHBOUND INTERSECTION WARNING HAZARD IDENTIFICATION BEACON (HIB) WILL BE CONVERTED TO AN ACTIVE SIGNAL AHEAD HIB CONNECTED TO THE SIGNAL. THE EXISTING INTERSECTION LIGHTING ON NORTHBOUND MD 182 WILL BE UPGRADED TO LED. MD 182 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

II. INTERSECTION OPERATION

1. THE INTERSECTION SHALL OPERATE IN A NEMA FIVE (5) PHASE, SEMI-ACTUATED MODE. AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE WILL BE PROVIDED FOR THE NORTHBOUND MD 182 APPROACH. NORTHBOUND AND SOUTHBOUND MD 182 APPROACHES OPERATE CONCURRENTLY. AN ACTUATED AUDIBLE PEDESTRIAN PHASE IS PROVIDED ACROSS THE WEST LEG TO CROSS LONGMEAD CROSSING DR. EASTBOUND LONGMEAD CROSSING DR AND WESTBOUND NORVALE RD APPROACHES OPERATE CONCURRENTLY. AN ALTERNATE PEDESTRIAN PHASE WITH AUDIBLE/TACTILE PEDESTRIAN SIGNALS WILL BE PROVIDED ACROSS THE NORTH LEG TO CROSS LAYHILL RD. THE SIGNAL SHALL OPERATE FROM 7:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM AND OPERATE ON FLASH THE REST OF THE TIME. THE NORTHBOUND ACTIVE SIGNAL AHEAD HIB WILL OPERATE WITH THE NORTHBOUND RED SIGNAL.

2. A PROPOSED NEMA FULL-TRAFFIC-ACTUATED, EIGHT (8) PHASE CONTROLLER WITH VIDEO DETECTION INTERFACE, 2 WIRE CENTRAL CONTROL UNIT, BATTERY BACKUP AND ALL NECESSARY EQUIPMENT IN A NEMA SIZE "S" BASE MOUNTED CABINET SHALL BE INSTALLED AT THIS LOCATION.

III. SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:
TO CROSS MD 182 (LAYHILL RD)

1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS LAYHILL AT LONGMEAD CROSSING AND NORVALE. WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS LONGMEAD CROSSING DR

1. WHEN A PEDESTRIAN LOCATES AND PRESSES THE PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS LONGMEAD CROSSING AT LAYHILL. WAIT."
2. WHEN THE WALK PHASE BEGINS, THE PUSHBUTTON UNIT WILL PROVIDE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY	DESCRIPTION
9104	1 EA	CONTROLLER CABINET, SIZE "S" W/CTRL, VIDEO INT. 1-8 CAM
9110	1 EA	UPS EQUIPMENT FOR "S" CABINET
9570	186 SF	SHEET ALUMINUM GROUND MOUNTED SIGN
	2 EA	R2-1 - SPEED LIMIT 40 (24"x30")
	1 EA	R8-7 (24"x24")
	1 EA	W3-3 (36"x36")
	2 EA	W3-3 (48"x48")
	1 EA	W14-2 (30"x30")
	3 EA	W16-14(1) (24"x24")
	1 EA	D-3(2) - Longmead Rd -> (84"x12")
	1 EA	D-3(2)MOD - <- Argyle Club Ln (60"x24")
	1 EA	D-3(2)MOD - Argyle Club Ln -> (60"x24")
	1 EA	D-3(2)MOD - <- Longmead Crossing Dr / Norvale Rd -> (72"x36")
	1 EA	D3-2(2)MOD - <- Norvale Rd / Longmead Crossing Dr -> (72"x48")
	5 EA	M1-5 (30"x24")
	2 EA	M3-1 (24"x12")
	3 EA	M3-3 (24"x12")
	2 EA	M5-1 (21"x15")
	2 EA	M6-1 (21"x15")
9571	128 SF	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN
	2 EA	R10-3(1) - LAYHILL RD (9"x15")
	2 EA	R10-3(1) - LONGMEAD CROSSING DR (9"x15")
	1 EA	W3-3 (36"x36")
	1 EA	W3-3a(1) (120"x48")
	1 EA	D-3(1) - Layhill Rd (DUAL FACED) (VAR.x16")
	1 EA	D-3(1) - <- Longmead Crossing Dr (VAR.x32")
	1 EA	D-3(1) - Longmead Crossing Dr -> (VAR.x32")
	1 EA	D-3(1) - <- Norvale Rd (VAR.x16")
	1 EA	D-3(1) - Norvale Rd -> (VAR.x16")

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

ITEM NO.	QUANTITY	DESCRIPTION
1001	2 EA	MAINTENANCE OF TRAFFIC
2001	7 CY	CLASS 2 EXCAVATION
2002	4 CY	TEST PIT EXCAVATION
5002	40 LF	5" HEAT APPLIED WHITE OR YELLOW PERMANENT PAVEMENT MARKINGS
5003	105 LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS
5004	370 LF	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
5005	125 LF	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
6001	320 LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6002	970 SF	5 INCH CONCRETE SIDEWALK
6003	95 SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
8001	44 EA	12 INCH LED SIGNAL HEAD SECTION
8002	1 EA	2-WIRE CENTRAL CONTROL UNIT
8005	5 EA	ADJUST HANDHOLE TO GRADE WITH NEW FRAME AND COVER
8008	4 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
8009	3 EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	1 EA	EMBEDDED METERED SERVICE PEDESTAL WITH BYPASS SWITCH
8014	1 EA	INSTALL CONTROLLER AND CABINET BASE MOUNT (ANY SIZE)
8016	4 EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8020	1 EA	MAST ARM POLE & 60' MAST ARM ANY 'T' DIMENSION
8021	2 EA	MAST ARM POLE & 70' MAST ARM ANY 'T' DIMENSION
8024	1 EA	REMOVE & DISPOSE OF EQUIPMENT (PER ASSIGNMENT)
8029	3 EA	VIDEO DETECTION CAMERA AND CABLE ANY LENGTH
8031	205 LF	1-CONDUCTOR ELECTRICAL CABLE, NO. 2/0 AWG/THHN
8032	1900 LF	12-PAIR COMMUNICATION CABLE, SELF- SUPPORTING, JELLY-FILLED/UNDERGROUND
8034	255 LF	DISCONNECT, PULL-BACK & REROUTE CABLES

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR (CONT'D)

ITEM NO.	QUANTITY	DESCRIPTION
8035	250 LF	ELECTRICAL CABLE - 3-CONDUCTOR (NO. 12 AWG) TYPE T/C
8039	75 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
8040	240 LF	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8041	340 LF	WOOD SIGN SUPPORTS UP TO 4' X 6'
8042	314 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8044	1105 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8047	205 LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN
8048	2 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8055	530 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8057	1600 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8058	1800 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8066	1 EA	CONCRETE TESTING
8067	1 EA	NEG - APPROVED - FURNISH & INSTALL LED LUMINAIRES & LAMPS
NEG	7 SY	TURFGRASS SOD ESTABLISHMENT
NEG	45 LF	WOOD SIGN SUPPORTS 6' X 6'

C. MONTGOMERY COUNTY FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.

CONTACTS

DISTRICT (DISTRICT 3 - MONTGOMERY)

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DISTRICT UTILITY ENGINEER
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MR. KEVIN NOWAK & MR. DUANE BERNARD
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MR. TOM FOUNTAIN
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
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MONTGOMERY COUNTY DOT

MR. KAMAL HAMUD
TRAFFIC ENGINEER
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MR. GREG WHITENER & MR. STEVE YOUNG
SUPERVISOR, SIGNAL SHOP
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CHIEF, SIGNAL OPERATIONS SECTION
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MR. MICHAEL STOCKER
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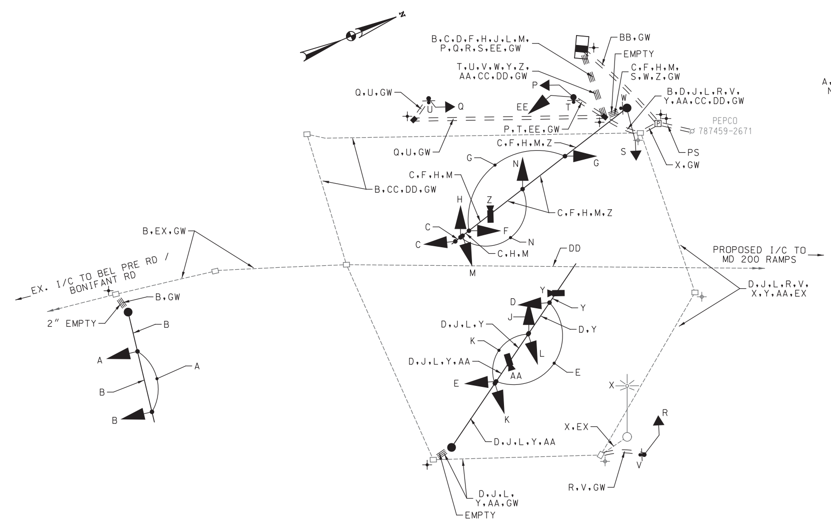
UTILITY CONTACT

PEPCO
PAUL WILSON
(301)548-4332
201 W GUDE DRIVE
ROCKVILLE, MD 20850-0850

PHASE CHART

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

WIRING DIAGRAM



WIRING KEY

C,D,F,H, J,L,M,EE - 7 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
A,B,E,G,K, N,P,Q,R,S - 5 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
T,U,V,W - 2 CONDUCTOR ELECTRICAL CABLE (NO.14 AWG)
X - 3 CONDUCTOR ELECTRICAL CABLE (NO.12 AWG TRAY)
Y,Z,AA - VIDEO DETECTION CABLE (3 CONDUCTOR NO. 18 AWG)
BB - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 8 AWG THHN/THWN)
CC - REROUTED EXISTING INTERCONNECT TO BEL PRE RD / BONIFANT RD (12-PAIR COMMUNICATION CABLE)
DD - PROPOSED INTERCONNECT TO MD 200 (12-PAIR COMMUNICATION CABLE)
GW - 1 CONDUCTOR STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
PS - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 2/0 AWG THHN)
EX - EXISTING CABLE
✛ - PROPOSED GROUND ROD
✛ - EXISTING GROUND ROD

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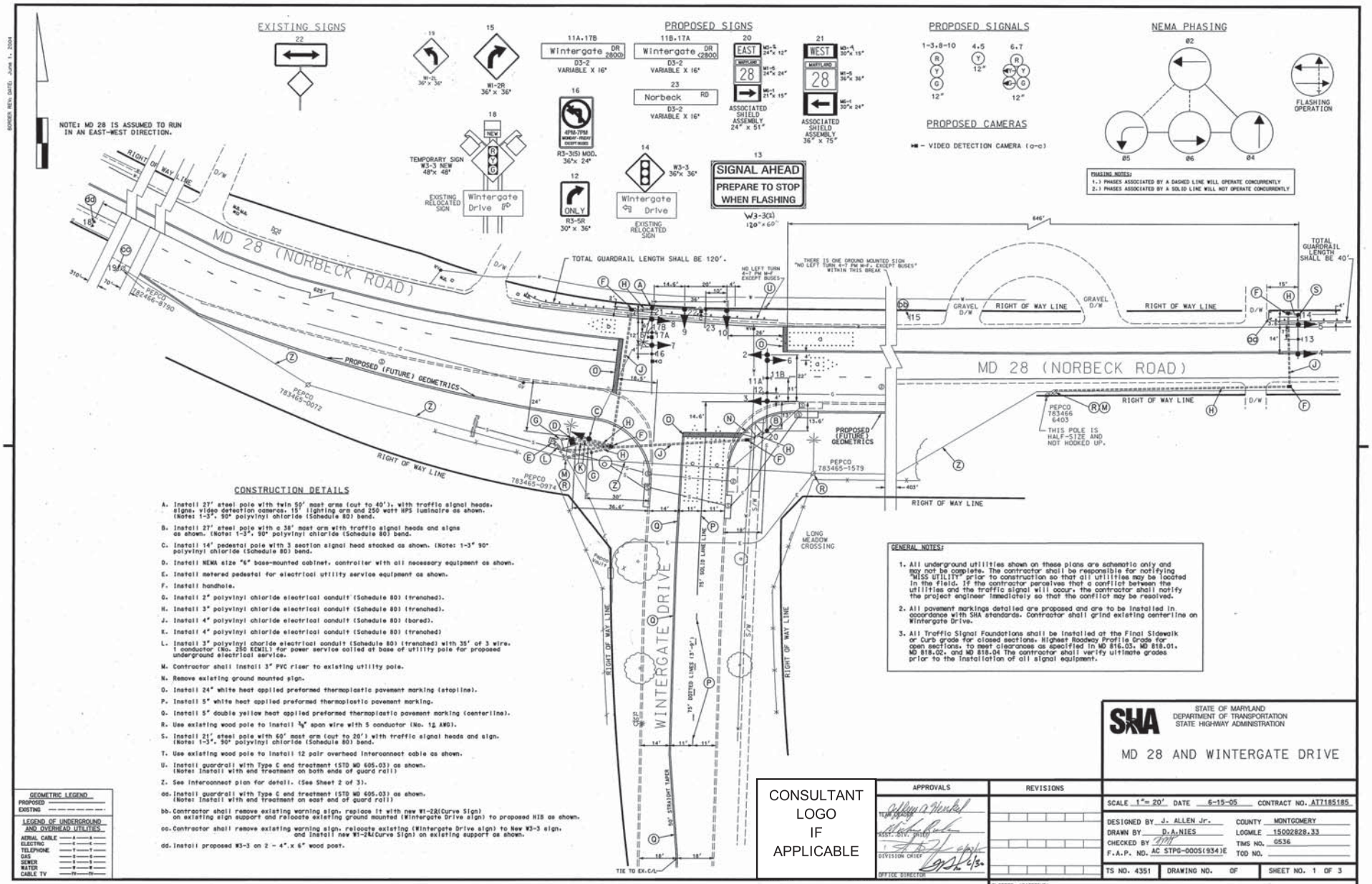
MD 182 AT LONGMEAD CROSSING DR /NORVALE RD
TRAFFIC SIGNAL INSTALLATION
ASPEN HILL, MD

GENERAL INFORMATION SHEET

SCALE N.T.S. DATE JUNE 20, 2014 CONTRACT NO. XY1285185
DESIGNED BY MF COUNTY MONTGOMERY
DRAWN BY MF LOGMILE 1501820259
CHECKED BY KMP TIMS NO. L915
F.A.P. NO. AC-STPG-000A(832)E TOD NO.
TS NO.3630A-GI DRAWING SG-04 OF 04 SHEET NO. 04 OF 05

PLOTTED: Friday, June 20, 2014 AT 09:52 AM
FILE: T:\173124A-TrafficDesignServices\TRF\172\Plans\pSG_N001-MD 182 @ Longmead Crossing.dgn

BY: Fukui-



CONSTRUCTION DETAILS

A. Install 27' steel pole with twin 50' mast arms (cut to 40'), with traffic signal heads, signs, video detection cameras, 15' lighting arm and 250 watt HPS luminaire as shown. (Note: 1-3", 90° polyvinyl chloride (Schedule 80) bend.

B. Install 27' steel pole with a 38' mast arm with traffic signal heads and signs as shown. (Note: 1-3", 90° polyvinyl chloride (Schedule 80) bend.

C. Install 14' pedestal pole with 3 section signal head stacked as shown. (Note: 1-3" 90° polyvinyl chloride (Schedule 80) bend.

D. Install NEMA size "6" base-mounted cabinet, controller with all necessary equipment as shown.

E. Install metered pedestal for electrical utility service equipment as shown.

F. Install handhole.

G. Install 2" polyvinyl chloride electrical conduit (Schedule 80) (trenched).

H. Install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).

J. Install 4" polyvinyl chloride electrical conduit (Schedule 80) (bored).

K. Install 4" polyvinyl chloride electrical conduit (Schedule 80) (trenched)

L. Install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched) with 35' of 3 wire, 1 conductor (No. 250 KCMIL) for power service coiled at base of utility pole for proposed underground electrical service.

M. Contractor shall install 3" PVC riser to existing utility pole.

N. Remove existing ground mounted sign.

O. Install 24" white heat applied preformed thermoplastic pavement marking (stopline).

P. Install 5" white heat applied preformed thermoplastic pavement marking.

Q. Install 5" double yellow heat applied preformed thermoplastic pavement marking (centerline).

R. Use existing wood pole to install ½" span wire with 5 conductor (No. 12 AWG).

S. Install 21' steel pole with 60' mast arm (cut to 20') with traffic signal heads and sign. (Note: 1-3", 90° polyvinyl chloride (Schedule 80) bend.

T. Use existing wood pole to install 12 pair overhead interconnect cable as shown.

U. Install guardrail with Type C end treatment (STD MD 605.03) as shown. (Note: Install with end treatment on both ends of guard rail)

Z. See interconnect plan for detail. (See Sheet 2 of 3).

aa. Install guardrail with Type C end treatment (STD MD 605.03) as shown. (Note: Install with end treatment on east end of guard rail)

bb. Contractor shall remove existing warning sign, replace it with new W1-2R(Curve Sign) on existing sign support and relocate existing ground mounted (Wintergate Drive sign) to proposed HIB as shown.

cc. Contractor shall remove existing warning sign, relocate existing (Wintergate Drive sign) to New W3-3 sign, and install new W1-2R(Curve Sign) on existing support as shown.

dd. Install proposed W3-3 on 2 - 4".x 6" wood post.

GENERAL NOTES:

1. All underground 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.
2. All pavement markings detailed are proposed and are to be installed in accordance with SHA standards. Contractor shall grind existing centerline on Wintergate Drive.
3. 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, and MD 818.04 The contractor shall verify ultimate grades prior to the installation of all signal equipment.

GEOMETRIC LEGEND
PROPOSED
EXISTING

LEGEND OF UNDERGROUND AND OVERHEAD UTILITIES
AERIAL CABLE
ELECTRIC
TELEPHONE
GAS
SEWER
WATER
CABLE TV

CONSULTANT LOGO IF APPLICABLE

APPROVALS
TEAM LEADER
ASSOC. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 28 AND WINTERGATE DRIVE

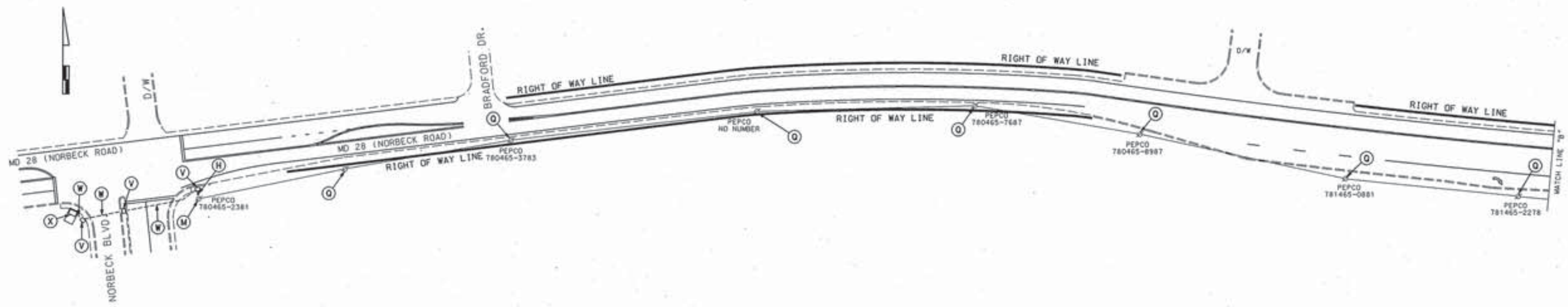
SCALE 1"= 20' DATE 6-15-05 CONTRACT NO. AT7185185
DESIGNED BY J. ALLEN Jr. COUNTY MONTGOMERY
DRAWN BY D.A.NIES LOGMILE 15002828.33
CHECKED BY TIMS NO. 0536
F.A.P. NO. AC STPG-0005(934)E TOD NO.
TS NO. 4351 DRAWING NO. OF SHEET NO. 1 OF 3

PLOTTED: %DATETIME%
FILE: %FILE%

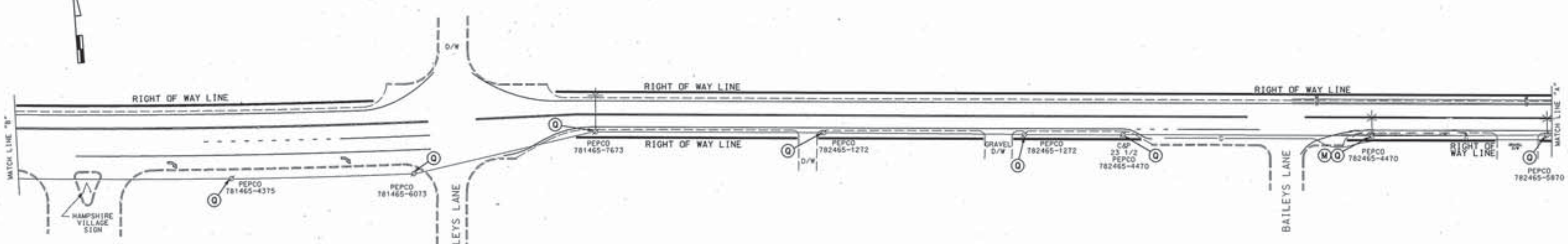
DRILL HOLES
DRILL HOLES
DRILL HOLES

DRILL HOLES

BORDER REV. DATE: June 1, 2004



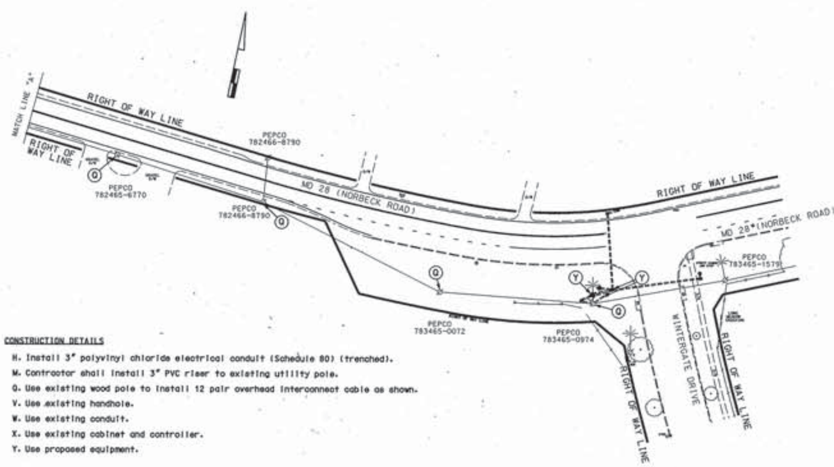
DRILL HOLES



GENERAL NOTES:

1. All underground 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.
2. All pavement markings detailed are proposed and are to be installed in accordance with SHA standards.
3. The contractor shall ground and bond all PEPCO poles that are affected.
4. The contractor shall contract Mr. Bob Thorne at (301) 651-6025 at least 72 hour prior to attaching to PEPCO poles.

DRILL HOLES



CONSTRUCTION DETAILS

H. Install 3" polyvinyl chloride electrical conduit (Schedule 80) (trenched).
M. Contractor shall install 3" PVC riser to existing utility pole.
Q. Use existing wood pole to install 12 pair overhead interconnect cable as shown.
V. Use existing handhole.
W. Use existing conduit.
X. Use existing cabinet and controller.
Y. Use proposed equipment.

GEOMETRIC LEGEND	
PROPOSED	————
EXISTING	— — — —

LEGEND OF UNDERGROUND AND OVERHEAD UTILITIES	
AERIAL CABLE	—A—
ELECTRIC	—E—
TELEPHONE	—T—
GAS	—G—
SEWER	—S—
WATER	—W—
CABLE TV	—TV—

INTERCONNECT PLAN

SHA — STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION

MD 28 AND WINTERGATE DRIVE

CONSULTANT LOGO IF APPLICABLE

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

PLOTTED: #DATETIME#
FILE: #FILE#

SCALE 1"= 50'	DATE 6-15-05	CONTRACT NO. AT7185185	
DESIGNED BY J. ALLEN Jr.		COUNTY MONTGOMERY	
DRAWN BY D.A.NIES		LOGMILE 15002828.33	
CHECKED BY		TIMS NO. 0536	
F.A.P. NO.		TOD NO.	
TS NO. 4351 I/C	DRAWING NO.	OF	SHEET NO. 2 OF 3

DRILL HOLES

DRILL HOLES

DRILL HOLES

BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new Traffic Control Signal with street lighting and interconnect at the intersection of MD 28 (Norbeck Rd) and Wintergate Drive in Montgomery County. Hazard Identification Beacons shall be installed on the Westbound approache of Norbeck Road in advance of this intersection. Video detection shall be used at this intersection. MD 28 (Norbeck Rd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA four-phase, semi-actuated mode, with the MD 28 (Norbeck Rd) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the westbound approach of MD 28 (Norbeck Rd). Fordside sampling stations shall be provided on both legs of MD 28 (Norbeck Rd) at this intersection. The Wintergate Drive approach shall run in its own phase.

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.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.

2. Disconnecting and splicing of interconnect cable shall be performed by Montgomery County Forces. The contractor shall run the interconnect cable into the base of each cabinet and properly tag the cable. Contact Dr. Wilhelm Derminassian (240) 777-8795 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. Lee Starkloff
Assistant District Engineer - Traffic
Phone: (301) 513-7318

Mr. Sonny Bailey
Sign Shop
410-787-7670

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

Dr. Wilhelm Derminassian
Montgomery County
240-777-8795

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

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

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

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A. AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9086	Video detection interface equipment: 1-4 cameras (To be installed by signal shop).	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	34 SF
	W1-2R "CURVE AHEAD (Symbolic)" sign. (36" x 36") with hardware.	1 EA
	W1-2L "CURVE AHEAD (Symbolic)" sign. (36" x 36") with hardware.	1 EA
	W3-3 NEW "SIGNAL AHEAD" sign. (48" x 48") with hardware.	1 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	132 SF
	D3-2 "Wintergate Dr 2800>" sign. (variable x 16") mast arm.	1 EA
	D3-2 "Wintergate Dr <2800" sign. (variable x 16") mast arm.	1 EA
	D3-2 "Norbeck RD sign. (Variable x 16") mast arm	1 EA
	R3-3(5) mod"NO LEFT TURN (Symbolic) / 4PM-7PM MONDAY-FRIDAY EXCEPT BUSES" sign (36"x24") mast arm.	1 EA
	R3-5R "RIGHT TURN ONLY" sign. (30" x 36") mast arm.	1 EA
	W3-3 "SIGNAL AHEAD" sign. (36" x 36") pole mount.	1 EA
	W3-3(2) "SIGNAL AHEAD/PREPARE TO STOP WHEN FLASHING" sign. (120" X 60") mast arm.	1 EA
	GUIDE SHIELD ASSEMBLY (36"x15") pole mounted. M3-4 "WEST"(30"X15") M1-5 "MD 28"(36"X36") M6-1 "left arrow "(30"X24")	1 EA
	GUIDE SHIELD ASSEMBLY (24"x51") pole mounted. M3-2 "EAST"(24"X12") M1-5 "MD 28"(24"X24") M6-1 "right arrow "(21"X15")	1 EA

EQUIPMENT LIST (CONT.)

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

ITEM NO.	DESCRIPTION	QUANTITY
1001	Maintenance of traffic per assignment.	3 EA
2002	Test Pit Excavation	6 C.Y.
5001	5" white heat applied permanent preformed thermoplastic pavement marking.	105 L.F.
5002	5" yellow heat applied permanent preformed thermoplastic pavement marking.	410 L.F.
5003	Removal of existing permanent pavement line markings	400 L.F.
5006	24" white heat applied permanent preformed thermoplastic pavement marking.	65 L.F.
6006	Traffic barrier w Beam using 6' Post	160 L.F.
6008	Type C traffic barrier end treatment.	3 EA
8001	Furnish and install concrete for signal foundation.	21 C.Y.
8014	Pre-manufactured camera to controller (200' length) cable	3 EA
8027	Furnish and install breakaway pedestal pole (14').	1 EA
8028	Relocate sign.	36 SF
8034	3" electrical conduit riser (PVC).	15 LF
8035	Furnish and install electrical cable - 5 conductor (No. 12 AWG)	1150 LF
8037	Furnish and install electrical cable - 1 conductor (No. 250 KCMIL)	140 L.F.
8043	Wood sign supports 4"x6".	40 L.F.
8044	Furnish and install No. 6 AWG stranded bare copper ground wire.	285 L.F.
8047	Weatherhead, 3 inch	1 EA
8050	Furnish and install 4" schedule 80 rigid polyvinyl chloride - bored.	170 L.F.
8051	Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched.	45 L.F.
8052	Furnish and install 3" schedule 80 rigid polyvinyl chloride - trenched.	185 L.F.
8053	Furnish and install 4" schedule 80 rigid polyvinyl chloride - trenched.	60 L.F.
8058	Metered pedestal service.	1 EA
8061	Furnish and install electrical cable 1-conductor No. 4 AWG THWN/THWN.	35 L.F.
8067	Furnish and install electrical handhole.	5 EA
8069	Install ground mounted sign.	34 SF
8070	Install overhead sign.	132 SF
8071	Video detector camera.	3 EA
8075	27' steel pole and twin 50' (cut to 40'1/50' mast arms.	1 EA
8076	Furnish and install 27' mast arm pole and 38' mast arm.	1 EA
8078	Furnish and install 27' mast arm pole and 60' (cut to 20') mast arm.	1 EA
8082	Furnish and install 12-pair communication cable, self-supporting (overhead).	3660 L.F.
8084	Furnish and install 250 watt HPS Luminaire with photocell.	1 EA
8091	Furnish and install ground rod -¾" x 10'.	8 EA
8093	Furnish and install 12" vehicular traffic signal head section	30 EA
8096	Cut, clean, galvanize and cap traffic signal structure.	2 EA
8101	Furnish and install electrical cable -5 conductor (No. 14 AWG).	80 L.F.
8102	Furnish and install electrical cable -7 conductor (No. 14 AWG).	515 L.F.
8103	Furnish and install tray cable - 2 conductor (No. 12 AWG).	130 L.F.
8107	Furnish and install 15' lighting arm for traffic signal structure.	1 EA

EQUIPMENT LIST (CONT.)

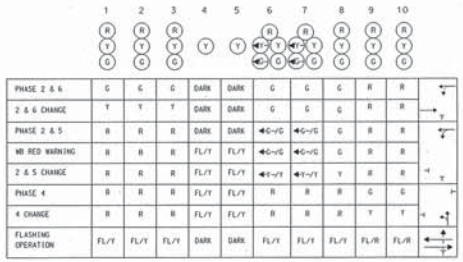
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8110	Furnish and install steel span wire, ⅜" diameter.	750 L.F.
8112	Install controller and cabinet base mount.	1 EA

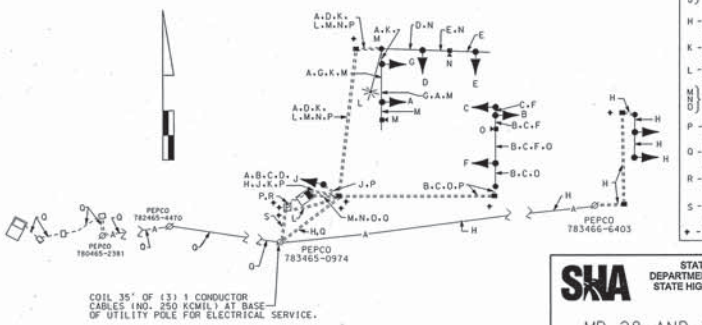
C. EQUIPMENT TO BE REMOVED

There is no signal equipment to be removed.

PHASE CHART



WIRING DIAGRAM



WIRING KEY

- DCBA — 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- GFEM — 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- H - 5-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G)
- K - 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- L - 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)
- DEM — PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (200')
- P - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- Q - 12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING)
- R - 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- S - 3 - 1 CONDUCTOR ELECTRICAL CABLE (No. 250 KCMIL)
- + - GROUND ROD

CONSULTANT LOGO IF APPLICABLE

PLOTTED: <DATETIME>
FILE: <FILE>

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 28 AND WINTERGATE DR.

SCALE NONE DATE 6/15/05 CONTRACT NO. AT7185185

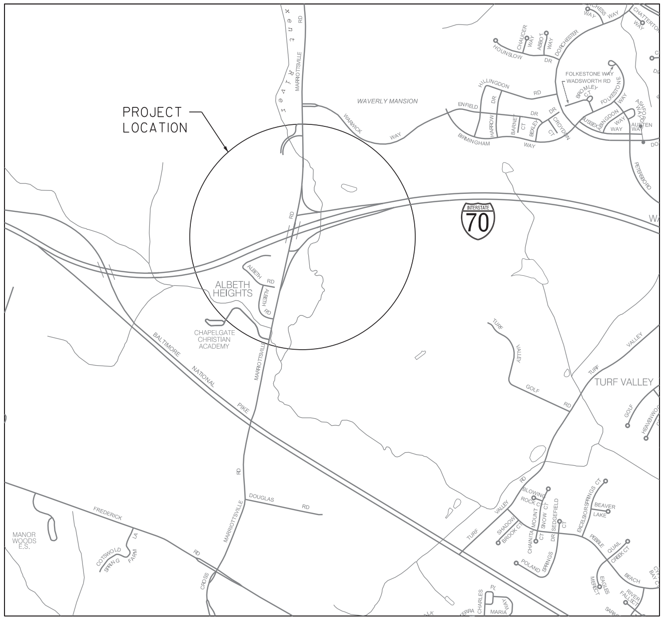
DESIGNED BY J.A.
DRAWN BY R.C.
CHECKED BY
F.A.P. NO. AC STPG-000S(934)E

COUNTY MONTGOMERY
LOGMILE 15002828.33
TMS NO. G536
TOD NO.

TS NO. 4351GI | DRAWING NO. OF | SHEET NO. 3 OF 3

PROJECT DESCRIPTION

THIS PROJECT INVOLVES INSTALLING INTERCHANGE LIGHTING AT THE I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE ROAD INTERCHANGE. THIS PROJECT IS IN HOWARD COUNTY.



N

PROJECT LOCATION
N.T.S.

EQUIPMENT LISTS "A, B & C"

A. EQUIPMENT TO BE FURNISHED BY ADMINISTRATION AND INSTALLED BY THE CONTRACTOR

NONE

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1002	MAINTENANCE OF TRAFFIC	LUMP	1
1003	PROTECTION VEHICLE	UD	45
2001	TEST PIT EXCAVATION	CY	21
8004	LIGHTING CONTROL CABINET, BASE MOUNT (12 0/240V,1 PHASE, 3 WIRE)	EA	2
8007	UP TO 200 AMP BASE MOUNTED METERED SERVICE PEDESTAL	EA	2
8012	CONCRETE FOUNDATION FOR TRAFFIC CONTROL DEVICES	CY	64
8013	THIRD PARTY CONCRETE TESTING	EA	2
8017	NO. 4 AWG STRANDED BARE COPPER GROUND WIRE	LF	6800
8019	ELECTRICAL CABLE 1-CONDUCTOR 250 KCMIL, CU, TYPE USE, 600V	LF	200
8022	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-BORED	LF	620
8023	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED	LF	220
8026	LED ROADWAY LUMINAIRE	EA	29
8031	40 FOOT LIGHTING STRUCTURE WITH UP TO A 20 FOOT BRACKET ARM	EA	29
8036	FURNISH AND INSTALL ELECTRICAL MANHOLE	EA	14
8039	BREAKAWAY BASE SUPPORT SYSTEM FOR LIGHTING STRUCTURE	EA	15
8044	DUCT CABLE - 2 CONDUCTOR, NO 4 AWG, 600 V	LF	10,300
8047	CABLE - 1 CONDUCTOR, NO 4 AWG, TYPE USE, 600V	LF	2,600
8049	CABLE - 1 CONDUCTOR, NO 10 AWG, TYPE THWN/THHN, 600V	LF	5,800
8052	CONNECTOR KIT - TYPE I	EA	36
8053	CONNECTOR KIT - TYPE II	EA	28
8054	CONNECTOR KIT - TYPE III	EA	30
8055	CONNECTOR KIT - TYPE IV	EA	20
8056	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	EA	51
8061	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT (PER ASSIGNMENT)	EA	1

INDEX OF SHEETS

1	AT-01	PROJECT INFORMATION AND QUANTITIES
2	LT-01	SHEET LAYOUT
3	LT-02	LIGHTING PLAN
4	LT-03	LIGHTING PLAN
5	LT-04	LIGHTING PLAN
6	LT-05	LIGHTING PLAN
7	LT-06	PANEL AND POLE SCHEDULE

GENERAL NOTES:

1. ALL UTILITY LINES ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND ELECTRICAL LINES AND UTILITIES PRIOR TO CONSTRUCTION. IF THE CONTRACTOR PERCEIVES THAT THERE IS A CONFLICT BETWEEN THE PROPOSED LIGHTING EQUIPMENT AND THE EXISTING UNDERGROUND ELECTRICAL LINES OR UTILITIES THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

2. THE HORIZONTAL OFFSET OF THE PROPOSED LIGHT POLE TO THE NOTED OBJECT MAY BE ADJUSTED SO THAT THE LUMINAIRE IS MOUNTED BETWEEN 1 FOOT WITHIN AND 2 FEET OUTSIDE OF THE EDGE OF TRAVEL LANE. THE MINIMUM POLE OFFSET FROM THE CENTERLINE OF THE LIGHT POLE TO THE EDGE OF SHOULDER, FACE OF W-BEAM OR FACE OF CURB SHALL NOT BE LESS THAN 6 FEET, UNLESS OTHERWISE SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

3. THE CENTER OF THE CABLE TRENCH SHALL BE 3 FEET BEHIND THE CENTER OF THE LIGHTING STRUCTURES UNLESS OTHERWISE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

4. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN CASE OF DAMAGE TO AN EXISTING FACILITY.

5. THE CONTRACTOR SHALL REPLACE ALL CONCRETE GUTTERS, FLUMES, UNDERDRAINS AND OTHER CONCRETE STRUCTURES DAMAGED OR REMOVED DURING THE INSTALLATION OF FOUNDATIONS AND CABLE. REPLACEMENT OF CONCRETE STRUCTURES WILL NOT BE MEASURED, BUT THEIR REPLACEMENT WILL BE INCIDENTAL TO OTHER PERTINENT ITEMS IN THE CONTRACT.

6. LIGHTING STRUCTURES SHALL NOT BE PLACED ON THE ROADWAY SIDE OF EXISTING OR PROPOSED TRAFFIC BARRIER W-BEAM OR CONCRETE TRAFFIC BARRIER WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.

7. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CABLE SHALL BE BY EXOTHERMIC WELD.

8. CONDUCTORS SHALL NOT BE SPLICED EXCEPT IN STRUCTURES, MANHOLES AND PULL OR JUNCTION BOXES. ALL MANHOLES, CONDUITS UNDER PAVEMENT, LIGHTING STRUCTURES, ETC. SHALL BE STAKED OUT AND EVERY LOCATION APPROVED BY THE ENGINEER BEFORE ANY WORK IS DONE.

9. ALL DRIVEN CONDUIT SHALL BE PLACED UNDER PAVEMENT BY DIRECTIONAL BORING OR JACKING.

10. ALL LIGHTING STRUCTURES NOT PROTECTED BY TRAFFIC BARRIER SHALL BE ON BREAKAWAY BASES.

11. ALL TRENCHING MUST BE BACKFILLED AND STABILIZED ON THE SAME WORKING DAY ON WHICH IT WAS OPENED. AREAS WHICH ARE NOT RESEEDED, MULCHED OR SODDED MUST BE COVERED TO PREVENT EROSION.

12. ALL SOIL REMOVED FOR HANDBOXES, FOUNDATIONS, ETC. MUST BE COVERED TO PREVENT EROSION. SOIL NOT USED FOR BACKFILL MUST BE DISPOSED OF THE ENGINEER'S SATISFACTION ON THE SAME WORKING DAY THE BACKFILL IS COMPLETED.

GENERAL NOTES (CONTINUED):

13. ALL DIMENSIONS SHOWN ARE MEASURED ALONG EDGE OF ROAD OR FACE OF CURB. OFFSETS ARE MEASURED FROM OBJECT TO CENTERLINE OF PROPOSED LIGHT POLE AS NOTED IN THE LIGHTING TAG AND POLE SCHEDULE.

14. FOR LOCATION OF CONTROL CABINETS WITH PANEL SEE SHEETS LT-02 AND LT-05.

15. CONTRACTOR SHALL NOTIFY MR. DAVE CLUTTER OF DISTRICT 7 MAINTENANCE (301-624-8113) 2 WEEKS PRIOR TO REMOVAL OF ANY EQUIPMENT. MR. CLUTTER WILL MARK EXISTING LIGHT POLES TO BE SALVAGED BY DISTRICT 7 FORCES.

16. AS-BUILT LIGHTING INVENTORY DATA SHALL BE PROVIDED TO THE ADMINISTRATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AT THE COMPLETION OF THE BURN TEST. LIGHTING SYSTEMS WILL NOT BE ACCEPTED FOR MAINTENANCE UNTIL AS-BUILT LIGHTING INVENTORY DATA HAS BEEN RECEIVED BY THE ADMINISTRATION.

17. FOUNDATIONS WITH BREAKAWAY BASES SHALL NOT PROTRUDE MORE THAN 4" ABOVE GRADE.

18. THE THIRD WIRE IN THE LIGHT POLES SHALL BE GREEN IN COLOR FOR THE GROUND WIRE.

19. EXISTING LEASE LIGHTS SHOWN ARE FOR REFERENCE PURPOSES ONLY. ALL PROPOSED LEASE LIGHTS AND REVISIONS TO EXISTING LEASE LIGHT WILL BE PERFORMED BY BG&E FORCES ONLY.

20. ALL TRENCHED CONDUIT SHALL BE 4 INCH CONDUIT UNLESS OTHERWISE NOTED ON THE PLANS.

21. INSTALL LIGHTING TAGS PER MD 808.03.

22. ALL MANHOLES SHALL BE INSTALLED WITH A 6 INCH UNDERDRAIN TO THE NEAREST OUTLET AS PER MD 811.04.

PARSONS BRINCKERHOFF

100 S. Charles Street
Tower 1, 10th Floor
Baltimore, MD 21201
(Ph) 410-787-5050
(Fax) 410-727-4608
http://www.pbworld.com

APPROVALS

TEAM LEADER

ASST. DIV. CHIEF

DIVISION CHIEF

OFFICE DIRECTOR

REVISIONS

SHA

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

I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

PROJECT INFORMATION AND QUANTITIES

SCALE NONE DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY JEK
DRAWN BY JEK
CHECKED BY LFW
F.A.P. NO.

COUNTY HOWARD
LOGMILE 13007013.59
TIMS NO. M585
TOD NO.

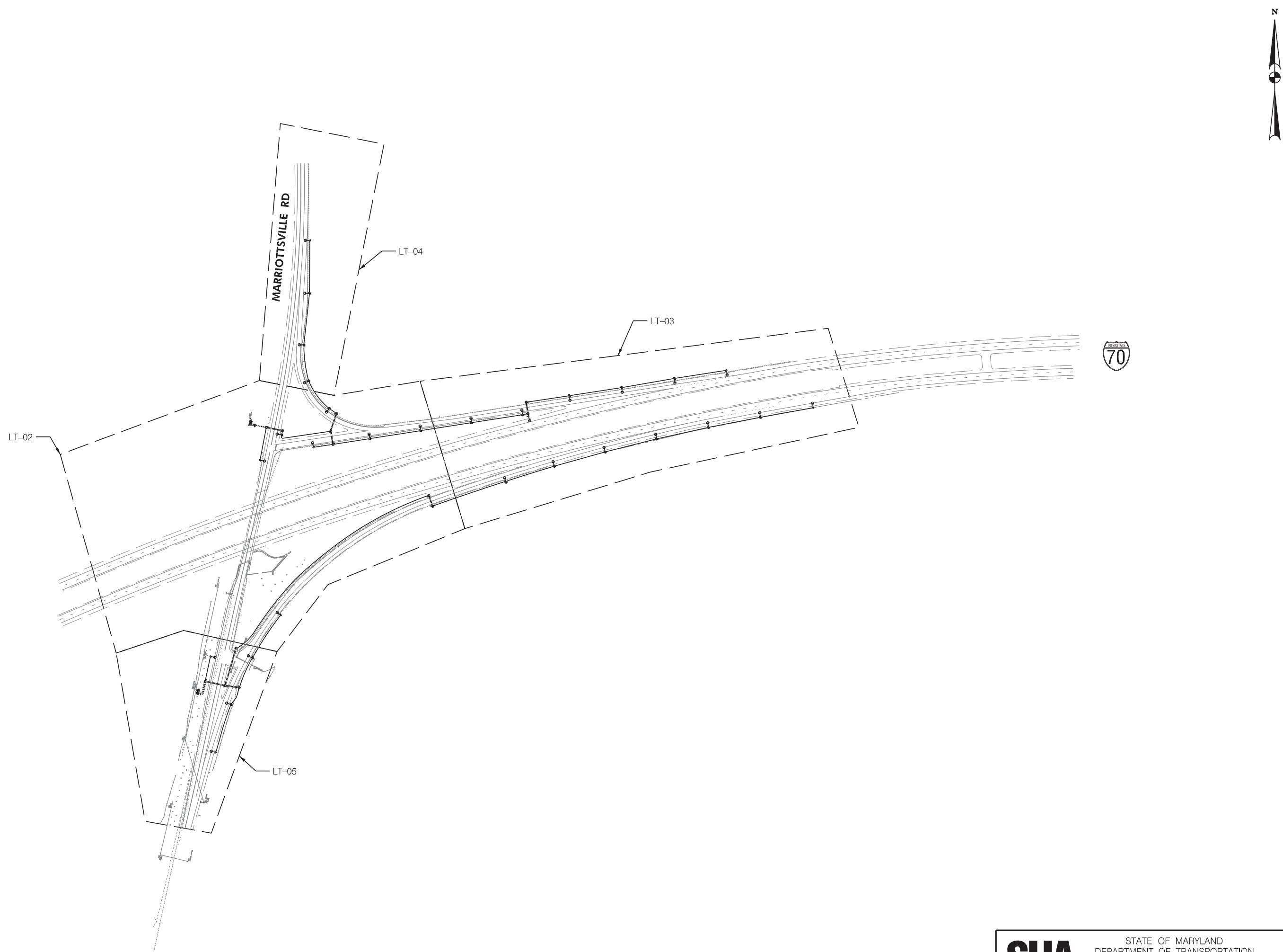
DRAWING NO. AT-01 OF 01 SHEET NO. 01 OF 07

PLOTTED: Monday, March 09, 2015 AT 04:12 PM
FILE: T:\173124A-TrafficDesignServices\TRF\198\Plans\pLT-AW_I-70 @ Marriottsville.dgn

BORDER REV. DATE: Monen12720807

DRILL HOLES
DRILL HOLES
DRILL HOLES

BY: Kurgansky -



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

I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

REVISIONS

SHEET LAYOUT

SCALE 1" = 200' DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY	JEK	COUNTY	HOWARD
DRAWN BY	JEK	LOGMILE	13007013.59
CHECKED BY	LFW	TIMS NO.	M585
F.A.P. NO.		TOD NO.	

DRAWING NO. LT – 01 OF 06 SHEET NO. 02 OF 07

PARSONS BRINCKERHOFF

100 S. Charles Street
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(Fax) 410-727-4608
http://www.pbworld.com

PLOTTED: Tuesday, February 03, 2015 AT 02:03 PM
FILE: T:\173124A-TrafficDesignServices\TRF\198\Plans\pLT-P001_I-70 @ Marriottsville.dgn

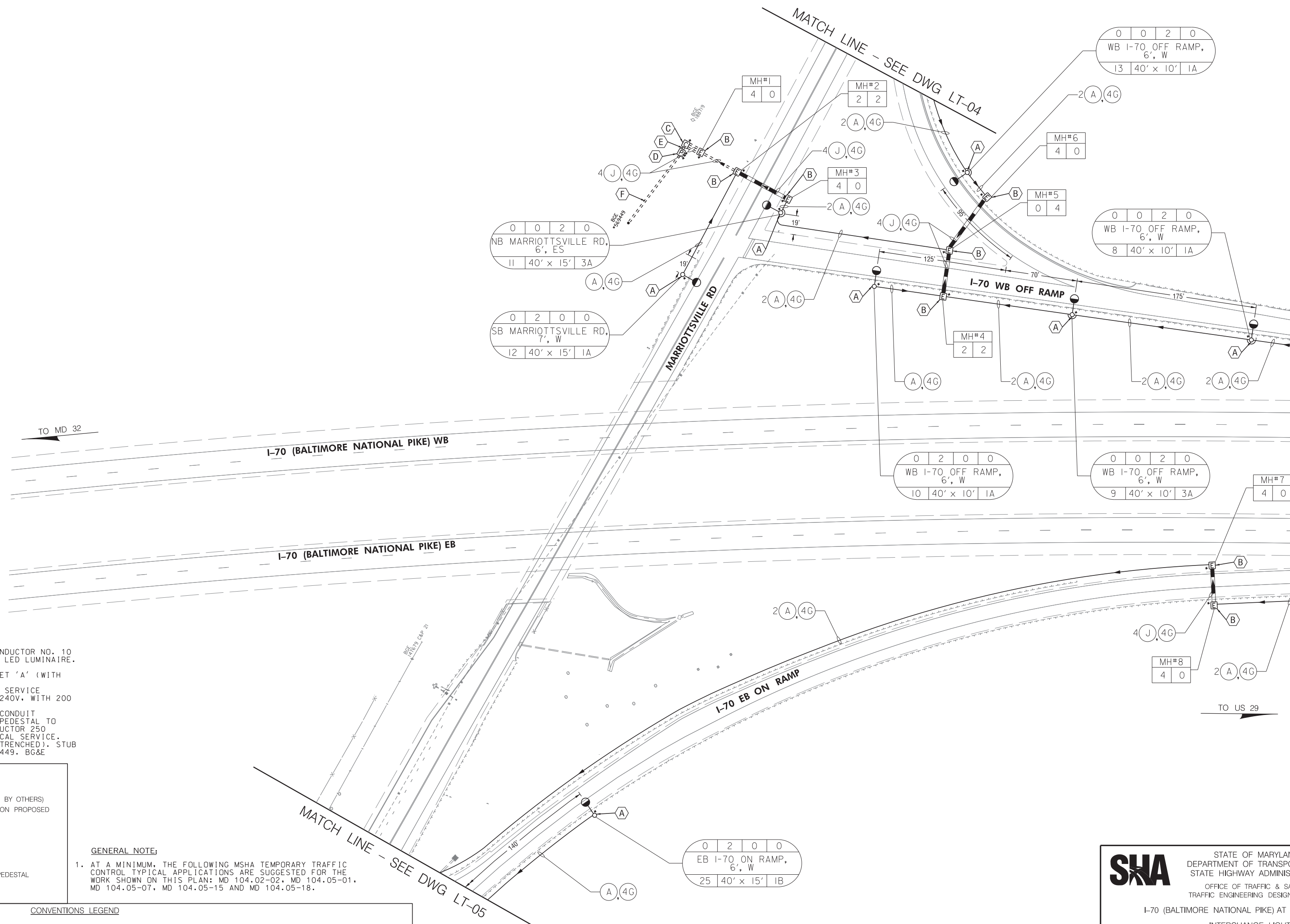
BY: Kurgansky –

BORDER REV. DATE: Wonen127200807

DRILL HOLES

DRILL HOLES

DRILL HOLES



CONSTRUCTION DETAILS

A. INSTALL PROPOSED LIGHT POLE WITH 3-1 CONDUCTOR NO. 10 AWG, TYPE THWN/THHN, 600V CABLES TO THE LED LUMINAIRE.
B. INSTALL PROPOSED ELECTRICAL MANHOLE.
C. INSTALL PROPOSED LIGHTING CONTROL CABINET 'A' (WITH PHOTOCELL) PER MD 801.03 AND 807.03.
D. FURNISH AND INSTALL BASE MOUNTED METER SERVICE PEDESTAL WITH SOCKET, SINGLE PHASE 120/240V, WITH 200 AMP MAIN DISCONNECT SWITCH.
E. INSTALL PROPOSED 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED) FROM PROPOSED METER SERVICE PEDESTAL TO PROPOSED LIGHTING CABINET WITH 3-1 CONDUCTOR 250 KCMIL, 600V CABLES FOR PROPOSED ELECTRICAL SERVICE.
F. INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED). STUB UP AT THE BASE OF PROPOSED POLE BGE#569449. BG&E FORCES TO MAKE FINAL CONNECTION.

LIGHTING SYMBOL LEGEND

- EXISTING UTILITY POLE
- PROPOSED 280W LED LEASED LIGHT (INSTALLED BY OTHERS)
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
- 4" SCHEDULE 80 PVC CONDUIT, TRENCHED
- DIRECT BURIAL DUCT CABLE
- C PROPOSED LIGHTING CABINET
- P PROPOSED BASE MOUNTED METERED SERVICE PEDESTAL
- E PROPOSED ELECTRICAL MANHOLE
- PROPOSED GROUND ROD

GENERAL NOTE:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS ARE SUGGESTED FOR THE WORK SHOWN ON THIS PLAN: MD 104.02-02, MD 104.05-01, MD 104.05-07, MD 104.05-15 AND MD 104.05-18.

GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

- SD —— SD STORM DRAIN
- G —— G GAS MAIN
- W —— W WATER MAIN
- S —— S SEWER MAIN
- E —— E ELECTRIC CABLES
- A —— A AERIAL CABLES
- T —— T TELEPHONE CABLES
- F —— F FIBER-OPTIC

CONVENTIONS LEGEND

- QUANTITY OF CONNECTOR KITS
- OFFSET AND OFFSET CODE
- CIRCUIT NUMBER
- MOUNTING HEIGHT X MAST ARM LENGTH
- POLE NUMBER
- POL | MH | OFF
- MANHOLE NUMBER
- # OF TYPE IV CONNECTOR KITS
- # OF TYPE I CONNECTOR KITS

*OFFSET CODES:
W=FACE OF W-BEAM, FOC=FACE OF CURB, ES=EDGE OF SHOULDER
CM=CENTERED IN MEDIAN, B=FACE OF CONCRETE BARRIER

- (A) 2 /C #4 AWG DUCT CABLE
- (J) 1 /C #4 AWG TYPE XHHW USE, 600V
- (4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # (X)(G) TYPE AND SIZE OF CABLES IN TRENCH /CONDUIT; TOTAL NUMBER OF CABLE(S) IN TRENCH /CONDUIT

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I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

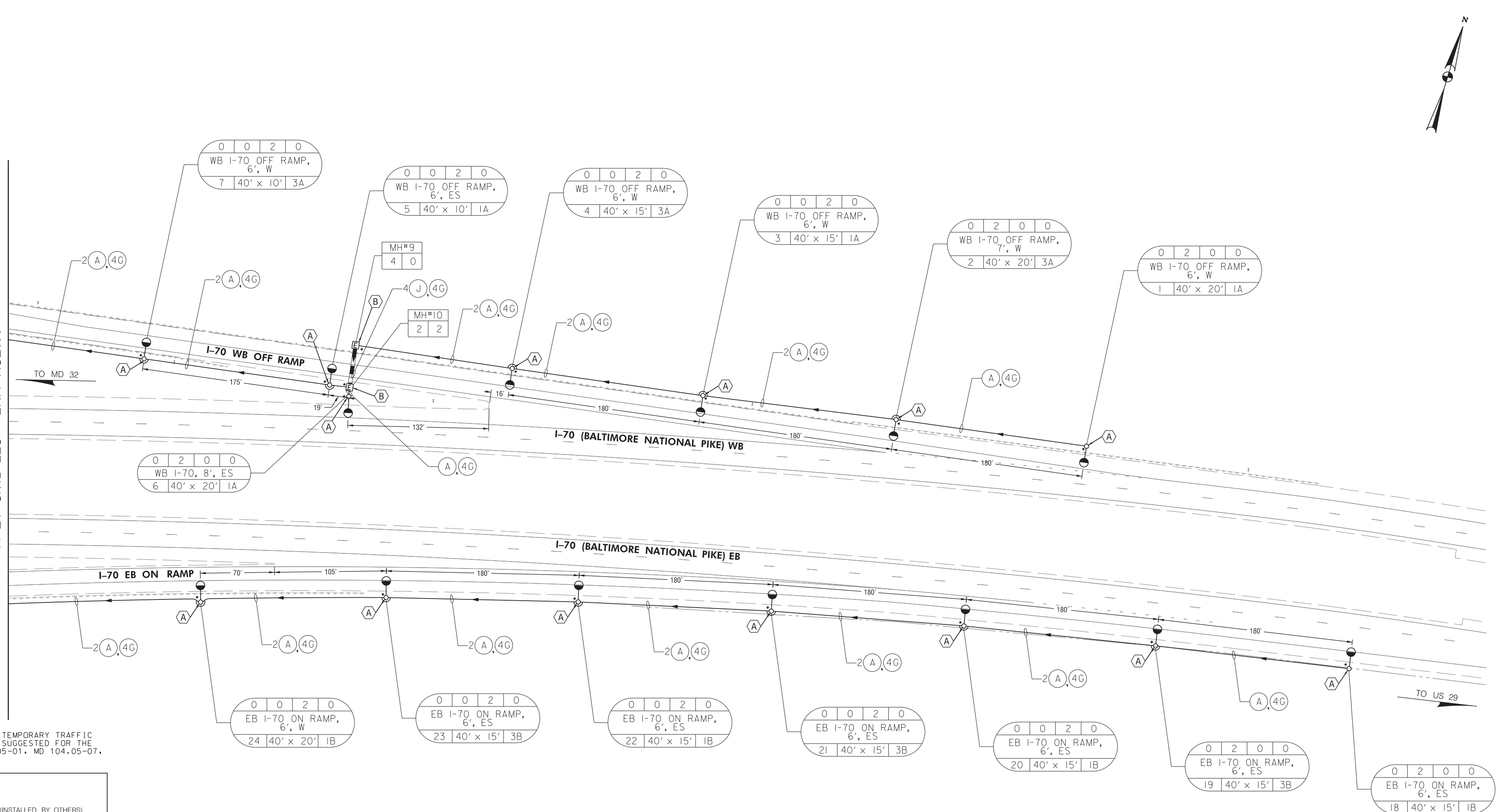
LIGHTING PLAN

SCALE 1" = 50' DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY	JEK	COUNTY	HOWARD
DRAWN BY	JEK	LOGMILE	13007013.59
CHECKED BY	LFW	TIMS NO.	M585
F.A.P. NO.		TOD NO.	

DRAWING NO. LT-02 OF 06 SHEET NO. 03 OF 07

PLOTTED: Monday, March 09, 2015 AT 04:12 PM
FILE: T:\173124A-TrafficDesignServices\TRF\198\Plans\pLT-P002_I-70 @ Marriottsville.dgn



GENERAL NOTE:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS ARE SUGGESTED FOR THE WORK SHOWN ON THIS PLAN: MD 104.05-01, MD 104.05-07, MD 104.05-15 AND MD 104.05-18.

LIGHTING SYMBOL LEGEND

- EXISTING UTILITY POLE
- PROPOSED 280W LED LEASED LIGHT (INSTALLED BY OTHERS)
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
- 4" SCHEDULE 80 PVC CONDUIT, TRENCHED
- DIRECT BURIAL DUCT CABLE
- C PROPOSED LIGHTING CABINET
- P PROPOSED BASE MOUNTED METERED SERVICE PEDESTAL
- E PROPOSED ELECTRICAL MANHOLE
- PROPOSED GROUND ROD

CONSTRUCTION DETAILS

A. INSTALL PROPOSED LIGHT POLE WITH 3-1 CONDUCTOR NO. 10 AWG, TYPE THWN/THHN, 600V CABLES TO THE LED LUMINAIRE.
B. INSTALL PROPOSED ELECTRICAL MANHOLE.

GEOMETRIC LEGEND

EXISTING
PROPOSED

UTILITY LEGEND

- SD — SD — STORM DRAIN
- G — G — GAS MAIN
- W — W — WATER MAIN
- S — S — SEWER MAIN
- E — E — ELECTRIC CABLES
- A — A — AERIAL CABLES
- T — T — TELEPHONE CABLES
- F — F — FIBER-OPTIC

CONVENTIONS LEGEND

QUANTITY OF CONNECTOR KITS
OFFSET AND OFFSET CODE
CIRCUIT NUMBER
MOUNTING HEIGHT X MAST ARM LENGTH
POLE NUMBER
POL MH OFF
MANHOLE NUMBER
OF TYPE IV CONNECTOR KITS
OF TYPE I CONNECTOR KITS

*OFFSET CODES:
W=FACE OF W-BEAM, FOC=FACE OF CURB, ES=EDGE OF SHOULDER
CM=CENTERED IN MEDIAN, B=FACE OF CONCRETE BARRIER

- (A) 2/C #4 AWG DUCT CABLE
- (J) 1/C #4 AWG TYPE XHHW USE, 600V
- (4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # (X)(G) TYPE AND SIZE OF CABLES IN TRENCH /CONDUIT; TOTAL NUMBER OF CABLE(S) IN TRENCH /CONDUIT

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I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

LIGHTING PLAN

SCALE 1" = 50' DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY	JEK	COUNTY	HOWARD
DRAWN BY	JEK	LOGMILE	13007013.59
CHECKED BY	LFW	TIMS NO.	M585
F.A.P. NO.		TOD NO.	

DRAWING NO. LT-03 OF 06 SHEET NO. 04 OF 07

PLOTTED: Tuesday, February 03, 2015 AT 02:03 PM
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BORDER REV. DATE: Women1272Q0807

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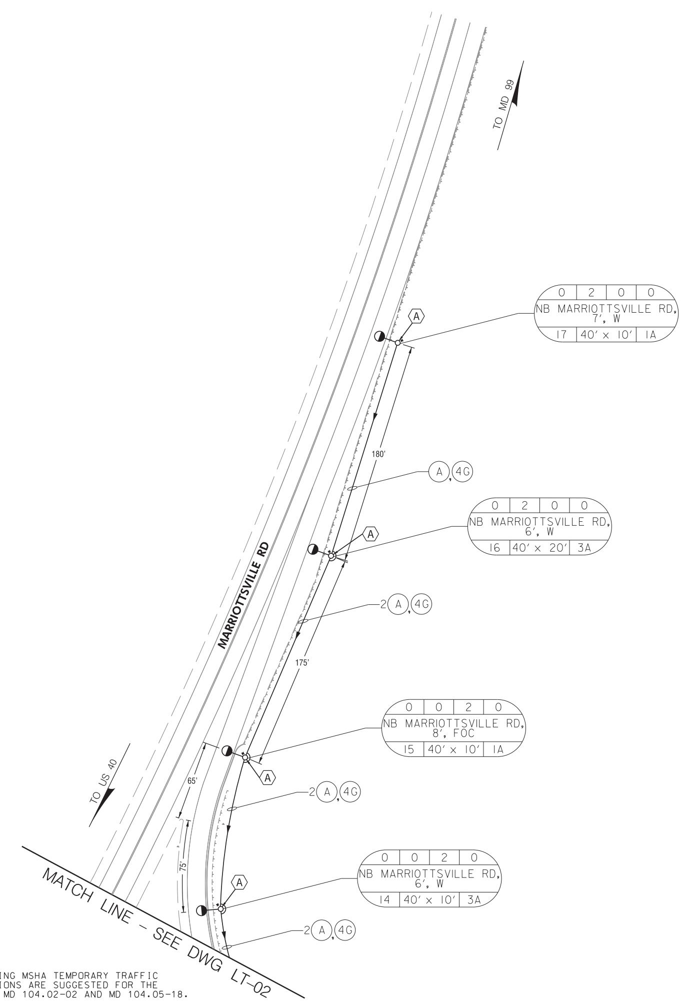
DRILL HOLES
DRILL HOLES

BY: Kurgansky -



CONSTRUCTION DETAILS

A. INSTALL PROPOSED LIGHT POLE WITH 3-1 CONDUCTOR NO. 10 AWG. TYPE THWN/THHN. 600V CABLES TO THE LED LUMINAIRE.

LIGHTING SYMBOL LEGEND

- EXISTING UTILITY POLE
- PROPOSED 280W LED LEASED LIGHT (INSTALLED BY OTHERS)
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
- 4" SCHEDULE 80 PVC CONDUIT, TRENCHED
- DIRECT BURIAL DUCT CABLE
- C PROPOSED LIGHTING CABINET
- P PROPOSED BASE MOUNTED METERED SERVICE PEDESTAL
- E PROPOSED ELECTRICAL MANHOLE
- PROPOSED GROUND ROD

GENERAL NOTE:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS ARE SUGGESTED FOR THE WORK SHOWN ON THIS PLAN: MD 104.02-02 AND MD 104.05-18.

GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

- SD — STORM DRAIN
- G — GAS MAIN
- W — WATER MAIN
- S — SEWER MAIN
- E — ELECTRIC CABLES
- A — AERIAL CABLES
- T — TELEPHONE CABLES
- F — FIBER-OPTIC

CONVENTIONS LEGEND

- QUANTITY OF CONNECTOR KITS
- OFFSET AND OFFSET CODE
- CIRCUIT NUMBER
- MOUNTING HEIGHT X MAST ARM LENGTH
- POLE NUMBER
- MANHOLE NUMBER
- # OF TYPE IV CONNECTOR KITS
- # OF TYPE I CONNECTOR KITS

*OFFSET CODES:
W=FACE OF W-BEAM, FOC=FACE OF CURB, ES=EDGE OF SHOULDER
CM=CENTERED IN MEDIAN, B=FACE OF CONCRETE BARRIER

- (A) 2 /C #4 AWG DUCT CABLE
- (J) 1/C #4 AWG TYPE XHHW USE, 600V
- (4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # (X)(G) — TYPE AND SIZE OF CABLES IN TRENCH /CONDUIT; TOTAL NUMBER OF CABLE(S) IN TRENCH /CONDUIT

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I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

LIGHTING PLAN

SCALE 1" = 50' DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY	JEK	COUNTY	HOWARD
DRAWN BY	JEK	LOGMILE	13007013.59
CHECKED BY	LFW	TIMS NO.	M585
F.A.P. NO.		TOD NO.	

DRAWING NO. LT-04 OF 06 SHEET NO. 05 OF 07

PLOTTED: Tuesday, February 03, 2015 AT 02:03 PM
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BORDER REV. DATE: Wonen1272O8O7
BY: Kurgansky -

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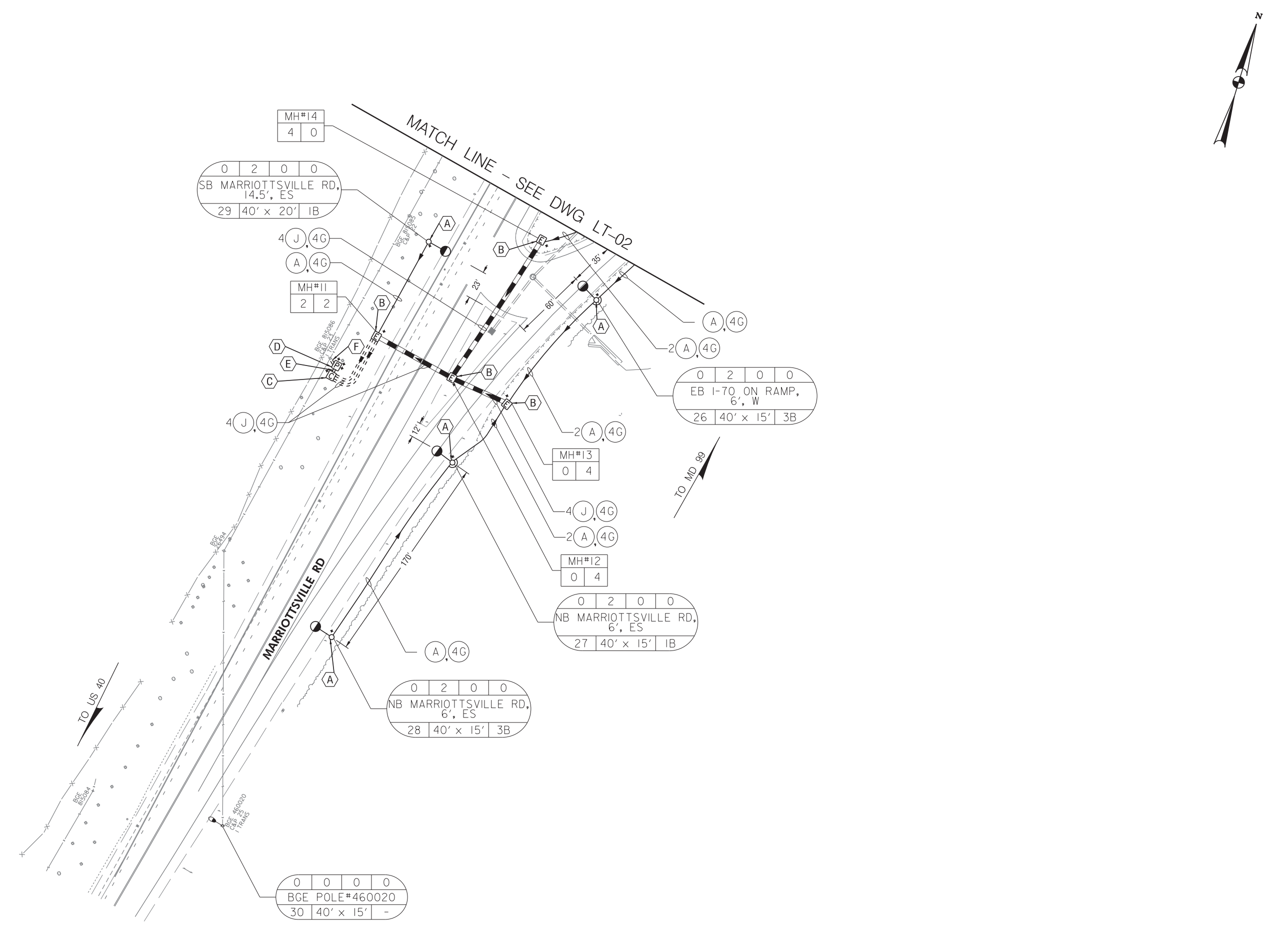
DRILL HOLES



CONSTRUCTION DETAILS

A. INSTALL PROPOSED LIGHT POLE WITH 3-1 CONDUCTOR NO. 10 AWG. TYPE THWN/THHN. 600V CABLES TO THE LED LUMINAIRE.
B. INSTALL PROPOSED ELECTRICAL MANHOLE.
C. INSTALL PROPOSED LIGHTING CONTROL CABINET 'B' (WITH PHOTOCELL) PER MD 801.03 AND 807.03.
D. FURNISH AND INSTALL BASE MOUNTED METER SERVICE PEDESTAL WITH SOCKET. SINGLE PHASE 120/240V. WITH 200 AMP MAIN DISCONNECT SWITCH.
E. INSTALL PROPOSED 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED) FROM PROPOSED METER SERVICE PEDESTAL TO PROPOSED LIGHTING CABINET WITH 3-1 CONDUCTOR 250 KCMIL. 600V CABLES FOR PROPOSED ELECTRICAL SERVICE.
F. INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED). STUB UP AT THE BASE OF POLE BGE#815086. BG&E FORCES TO MAKE FINAL CONNECTION.

LIGHTING SYMBOL LEGEND

- EXISTING UTILITY POLE
- PROPOSED 280W LED LEASED LIGHT (INSTALLED BY OTHERS)
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
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- P PROPOSED BASE MOUNTED METERED SERVICE PEDESTAL
- E PROPOSED ELECTRICAL MANHOLE
- + PROPOSED GROUND ROD

GENERAL NOTE:

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GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

SD — SD	STORM DRAIN
G — G	GAS MAIN
W — W	WATER MAIN
S — S	SEWER MAIN
E — E	ELECTRIC CABLES
A — A	AERIAL CABLES
T — T	TELEPHONE CABLES
F — F	FIBER-OPTIC

CONVENTIONS LEGEND

- QUANTITY OF CONNECTOR KITS
- OFFSET AND OFFSET CODE
- CIRCUIT NUMBER
- MOUNTING HEIGHT X MAST ARM LENGTH
- POLE NUMBER
- MANHOLE NUMBER
- # OF TYPE IV CONNECTOR KITS
- # OF TYPE I CONNECTOR KITS

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I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

LIGHTING PLAN

SCALE 1" = 50'	DATE FEBRUARY 3, 2015
CONTRACT NO. XY2395185	
DESIGNED BY JEK	COUNTY HOWARD
DRAWN BY JEK	LOGMILE 13007013.59
CHECKED BY LFW	TIMS NO. M585
F.A.P. NO.	TOD NO.
DRAWING NO. LT-05 OF 06	SHEET NO. 06 OF 07

PLOTTED: Tuesday, February 03, 2015 AT 02:04 PM
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BORDER REV. DATE: Mon Jan 12 7202 0807

SCHEDULE OF PROPOSED PANEL "A" - LT-02 (MARRIOTTSVILLE RD SB)

SERVICE 200 AMP 120/240 VOLTS, 1 PHASE, 3 WIRE		LUMINAIRE VOLTAGE, 240 VOLTS			BREAKERS 200 AMP MAIN BREAKER			
CIRCUIT NUMBER	EQUIPMENT SERVED	CONNECTED LOAD		PHASE AND VOLTS	BRANCH CIRCUIT BREAKERS			REMARKS
		KW	AMPS		NUMBER OF POLES	FRAME SIZE	TRIP SIZE	
1A	LIGHT POLES 1, 3,5,6,8,10,12,13,15,17	2.80	11.67	1/240	2	100	20	(10) -280 WATT LED ROADWAY LUMINAIRES
2A	SPACE	-	-	-	-	-	-	
3A	LIGHT POLES 2,4,7,9,11,14,16	1.96	8.17	1/240	2	100	20	(7) -280 WATT LED ROADWAY LUMINAIRES
4A	SPACE	-	-	-	-	-	-	
5A	SPACE	-	-	-	-	-	-	
6A	SPACE	-	-	-	-	-	-	
7A	SPACE	-	-	-	-	-	-	
8A	SPACE	-	-	-	-	-	-	
	TOTAL	4.76	19.8					

SCHEDULE OF PROPOSED PANEL "B" - LT-05 (MARRIOTTSVILLE RD SB)

SERVICE 200 AMP 120/240 VOLTS, 1 PHASE, 3 WIRE		LUMINAIRE VOLTAGE, 240 VOLTS			BREAKERS 200 AMP MAIN BREAKER			
CIRCUIT NUMBER	EQUIPMENT SERVED	CONNECTED LOAD		PHASE AND VOLTS	BRANCH CIRCUIT BREAKERS			REMARKS
		KW	AMPS		NUMBER OF POLES	FRAME SIZE	TRIP SIZE	
1B	LIGHT POLES 18,20,22,24,25,27,29	1.96	8.17	1/240	2	100	20	(7) -280 WATT LED ROADWAY LUMINAIRES
2B	SPACE	-	-	-	-	-	-	
3B	LIGHT POLES 19,21,23,26,28	1.40	5.83	1/240	2	100	20	(5) -280 WATT LED ROADWAY LUMINAIRES
4B	SPACE	-	-	-	-	-	-	
5B	SPACE	-	-	-	-	-	-	
6B	SPACE	-	-	-	-	-	-	
7B	SPACE	-	-	-	-	-	-	
8B	SPACE	-	-	-	-	-	-	
	TOTAL	3.36	14.0					

SCHEDULE OF MANHOLES - I-70 @ MARRIOTTSVILLE

MANHOLE NUMBER	NUMBER OF TYPE I CONNECTOR KITS	NUMBER OF TYPE IV CONNECTOR KITS	EXISTING OR PROPOSED
01	4	0	PROPOSED
02	2	2	PROPOSED
03	4	0	PROPOSED
04	2	2	PROPOSED
05	0	4	PROPOSED
06	4	0	PROPOSED
07	4	0	PROPOSED
08	4	0	PROPOSED
09	4	0	PROPOSED
10	2	2	PROPOSED
11	2	2	PROPOSED
12	0	4	PROPOSED
13	0	4	PROPOSED
14	4	0	PROPOSED

SCHEDULE OF POLES - I-70 @ MARRIOTTSVILLE

POLE NUMBER	BRACKET ARM LENGTH	POLE HEIGHT	LUMINAIRE WATTAGE	TYPE OF BASE	POLE STANDARD	POLE LOCATION	DRAWING NUMBER
1	20'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-03
2	20'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	7' TO FACE OF W-BEAM	LT-03
3	15'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-03
4	15'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-03
5	10'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
6	20'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	8' TO EDGE OF SHOULDER	LT-03
7	10'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-03
8	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-02
9	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-02
10	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-02
11	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-02
12	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	7' TO FACE OF W-BEAM	LT-02
13	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-02
14	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-04
15	10'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	8' TO FACE OF CURB	LT-04
16	20'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-04
17	10'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	7' TO FACE OF W-BEAM	LT-04
18	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
19	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
20	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
21	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
22	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
23	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-03
24	20'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-03
25	15'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-02
26	15'	40'	UP TO 280 WATT LED	NON-BREAKAWAY	PROPOSED	6' TO FACE OF W-BEAM	LT-05
27	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-05
28	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO EDGE OF SHOULDER	LT-05
29	20'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	14.5' TO EDGE OF SHOULDER	LT-05
30	15'	N/A	UP TO 280 WATT LED	EXISTING UTILITY POLE	-	BG&E POLE # 460020	LT-05

DRILL HOLES

DRILL HOLES

DRILL HOLES

BY: Kurgansky –

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I-70 (BALTIMORE NATIONAL PIKE) AT MARRIOTTSVILLE RD
INTERCHANGE LIGHTING
MARRIOTTSVILLE, MD

PANEL AND POLE SCHEDULE

SCALE N.T.S. DATE FEBRUARY 3, 2015 CONTRACT NO. XY2395185

DESIGNED BY JEK COUNTY HOWARD
DRAWN BY JEK LOGMILE 13007013.59
CHECKED BY LFW TIMS NO. M585
F.A.P. NO. TOD NO.

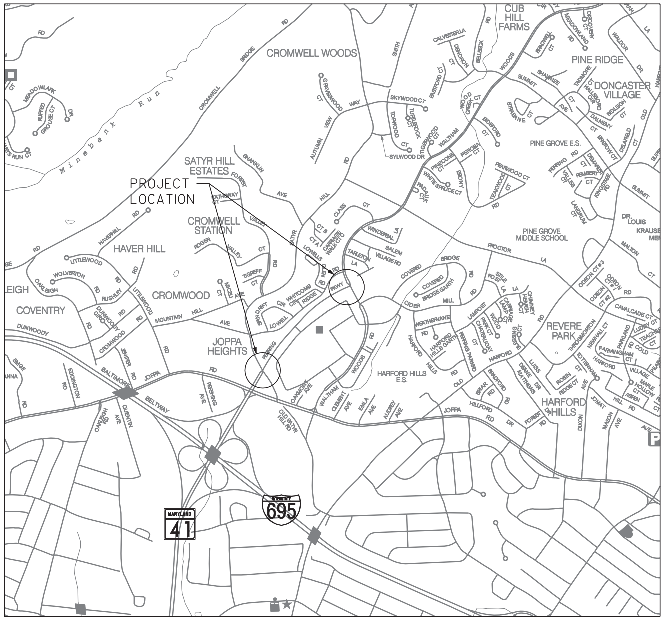
DRAWING NO. LT – 06 OF 06 SHEET NO. 07 OF 07

PLOTTED: Tuesday, February 03, 2015 AT 02:04 PM
FILE: T:\173124A-TrafficDesignServices\TRF\198\Plans\pLT-0006_I-70@Marriottsville.dgn

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF STREET LIGHTING AT THE INTERSECTION OF MD 41 (PERRING PKWY) AND SATYR HILL ROAD AND THE INTERSECTION OF MD 41 AND WALTHAM WOODS RD.

THIS PROJECT IS IN BALTIMORE COUNTY.



PROJECT LOCATION
N.T.S.

EQUIPMENT LISTS "A, B & C"

A. EQUIPMENT TO BE FURNISHED BY ADMINISTRATION AND INSTALLED BY THE CONTRACTOR

NONE

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

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1001	MAINTENANCE OF TRAFFIC	EA	2
2001	TEST PIT EXCAVATION	CY	4
8001	CONCRETE FOR TRAFFIC CONTROL DEVICES	CY	11
8002	40 FOOT LIGHT STRUCTURE WITH UP TO A 20 FOOT BRACKET ARM	EA	5
8004	EMBEDDED METERED SERVICE PEDESTAL (100 OR 200 AMP)	EA	2
8010	REMOVE AND DISPOSE EXISTING MATERIAL AND EQUIPMENT (PER ASSIGNMENT)	EA	1
8016	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED	LF	365
8017	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	170
8020	NO. 4 AWG STRANDED BARE COPPER GROUND WIRE	LF	635
8024	FURNISH AND INSTALL ELECTRICAL MANHOLE	EA	5
8025	BREAKAWAY BASE SUPPORT SYSTEM FOR LIGHTING STRUCTURE	EA	5
8027	DUCT CABLE - 2 CONDUCTOR, NO 4 AWG, 600 V	LF	350
8029	CABLE - 1 CONDUCTOR, NO 6 AWG, TYPE USE, 600V	LF	850
8030	CABLE - 1 CONDUCTOR, NO 10 AWG, TYPE THWN/THHN, 600V	LF	750
8031	CONNECTOR KIT - TYPE I	EA	14
8032	CONNECTOR KIT - TYPE II	EA	10
8034	CONNECTOR KIT - TYPE IV	EA	2
8035	GROUND ROD - 3/4 INCH DIAMETER X 10 FOOT LENGTH	EA	10
8043	FURNISH & INSTALL LED LUMINAIRE & LAMPS	EA	5

C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

INDEX OF SHEETS

1	AT-1	TITLE SHEET
2	LT-01	LIGHTING PLAN
3	LT-02	LIGHTING PLAN

PARSONS BRINCKERHOFF
100 S. Charles Street
Tower 1, 10th Floor
Baltimore, MD 21201
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APPROVALS
TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

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

MD 41 (PERRING PKWY) AT SATYR HILL RD AND WALTHAM WOODS RD
INTERSECTION LIGHTING UPGRADE

TITLE SHEET

SCALE NONE DATE APRIL 26, 2013 CONTRACT NO. XX6445185

DESIGNED BY JEK COUNTY BALTIMORE
DRAWN BY JEK LOGMILE
CHECKED BY KMP TIMS NO. L865
F.A.P. NO. TOD NO.

TS NO. DRAWING AT-01 OF 01 SHEET NO. 01 OF 03

PLOTTED: Friday, April 26, 2013 AT 01:18 PM
FILE: T:\173124A-TrafficDesignServices\TRF\130\Plans\pLT-AW_MD 41 @ Satyr Hill & Waltham Woods.dgn

BORDER REV. DATE: June 1, 2004
DRILL HOLES
DRILL HOLES
DRILL HOLES
BY: kurgansky -

BORDER REV. DATE: June 1, 2004

DRILL HOLES

DRILL HOLES

DRILL HOLES

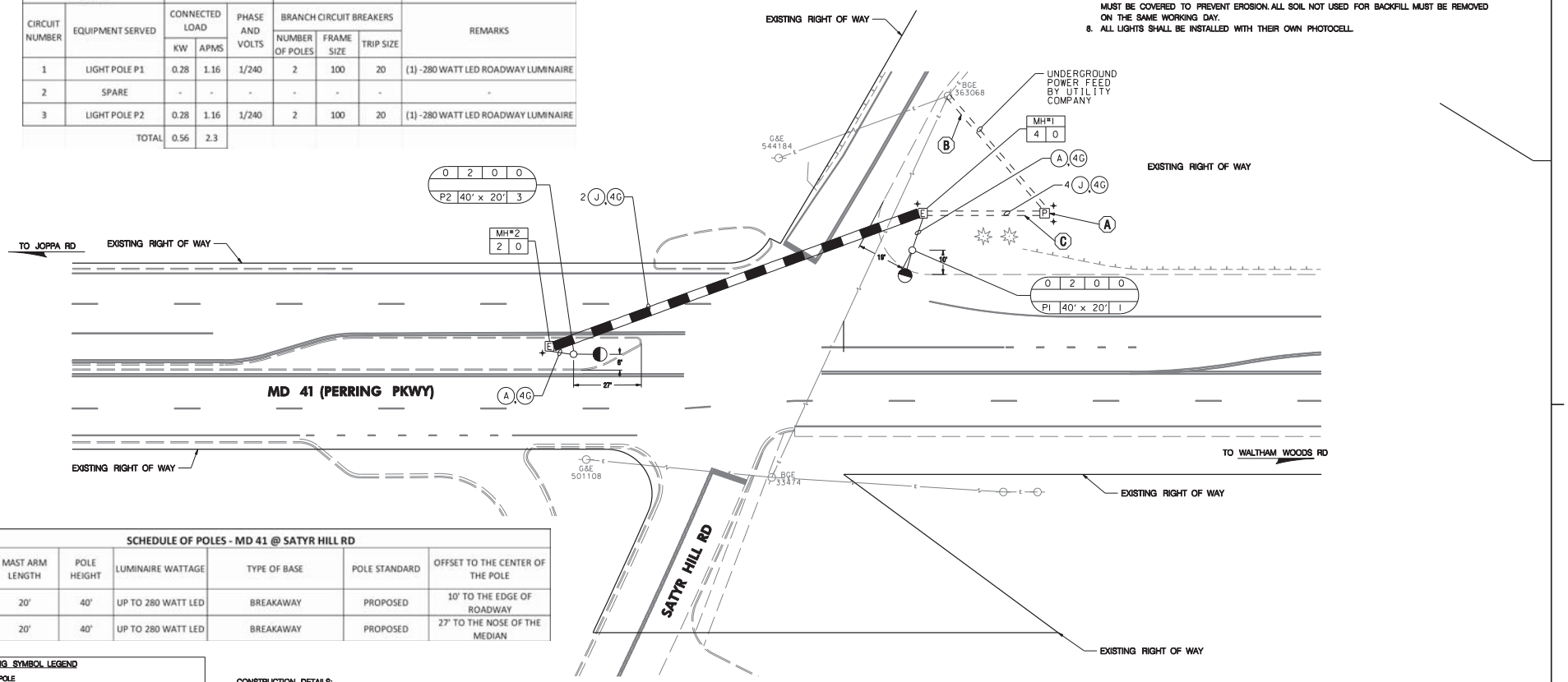
BY: kurgansky

SCHEDULE OF PROPOSED PANEL "A" - LT-01

SERVICE 100 AMP 120/240 VOLTS, 1 PHASE, 3 WIRE		LUMINAIRE VOLTAGE, 240 VOLTS			BREAKERS 100 AMP MAIN BREAKER			EMBEDDED METERED SERVICE PEDESTAL
CIRCUIT NUMBER	EQUIPMENT SERVED	CONNECTED LOAD		PHASE AND VOLTS	BRANCH CIRCUIT BREAKERS			REMARKS
		KW	APMS		NUMBER OF POLES	FRAME SIZE	TRIP SIZE	
1	LIGHT POLE P1	0.28	1.16	1/240	2	100	20	(1) -280 WATT LED ROADWAY LUMINAIRE
2	SPARE	-	-	-	-	-	-	-
3	LIGHT POLE P2	0.28	1.16	1/240	2	100	20	(1) -280 WATT LED ROADWAY LUMINAIRE
	TOTAL	0.56	2.3					

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN CASE OF DAMAGE TO AN EXISTING FACILITY.
3. LIGHTING STRUCTURE FOUNDATIONS SHALL BE INSTALLED PER STANDARD NO. MD 801.02.
4. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CABLE SHALL BE BY EXOTHERMIC WELD.
5. ALL LIGHTING STRUCTURES NOT PROTECTED BY TRAFFIC BARRIER SHALL BE ON BREAKAWAY BASES.
6. FOUNDATIONS WITH BREAKAWAY BASES SHALL NOT PROTRUDE MORE THAN 4" ABOVE GRADE.
7. ALL TRENCHING MUST BE BACK FILLED AND RESTORED TO ITS ORIGINAL CONDITION ON THE SAME WORKING DAY ON WHICH IT WAS OPENED. AREAS WHICH ARE NOT RE-SEEDED, MULCHED OR SODDED MUST BE COVERED TO PREVENT EROSION. ALL SOIL NOT USED FOR BACKFILL MUST BE REMOVED ON THE SAME WORKING DAY.
8. ALL LIGHTS SHALL BE INSTALLED WITH THEIR OWN PHOTOCELL.



SCHEDULE OF POLES - MD 41 @ SATYR HILL RD

POLE NUMBER	MAST ARM LENGTH	POLE HEIGHT	LUMINAIRE WATTAGE	TYPE OF BASE	POLE STANDARD	OFFSET TO THE CENTER OF THE POLE
P1	20'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	10' TO THE EDGE OF ROADWAY
P2	20'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	27' TO THE NOSE OF THE MEDIAN

LIGHTING SYMBOL LEGEND

- UTILITY POLE
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
- SCHEDULE 80 PVC CONDUIT, TRENCHED (SIZE AS NOTED)
- DIRECT BURIAL DUCT CABLE
- E PROPOSED LIGHTING MANHOLE
- P PROPOSED METERED SERVICE PEDESTAL
- PROPOSED GROUND ROD

CONSTRUCTION DETAILS:

Ⓐ FURNISH AND INSTALL EMBEDDED METER SERVICE PEDESTAL WITH SOCKET, SINGLE PHASE 120/240V, WITH A 100 AMP MAIN DISCONNECT SWITCH (PANEL A).

Ⓑ INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED). STUB UP AT THE BASE OF BGE POLE 363068. BGE FORCES SHALL MAKE THE FINAL CONNECTION.

Ⓒ INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).

SCHEDULE OF MANHOLES - MD 41 @ SATYR HILL RD

MANHOLE NUMBER	NUMBER OF TYPE I CONNECTOR KITS	NUMBER OF TYPE IV CONNECTOR KITS	EXISTING OR PROPOSED
01	4	0	PROPOSED
02	2	0	PROPOSED

GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

- SD SD STORM DRAIN
- G G GAS MAIN
- W W WATER MAIN
- S S SEWER MAIN
- E E ELECTRIC CABLES
- A A AERIAL CABLES
- T T TELEPHONE CABLES
- F F FIBER-OPTIC

CONVENTIONS LEGEND

- QUANTITY OF CONNECTOR KITS
- STA. #& OFF
- POL MH CIR
- STATION NUMBER & OFFSET
- CIRCUIT NUMBER
- MOUNTING HEIGHT X MAST ARM LENGTH
- POLE NUMBER
- MH #
- MANHOLE NUMBER
- # OF TYPE IV CONNECTOR KITS
- # OF TYPE I CONNECTOR KITS
- (A) 2C #4 AWG DUCT CABLE
- (J) #6 AWG TYPE USE, 600V
- (4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # (X) (G)
- TYPE AND SIZE OF CABLES IN TRENCH CONDUIT
- TOTAL NUMBER OF CABLE(S) IN TRENCH CONDUIT

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

MD 41 (PERRING PKWY) AT SATYR HILL RD
INTERSECTION LIGHTING UPGRADE

REVISIONS

LIGHTING PLAN

SCALE 1" = 20' DATE APRIL 26, 2013 CONTRACT NO. X0644186

DESIGNED BY JEK COUNTY BALTIMORE
DRAWN BY JEK LOGMILE 03041002.59
CHECKED BY KMP TIMS NO. L665
F.A.P. NO. TOD NO.

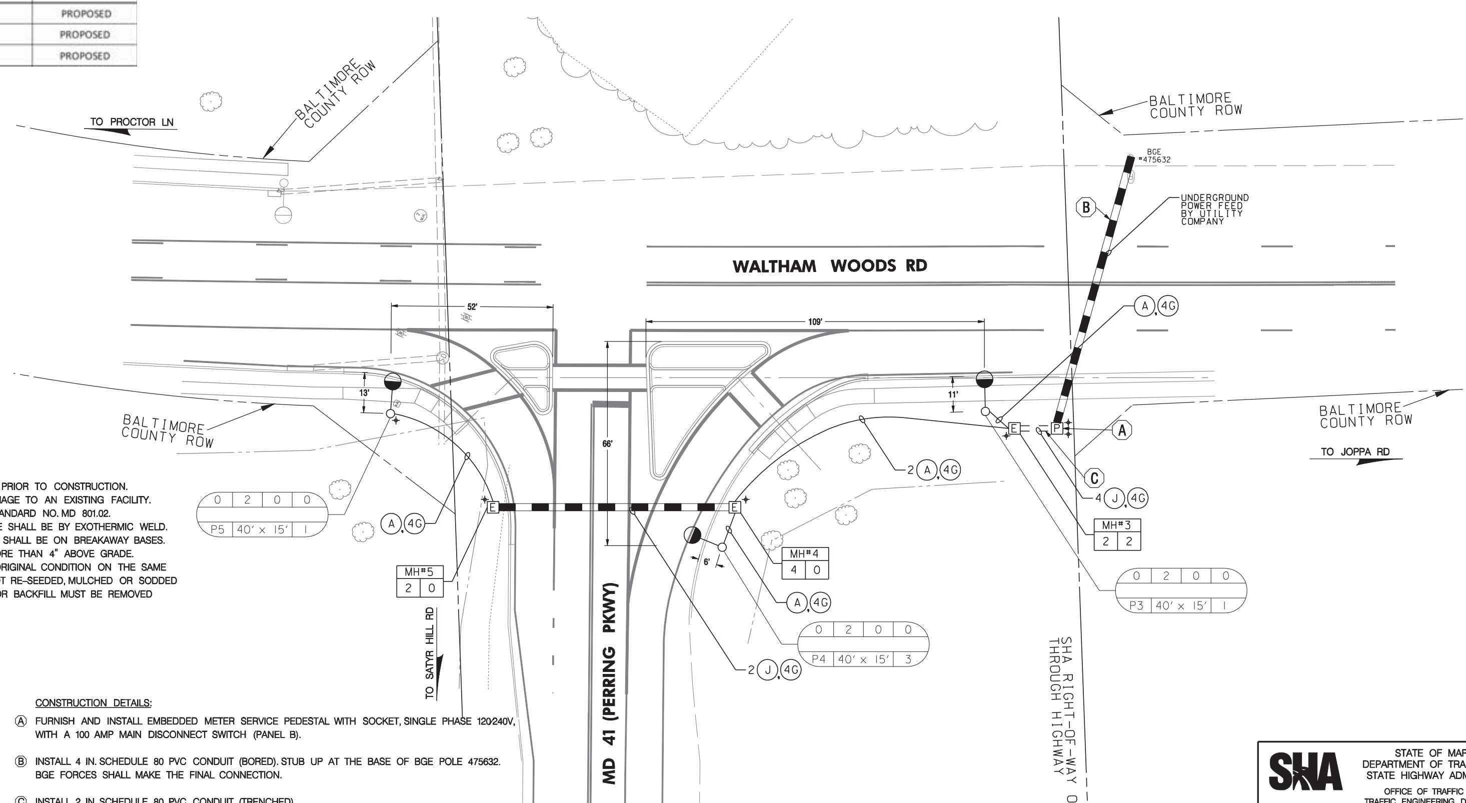
TS NO. | DRAWING LT – 01 OF 02 | SHEET NO. 02 OF 03

PLOTTED: Friday, April 26, 2013 AT 01:24 PM
FILE: T:\OTSEA-Traffic\Design\Services\TRP\100\Plans\pLT-P01_MD 41 @ Satyr Hill.dgn

SCHEDULE OF POLES - MD 41 @ WALTHAM WOODS RD						
POLE NUMBER	MAST ARM LENGTH	POLE HEIGHT	LUMINAIRE WATTAGE	TYPE OF BASE	POLE STANDARD	OFFSET TO THE CENTER OF THE POLE
P3	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	11' TO THE FACE OF CURB
P4	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	6' TO THE FACE OF CURB
P5	15'	40'	UP TO 280 WATT LED	BREAKAWAY	PROPOSED	13' TO THE FACE OF CURB

SCHEDULE OF MANHOLES - MD 41 @ WALTHAM WOODS RD			
MANHOLE NUMBER	NUMBER OF TYPE I CONNECTOR KITS	NUMBER OF TYPE IV CONNECTOR KITS	EXISTING OR PROPOSED
03	2	2	PROPOSED
04	4	0	PROPOSED
05	2	0	PROPOSED

SCHEDULE OF PROPOSED PANEL "B"- LT-02									
SERVICE 100 AMP 120/240 VOLTS, 1 PHASE, 3 WIRE		LUMINAIRE VOLTAGE, 240 VOLTS			BREAKERS 100 AMP MAIN BREAKER			EMBEDDED METERED SERVICE PEDESTAL
CIRCUIT NUMBER	EQUIPMENT SERVED	CONNECTED LOAD		PHASE AND VOLTS	BRANCH CIRCUIT BREAKERS			REMARKS
		KW	APMS		NUMBER OF POLES	FRAME SIZE	TRIP SIZE	
1	LIGHT POLES P3 & P5	0.56	2.32	1/240	2	100	20	(2) -280 WATT LED ROADWAY LUMINAIRES
2	SPARE	-	-	-	-	-	-	-
3	LIGHT POLE P4	0.28	1.16	1/240	2	100	20	(1) -280 WATT LED ROADWAY LUMINAIRE
	TOTAL	0.84	3.5					



GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS PRIOR TO CONSTRUCTION.
2. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN CASE OF DAMAGE TO AN EXISTING FACILITY.
3. LIGHTING STRUCTURE FOUNDATIONS SHALL BE INSTALLED PER STANDARD NO. MD 801.02.
4. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CABLE SHALL BE BY EXOTHERMIC WELD.
5. ALL LIGHTING STRUCTURES NOT PROTECTED BY TRAFFIC BARRIER SHALL BE ON BREAKAWAY BASES.
6. FOUNDATIONS WITH BREAKAWAY BASES SHALL NOT PROTRUDE MORE THAN 4" ABOVE GRADE.
7. ALL TRENCHING MUST BE BACK FILLED AND RESTORED TO ITS ORIGINAL CONDITION ON THE SAME WORKING DAY ON WHICH IT WAS OPENED. AREAS WHICH ARE NOT RE-SEEDED, MULCHED OR SODDED MUST BE COVERED TO PREVENT EROSION. ALL SOIL NOT USED FOR BACKFILL MUST BE REMOVED ON THE SAME WORKING DAY.
8. ALL LIGHTS SHALL BE INSTALLED WITH THEIR OWN PHOTOCELL.

LIGHTING SYMBOL LEGEND

- EXISTING LEASED LIGHTING TO REMAIN
- EXISTING LIGHT POLE TO REMAIN
- UTILITY POLE
- PROPOSED 280W LED COBRA HEAD LUMINAIRE ON PROPOSED GROUND MOUNT LIGHTING STRUCTURE
- 4" SCHEDULE 80 PVC CONDUIT, BORED
- SCHEDULE 80 PVC CONDUIT, TRENCHED (SIZE AS NOTED)
- DIRECT BURIAL DUCT CABLE
- E PROPOSED LIGHTING MANHOLE
- P PROPOSED METERED SERVICE PEDESTAL
- PROPOSED GROUND ROD

CONSTRUCTION DETAILS:

Ⓐ FURNISH AND INSTALL EMBEDDED METER SERVICE PEDESTAL WITH SOCKET, SINGLE PHASE 120/240V, WITH A 100 AMP MAIN DISCONNECT SWITCH (PANEL B).

Ⓑ INSTALL 4 IN. SCHEDULE 80 PVC CONDUIT (BORED). STUB UP AT THE BASE OF BGE POLE 475632. BGE FORCES SHALL MAKE THE FINAL CONNECTION.

Ⓒ INSTALL 2 IN. SCHEDULE 80 PVC CONDUIT (TRENCHED).

GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

- SD — SD STORM DRAIN
- G — G GAS MAIN
- W — W WATER MAIN
- S — S SEWER MAIN
- E — E ELECTRIC CABLES
- A — A AERIAL CABLES
- T — T TELEPHONE CABLES
- F — F FIBER-OPTIC

CONVENTIONS LEGEND

- QUANTITY OF CONNECTOR KITS (I II III IV)
- STA. #& OFF — STATION NUMBER & OFFSET
- CIR — CIRCUIT NUMBER
- MH — MOUNTING HEIGHT X MAST ARM LENGTH
- POL — POLE NUMBER
- MH # — MANHOLE NUMBER
- # OF TYPE IV CONNECTOR KITS
- # OF TYPE I CONNECTOR KITS
- Ⓐ 2C #4 AWG DUCT CABLE
- Ⓙ #6 AWG TYPE USE, 600V
- Ⓖ(4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # Ⓧ Ⓖ — TYPE AND SIZE OF CABLES IN TRENCH CONDUIT; TOTAL NUMBER OF CABLE(S) IN TRENCH CONDUIT

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TRAFFIC ENGINEERING DESIGN DIVISION

MD 41 (PERRING PKWY) AT WALTHAM WOODS RD
INTERSECTION LIGHTING UPGRADE

REVISIONS

LIGHTING PLAN

SCALE 1" = 20' DATE APRIL 26, 2013 CONTRACT NO. XX6445185

DESIGNED BY JEK — COUNTY BALTIMORE
DRAWN BY JEK — LOGMILE 03041002.97
CHECKED BY TE — TIMS NO. L865
F.A.P. NO. — TOD NO.

TS NO. — DRAWING LT-02 OF 02 — SHEET NO. 03 OF 03

PLOTTED: Friday, April 26, 2013 AT 01:25 PM
FILE: T:\173124A-TrafficDesignServices\TRF\130\Plans\pLT-P001_MD 41 @ Waltham Woods.dgn

BY: kurgansky –

DRILL HOLES

DRILL HOLES

DRILL HOLES

BORDER REV. DATE: June 1, 2004

PROJECT DESCRIPTION

THIS PROJECT INVOLVES INSTALLING UNDERPASS LIGHTING AT THE I-695 AT MD 26 (LIBERTY ROAD) INTERCHANGE. THIS PROJECT IS IN BALTIMORE COUNTY.

PROJECT LOCATION

N.T.S.

GENERAL NOTES:

1. ALL UTILITY LINES ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND ELECTRICAL LINES AND UTILITIES PRIOR TO CONSTRUCTION. IF THE CONTRACTOR PERCEIVES THAT THERE IS A CONFLICT BETWEEN THE PROPOSED LIGHTING EQUIPMENT AND THE EXISTING UNDERGROUND ELECTRICAL LINES OR UTILITIES THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN CASE OF DAMAGE TO AN EXISTING FACILITY.
3. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CABLE SHALL BE BY EXOTHERMIC WELD.
4. CONDUCTORS SHALL NOT BE SPLICED EXCEPT IN STRUCTURES, MANHOLES AND PULL OR JUNCTION BOXES. ALL MANHOLES, CONDUITS UNDER PAVEMENT, LIGHTING STRUCTURES, ETC. SHALL BE STAKED OUT AND EVERY LOCATION APPROVED BY THE ENGINEER BEFORE ANY WORK IS DONE.
5. FOR EXISTING ELECTRICAL INFORMATION FOR LIGHTING CONTACT JIM FLUTKA AT DISTRICT 4 MAINTENANCE AT (410) 229-2375.
6. ALL ANCHOR BOLTS USED FOR MOUNTING JUNCTION BOXES AND CONDUIT CLAMPS TO BRIDGE WINGWALLS, ABUTMENTS AND PARAPETS SHALL BE STAINLESS STEEL. ALL ANCHOR BOLTS SHALL BE 1/4 INCH DIAMETER AND EMBEDDED A MINIMUM OF 2 INCHES WITH A TENSILE PULLOUT STRENGTH OF 500 LBS. ANCHOR BOLTS MUST BE AN EPOXY BASED MOUNTING SYSTEM. MECHANICAL OR EXPANDING ANCHOR BOLTS SHALL NOT BE USED. CONTRACTOR SHALL SUBMIT A DETAIL TO THE ENGINEER FOR APPROVAL ON METHOD OF ATTACHING JUNCTION BOXES.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION

ITEM NO.	QUANTITY	UNIT	DESCRIPTION

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

ITEM NO.	QUANTITY	UNIT	DESCRIPTION
1001	1	LS	MAINTENANCE OF TRAFFIC
8003	16	EA	GALVANIZED STEEL JUNCTION BOX, ANY SIZE UP TO 12 INCH x 12 INCH
8016	600	LF	NO. 4 AWG STANDARD BARE COPPER GROUND WIRE
8027	14	EA	LED UNDERPASS LUMINAIRE
8045	2275	LF	CABLE - 1 CONDUCTOR, NO 4 AWG, TYPE USE, 600V
8047	2300	LF	CABLE - 1 CONDUCTOR, NO 10 AWG, TYPE THWN/THHN, 600V
8049	190	LF	1 INCH DIAMETER FLEXIBLE STEEL CONDUIT
8050	26	EA	CONNECTOR KIT - TYPE I
8051	20	EA	CONNECTOR KIT - TYPE II
8052	16	EA	CONNECTOR KIT - TYPE III
8053	16	EA	CONNECTOR KIT - TYPE IV
8059	1	EA	REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT (PER ASSIGNMENT)
8062	1200	LF	1 1/2 INCH DIAMETER RIGID STEEL CONDUIT
8063	720	LF	L 5"x5"x3/8" ANGLE IRON SUPPORT FOR CONDUIT SUPPORT (COATED DARK BROWN)
8064	14	EA	LED UNDERPASS LUMINAIRE MOUNTING ASSEMBLY (COATED DARK BROWN)
8065	14	EA	DRILLING OF BRIDGE GIRDER OR DIAPHRAGM FOR UNDERPASS LUMINAIRE

SCHEDULE OF JUNCTION BOXES

JUNCTION BOX NUMBER	NUMBER OF TYPE I CONNECTOR KITS	NUMBER OF TYPE II CONNECTOR KITS	NUMBER OF TYPE III CONNECTOR KITS	NUMBER OF TYPE IV CONNECTOR KITS	EXISTING OR PROPOSED	DRAWING NUMBER
01	0	2	0	0	PROPOSED	LT-02
02	0	2	0	0	PROPOSED	LT-02
03	2	2	0	0	PROPOSED	LT-02
04	2	2	0	0	PROPOSED	LT-02
05	0	0	0	4	PROPOSED	LT-02
06	2	0	2	0	EXISTING	LT-02
07	2	0	2	0	EXISTING	LT-02
08	0	0	0	8	EXISTING	LT-02
09	2	0	2	0	PROPOSED	LT-02
10	2	0	2	0	PROPOSED	LT-02
11	2	0	2	0	PROPOSED	LT-02
12	2	0	2	0	PROPOSED	LT-02
13	2	0	2	0	PROPOSED	LT-02
14	2	0	2	0	PROPOSED	LT-02
15	0	2	0	0	EXISTING	LT-02
16	2	2	0	0	EXISTING	LT-02
17	0	0	0	4	EXISTING	LT-02
18	2	2	0	0	PROPOSED	LT-02
19	2	2	0	0	PROPOSED	LT-02
20	0	2	0	0	PROPOSED	LT-02
21	0	2	0	0	PROPOSED	LT-02

CONTACTS

DISTRICT (DISTRICT 4)

MS. WENDY WOLCOTT
DISTRICT ENGINEER
410-229-2310/2311

MS. ERIN KUHN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
410-229-2381

MR. MICHAEL PASQUARIELLO
DISTRICT UTILITY ENGINEER
410-229-2341

MR. JESSE FREE
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
410-229-2421

MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
410-229-2361

OFFICE OF TRAFFIC AND SAFETY

VACANT
CHIEF, TRAFFIC OPERATIONS
410-787-7630

MS. KELLY CALDWELL-HARPER
ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS
410-787-7625

INDEX OF SHEETS

1 AT-01 PROJECT INFORMATION AND QUANTITIES
2 LT-01 LIGHTING PLAN
3 LT-02 LIGHTING PLAN
4 LT-03 UNDERPASS LIGHTING LAYOUT
5 LT-04 UNDERPASS LIGHTING DETAILS
6 LT-05 UNDERPASS LIGHTING DETAILS

SCHEDULE OF PROPOSED CHANGES TO PANEL P2 "MD-26 UNDERPASS"

	SERVICE 100 AMP, 120/240 VOLTS, SINGLE PHASE, 3-WIRE		LUMINAIRE VOLTAGE, 240 VOLTS			BREAKERS 100 AMP MAIN BREAKER			NEMA 4X ENCLOSURE
	CIRCUIT NUMBER	EQUIPMENT SERVED	CONNECTED LOAD KW	CONNECTED LOAD APMS	PHASE AND VOLTS	BRANCH CIRCUIT BREAKERS NUMBER OF POLES	FRAME SIZE	TRIP SIZE	REMARKS
*	1	SIGN # C-5	0.30	1.40	1/240	2	100	20	(2) -135 WATT LED
*	2	POLE # 13, 14, 21, 40, 42	1.50	6.30	1/240	2	100	20	(5) -250 WATT HPS
*	3	SIGN # C-5	0.20	0.70	1/240	2	100	20	(1) -135 WATT LED
*	4	POLE # 17, 20, 41	0.90	3.80	1/240	2	100	20	(3) - 250 WATT HPS
	5	UNDERPASS LUMINAIRE # 1, 4, 5, 8, 9, 12, 13, 16, 17	0.86	3.6	1/240	2	100	20	(9) -97 WATT LED
*	6	SPARE	-	-	-	-	-	-	
	7	UNDERPASS LUMINAIRE # 2, 3, 6, 7, 10, 11, 14, 15, 18	0.86	3.6	1/240	2	100	20	(9) -97 WATT LED
*	8	SPARE	-	-	-	-	-	-	
*	9	SPARE	-	-	-	-	-	-	
*	10	SPARE	-	-	-	-	-	-	
*	11	SPARE	-	-	-	-	-	-	
*	12	SPARE	-	-	-	-	-	-	
*	13	SPARE	-	-	-	-	-	-	
*	14	SPARE	-	-	-	-	-	-	
*	15	SPARE	-	-	-	-	-	-	
*	16	SPARE	-	-	-	-	-	-	
*	17	SPARE	-	-	-	-	-	-	
*	18	SPARE	-	-	-	-	-	-	
*	19	SPARE	-	-	-	-	-	-	
*	20	SPARE	-	-	-	-	-	-	
		TOTAL	4.62	19.4					

*EXISTING CIRCUITS TO REMAIN UNCHANGED. NOT SHOWN ON PLANS

SHA
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DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 26 (LIBERTY RD) AT I-695 INTERCHANGE
BALTIMORE, MD

PROJECT INFORMATION AND QUANTITIES

SCALE NONE DATE MAY 15, 2017 CONTRACT NO. XY1615185

DESIGNED BY NEK COUNTY BALTIMORE
DRAWN BY MAW LOGMILE 03002608.31 - 8.40
CHECKED BY TJS TIMS NO. M486
MDE/PRD SEE TITLE SHEET TOD NO.

DRAWING NO. AT - 01 OF 01 SHEET NO. 01 OF 06

APPROVALS
TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

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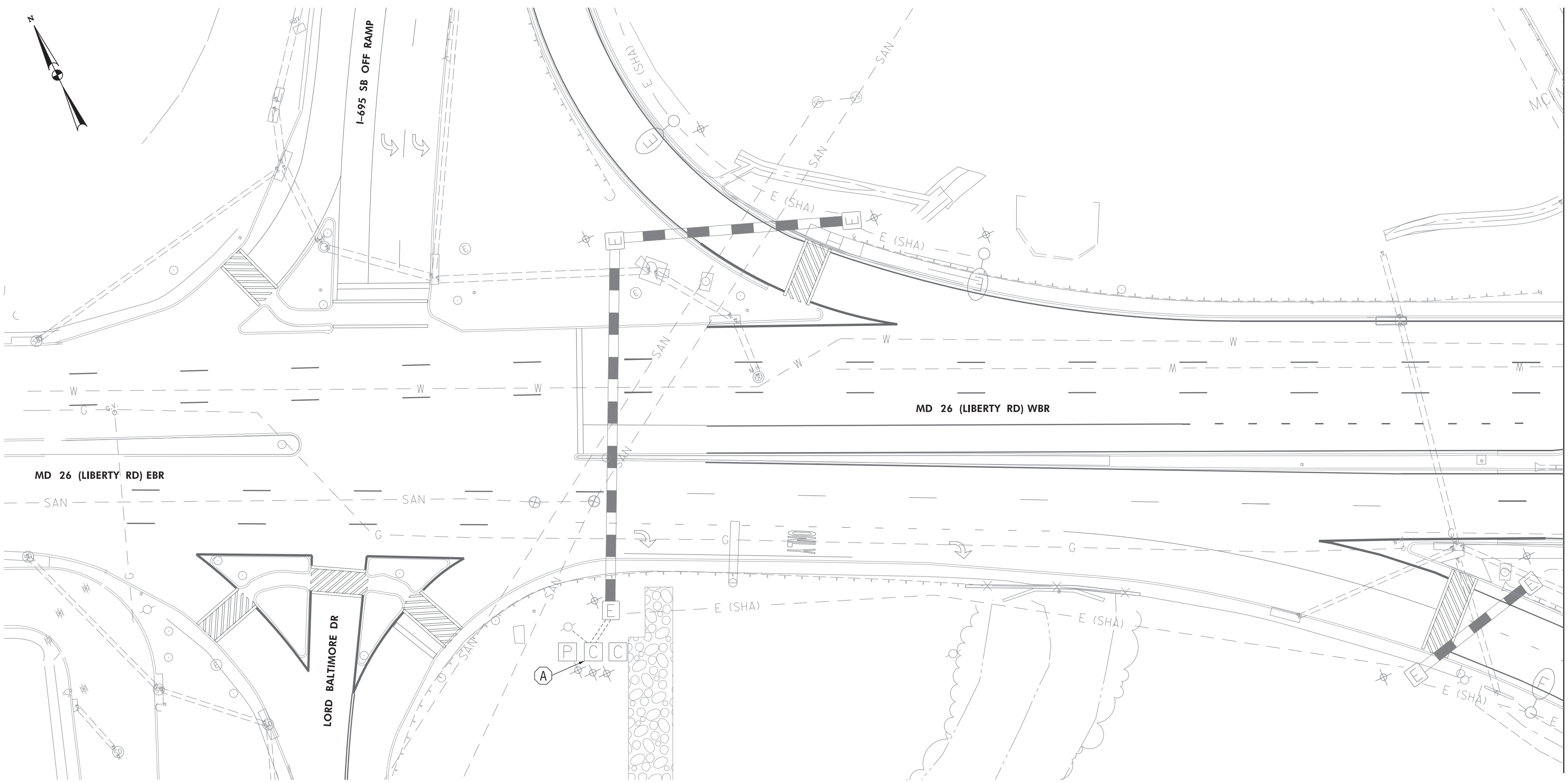
FAX: +1.410.727.4608
http://www.wsp.com

PLOTTED: Monday, May 15, 2017 AT 03:17 PM
FILE: T:\173124A-TrafficDesignServices\TRF\251\Plans\pLT-P000_MD26&I695.dgn

BORDER REV. DATE: March 27, 2007
BY: WagnerM -
DRILL HOLES
DRILL HOLES
DRILL HOLES



NOTES:
1. EXISTING DUCT CABLE AND MANHOLES SERVING EXISTING LIGHTING TO REMAIN.
2. THERE IS NO WORK PROPOSED ON THIS DRAWING. DRAWING SHOWN FOR INFORMATION PURPOSES ONLY.

CONSTRUCTION DETAILS:
(A) EXISTING LIGHTING CABINET

LIGHTING SYMBOL LEGEND

PROPOSED 97W LED UNDERPASS LIGHT & ORIENTATION (TYPE II DISTRIBUTION)	J PROPOSED 12" X 12" X 6" JUNCTION BOX
EXISTING UNDERPASS LIGHT, TO REMAIN	C EXISTING LIGHTING CABINET
EXISTING LIGHT STRUCTURE, TO REMAIN	E EXISTING LIGHTING MANHOLE
EXISTING CANTILEVER STRUCTURE, TO REMAIN	J EXISTING LIGHTING JUNCTION BOX
EXISTING 4" SCHEDULE 80 PVC CONDUIT, BORED	— E (SHA) — EXISTING DUCT CABLE TO REMAIN
EXISTING SCHEDULE 80 PVC CONDUIT, TRENCHED	P EXISTING METERED SERVICE PEDESTAL, TO REMAIN
EXISTING 2" STEEL CONDUIT	+ EXISTING GROUND ROD
PROPOSED $1\frac{1}{2}$" RIGID GALVANIZED STEEL CONDUIT	

GEOMETRIC LEGEND
EXISTING
PROPOSED

UTILITY LEGEND
SD — SD STORM DRAIN
G — G GAS MAIN
W — W WATER MAIN
S — S SEWER MAIN
E — E ELECTRIC CABLES
A — A AERIAL CABLES
T — T TELEPHONE CABLES
F — F FIBER-OPTIC

QUANTITY OF CONNECTOR KITS
LT. #
CIR
LIGHT NUMBER
CIRCUIT NUMBER
OF TYPE I CONNECTOR KITS
JB#
MANHOLE NUMBER/ JUNCTION BOX NUMBER
OF TYPE II CONNECTOR KITS
OF TYPE IV CONNECTOR KITS
OF TYPE III CONNECTOR KITS

CONVENTIONS LEGEND
(J) 1 CONDUCTOR #4 AWG TYPE USE, 600V
(4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
(X)(G) TYPE AND SIZE OF CABLES IN CONDUIT / TOTAL NUMBER OF CABLE(S) IN CONDUIT

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OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 26 (LIBERTY RD) AT I-695 INTERCHANGE
BALTIMORE, MD

LIGHTING PLAN

SCALE 1" = 20'	DATE MAY 15, 2017	CONTRACT NO. XY1615185	
DESIGNED BY	NEK	COUNTY	BALTIMORE
DRAWN BY	MAW	LOGMILE	03002608.31 - 8.40
CHECKED BY	TJS	TIMS NO.	M486
MDE/PRD	SEE TITLE SHEET	TOD NO.	
DRAWING NO.	LT-01 OF 05	SHEET NO.	02 OF 06

PLOTTED: Monday, May 15, 2017 AT 03:17 PM
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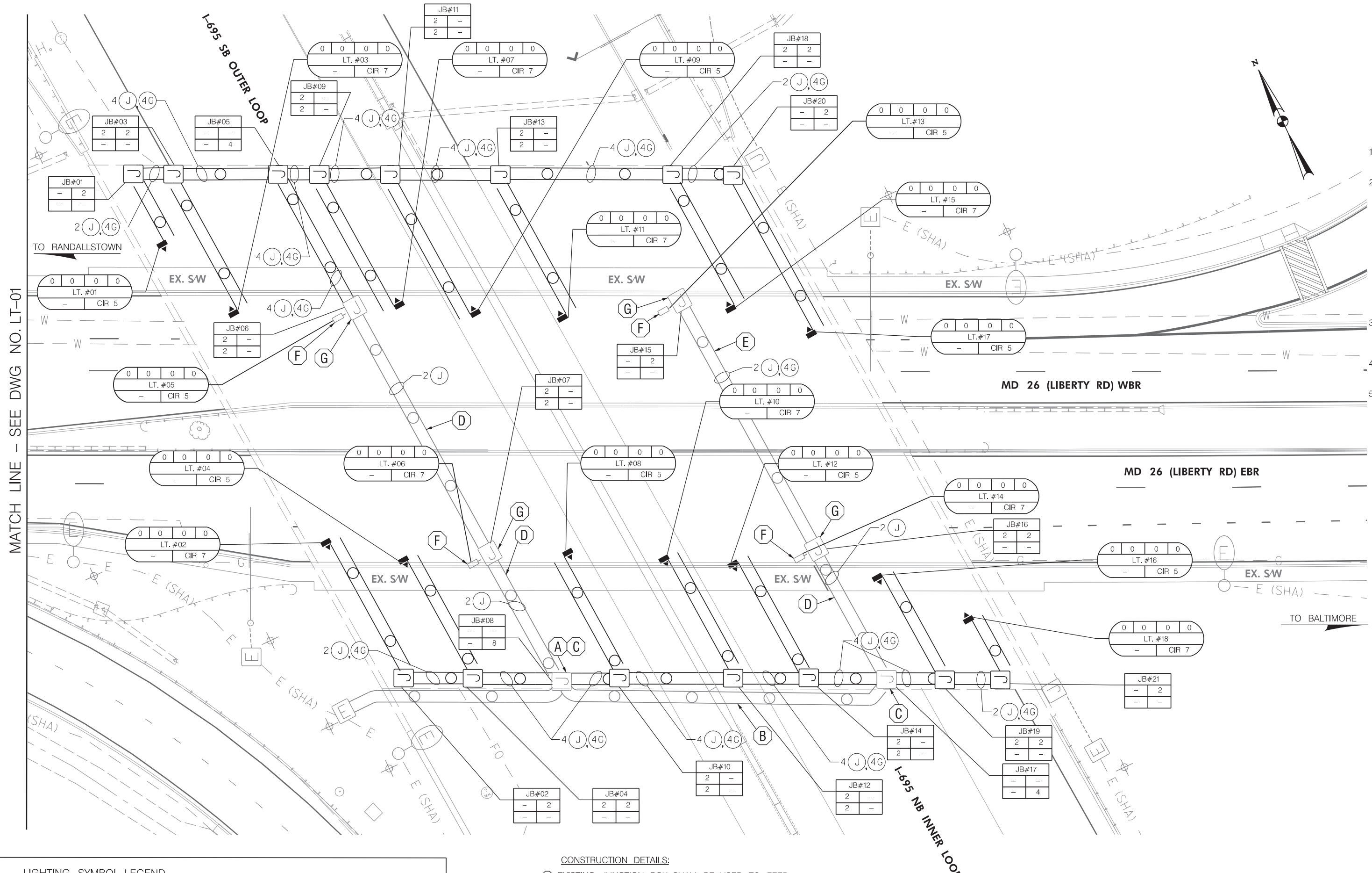
DRILL HOLES
DRILL HOLES
DRILL HOLES
BORDER REV. DATE: March 27, 2007
BY: WagnerM -



NOTES:

1. EXISTING DUCT CABLE AND MANHOLES SERVING EXISTING LIGHTING TO REMAIN.
2. CONDUIT FROM CLOSEST JUNCTION BOX TO UNDERPASS LUMINAIRE SHALL BE 1 1/2 INCH RIGID STEEL CONDUIT. CONNECTIONS FROM JUNCTION BOX TO RIGID CONDUIT AND FROM LUMINAIRE TO RIGID CONDUIT WILL INCLUDE A SECTION OF FLEXIBLE CONDUIT. 1 1/2 INCH RIGID STEEL CONDUIT SHALL CONTAIN THREE (3) NO. 10 AWG TYPE THWN/THHN, 600V WIRES. TWO (2) NO. 10 AWG CABLES SHALL CONNECT THE UNDERPASS LUMINAIRE TO THE CONNECTOR KITS IN THE JUNCTION BOX NEAREST THE UNDERPASS LUMINAIRE. ONE (1) NO. 10 AWG SHALL UTILIZE GREEN INSULATION AND CONNECT BETWEEN THE GROUND TERMINAL IN THE LUMINAIRE AND THE NO. 4 AWG GROUND WIRE IN THE JUNCTION BOX.
3. ALL MOUNTING HARDWARE REQUIRED FOR THE INSTALLATION OF JUNCTION BOXES SHALL BE INCIDENTAL TO THE COST OF FURNISHING EACH ITEM.
4. REFER TO DRAWINGS LT-04 & LT-05 FOR UNDERPASS LUMINAIRE AND CONDUIT MOUNTING DETAILS.
5. REFER TO THE UNDERPASS LIGHTING LAYOUT ON LT-03 FOR LUMINAIRE PLACEMENT DIMENSIONS.

LIGHTING SYMBOL LEGEND

- PROPOSED 97W LED UNDERPASS LIGHT & ORIENTATION (TYPE II DISTRIBUTION)
- EXISTING UNDERPASS LIGHT, TO REMAIN
- EXISTING LIGHT STRUCTURE, TO REMAIN
- EXISTING CANTILEVER STRUCTURE, TO REMAIN
- EXISTING 4" SCHEDULE 80 PVC CONDUIT, BORED
- EXISTING SCHEDULE 80 PVC CONDUIT, TRENCHED
- EXISTING 2" STEEL CONDUIT
- PROPOSED 1 1/2" RIGID GALVANIZED STEEL CONDUIT
- J — PROPOSED 12" X 12" X 6" JUNCTION BOX
- C — EXISTING LIGHTING CABINET
- E — EXISTING LIGHTING MANHOLE
- J — EXISTING LIGHTING JUNCTION BOX
- — E (SHA) — — EXISTING DUCT CABLE TO REMAIN
- P — EXISTING METERED SERVICE PEDESTAL, TO REMAIN
- EXISTING GROUND ROD

GEOMETRIC LEGEND

- EXISTING
- PROPOSED

UTILITY LEGEND

- SD — STORM DRAIN
- G — GAS MAIN
- W — WATER MAIN
- S — SEWER MAIN
- E — ELECTRIC CABLES
- A — AERIAL CABLES
- T — TELEPHONE CABLES
- F — FIBER-OPTIC

QUANTITY OF CONNECTOR KITS (I, II, III, IV)
LT. # — LIGHT NUMBER
CIR — CIRCUIT NUMBER

JB# — MANHOLE NUMBER/ JUNCTION BOX NUMBER
OF TYPE I CONNECTOR KITS
OF TYPE II CONNECTOR KITS
OF TYPE IV CONNECTOR KITS
OF TYPE III CONNECTOR KITS

CONVENTIONS LEGEND

- (J) 1 CONDUCTOR #4 AWG TYPE USE, 600V
- (4G) #4 AWG STRANDED BARE COPPER GROUND WIRE
- # (X)(G) — TYPE AND SIZE OF CABLES IN CONDUIT; TOTAL NUMBER OF CABLE(S) IN CONDUIT

CONSTRUCTION DETAILS:

- (A) EXISTING JUNCTION BOX SHALL BE USED TO FEED PROPOSED 1 1/2" GALVANIZED STEEL CONDUITS.
- (B) EMBEDDED CONDUIT BETWEEN EXISTING JUNCTION BOXES SHALL BE ABANDONED IN PLACE. WIRE WITHIN EMBEDDED CONDUIT SHALL BE REMOVED AND CAPPED.
- (C) EXISTING JUNCTION BOX SHALL BE USED TO HOUSE CONNECTOR KITS AND FEEDERS ASSOCIATED WITH PROPOSED LUMINAIRE INSTALLATION.
- (D) USE EXISTING CONDUIT. EXISTING CABLES TO REMAIN. INSTALL PROPOSED CABLES AS SHOWN.
- (E) USE EXISTING CONDUIT. REMOVE EXISTING CABLES AND INSTALL PROPOSED CABLES AS SHOWN
- (F) EXISTING UNDERPASS LUMINAIRE AND ASSOCIATED HARDWARE TO REMAIN.
- (G) USE EXISTING JUNCTION BOX AND REMOVE EXISTING CONNECTOR KITS. INSTALL PROPOSED CONNECTOR KITS AS SHOWN.

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LIGHTING PLAN

REVISIONS

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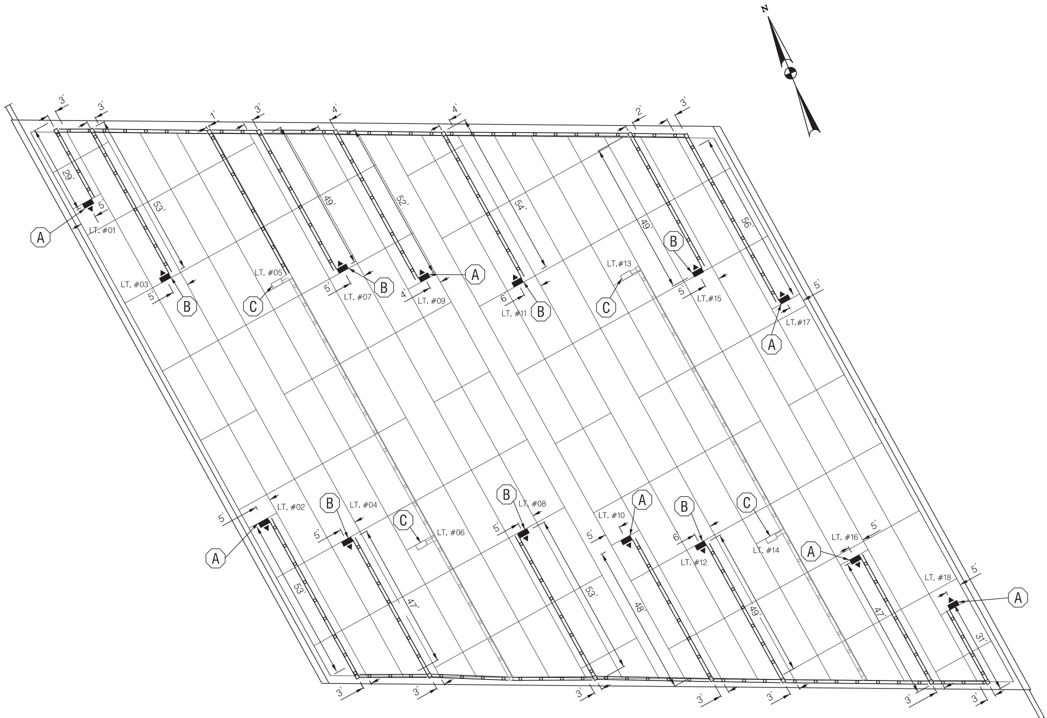

LED UNDERPASS LIGHT AND JUNCTION BOX LAYOUT

NOTES:
1. LIGHT FIXTURES NOT SHOWN TO SCALE

CONSTRUCTION DETAILS:

Ⓐ INSTALL LED UNDERPASS LIGHT, LIGHTING CONDUIT, ANGLE SUPPORT (8 INCH x 6 INCH X 1/2 INCH) AS DETAILED ON LT-04

Ⓑ INSTALL LED UNDERPASS LIGHT, LIGHTING CONDUIT ON EXISTING DIAPHRAGM AS DETAILED ON LT-04

Ⓒ EXISTING UNDERPASS LUMINAIRE ON ANGLE SUPPORT TO REMAIN

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REVISIONS

UNDERPASS LIGHTING LAYOUT

SCALE 1" = 20' DATE MAY 15, 2017 CONTRACT NO. XY1615185

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BY: WagnerM –

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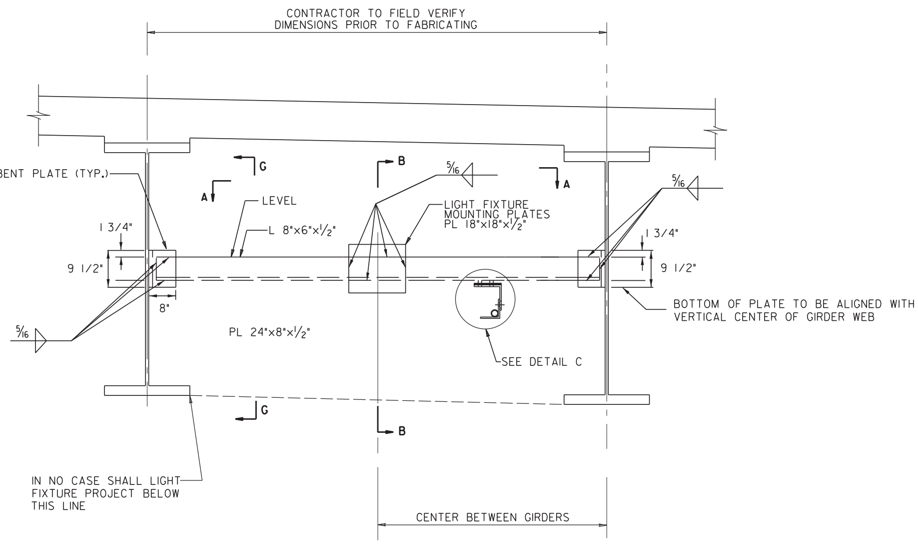
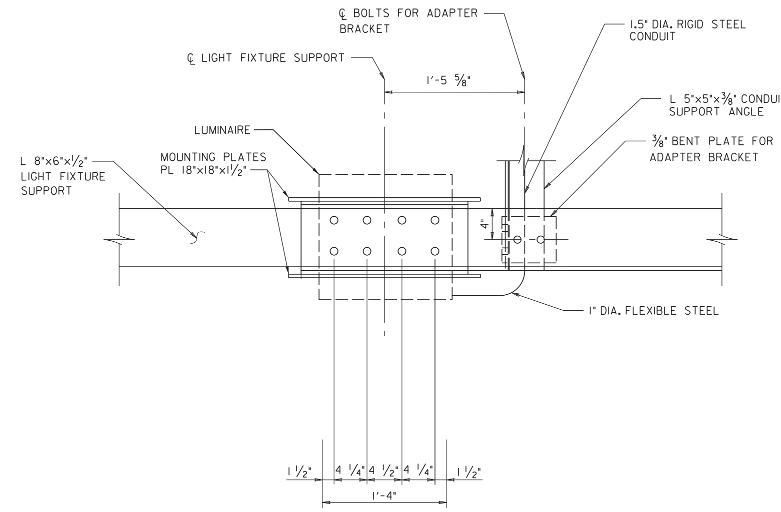


LIGHT FIXTURE SUPPORT (LT.# 01,02,09,10,16,17,18)

SCALE: 3/4" = 1'-0"

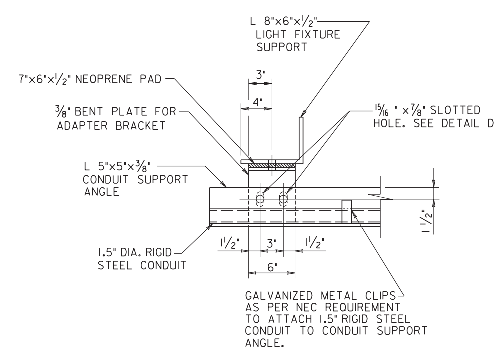


VIEW A–A

SCALE: 1 1/2" = 1'-0"

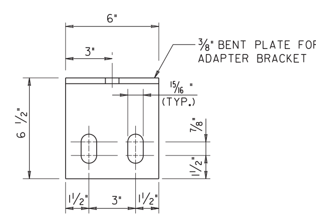
NOTES:

1. THE STEEL SUPPLIER SHALL COORDINATE WITH THE LIGHTING SUPPLIER FOR THE LOCATION OF HOLES FOR MOUNTING LIGHT FIXTURE.
2. THE BOTTOM OF THE LIGHT FIXTURE SHALL NOT EXTEND BELOW THE BOTTOM OF THE BEAM
3. ALL BOLTS TO BE 7/8" Ø A 325 IN 15/16" Ø HOLES BOLTS FOR ATTACHING LUMINAIRE TO BRACKET AND BRACKET TO LUMINAIRE SUPPORT SHALL BE AS SPECIFIED OR PROVIDED BY THE MANUFACTURER.
4. WELDING, FABRICATION, ALL MOUNTING HARDWARE, AND INSTALLATION SHALL BE INCIDENTAL TO THE ANGLE IRON AND LUMINAIRE ASSEMBLY BID ITEMS.
5. LUMINAIRE MOUNTING PLATE SHALL BE SIZED AS SHOWN OR SIZED TO PROVIDE A MINIMUM OF 2" CLEAR AROUND THE OUTER EDGE OF ANY ATTACHMENT BOLT HOLE FOR THE BRACKET



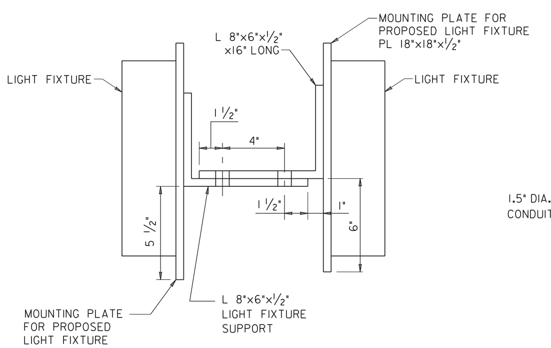
VIEW D–D – ADAPTER BRACKET

SCALE: 1 1/2" = 1'-0"



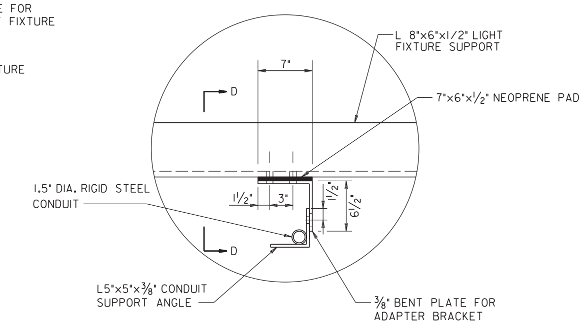
DETAIL D

SCALE: 3" = 1'-0"



SECTION B–B

SCALE: 3" = 1'-0"



DETAIL C

SCALE: 1 1/2" = 1'-0"

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REVISIONS

UNDERPASS LIGHTING DETAILS

SCALE NONE | DATE MAY 15, 2017 | CONTRACT NO. XY1615185

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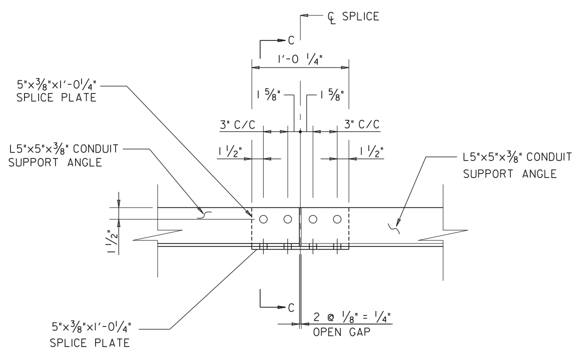
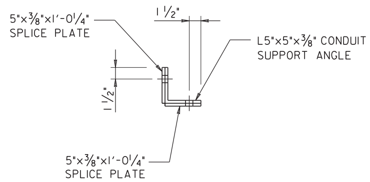
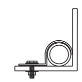


SPLICE FOR CONDUIT SUPPORT ANGLE – ELEVATION
SCALE: 1 1/2" = 1'-0"

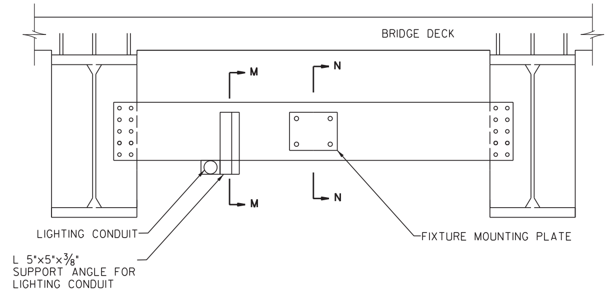


SECTION C–C
SCALE: 1 1/2" = 1'-0"



UL LISTED GALVANIZED CONDUIT CLAMP, THROUGH BOLTED THROUGH SUPPORT ANGLE. BOLTS SIZED TO FACTORY CLAMP HOLE AND AS SPECIFIED IN SECTION 909.06

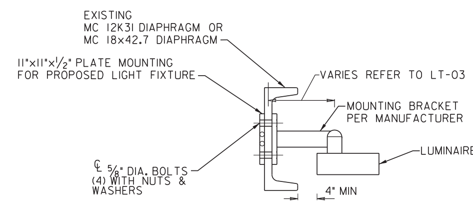
DETAIL F
SCALE: 1 1/2" = 1'-0"



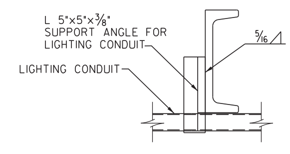
LIGHT FIXTURE SUPPORT AT DIAPHRAGM DETAIL (LT.#03,04,07,08,11,12,15)
SCALE: N.T.S.

NOTES:

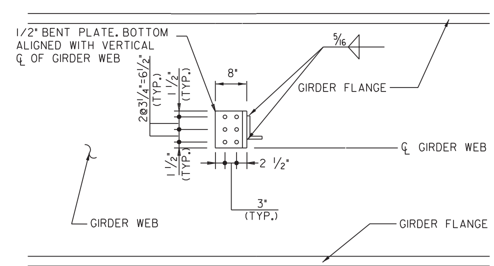
1. THE CONTRACTOR SHALL PROVIDE 1/2" NEOPRENE PADS BETWEEN THE DIAPHRAGMS AND THE CONDUIT SUPPORT ANGLE AND BETWEEN ADAPTER AND BRACKET LIGHT FIXTURE SUPPORT TO ATTENUATE VIBRATION FROM THE BRIDGE.
2. ALL CONDUIT ATTACHED TO CONDUIT SUPPORT ANGLE SHALL BE AS SPECIFIED ON THE LIGHTING PLANS.
3. APPROPRIATE GROUNDING SHALL BE PROVIDED IN THE CONDUIT.
4. ALL STRUCTURAL STEEL AND HARDWARE ATTACHED TO THE BRIDGE SHALL BE PAINTED DARK BROWN. (FEDERAL STD. NO. 595-20045)
5. BOLT HOLES IN DIAPHRAGMS AND GIRDERS SHALL BE DRILLED. THE BURNING OF HOLES WILL NOT BE PERMITTED. THE AFFECTED AREA SHALL BE CLEANED WITH A METAL WIRE BRUSH AND PAINTED TO MATCH THE BRIDGE PAINT SYSTEM BEFORE INSTALLATION OF CONDUIT SUPPORT ANGLE.
6. ALL BOLTS USED TO ATTACH GALVANIZED METAL CONDUIT CLIPS TO THE CONDUIT SUPPORT ANGLE OR BACKWALL SHALL USE LOCK WASHERS OR LOCK NUTS.
7. FIELD SPLICE TO BE LOCATED AS REQUIRED. NO MORE THAN 10 FIELD SPLICES PER CONDUIT SUPPORT WILL BE ALLOWED. FIELD SPLICES SHALL NOT BE LOCATED OVER SUPPORTS.
8. ALL BOLTS TO BE 7/8" Ø A 325 IN 15/16" Ø HOLES UNLESS OTHERWISE INDICATED.
9. FOR CONDUIT SUPPORT ANGLE SPLICES, ALL BOLTS SHALL BE PLACED SO THAT THE BOLT HEAD IS ON THE INSIDE OF THE ANGLE.
10. CONDUIT SHALL BE ATTACHED TO CONDUIT SUPPORT ANGLE WITH GALVANIZED METAL CLIPS PER NEC REQUIREMENTS.
11. REINFORCING STEEL IN CONCRETE ABUTMENTS SHALL BE LOCATED WITH PACHOMETER SO MOUNTING HARDWARE DOES NOT INTERFERE WITH IT.
12. HOLES IN THE DIAPHRAGM AND GIRDER SHALL BE DRILLED ONLY AFTER FINAL CONDUIT AND LUMINAIRE POSITIONING HAS BEEN DETERMINED.



SECTION N–N
SCALE: N.T.S.



SECTION M–M
SCALE: N.T.S.



SECTION G–G
SCALE: N.T.S.

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