

# MD 176 (DORSEY ROAD) SHARED USE PATH FEASIBILITY STUDY

FROM MD 713 (ARUNDEL MILLS BOULEVARD) TO EAST OF MD 170 (AVIATION BOULEVARD)



Date: September 2017

## Table of Contents

|   |    |
|---|----|
| Assessment Background .....                           | 3  |
| Purpose and Need .....                                | 3  |
| Existing Conditions.....                              | 4  |
| Westbound MD 176 (from MD 713 to MD 170) .....        | 4  |
| Eastbound MD 176 (from Trafalgar Road to MD 713)..... | 4  |
| Americans with Disabilities Act .....                 | 5  |
| Environmental Compliance and Permitting.....          | 5  |
| Stormwater Management and Drainage.....               | 5  |
| Landscaping .....                                     | 6  |
| Utilities.....  | 7  |
| Right of Way.....                                     | 7  |
| Conclusions and Recommendations .....                 | 7  |
| Proposed Shared Use Path .....                        | 7  |
| Appendix A.....                                       | 9  |
| Appendix B.....                                       | 19 |
| Appendix C.....                                       | 20 |
| Appendix D.....                                       | 21 |
| Appendix E.....                                       | 23 |
| Appendix F.....                                       | 24 |
| Appendix G.....                                       | 28 |
| Appendix H.....                                       | 33 |



## Assessment Background

Anne Arundel County Department of Public Works and Department of Planning and Zoning have requested the Maryland Department of Transportation State Highway Administration (MDOT SHA) perform a feasibility study to install a shared use path along the westbound (WB) side of MD 176 from MD 713 (Arundel Mills Boulevard) to MD 170 (Aviation Boulevard) (see map below). They also requested MDOT SHA investigate installing sidewalk on eastbound (EB) MD 176 west of MD 713. MD 176 is in Severn, Anne Arundel County in MDOT SHA's District 5. The project area is in a Priority Funding Area.

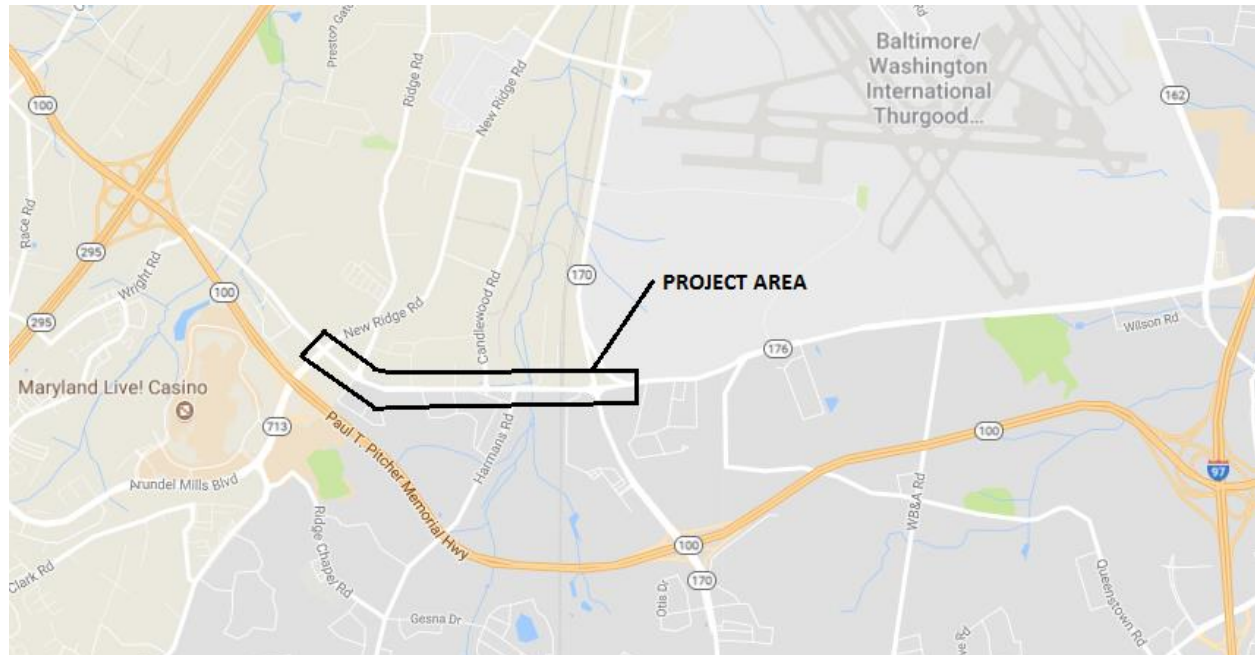


Figure 1: Project area map

## Purpose and Need

The proposed shared use path will extend along WB MD 176 from MD 713 (Arundel Mills Boulevard)/New Ridge Road to Aviation Boulevard. The proposed shared use path will provide connectivity between existing sidewalks and bus stops along MD 176. There are existing sidewalks north of MD 176 on Ridge Road and Ashton Road that form a network and connect many of the commercial and residential properties in the area. There is existing sidewalk in front of a new development west of MD 713; however, there is a gap of approximately 650 feet between the end of the sidewalk and the intersection with MD 713.

There are three bus stops along WB MD 176 that serve three Maryland Transit Administration (MTA) and Regional Transportation Agency (RTA) bus routes. These bus stops are currently accessed by walking on the grass. There are two bus stops on EB MD 176: one at Ridge Road and one at Candlewood Road. Proposed improvements also include relocating pedestrian pushbutton signals at Ridge Road, installing missing curb and gutter west of Ridge Road, and replacing non-compliant sidewalk on both sides of MD 176.

The proposed shared use path will connect to the Baltimore-Washington International Airport (BWI) trail that is located east of Aviation Boulevard.

### Existing Conditions

The following information was gathered using eGIS, Google Maps and Street View, MD iMAP, Maryland's Environmental Resource and Land Information Network (MERLIN), and a site visit conducted on January 11, 2017 and July 7, 2017. The limits of this feasibility study are from Trafalgar Road (Mile point 0.65) to Aviation Boulevard (Mile point 2.200) which is 1.55 miles.

#### Westbound MD 176 (from MD 713 to MD 170)

MD 176 is a four-lane undivided urban collector. There is a center turn lane from Ridge Road to Candlewood Road. There are no shoulders on MD 176 in the project area. The posted speed limit is 45 mph throughout the project study area. MD 176 is not on the National Highway System. The annual average daily traffic on MD 176 is 13,712 (see Appendix D). Pedestrian counts and a crash history report are not included in this feasibility study and should be obtained before design activities begin. There are ten named roads that intersect with MD 176 within the project limits. There are four residential entrances along WB MD 176 located between Ashton Road and Wolverine Road. There are four commercial entrances along WB MD 176 located between Ridge Road and Ashton Road. The main pedestrian generators in the project area are the residential developments on the south side of MD 176 and east of MD 713 and two commercial centers: one located between Ridge Road and Ashton Road, and the other located at the intersection of MD 176 and Candlewood Road.

There is a closed drainage system throughout the project limits. There is an area that is missing curb and gutter west of Ridge Road. There are two structures within the project area. The first structure is major structure No. 020051001 which carries MD 176 over Amtrak railroad tracks. The second is minor structure No. 020338X01 which carries MD 176 over Stony Run. Both structures are neither structurally deficient nor functionally obsolete. Other notable conditions include a small area of brick sidewalk on the northeast corner of the intersection at Ashton Road and the Harmans Dorsey Fire Department which has an emergency vehicle traffic signal in front of the fire house.

#### Eastbound MD 176 (from Trafalgar Road to MD 713)

In the existing condition, the compliant sidewalk along EB MD 176 in front of the Serenity Place apartment complex stops approximately 650 feet from the intersection of MD 176 and MD 713. This sidewalk was constructed under access permit 09-AP-AA-020-12. This area is open section with a two-foot shoulder and guardrail for approximately half the length as well as at the intersection of MD 176 and MD 713. There is a significant slope behind the guardrail that was measured to be approximately 3:1 based on Anne Arundel County topography data from 2011. The main pedestrian generators in this area are the Serenity Place apartments and Saint Mark's United Methodist Church.

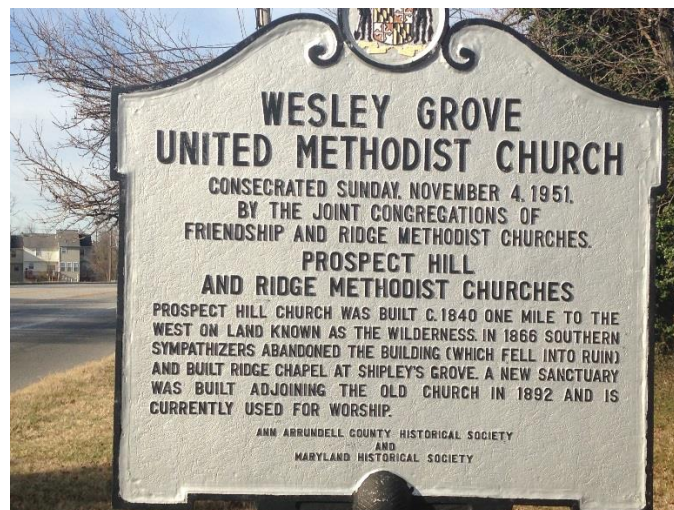
Anne Arundel County has also asked for a separate feasibility study to assess installing a shared use path along MD 713 (see Appendices F and G). This proposed shared use path would serve as a connection from MD 176 to the Maryland Live! Casino and Arundel Mills Mall.

#### [Americans with Disabilities Act](#)

There are three existing pedestrian facilities in the project area that do not meet Americans with Disabilities Act (ADA) requirements. The only existing pedestrian facilities in the area are non-compliant sidewalk in front of the Harmans Dorsey Fire Department and non-compliant sidewalk 200 feet west of Ridge Road. During the field visit, the ramp at Ridge Road was measured to have a slope of approximately 11%. This slope is too steep and should be reconstructed to meet ADA standards. See Appendix E for the ADA compliance map.

### [Environmental Compliance and Permitting](#)

The Wesley Grove United Methodist Church has a historic marker from the Anne Arundel County Historical Society and Maryland Historical Society (see photo below). This project will require adherence to the National Environmental Policy Act (NEPA). Per eGIS, there are palustrine wetlands on both side of MD 176 east of Shirley Avenue (see Appendix H). These wetlands run along Stony Run which crosses under MD 176 through structure No. 020338X0.



Picture 2: The historical marker for Wesley Grove United Methodist Church

### [Stormwater Management and Drainage](#)

This project will require stormwater management (SWM). There are two existing SWM facilities (Nos. 020108 and 020109, see picture below) on the northeast corner of New Ridge Road and Dorsey Road. These facilities receive water from both MD 713 and MD 176 and are both infiltration basins. The stormwater runoff on MD 176 is conveyed via a closed section with inlets. Potential stormwater management facility locations include the northeast corner of MD 176 and Shipley Avenue, the northeast corner of MD 176 and MD 170, the southeast corner of MD 176 and Ridge Road, and between MD 176 and Old Dorsey Road near Candlewood Court.



During the field visit, it was noted that two inlets, one at Candlewood Road and one west of Ashton Road, were deteriorating and may need to be reconstructed. Potential stormwater management and drainage improvements will be further evaluated in the design phase.



Picture 3: Looking north at SWM facility No. 020108

### Landscaping

There are three and a half acres of forest protected by the Forest Conservation Act north of MD 176 between Ridge Road and New Ridge Road (see Appendix C). A roadside tree permit will be necessary to construct the shared use path. Some of the possible impacts include the forested area between Ridge Road and New Ridge Road, west of Wolverine Lane, and across from Old Dorsey Road (see pictures below). Trees between Shipley Ave and the Amtrak railroad tracks will be impacted. There is potential for reforestation in the northeast corner of the MD 176 and MD 170 intersection.



Picture 4: Potentially impact forested area west of Wolverine Lane



Picture 5: Potentially impacted trees across from Old Dorsey Road

## Utilities

There are utility poles along the westbound side of MD 176 for the entirety of the project area. The poles are owned by BGE. Most of the utility poles will not be impacted; furthermore, any conflicts will need to be avoided, relocated, or a design waiver will need to be approved. There are multiple locations in the project area that are designated with warning pylons for buried fiber optic cable. During a field visit, there were Miss Utility flags marking buried AT&T fiber optic cable and buried BGE gas lines, as well as multiple water meters. Additional utility designation will be necessary if design progresses to locate the underground utilities in the project area.

## Right of Way

Existing Right of Way (ROW) information from eGIS indicates the existing ROW line is at the back of curb for most of the project area. ROW will need to be donated or acquired to construct the shared use path, sidewalk, and associated improvements including any SWM facilities. ROW costs have not been estimated as part of this study.

## Conclusions and Recommendations

### Proposed Shared Use Path

After reviewing data through desktop research, a site visit, and compiling concept plans, it has been determined that it is feasible to build a shared use path along westbound MD 176. The typical section consists of the 10-foot shared use path and two-foot graded shoulders on both sides. The shared use path will follow the same profile as MD 176 throughout the project study area. The proposed shared use path in the attached concept plans (Appendix A) utilizes a minimum five-foot buffer throughout most of the project for user comfort and safety. The path is aligned with the back of curb in some areas to limit ROW, grading, and environmental impacts. In these areas, the typical section does not include the two-foot graded shoulders between the shared use path and the roadway. It is recommended to reconstruct the existing sidewalk in front of the Harmans Dorsey fire station for connectivity to the MTA/RTA bus stop on eastbound MD 176. The existing median islands at Ridge Road, Candlewood Road, and MD 170 will need to be reconstructed to accommodate the proposed shared use path. Upgrades to the existing pedestrian pushbutton signals at Ridge Road will be necessary. A crosswalk may be necessary to connect to proposed shared use path at MD 713 based on engineering judgement and pedestrian volume. All MTA/RTA bus stops should be designed to meet MDOT SHA, County, and transit agency standards.

Amtrak does not allow at grade crossings of their railroad facilities. Therefore, the railroad can only be crossed on a new structure for the shared use path or a modification to the lane alignment on the existing structure. The existing typical section on the bridge consists of four lanes, including 12-foot inside lanes and 16-foot outside lanes. This study proposes narrowing all the lanes on the bridge to 11-feet. Narrowing the lanes is allowable per AASHTO pg. 6-13 P 5. This will require the lanes on the approaches to be realigned with the appropriate transitions. The shared use path will be placed on the existing structure and will be separated from traffic using

Qwick Kurb® with post mounted delineators. A retaining wall will be necessary to support the shared use path between MD 176 and Shipley Avenue. The retaining wall will be approximately 12-feet high and at least 400 feet long. The retaining wall may need to be extended to limit environmental and grading impacts.

#### MD 176 West of New Ridge Road

It is recommended to construct new sidewalk from the MD 713 intersection to the Serenity Place Apartments. There is 200 feet of compliant sidewalk that extends from the apartment complex entrance east towards MD 713. The proposed sidewalk will extend the compliant sidewalk and connect to the shared use path at the MD 713 intersection. In this area, the existing guardrail should be removed and relocated behind the proposed sidewalk.

If funding is made available for this project, the next steps would include obtaining topographic survey, right-of-way establishment, and utility designation.

The estimated cost for this project is approximately \$4,485,000.00 (See Appendix B).



Appendix A

## Concept Plans





MATCH LINE - SEE SHEET 2

**MD 176 (DORSEY ROAD)**

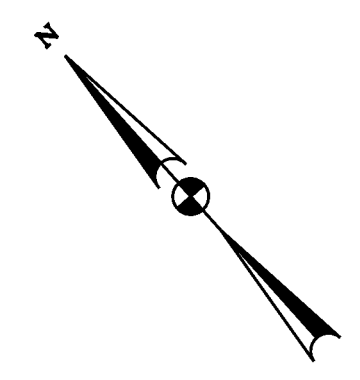
REMOVE EXISTING RAMP & TIE INTO EXISTING SIDEWALK

REMOVE AND RELOCATE EXISTING GUARDRAIL BEHIND SIDEWALK

APPROX EX. ROW

APPROX EX. ROW

BY: Jdelaney - Highway Design Division



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |



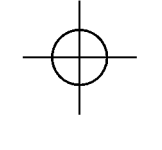
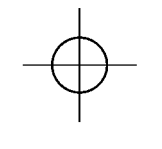
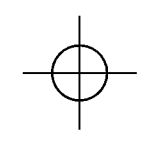
**MARYLAND DEPARTMENT OF TRANSPORTATION**  
STATE HIGHWAY ADMINISTRATION

INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-01</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |

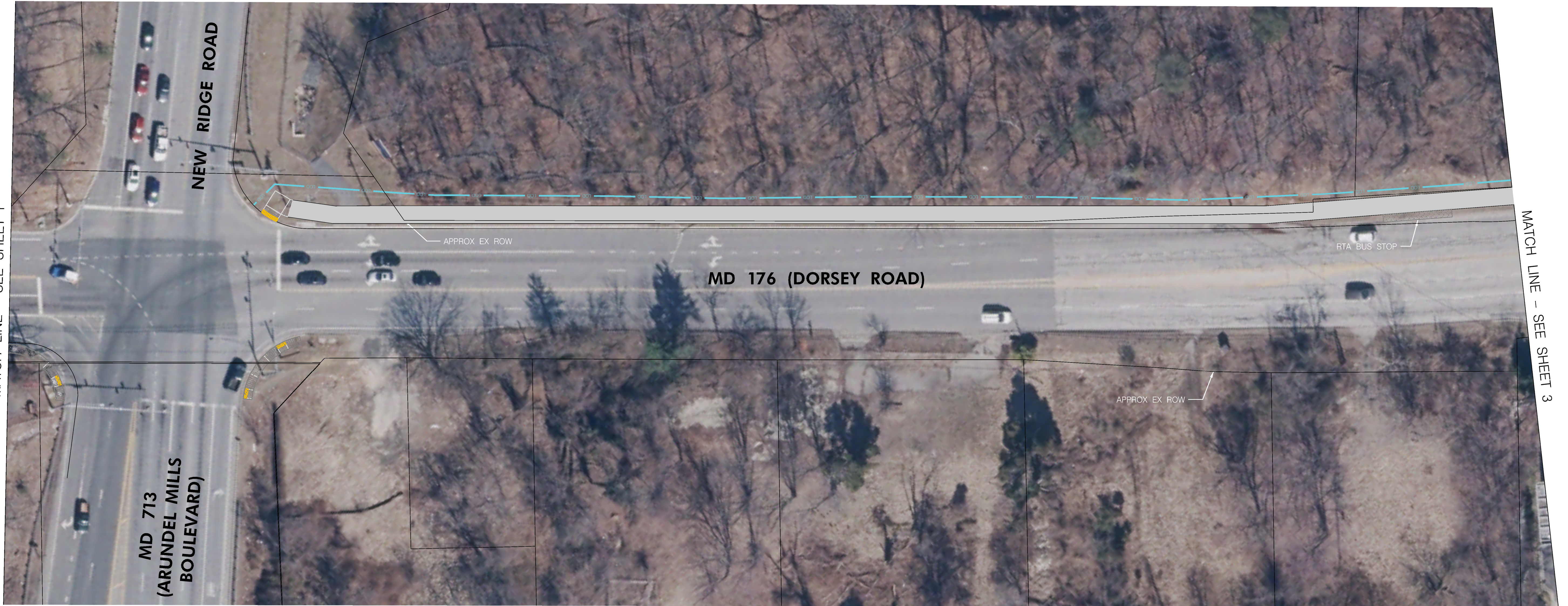




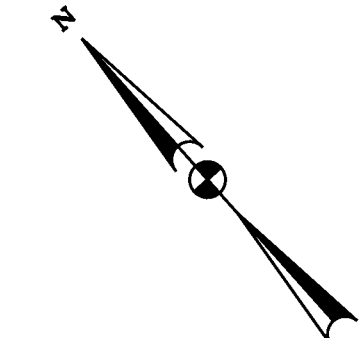
BY: Jdelaney - Highway Design Division

PLOTTED: Tuesday, September 19, 2017 AT 04:17 PM

MATCH LINE - SEE SHEET 1



MATCH LINE - SEE SHEET 3



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |

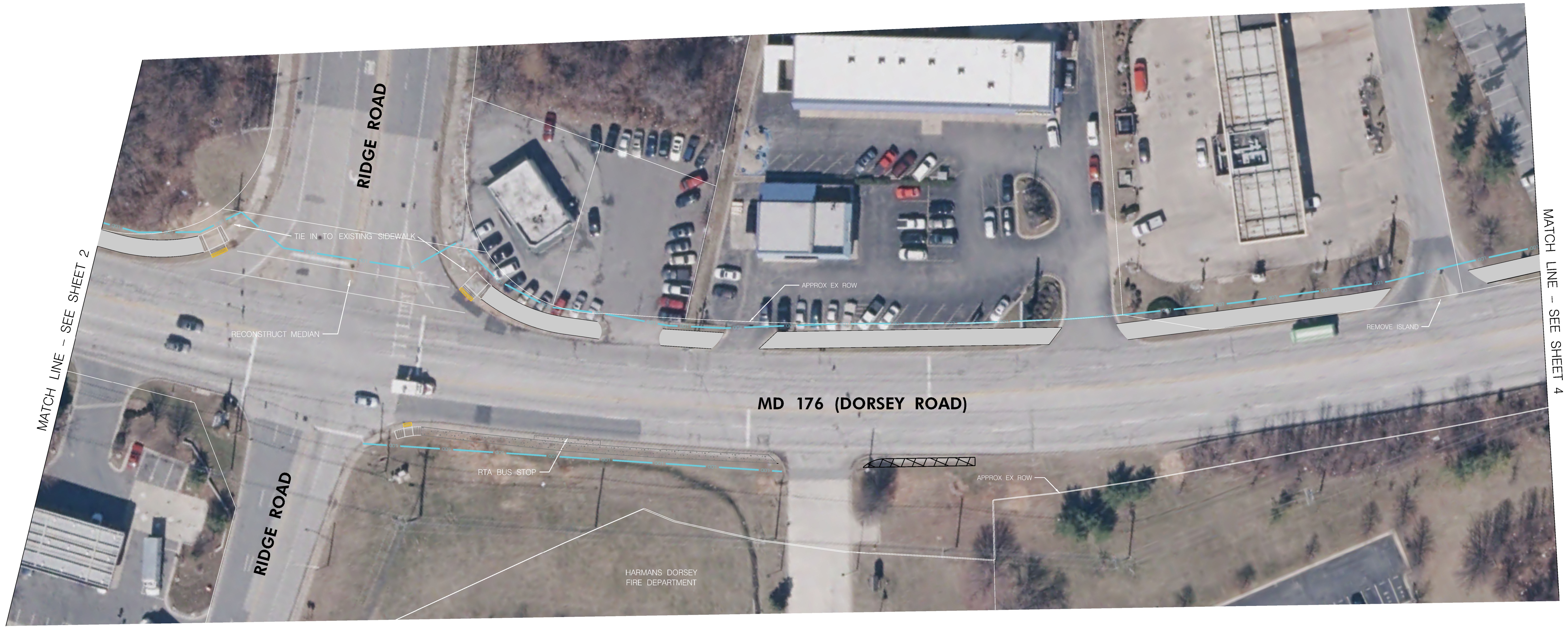
INNOVATIVE CONTRACTING DIVISION

**MARYLAND DEPARTMENT OF TRANSPORTATION**  
STATE HIGHWAY ADMINISTRATION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-02</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |





MATCH LINE - SEE SHEET 2

MATCH LINE - SEE SHEET 4

RIDGE ROAD

RIDGE ROAD

MD 176 (DORSEY ROAD)

RECONSTRUCT MEDIAN

TIE IN TO EXISTING SIDEWALK

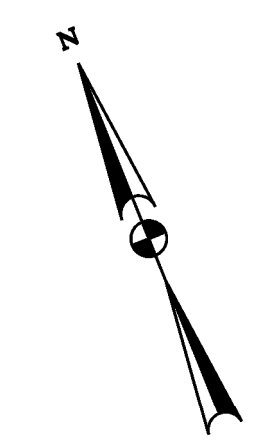
APPROX EX ROW

REMOVE ISLAND

RTA BUS STOP


APPROX EX ROW

HARMANS DORSEY  
FIRE DEPARTMENT



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |



**MARYLAND DEPARTMENT OF TRANSPORTATION**  
STATE HIGHWAY ADMINISTRATION

INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-03</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |

BY: Jdelaney - Highway Design Division





BY: Jdelaney - Highway Design Division



MATCH LINE - SEE SHEET 3

MATCH LINE - SEE SHEET 5

MD 176 (DORSEY ROAD)

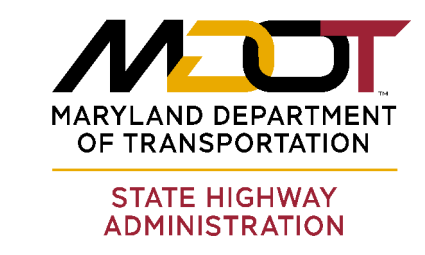
ASHTON ROAD

LEEDS ROAD



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |



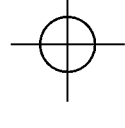
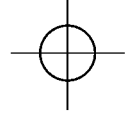
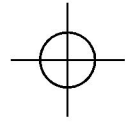
INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

**ROADWAY PLAN**

|                          |                            |                          |
|--------------------------|----------------------------|--------------------------|
| SCALE <b>1" = 30'</b>    | ADVERTISED DATE _____      | CONTRACT NO. _____       |
| DESIGNED BY _____        | COUNTY <u>ANNE ARUNDEL</u> |                          |
| DRAWN BY _____           | LOGMILE _____              |                          |
| CHECKED BY _____         | HORIZONTAL SCALE _____     |                          |
| MDE/PRD _____            | VERTICAL SCALE _____       |                          |
| DRAWING NO. <b>PS-04</b> | OF <b>09</b>               | SHEET NO. _____ OF _____ |





MATCH LINE - SEE SHEET 4

MATCH LINE - SEE SHEET 6



MD 176 (DORSEY ROAD)

WOLVERINE ROAD

SANDALWOOD COURT

APPROX EX ROW

TRES TO BE IMPACTED

APPROX EX ROW NO BUFFER AREA



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |

**MDOT**  
MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

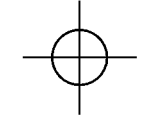
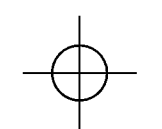
INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-05</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |

BY: Jdelaney - Highway Design Division





MATCH LINE - SEE SHEET 5

MATCH LINE - SEE SHEET 7



BY: Jdelaney - Highway Design Division



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical



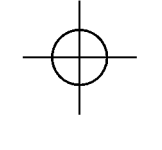
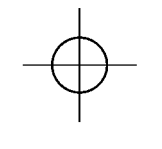
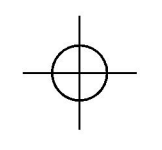
INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-06</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |





MATCH LINE - SEE SHEET 6

MATCH LINE - SEE SHEET 8



BY: Jdelaney - Highway Design Division



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |

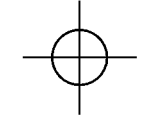
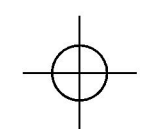


INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-07</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |

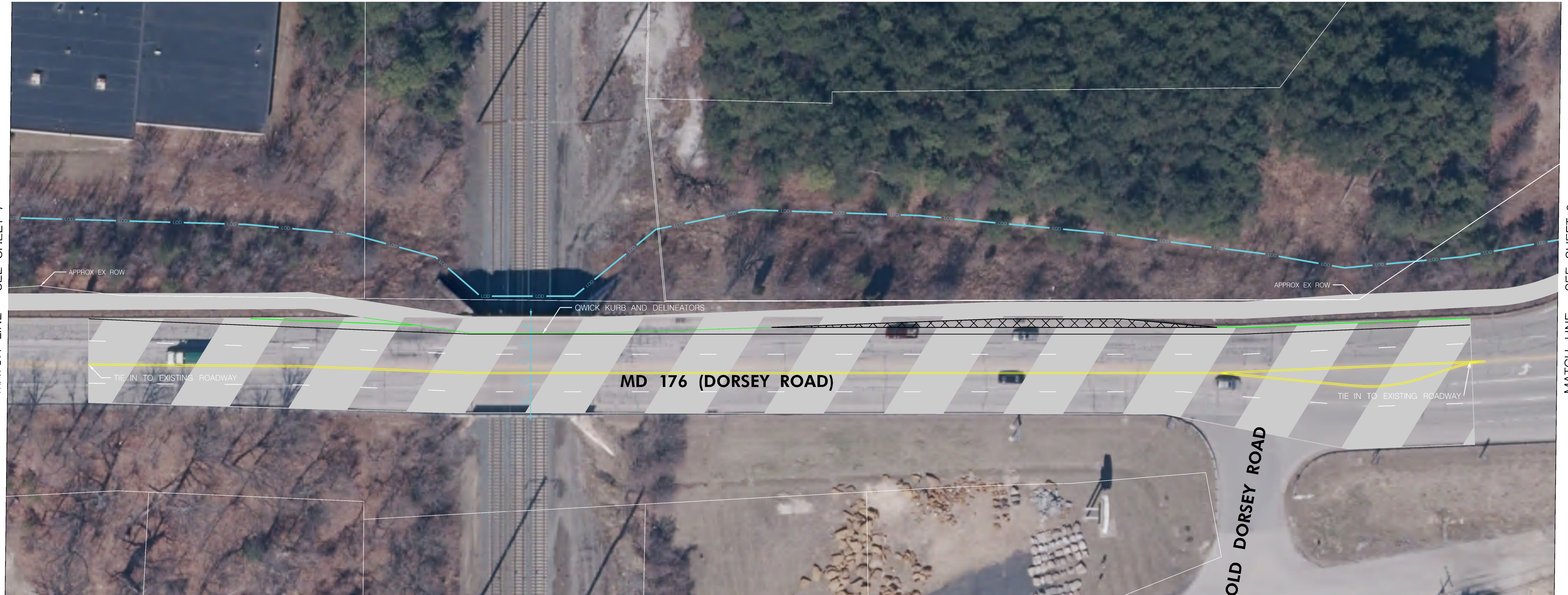




BY: Jdelaney - Highway Design Division

MATCH LINE - SEE SHEET 7


MATCH LINE - SEE SHEET 9



DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |

INNOVATIVE CONTRACTING DIVISION



MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

STATE HIGHWAY ADMINISTRATION

| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-08</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |





BY: Jdelaney - Highway Design Division

DATUM: NAD 83/91 Horizontal  
NAVD 88 Vertical

| ROADWAY LEGEND |                                    |
|----------------|------------------------------------|
|                | FULL DEPTH RECONSTRUCTION          |
|                | CONCRETE SIDEWALK                  |
|                | EXISTING SIDEWALK/PAVEMENT REMOVAL |
|                | DETECTABLE WARNING SURFACE         |
|                | MILL AND OVERLAY RESURFACING       |



INNOVATIVE CONTRACTING DIVISION

MD 176 (DORSEY ROAD)  
SHARED USE PATH FEASIBILITY STUDY  
FROM MD 713 TO MD 170

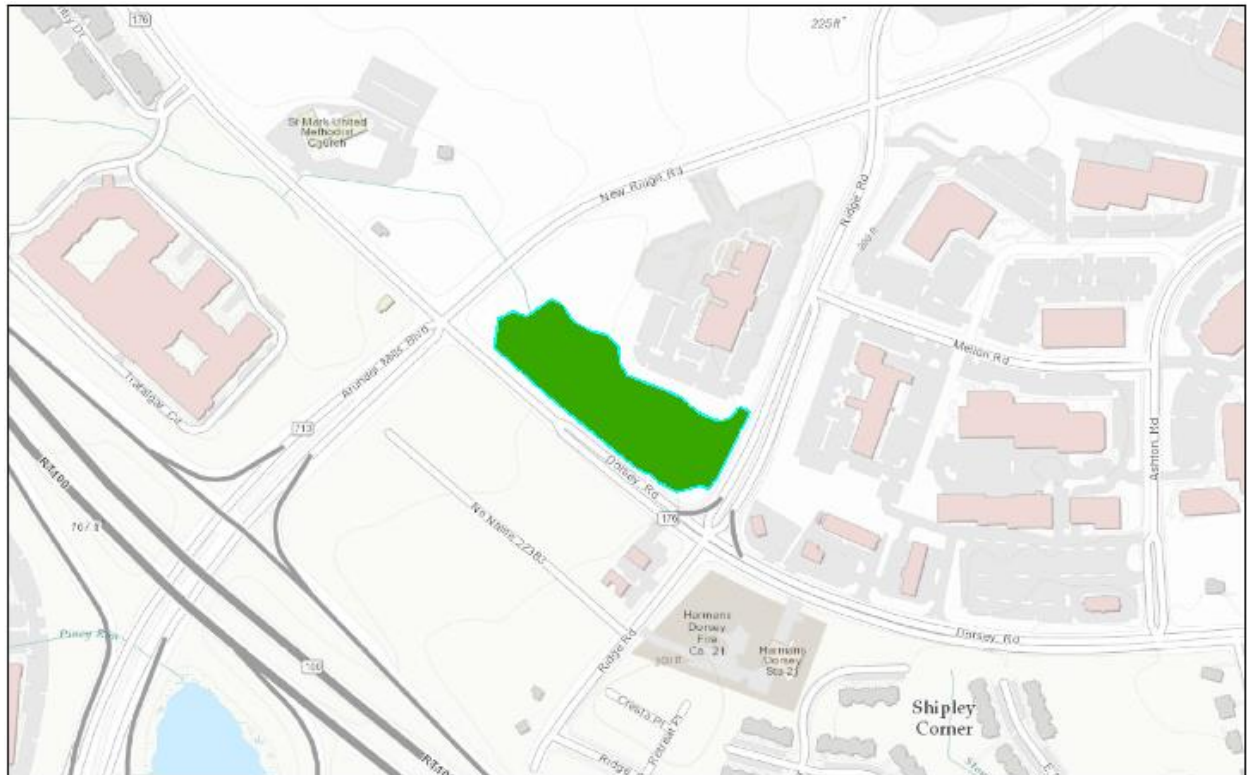
| ROADWAY PLAN                          |   |
|---------------------------------------|---|
| SCALE: 1" = 30'                       | ADVERTISED DATE: _____ CONTRACT NO. _____ |
| DESIGNED BY: _____                    | COUNTY: ANNE ARUNDEL                      |
| DRAWN BY: _____                       | LOGMILE: _____                            |
| CHECKED BY: _____                     | HORIZONTAL SCALE: _____                   |
| MDE/PRD: _____                        | VERTICAL SCALE: _____                     |
| DRAWING NO. <b>PS-09</b> OF <b>09</b> | SHEET NO. _____ OF _____                  |



## Appendix B Cost Estimate

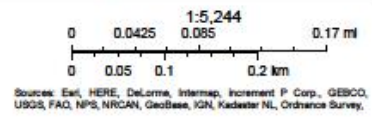
| ITEM NO.                            | CATEGORY CODE NO. | DESCRIPTION   | QTY.  | UNIT | UNIT COST     | TOTAL COST             |
|-------------------------------------|-------------------|---|-------|------|---------------|------------------------|
| <b>CATEGORY 1 - PRELIMINARY</b>     |                   |   |       |      |               |                        |
| 1001                                | 100000            | 50% OF CATEGORIES 2, 4, 5, & 6                              | 1     | LS   | \$ 665,423.90 | \$ 665,423.90          |
|                                     |                   | <b>CATEGORY 1 =</b>   |       |      |               | <b>\$ 665,423.90</b>   |
| <b>CATEGORY 2 - GRADING</b>         |                   |   |       |      |               |                        |
| 2001                                | 201032            | CLASS 2 EXCAVATION  | 4,309 | CY   | \$ 40.00      | \$ 172,373.93          |
| 2002                                | 202065            | COMMON BORROW   | 500   | CY   | \$ 35.00      | \$ 17,500.00           |
|                                     |                   | <b>CATEGORY 2 =</b>   |       |      |               | <b>\$ 189,873.93</b>   |
| <b>CATEGORY 3 - DRAINAGE</b>        |                   |   |       |      |               |                        |
| 3001                                | 300000            | 15% OF CATEGORIES 2, 4, 5, & 6                              | 1     | LS   | \$ 199,627.17 | \$ 199,627.17          |
|                                     |                   | <b>CATEGORY 3 =</b>   |       |      |               | <b>\$ 199,627.17</b>   |
| <b>CATEGORY 4 - STRUCTURES</b>      |                   |   |       |      |               |                        |
| 4001                                | 400000            | RETAINING WALL  | 4,800 | SF   | \$ 150.00     | \$ 720,000.00          |
|                                     |                   | <b>CATEGORY 4 =</b>   |       |      |               | <b>\$ 720,000.00</b>   |
| <b>CATEGORY 5 - PAVING</b>          |                   |   |       |      |               |                        |
| 5001                                | 501500            | SUPERPAVE ASPHALT MIX 9.5MM FOR SURFACE, PG 64S-22, LEVEL 2 | 1,135 | TON  | \$ 120.00     | \$ 136,186.35          |
| 5002                                | 504560            | SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG 64S-22, LEVEL 2   | 1,050 | TON  | \$ 100.00     | \$ 104,956.54          |
| 5003                                | 520111            | 4 INCH GRADED AGGREGATE BASE COURSE                         | 7,851 | SY   | \$ 8.00       | \$ 62,805.99           |
| 5004                                | 530101            | GRINDING ASPHALT PAVEMENT 0 INCH TO 2 INCH                  | 5,725 | SY   | \$ 3.00       | \$ 17,175.00           |
| 5005                                | 549401            | 5 INCH WHITE THERMOPLASTIC PAVEMENT MARKINGS                | 2,150 | LF   | \$ 0.85       | \$ 1,827.50            |
| 5006                                | 549403            | 5 INCH YELLOW THERMOPLASTIC PAVEMENT MARKINGS               | 850   | LF   | \$ 0.85       | \$ 722.50              |
|                                     |                   | <b>CATEGORY 5 =</b>   |       |      |               | <b>\$ 323,673.88</b>   |
| <b>CATEGORY 6 - SHOULDER</b>        |                   |   |       |      |               |                        |
| 6001                                | 634300            | STANDARD TYPE A CURB & GUTTER 12" X 8"                      | 150   | LF   | \$ 32.00      | \$ 4,800.00            |
| 6002                                | 655105            | 5" CONCRETE SIDEWALK  | 5,400 | SF   | \$ 9.00       | \$ 48,600.00           |
| 6003                                | 655120            | DETECTABLE WARNING SURFACE FOR CURB RAMPS                   | 360   | SF   | \$ 40.00      | \$ 14,400.00           |
| 6004                                | 662182            | REMOVE AND RESET EXISTING TRAFFIC BARRIER W BEAM            | 300   | LF   | \$ 15.00      | \$ 4,500.00            |
| 6005                                | 600000            | QWICK KURB®   | 250   | LF   | \$ 100.00     | \$ 25,000.00           |
|                                     |                   | <b>CATEGORY 6 =</b>   |       |      |               | <b>\$ 97,300.00</b>    |
| <b>CATEGORY 7 - LANDSCAPING</b>     |                   |   |       |      |               |                        |
| 7001                                | 700000            | 12% OF CATEGORIES 2, 4, 5, & 6                              | 1     | LS   | \$ 159,701.74 | \$ 159,701.74          |
|                                     |                   | <b>CATEGORY 7 =</b>   |       |      |               | <b>\$ 159,701.74</b>   |
| <b>CATEGORY 8 - TRAFFIC</b>         |                   |   |       |      |               |                        |
| 8001                                | 800000            | UPGRADE SIGNAL LEG WITH APS/CPS                             | 8     | EA   | \$ 15,000.00  | \$ 120,000.00          |
|                                     |                   | <b>CATEGORY 8 =</b>   |       |      |               | <b>\$ 120,000.00</b>   |
| <b>SUBTOTAL</b>                     |                   |   |       |      |               | <b>\$ 2,475,600.62</b> |
|                                     |                   | 40% CONTINGENCY   |       |      |               | \$ 990,240.25          |
| <b>SUBTOTAL - NEAT CONSTRUCTION</b> |                   |   |       |      |               | <b>\$ 3,465,840.86</b> |
|                                     |                   | 14.4% OVERHEAD AND ADMINISTRATION                           |       |      |               | \$ 499,081.08          |
|                                     |                   | 15.0% UTILITY RELOCATIONS                                   |       |      |               | \$ 519,876.13          |
| <b>TOTAL PROJECT COST</b>           |                   |   |       |      |               | <b>\$ 4,484,798.08</b> |

## Appendix C Forest Conservation Area



January 23, 2017

- |  |  |
|--|--|
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #008000; border: 1px solid black;"></span> Forest Conservation Act Easements          | <span style="display: inline-block; width: 15px; height: 10px; background-color: #00FFFF; border: 1px solid black;"></span> Conservation Reserve Enhancement Program |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> DNR Owned Lands and Conservation Easements | <span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> Forest Legacy                            |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> DNR Owned Properties                       | <span style="display: inline-block; width: 15px; height: 10px; background-color: #DDA0DD; border: 1px solid black;"></span> Other                                    |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> DNR Owned Properties - Submerged           |  |



MD IMAP  
2014

Forest Conservation Act Easements 21704\_482 (Source: MERLIN)



[Appendix D](#)

**DNR Palustrine Wetlands**



# MERLIN Maryland's Environmental Resources and Land Information Network



July 25, 2017

State Boundary Mask

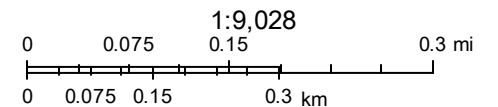
Lacustrine Riverine

Wetlands - Polygon - Department of Natural Resources

Marine

Estuarine

Palustrine



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey,

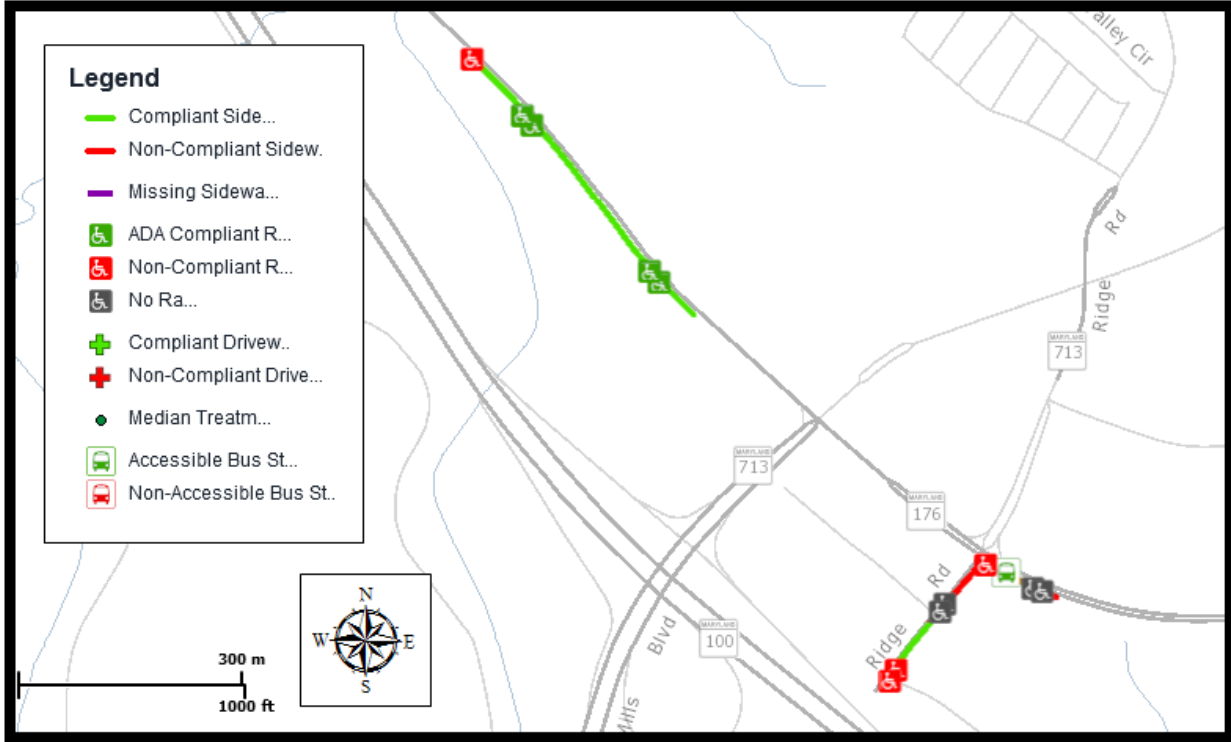


[Appendix E](#)

# ADA Compliance Map

MD 176 ADA Compliance

8/15/2017





## Appendix F

# Anne Arundel County Communication

From: Brian Ulrich <pzulri44@aacounty.org>

Date: Mon, Nov 21, 2016 at 11:41 AM

Subject: Re: AA1725279 MD 214, AA1785179 MD 173, AA1795179 MD 168, AA1805179 MD 424

To: Daniel Anderson <pwande85@aacounty.org>

Cc: Jared Paper-Evers <JPaperEvers@sha.state.md.us>, "Mayer, Jon" <pzmayer98@aacounty.org>, Bryon White <bwhite@sabra-wang.com>

I think the intent as it relates to 713 north of bass pro is to provide sidewalk and a safer walking experience where there is an existing worn path and people are already walking now.

So I understand the issue with crossing the free flow dual off ramp, however people are doing it now. It doesn't have to be there if we can't make it work there, but it needs to be somewhere if we want to provide a safe walking path. If you're asking if I want sidewalk on 713 north of 100 to 176 if we don't provide a safe crossing under the overpass, then no, I don't want to encourage a false sense of security and lead them to nothing. But again like I said people are walking it now so the intent would be to provide some improvement from what they have.

As far as 176 by itself, there is existing sidewalk along a development west of 713 that we would like to extend east to 713 and beyond. There is existing sidewalk on Ridge Road at 176 and Ashton Road at 176 which both extend northwards to a larger sidewalk system so we would like to extend the sidewalk on 176 for those reasons independent of 713. Additionally there are some transit facilities on 176 that need improvements and sidewalk leading to those as well.

See if the attached slides from a larger LDC presentation helps. As far as the LDC monies we'd have to check with them but I'd imagine they'd pay for whatever it took to get it built, we just have to justify everyone and make the case. If it's a high enough priority then they would fund it. We are working to develop a programmed out needs list to provide the LDC, so we need to work with you on that to make an effective sidewalk program for the area. We've also discussed the potential need for a multiuse path from the airport to Arundel Mills which would need some way to cross 100 whether via 713 or an over/underpass of the highway. Do you want to set up a meeting to discuss all these issues again?

Brian Ulrich, PE  
Transportation Planning Administrator  
Office of Planning & Zoning - Transportation Division  
Anne Arundel County  
2664 Riva Road  
Annapolis, MD 21401  
410-222-7711



On Mon, Nov 21, 2016 at 11:18 AM, Daniel Anderson <pwande85@aacounty.org> wrote:  
Jared,

See the attached concept plan. Either side of MD 713 would be acceptable. If the east side, would think a crossing across MD 713 from Pro Bass Drive is necessary. Is the east side feasible per the attached? If not, I'll let Brian and Jon respond regarding MD 176.

Daniel Anderson  
Engineer Manager, Transportation Engineering  
Anne Arundel County Department of Public Works  
Bureau of Engineering  
2662 Riva Road, MS-7301  
Annapolis, MD 21401  
Phone: (410) 222-7566

On Fri, Nov 18, 2016 at 3:49 PM, Jared Paper-Evers <JPaperEvers@sha.state.md.us> wrote:  
Dan,

Regarding MD 713, it doesn't appear to be feasible to provide a sidewalk connection under along MD 713 under MD 100 without crossing the two-lane off ramp from MD 100 EB to MD 713 SB. Is it your intent to make a pedestrian connection to MD 176 where there are no existing pedestrian facilities or to tie-in to the sidewalk at Bass Pro Drive which seems like a more logical terminus for pedestrian traffic? Also, if the connection along MD 713 can't be made to MD 176, is there still a purpose to provide sidewalk on the north side of MD 176 (which I presume is to get pedestrians from the business/industrial area to the businesses along MD 713)? The answers to these questions will help us to further evaluate whether these projects are reasonable and feasible under our New Sidewalk Construction Program.

Also, could clarify your intended use of the funding the County receives from Arundel Mills Live? Is this funding for construction/ROW/utilities or could it be put towards design as well?

Thanks,

Jared Paper-Evers, P.E.  
Transportation Engineer  
Office of Highway Development  
Maryland State Highway Administration  
707 N. Calvert Street, Mail Stop C-102  
Baltimore, MD 21202  
410-545-8400  
jpaperevers@sha.state.md.us

From: Daniel Anderson [mailto:pwande85@aacounty.org]  
Sent: Tuesday, October 18, 2016 9:25 AM  
To: Jared Paper-Evers <JPaperEvers@sha.state.md.us>



Cc: Ulrich, Brian <pzulri44@aacounty.org>; Jeffrey Folden <jfolden1@sha.state.md.us>; Sean  
Campion <SCampion@sha.state.md.us>

Subject: Re: AA1725279 MD 214, AA1785179 MD 173, AA1795179 MD 168, AA1805179  
MD 424

Sure.

MD 713, any missing sections between MD 176 to MD 175.

MD 176, north side, between Arundel Mills Blvd and Candlewood.

MD 175 is the highest priority of these 3.

Daniel Anderson  
Engineer Manager, Transportation Engineering  
Anne Arundel County Department of Public Works  
Bureau of Engineering  
2662 Riva Road, MS-7301  
Annapolis, MD 21401  
Phone: (410) 222-7566

On Mon, Oct 17, 2016 at 5:17 PM, Jared Paper-Evers <JPaperEvers@sha.state.md.us> wrote:  
Dan,

We will pull together the latest cost information for the subject projects and send to you shortly.  
Can you provide a more specific description/limits of the sidewalk you are requesting along MD  
713 and MD 176? We'll have to evaluate these locations as well as MD 175 to determine  
whether sufficient preliminary engineering funds are available to complete the design.

Thanks,

Jared Paper-Evers, P.E.  
Transportation Engineer  
Office of Highway Development  
Maryland State Highway Administration  
707 N. Calvert Street, Mail Stop C-102  
Baltimore, MD 21202  
410-545-8400  
jpaperevers@sha.state.md.us

From: Daniel Anderson [mailto:pwande85@aacounty.org]

Sent: Monday, October 17, 2016 1:48 PM

To: Jared Paper-Evers <JPaperEvers@sha.state.md.us>; William Gover  
<wgover@sha.state.md.us>; John Vranish <JVranish@sha.state.md.us>; Michael Fulk  
<MFulk@sha.state.md.us>; Beth Ann Larson <BLarson@sha.state.md.us>; Heather Hunt  
<HHunt@sha.state.md.us>; Conan Andrzejewski <CAndrzejewski@sha.state.md.us>; Dale  
Edwards <DEdwards4@sha.state.md.us>



Cc: Debra Russell <DRussell@sha.state.md.us>; Ulrich, Brian <pzulri44@aacounty.org>;  
Bodmann, Mark J. <mbodmann@wallacemontgomery.com>  
Subject: AA1725279 MD 214, AA1785179 MD 173, AA1795179 MD 168, AA1805179 MD  
424

Could you please send me the cost estimates for the subject projects, identifying the County's anticipated share, and the R/W \$ amount.

I received the revised MOU's from Dale for MD 424. John G, from our 9/12/2016 meeting, you were to provide us the plats for this one, and the MOU says the appraisals. Has SHA considered obtaining quit claims and / or rights of entries as method of cost containment in lieu fee simple R/W acquisition? The MOU also notes outreach during the design phase. Has this occurred? If not, it may be the opportune time to ask the adjacent community associations and / or property owners to relinquish their rights to the land that neither has clear title to.

Also, the County receives funding from the Arundel Mills Live casino that we'd like to use towards sidewalks along MD 713 and MD 176. Please initiate these designs, and initiate the design for a sidewalk along the south side of MD 175 from the Sappington Station roundabout to MD 170.

Let me know if questions / comments.

Daniel Anderson  
Engineer Manager, Transportation Engineering  
Anne Arundel County Department of Public Works  
Bureau of Engineering  
2662 Riva Road, MS-7301  
Annapolis, MD 21401  
Phone: (410) 222-7566

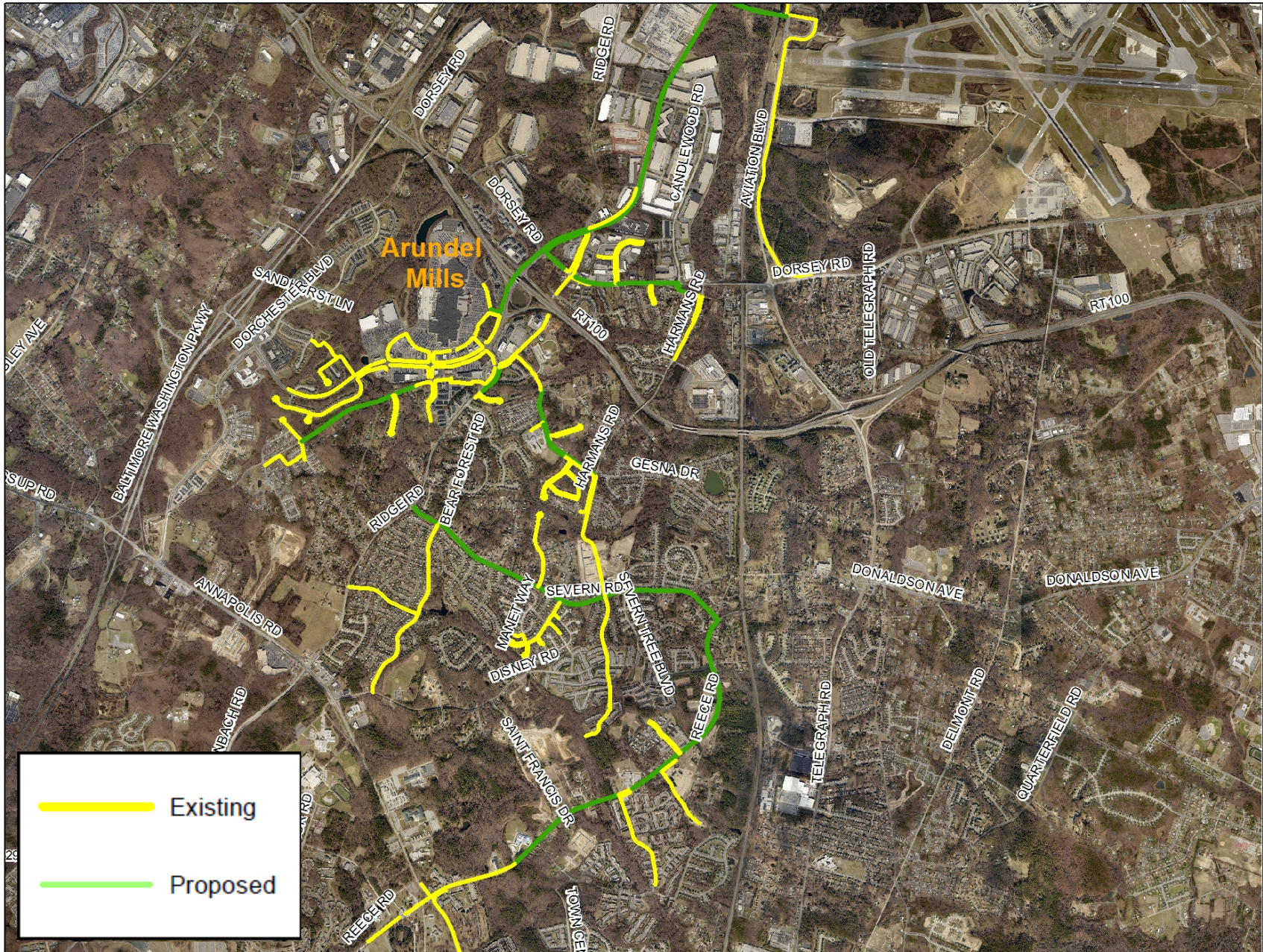


Appendix G

Existing and Requested Sidewalk

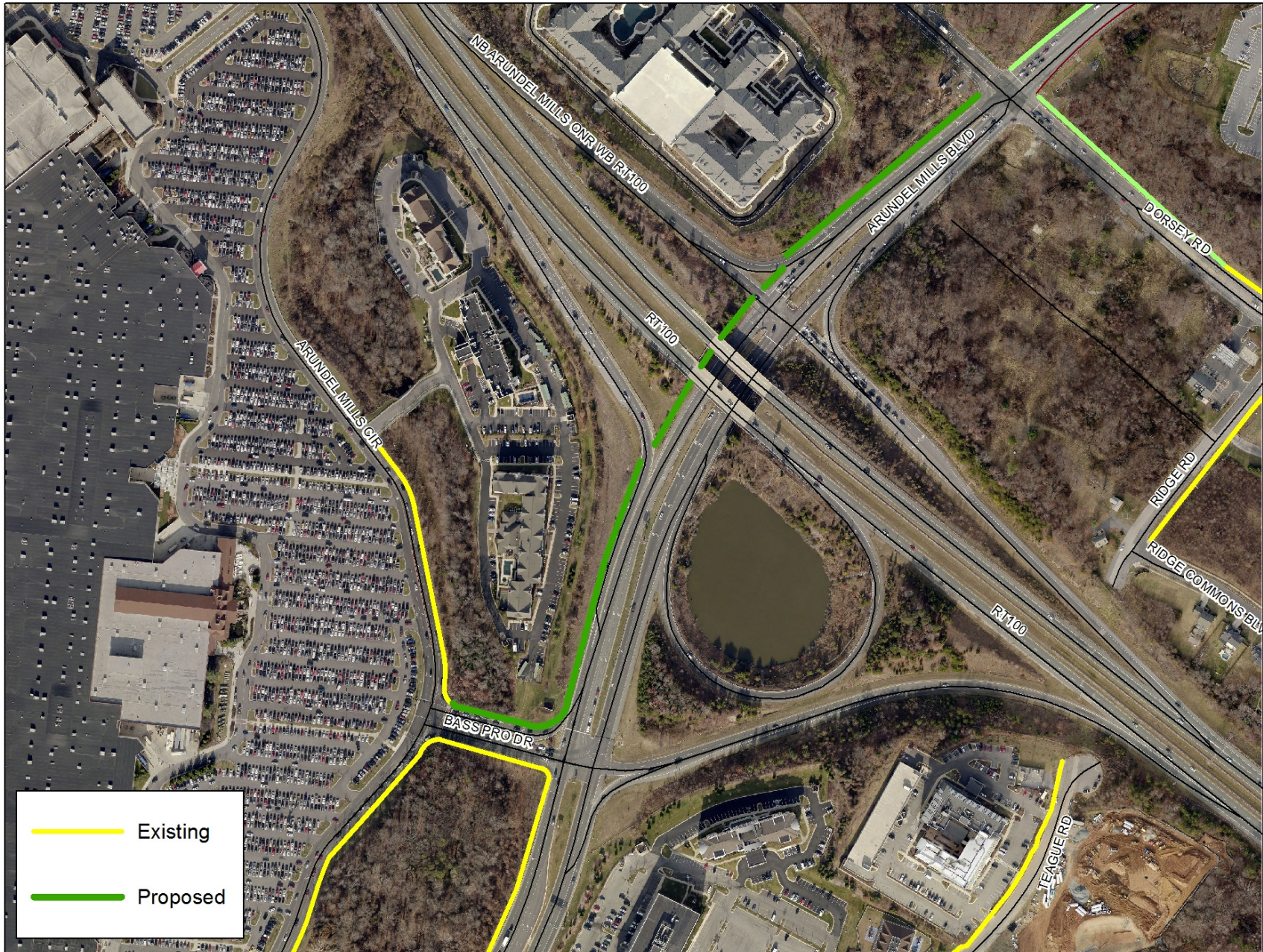


# Existing and Proposed Sidewalks



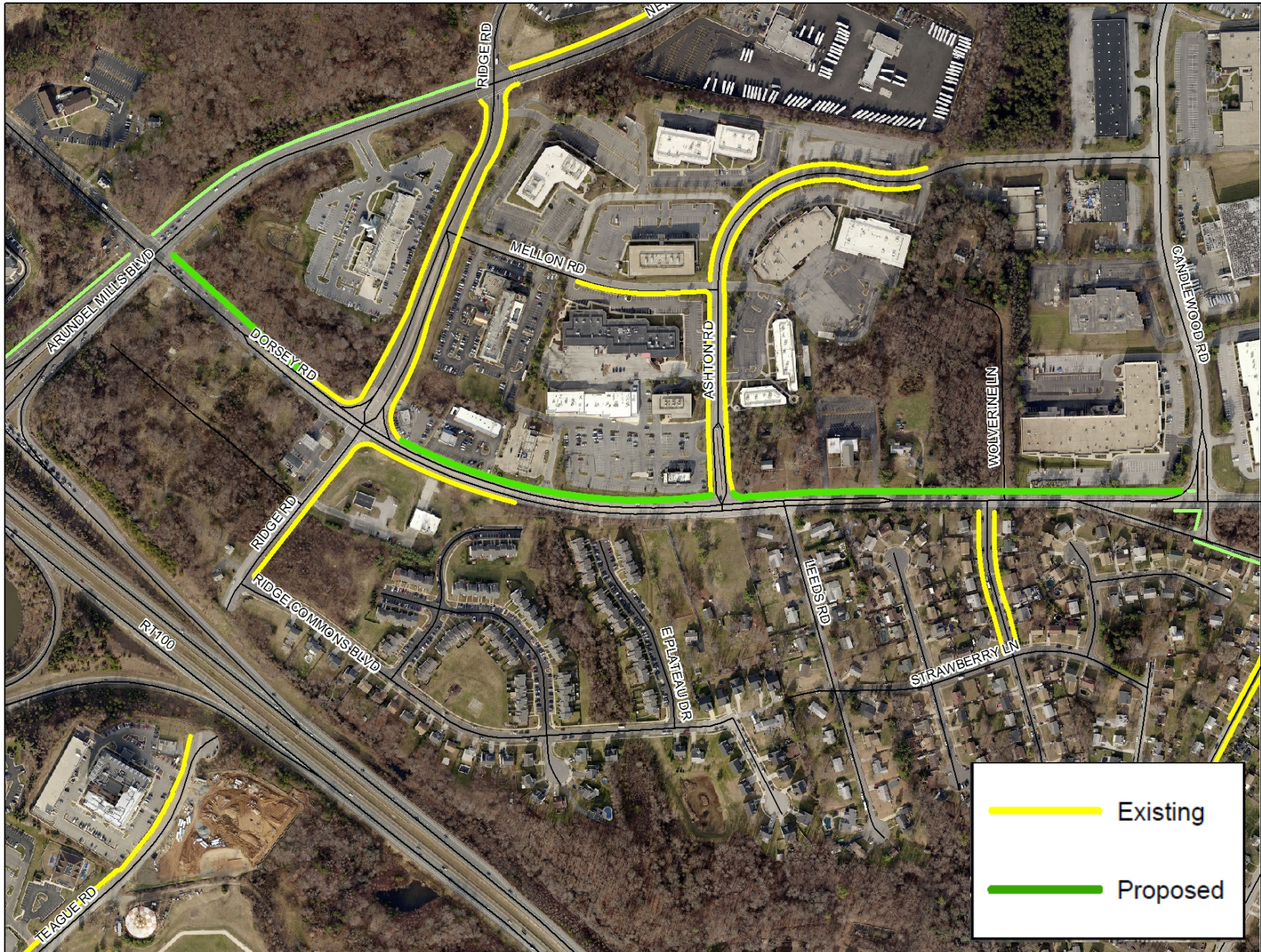


# MD Rte. 713 Ridge Road / Arundel Mills Boulevard / MD Rte. 176 Dorsey Road





# MD Rte. 176 Dorsey Road





# Dorsey Road/ Candlewood Ct/ Old Dorsey Road





[Appendix H](#)

2015 Anne Arundel County Highway Location Reference



HIGHWAY LOCATION REFERENCE

COUNTY: ANNE ARUNDEL  
DISTRICT: 5  
DATE: 12/31/15

**ROUTE NUMBER:** MD 175AA CONTINUED  
**INVENTORY DIRECTION:** NORTH  
**ROUTE NAME:** MAX BLOB PARK RD

| STATE SYSTEM    | FUNCTIONAL CLASS | MEDIAN TYPE  | ACCESS CONTROL | NHS     | MILEPOINT     | MILEPOINT DESCRIPTION  | MARKED LANES | SURFACE WIDTH/TYPE* | AADT |
|-----------------|------------------|--------------|----------------|---------|---------------|------------------------|--------------|---------------------|------|
| STATE SECONDARY | URB LOCAL        | NONE (UNDIV) | NONE           | NOT NHS | 00.020        | TRAFFIC SIGNAL         | 2            | 24I                 | 0    |
|                 |                  |              |                |         | 00.020 MD175  | ANNAPOLIS RD           |              |                     |      |
|                 |                  |              |                |         | 00.020 CO6947 | MILESTONE PKWY (AHEAD) |              |                     |      |

**ROUTE NUMBER:** MD 176  
**INVENTORY DIRECTION:** EAST  
**ROUTE NAME:** DORSEY RD

| STATE SYSTEM    | FUNCTIONAL CLASS | MEDIAN TYPE        | ACCESS CONTROL | NHS     | MILEPOINT     | MILEPOINT DESCRIPTION           | MARKED LANES | SURFACE WIDTH/TYPE* | AADT   |
|-----------------|------------------|--------------------|----------------|---------|---------------|---------------------------------|--------------|---------------------|--------|
| STATE SECONDARY | URB LOCAL        | NONE (UNDIV)       | NONE           | NOT NHS | 00.000        |                                 | 2            | 40I                 | 8,772  |
|                 |                  |                    |                |         | 00.000 CO6429 | DORSEY RD (BACK)                |              |                     |        |
|                 |                  |                    |                |         | 00.030 OP310  | ABRAHAM RD                      |              |                     |        |
|                 | URB COLL         |                    |                |         | 00.090        |                                 | 2            | 24I                 |        |
|                 |                  |                    |                |         | 00.090 MD100N | WRIGHT RD                       |              |                     |        |
|                 |                  |                    |                |         | 00.166        | MERCANTILE DR                   |              |                     |        |
|                 |                  |                    |                |         | 00.270        | STRUC #020050001 - PINEY RUN    |              |                     |        |
|                 |                  |                    |                |         | 00.310        |                                 | 2            | 34I                 |        |
|                 |                  |                    |                |         | 00.330        |                                 | 2            | 24I                 |        |
|                 |                  |                    |                |         | 00.330 CO6219 | AIRPORT 100 WAY                 |              |                     |        |
|                 |                  | PAINTED            |                |         | 00.434        |                                 |              |                     |        |
|                 |                  | CENTER TLA (UNDIV) |                |         | 00.494        |                                 |              |                     |        |
|                 |                  |                    |                |         | 00.494        | WINDSTREAM CIR                  |              |                     |        |
|                 |                  |                    |                |         | 00.656        | TRAFALGAR CIR                   |              |                     |        |
|                 |                  |                    |                |         | 00.750        | ST MARK UNITED METHODIST CHURCH |              |                     |        |
|                 |                  |                    |                |         | 00.760        |                                 | 3            | 36I                 |        |
|                 |                  | NONE (UNDIV)       |                |         | 00.770        |                                 |              |                     |        |
|                 |                  |                    |                |         | 00.860        |                                 |              |                     | 13,712 |
|                 |                  |                    |                |         | 00.860 CO5769 | NEW RIDGE RD                    |              |                     |        |
|                 |                  |                    |                |         | 00.860 MD713  | ARUNDEL MILLS BLVD              |              |                     |        |
|                 |                  |                    |                |         | 00.860        | TRAFFIC SIGNAL                  |              |                     |        |
|                 |                  | PAINTED            |                |         | 00.940        |                                 | 4            | 48I                 |        |
|                 |                  | NONE (UNDIV)       |                |         | 00.985        |                                 |              |                     |        |
|                 |                  |                    |                |         | 01.020        | SPUR FR RIDGE RD - SP177        |              |                     |        |
|                 |                  |                    |                |         | 01.040 MD713D | RIDGE RD                        |              |                     |        |

\*A,B = UNIMPROVED; C = GRADED & DRAINED; D,E = SOIL, GRAVEL, STONE; F,G = LOW TYPE BITUMINOUS  
H,I = HIGH TYPE BITUMINOUS; J = CONCRETE; K = BRICK; L = BLOCK



HIGHWAY LOCATION REFERENCE

COUNTY: ANNE ARUNDEL  
DISTRICT: 5  
DATE: 12/31/15

ROUTE NUMBER: MD 176 CONTINUED  
INVENTORY DIRECTION: EAST  
ROUTE NAME: DORSEY RD

| STATE SYSTEM    | FUNCTIONAL CLASS | MEDIAN TYPE        | ACCESS CONTROL | NHS     | MILEPOINT     | MILEPOINT DESCRIPTION                | MARKED LANES | SURFACE WIDTH/TYPE* | AADT   |
|-----------------|------------------|--------------------|----------------|---------|---------------|--------------------------------------|--------------|---------------------|--------|
| STATE SECONDARY | URB COLL         | NONE (UNDIV)       | NONE           | NOT NHS | 01.040 CO582  | RIDGE RD                             | 4            | 48I                 | 13,712 |
|                 |                  |                    |                |         | 01.040        | TRAFFIC SIGNAL                       |              |                     |        |
|                 |                  |                    |                |         | 01.050        | SPUR TO RIDGE RD - SP131             |              |                     |        |
|                 |                  |                    |                |         | 01.100        | ENT TO AA CO FIRE DEPT               |              |                     |        |
|                 |                  |                    |                |         | 01.100        | FIRE HOUSE SIGNAL                    |              |                     |        |
|                 |                  |                    |                |         | 01.140        | SPEED LIMIT 45 MPH                   |              |                     |        |
|                 |                  | PAINTED            |                |         | 01.170        |                                      |              |                     |        |
|                 |                  | NONE (UNDIV)       |                |         | 01.215        |                                      |              |                     |        |
|                 |                  | PAINTED            |                |         | 01.290        |                                      |              |                     |        |
|                 |                  |                    |                |         | 01.290 CO4157 | ASHTON RD                            |              |                     |        |
|                 |                  | CENTER TLA (UNDIV) |                |         | 01.330        |                                      |              |                     |        |
|                 |                  |                    |                |         | 01.330 CO924  | LEEDS RD                             |              |                     |        |
|                 |                  |                    |                |         | 01.360        | WESLEY GROVE UNITED METHODIST CHURCH |              |                     |        |
|                 |                  | NONE (UNDIV)       |                |         | 01.400        |                                      | 4            | 50I                 |        |
|                 |                  |                    |                |         | 01.460 CO4620 | SANDALWOOD CT                        |              |                     |        |
|                 |                  |                    |                |         | 01.480        | WOLVERINE LA                         |              |                     |        |
|                 |                  |                    |                |         | 01.530 CO4913 | OLD DORSEY RD                        |              |                     |        |
|                 |                  |                    |                |         | 01.590        | SPUR FR CANDLEWOOD RD - SP276        |              |                     |        |
|                 |                  |                    |                |         | 01.610 CO4158 | CANDLEWOOD RD                        |              |                     |        |
|                 |                  |                    |                |         | 01.610        | TRAFFIC SIGNAL                       |              |                     |        |
|                 |                  |                    |                |         | 01.610        | SPUR FR OLD DORSEY RD                |              |                     |        |
|                 |                  |                    |                |         | 01.620        | SPUR TO CANDLEWOOD RD                |              |                     |        |
|                 |                  | PAINTED            |                |         | 01.690        |                                      | 4            | 48I                 |        |
|                 |                  | NONE (UNDIV)       |                |         | 01.730        |                                      | 4            | 50I                 |        |
|                 |                  |                    |                |         | 01.730 CO585  | SHIPLEY AVE                          |              |                     |        |
|                 |                  |                    |                |         | 01.730 CO928  | HARMANS RD                           |              |                     |        |
|                 |                  |                    |                |         | 01.730        | TRAFFIC SIGNAL                       |              |                     |        |
|                 |                  | PAINTED            |                |         | 01.800        |                                      | 4            | 48I                 |        |
|                 |                  |                    |                |         | 01.810        | DRAINAGE #02338X0 STONEY RUN         |              |                     |        |
|                 |                  | NONE (UNDIV)       |                |         | 01.870        |                                      |              |                     |        |
|                 |                  |                    |                |         | 01.930        | R/R #ATK 529 605 6                   |              |                     |        |
|                 |                  |                    |                |         | 01.930        | STRUC #020051001                     |              |                     |        |
|                 |                  | PAINTED            |                |         | 02.010        |                                      |              |                     |        |

\*A,B = UNIMPROVED; C = GRADED & DRAINED; D,E = SOIL, GRAVEL, STONE; F,G = LOW TYPE BITUMINOUS  
H,I = HIGH TYPE BITUMINOUS; J = CONCRETE; K = BRICK; L = BLOCK



HIGHWAY LOCATION REFERENCE

COUNTY: ANNE ARUNDEL  
DISTRICT: 5  
DATE: 12/31/15

ROUTE NUMBER: MD 176 CONTINUED  
INVENTORY DIRECTION: EAST  
ROUTE NAME: DORSEY RD

| STATE SYSTEM    | FUNCTIONAL CLASS | MEDIAN TYPE             | ACCESS CONTROL | NHS     | MILEPOINT     | MILEPOINT DESCRIPTION           | MARKED LANES | SURFACE WIDTH/TYPE* | AADT   |
|-----------------|------------------|-------------------------|----------------|---------|---------------|---------------------------------|--------------|---------------------|--------|
| STATE SECONDARY | URB COLL         | PAINTED<br>NONE (UNDIV) | NONE           | NOT NHS | 02.010 MD645D | OLD DORSEY RD                   | 4            | 48I                 | 13,712 |
|                 |                  |                         |                |         | 02.030        |                                 |              |                     |        |
|                 |                  |                         |                |         | 02.050        | SPUR TO MD 170 - SP92           |              |                     |        |
|                 |                  |                         |                |         | 02.050        | SPUR FR MD 170 - SP248          |              |                     |        |
|                 | URB MINOR ART    |                         |                |         | 02.070        |                                 |              |                     | 18,105 |
|                 |                  |                         |                |         | 02.070 MD170  | AVIATION BLVD                   |              |                     |        |
|                 |                  |                         |                |         | 02.070        | TRAFFIC SIGNAL                  |              |                     |        |
|                 |                  |                         |                |         | 02.100        | SPUR FR MD 170 - SP246          |              |                     |        |
|                 |                  | CENTER TLA (UNDIV)      |                |         | 02.118        |                                 |              |                     |        |
|                 |                  |                         |                |         | 02.150        | SPEED LIMIT 50 MPH              |              |                     |        |
|                 |                  |                         |                |         | 02.200 MD170A | MD 170 SPUR                     |              |                     |        |
|                 |                  |                         |                |         | 02.300 CO586  | HAWKINS DR                      |              |                     |        |
|                 |                  |                         |                |         | 02.420 CO594  | MULBERRY RD                     |              |                     |        |
|                 |                  |                         |                |         | 02.460 CO595  | KELLY LA                        |              |                     |        |
|                 |                  |                         |                |         | 02.510 CO596  | LOCUST DR                       |              |                     |        |
|                 |                  | NONE (UNDIV)            |                |         | 02.710        |                                 |              |                     |        |
|                 |                  |                         |                |         | 02.710 MD652  | OLD TELEGRAPH RD                |              |                     |        |
|                 |                  |                         |                |         | 02.730        |                                 | 4            | 60I                 |        |
|                 |                  |                         |                |         | 02.730        | SPUR FR MD 652 - SP272          |              |                     |        |
|                 |                  | PAINTED                 |                |         | 02.770        |                                 | 4            | 48I                 |        |
|                 |                  | NONE (UNDIV)            |                |         | 02.830        |                                 |              |                     |        |
|                 |                  |                         |                |         | 02.850        | SPUR TO CONNELLEY DR - SP270    |              |                     |        |
|                 |                  |                         |                |         | 02.870        | TRAFFIC SIGNAL                  |              |                     |        |
|                 |                  |                         |                |         | 02.870 CO4924 | CONNELLEY DR                    |              |                     |        |
|                 |                  |                         |                |         | 02.880        | SPUR FR CONNELLEY DR - SP340    |              |                     |        |
|                 |                  | PAINTED                 |                |         | 02.930        |                                 |              |                     |        |
|                 |                  | NONE (UNDIV)            |                |         | 02.980        |                                 |              |                     |        |
|                 |                  |                         |                |         | 02.980        | TRAFFIC DR (ENT TO SHA HANOVER) |              |                     |        |
|                 |                  | CENTER TLA (UNDIV)      |                |         | 03.020        |                                 |              |                     |        |
|                 |                  | NONE (UNDIV)            |                |         | 03.260        |                                 |              |                     |        |
|                 |                  |                         |                |         | 03.260 CO5322 | MCCORMICK DR                    |              |                     |        |
|                 |                  |                         |                |         | 03.260        | TRAFFIC SIGNAL                  |              |                     |        |
|                 |                  | PAINTED                 |                |         | 03.321        |                                 |              |                     |        |

\*A,B = UNIMPROVED; C = GRADED & DRAINED; D,E = SOIL, GRAVEL, STONE; F,G = LOW TYPE BITUMINOUS  
H,I = HIGH TYPE BITUMINOUS; J = CONCRETE; K = BRICK; L = BLOCK