



**Dedicated but Unmaintained Roads (DBU)  
Program  
CIP No. 501117**

***Bryan Avenue Improvement***



**December 15, 2025**

**Montgomery County Department of Transportation  
Division of Transportation Engineering**

**100 Edison Park Drive, Fourth Floor  
Gaithersburg, Maryland 20878**

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## **I. INTRODUCTION**

Montgomery County Department of Transportation (MCDOT), Division of Transportation Engineering, received a majority-signed petition from residents on Bryan Avenue in Gaithersburg requesting the roadway to be evaluated for improvement under the Dedicated But Unmaintained (DBU) program.

The DBU portion of Bryan Avenue is currently an unpaved segment to the south of Wilson Street. The road improvement project will include design and construction of roadway pavement, storm drain system, and to bring the roadway up to current County standards.

This report was prepared for residents along Bryan Avenue and describes an overview of the DBU program, the existing conditions of Bryan Avenue, conceptual design, project schedule, and a preliminary cost estimate for the project.

## **II. BACKGROUND**

### **1. Background of DBU Policy**

The following is a chronological order for the establishment of the Dedicated but Unmaintained County Roads (DBU) policy:

- The County Council appropriated funds in FY08 Capital Budget for developing the DBU policy.
- July 2007-June 2008 (FY08) - Community stakeholders and representatives from the County met periodically and developed the policy.
- September 2009 - the County Executive transmitted a draft policy to the County Council.
- October 2009 – County Council Transportation and Environment (T&E) Committee reviewed and commented on the draft policy.
- December 2009 - the DBU Policy was adopted.
- January 2010 - The County Executive recommended the Capital Improvement Program (CIP) budget for the DBU program.
- May 2010 - The County Council approved CIP for the DBU program.

- November 2015 – Amended policy was approved via Council Resolution 18-321.

## **2. Background of DBU Roads and Public Information**

MCDOT compiled the list of DBU roads from a report by Montgomery County Civic Federation and the County’s inventory utilizing the latest State Highway Administration (SHA) MAARS Report, Geographic Information System (GIS) map/aerial photos, existing subdivision plats, existing deeds, and status of the County maintenance by the County’s depots. As a result of the research, a total of sixty-five (69) roads and ten (10) alleys within the County have been identified as the DBU roads. The list is included in Appendix A.

In 2010, as required by the DBU policy, two public information meetings were held for the property owners who reside adjacent to the identified DBU roads. The two public information meetings were held to provide every affected property owner with an opportunity to attend one of the public information meetings to understand the program and address any of their concerns regarding the program. The meetings were held on September 22, 2010, and October 12, 2010. The deadline for DBU application was set for December 31, 2010.

The DBU program divides into the following four categories:

1. Self-Build/Self Maintain
2. Self-Build/County Maintain
3. County Build/County Maintain
4. No Build (Do Nothing)

## **3. Background Information of Bryan Avenue Application**

On August 29, 2025, MCDOT received a petition from affected property owners (APOs) with a majority vote requesting an evaluation for the entirety of Bryan Avenue for improvement under the DBU program. Four of the five properties are owned by the same individual. This has initiated efforts to analyze the potential impact, feasibility, and costs to complete this project.

## **III. EXISTING CONDITION**

This preliminary evaluation was developed using GIS aerial photo, database research, and coordination with various utility companies. MCDOT also conducted a field investigation on September 3, 2025, to review actual field conditions.

## **1. Roadway**

The existing roadway of Bryan Ave is paved from MD 117 (West Diamond Ave) to Wilson St. Bryan Ave is unpaved from and including Wilson St, to the dead end. The existing 350' long, and between 14-foot to 18-foot wide dirt road has no established edge of pavement that separates it from the existing curbed parking lot for the residents of the Londonberry Apartments complex. The owner of the lots along the unpaved road has hired a private third party to survey the property limits. There are signs of earthwork to the east of the affected properties adjacent to some of the Londonberry Apartment buildings, behind lots 405, 407, 409, and 411 Bryan Ave. Overhead utility lines and utility poles run along the east side of Bryan Ave, with significant major trees lining either side of the road.

*Starting Project Limit on Bryan Avenue  
Looking South from Wilson St*



*Existing Condition of Bryan Avenue*



## **2. Drainage**

With Bryan Ave not being maintained by the County and due to the age of the road, MCDOT was not able to obtain sufficient data regarding a stormwater management plan and cannot accurately describe the present condition of drainage along the roadway.

Field visits showed that the current dirt road drains downhill from the dead end towards MD-117 and drains into Draft Branch. As-Builts from the 1960s list two future 15-inch storm drains, but were not verified in the field. An inlet along MD-117 confirms an existing storm drain network in the area, although we cannot confirm at this time whether it is connected to Bryan Ave.

## **3. Utilities**

There are three utility poles along the east side of Bryan Ave. The owners of the overhead utility lines on each of the poles are unknown. As-builts from the 1960s show that there is an existing 24" water line running along the entire length of Bryan Ave. The house at 401 Bryan Ave is an active residence and is assumed to receive water service from the 24" water main. Depending on the material of the pipe, and/or the existing service connection to 401 Bryan Ave, the service connections to the lots at 405-411 Bryan Ave will incur additional costs at the expense of the property owner. The as-built also notes *future storm drains* but were not verified during the field visit.

A sewer manhole was noted near the existing creek during the field visit, but further investigation is required to verify the limits of the existing sewer line.

## **4. Trees**

There are approximately a total of 100 major trees lining either side of Bryan Ave that will require removal and/or replanting.

## **5. Streetlights**

There are no streetlights in existing conditions. Streetlights will be added to the utility poles, and a photometric analysis will be required to ensure the road is adequately lit.

# **IV. CONCEPTUAL DESIGN**

## **1. Roadway**

A geotechnical report will be needed during the design phase. Based on the GIS soil data, two cores will be needed to properly identify the existing soil characteristics. This data will inform if the existing subgrade is sufficient to prevent pavement failure or if stabilization is needed. It is critical to have

stabilized subgrade to support the base and asphalt pavement. A GIS map of existing soil data is shown in Appendix C.

Due to various constraints along the roadway and to minimize impacts to existing features, MCDOT proposes two options for the configuration of the roadway. This can be seen as Typical Sections in Appendix E.

Option 1 is to provide an open section design, that lines either side of the proposed road with open ditches. This will be less invasive and require less grading in order to level the road with the drainage ditches.

Option 2 is to provide a closed section design, that lines a curb and gutter along both sides of the road. This option would require a greater area of disturbance in order to grade the curb and gutter into the existing ground. The majority of the additional cost would be due to the additional storm drain network that would be required to redirect drainage to the existing creek.

Option 1 is the recommended alternative due to the significant additional costs incurred from option 2.

## **2. Stormwater Management & Drainage**

MCDOT will coordinate the Department of Permitting Services to determine the best approach to manage stormwater runoff for this improvement project.

The current proposed stormwater design would route the drainage from the proposed road to the side ditches through new storm drains to a stormwater management facility proposed at the current lots at 309 and 315 Bryan Ave. Refer to Appendix F for the plan view. From the micro bioretention facility, the runoff would outfall just upstream of the existing stream. The footprint of the micro bioretention facility would require additional property acquisition.

## **3. Utilities**

Based on GIS data and field observation, MCDOT does not anticipate the relocation of any utility poles. However, this may change as further information is obtained during the design phase. MCDOT will coordinate closely with PEPCO and other utilities to determine if any relocations will be needed.

## **4. Trees**

Trees within the project limit will need to be removed to provide sufficient room for drainage. Our field visit found approximately one hundred (100) trees will be affected. Note that this would change as more information is obtained during design.

The removal of the trees would require coordination with the Maryland National Capital Park and Planning Commission, Montgomery Planning, in order to receive approval for Forest Conservation Plan (FCP). As part of a potential FCP, it is possible that the APOs would be subject to additional fees in lieu to offset the significant number of mature trees that would need to be cleared.

**V. PROJECT SCHEDULE**

The following is a tentative schedule assuming the County Executive and the County Council will approve funding for Bryan Avenue Improvement in the upcoming CIP budget request for FY29 – FY34; the budget request cycle has been finalized for FY27-FY32, and therefore the funding request for this DBU would have to be processed for FY29-FY34. Note that the County’s Fiscal Year starts on July 1 of the calendar year.

Phase	Duration	Starting Date	Ending Date
Design	15 months	Summer 2029	Fall 2030
Property Acquisition	9 months	Fall 2030	Summer 2031
Construction	9 months	Fall 2031	Summer 2032

**VI. PROJECT COST ESTIMATE**

MCDOT has derived a total project cost to include design, property acquisition, and construction. Cost for design includes the geotechnical report, permits for stormwater management and erosion control, forest conservation plan, topographic survey, and engineering design. The breakdown can be seen in **Appendix H & I**.

The open section roadway will cost **\$805,892.91**. This cost includes 3% inflation costs per year for 3 years until the project funding is potentially approved for fiscal budget FY29-34. The County will contribute 10%, or \$80,589.29, to the total project cost. The remaining 90%, or \$725,303.62 of the project cost will be evenly divided amongst the five (5) APOs. Therefore, each APO will be responsible for paying a total of \$145,060.72 over 20 years, billed through property taxes. Each APO will have an option to pay in a lump sum, or as installments through property tax. Payments through installments will result an additional \$7,253.04 property tax burden every year, for 20 years, and subject to interest.

The curb and gutter section roadway will cost **\$900,162.23**. The County’s 10% contribution is \$90,016.22. The APO responsibility is \$810,146.00. The lump sum total for each APO is \$162,029.20. If paid in installments, the annual property tax burden would be \$8,101.46 for 20 years, subject to interest.

For the lots located at 405-411 Bryan Ave, an additional cost of approximately \$40,000 per lot to connect to the WSSC watermain. and, assuming sewer line exists in the project area, sewer service. This assumes no additional work would be required to connect these properties to the utilities. This fee would be paid by the APO to WSSC and would establish a connection up to the property limit; the connection from the public right of way to the building would be the responsibility of the property owner. The permitting process would take roughly 3 months for approval, and would be subject to WSSC scheduling availability to do the work. The total cost for the APO for the lots at 405, 407, 409, and 411 Bryan Ave are below.

Open Section Roadway Design

For the total project cost to be split by all APOs:

<b>Open Section Roadway</b>	
Design	\$ 145,000.00
Land Acquisition	\$ 42,943.67
Construction Management	\$ 166,000.00
Construction Cost	\$ 383,562.51
<b>Total Project Cost (FY26)</b>	<b>\$ 737,506.18</b>
<b>Projected Total Project Cost (FY29)</b>	<b>\$ 805,892.91</b>

County's Participation (10% Project Cost):

Projected Total Project Cost (FY29) \* 0.10 =  
\$80,589.29

Total APO Responsibility (90% Project Cost):

Projected Total Project Cost (FY29) \* 0.90 =  
\$725,303.62

Responsibility per APO:

Projected Total Project Cost (FY29) / 5 APOs =  
\$145,060.72

Annual Property Tax Increase per lot (for 20 years):

Responsibility per APO / 20 years =  
\$7,253.04 (plus interest)

For 405, 407, 409, and 411 Bryan Ave, including the water and sewer main connections, the costs are:

<b>405-411 Bryan Ave</b>	
WSSC Water and Sewer Connection per lot	\$ 40,000.00
APO Responsibility per lot	\$ 145,060.72
Total Cost per lot (Lump Sum)	\$ 185,060.72
<b>Total Cost for 405, 407, 409, 411 Bryan Ave</b>	<b>\$ 740,242.90</b>

Closed Section (Curb and Gutter) Design

For the total project cost to be split by all APOs:

<b>Curb and Gutter Roadway</b>	
Design	\$ 145,000.00
Land Acquisition	\$ 42,943.67
Construction Management	\$ 166,000.00
Construction Cost	\$ 469,832.29
<b>Total Project Cost (FY26)</b>	<b>\$ 823,775.95</b>
<b>Projected Total Project Cost (FY29)</b>	<b>\$ 900,162.23</b>

County’s Participation (10% Project Cost):

Projected Total Project Cost (FY29) \* 0.10 =  
\$90,016.22

Total APO Responsibility (90% Project Cost):

Projected Total Project Cost (FY29) \* 0.90 =  
\$810,146.00

Responsibility per APO:

Projected Total Project Cost (FY29) / 5 APOs =  
\$162,029.20

Annual Property Tax Increase per lot (for 20 years):

Responsibility per APO / 20 years =  
\$8,101.46 (plus interest)

For 405, 407, 409, and 411 Bryan Ave, including the water and sewer main connections, the costs are:

<b>405-411 Bryan Ave</b>	
WSSC Water and Sewer Connection per lot	\$ 40,000.00
APO Responsibility per lot	\$ 162,029.20
Total Cost per lot (Lump Sum)	\$ 202,029.20
<b>Total Cost for 405, 407, 409, 411 Bryan Ave</b>	<b>\$ 808,116.80</b>

# **APPENDIX A**

## **List of DBU Roads**

**DBU List**

7/31/2025

No.	Road Name	Starting Point (Miles)	Ending Point (Miles)	Total (Miles)	Town
1	3rd AVE	GEORGIA AVE	0.05	0.05	OLNEY
2	AITCHESON LA	0.22 (North of Riding Stable Road)	0.70	0.48	LAUREL
3	ANCHORAGE DR	MACARTHUR BLVD	0.13	0.13	BETHESDA
4	ANCHORAGE PL.	BOLLING LA	ANCHORAGE DR/.08	0.08	BETHESDA
5	ANDERSON ST.	0.1 (Northwest of Octagon Lane)	0.18	0.08	SILVER SPRING
6	ARDWICK DR	GOLF LA.	WAYCROFT WAY/.22	0.22	ROCKVILLE
7	ATTLEBORO RD	NORWOOD RD	DUXBURY DR/0.25	0.25	SILVER SPRING
8	AUTH LA	0.09 (South of Hermleigh Road)	0.13	0.04	SILVER SPRING
9	BELFAST PL	KINGSGATE RD	0.15	0.15	POTOMAC
10	BELLE COTE DR	KRUHM RD	0.42	0.42	BURTONSVILLE
11	BENNETT ROAD	WOODWELL RD	ALDERTON LN	0.08	WHEATON
12	BENTLEY RD	0.36 (North of Olney Sandy Spring Road)	0.50	0.14	OLNEY
13	BIRCHCREST LA	FREDERICK RD	0.22	0.22	CLARKSBURG
14	BISHOP DR	WINTHROP DR	0.05	0.05	SILVER SPRING
15	BLANTON RD	GOOD HOPE RD	0.15	0.15	SILVER SPRING
16	BOLLING LA	ANCHORAGE DR	ANCHORAGE PL./0.11	0.11	BETHESDA
17	BRATTON DR	SUNSET DR	BRATTON CT/0.09	0.09	ROCKVILLE
18	BROOKS RD	RIDGE DR	KIRK LA/0.15	0.15	ROCKVILLE
19	CARNAGIE AVE	NEEDWOOD RD	0.12	0.12	DERWOOD
20	CINDY LA	SEVEN LOCKS RD	0.08	0.08	BETHESDA
21	CIRCLE DR	RIDGE DR/0.68	GLEN MILL RD/1.02	0.34	ROCKVILLE
22	CLOVER LA	PERSIMMON TREE RD	0.06	0.06	POTOMAC
23	CREST HILL LA	0.22 (South of Briggs Chaney Road)	0.51	0.29	SILVER SPRING
24	CROWFOOT LA	COPLEY LA	0.09	0.09	SILVER SPRING
25	DOMINION DR	0.2 (North of Olney Sandy Spring Road)	0.25	0.05	SANDY SPRING
26	DUXBURY RD	ATTLEBORO RD	0.14	0.14	SILVER SPRING
27	ECKMOOR RD	ELDRID DR	0.05	0.05	SILVER SPRING
28	EMORY ST	MUNCASTER MILL RD	0.07	0.07	GAITHERSBURG
29	EMORY CHURCH RD	NORBROOK DR	0.13	0.13	OLNEY
30	ERSKINE AVE	GLENALLAN AVE	WALLACE AVE/0.10	0.10	SILVER SPRING
31	FRASER AVE	MONTGOMERY ST	LINDEN LA	0.11	SILVER SPRING
32	GARDNER PL	CHAPELGATE RD	0.11	0.11	GERMANTOWN
33	GARY RD	0.31 (North of River Road)	0.35	0.04	POTOMAC
34	GOLF LA	MIDDLESHIRE PL/0.10	0.28	0.18	ROCKVILLE
35	HAW LA	EDNOR RD	0.21	0.21	SILVER SPRING

36	HAWHILL END	WILDEN LA/.07	0.13	0.06	POTOMAC
37	HEIL RD	NEW HAMPSHIRE AVE	0.15	0.15	SILVER SPRING
38	HILLSDALE DR	HILLSDALE DR/.06	0.10	0.04	KENSINGTON
39	KINGSGATE RD	ROCK RUN DR	0.15	0.15	POTOMAC
40	KIRK LA	BROOK RD	0.04	0.04	OLNEY
41	LAUX ST	ROSEMERE AVE	0.03	0.03	SILVER SPRING
42	LEEWARD PL	MACARTHUR BLVD	0.05	0.05	BETHESDA
43	LONG BRANCH PKWY	DEARBORN AVE	0.06	0.06	SILVER SPRING
44	MAPLE RIDGE CT	HOLLY RIDGE ROAD	0.15	0.15	ROCKVILLE
45	MARTIN AVE	ARCOLA AVE	0.08	0.08	WHEATON
46	MERRICK RD	WILSON LA	0.13	0.13	BETHESDA
47	MOULTRIE PKWY	LOGAN DR	0.06	0.06	POTOMAC
48	MT EVEREST LA	NORBECK ROAD	0.42	0.42	SILVER SPRING
49	Oaklawn Drive	AVENELL RD	0.15	0.15	SILVER SPRING
50	OLD ORCHARD RD	0.38 (South of Ednor Road)	0.52	0.14	SILVER SPRING
51	OLNEY LA	BREADY RD	0.26	0.26	OLNEY
52	ORANGE DRIVE	INIVERSITY BLVD	0.04	0.04	SILVER SPRING
53	OVERHILL RD	GARRETT RD	0.21	0.21	DERWOOD
54	PEMBROKE RD	BRADLEY RD	0.14	0.14	BETHESDA
55	POE RD	0.12 (South of Bradley Blvd)	0.16	0.04	BETHESDA
56	RADNOR RD	SPUR TO DURBIN RD	0.02	0.02	BETHESDA
57	SILVERWOOD LA	MARYLAND AVE	0.21	0.21	BETHESDA
58	STONE RD	KIRK LA	0.09	0.09	OLNEY
59	SUNCREST AVE	FREDERICK RD	0.18	0.18	CLARKSBURG
60	UNITY LA	GLEN MILL RD	0.31	0.31	POTOMAC
61	UNNAMED RD	BRYANTS NURSERY RD	NORBECK RD	0.30	SILVER SPRING
62	UPLAND DR	GOOD HOPE RD	0.17	0.17	SILVER SPRING
63	WAYCROFT WAY	GOLF LA	0.27	0.27	ROCKVILLE
64	WILLOW LA	PINETREE ROAD	0.25	0.25	ROCKVILLE
65	WINDSWEPT LA	NEW HAMPSHIRE AVE	0.67	0.67	BRINKLOW
66	WINDWARD PLACE	MACARTHUR BLVD	0.07	0.07	BETHESDA
67	WINNPENNY LA	CAPE MAY RD	0.07	0.07	SILVER SPRING
68	WINTHROP DR	PIPING ROCK DR	BISHOP RD	0.06	SILVER SPRING
69	WISCASSET RD	MOHICAN RD	0.07	0.07	BETHESDA
70	ALLEY	BALTIMORE AVE	NEWPORT AVE	0.10	BETHESDA
71	ALLEY	PIERCE DR	EASTMOOR DR	0.12	SILVER SPRING
72	ALLEY	RIDGEMOOR DR	RIDGEMOOR DR	0.09	SILVER SPRING
73	ALLEY	NEWBURN DR	NEWBURN DR	0.11	BETHESDA
74	ALLEY	BAYARD BLVD	ALLAN RD	0.04	BETHESDA
75	ALLEY	EARLSTON DR	WESTWAY DR	0.09	BETHESDA
76	ALLEY	ALLEY	CHELTENHAM DR	0.08	BETHESDA
77	ALLEY	RIVER RD	MERIVALE RD	0.10	BETHESDA
78	ALLEY	BERKLEY ST	LEROY PL	0.16	BETHESDA
79	ALLEY	WESTWAY DR	EARLSTON DR	0.19	BETHESDA

# **APPENDIX B**

**Petition Submitted by the Bryan Avenue APOs**

# Petition

Date: 8/29/2025

## COUNTY BUILD / COUNTY MAINTAIN REQUEST FOR CIP FUNDS

### DBU PORTION OF BRYAN AVENUE GAITHERSBURGB MD 20877

(Specifically 401, 405, 407, 409 & 411 Bryan Avenue Gaithersburg MD 20877)

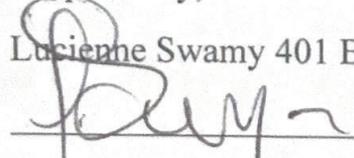
This petition signed by the (APO) affected property owners of the (DBU) dedicated but unbuilt portion of Bryan Avenue Gaithersburg MD 20877 is for a study and associated cost estimate to bring this portion of Bryan Avenue up to Montgomery County MD road standards, and to transfer maintenance of this portion of Bryan Ave to Montgomery County MD MCDOT.

The affected owner(s) are aware that the associated cost of improvements would be assessed to the affected property owners should they elect to proceed with the improvements. This cost could be absorbed by way of a special property tax assessment over 20 years to the owner(s) property tax bill. It is further understood that the owners will have to decide whether they want to proceed after receiving the results of the study and cost estimate from MCDOT.

Looking forward to receiving the cost estimate and study results in a timely manner from Montgomery County MD MCDOT.

Respectfully,

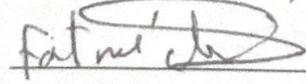
Lucienne Swamy 401 Bryan Avenue

 Date 8/29/2025

Michael Chehab 405, 407, 409 & 411 Bryan Avenue

 Date 8/29/2025

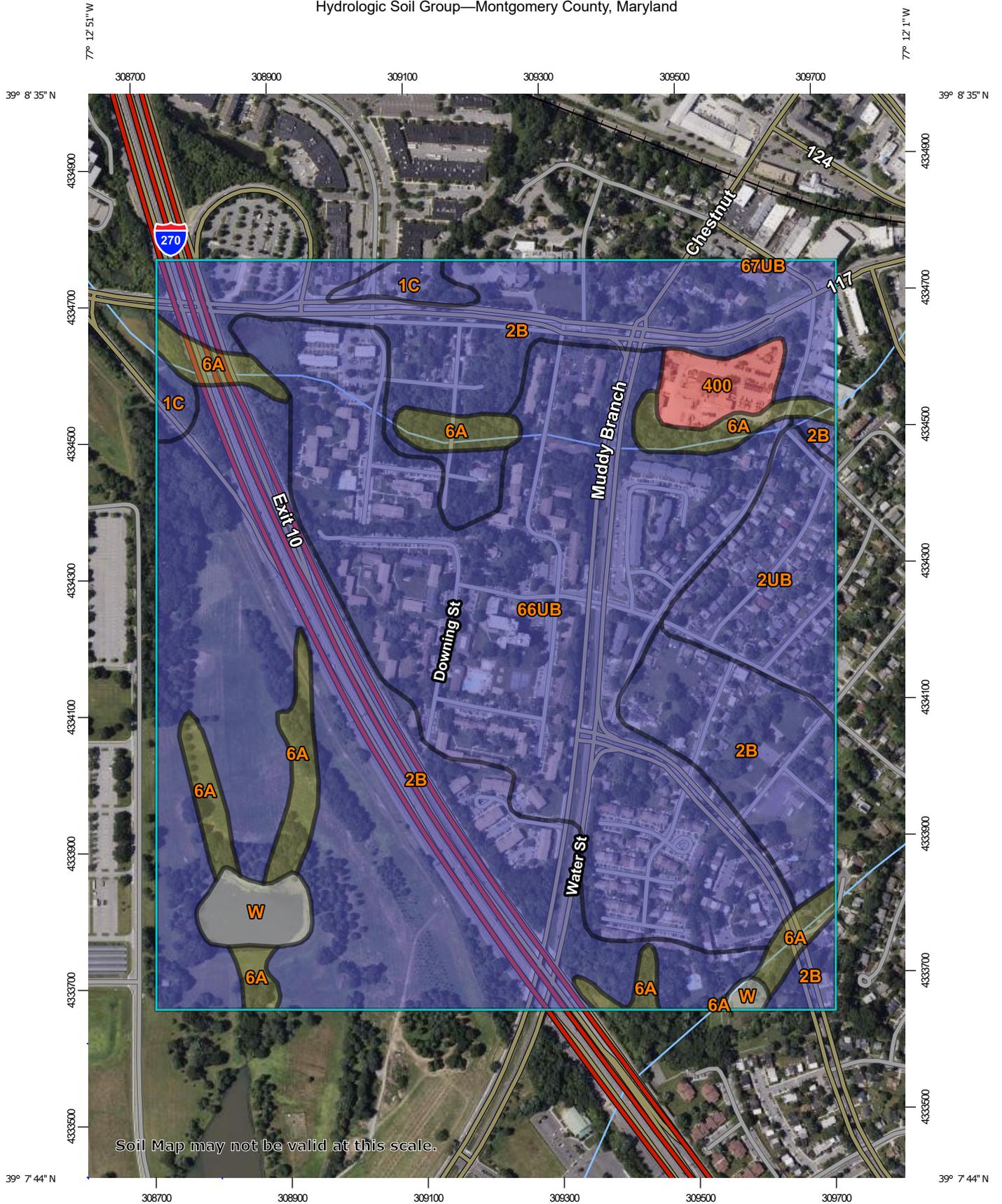
Fatme Chehab 405, 407, 409 & 411 Bryan Avenue

 Date 8/29/2025

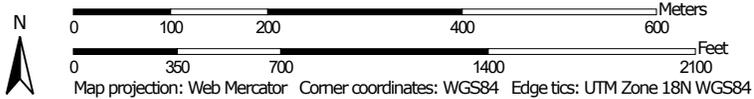
# **APPENDIX C**

## **Aerial GIS Map of Soil Data**

Hydrologic Soil Group—Montgomery County, Maryland



Map Scale: 1:7,740 if printed on A portrait (8.5" x 11") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Montgomery County, Maryland  
 Survey Area Data: Version 21, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2022—Aug 15, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1C	Gaila silt loam, 8 to 15 percent slopes	B	3.6	1.3%
2B	Glenelg silt loam, 3 to 8 percent slopes	B	139.0	51.1%
2UB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	14.8	5.4%
6A	Baile silt loam, 0 to 3 percent slopes	C/D	17.2	6.3%
66UB	Wheaton-Urban land complex, 0 to 8 percent slopes	B	88.5	32.5%
67UB	Urban land-Wheaton complex, 0 to 8 percent slopes	D	0.2	0.1%
400	Urban land	D	4.4	1.6%
W	Census water		4.4	1.6%
<b>Totals for Area of Interest</b>			<b>272.1</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

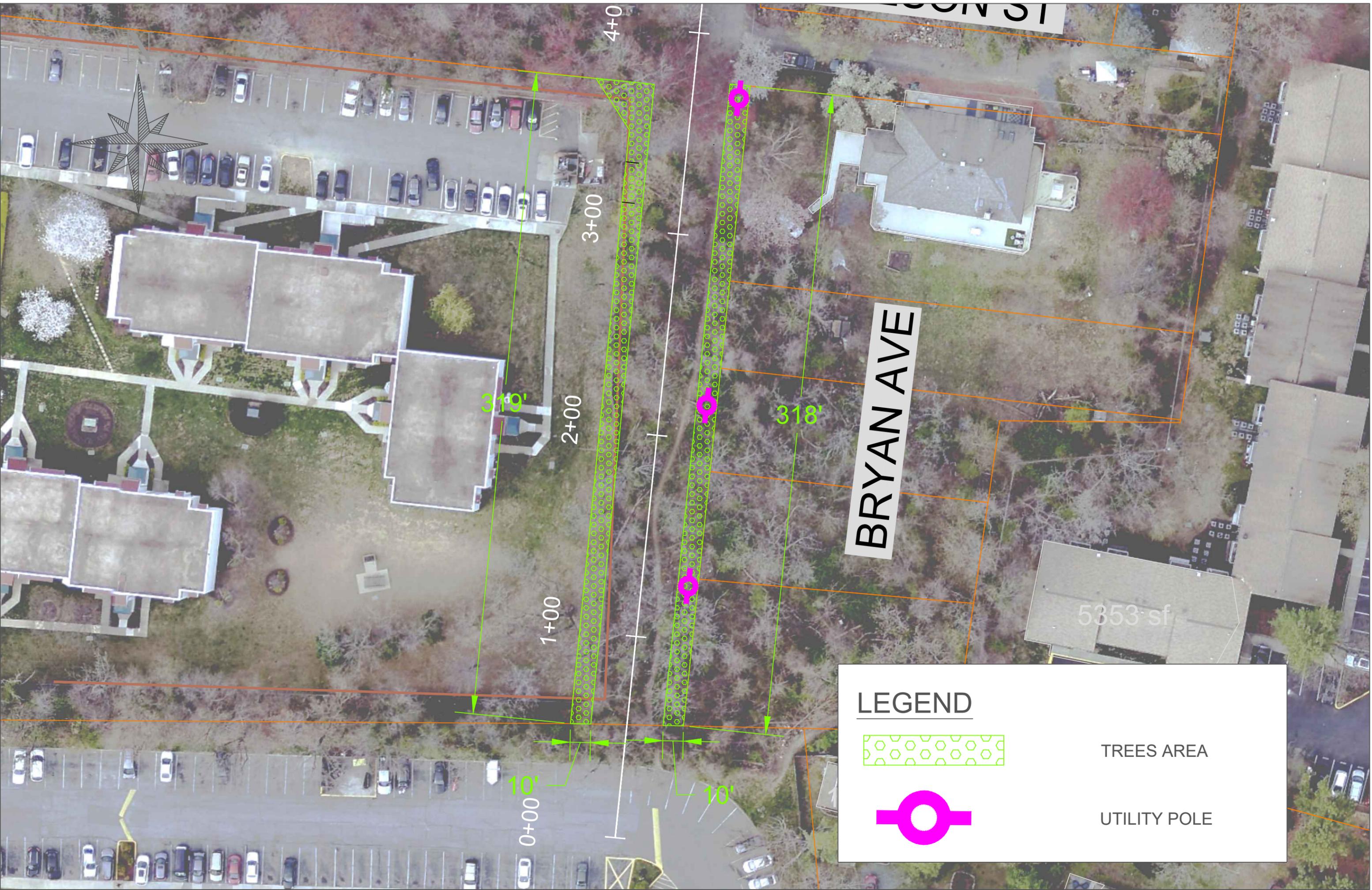
*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## **APPENDIX D**

**Aerial GIS Map with PEPCO Poles and Tree Locations**



**BRYAN AVE**

5353 sf

319'

318'

1+00

2+00

3+00

4+00

0+00

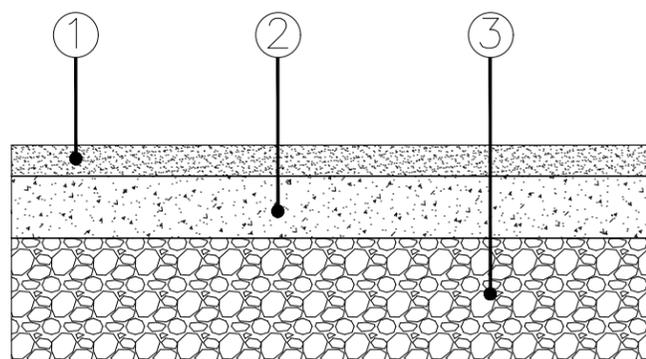
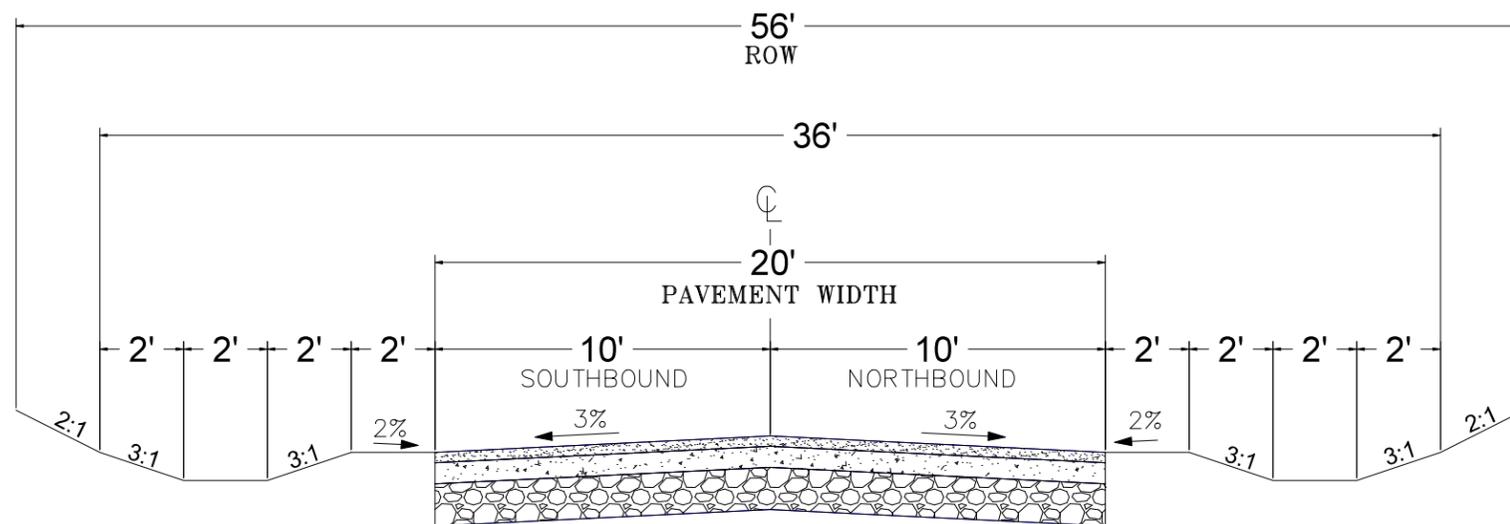
10'

**LEGEND**

	TREES AREA
	UTILITY POLE

# **APPENDIX E.1**

## **Proposed Typical Sections**

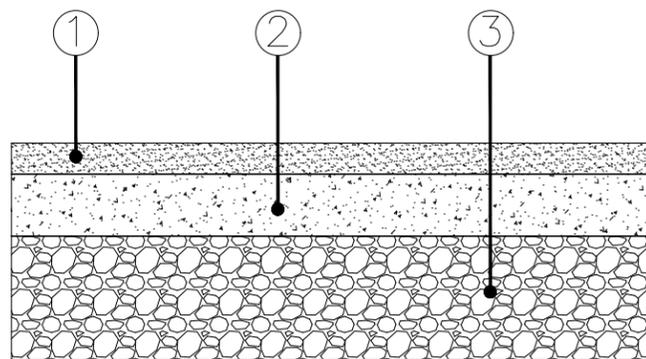
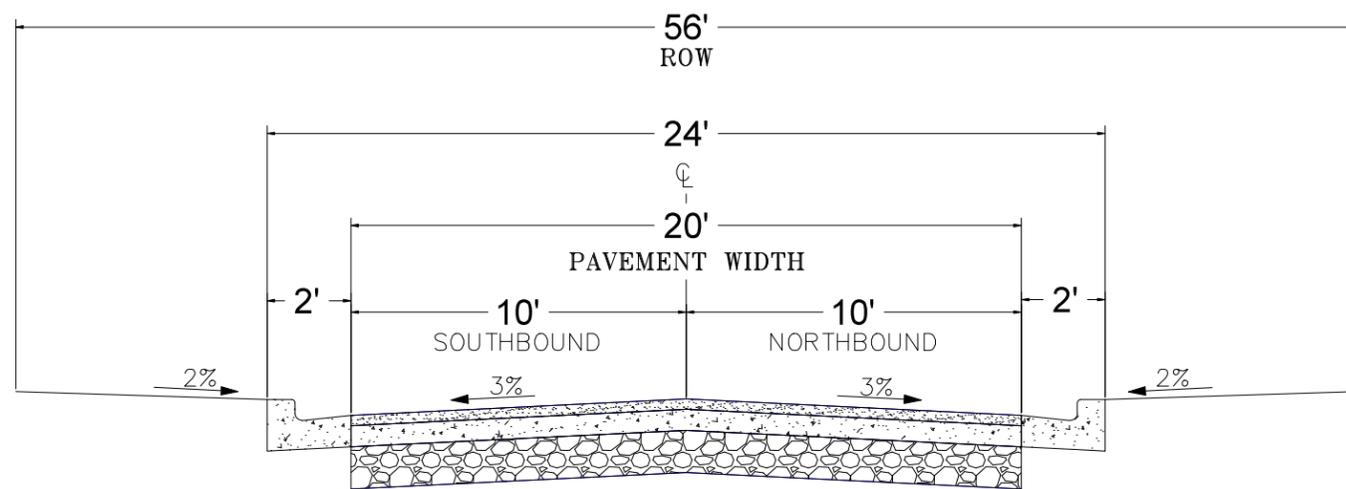


- ① 2" HM SUPERPAVE, TYPE I 12.5mm, PG64-22, SURFACE, LEVEL 2
- ② 4" HM SUPERPAVE, TYPE I 19mm, PG64-22, BASE, LEVEL 2
- ③ 8" GRADED AGGREGATE BASE, PLACED IN 2-4" LIFTS

TYPICAL SECTION  
OPEN SECTION DESIGN

BRYAN AVENUE  
IMPROVEMENT

Scale 1"=2'  
Dec 2025



- ① 2" HM SUPERPAVE, TYPE I 12.5mm, PG64-22, SURFACE, LEVEL 2
- ② 4" HM SUPERPAVE, TYPE I 19mm, PG64-22, BASE, LEVEL 2
- ③ 8" GRADED AGGREGATE BASE, PLACED IN 2-4" LIFTS

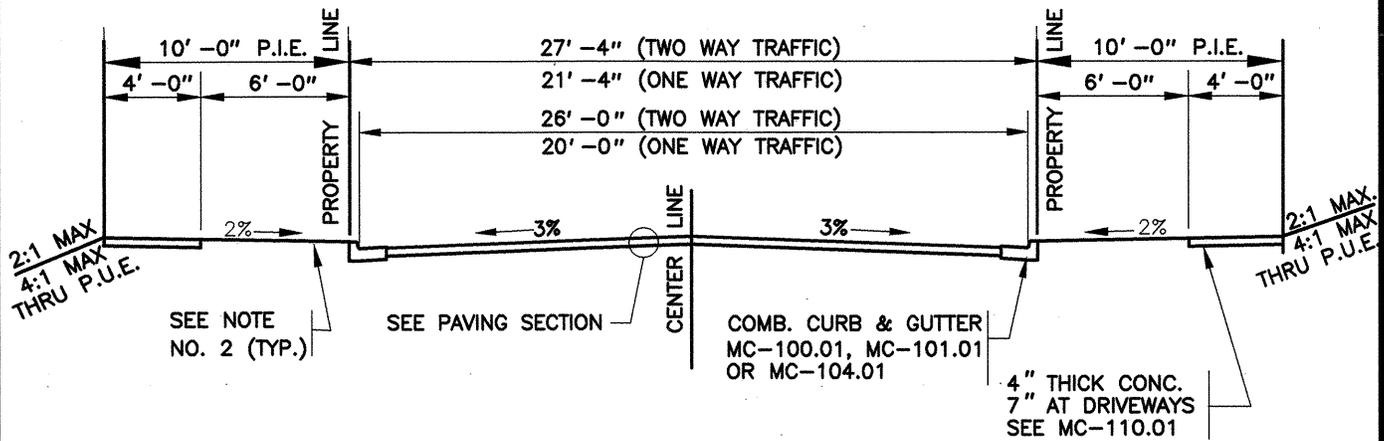
TYPICAL SECTION  
CURB AND GUTTER  
DESIGN

BRYAN AVENUE  
IMPROVEMENT

Scale 1"=2'  
Dec 2025

# **APPENDIX E.2**

## **Design Standards**



TYPICAL ROAD SECTION

3" BITUMINOUS CONCRETE SURFACE COURSE IN 2-1 1/2" LAYERS
3" BITUMINOUS CONCRETE BASE COURSE
APPROVED SUBGRADE

PAVING SECTION

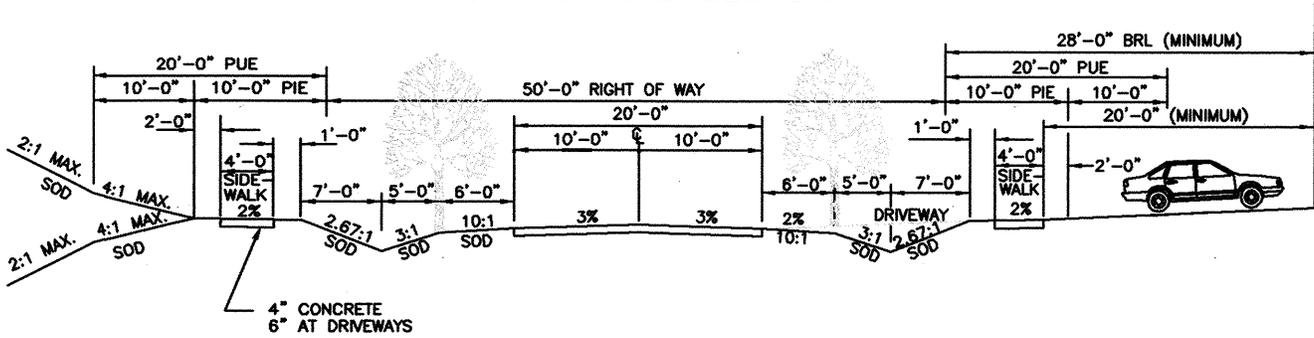
GENERAL NOTES

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. THE SLOPE BEHIND THE CURB TOWARD THE ROAD SHALL BE 2% FOR A DISTANCE OF 3' - 0" FROM THE FACE OF CURB.
3. SURFACE AREA OF INLET SLABS SHALL REMAIN ENTIRELY EXPOSED.
4. TOP OF CURB ELEVATION (20' PAVEMENT) = CENTERLINE ELEVATION + 0.11' (FOR 6" CURB HEIGHT)
5. TOP OF CURB ELEVATION (26' PAVEMENT) = CENTERLINE ELEVATION + 0.02' (FOR 6" CURB HEIGHT)

P:\DITSTJ\MCE21003 7-1-94 11:08:00 am EST

APPROVED <u>JAN 5/98</u> DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
<i>Ernie M. ...</i> DIRECTOR, DEPT. OF TRANS.		MODIFIED TERTIARY RESIDENTIAL STREET
<i>Ed ...</i> CHIEF, DIV. OF ENG. SERVICES		STANDARD NO. MC-210.03

# TYPICAL ROAD SECTION



## PAVING SECTION

3" BITUMINOUS CONCRETE SURFACE COURSE IN 2 - 1 1/2" LAYERS
3" BITUMINOUS CONCRETE BASE COURSE
APPROVED SUBGRADE

## GENERAL NOTES

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. SEE STANDARD NO. MC-811.01 - METHODS OF GRADING SIDE SLOPES.
3. PUBLIC UTILITY EASEMENTS (PUEs) ARE SUBJECT TO THE TERMS AND CONDITIONS OF A DOCUMENT ENTITLED "DECLARATIONS OF TERMS AND PROVISIONS OF PUBLIC UTILITY EASEMENTS" THAT IS RECORDED IN THE LAND RECORDS OF MONTGOMERY COUNTY IN LIBER 3834 AT FOLIO 457.
4. THE SIDE DITCH IN FILL SLOPES MAY BE ELIMINATED IN AREAS NOT MASTER PLANNED FOR DEVELOPMENT ONLY AFTER OVERLAND FLOW PATH AND EROSION POTENTIAL ARE CONSIDERED.
5. SEE STANDARDS NO. MC-701.01 AND MC-703.02 FOR SPECIES, SIZE AND SPACING OF STREET TREES.
6. WHEN USING THIS STANDARD, THE GARAGE SHALL BE SET BACK A MINIMUM DISTANCE OF 20 FEET, MEASURED FROM THE BACK EDGE OF THE SIDEWALK. THE MINIMUM BUILDING RESTRICTION LINE SETBACK IS 28 FEET.
7. STREET LIGHTING POLES ARE TO BE LOCATED AS DIRECTED BY THE MONTGOMERY COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION.
8. PUBLIC IMPROVEMENTS EASEMENTS (PIEs) ARE TO BE GRANTED BY A SITE SPECIFIC DECLARATION OF PUBLIC IMPROVEMENTS EASEMENT DOCUMENT. THAT DOCUMENT IS TO BE RECORDED IN THE LAND RECORDS OF MONTGOMERY COUNTY, MARYLAND AND REFERENCED ON THE RECORD PLAT.
9. THE 2-FOOT WIDE SECTION OF THE PIEs BEHIND THE SIDEWALKS IS TO ALLOW FOR THE TEMPORARY CONSTRUCTION, RECONSTRUCTION, AND MAINTENANCE OF THE SIDEWALKS.
10. SEVERAL OF THE DIMENSIONS SPECIFIED ON THIS STANDARD REFLECT MODIFICATIONS TO THE VALUES SHOWN ON STANDARD NO. MC-301.03 (RESIDENTIAL DRIVEWAY/OPEN SECTION ROAD).
11. ELEVATION AT THE FRONT EDGE OF SIDEWALK = EDGE OF PAVEMENT ELEVATION + 0.38'

APPROVED 1/30/07  
DATE

*Auth. [Signature]*  
DIRECTOR, DEPT. OF PUBLIC WORKS & TRANSPORTATION

*[Signature]*  
CHIEF, DIV. OF CAP. DEV.

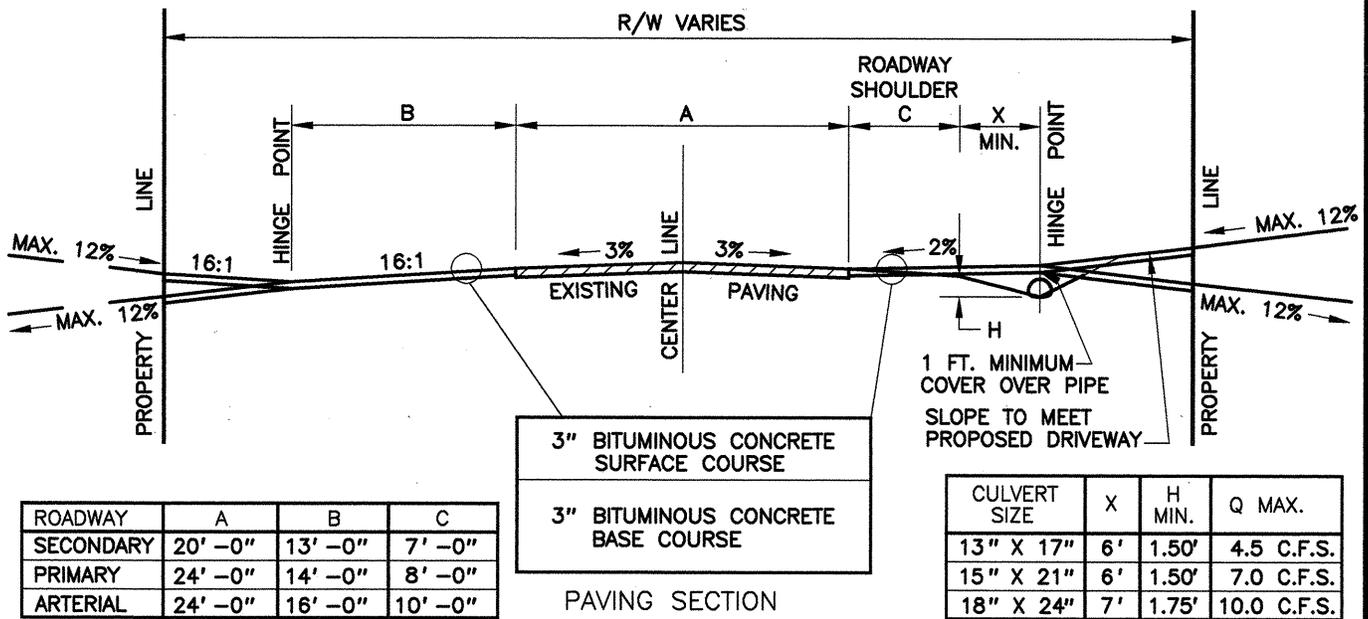
REVISED

Width of PUEs and Note #9 (1-07)

MONTGOMERY COUNTY  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION

TERTIARY RESIDENTIAL STREET  
OPEN SECTION  
WITH SIDEWALKS AND STREET TREES

STANDARD NO. MC-210.05

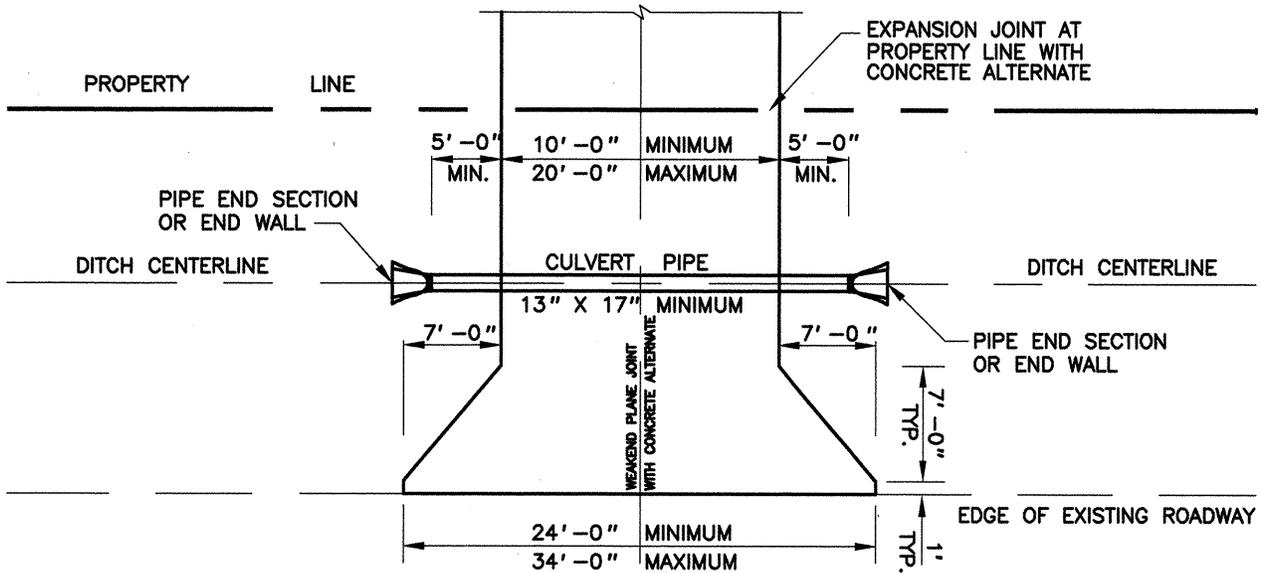


ROADWAY	A	B	C
SECONDARY	20'-0"	13'-0"	7'-0"
PRIMARY	24'-0"	14'-0"	8'-0"
ARTERIAL	24'-0"	16'-0"	10'-0"

3" BITUMINOUS CONCRETE SURFACE COURSE  
 3" BITUMINOUS CONCRETE BASE COURSE

PAVING SECTION

CULVERT SIZE	X	H MIN.	Q MAX.
13" X 17"	6'	1.50'	4.5 C.F.S.
15" X 21"	6'	1.50'	7.0 C.F.S.
18" X 24"	7'	1.75'	10.0 C.F.S.

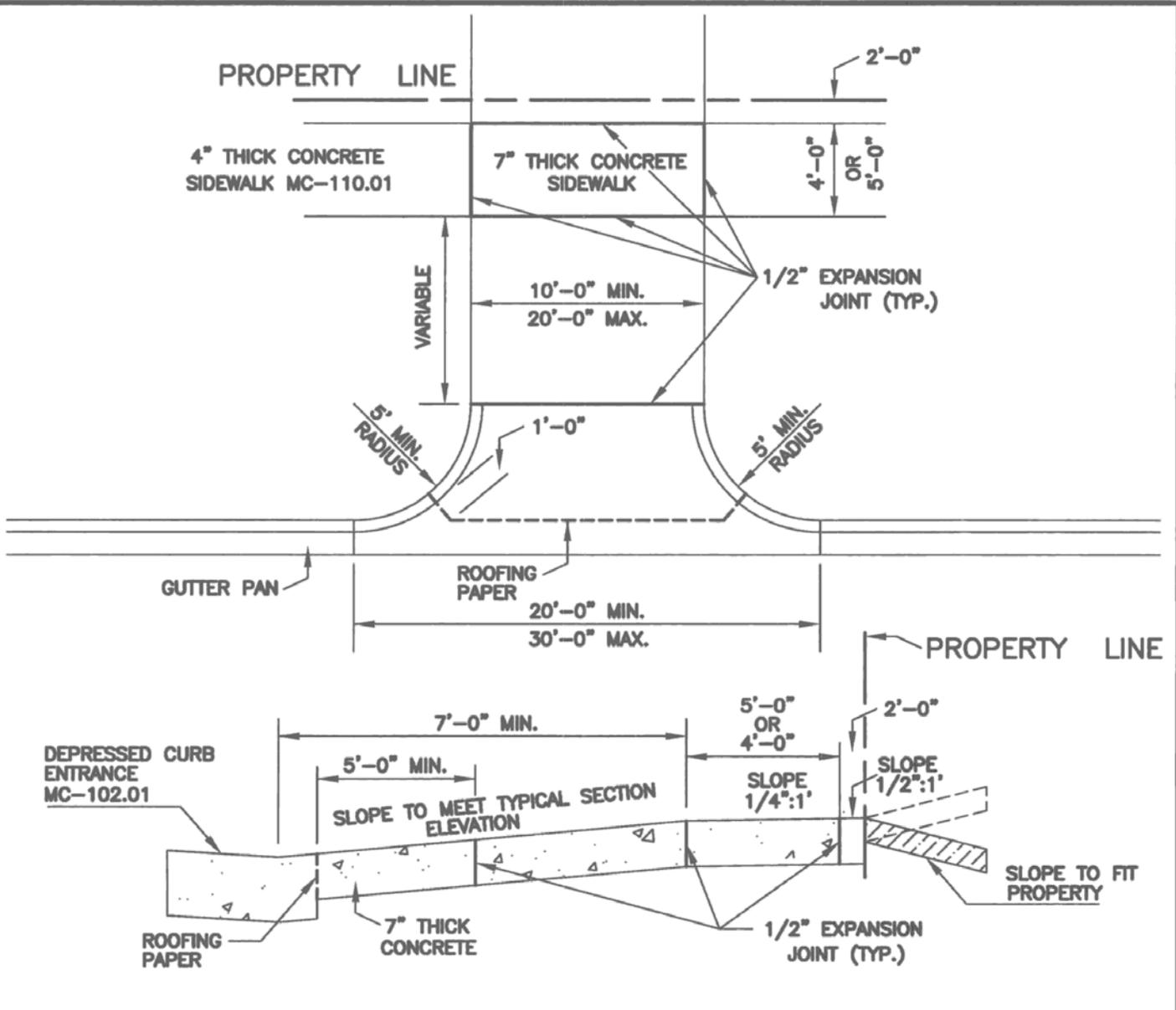


GENERAL NOTES

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. DRIVEWAY AND DRIVEWAY APRON TO BE MAINTAINED BY PROPERTY OWNER.
3. DITCH IS TO BE DESIGNED FOR A MAXIMUM Q. OF 12 C.F.S., A MAXIMUM V. OF 5 F.P.S. AND A DEPTH OF FLOW OF ONE FOOT. DEPTH OF FLOW MAY EXCEED ONE FOOT FOR CULVERT APPROACH HEAD REQUIREMENTS, WITH A MAXIMUM ALLOWABLE OF 6" ABOVE THE CROWN OF PIPE.
4. END SECTIONS ARE TO BE FASTENED TO THE FIRST CORRUGATION AND FITTED TO FORM A TIGHT CONNECTION. THE PIPE SHALL NOT PROJECT INTO THE END SECTION.
5. SPECIAL CARE MUST BE TAKEN TO PROVIDE PROPER COMPACTION OF BACKFILL AROUND THE CULVERT PIPE AND THE END SECTION.

P:\DDT\STD\NC-30103 6-24-94 9:34:23 am EST

APPROVED <u>JAN 5/96</u> DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
 DIRECTOR, DEPT. OF TRANS.		<b>RESIDENTIAL DRIVEWAY          OPEN SECTION ROAD</b>
 CHIEF, DIV. OF ENG. SERVICES		<b>STANDARD NO. MC-301.03</b>



**GENERAL NOTES**

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. DRIVEWAY AND DRIVEWAY APRON TO BE MAINTAINED BY PROPERTY OWNER.
3. THE EXPANSION JOINTS SHALL BE PLACED AT LOCATIONS SHOWN.
4. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH ASTM-C920. 1

APPROVED 14 APR '06  
DATE

*Archie Hill*  
DIRECTOR, DEPT. OF PUBLIC WORKS & TRANSPORTATION

*Holger Serrano*  
for CHIEF, DIV. OF CAP. DEV.

REVISED

RENAMED 04-27-2005

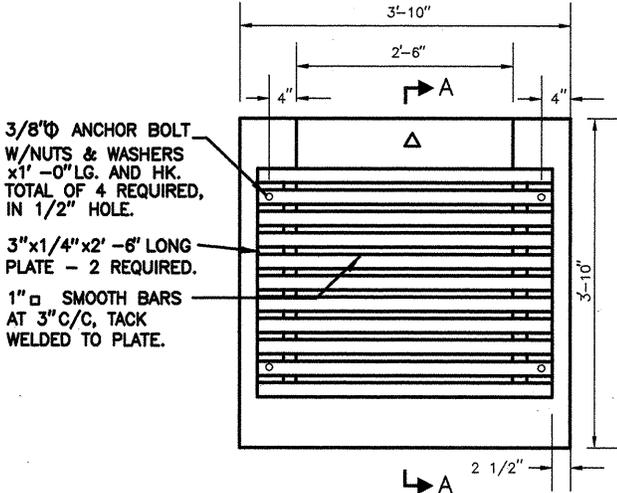
1 ASTM-C920 4/2006

MONTGOMERY COUNTY  
DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION

**RESIDENTIAL DRIVEWAY  
WITH CURB RADIUS**

**STANDARD NO. MC-301.05**

X



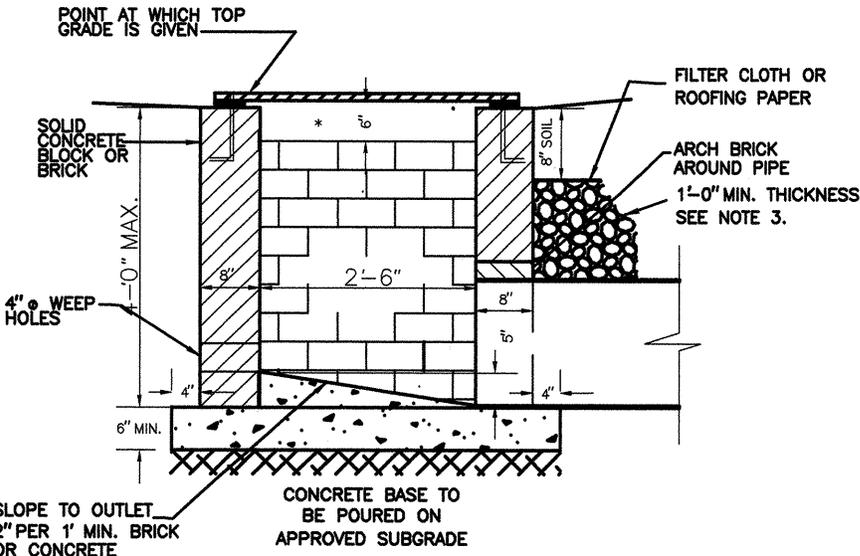
3/8"Ø ANCHOR BOLT  
W/NUTS & WASHERS  
x1' - 0" LG. AND HK.  
TOTAL OF 4 REQUIRED,  
IN 1/2" HOLE.

3" x 1/4" x 2' - 6' LONG  
PLATE - 2 REQUIRED.

1" □ SMOOTH BARS  
AT 3" C/C, TACK  
WELDED TO PLATE.

△ PROVIDE OPENING IN  
UPSTREAM SIDE ONLY,  
EXCEPT WHEN LOCATED  
IN SUMP.

"PLAN"



\* OPENINGS MAY BE PLACED IN ANY OR  
ALL SIDES AS SPECIFIED

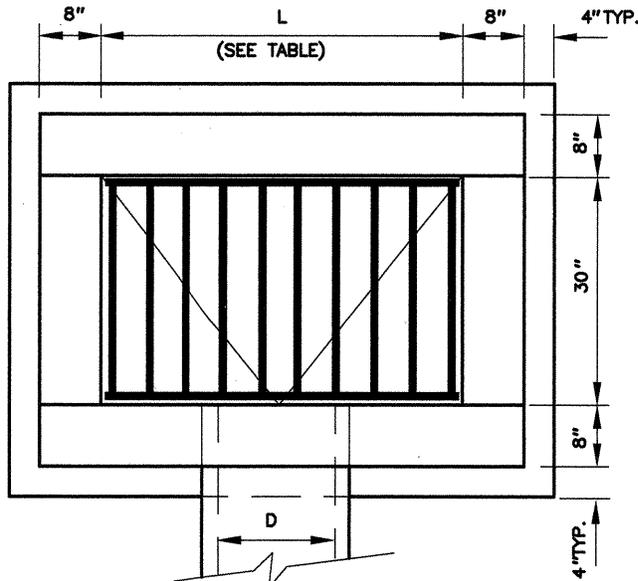
SECTION "A-A"

GENERAL NOTES

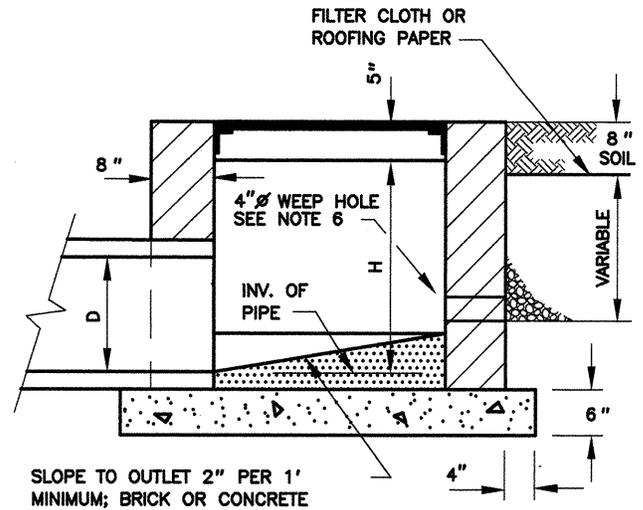
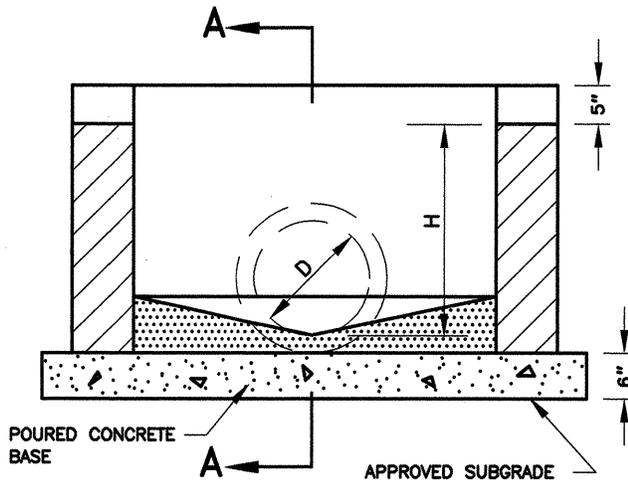
1. E INLET TO BE USED AS TERMINAL INLETS ONLY.
2. USE SOLID MASONRY (BRICK OR CONCRETE BLOCK) OR POURED CONCRETE FOR WALLS.
3. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE. MIN 1' FROM WALL.
4. WEEP HOLES TO BE PLACED IN WALL OPPOSITE OUTLET PIPE 5" ABOVE PIPE INVERT. COVER OPENING WITH 1/2" HARDWARE CLOTH.
5. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C 270 TYPE M.
6. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
7. f'c=3,500 PSI AT 28 DAYS.

PADDITDNDSTDEED 7-1-94 112659 an EST

APPROVED <u>JAN 5/95</u> DATE	REVISED _____ _____ _____ _____ _____ _____	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
 DIRECTOR, DEPT. OF TRANS.	"E" INLET	
 CHIEF, DIV. OF ENG. SERVICES	STANDARD NO. MC-504.01	



D	L	H
15"	4' - 0"	2' - 6"
18"	4' - 0"	2' - 9"
21"	4' - 6"	3' - 0"
24"	5' - 0"	3' - 3"
27"	5' - 6"	3' - 7"
30"	6' - 0"	3' - 10"
33"	6' - 0"	4' - 1"
36"	6' - 0"	4' - 4"



SECTION A-A

GENERAL NOTES

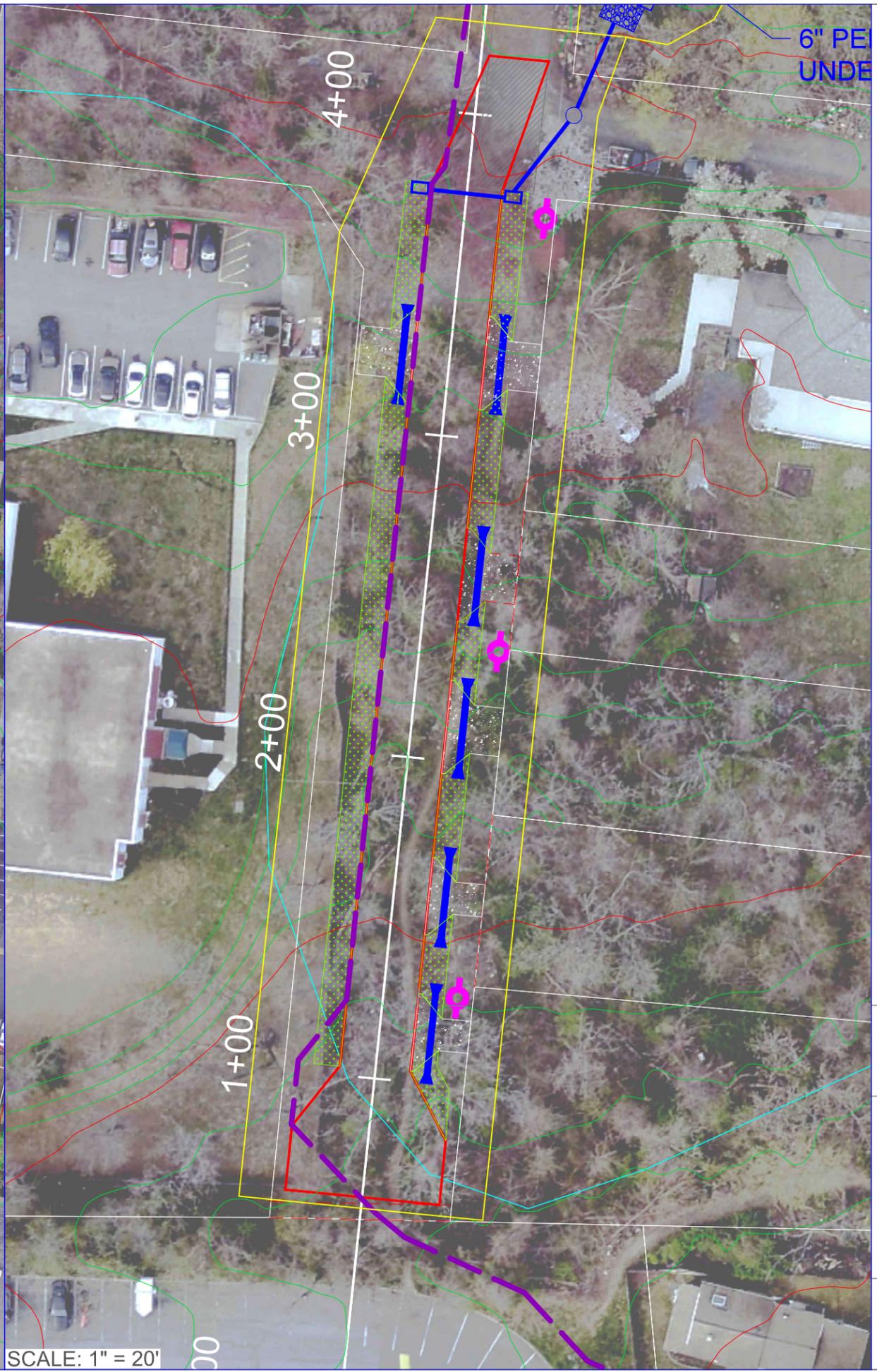
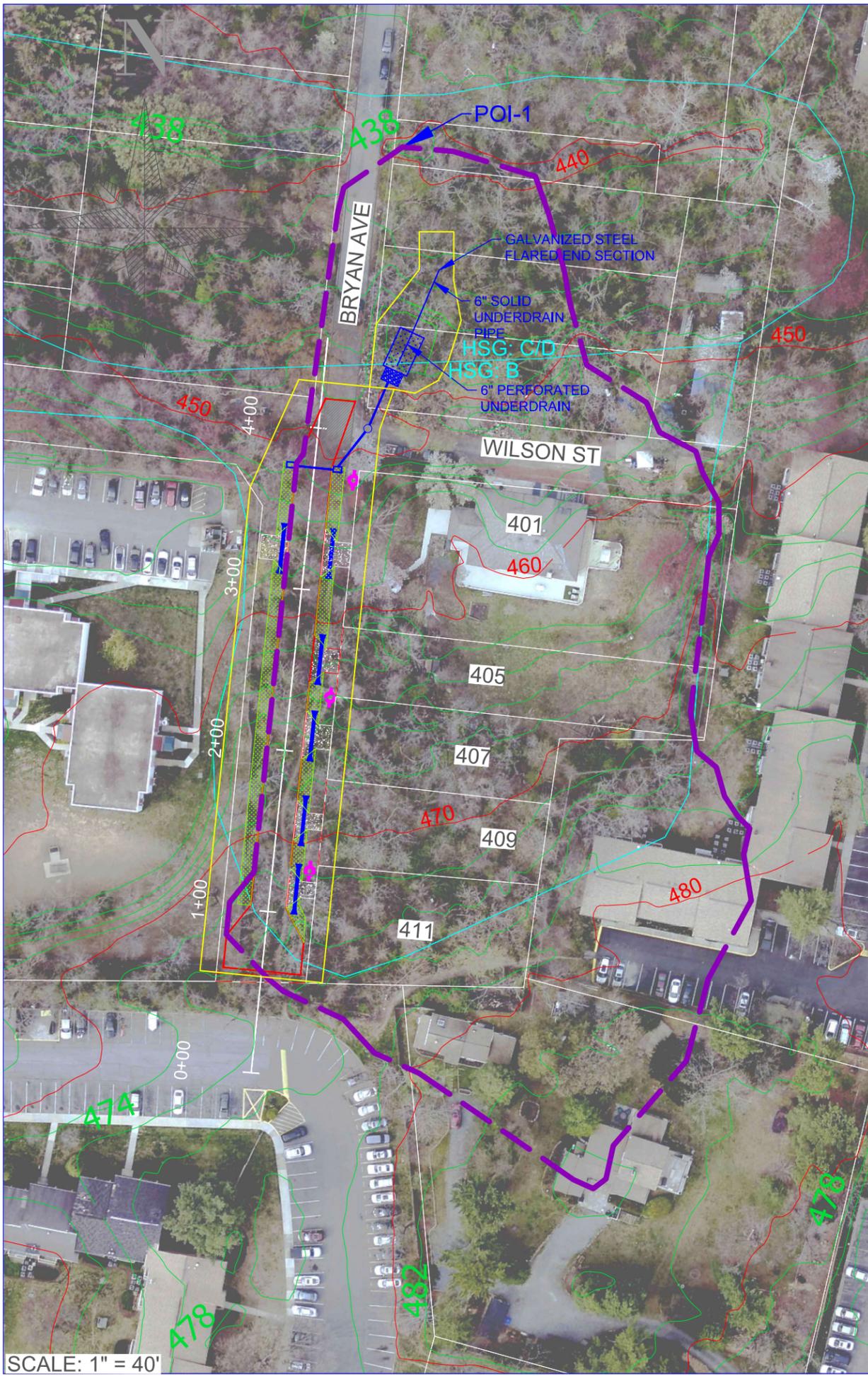
1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. PROVIDE GRATE PER M.S.H.A. STD. NO. MD-377.02 MODIFIED WITH BARS 3" O.C.; TACK WELD IN PLACE.
3. CONSTRUCTION TO BE OF CONCRETE OR BRICK MASONRY.
4. STEEL VERTICAL 1/2"  $\phi$  BARS, 6" C.C., HORIZONTAL 1/2"  $\phi$  BARS, 6" C.C.; BOTTOM 1/2"  $\phi$  BARS 6" C.C. EACH WALL, 2" MIN. COVER. (WITH CONCRETE CONSTRUCTION)
5. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C270 TYPE M.
6. WEEP HOLES TO BE PLACED IN WALL OPPOSITE OUTLET PIPE 5" ABOVE PIPE INVERT. COVER OPENING WITH 1/2" HARDWARE CLOTH. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE FOR A THICKNESS OF 12" MINIMUM.
7. BRICK SHALL CONFORM TO AASHTO DESIGNATION M-114 GRADE SW.
8.  $f'c = 3500$  PSI AT 28 DAYS.
9. PARGE OUTSIDE WALLS.

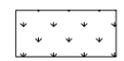
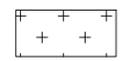
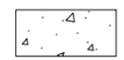
P:\ADT\STDA\MC506.02 6-24-94 9:42:37 a.m. EST

APPROVED <u>JAN 5 1995</u> DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
 DIRECTOR, DEPT. OF TRANS.		<b>"J" INLET          AS A TERMINUS</b>
 CHIEF, DIV. OF ENG. SERVICES		<b>STANDARD NO. MC-506.02</b>

# **APPENDIX F**

## **Proposed Stormwater Management Concept**



- LEGEND
-  RIP RAP
  -  BIO RETENTION
  -  OPEN SECTION
  -  CONCRETE DRIVEWAY
  -  DRAINAGE AREA
  -  LOD
  -  EDGE OF PAVEMENT

SWM CONCEPT PLAN

BRYAN AVENUE IMPROVEMENT (OPEN SECTION)

Dec 2025



# APPENDIX G

## List of Affected Properties

APOs

<u>#</u>	<u>House Number</u>	<u>Owner Last Name</u>	<u>Owner First Name</u>
1	401 Bryan Ave	Sway	Lucienne
2	405 Bryan Ave	Michael	Chehab
3	407 Bryan Ave	Michael	Chehab
4	409 Bryan Ave	Michael	Chehab
5	411 Bryan Ave	Michael	Chehab

-----  
**Total Number of Affected Properties: 5**

# **APPENDIX H.1**

**Itemized Construction Cost Estimate for Open Section Roadway**

**MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION  
DIVISION OF TRANSPORTATION ENGINEERING  
WORK ORDER PROPOSAL**

**Open Section Itemized Cost Estimate**

ITEM #	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1001	CLEARING	8	CH	\$50.00	\$400.00
1002	UNCLASSIFIED GRUBBING EXCAVATION	1138	CY	\$30.00	\$34,140.00
1008	TEMPORARY TRAFFIC SIGNS	48	SF	\$15.00	\$720.00
1021	TYPE III BARRICADES FOR MAINTENANCE OF TRAFFIC	2	EA	\$0.01	\$0.02
1022	CONES FOR MAINTENANCE OF TRAFFIC	20	EA	\$25.00	\$500.00
1032	CRUSHER RUN AGGREGATE CR-6 FOR MAINTENANCE OF TRAFFIC	107	TONS	\$0.01	\$1.07
1033	HOT MIX ASPHALT AND COLD MIX ASPHALT FOR MAINTENANCE OF TRAFFIC	107	TONS	\$1.00	\$107.00
1034	CONSTRUCTION STAKEOUT	8	CH	\$150.00	\$1,200.00
1036	STEEL PLATE, 8'X12' FOR MAINTENANCE OF TRAFFIC	1	EA	\$1.00	\$1.00
2001	UNCLASSIFIED ROADWAY EXCAVATION	369	CY	\$30.00	\$11,070.00
2004	TEST PIT EXCAVATION	35	CY	\$100.00	\$3,500.00
2005	FULL DEPTH SAW CUTS	20	LF	\$8.00	\$160.00
2010	BIAXIAL GEOGRID	948	SY	\$2.00	\$1,896.00
3002	CLASS 3 EXCAVATION FOR STORM DRAIN AND MISCELLANEOUS CONSTRUCTION: TOTAL DEPTH OF EXCAVATION GREATER THAN 4 VERTICAL FEET AND LESS THAN OR EQUAL TO 8 VERTICAL FEET	133	CY	\$60.00	\$7,980.00
3004	SELECTED BACKFILL USING No. 57 AGGREGATE	59	TONS	\$65.00	\$3,835.00
3005*	SELECTED BACKFILL USING CRUSHER RUN AGGREGATE CR-6	59	TONS	\$55.00	\$3,245.00
3009	CLASS IV OR CLASS V 24 INCH REINFORCED CONCRETE PIPE	81	LF	\$36.00	\$2,916.00
3035	17 INCH X 13 INCH CORRUGATED METAL PIPE ARCH, 16 GAUGE	180	LF	\$11.00	\$1,980.00
3044	"E" INLET MCDOT STANDARD No. MC-504.01	4	VF	\$200.00	\$800.00
3047	"J" INLET AS TERMINUS MCDOT STANDARD No. MC-506.02	4	VF	\$250.00	\$1,000.00
3075	M.S.H.A. STANDARD No. MD-371.01 END SECTION FOR 17 INCH X 13 INCH CORRUGATED METAL PIPE ARCH	12	EA	\$85.00	\$1,020.00
3084	6 INCH DIAMETER PERFORATED PIPE FOR UNDER DRAINS & SPRING CONTROL	58	LF	\$20.00	\$1,160.00
3085	EROSION AND SEDIMENT CONTROL ORIGINAL EXCAVATION	100	CY	\$0.01	\$1.00
3097	INLET PROTECTION	48	LF	\$50.00	\$2,400.00
3098	STABILIZED CONSTRUCTION ENTRANCE	23	TONS	\$20.00	\$460.00
3100	MODIFIED SUPER SILT FENCE	200	LF	\$10.00	\$2,000.00
3104	GEOTEXTILE FOR SEDIMENT CONTROL	25	SY	\$1.00	\$25.00
3105	RIP RAP FOR SEDIMENT CONTROL	25	TONS	\$1.00	\$25.00
3114	CLASS II RIP RAP FOR SLOPE AND CHANNEL PROTECTION	66	TONS	\$85.00	\$5,610.00
3132	18" DIAMETER FILTER LOG	200	LF	\$20.00	\$4,000.00
3133	DIVERSION FENCE	200	LF	\$10.00	\$2,000.00
5001	GRADED AGGREGATE BASE COURSE FOR EACH 4 INCH LIFT	1896	SY	\$14.00	\$26,544.00
5002	CALCIUM CHLORIDE FOR DUST CONTROL	3413	SY	\$0.01	\$34.13
5004	HOT MIX ASPHALT SURFACE PAVEMENT FOR ROADWAYS: SUPERPAVE 12.5 MM, PG 64-22	107	TONS	\$110.00	\$11,770.00
5005	HOT MIX ASPHALT BASE PAVEMENT FOR DRIVEWAYS AND BIKE PATHS: SUPERPAVE 19.0 MM, PG 64-22	214	TONS	\$110.00	\$23,540.00
5011	MILLING HOT MIX ASPHALT PAVEMENT PER 1 INCH DEPTH: FOR TOTAL QUANTITIES LESS THAN 500 SQUARE YARDS	169	SY	\$10.00	\$1,690.00
6007	7 INCH DEPTH PLAIN CONCRETE FOR DRIVEWAYS AND DRIVEWAY APRONS, MSHA MIX NO. 3	2000	SF	\$4.00	\$8,000.00
7004	TEMPORARY WOOD CELLULOSE MULCHING	380	SY	\$0.10	\$38.00
7006	PERMANENT SEEDING AREAS	380	SY	\$1.25	\$475.00
7015	SOIL STABILIZATION MATTING: TYPE "A"	380	SY	\$7.00	\$2,660.00
7018	SELECTIVE TREE FELLING AND REMOVAL: 6 1/4 INCHES IN CALIPER OR LARGER	96	CH	\$550.00	\$52,800.00
7020	TREE ROOT PRUNING	720	LF	\$1.00	\$720.00
7023	BIORETENTION SOIL MEDIA MIX	55	CY	\$70.00	\$3,850.00
8009	ADJUST EXISTING MANHOLES (ANY SIZE, ANY TYPE) TO FINISHED GRADE: DOWN 6 INCHES OR UP 12 INCHES	1	EA	\$300.00	\$300.00
	LED ROADWAY LUMINAIRE	3	EA	\$800.00	\$2,400.00
	UTILITY POLE RELOCATION	3	EA	\$15,000.00	\$45,000.00
				SUBTOTAL	\$273,973.22
				40% CONTINGENCY	\$109,589.29
				<b>GRAND TOTAL</b>	<b>\$383,562.51</b>

## **APPENDIX H.2**

### **Itemized Construction Cost Estimate for Curb and Gutter Roadway**

**MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION  
DIVISION OF TRANSPORTATION ENGINEERING  
WORK ORDER PROPOSAL**

**Closed Section Itemized Cost Estimate**

ITEM #	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1001	CLEARING	8	CH	\$50.00	\$400.00
1002	UNCLASSIFIED GRUBBING EXCAVATION	1138	CY	\$30.00	\$34,140.00
1008	TEMPORARY TRAFFIC SIGNS	48	SF	\$15.00	\$720.00
1021	TYPE III BARRICADES FOR MAINTENANCE OF TRAFFIC	2	EA	\$0.01	\$0.02
1022	CONES FOR MAINTENANCE OF TRAFFIC	20	EA	\$25.00	\$500.00
1032	CRUSHER RUN AGGREGATE CR-6 FOR MAINTENANCE OF TRAFFIC	134	TONS	\$0.01	\$1.34
1033	HOT MIX ASPHALT AND COLD MIX ASPHALT FOR MAINTENANCE OF TRAFFIC	134	TONS	\$1.00	\$134.00
1034	CONSTRUCTION STAKEOUT	8	CH	\$150.00	\$1,200.00
1036	STEEL PLATE, 8'X12' FOR MAINTENANCE OF TRAFFIC	1	EA	\$1.00	\$1.00
2001	UNCLASSIFIED ROADWAY EXCAVATION	290	CY	\$30.00	\$8,700.00
2004	TEST PIT EXCAVATION	35	CY	\$100.00	\$3,500.00
2005	FULL DEPTH SAW CUTS	20	LF	\$8.00	\$160.00
2010	BIAXIAL GEOGRID	746	SY	\$2.00	\$1,492.00
3002	CLASS 3 EXCAVATION FOR STORM DRAIN AND MISCELLANEOUS CONSTRUCTION: TOTAL DEPTH OF EXCAVATION GREATER THAN 4 VERTICAL FEET AND LESS THAN OR EQUAL TO 8 VERTICAL FEET	560	CY	\$60.00	\$33,600.00
3004	SELECTED BACKFILL USING No. 57 AGGREGATE	59	TONS	\$65.00	\$3,835.00
3005*	SELECTED BACKFILL USING CRUSHER RUN AGGREGATE CR-6	59	TONS	\$55.00	\$3,245.00
3009	CLASS IV OR CLASS V 24 INCH REINFORCED CONCRETE PIPE	540	LF	\$36.00	\$19,440.00
3044	"E" INLET MCDOT STANDARD No. MC-504.01	16	VF	\$200.00	\$3,200.00
3047	"J" INLET AS TERMINUS MCDOT STANDARD No. MC-506.02	8	VF	\$250.00	\$2,000.00
3048	TYPE "A" MANHOLE MCDOT STANDARD No. MC-510.01: FOR THE PORTION OF VERTICAL DEPTH UP TO AND INCLUDING 6 FEET	24	VF	\$150.00	\$3,600.00
3084	6 INCH DIAMETER PERFORATED PIPE FOR UNDER DRAINS & SPRING CONTROL	58	LF	\$20.00	\$1,160.00
3085	EROSION AND SEDIMENT CONTROL ORIGINAL EXCAVATION	100	CY	\$0.01	\$1.00
3097	INLET PROTECTION	144	LF	\$50.00	\$7,200.00
3098	STABILIZED CONSTRUCTION ENTRANCE	23	TONS	\$20.00	\$460.00
3100	MODIFIED SUPER SILT FENCE	200	LF	\$10.00	\$2,000.00
3104	GEOTEXTILE FOR SEDIMENT CONTROL	25	SY	\$1.00	\$25.00
3105	RIP RAP FOR SEDIMENT CONTROL	25	TONS	\$1.00	\$25.00
3114	CLASS II RIP RAP FOR SLOPE AND CHANNEL PROTECTION	66	TONS	\$85.00	\$5,610.00
3132	18" DIAMETER FILTER LOG	200	LF	\$20.00	\$4,000.00
3133	DIVERSION FENCE	200	LF	\$10.00	\$2,000.00
5001	GRADED AGGREGATE BASE COURSE FOR EACH 4 INCH LIFT	1492	SY	\$14.00	\$20,888.00
5002	CALCIUM CHLORIDE FOR DUST CONTROL	3413	SY	\$0.01	\$34.13
5004	HOT MIX ASPHALT SURFACE PAVEMENT FOR ROADWAYS: SUPERPAVE 12.5 MM, PG 64-22	134	TONS	\$110.00	\$14,740.00
5005	HOT MIX ASPHALT BASE PAVEMENT FOR DRIVEWAYS AND BIKE PATHS: SUPERPAVE 19.0 MM, PG 64-22	267	TONS	\$110.00	\$29,370.00
5011	MILLING HOT MIX ASPHALT PAVEMENT PER 1 INCH DEPTH: FOR TOTAL QUANTITIES LESS THAN 500 SQUARE YARDS	169	SY	\$10.00	\$1,690.00
6002	COMBINATION CONCRETE CURB & GUTTER (ANY TYPE)	600	LF	\$26.00	\$15,600.00
6007	7 INCH DEPTH PLAIN CONCRETE FOR DRIVEWAYS AND DRIVEWAY APRONS, MSHA MIX NO. 3	670	SF	\$4.00	\$2,680.00
7004	TEMPORARY WOOD CELLULOSE MULCHING	380	SY	\$0.10	\$38.00
7006	PERMANENT SEEDING AREAS	380	SY	\$1.25	\$475.00
7015	SOIL STABILIZATION MATTING: TYPE "A"	380	SY	\$7.00	\$2,660.00
7018	SELECTIVE TREE FELLING AND REMOVAL: 6 1/4 INCHES IN CALIPER OR LARGER	96	CH	\$550.00	\$52,800.00
7020	TREE ROOT PRUNING	720	LF	\$1.00	\$720.00
7023	BIORETENTION SOIL MEDIA MIX	55	CY	\$70.00	\$3,850.00
8009	ADJUST EXISTING MANHOLES (ANY SIZE, ANY TYPE) TO FINISHED GRADE: DOWN 6 INCHES OR UP 12 INCHES	1	EA	\$300.00	\$300.00
	LED ROADWAY LUMINAIRE	3	EA	\$800.00	\$2,400.00
	UTILITY POLE RELOCATION	3	EA	\$15,000.00	\$45,000.00
				SUBTOTAL	\$335,594.49
				40% CONTINGENCY	\$134,237.80
				<b>GRAND TOTAL</b>	<b>\$469,832.29</b>

# **APPENDIX I**

## **Design, Property Acquisition, and Construction Management Cost Estimate**

Design Duration: 15 months										
	FY29				FY30				Total	Rounded
	Hourly Rate	Hours Per Month	Months	Cost	Hourly Rate	Hours Per Month	Months	Cost		
Design PM	100	35	12	42,000	100	35	3	10500		
Soil Boring (2)				6,000						
Survey				5,000						
Permit SWM				2,990						
Permit ESC								3665.86		
Forest Conservation Plan/Permit				6,000						
<b>Subtotal</b>				<b>\$ 61,990</b>				<b>\$ 14,166</b>	<b>\$ 76,156</b>	<b>\$ 77,000</b>

Property Acquisition Duration: 9 months												
	FY30				FY31				Easement	Appraisal	Total	Rounded
	Hourly Rate	Hours Per Month	Months	Cost	Hourly Rate	Hours Per Month	Months	Cost				
Property Acq	100	20	9	18000								
<b>Subtotal</b>				<b>\$ 18,000</b>				<b>\$ -</b>	<b>42943.67</b>	<b>7000</b>	<b>\$ 67,944</b>	<b>\$ 68,000</b>

Construction Management Duration: 9 months										
	FY31				FY32				Total	Rounded
	Hourly Rate	Hours Per Month	Months	Cost	Hourly Rate	Hours Per Month	Months	Cost		
Design PM	100	24	9	21600						
Construction PM	100	80	9	72000						
Area Engineer	100	80	9	72000						
<b>Subtotal</b>				<b>\$ 165,600</b>				<b>\$ -</b>	<b>\$ 165,600</b>	<b>\$ 166,000</b>

