



ADDENDUM NO. 1

TO: Interested Parties
FROM: Jessica Spring, Project Manager
Division of Engineering
DATE: Monday, June 6, 2022
PROJECT: Showalter Road at Crayton Boulevard Signal Intersection Improvements
County Contract No. TS-SC-040-16
Project No. 16-040

Acknowledge receipt of this Addendum No. 1 by signing in the space provided below and returning with your Bid.

Failure to sign and return with your Bid may subject the Bidder to disqualification. This Addendum No. 1 forms a part of the Bid Documents, it supplements and modifies them as outlined herein.

This Addendum No. 1 consists of thirty (30) pages, including this page.

I hereby acknowledge receipt of Addendum No. 1:

By: _____ Date _____
Signed Name

Typed Name

Title

For (Firm): _____

Phone Number: _____

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ADDENDUM NO. 1

SHOWALTER ROAD AT CRAYTON BOULEVARD
SIGNAL INTERSECTION IMPROVEMENTS

COUNTY CONTRACT NO. TS-SC-040-16
PROJECT NO. 16-040

Date Issued: Monday, June 6, 2022

Bids Due: Wednesday, June 22, 2022
2:00 p.m., EST

The following addendum material is hereby made a part of the Bid Documents.

Please note the following changes, information, and/or instructions in connection with the proposed work and submit proposals accordingly.



Jessica Spring, Project Manager
Division of Engineering

By Authority of:
Board of County Commissioners
Washington County, Maryland



Scott Hobbs, P.E., Director
Division of Engineering

ADDENDUM NO. 1

**SHOWALTER ROAD AT CRAYTON BOULEVARD
SIGNAL INTERSECTION IMPROVEMENTS**

**COUNTY CONTRACT NO. TS-SC-040-16
PROJECT NO. 16-040**

TO: All prime Contractors and all others to whom specifications have been issued:

ITEM 1.01 **PRE-BID TELECONFERENCE MEETING:**

The pre-bid teleconference meeting was held Thursday, May 26, 2022 at 10:00 a.m. Attached find the minutes and attendance record consisting of four (4) total pages.

ITEM 1.02 **BID QUESTIONS:**

The deadline for submitting questions is extended to **4:00 p.m. on Thursday, June 9, 2022**. Questions may be submitted via e-mail at: ecbidquestions@washco-md.net; or via Fax at (240) 313-2401.

The only questions submitted to date were raised during the pre-bid teleconference meeting. Refer to Addendum No. 1, Pre-Bid Teleconference Meeting, Paragraph 8. for all bid questions received to date.

ITEM 1.03 **TIME OF COMPLETION / CONTRACT DURATION:**

The contract time of completion is changed from 150 consecutive calendar days to **275 consecutive calendar days** in response to pre-bid meeting question no. 1 relating to the long lead time for the proposed traffic signal cabinet (refer to Item 1.02 above). The contractor awarded the work shall submit for the County's review all long-lead project items within two-weeks of project Notice To Proceed.

REVISE Invitation to Bid paragraph ITB 1.10 TIME OF COMPLETION accordingly.

ITEM 1.04 **PROJECT DRAWING SET:**

In response to pre-bid meeting question no. 2 asked during the pre-bid meeting (refer to Item 1.02 above) relating to the existing 4-anchor bolt signal foundation at the southeast quadrant of the intersection:

REPLACE previously issued project drawings (11 pages) with REVISED drawings (11 pages) included herein. Note, the revised bid documents include one each 27-foot steel pole with twin 44-foot mast arms. The new pole at the southeast quadrant of the intersection will utilize the existing 4-anchor bolt signal foundation per MDOT SHA's previous standard (Bid Item 8030). The other new pole (Bid Item 8031) located at the northwest quadrant of the intersection will utilize a 6-anchor bolt configuration.

Drawing revisions are noted in the "Revision Description" box for plan sheets 3, 4, 5, 6 and 7.

ADDENDUM NO. 1

SHOWALTER ROAD AT CRAYTON BOULEVARD
SIGNAL INTERSECTION IMPROVEMENTS

COUNTY CONTRACT NO. TS-SC-040-16
PROJECT NO. 16-040

ITEM 1.05 **BID ITEMS ADDED / AMENDED BY ADDENDUM:**

Item 5009 – Saw Cutting; Quantity 200 LF

Item 8030 – 27-FT. Steel Pole with Twin 44-FT. Mast Arms; Quantity 1 EA

Item 8036 - 2-Inch Schedule 80 Rigid PVC Conduit – Trenched; Quantity 40 LF

ITEM 1.06 **SPECIAL PROVISIONS ADDED / AMENDED BY ADDENDUM:**

REPLACE Special Provision Table of Contents Page SP TOC-2 with revised page SP TOC-2R attached herein.

REPLACE Special Provision Page 16 with revised page SP-16R included herein, relating to added saw cutting item.

REPLACE Special Provision Page 23 with revised page SP-23R included herein, relating to added 2-inch schedule 80 rigid pvc conduit item.

REPLACE Special Provision Page 62 with revised page SP-62R included herein, relating to amended mast arm configuration.

REPLACE Special Provision Page 68 with revised page SP-68R included herein, relating to removal of extraneous text.

REPLACE Special Provision Page 71 with revised page SP-71R included herein, relating to removal of extraneous text.

ITEM 1.07 **SPECIAL PROVISION CLARIFICATION:**

ITEM 1002 – Maintenance of Traffic (MOT): Regarding the Temporary Lane or Shoulder Closure Schedule found on page SP-3, note that work is not permitted on Saturdays or Sundays without written approval from the Engineer at least 72-hours prior to implementing the change.

ITEM 1.08 **REVISED BID FORMS:**

REPLACE Bid Form Page BF-15 with REVISED BID FORM Page BF-15R attached.
Reference Item 1.05 above.

ADDENDUM NO. 1

**SHOWALTER ROAD AT CRAYTON BOULEVARD
SIGNAL INTERSECTION IMPROVEMENTS**

**COUNTY CONTRACT NO. TS-SC-040-16
PROJECT NO. 16-040**

REPLACE Bid Form Page BF-19 with REVISED BID FORM Page BF-19R attached.
Note, quantities for Items 8013 and 8014 were adjusted based on the revised traffic signal drawings.

REPLACE Bid Form Page BF-21 with REVISED BID FORM Page BF-21R attached.
Note, quantity for Item 8026 was adjusted based on the revised traffic signal drawings.
Also, reference Item 1.05 above.

REPLACE Bid Form Page BF-22 with REVISED BID FORM Page BF-22R attached.
Reference Item 1.05 above.

ITEM 1.09 **BID FORMS/PREPARATION OF BID:**

Bids shall be executed on the *separate, detached* set of Bid Forms provided with the bid document; in addition to any revised Bid Form pages issued via addenda. Refer also to the Bid Document, paragraph ITB 1.03 – Preparation of Bid. In addition, each submitted bid shall include the signed cover page of each issued addendum.

ITEM 1.10 **LOCATION FOR SUBMITTING BIDS:**

Bids will be received and time-stamped at the location noted below. Do not submit any bid via email as bids will not be accepted this way.

Washington County Administrative Annex Building
Division of Engineering
747 Northern Avenue
Hagerstown, MD 21742

Attachments: Pre-Bid Teleconference Meeting Minutes and Attendance (4 total pages)
REVISED Special Provision Page SP TOC-2R (1 page)
REVISED Special Provision Page SP-16R (1 page)
REVISED Special Provision Page SP-23R (1 page)
REVISED Special Provision Page SP-62R (1 page)
REVISED Special Provision Page SP-68R (1 page)
REVISED Special Provision Page SP-71R (1 page)
REVISED Bid Form Page BF-15R (1 page)
REVISED Bid Form Page BF-19R (1 page)
REVISED Bid Form Page BF-21R (1 page)
REVISED Bid Form Page BF-22R (1 page)
REVISED PROJECT DRAWINGS (11 total pages)

END OF ADDENDUM NO. 1



ADDENDUM NO. 1

SHOWALTER ROAD AT CRAYTON BOULEVARD SIGNAL INTERSECTION IMPROVEMENTS

**County Contract No.: TS-SC-040-16; Project No. 16-040
Thursday, May 26, 2022 at 10:00 A.M.**

PRE-BID TELECONFERENCE MEETING AND ATTENDANCE RECORD

The Pre-Bid meeting for the referenced project was held virtually. Meeting comments are below.

1. **WELCOME/INTRODUCTION:**

- a) Record of Attendance: See attached attendance sheet (1 page).
- b) Project Team: Contract will be administered and managed by the Washington County Division of Engineering using local county funding.
 - 1. Jessica Spring, Project Manager, Division of Engineering
 - 2. Pam Mohn, Chief of Design, Division of Engineering
 - 3. Tamara Pitts, Transportation Engineer, Division of Engineering
 - 4. Greg Jones, Engineering Technician III, Division of Engineering

2. **PROJECT OVERVIEW:**

- a) The project involves the installation of a new traffic signal and associated equipment; signage; 2-inch mill and overlay; and pavement markings at the intersection of Showalter Road and Crayton Boulevard in Washington County, Maryland.
- b) Note that the traffic signal plan shows the installation of new conduit runs to an existing handhole located on the northwest quadrant of the intersection. This existing handhole is behind an existing chain link fence and located on Hagerstown Regional Airport (HGR) property. All trenching to install new conduit runs shall not disturb the exiting chain link fence and shall be coordinated with HGR personnel through the County's Division of Engineering project manager.

3. **TIME OF COMPLETION & LIQUIDATED DAMAGES:**

- a) This is a 150 consecutive calendar day contract. Liquidated Damages are in the amount of \$250.00 per day for each consecutive calendar day beyond the contract end date.

NOTE: Per Addendum No. 1, Item 1.03, the contract duration is extended to 275 consecutive calendar days in response to a pre-bid question received during the pre-bid teleconference meeting. See Paragraph 8.b) Bid Questions, below.

4. **NOTICE TO PROCEED (NTP):**

- a) The proposed Notice to Proceed is August 2022; and the proposed completion date is December 2022. Refer to Bid Document item ITB 1.10 for further detail.

NOTE: Per Addendum No. 1, Item 1.03, the contract duration is extended to 275 consecutive calendar days. Therefore, the proposed NTP is August 2022 and the proposed completion date is April 2023. See Paragraph 8.b) Bid Questions, below.

5. **PROGRESS SCHEDULE & CONTRACTOR PAYMENTS:**

- a) The Contractor shall furnish a progress schedule at project onset along with monthly updates. Contractors shall incorporate any costs associated with the schedule into other line items found in the bid.
- b) The Contractor shall submit the pencil copy for each monthly estimate to the County for review and approval based upon the work performed during that month.

6. **RECORD AS-BUILT DRAWING:**

- a) Contractor shall furnish as-built drawings upon final construction and prior to project close-out. Any costs shall be incidental to appropriate bid items.

7. **MATERIALS TESTING and MATERIAL CERTIFICATIONS:**

- a) Contractor is required to provide field and laboratory testing of materials used for construction, including concrete, soils, aggregates, and asphalt. Contractor shall also furnish material certifications.

8. **BID QUESTIONS:**

- a) The deadline for submitting questions is **Friday, June 3, 2022 at 4:00 P.M. EST.** Bidders may send questions via facsimile or email. The Fax number is **240-313-2401**; and the email address is **ecbidquestions@washco-md.net** (Refer to ITB 1.11 found on page ITB-9).

NOTE: The bid question period is extended to 4:00 p.m., Thursday, June 9, 2022. See Addendum No. 1, Item 1.02.

- b) Questions raised during the pre-bid meeting include:

Q1: Time of Completion: According to material suppliers, the current lead time for a traffic signal cabinet following submittal approval is 24 – 26 weeks. The lead time for signal poles is slightly less. This pushes the proposed project completion from December 2022 to August 2023. Please advise.

R1: The County will review and respond by addendum.

See Addendum No. 1, Item 1.03.

Q2: Existing 4-Anchor Bolt Signal Foundation at Southeast Quadrant: The existing signal foundation located in the concrete island at the southeast quadrant of the intersection has four (4) anchor bolts. The existing 4-anchor bolts are oriented 90-degrees to Showalter Road and not 45-degrees as shown on the drawing. I do not believe that the existing 4-bolt configuration with the orientation as shown will work with the proposed design. Please advise.

R2: The County will review the southeast quadrant signal foundation and respond by addendum. See Addendum No. 1, Item 1.04.

Note that the new/proposed signal foundation located at the northwest quadrant of the intersection shall be constructed with six (6) anchor bolts per the updated Maryland State Highway Administration Signal Structure Foundation detail provided in the project drawings.

9. **BID FORMS:**

- a) Bids shall be submitted on the *separate, detached* forms found in the downloaded ***Bid Packet*** file; along with any revised Bid Form pages that may be issued by addenda. Bidders may not substitute forms; use of other forms may render bids non-responsive.

10. **BID SECURITY:**

- a) A bid security in the amount of 5% of the total bid price shall accompany each submitted bid. The bid security shall be made payable to the Board of County Commissioners of Washington County, Maryland and may be in the form of a cashier's check, certified check, or bid bond.

11. **BID DUE DATE & LOCATION:** Refer also to the Bid Document.

- a) Bids will be received until **2:00 P.M. EST, Wednesday, June 22, 2022.**
- b) The Sealed Bids, properly designated, may be mailed or delivered to:

Washington County Administrative Annex Building
Division of Engineering
747 Northern Avenue
Hagerstown, MD, 21742

- c) Do not submit any bid via email as bids will not be accepted this way. Please allow ample time for delivery of bid packets.

12. **MEETING ADJOURNMENT:**

- a) Attendees were thanked for their attendance and the meeting adjourned at 10:30 a.m.

ATTACHMENTS: Pre-Bid Sign-In Sheet (1 page)



ATTENDANCE RECORD

Pre-Bid Meeting: Invitation to Bid

**SHOWALTER ROAD AT CRAYTON BOULEVARD
SIGNAL INTERSECTION IMPROVEMENTS**

**County Contract No.: TS-SC-040-16; Project No. 16-040
Thursday, May 26, 2022 at 10:00 A.M.**

Name / Title	Agency	Phone / E-mail
Jessica Spring Project Manager	Washington County MD Division of Engineering	Phone: (240) 313-2414 Fax: 240.313.2401 jspring@washco-md.net
Pam Mohn Chief of Design	Washington County MD Division of Engineering	Phone: (240) 313-2460
Tamara Pitts Transportation Engineer	Washington County MD Division of Engineering	Phone: (240) 313-2460
Greg Jones Engineering Technician III	Washington County MD Division of Engineering	Phone: (240) 313-2460
Tony Kerns	C. William Hetzer, Inc.	Phone: (301) 733-7300 Estimating@cwiliamhetzer.com

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- Contractor's name
- Purchase order number
- Lot number
- Color

- .04 MEASUREMENT AND PAYMENT:** Preformed Thermoplastic Pavement Marking Legends (letters and numbers) and Symbols will be measured and paid for at the Contract unit price per square foot. The square foot pay quantity for Legends (letters and numbers) and Symbols will be as specified in the Administrations Standard Details. Preformed Thermoplastic Pavement Marking lines will be measured and paid for at the Contract unit price per linear foot for the color and width specified.

The payment will be full compensation for all pavement preparation, furnishing and placing of markings, testing, and for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made upon submission of the Quality Control Reports to the County:

Item No. 5009 – SAW CUTTING

- .01 DESCRIPTION:** The Contractor shall saw cut the existing roadway pavement to provide a clean joint for mill and overlay at commercial driveway tie-ins on Showalter Road. Saw cutting is also needed within the concrete island to install the concrete bollard foundations.

- .02 MATERIALS:**
- | | |
|--------------|------------------------------------|
| Tack Coat | MDOT SHA Section 904.03, 504.03.04 |
| Joint Sealer | MDOT SHA Section 911 |

- .03 CONSTRUCTION:** Saw cuts shall be made with a power saw, to the width directed by the Engineer. Saw cuts shall be clean, dry, and free from dust, grit, oil, and moisture to the satisfaction of the Engineer. This item shall be used only where and as directed by the Engineer.

Prior to placing new pavement, the entire face of existing pavement shall be coated with tack coat.

After new pavement has been placed, all joints shall be filled with approved joint sealer.

Appropriate traffic control devices shall be in place and functional prior to commencing any work on this item.

- .04 MEASUREMENT AND PAYMENT:** Saw cutting will be measured and paid at the Contract unit price per linear foot. Payment will be for full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

Item No. 8005- 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
Item No. 8036- 2 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED

.01 DESCRIPTION: Furnish and install electrical conduit and fittings.

.02 MATERIALS:

Portland Cement Concrete	902.10, Mix No. 6
Metallic Conduit and Fittings	921.07.01
Nonmetallic Conduit and Fittings	921.07.02
Flexible Conduit and Fittings	921.07.02
PVC Coated Metallic Conduit and Fittings	921.07.03

.03 CONSTRUCTION:

A. Bends. Unless otherwise specified, use manufactured bends or field bends to make changes in direction. Maintain an 18 in. trade radius.

B. Connections. Make conduit runs with as few couplings as standard length will permit. Rigid steel conduit connections shall be threaded. Paint field cut threads of galvanized conduit with approved galvanizing repair paint prior to assembly. Connect nonmetallic conduit using a solvent welding process. Use watertight cast ferrous compression type fittings for electrical metallic tubing (EMT).

C. Conduit Terminations. Use pull boxes or conduit bodies at conduit terminations. Conduits terminating in cast iron junction boxes shall be threaded into hubs, with bonding screws furnished and installed on the interior of the box. Conduits terminating in junction boxes without hubs shall be secured with two lock nuts with an insulated grounding bushing installed. Conduits terminating at concrete foundations, manholes, or hand holes shall be secured as specified in the Contract Documents. Cap all ends of unused conduit.

D. Cleaning and Capping. Prior to installing conductors, remove all obstructions and debris by pulling a mandrel type device through each conduit run and all fittings in the presence of the Engineer. Cap conduit ends by using a manufactured cap or plug. Prior to the installation of wiring, remove manufactured caps or plugs and install an insulated bonding bushing on galvanized rigid conduit; install bell end fittings on PVC conduit.

E. Pull Wire. Install a pull wire or cord in all conduits left empty. Pull wire and cord shall be corrosion resistant material with a breaking strength of at least 200 lb.

F. Exposed Conduit. Exposed conduit runs shall be parallel or at right angles to walls, slabs, girders, etc. Locate conduit to minimize accumulation of dirt and to provide accessibility for painting. Attach conduit to steel, concrete, masonry, or timber using straps, clamps, or hangers of an approved type made of stainless steel or galvanized malleable iron. Space the attachments as specified. When specified, paint all exposed rigid steel conduit surfaces to match the color of adjacent

Item No. 8030 - 27 FT. STEEL POLE WITH TWIN 44 FT. MAST ARMS**Item No. 8031 - 27 FT. STEEL POLE WITH 70 FT. MAST ARM**

- .01 DESCRIPTION:** Furnish and install galvanized traffic signal mast arms and mast arm poles at locations specified in the Contract Document or as directed by the Engineer. **The twin 44 ft mast arms and pole will be set on an existing foundation with a 4-anchor bolt configuration in line with MDOT SHA's previous standard.** The 70 ft pole and mast arm is to be set on a new foundation using the new 6-anchor bolt configuration per MDOT SHA current standard 801.01.
- .02 MATERIALS:** Design shall conform to the latest edition of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, except as noted. All welding shall conform to American Welding Society (AWS) Structural Welding Code D1.1 - Steel, Tubular Structures.

Each mast arm(s) and mast arm pole structure furnished shall consist of a design from a steel pole shaft, with a steel base plate and flange plate, steel mast arm shaft.(s) with steel flange plate(s), four flange bolts per mast arm, four anchor bolts and miscellaneous hardware.

- (a)** Manufacture the mast arms and mast arm poles from steel tubing conforming to A 595 Grade A or equal. Each mast arm and mast arm pole shall be fabricated of one length and shall have one longitudinal weld, parallel to the long axis of the mast arm or mast arm pole, with no transverse welds. Finish the longitudinal weld to form a smooth outside surface and the wall of the mast arms and mast arm poles shall be of uniform thickness including the welded area. The mast arms and mast arm poles shall be round or multi-sided (8 sides or more) in cross section and be uniformly tapered from butt to tip with a 1 in. reduction in diameter for each 7 ft. in length (0.14 in./ ft.). Mast arms shall be of two piece design for all mast arms 60 ft. in length. Mast arms shall be of three piece design for all mast arms 70 ft and 75 ft.. in length. Any combination of two piece of 60 ft. arm of the same butt diameter shall fit together and any combination of two or three piece of 60 ft, 70 ft.. and 75 ft. mast arms in sequence shall fit together. The bolted splice for two or three piece mast arms shall be as specified in the Contract Document.
- (1)** 60 ft., 70 ft., and 75 ft. mast arms shall have a butt section of 35 ft. in length.
- (2)** 60 ft. two piece and 70 ft. three piece mast arm butt sections shall be 12.5 in. outside diameter at the flange plate and made of 3 gauge (0. 250 in.) thickness steel.
- (3)** All extension sections of two and three piece mast arms shall be made of 7 gauge (0.179 in.) thickness steel.
- (4)** Twin 27 ft. mast arm poles designed with mast arm lengths for one mast arm of 60 ft., 70 ft., and 75 ft. shall be 15 in. outside diameter at the base plate and made of zero gauge (0.312 in.) thickness steel.
- (b)** The material for mast arm pole base plate shall conform to A 709, Grade 36 and shall be of sufficient size and strength. Secure the base plate to the lower end of the mast

bolt.

- (e) Provide each anchor bolt with two anchor bolt nuts and two flat washers.
 - (1) Anchor bolt nuts shall conform to A 194 grade 2 or 2H or A 563 D or DH.
 - (2) Tap all nuts oversize the minimum amount required to permit assembly on the coated externally threaded fastener.
 - (3) Washers shall conform to F436.
- (f) Hot dip or mechanically galvanize all nuts, washers and the top 12 in. of all anchor bolts. The galvanized coating shall conform to the thickness, adherence and quality requirements of A 123 or A 153 for hardware.

All high strength bolts (of a given length), nuts (of a given size) and washers (of a given diameter) shall be from the same manufacturing lot per each requisition of materials. The use of foreign made fasteners is prohibited.

Alternate Design. Alternate mast arm and mast arm pole designs will be considered provided the following qualifications are observed:

- (a) Alternate mast arm designs may use sectional construction provided each section has a minimum length of 30 ft. except for the outer most section.
- (b) Overlap between sections shall be a minimum 18 in.
- (c) Bolt circle diameters shall be as specified in the Contract Documents.
- (d) Alternate post designs may be straight (not tapered) sections and shall have a base diameter equal to, or no greater than 1 in. more than, those values shown on the typical.
- (e) All alternate design must be structurally equivalent to the original design and as approved by the Engineer.

.03 CONSTRUCTION Refer to MDOT Standard MD - 818.03

.04 MEASUREMENT AND PAYMENT. Furnish and install poles for mast arm(s) and mast arm(s) will be measured and paid for at the contract unit price per each type of pole and mast arm(s) size as specified in the Contract Documents. The payment will be full compensation for furnishing & installing all materials including labor, equipment, materials, anchor bolts, tools and incidentals necessary to complete the work.

(2) All nuts shall be tapped oversize the minimum amount required to permit assembly on the coated externally threaded fastener.

(3) Washers shall conform to F 436.

(f) All nuts, washers, and the top 12 in. of all anchor bolts shall be hot dipped or mechanically galvanized. The galvanized coating shall conform to the thickness, adherence and quality requirements of A 123 or A 153 for hardware.

All high strength bolts (of a given length), nuts (of a given size) and washers (of a given diameter) shall be from the same manufacturing lot per each requisition of materials. The use of foreign made fasteners is prohibited!

.03 CONSTRUCTION: Refer to: MDOT Standards MD-818.03
MDOT Standards MD-818.16

.04 MEASUREMENT AND PAYMENT: Pedestal Poles will be measured and paid for at the Contract unit price per each type of pole furnished and installed. The payment will be full compensation for furnishing and installing transformer base and all materials, labor, equipment, tools and incidentals necessary to complete work.

Tag Detail

Mfg: _____ ^[1]	Contract #: _____ ^[2]
Pole Diameter: _____ ^[3]	Height: _____ ^[4] Gauge: _____ ^[5]
Anchor Bolts: _____ ^[6]	Bolt Circle: _____ ^[7]

Tag Reference

[1] Name of the manufacturer of the pedestal pole.

[2] Administration Contract Number of the pedestal pole.

[3] Pole outside diameter at the base: 4-½ in. O.D.

[4] Pole height¹: 10ft

ITEM	CODE	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE	ITEM TOTAL
5001		7,550	S.Y.	MILLING ASPHALT PAVEMENT, 0-2 INCHES	_____	_____
5002		906	TON	HOT MIX ASPHALT SUPERPAVE SURFACE 9.5 mm (PG 64-22)	_____	_____
5003		5,600	L.F.	5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKINGS	_____	_____
5004		4,800	L.F.	5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS	_____	_____
5005		200	L.F.	10 INCH YELLOW THERMOPLASTIC PAVEMENT MARKINGS	_____	_____
5006		50	L.F.	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS	_____	_____
5007		80	L.F.,	24 INCH PREFORMED THERMOPLASTIC PAVEMENT MARKINGS	_____	_____
5008		205	S.F.	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING SYMBOLS	_____	_____
5009		200	L.F.	SAW CUTTING	_____	_____
End Category 5000 Contract No. TS-SC-040-16					Total This Sheet	_____

ITEM	CODE	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE		ITEM TOTAL
8009		50	L.F.	ELECTRICAL SERVICE CABLE - 3 WIRE - 1 CONDUCTOR (4 AWG)	---	---	---
8010		50	L.F.	TELEPHONE SERVICE - COMMUNICATION CABLE	---	---	---
8011		400	L.F.	ELECTRICAL CABLE - 3 CONDUCTOR (12 AWG)	---	---	---
8012		400	L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (14 AWG)	---	---	---
8013		400	L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (14 AWG)	---	---	---
8014		1,650	L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (14 AWG)	---	---	---
8015		1,100	L.F.	STRANDED BARE COPPER GROUND WIRE (6 AWG)	---	---	---
8016		1	EA.	ELECTRICAL HANDHOLE	---	---	---
Category 8000 Contract No. TS-SC-040-16					Total This Sheet		---

ITEM	CODE	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE		ITEM TOTAL
8025		4	EA.	IP BASE VIDEO DETECTION CAMERA	—	—	—
8026		850	L.F..	VIDEO CAMERA DETECTION LEAD – IN CABLE	—	—	—
8027		1	L.S.	BATTERY BACKUP EQUIPMENT FOR TRAFFIC SIGNAL	—	—	—
8028		1	EA.	2 WIRE APS CENTRAL CONTROL UNIT	—	—	—
8029		2	EA.	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGN	—	—	—
8030		1	EA.	27 FOOT STEEL POLE WITH TWIN 44 FOOT MAST ARMS	—	—	—
8031		1	EA.	27 FOOT STEEL POLE WITH 70 FOOT MAST ARM	—	—	—
8032		2	EA.	10 FOOT BREAKWAY PEDESTAL POLE	—	—	—
Category 8000 Contract No. TS-SC-040-16					Total This Sheet		—

ITEM	CODE	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	ITEM TOTAL
8033		1	EA.	DESCRIMINATOR MODULAR - 4 CHANNEL No.764	—	—
8034		3	EA.	OPTICOM No. 721 DETECTOR EYE	—	—
8035		650	L.F.	OPTICOM DETECTOR CABLE (20 AWG)	—	—
8036		40	L.F.	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	—	—
End Category 8000						
Contract No. TS-SC-040-16				Total This Sheet		—

WASHINGTON COUNTY, MARYLAND

DIVISION OF ENGINEERING



SHOWALTER RD. AT CRAYTON BLVD.

SIGNAL INTERSECTION IMPROVEMENTS

PROJECT NO. 16-040
CONTRACT NO. TS-SC-040-16



AASHTO DESIGN CRITERIA
 THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2018 PUBLICATION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MUTCD
 ALL WORK ON THIS PROJECT SHALL CONFORM TO: THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED MAY 2017 REVISIONS THEREOF OR ADDITIONS THERETO; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK; THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND THE LATEST MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

ADA COMPLIANCE
 THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION.

SEAL:

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No. 39252 EXPIRATION DATE: 6.21.22

APPROVED FOR CONSTRUCTION

Scott Hobbs 5/19/22
 SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 FOR WASHINGTON COUNTY, MD

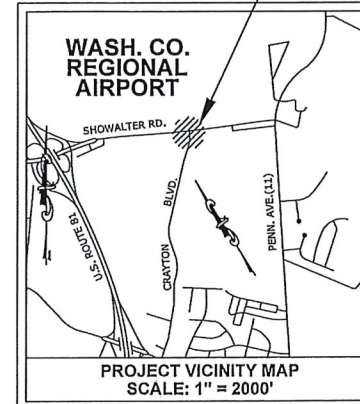
I / WE CERTIFY ALL / ANY PARTIES RESPONSIBLE FOR CLEARING, GRADING, CONSTRUCTION, AND / OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SOIL EROSION AND SEDIMENT.

APPROVED FOR CONSTRUCTION.

Scott Hobbs 5/19/22
 SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 FOR WASHINGTON COUNTY, MD

OWNER/DEVELOPER:

BOARD OF COUNTY COMMISSIONERS
 FOR WASHINGTON COUNTY, MD
 AGENT: SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 747 NORTHERN AVENUE
 HAGERSTOWN, MARYLAND 21742
 PHONE: 240-313-2460
 FAX: 240-313-2401



DISTURBED AREA QUANTITY

THE TOTAL AREA TO BE DISTURBED SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY .0124 ACRES AND THE TOTAL AMOUNT OF EXCAVATION AND FILL SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY 20 CU. YDS. OF EXCAVATION AND APPROXIMATELY 10 CU. YDS. OF FILL.

BOARD OF COUNTY COMMISSIONERS:

JEFFREY A. CLINE, PRESIDENT
 TERRY L. BAKER, VICE PRESIDENT
 WAYNE K. KEEFER
 RANDALL E. WAGNER
 CHARLES A. BURKETT JR.

JOHN M. MARTIRANO, COUNTY ADMINISTRATOR
 SCOTT HOBBS, P.E., DIRECTOR OF ENGINEERING

INDEX OF SHEET(S):

SHEET 01	COVER SHEET
SHEET 02	GENERAL NOTES & LEGENDS
SHEET 03	TRAFFIC SIGNAL PLAN
SHEET 04	TRAFFIC SIGNAL WIRING PLAN AND SUMMARY OF QUANTITIES
SHEET 05 - 07	MD-SHA TRAFFIC SIGNAL DETAILS
SHEET 08 - 10	PAVEMENT MARKING PLAN
SHEET 11	TRAFFIC CONTROL

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GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, THE LATEST EDITION OF THE MDSA STANDARD SPECIFICATIONS, AND SUPPLEMENTAL SPECIFICATIONS.
- WHERE REFERENCE IS MADE TO STANDARDS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN HIS POSSESSION THE MARYLAND SHA BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES WITH THE LATEST UP TO DATE MSHA STANDARDS AS OF THE DATE OF ADVERTISEMENT OF THIS PROJECT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE LATEST APPROVED SET OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND ANY REFERENCED MDSA STANDARDS AS OF NOTICE TO PROCEED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING PROPERTY MARKERS, CONTROL POINTS AND BENCHMARKS FOR THE DURATION OF THE CONTRACT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE ANY OF THESE POINTS THAT ARE DISTURBED OR DAMAGED DURING THE CONSTRUCTION PROCESS. WHERE NECESSARY, POINTS SHALL BE REPLACED UNDER THE DIRECT SUPERVISION OF A REGISTERED SURVEYOR TO THE STANDARD WITH WHICH THEY WERE ESTABLISHED.
- DEFINITION OF TERMS:
PROPOSED RIGHT OF WAY:
 DENOTES LAND BELONGING TO COUNTY OR STATE, WHICH CONTAINS THE ROADWAY AND SUPPORTING STRUCTURES.
PERPETUAL EASEMENT:
 PORTIONS OF PRIVATE PROPERTY FOR WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO UTILIZE FOR THE INSTALLATION AND MAINTENANCE OF UTILITIES, DRAINAGE STRUCTURES, ETC.
REVERTIBLE EASEMENT:
 PORTIONS OF PRIVATE PROPERTY FOR WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO CONSTRUCT AND MAINTAIN SUPPORTING SLOPES AND STRUCTURES FOR THE ROADWAY.
TEMPORARY CONSTRUCTION EASEMENT:
 PORTIONS OF PRIVATE PROPERTY ON WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO OCCUPY AND GRADE ON DURING THE PERIOD OF CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE, CHECK, AND BE RESPONSIBLE FOR ALL MEASUREMENTS AND DIMENSIONS NECESSARY FOR THE PROPER CONSTRUCTION OF ALL WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ACTUAL CONDITIONS AND PLANNING ALL CONSTRUCTION ACCORDINGLY. ALL DIMENSIONS SHOWN SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE ANY WORK COMMENCES.
- ANY DAMAGE TO ADJACENT ROADS, YARDS, STRUCTURES, FENCES, SHRUBBERY, ETC., DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY OR THE PROPERTY OWNERS BEFORE ANY WORK COMMENCES.
- MATERIALS SALVAGED FROM CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- WORK SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES. IF ACCESS MUST BE INTERRUPTED FOR SHORT PERIODS OF TIME, THE INTERRUPTION SHALL BE COORDINATED WITH THE ENGINEER AND THE PROPERTY OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC THROUGHOUT THE ENTIRE PERIOD OF CONSTRUCTION BY PROVIDING A REASONABLY SMOOTH AND EVEN SURFACE SATISFACTORY FOR THE USE OF PUBLIC TRAFFIC, AND BY PROVIDING ACCESS TO ALL PUBLIC ROADS AND RESIDENTIAL AND COMMERCIAL ENTRANCES AT ALL TIMES. CONTRACTOR TO FOLLOW MOT PLANS AND SHA STANDARDS FOR CONSTRUCTION ACCESS.
- THE CONTRACTOR MUST NOT OCCUPY ANY NON-PERMITTED WETLAND AREAS.

- IN ANY AREA WHERE ASPHALT THAT IS TO BE REMOVED ADJOINS ASPHALT THAT IS TO REMAIN, THE ASPHALT PAVING SHALL BE SAW CUT IN ORDER TO PROVIDE A CLEAN JOINT BETWEEN THAT WHICH IS TO BE REMOVED AND THAT WHICH IS TO REMAIN.
- IN AREAS WHERE CONCRETE THAT IS TO BE REMOVED ADJOINS CONCRETE THAT IS TO REMAIN, THE CONCRETE SHALL BE SAW CUT AT THE NEAREST JOINT AND A BITUMINOUS EXPANSION JOINT PROVIDED BETWEEN NEW AND EXISTING WORK. WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE SPECIFICATIONS AND ON THE APPROVED CONSTRUCTION DRAWINGS.
- CLEARING AND GRUBBING SHALL OCCUR INSIDE THE PLATTED RIGHT OF WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- UTILITIES: THE LOCATIONS OF UNDERGROUND AND AERIAL UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE CONSIDERED COMPLETE OR ACCURATE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS PRIOR TO STATING ANY WORK SHOWN ON THESE DRAWINGS. THE CONTRACTOR MUST PROTECT, IN PLACE, ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED ON THE PLANS.
 Miss Utility 1-800-257-7777
 Washington County Division of Engineering 240-313-2460
 Washington County Dept. of Water Quality 240-313-2625
 Washington County Soil Conservation District 301-797-6821 (Ext.3)
 Potomac Edison (Allegheny Power) 301-582-5266
 Columbia Gas (Hagerstown) 240-420-2026
 Verizon 301-790-7135
 Antietam Cable 240-420-2082
 City of Hagerstown Utilities Dept. - Water & Wastewater Division 301-739-8577 (Ext. 650)
- IF DURING CONSTRUCTION THE CONTRACTOR FINDS THAT CLEARANCES BETWEEN EXISTING UTILITIES AND PROPOSED WORK IS LESS THAN THAT NOTED OR IS LESS THAN SIX INCHES, HE SHALL CONTACT THE ENGINEER FOR INSTRUCTIONS ON HOW TO PROCEED.
- THE CONTRACTOR MUST PROTECT IN PLACE ANY ACTIVE ABOVE GROUND AND OR UNDERGROUND UTILITIES FOUND UNLESS OTHER TREATMENT IS CALLED FOR. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION. THE COUNTY OR THE PROPERTY OWNER SHALL NOT BEAR ANY COST OR RESPONSIBILITY FOR DAMAGE TO UTILITIES OR PROPERTY AS THE RESULT OF THE CONTRACTOR'S NEGLIGENCE.
- THE CONTRACTOR SHALL PROTECT AND NOT INTERRUPT EXISTING UTILITY SERVICES DURING CONSTRUCTION, UNLESS AUTHORIZED BY THE ENGINEER. THE CONTRACTOR SHALL SUPPORT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION AND THIS SUPPORT SHALL BE INCIDENTAL TO PERTINENT PAY ITEMS. THE LOCATION OF THE UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.

SYMBOL LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE, CORNER
		RIGHT-OF-WAY LINE
		UTILITIES EASEMENT
		TEMP. CONSTRUCTION EASEMENT (T.C.E.)
		REVERTIBLE GRADING EASEMENT (R.G.E.)
		DRAINAGE EASEMENT
		FOREST EASEMENT
		STREAM EASEMENT
		CENTERLINE
		CONTOURS
		PROFILE GRADE LINE
		TREE LINE
		EDGE OF PAVEMENT
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		FENCE LINE
		STREAM OR DITCH
		FLOW LINE
		WATER LINE
		SANITARY SEWER LINE, STUB
		GAS LINE
		FORCE MAIN
		STORM DRAIN, END SECTION
		WATER VALVE
		WATER CAP, REDUCER, BEND
		FIRE HYDRANT, METER
		OVERHEAD ELECTRIC LINE
		TRAFFIC BARRIER
		FLOODPLAIN
		BUILDINGS, HOUSES, GARAGES
		SANITARY SEWER MANHOLE
		STORM DRAIN INLET
		UTILITY POLE
		HANDICAP PARKING
		POLE LIGHT
		ROAD SIGN
		SPOT ELEVATION
		INLET NUMBERING
		END SECTION NUMBERING
		ENDWALL NUMBERING
		SOIL BORING LOCATION
		DIRECTIONAL FLOW ARROW

ABBREVIATIONS

AASHTO	-AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	G2	-GRADE 2	PVI	-POINT OF VERTICAL INTERSECTION
ADT	-AVERAGE DAILY TRAFFIC	H.S.D	-HEADLIGHT SIGHT DISTANCE	PVT	-POINT OF VERTICAL TANGENCY
B.C.	-BOTTOM OF CURB	HWALL	-HEADWALL	R.	-RADIUS
B.F.C.	-BOTTOM FACE OF CURB	INV.	-INVERT	RCP	-REINFORCED CONCRETE PIPE
B/L	-BASE LINE	K	-RATE OF CHANGE OF GRADE	R.G.E.	-REVERTIBLE GRADING EASEMENT
-C-	-CUT	L	-LENGTH	R.O.W.	-RIGHT OF WAY
C..B.	-CATCH BASIN	LOD	-LIMIT OF DISTURBANCE	S.B.	-SOUTH BOUND
CL	-CENTERLINE	LP	-LIGHTPOLE	S.D.	-STORM DRAIN
C/O	-CLEANOUT	LVC	-LENGTH OF VERTICAL CURVE	SHLD	-SHOULDER
CONC.	-CONCRETE	MPH	-MILES PER HOUR	S.S.D.	-STOPPING SIGHT DISTANCE
CORR.	-CORRECTION	MSHA	-MARYLAND STATE HIGHWAY ASSOCIATION	STA.	-STATION
CULV.	-CULVERT	N.P.	-NORTH BOUND	S/W	-SIDEWALK
Dc	-DEGREE OF CURVATURE	N.T.S.	-NOT TO SCALE	T	-TANGENT
DS..	-DESIGN SPEED	PC	-POINT OF CURVATURE	T.C.	-TOP OF CURB
E	-EXTERNAL	P.D.E.	-PERPETUAL DRAINAGE EASEMENT	T.C.E.	-TEMPORARY CONSTRUCTION EASEMENT
E.B.	-EAST BOUND	P.G.E.	-PROFILE GRADE ELEVATION	T.P.	-TEST PIT
EL., ELEV.	-ELEVATION	P.G.L.	-PROFILE GRADE LINE	TYP.	-TYPICAL
ESMT.	-EASEMENT	P.I.	-POINT OF INTERSECTION	U/BOX	-UTILITY BOX
EX.	-EXISTING	P/R	-POINT OF ROTATION	V.C.	-VERTICAL CURVE
-F-	-FILL	PROP.	-PROPOSED	W.B.	-WEST BOUND
G1	-GRADE 1	PT.	-POINT OF TANGENCY		
		PVC	-POINT OF VERTICAL CURVATURE		

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401



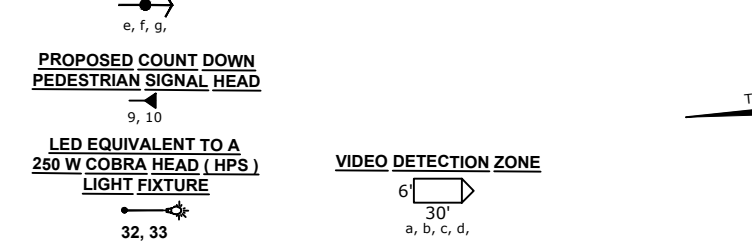
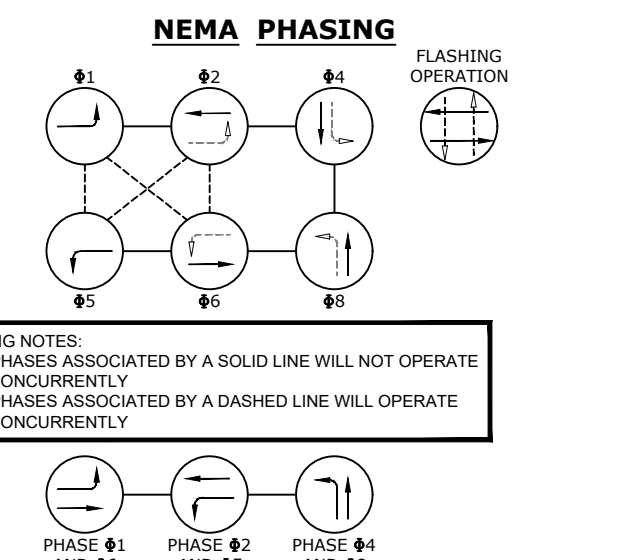
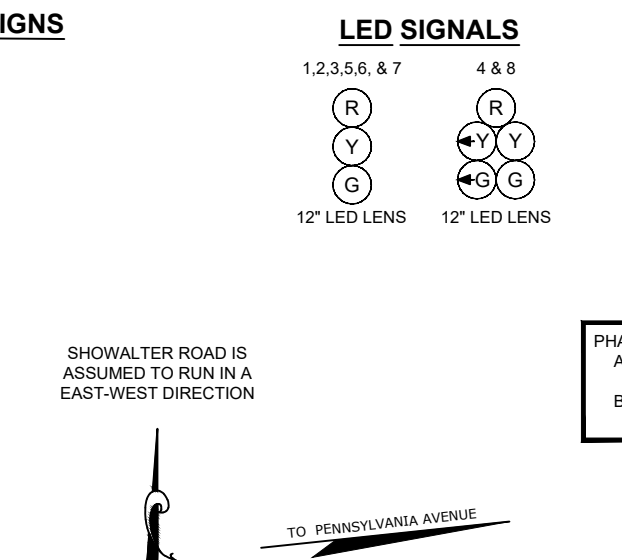
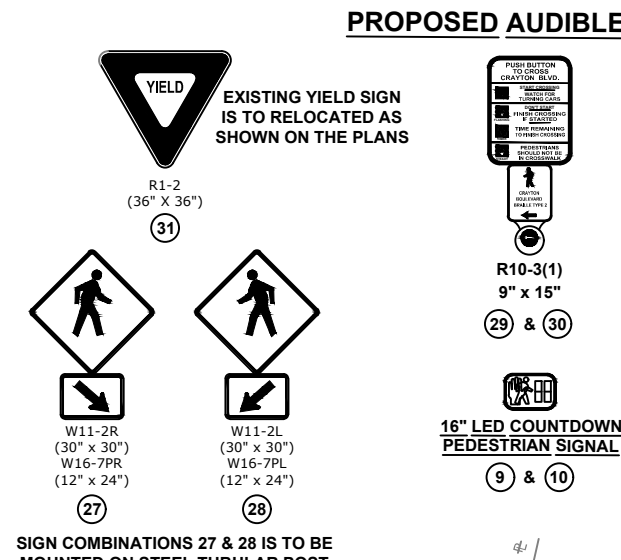
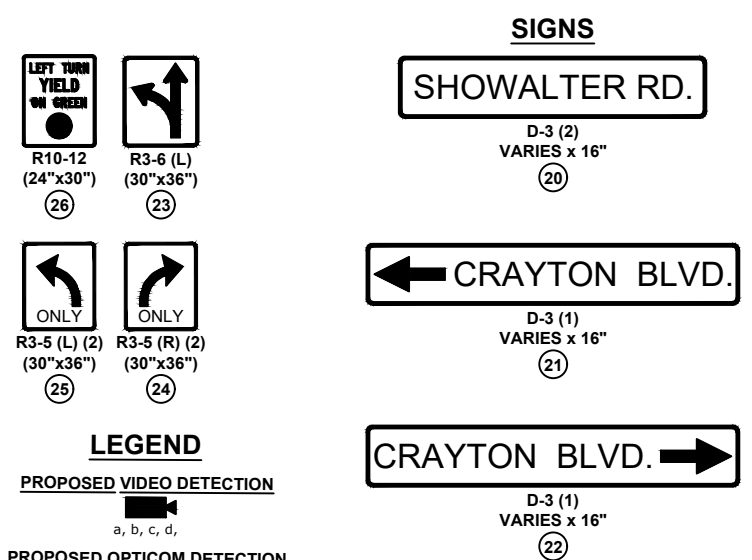
SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
GENERAL NOTES
AND LEGENDS

SCALE
NONE

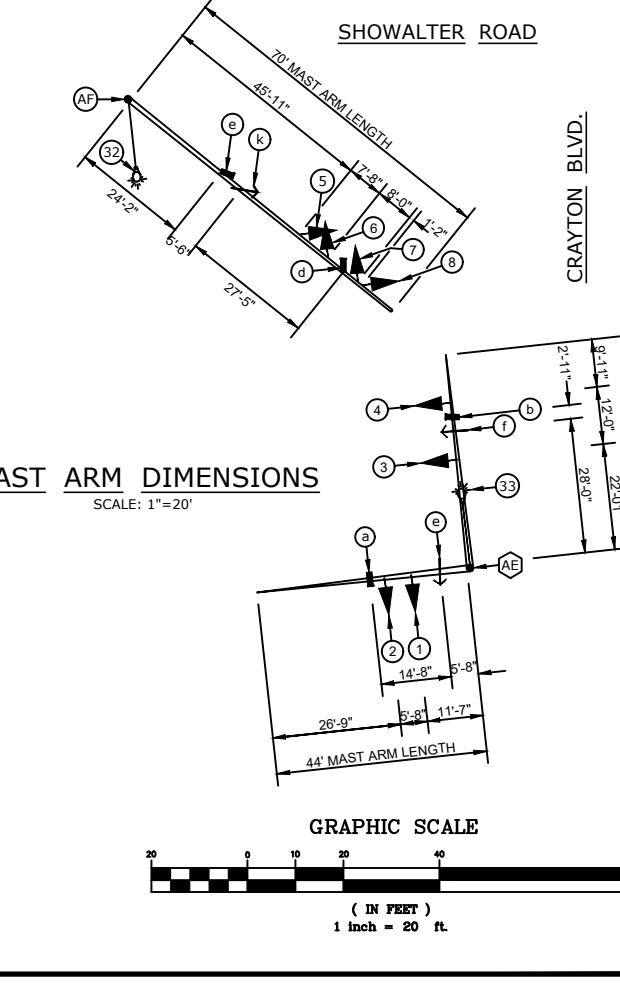
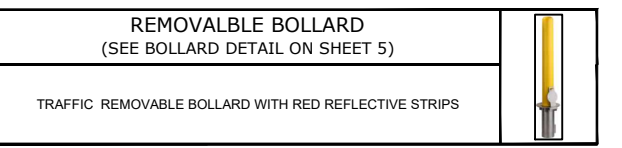
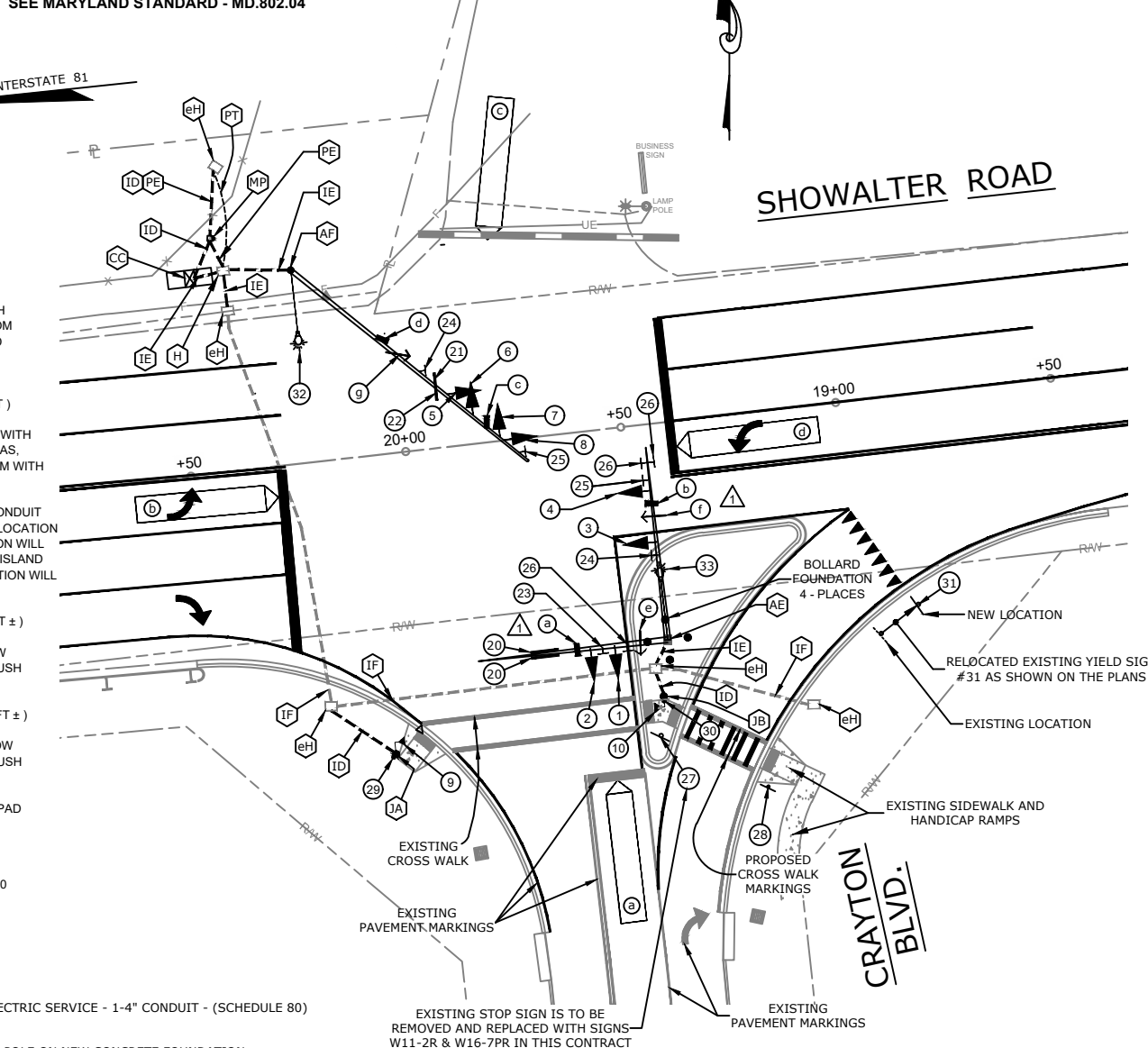
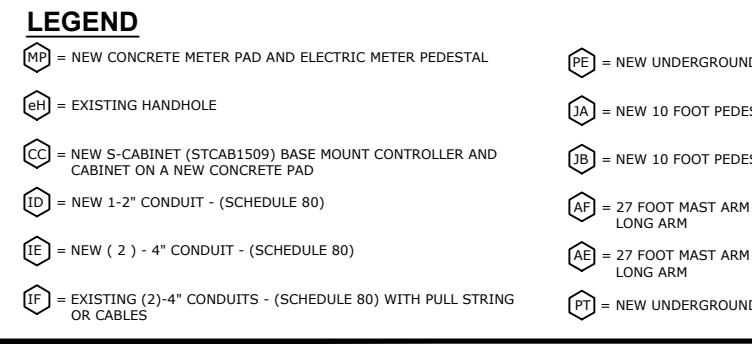
SHEET NO.
02 OF 11

PROJECT NO.
16-040

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- ### CONSTRUCTION NOTES
1. CONSTRUCT A NEW CONCRETE MAST ARM POLE FOUNDATION WITH (2) - 4" PVC ELECTRICAL CONDUITS (SCHEDULE 80) IN THE FOUNDATION. (Sta. 21.72 ± @ 44.68 FT. RIGHT)
 2. INSTALL 27 FOOT STEEL MAST ARM POLE ON AN NEW CONCRETE FOUNDATION (SEE NOTE 1 ABOVE) WITH SINGLE MAST ARM (70 FOOT LONG) WITH TRAFFIC SIGNAL HEADS, VIDEO DETECTION CAMERAS, OPTICOM DETECTION EYE, AND SIGNS MOUNTED ON MAST ARM. INSTALL 20 FOOT STREET LIGHTING ARM WITH LED LUMINAIR.
 3. EXISTING CONCRETE MAST ARM POLE FOUNDATION THAT WAS PREVIOUSLY INSTALLED (BY OTHERS) WITH (2) - 4" PVC ELECTRICAL CONDUITS (SCHEDULE 80) IN THE FOUNDATION. (Sta. 19.45 ± @ 50FT. LEFT)
 4. INSTALL 27 FOOT STEEL MAST ARM POLE ON AN EXISTING CONCRETE FOUNDATION (SEE NOTE 3 ABOVE) WITH TWIN MAST ARM (44 FOOT AND 44 FOOT LONG) WITH TRAFFIC SIGNAL HEADS, VIDEO DETECTION CAMERAS, OPTICOM DETECTION EYE, AND SIGNS MOUNTED ON MAST ARMS. INSTALL 20 FOOT STREET LIGHTING ARM WITH LED LUMINAIRE.
 5. CONSTRUCT TWO NEW CONCRETE PEDESTRIAN POLE FOUNDATIONS WITH A (1) - 4" PVC ELECTRICAL CONDUIT AND WITH A BREAKAWAY BASE (MD-SHA STANDARD No. 821.01-01) TO BE INSTALLED. THE FOUNDATION LOCATION MUST MEET THE LATEST REQUIREMENTS OF MD-MUTCD AND NCHRP ADA PUBLICATIONS. EXACT LOCATION WILL BE FIELD APPROVED BY THE COUNTY ENGINEER. ALL EXCAVATION, BACKFILL, SEED, MULCH, CONCRETE ISLAND REPAIR AND THE 1/2 INCH EXPANSION JOINT BETWEEN EXISTING ISLAND AND CONCRETE POLE FOUNDATION WILL BE AN INCIDENTAL COST TO THE PEDESTRIAN POLE INSTALLATIONS.
 6. INSTALL A 10 FOOT STEEL PEDESTAL POLE ON A EXISTING BREAKAWAY BASE (Sta. 20+09 @ 63.35 FT. LEFT ±) (MD-SHA STD. No. 821.01-01) AND CONCRETE FOUNDATION (SEE NOTE 5 ABOVE) WITH A COUNTDOWN PEDESTRIAN SIGNAL HEAD (#9), AUDIBLE / TACTILE PEDESTRIAN PUSH BUTTON WITH A VIBRATING ARROW POINTING LEFT AND A R10-3 (1) SIGN ALL MOUNTED ON THE POLE. (THE R10-3 (1) SIGN (#29) TO READ "PUSH BUTTON TO CROSS CRAYTON BOULEVARD".)
 7. INSTALL A 10 FOOT STEEL PEDESTAL POLE ON A EXISTING BREAKAWAY BASE (Sta. 19+47 @ 64+00 FT. LEFT ±) (MD-SHA STD. No. 821.01-01) AND CONCRETE FOUNDATION (SEE NOTE 5 ABOVE) WITH A COUNTDOWN PEDESTRIAN SIGNAL HEAD (#10), AUDIBLE / TACTILE PEDESTRIAN PUSH BUTTON WITH A VIBRATING ARROW POINTING LEFT AND A R10-3 (1) SIGN ALL MOUNTED ON THE POLE. (THE R10-3 (1) SIGN (#30) TO READ "PUSH BUTTON TO CROSS CRAYTON BOULEVARD".)
 8. INSTALL NEW S-CABINET (STCAB1509) BASE MOUNT CONTROLLER AND CABINET ON A NEW CONCRETE PAD WITH AVAILABLE CONDUITS. EXACT LOCATION WILL BE FIELD APPROVED BY THE COUNTY ENGINEER.
 9. INSTALL ELECTRIC HANDHOLE
 10. INSTALL EMBEDDED METER SERVICE PEDESTAL (MD-SHA STANDARD 807.07-01) WITH 1-4" SCHEDULE 80, 90 DEGREE PVC CONDUIT BENDS IN PEDESTAL BASE.



NO.	REVISION DESCRIPTION	BY	DATE
1	MAST ARM - SEE CORNER TO A TWIN ARM DESIGN	GLJ	06-01-22

DESIGNED BY:	SH / P/JM	DRAWN BY:	GLJ
CHECKED BY:	PJM / TP	DATE:	05-17-21

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401

**SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
TRAFFIC SIGNAL
PLAN**

SCALE	1" = 20'
SHEET NO.	03 OF 11
PROJECT NO.	16 - 040

PROJECT DESCRIPTION

GENERAL:

THIS PROJECT INVOLVES THE INSTALLATION OF A TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF SHOWALTER ROAD AND CRAYTON BOULEVARD. THE SIGNAL WILL BE LOCATED WITHIN WASHINGTON COUNTY, MARYLAND RIGHT-OF-WAY. THE SIGNAL WILL BE OWNED BY THE COMMISSIONERS OF WASHINGTON COUNTY, MARYLAND AND OPERATED AND MAINTAINED THROUGH THE COUNTY'S DIVISION OF PUBLIC WORKS. ON THESE PLANS CRAYTON BOULEVARD IS SOUTH OF THE INTERSECTION AND A COMMERCIAL ENTRANCE TO THE NORTH.

INTERSECTION OPERATIONS:

AN EIGHT PHASE, FULL TRAFFIC ACTUATED CONTROLLER HOUSED IN A BASE MOUNTED CABINET IS TO BE INSTALLED ON A PROPOSED CONCRETE PAD WITH CONDUITS ALREADY IN PLACE WITHIN THE ROADWAY:

- 1) THE INTERSECTION WILL OPERATE IN A "TRUE" NEMA EIGHT PHASE OPERATION WITH AN EXCLUSIVE LEFT TURN PHASING FROM EACH APPROACH OF SHOWALTER ROAD, AND A THROUGH MOVEMENT PHASE WILL OPERATE CONCURRENTLY FROM EACH APPROACH OF SHOWALTER ROAD.
- 2) THE SOUTH - NORTH MOVEMENT WILL INCLUDE A SHARED PERMISSIVE LEFT AND CONCURRENT THROUGH WITH THE CRAYTON BOULEVARD APPROACH AND THE DRIVEWAY APPROACH.
- 3) THERE WILL BE A CONCURRENT PEDESTRIAN PHASE ACROSS CRAYTON BOULEVARD WITH THE GREEN CYCLE FOR SHOWALTER ROAD.
- 4) RIGHT-TURN-ON-RED WILL BE ALLOWED FOR EACH APPROACH TO THIS INTERSECTION.
- 5) EACH ROADWAY APPROACH WILL HAVE EMERGENCY VEHICLE PRE-EMPTION.

APS NOTES:

- 1) APS WILL FUNCTION AS FOLLOWS FOR CROSSING CRAYTON BOULEVARD:
 - a. WHEN A PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSH BUTTON UNIT WILL ANNOUNCE THE FOLLOWING MESSAGE: "WAIT TO CROSS CRAYTON BOULEVARD @ SHOWALTER ROAD".
 - b. WHEN THE WALK PHASE BEGINS THE PUSH BUTTON UNIT WILL PROVIDE RAPID TICKS WHICH LAST THE DURATION OF THE WALK PHASE.

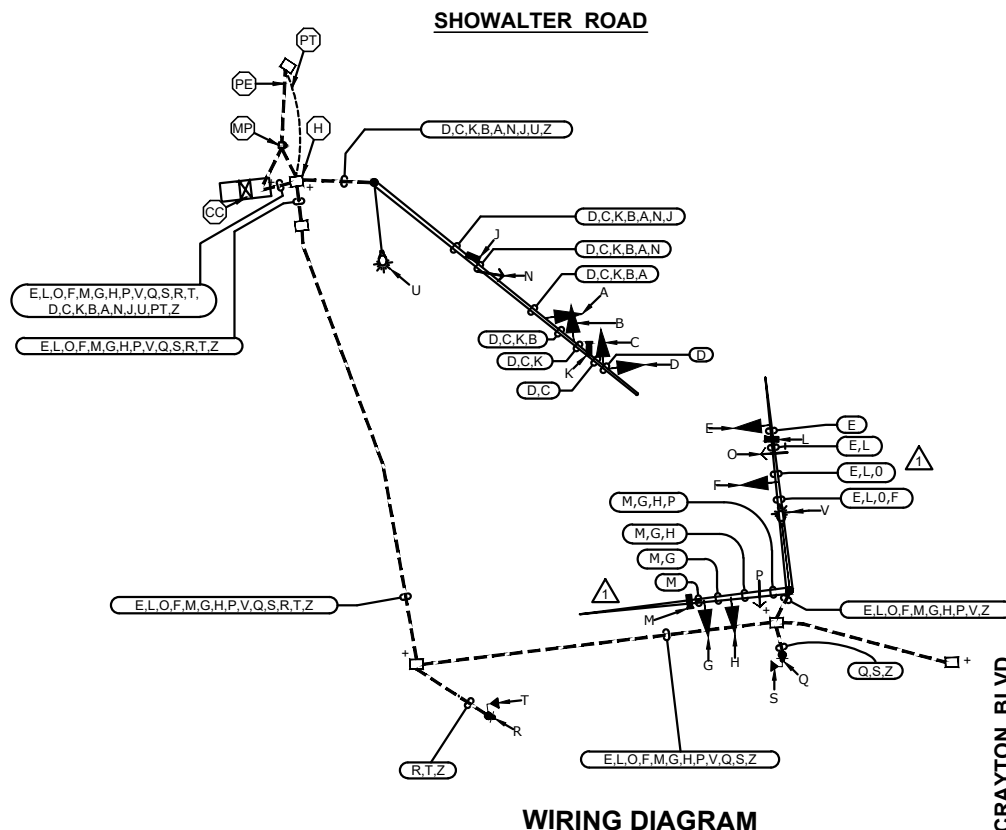
	1	2	3	4	5	6	7	8	9	10		
PHASE 1 AND 5 1 AND 5 CHANGE TO 1 & 6, 2 & 5, OR 2 & 6	R	R	R	←G	R	R	R	←G	R	DW	DW	
1 & 5 CHANGE TO 1 & 6 - 5 CHANGE	R	R	R	←G	R	R	R	←Y	R	DW	DW	
PHASE 1 & 6	R	R	G	←G	G	R	R	-	R	W	W	
PEDESTRIAN CLEARANCE	R	R	G	←G	G	R	R	-	R	FLDW	FLDW	
1 & 5 CHANGE TO 2 & 5 - 1 CHANGE	R	R	G	←Y	G	R	R	←G	R	DW	DW	
PHASE 2 & 5	R	R	R	-	R	G	R	←G	G	DW	DW	
1 & 5 CHANGE TO 2 & 6	R	R	R	←Y	R	R	R	←Y	R	DW	DW	
PHASE 2 & 6	R	R	G	-	G	R	R	-	G	W	W	
PEDESTRIAN CLEARANCE	R	R	G	-	G	R	R	-	G	FLDW	FLDW	
2 & 6 CHANGE	R	R	Y	-	Y	R	R	-	Y	DW	DW	
PHASE 4 AND 8	G	G	R	-	R	R	G	-	R	DW	DW	
4 AND 8 CHANGE	Y	Y	R	-	R	R	Y	-	R	DW	DW	
PRE-EMPTION (A) SHOWALTER RD. PHASE 1 & 6	R	R	G	-	G	R	R	-	R	DW	DW	
PRE-EMPTION (B) SHOWALTER RD. PHASE 2 & 5	R	R	R	-	R	G	R	-	G	DW	DW	
PRE-EMPTION (C) CRAYTON BLVD. PHASE 4 & 8	G	G	R	-	R	R	R	-	R	DW	DW	
FLASHING OPERATION	FR	FR	FY	-	FY	FY	FR	-	FY	DARK	DARK	

COMMENTS:
 1. THIS PHASE CHART INCLUDES ONLY A PORTION OF THE PHASE SEQUENCE POSSIBLE AT A FULLY ACTUATED 6 PHASE INTERSECTION.
 2. THE 8 PHASE CONTROLLER AND CABINET PROVIDED SHALL BE CAPABLE OF PROCESSING ALL POTENTIAL SEQUENCES AND CHANGE INTERVALS.

PHASING CHART

SIGNAL GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION. ALL POLES, HANDHOLES, CONDUITS UNDER PAVEMENT, CABINETS AND METERED SERVICE PEDESTALS SHALL BE STAKED OUT AND EVERY LOCATION APPROVED BY THE ENGINEER BEFORE ANY WORK IS PERFORMED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE. TAGS SHALL BE INSTALLED ON EACH CABLE IN THE CONTROLLER CABINET AS WELL AS EACH HANDHOLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. NO. 6 AWG STRANDED BARE COPPER GROUND WIRE INSTALLED IN EACH SHA HANDHOLE SHALL CONNECT THE GROUNDING LUG ON THE LID / COLLAR TO THE GROUND ROD IN THE BASE OF THE HANDHOLE TO PROPERLY GROUND THE STRUCTURE.
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 SHA STANDARDS 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.
6. 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.
7. ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE OR BUILT INTO BACKER CURB.
8. THE CONTRACTOR SHALL INTEGRATE PROPOSED / EXISTING CONCRETE FOUNDATIONS WITH NEW CURB OR SIDEWALK RAMPS WHERE NECESSARY. THE FOUNDATIONS SHALL BE FLUSH WITH, AND PART OF, THE FINAL CURB OR SIDEWALK GRADE TO INCREASE ACCESSIBILITY FOR PEDESTRIANS.
9. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MDMUTC CHAPTER 4E "PEDESTRIAN CONTROL FEATURES" AND FIGURES 4E-3 AND 4E-4, AND THE LATEST NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS GUIDE TO BEST PRACTICE."
10. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
11. THE 10" SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER OF POLE TO CENTER OF POLE.
12. PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
13. VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
14. DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
15. WITHIN 36 IN. OF UNDERGROUND UTILITY LOCATIONS, THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE FOR FOUNDATION AND CONDUIT BY HAND.
16. HAND DIGGING FOR INSTALLATION OR REMOVAL OF SIGNAL EQUIPMENT, SIGNS, CURB AND SIDEWALK SHALL BE INCIDENTAL TO THE ITEMS IN THE EQUIPMENT LIST. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR HAND DIGGING.
17. THE CONTRACTOR SHALL EXCAVATE CONCRETE FOUNDATIONS AS NEEDED TO INSTALL NEW FOUNDATIONS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR EXCAVATING TO THE REQUIRED DEPTH FOR NEW FOUNDATIONS.
18. ALL PROPOSED SIGNS MOUNTED ON TRAFFIC SIGNAL STRUCTURES SHALL BE MOUNTED IN ACCORDANCE WITH SHA TYPICAL TYP 813.99.01 AND TYP 813.99.04. ALL PROPOSED R10-3(1) SIGNS SHALL BE MOUNTED IN ACCORDANCE WITH SHA STANDARD MD 813.07. ALL MOUNTING HARDWARE SHALL BE INCIDENTAL TO SHEET ALUMINUM SIGNS ITEM.



WIRING DIAGRAM
SCALE: NONE

WIRING KEY

- A,B,C,D,E,F,G,H = 7 CONDUCTOR ELECTRIC CABLE (14 AWG) (SIGNAL HEAD)
- S,T = 5 CONDUCTOR ELECTRIC CABLE (14 AWG) (PEDESTRIAN LIGHT CROSS WALK)
- Q,R = 2 CONDUCTOR ELECTRIC CABLE (14 AWG) (PUSH BUTTON CROSS WALK)
- U,V = 3 CONDUCTOR ELECTRIC CABLE (12 AWG) TRAY CABLE, (OVERHEAD STREET LIGHT)
- N,O,P = 4 CONDUCTOR OPTICOM DETECTOR CABLE (20 AWG)
- J,K,L,M = 3 CONDUCTOR ELECTRIC CABLE (18 AWG.) (VIDEO CAMERA DETECTION LEAD-IN CABLE)
- Z = STRANDED BARE COPPER GROUND WIRE (6 AWG)
- PE = UNDERGROUND ELECTRIC SERVICE - 3 WIRE, 1 CONDUCTOR (4 AWG)
- PT = UNDERGROUND TELEPHONE SERVICE WITH 1 COMMUNICATION CABLE (4 AWG)
- + = 3/4" INCH X 10 FOOT GROUNDING ROD WITH 6 GAUGE SOLID COPPER WIRE TO THE HANDHOLE FRAME
- MP = METERED SERVICE PEDESTAL
- CC = CONTROLLER, CABINET, & CONCRETE PAD

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building 7
 7000 Highway 211/42
 Phone: 240-313-2460 Fax: 240-313-2401

RESUBMITTED BY: SH / PJM
 DRAWN BY: GLJ
 CHECKED BY: PJM / TP
 DATE: 05-17-22

IND: 1
 REVISION DESCRIPTION: MIST ARMS - SEE CORNER VIEW TO A TWIN ARM DESIGN

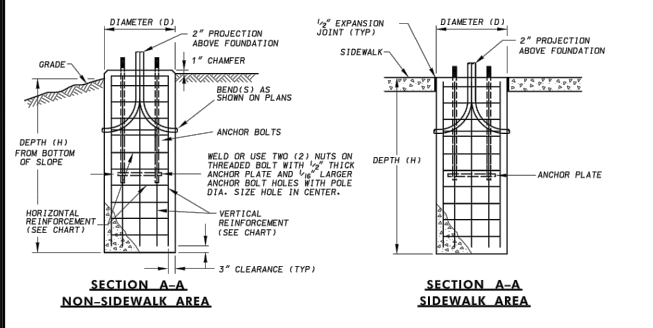
DATE: 06-01-22

SHOWALTER ROAD AND CRAYTON BOULEVARD INTERSECTION TRAFFIC SIGNAL WIRING PLAN AND SIGNAL NOTES

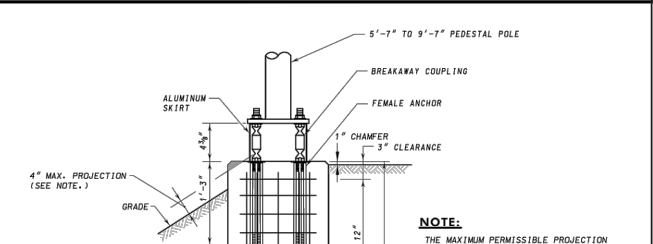
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Table with columns: POLE TYPE, ARM LENGTH OR POLE SIZE, BOLT SIZE (IN.), ANCHOR BOLT SIZE (NO. - DIA. IN. X IN.), ANCHOR BOLT PROJECTION ABOVE FOUNDATION MAX (IN.), FOUNDATION REINFORCEMENT, CONCRETE REQUIRED C.Y.

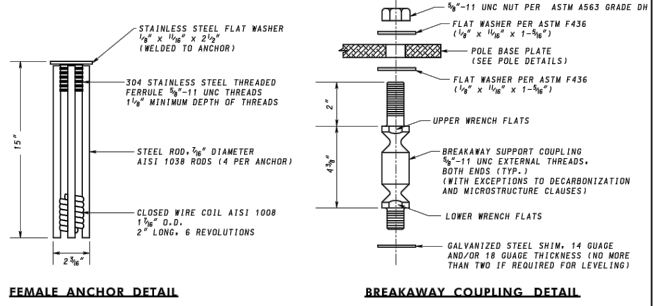
NOTES: 1. MAST ARM POLE FOUNDATIONS SHALL PROJECT ABOVE GRADE TO PROVIDE MAST ARM TO ROADWAY CLEARANCE OF 15' - 20' FULLY LOADED. 2. ALL EXPOSED FOUNDATION FACES SHALL BE FINISHED SMOOTH.



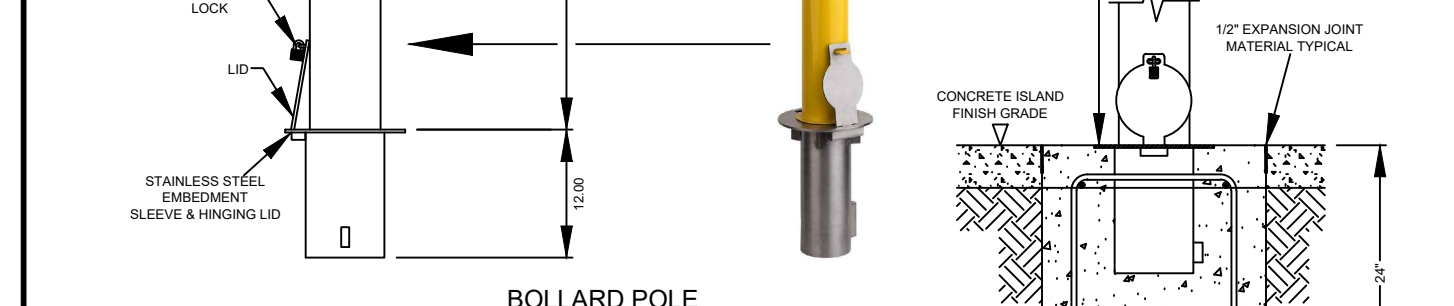
Specification table for Signal Structure Foundations, Standard No. MD 801.01, including approval dates and revision history.



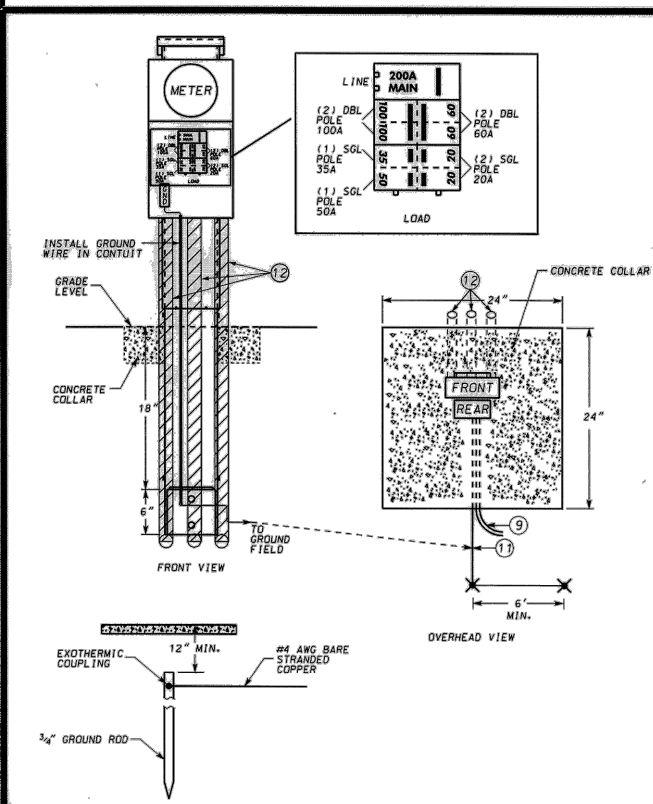
NOTE: THE CONCRETE ISLAND IS TO BE CORE DRILLED TO INSTALL THE FOUNDATION. THE COST WILL BE INCIDENTAL TO THE PAY ITEM.



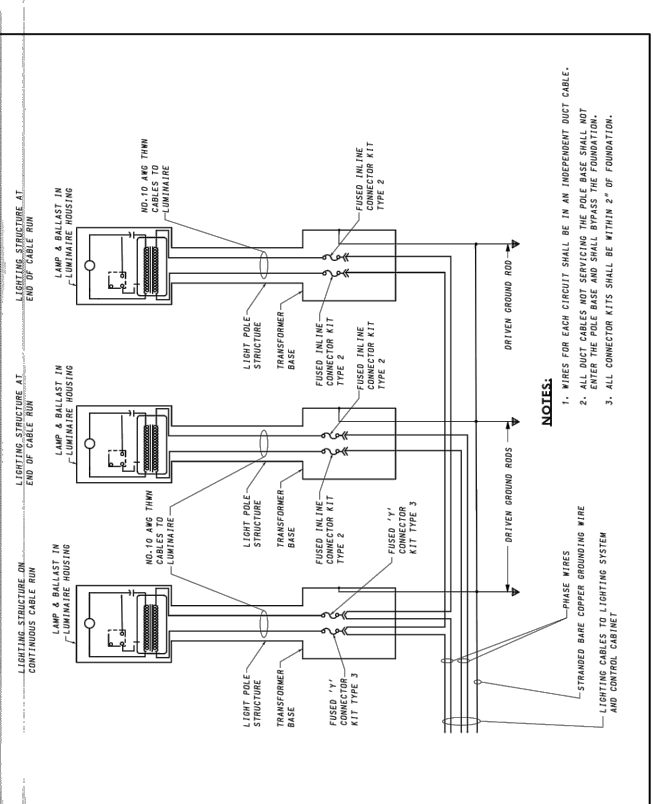
Specification table for Signal Structure Foundations for Pushbutton and Pedestrian Signal Pole, Standard No. MD 801.01-01.



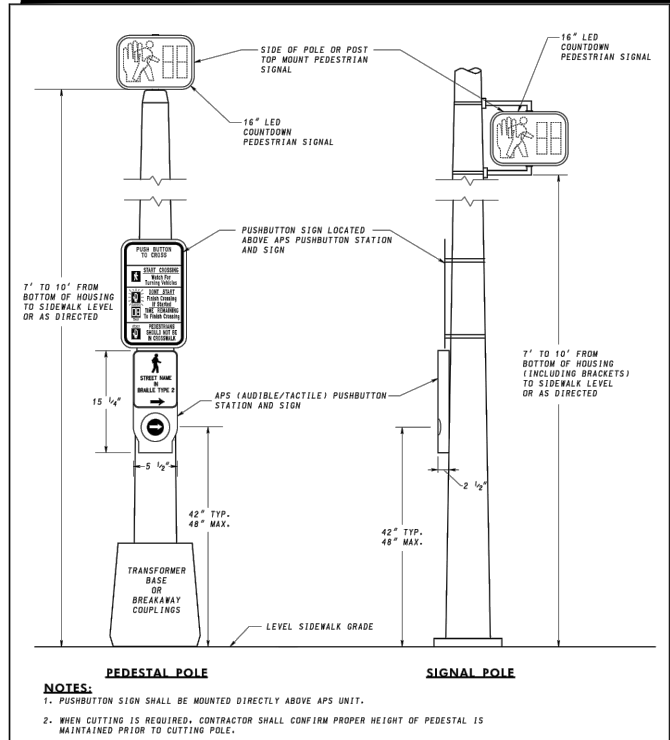
NOTES: 1. BOLLARD - 6" SCHEDULE 40 STEEL POWDER COATED YELLOW PER MANUFACTURE SPECIFICATIONS WITH (2) 1" WIDE RED REFLECTIVE STRIPS PER MDSA STANDARDS FOR RETROREFLECTIVITY AND ILLUMINATION.



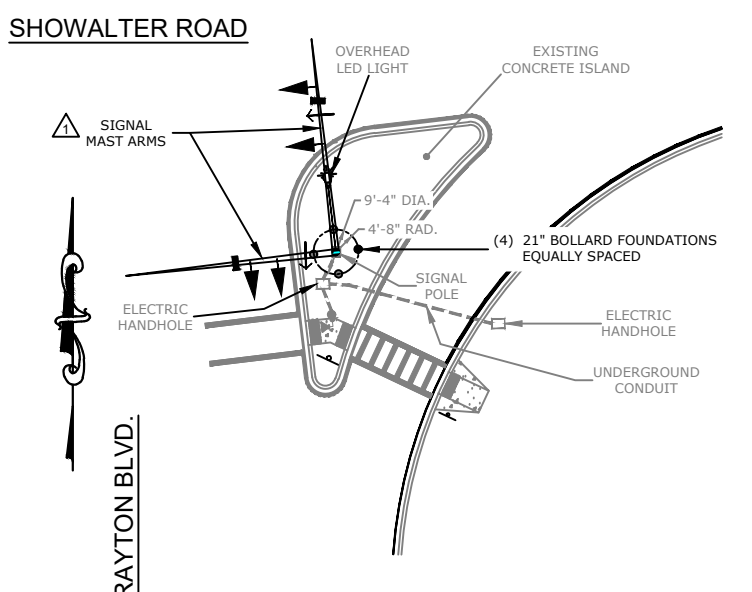
Specification table for Embedded Service Pedestal, Standard No. MD 807.02, including approval dates and revision history.



Specification table for Roadway Lighting 240 Volt Pole Connections, Standard No. MD 810.05.



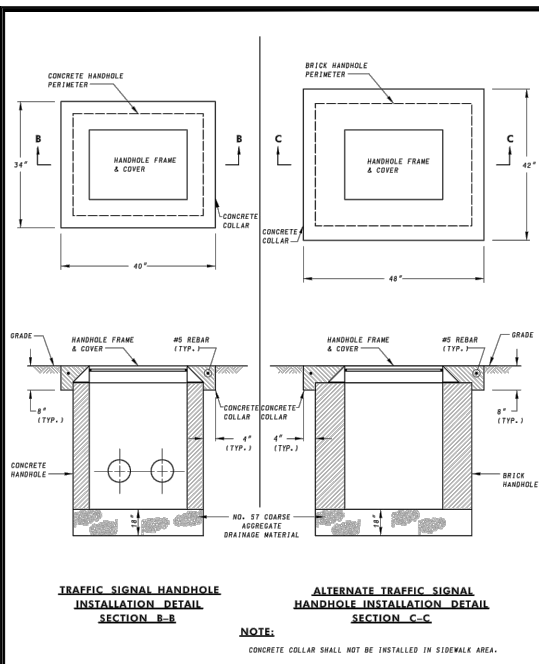
Specification table for Accessible Pedestrian Signal (APS) Pushbutton Location on Pole, Standard No. MD 817.01.



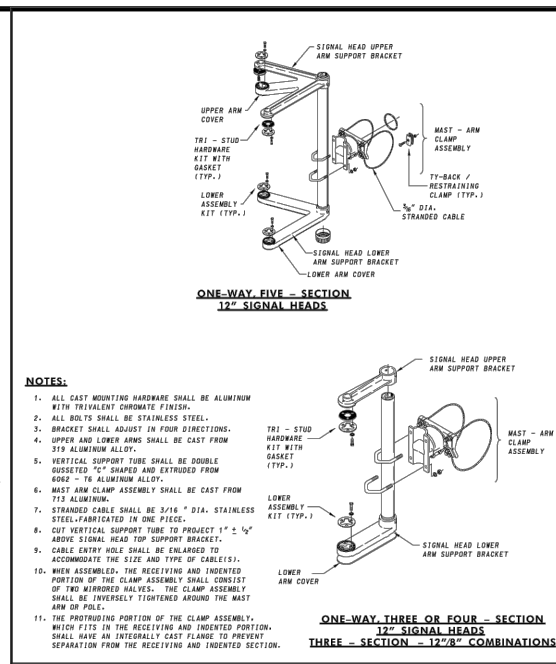
Specification table for Removable Bollard Detail, Standard No. MD 817.01, including approval dates and revision history.

Project information including Washington County, Maryland, Division of Engineering, project name 'SHOWALTER ROAD AND CRAYTON BOULEVARD INTERSECTION MD-SHA STANDARD DETAILS', and sheet number '05 OF 11'.

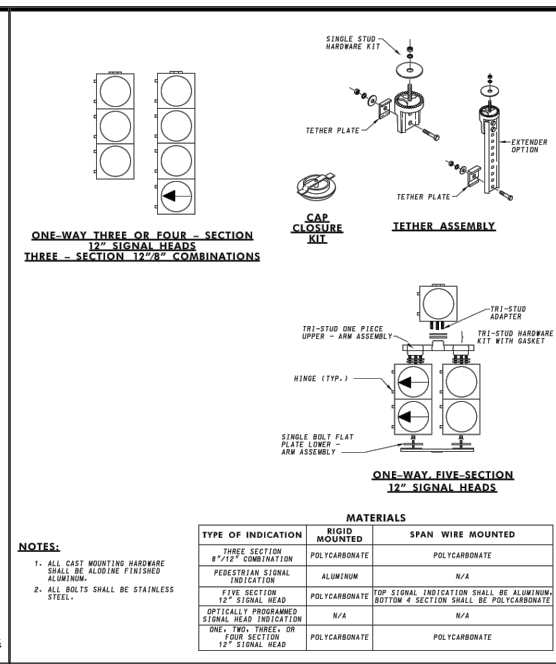
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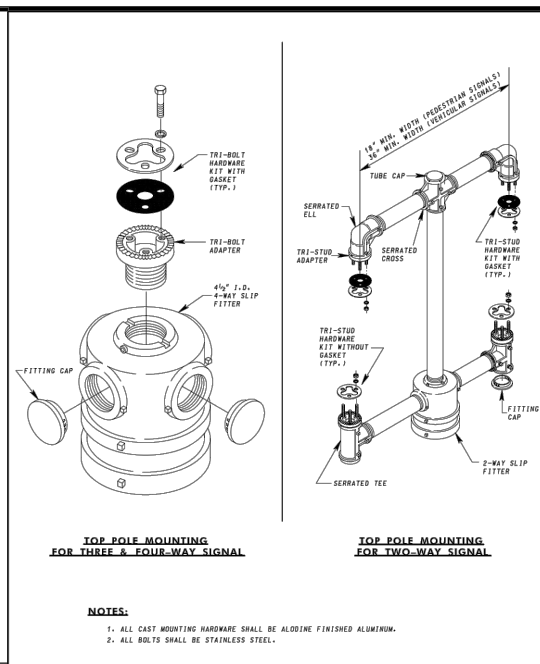
SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
811		HANDHOLE INSTALLATION
APPROVED		
SHA		
STANDARD NO.	MD 811.03	



SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
814		SIGNAL HEAD MOUNTING DETAILS RIGID MOUNT
APPROVED		
SHA		
STANDARD NO.	MD 814.01	

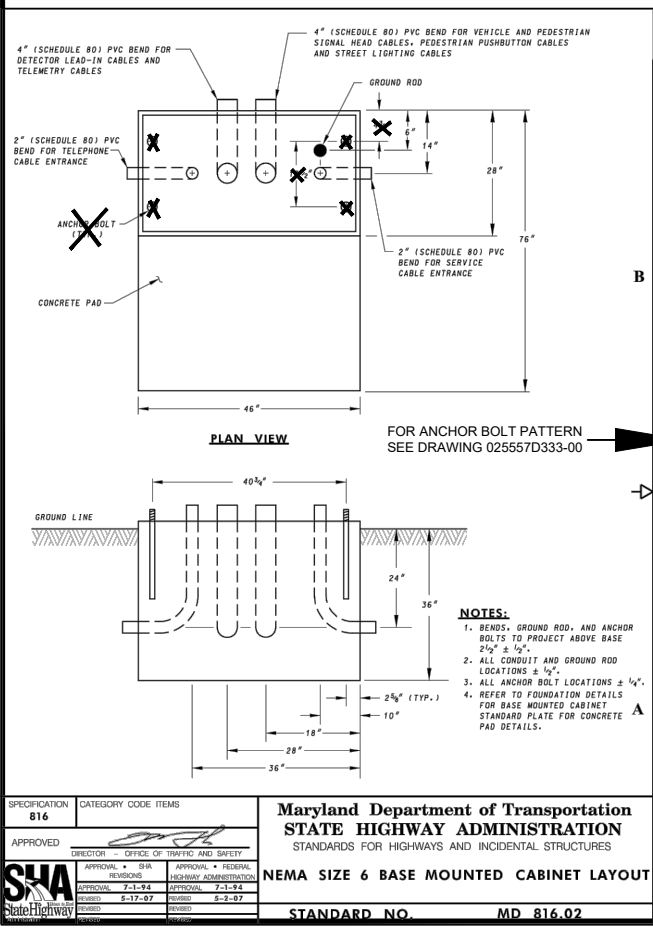


SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
814		SIGNAL HEAD MOUNTING DETAILS
APPROVED		
SHA		
STANDARD NO.	MD 814.02	

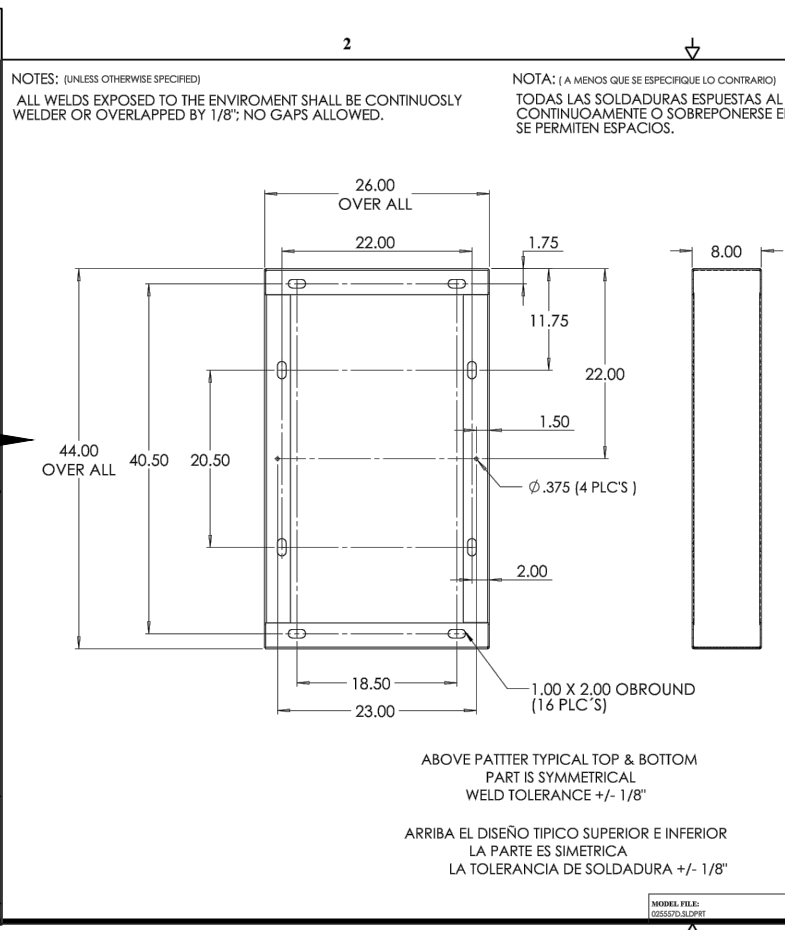


SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
806, 808		LIGHTING ARM AND VIDEO DETECTION CAMERA ARM PLACED ON TRAFFIC SIGNAL POLES
APPROVED		
SHA		
STANDARD NO.	MD 818.20	

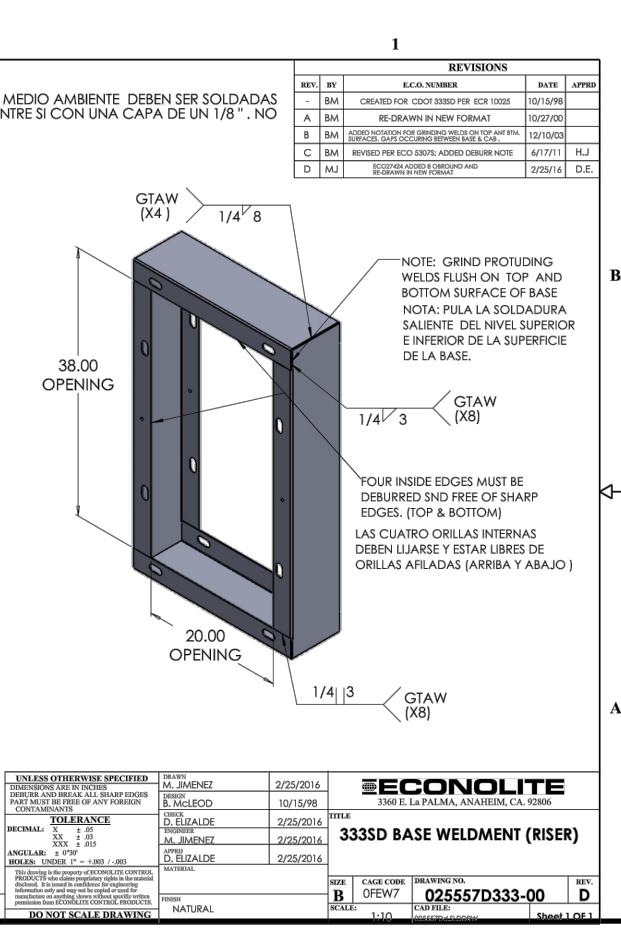
SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
816		NEMA SIZE 6 BASE MOUNTED CABINET LAYOUT
APPROVED		
SHA		
STANDARD NO.	MD 816.02	



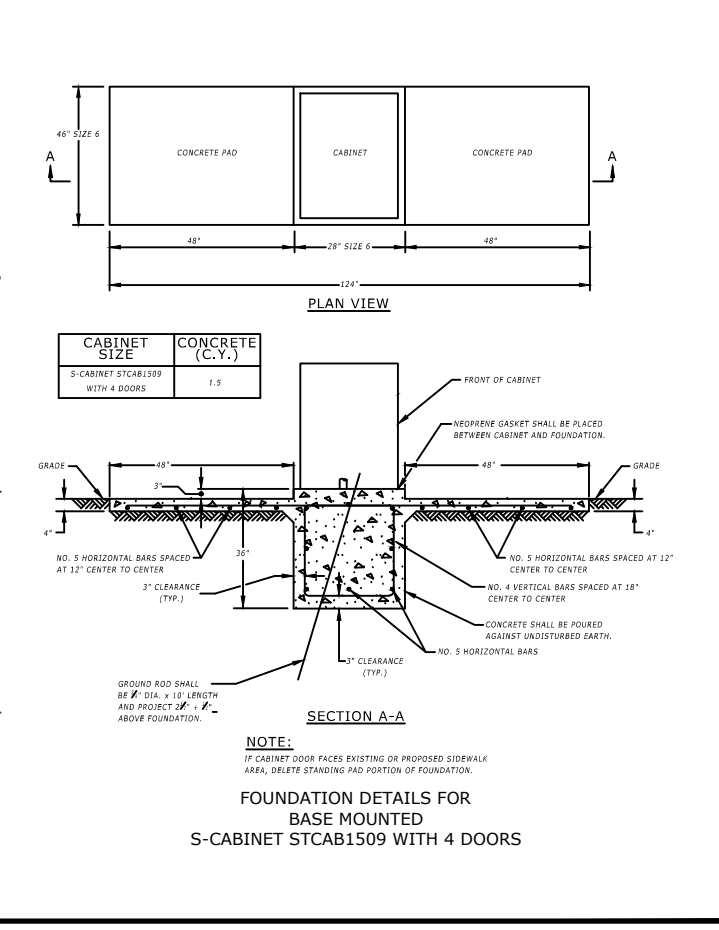
SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
816		NEMA SIZE 6 BASE MOUNTED CABINET LAYOUT
APPROVED		
SHA		
STANDARD NO.	MD 816.02	



SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
814		SIGNAL HEAD MOUNTING DETAILS
APPROVED		
SHA		
STANDARD NO.	MD 814.01	



SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
814		SIGNAL HEAD MOUNTING DETAILS
APPROVED		
SHA		
STANDARD NO.	MD 814.02	



SPECIFICATION	CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
806, 808		LIGHTING ARM AND VIDEO DETECTION CAMERA ARM PLACED ON TRAFFIC SIGNAL POLES
APPROVED		
SHA		
STANDARD NO.	MD 818.20	

DATE	06-01-22
BY	GLJ
REVISION DESCRIPTION	ADD DETAIL MD-SHA 818.20
NO	1
DESIGNED BY:	SH / PJM
DRAWN BY:	GLJ
CHECKED BY:	PJM / TP
DATE:	05-17-22

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401

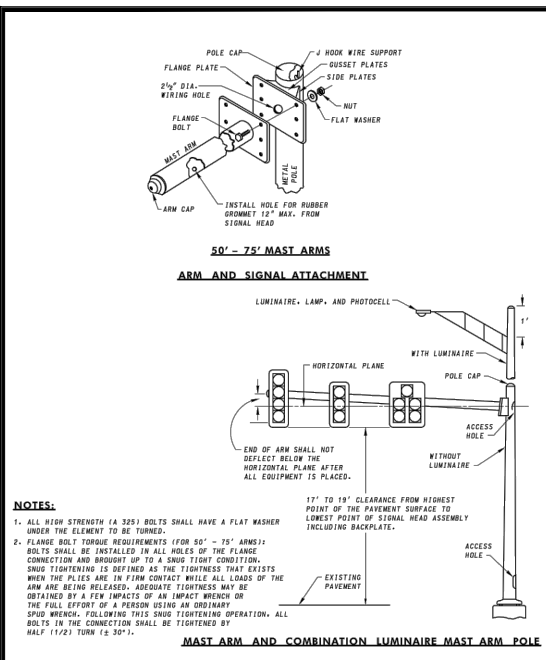
SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
MD - SHA
STANDARD DETAILS

SCALE
NONE

SHEET NO.
06 OF 11

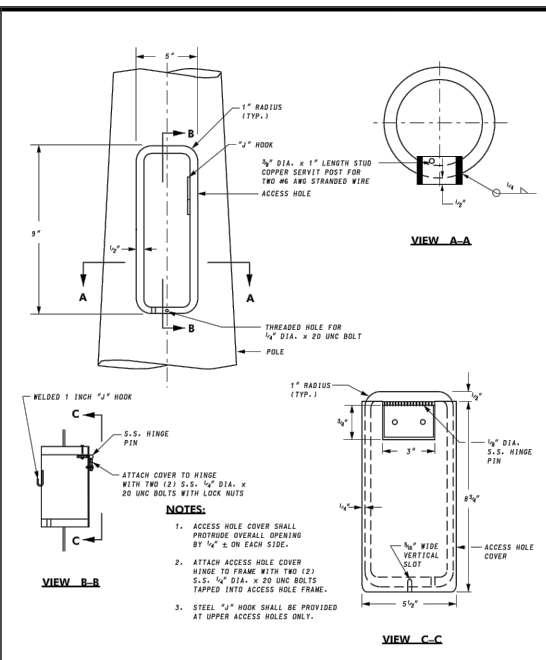
PROJECT NO.
16 - 040

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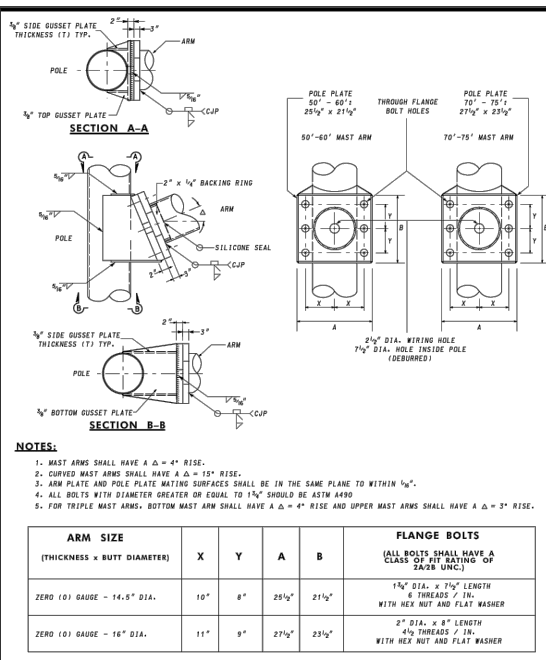
NOTES:

- ALL HIGH STRENGTH (A 325) BOLTS SHALL HAVE A FLAT WASHER UNDER THE ELEMENT TO BE TIGHTENED.
- FLANGE BOLT TORQUE REQUIREMENTS FOR 50' - 75' ARMS:
BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE FLANGE CONNECTION AND BROUGHT UP TO A SNUG TIGHT CONDITION. SNUG TIGHTENING IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLATES ARE IN FIRM CONTACT WITH ALL LOADS OF THE ARM ARE BEING RELEASED. ADEQUATE TIGHTNESS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A PERSON USING AN ORDINARY SPREADER. FOLLOWING THIS SNUG TIGHTENING OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED BY HALF (1/2) TURN (± 30°).



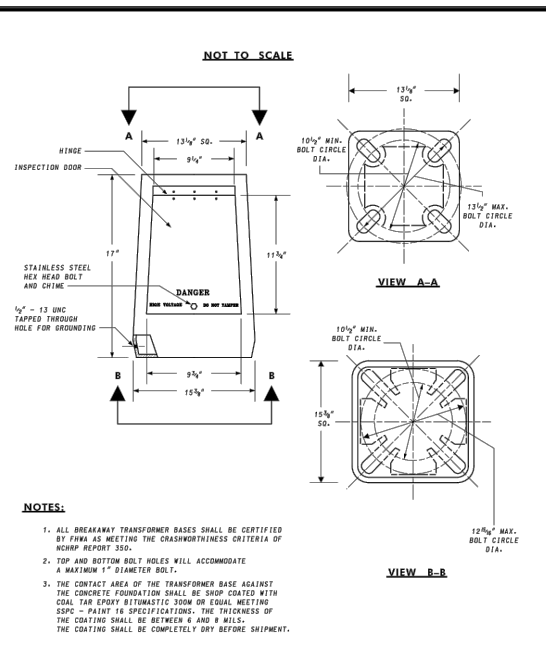
NOTES:

- ACCESS HOLE COVER SHALL PROVIDE OVERALL OPENING BY 1/4" ON EACH SIDE.
- ATTACH ACCESS HOLE COVER HINGE TO FRAME WITH TWO (2) 5/16" DIA. x 20 UNC BOLTS TAPPED INTO ACCESS HOLE FRAME.
- STEEL 1/2" HOOK SHALL BE PROVIDED AT UPPER ACCESS HOLES ONLY.



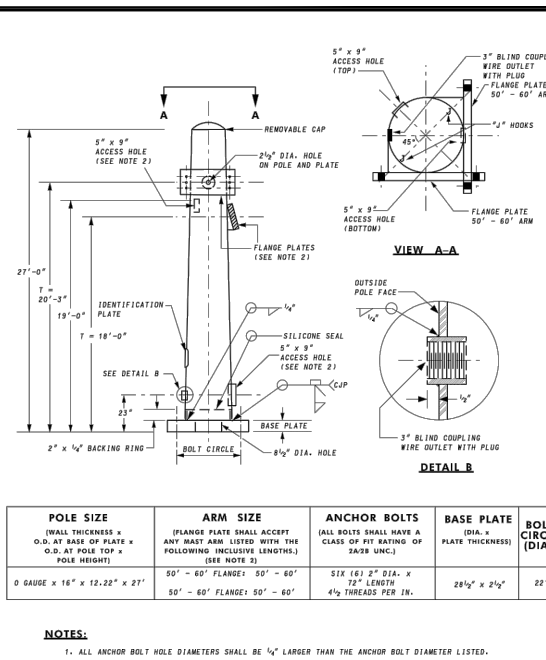
NOTES:

- MAST ARMS SHALL HAVE A Δ = 4" RISE.
- CURVED MAST ARMS SHALL HAVE A Δ = 15" RISE.
- ARM PLATE AND POLE PLATE MATING SURFACES SHALL BE IN THE SAME PLANE TO WITHIN 1/16".
- ALL BOLTS WITH DIAMETER GREATER OR EQUAL TO 1 1/4" SHOULD BE ASTM A490.
- FOR TRIPLE MAST ARMS, BOTTOM MAST ARM SHALL HAVE A Δ = 4" RISE AND UPPER MAST ARMS SHALL HAVE A Δ = 3" RISE.



NOTES:

- ALL BREAKAWAY TRANSFORMER BASES SHALL BE CERTIFIED BY FHWA AS MEETING THE CRASHWORTHINESS CRITERIA OF SCRAM REPORT 305.
- TOP AND BOTTOM BOLT HOLES WILL ACCOMMODATE A MAXIMUM 1" DIAMETER BOLT.
- THE CONTACT AREA OF THE TRANSFORMER BASE AGAINST THE CONCRETE FOUNDATION SHALL BE SHOP COATED WITH COAL TAR EPOXY BITUMINOUS PAINT OF EQUAL WEALTHING SPEC. - PAINT IS SPECIFICATED. THE THICKNESS OF THE COATING SHALL BE BETWEEN 6 AND 8 MILS. THE COATING SHALL BE COMPLETELY DRY BEFORE SHIPMENT.



NOTES:

- ANCHOR BOLT HOLE DIAMETERS SHALL BE 1/4" LARGER THAN THE ANCHOR BOLT DIAMETER LISTED.
- REFER TO MAST ARM FLANGE PLATES AND ACCESS HOLE STANDARD PLATES FOR DETAILS.

SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MAST ARM POLE DETAILS

STANDARD NO. MD 818.02

SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
ACCESS HOLE FOR TRAFFIC SIGNAL AND SIGN STRUCTURES

STANDARD NO. MD 818.11

SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
MAST ARM FLANGE PLATES

STANDARD NO. MD 818.12

SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

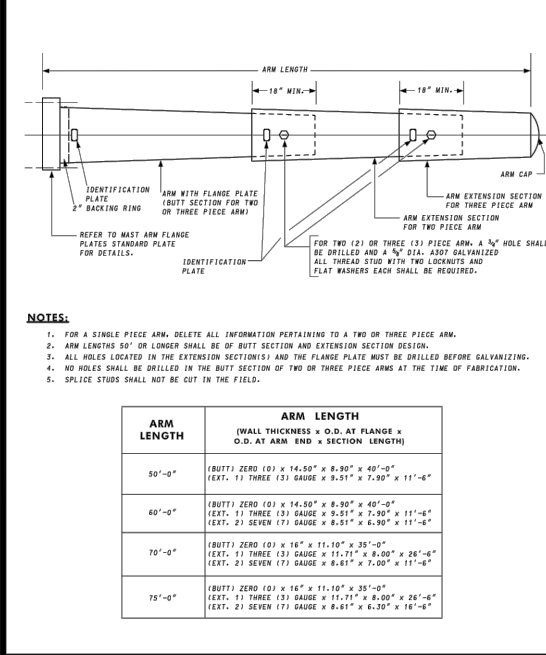
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
BREAKAWAY TRANSFORMER BASE FOR 10', 14' AND 20' PEDESTAL POLES

STANDARD NO. MD 821.01-01

SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TWIN MAST ARM POLE WITH IDENTICAL FLANGE PLATES

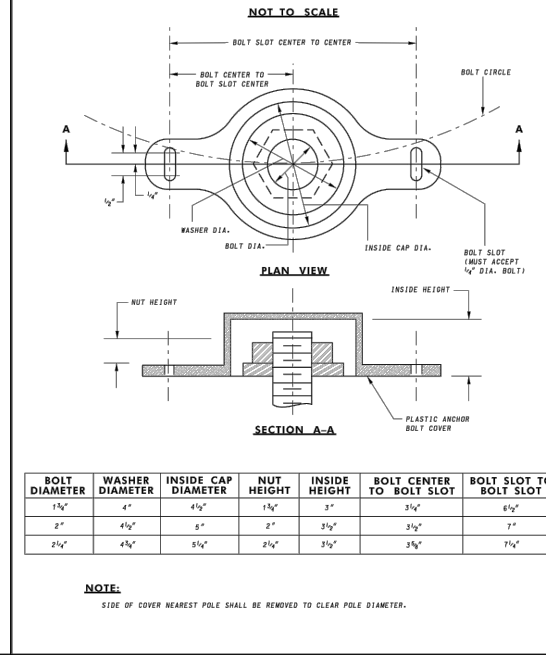
STANDARD NO. MD 818.07



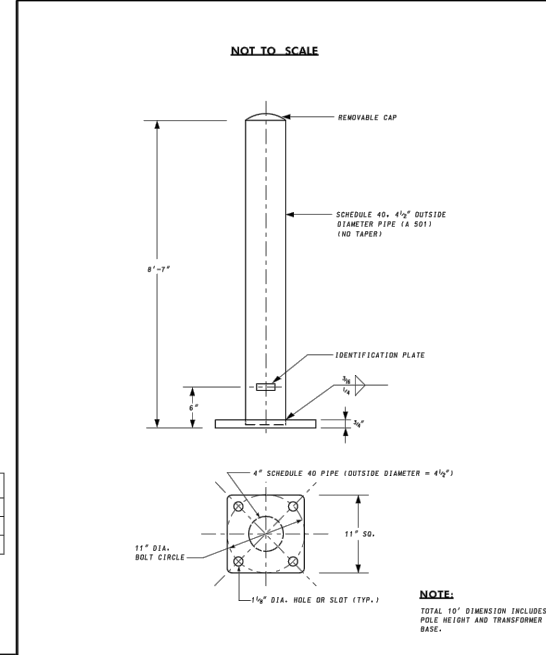
NOTES:

- FOR A SINGLE PIECE ARM, DELETE ALL INFORMATION PERTAINING TO A TWO OR THREE PIECE ARM.
- ARM LENGTHS 50' OR LONGER SHALL BE OF BUTT SECTION AND EXTENSION SECTION DESIGN.
- ALL HOLES LOCATED IN THE EXTENSION SECTIONS AND THE FLANGE PLATE MUST BE DRILLED BEFORE GALVANIZING.
- NO HOLES SHALL BE DRILLED IN THE BUTT SECTION OF TWO OR THREE PIECE ARMS AT THE TIME OF FABRICATION.
- SPLICE STUDS SHALL NOT BE CUT IN THE FIELD.

ARM LENGTH	ARM LENGTH (WALL THICKNESS x O.D. AT FLANGE x O.D. AT ARM END x SECTION LENGTH)
50'-0"	(BUTT) ZERO (0) x 14.50" x 8.90" x 40'-0" (EXT. 1) THREE (3) GAUGE x 9.51" x 7.90" x 11'-6"
60'-0"	(BUTT) ZERO (0) x 14.50" x 8.90" x 40'-0" (EXT. 1) THREE (3) GAUGE x 9.51" x 7.90" x 11'-6" (EXT. 2) SEVEN (7) GAUGE x 8.61" x 8.40" x 11'-6"
70'-0"	(BUTT) ZERO (0) x 16" x 11.10" x 35'-0" (EXT. 1) THREE (3) GAUGE x 11.71" x 8.00" x 26'-4" (EXT. 2) SEVEN (7) GAUGE x 8.61" x 7.00" x 11'-6"
75'-0"	(BUTT) ZERO (0) x 16" x 11.10" x 35'-0" (EXT. 1) THREE (3) GAUGE x 11.71" x 8.00" x 26'-4" (EXT. 2) SEVEN (7) GAUGE x 8.61" x 6.20" x 16'-0"



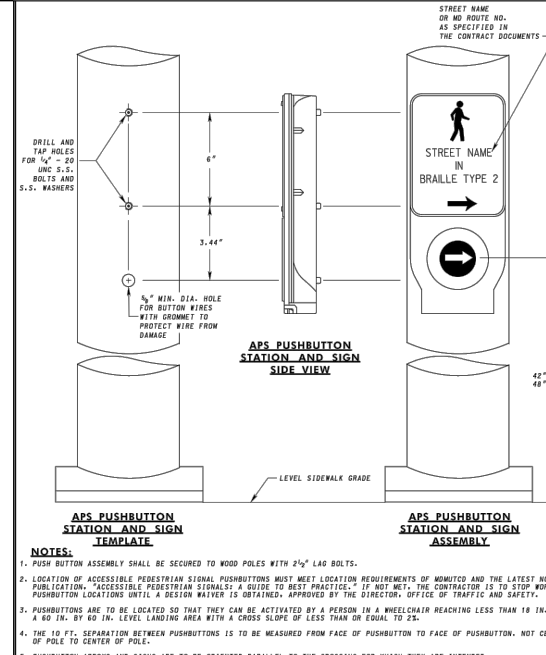
NOTE: SIDE OF COVER NEAREST POLE SHALL BE REMOVED TO CLEAR POLE DIAMETER.



SPECIFICATION 818 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
10' PEDESTAL POLE

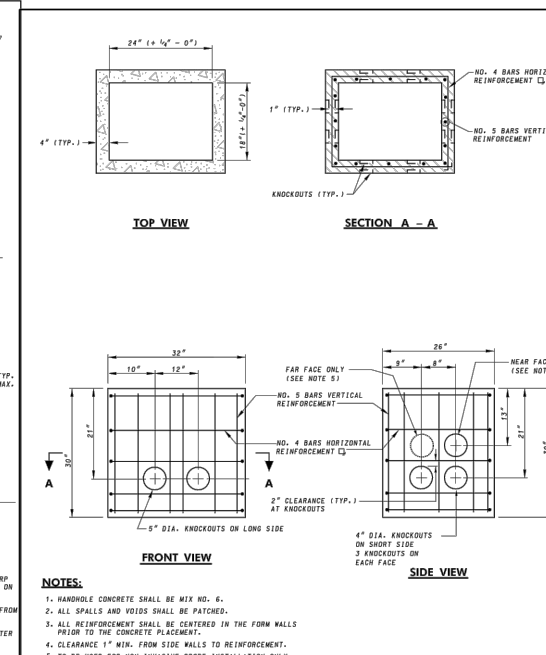
STANDARD NO. MD 818.16



SPECIFICATION 817 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
PEDESTRIAN PUSH BUTTON ASSEMBLY

STANDARD NO. MD 817.02



SPECIFICATION 811 CATEGORY CODE ITEMS
APPROVED: [Signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
HANDHOLE (MATERIALS DETAIL)

STANDARD NO. MD 811.01

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401

DATE: 06-01-22
BY: GLJ
REVISION DESCRIPTION: ADD DETAIL MD-SHA 818.07

DESIGNED BY: SH / PJM
DRAWN BY: GLJ
CHECKED BY: PJM / TP
DATE: 05-17-22

SCALE: NONE
SHEET NO. 07 OF 11
PROJECT NO. 16 - 040

K:\CADD\16-040 SHOWALTER - CRAYTON SIGNAL DESIGN\CONSTRUCTION PLANS\F-STRIPPING PLAN\STRIPPING PLAN.DWG Last Saved: 6/2/2022 11:45 AM

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

MDOT SHA - "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

MDOT SHA - "STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS", MOST CURRENT EDITION AND SUBSEQUENT REVISIONS AND SUPPLEMENTS.

MDOT SHA - "BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES", MOST CURRENT EDITION AND SUBSEQUENT REVISIONS AND 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-BREAKAWAY
 - BM - BRIDGE MOUNTED
 - 2. STANDARD SIGNS (REGULATORY, WARNING, ETC.)
 - A) STRUCTURAL TYPES
 - WOOD SUPPORTS
 - SQUARE TUBE

- B) PANELS
 - MATERIAL - EXTRUDED ALUMINUM COPY - DIRECT APPLIED
 - 1) HIGH INTENSITY (NEW SIGNS AND REVISIONS TO EXISTING SIGNS)

- B) PANELS
 - MATERIAL - SHEET ALUMINUM COPY - DIRECT APPLIED

IDENTIFICATION OF SIGNS AND PANELS

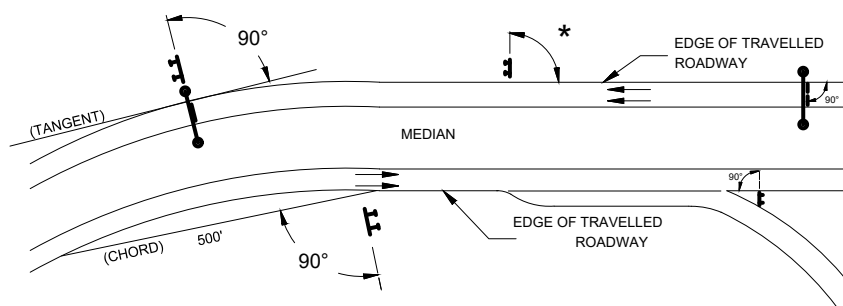
GUIDE SIGNS
EACH GUIDE SIGN IS IDENTIFIED BY A SIGN NUMBER ON THE PLANS AND IN THE TABULATIONS. (GM-1, GM-2, GM-3, etc)
SIGNS ON STRUCTURES ARE IDENTIFIED WITH A NUMBER AND WHERE VARIATIONS OCCUR, A LOWER CASE LETTER. (OH-1a, OH-1b, OH-1c)

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 AT http://apps.roads.maryland.gov/businesswithsha/bizstdspecs/desmanualstdpub/publicationsonline/oots/internet_signbook.asp

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°

REFLECTORIZATION

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

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 ERRECTED 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 DESIGN 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 MDOT SHA'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS 2017 EDITION AND SUBSEQUENT REVISIONS AND SUPPLEMENTS.
2. LISTED ON MDOT SHA OFFICE OF TRAFFIC AND SAFETY'S QUALIFIED PRODUCTS LIST (QPL).

PROJECT REQUIREMENTS CONTINUED

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

GENERAL NOTE: ALL COLORS SHALL BE RETROREFLECTIVE EXCEPT BLACK. BLACK TEXT, BORDERS, SYMBOLS OR ANY BLACK ELEMENTS OF ANY SIGN SHALL BE NON-REFLECTIVE. THIS APPLIES TO ALL MDOT SHA SIGNS AS SHOWN BELOW.

A) GUIDE, EXIT GORE, GENERAL INFORMATION, AND SERVICE SIGNS - FALL INTO TWO SUB CATEGORIES:

- (I). GROUND MOUNTED: ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9).
- (II). OVERHEAD STRUCTURE SIGNS AND OVERHEAD CANTILEVER SIGNS: ALL RETROREFLECTIVE SHEETING ELEMENTS OF ALL OVERHEAD SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE XI (11). (THIS SECTION DOES NOT APPLY TO OVERHEAD SIGNALIZED INTERSECTION SIGNING; MAST ARM OR SPAN WIRE. FOLLOW THE REQUIREMENTS FOR THE RESPECTIVE SIGN CLASSIFICATION FOR SIGNAL SIGNING.)

B) WARNING SIGNS - RETROREFLECTIVE SHEETING FOR WARNING SIGNS (FLUORESCENT YELLOW AND FLUORESCENT ORANGE) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). REGULATORY MESSAGES WITHIN WARNING SIGNS SHALL FOLLOW THE REQUIREMENTS FOR REGULATORY SIGNS.

C) SCHOOL SIGNS - RETROREFLECTIVE SHEETING FOR SCHOOL SIGNS (FLUORESCENT YELLOW AND FLUORESCENT YELLOW-GREEN) SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). REGULATORY MESSAGES WITHIN SCHOOL SIGNS SHALL FOLLOW THE REQUIREMENTS FOR REGULATORY SIGNS.

D) REGULATORY SIGNS - FALL INTO THREE SUBCATEGORIES:

- (I). "RED" REGULATORY SIGNS; (SPECIFICALLY - STOP, YIELD, DO NOT ENTER AND WRONG WAY). ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9).
- (II). ALL R7 AND R8 SERIES PARKING RELATED SIGNS AND THEIR SUPPLEMENTAL PANELS, NO TRESPASSING SIGNS, AND SIGNS DIRECTED AT PEDESTRIANS AND BICYCLISTS ONLY. ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET THE REQUIREMENTS FOR ASTM TYPE IV (4).
- (III). ALL OTHER REGULATORY SIGNS - ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET ASTM TYPE IV (4) INCLUDING RED ELEMENTS. WARNING MESSAGES WITHIN REGULATORY SIGNS SHALL FOLLOW THE REQUIREMENTS FOR WARNING SIGNS.

E) ROUTE MARKERS (INDEPENDENT USE AND GUIDE SIGN USE)

INDEPENDENT USE: ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET BUT NOT TO EXCEED THE REQUIREMENTS FOR ASTM TYPE IV (4).

GUIDE SIGN USE: WHEN INCORPORATED IN THE BODY OF A GUIDE SIGN, ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET THE SHEETING REQUIREMENTS OF THE GUIDE SIGNS FOR WHICH THEY ARE TO BE APPLIED; GROUND MOUNT ASTM TYPE IX (9) OR OVERHEAD ASTM TYPE XI (11).

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

G) SPECIFIC SERVICE (LOGO) SIGNING - ALL COPY, DIVIDER BORDERS, LOGOS AND ARROWS SHALL BE DEMOUNTABLE ALUMINUM OVERLAYS. .032 MINIMUM TO .063 MAXIMUM. ALL RETROREFLECTIVE SHEETING ELEMENTS OF THESE SIGNS SHALL MEET OR EXCEED THE REQUIREMENTS FOR ASTM TYPE IX (9). DISTANCES ON DIRECTIONAL ARROWS WHEN SPECIFIED SHALL BE BLACK. THE OVERLAYS ARE TO BE APPLIED WITH .125 ALUMINUM POP RIVETS TO THE BODY OF THE MAIN SIGN.

H) 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.

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"

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: SHI / PJM
DRAWN BY: GLJ
CHECKED BY: PJM / TP
DATE: 05-17-22

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401

SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
TRAFFIC SIGNAL
SIGNAGE NOTES

SCALE NONE
SHEET NO. 08 OF 11
PROJECT NO. 16 - 040

K:\CADD\16-040 SHOWALTER - CRAYTON SIGNAL DESIGN\CONSTRUCTION PLANS\F-STRIPPING PLAN\STRIPPING PLAN.DWG Last Saved: 6/2/2022 11:46 AM

SQUARE FOOT AREAS OF SYMBOLS AND ARROWS		
SYMBOL	DESCRIPTION	AREA (SQ. FT.)
	THROUGH LANE-USE	12.5
	TURN LANE-USE (LEFT OR RIGHT)	15.5
	TURN AND THROUGH LANE-USE (LEFT OR RIGHT)	25.5
	LEFT AND RIGHT TURN LANE-USE	27.0
	ALL DIRECTIONS LANE-USE	38.5
	LANE-REDUCTION (LEFT OR RIGHT)	42.0
	FREEWAY, EXPRESSWAY AND RAMP ARROW	24.4
	WRONG WAY ARROW	23.8
	HOV LANE	13.5
	ACCESSIBILITY SYMBOL (BLUE BACKGROUND)	
	40'x40' (STANDARD)	11.5
	48'x48' (SPECIAL)	16.0
	RAILROAD-CROSSING	64.7 (TOTAL) 3.6 (EACH)
	YIELD AHEAD TRIANGLE	57.5
	POSTED SPEED LIMIT LESS THAN 45 MPH	43.0
	POSTED SPEED LIMIT LESS THAN 45 MPH SHARK'S TEETH	34.0
	POSTED SPEED LIMIT LESS THAN 45 MPH 12'x18'	0.75
	POSTED SPEED LIMIT 45 MPH OR GREATER	3.0
	BIKE LANE DETECTOR	1.0
	SHARED LANE (40'x12')	9.0
	BIKE LANE ARROW	5.0
	BIKE LANE (40'x12')	5.0
	BIKE LANE (40'x12') FOR USE ON STATE ROADWAYS	6.0

SQUARE FOOT AREAS OF LEGENDS		
LEGEND	SIZE/DESCRIPTION	AREA (SQ. FT.)
	HEAD LANE LEFT ONLY	29.0
	HEAD LANE LEFT	22.3
	HEAD LANE RIGHT	18.2
	HEAD LANE	20.8
	SCHOOL	17.3
	SCHOOL	24.5
	SCHOOL	32.3
	SCHOOL	94.0
	SLOW STOP	22.8
	TURN RIGHT	20.8
	TURN RIGHT	22.8
	YIELD	20.3
	YIELD	22.3

SQUARE FOOT AREAS OF NUMBERS										
NUMBER	1	2	3	4	5	6	7	8	9	0
SMALL (6 FT.)	1.5	3.3	3.3	2.9	3.5	3.5	2.2	3.8	3.5	3.4
LARGE (18 FT.)	5.5	7.1	4.8	6.1	5.9	4.7	3.8	6.0	2.8	5.7

SQUARE FOOT AREAS OF LETTERS											
LETTER	A	B	C	D	E	F	G	H	I	J	K
SMALL (6 FT.)	3.1	4.0	2.7	3.4	3.3	2.6	3.3	3.4	1.5	2.1	3.1
LARGE (18 FT.)	5.5	7.1	4.8	6.1	5.9	4.7	3.8	6.0	2.8	5.7	

NOTE: REFER TO THE MOST RECENT VERSION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE FHWA STANDARD HIGHWAY SIGNS MANUAL FOR DIMENSIONS OF ALL PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS, AND NUMBERS.

SPECIFICATION: CATEGORY CODE ITEMS

APPROVED:

DIRECTOR: OFFICE OF TRAFFIC AND SAFETY

APPROVAL: SHA REVISIONS: APPROVAL: FEDERAL HIGHWAY ADMINISTRATION

APPROVED: 5-21-14

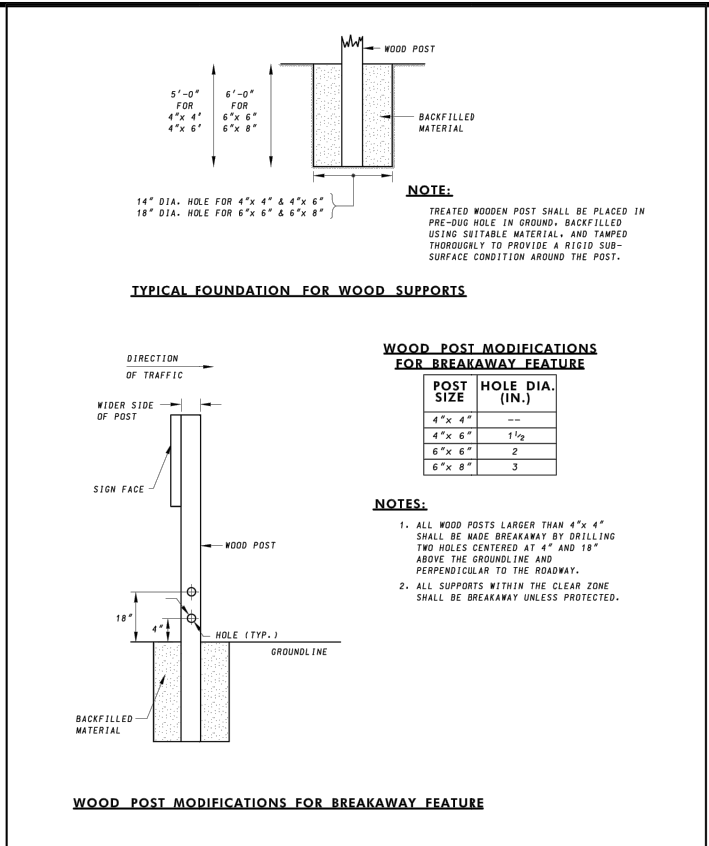
REVISIONS: 5-29-14

STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SQUARE FOOT AREAS OF PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS

STANDARD NO. MD 550.01



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED:

DIRECTOR: OFFICE OF TRAFFIC AND SAFETY

APPROVAL: SHA REVISIONS: APPROVAL: FEDERAL HIGHWAY ADMINISTRATION

APPROVED: 5-17-07

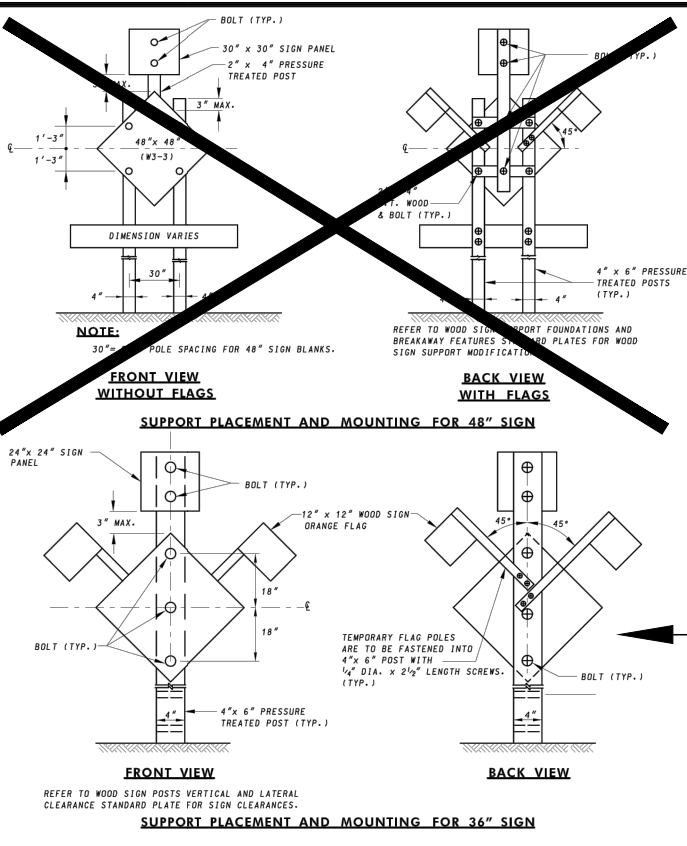
REVISIONS: 2-1-03, 2-2-07

STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

WOOD SIGN SUPPORT FOUNDATIONS AND BREAKAWAY FEATURES

STANDARD NO. MD 812.01



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED:

DIRECTOR: OFFICE OF TRAFFIC AND SAFETY

APPROVAL: SHA REVISIONS: APPROVAL: FEDERAL HIGHWAY ADMINISTRATION

APPROVED: 5-17-07

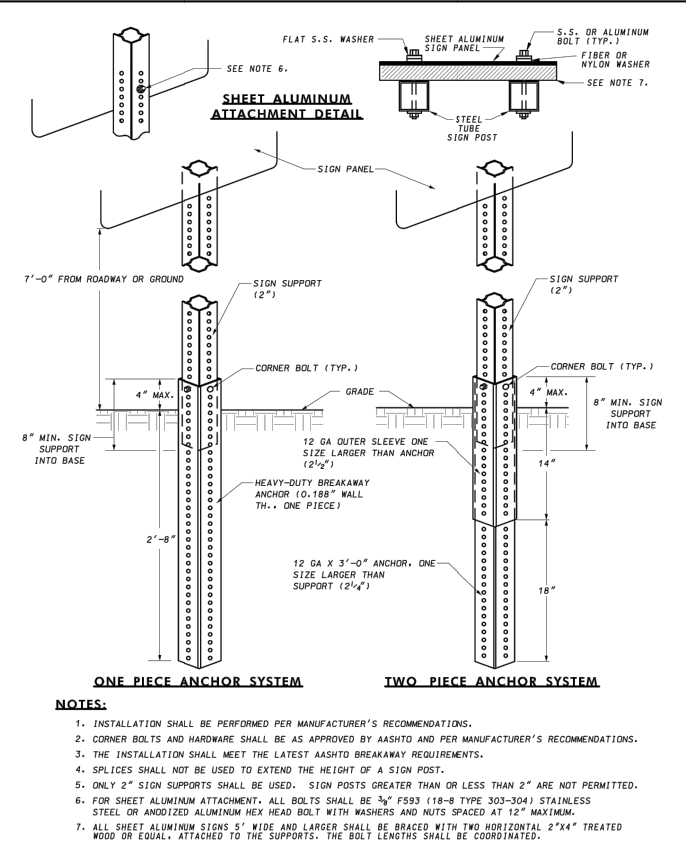
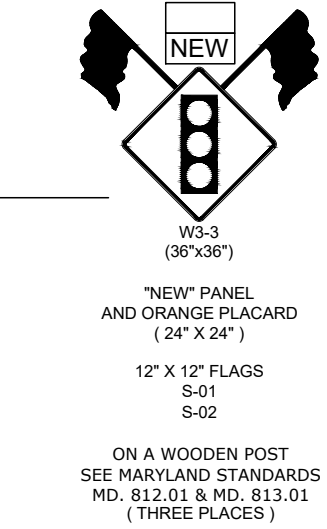
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STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

GROUND MOUNTED SIGN DETAILS (W3-3 NEW)

STANDARD NO. MD 813.01



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED:

DIRECTOR: OFFICE OF TRAFFIC AND SAFETY

APPROVAL: SHA REVISIONS: APPROVAL: FEDERAL HIGHWAY ADMINISTRATION

APPROVED: 5-17-07

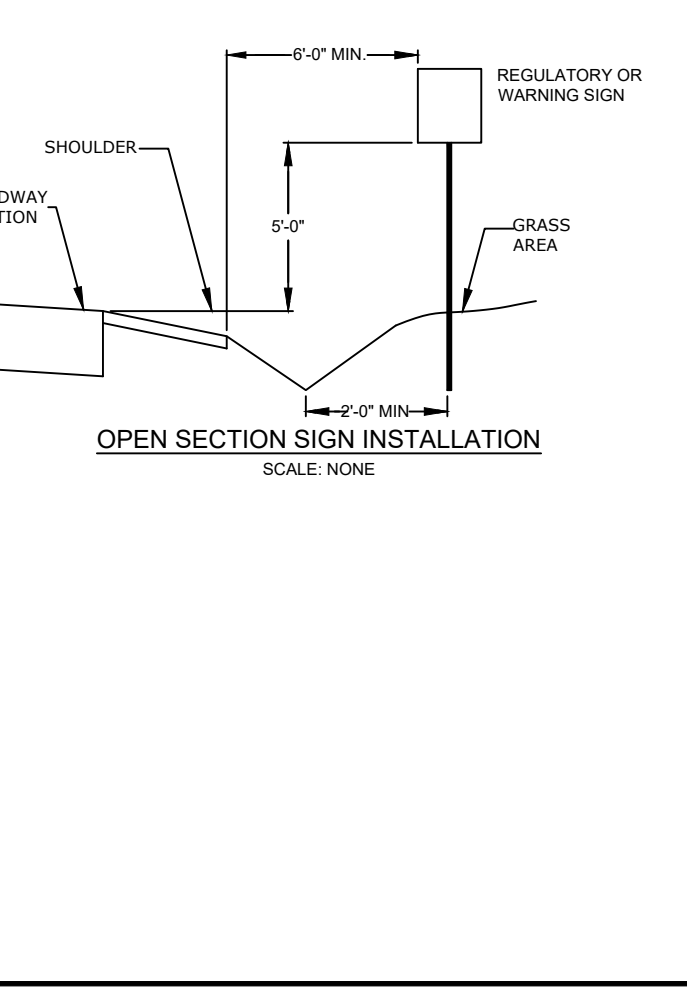
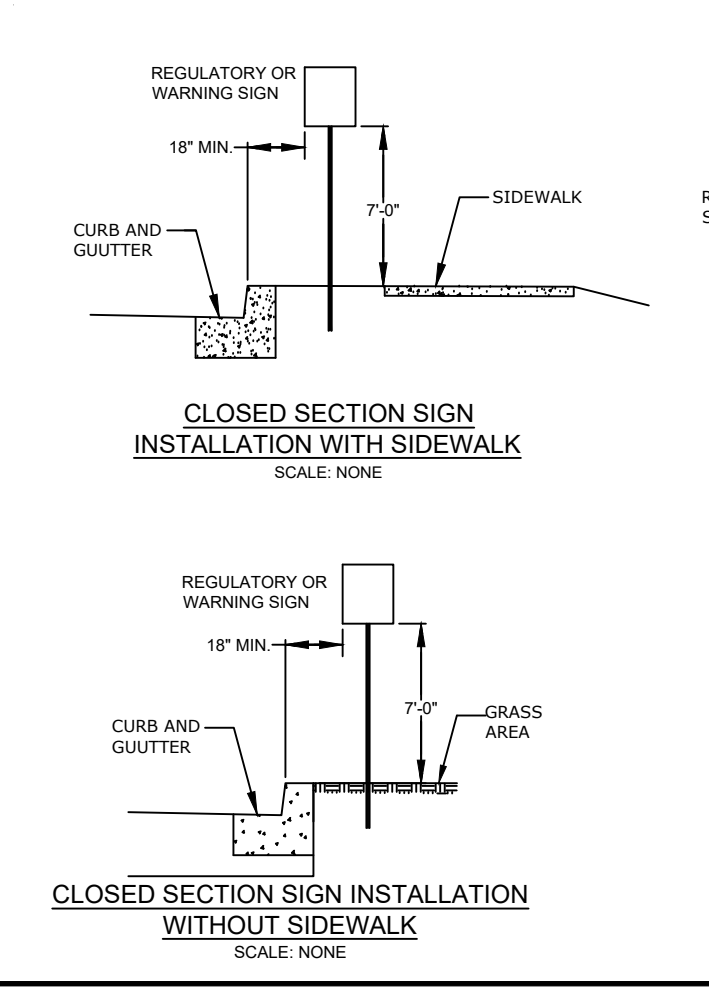
REVISIONS: 5-3-07

STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

BREAKAWAY TUBULAR STEEL SIGN SUPPORTS

STANDARD NO. MD 802.04



DATE	
BY	
REVISION DESCRIPTION	
NO.	
DESIGNED BY: SH/PJM	
DRAWN BY: GLJ	
CHECKED BY: PJM/TP	
DATE: 05-17-22	

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

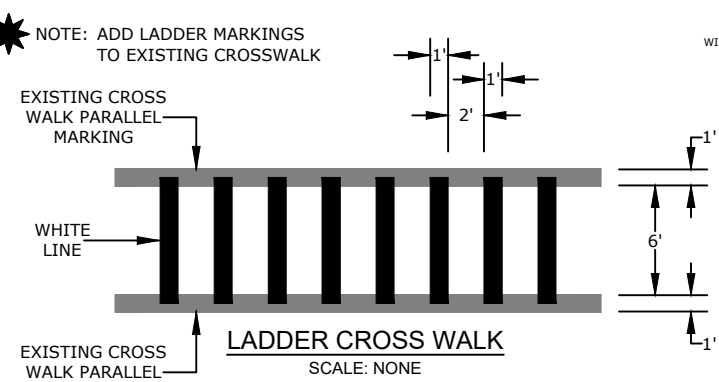
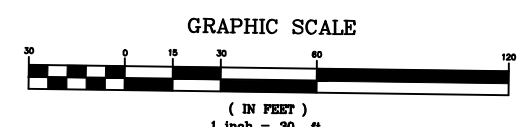
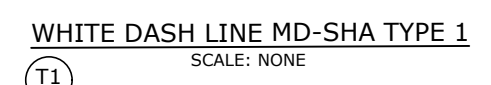
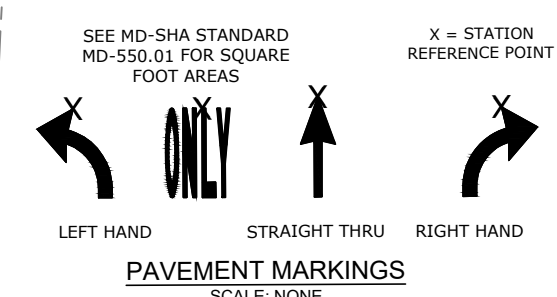
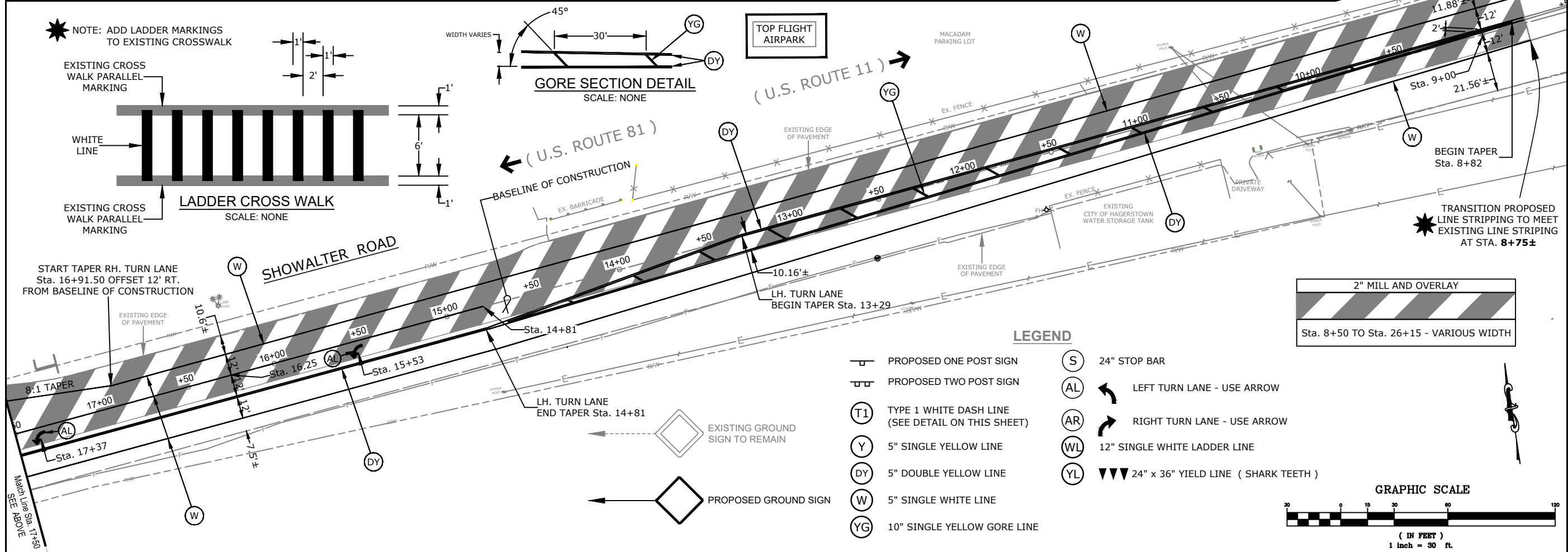
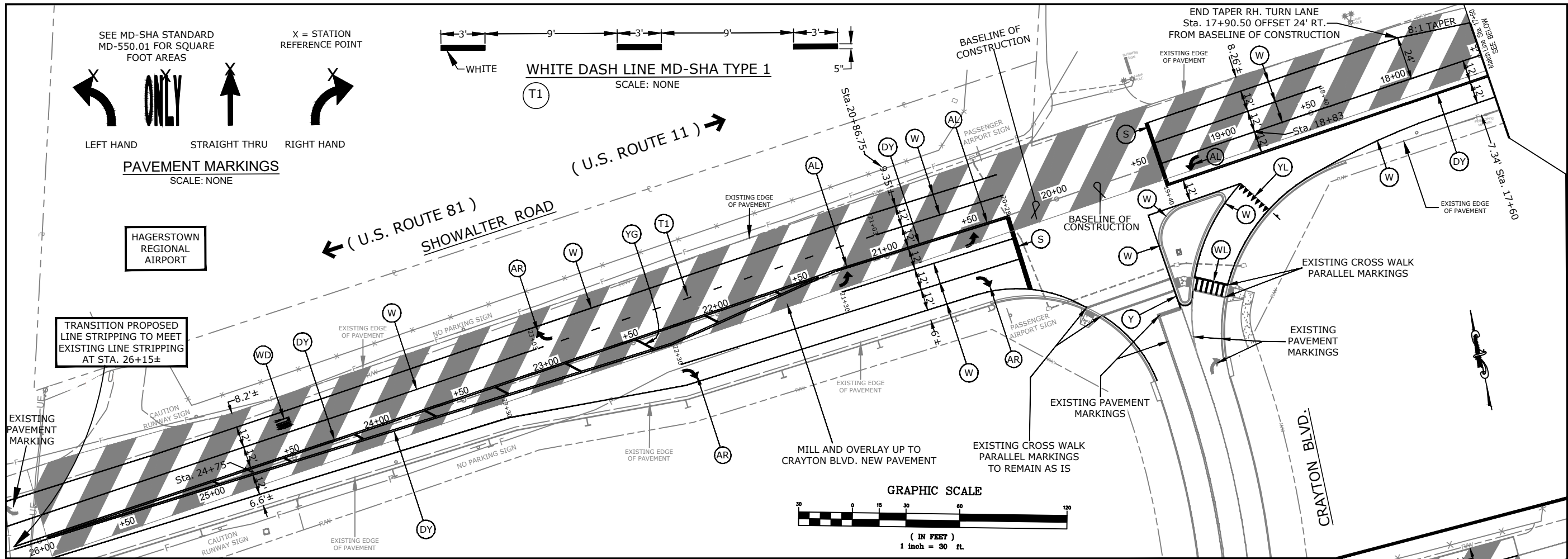
Washington County Administrative Annex, Building 747 Northern Avenue, Hagerstown, Maryland, 21742
Phone: 240-313-2460 Fax: 240-313-2401

SHOWALTER ROAD AND CRAYTON BOULEVARD INTERSECTION
PAVEMENT MARKING AND SIGNAGE DETAILS

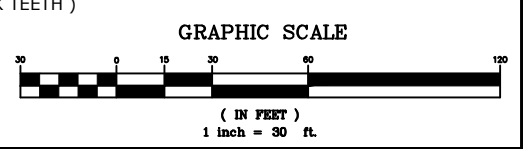
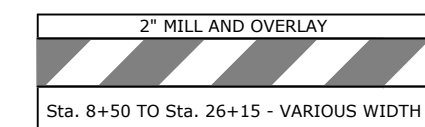
SCALE: NONE

SHEET NO. 09 OF 11

PROJECT NO. 16 - 040



- LEGEND**
- ▬ PROPOSED ONE POST SIGN
 - ▬▬ PROPOSED TWO POST SIGN
 - (T1) TYPE 1 WHITE DASH LINE (SEE DETAIL ON THIS SHEET)
 - (Y) 5" SINGLE YELLOW LINE
 - (DY) 5" DOUBLE YELLOW LINE
 - (W) 5" SINGLE WHITE LINE
 - (YG) 10" SINGLE YELLOW GORE LINE
 - (S) 24" STOP BAR
 - (AL) LEFT TURN LANE - USE ARROW
 - (AR) RIGHT TURN LANE - USE ARROW
 - (WL) 12" SINGLE WHITE LADDER LINE
 - (YL) 24" x 36" YIELD LINE (SHARK TEETH)



NO.	REVISION DESCRIPTION	DATE

DESIGNED BY: SH / PJM	DRAWN BY: GLJ	CHECKED BY: PJM / TP	DATE: 05-17-22
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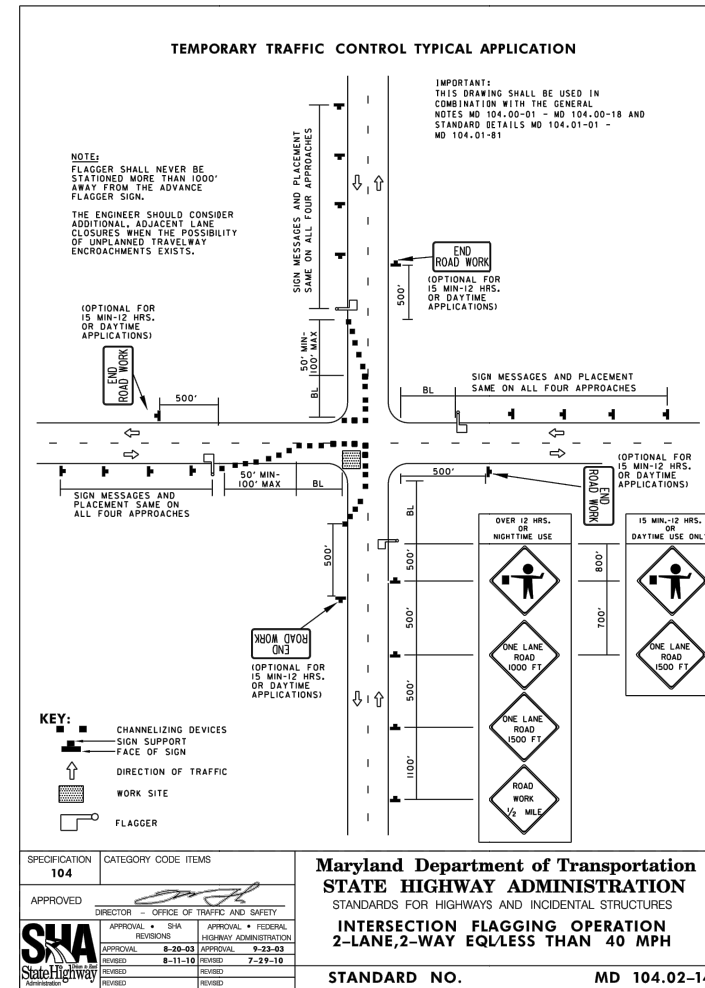
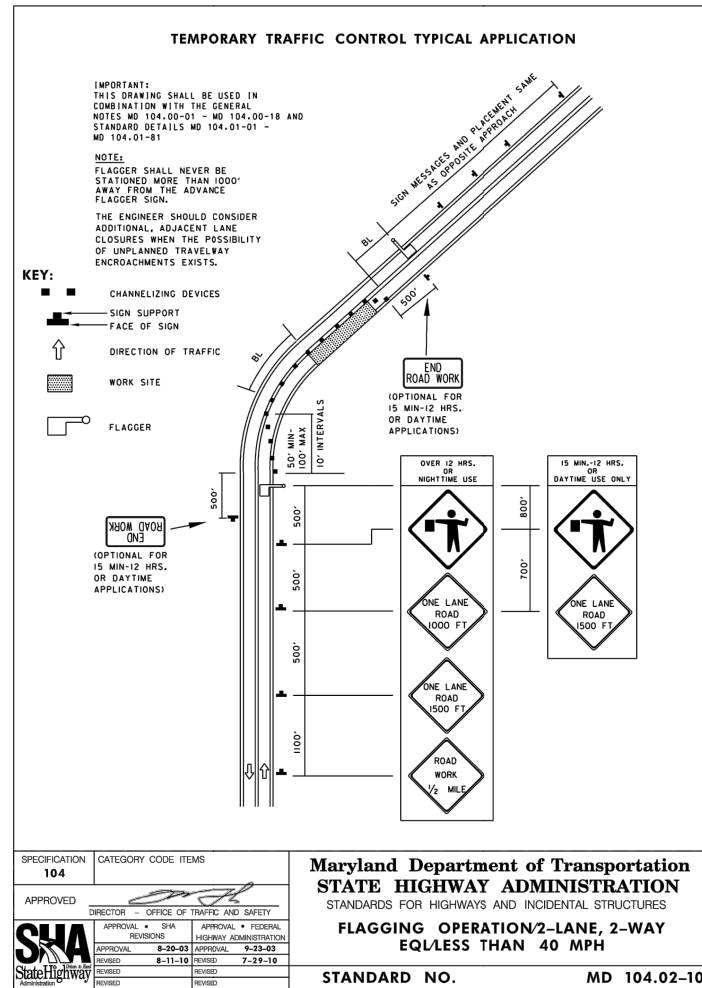
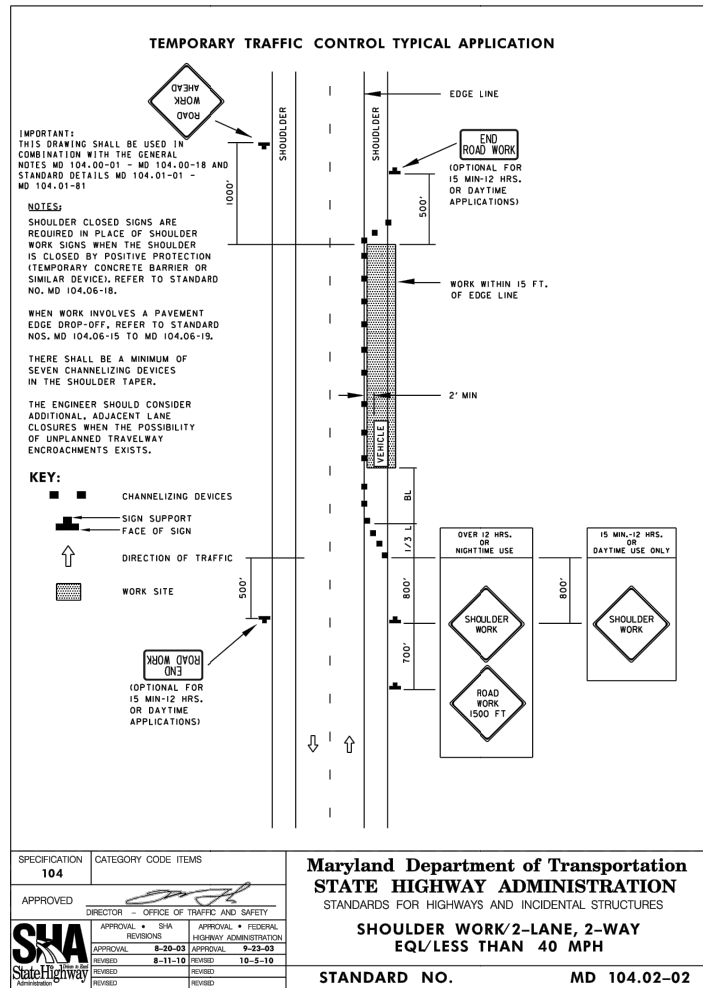
WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
700 North Washington Street, Hagerstown, MD 21742
Phone: 240-313-2480 Fax: 240-313-2401

**SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
PAVEMENT MARKING
& STRIPING PLAN**

SCALE 1" = 30'	SHEET NO. 10 OF 11
PROJECT NO. 16 - 040	

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MAINTENANCE OF TRAFFIC NOTES

1. THE INTENT OF THESE NOTES & PLANS ARE TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO THE TRAVELING PUBLIC AND THE MAXIMUM SAFETY OF THE CONTRACTOR. ALL CONSTRUCTION AND MATERIALS FOR THE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS CONTAINED IN THE LATEST EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), INCLUDING SUPPLEMENTAL REVISIONS, NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP), AND THE LATEST EDITION OF THE MDSA STANDARD SPECIFICATIONS, AND SUPPLEMENTAL SPECIFICATIONS.
2. SHOULD ANY PAVED AREAS NOT TO BE REMOVED, RECONSTRUCTED AND/OR RESURFACED BECOME DAMAGED OR DESTROYED, DUE TO THE CONTRACTOR'S NEGLIGENCE OR FAILURE TO PROVIDE ADEQUATE SIGNS, BARRICADES, CONES, FLAGGERS OR OTHER TRAFFIC CONTROL DEVICES, THE RESTORATION OF THE PAVED AREAS SHALL BE AT THE CONTRACTOR'S EXPENSE. THIS RESTORATION SHALL BE TO THE SATISFACTION OF THE ENGINEER.
3. TRAVEL LANES SHALL BE A MINIMUM OF TEN FEET IN WIDTH AND TWELVE FEET ON INTERSTATE RAMP. IN THE EVENT THAT LANE CLOSURES ARE REQUIRED & APPROVED BY THE ENGINEER, THE APPROPRIATE SIGNING & FLAGGING OPERATION SHALL BE USED IN ACCORDANCE WITH MUTCD. ALL LANES SHALL BE REOPENED TO TWO WAY TRAFFIC WHEN WORK IS SUSPENDED.
4. IF A PAVEMENT DROP-OFF MEASURES GREATER THAN 4", A 2:1 SLOPE OF COMPACTED CRUSHER GRAVEL WILL BE REQUIRED.
5. ALL OPEN TRENCHES SHALL BE CLOSED WHEN WORK IS SUSPENDED. IF STEEL PLATES ARE TO BE USED, APPROPRIATE SIGNING WILL BE REQUIRED. ALL PLATES SHALL IN TRAFFIC LANES SHALL BE STAKED AND WEDGED WITH ASPHALT.
6. ALL SIGNS THAT DO NOT APPLY SHALL BE COVERED.
7. ACCESS SHALL BE PROVIDED TO ALL EXISTING DRIVEWAYS AND BUSINESSES AT ALL TIMES. DISTURBANCE TO LOCAL BUSINESS OPERATIONS SHALL BE KEPT TO A MINIMUM.
8. ALL CONES, DRUMS, AND FLAGGERS SHALL BE MOVED IN ACCORDANCE WITH CONSTRUCTION PROGRESS.
9. UNLESS OTHERWISE SPECIFIED, VEHICLES AND EQUIPMENT SHALL ALWAYS MOVE WITH, NOT ACROSS OR AGAINST THE FLOW OF TRAFFIC, AND SHALL NOT ENTER OR LEAVE WORK AREAS IN A MANNER WHICH WILL BE HAZARDOUS TO, OR INTERFERE WITH NORMAL TRAFFIC FLOW. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY OF A TRAVELED ROADWAY, EXCEPT IN AREAS DESIGNATED BY THE ENGINEER.
10. THE CONTRACTOR SHALL PROVIDE, ERECT, MAINTAIN (PROPER POSITION, CLEAN, LEGIBLE, AND IN GOOD WORKING CONDITION), AND REMOVE LIGHTS, SIGNS, DRUMS, BARRICADES, AND ALL OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC. PLACEMENT OF ALL TRAFFIC CONTROL DEVICES SHALL START AND PROCEED IN THE DIRECTION OF THE FLOW OF TRAFFIC. REMOVAL OF TRAFFIC CONTROL DEVICES SHALL START AT THE END OF THE CONSTRUCTION AREA AND PROCEED TOWARD ONCOMING TRAFFIC. THE CONTRACTOR SHALL PROVIDE FOR THE INSTALLATION OF ALL NECESSARY TRAFFIC CONTROL DEVICES BEFORE BEGINNING WORK AND IMMEDIATELY REMOVE THESE DEVICES WHEN WORK IS SUSPENDED OR COMPLETED. THE CONTRACTOR SHALL ALSO PROVIDE A CONTACT AVAILABLE 24/7 FOR REPAIR AND MAINTENANCE.
11. ALL FINAL PAVEMENT MARKINGS SHALL BE SPOTTED AND APPROVED BY THE ENGINEER PRIOR TO FINAL MARKINGS BEING APPLIED.
12. ALL SIGNS, DRUMS AND BARRICADES SHALL BE NEW OR LIKE NEW CONDITION.

DATE	
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CHECKED BY:	PJM / TP
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WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

SHOWALTER ROAD AND
CRAYTON BOULEVARD INTERSECTION
TRAFFIC CONTROL PLAN
AND NOTES

SCALE	NONE
SHEET NO.	11 OF 11
PROJECT NO.	16 - 040

Washington County Administrative Annex, Building
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