Description

Construction of pedestrian, bicycle and safety improvements on Good Hope Road in Silver Spring, Maryland. The project elements are a sidepath along the east side of Good Hope Road between Windmill Drive and Briggs Chaney Road, crosswalk improvements at the intersection of Good Hope Road with Briggs Chaney Road, and a sidepath along the west side of Good Hope Road between Briggs Chaney Road and Rainbow Drive.

- Applicant: Montgomery County Department of Transportation
- Cloverly Master Plan (1997)

Staff Recommendation: Approval to Transmit Comments

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Summary

The Montgomery County Department of Transportation (MCDOT) is proposing to construct pedestrian, bicycle and safety improvements along Good Hope Road in Silver Spring. The project includes the following improvements:

- Construction of an 8-foot wide sidepath with predominantly a five-foot wide buffer on the east side of Good Hope Road between Windmill Drive and Briggs Chaney Road for a total distance of 1,330 linear feet,
- Construction of an 8-foot wide sidepath with predominantly a five-foot wide minimum buffer on the west side of Good Hope Road between Briggs Chaney Road and Rainbow Drive for a total distance of 3,150 linear feet,
- Crosswalk improvements at the intersection of Good Hope Road with Briggs Chaney Road, and
- Construction of a 10-foot wide pedestrian bridge to span a tributary to the Upper Paint Branch near Hopefield Road.

The project location is depicted in Figure 1. The current project, which includes full design and construction cost funding, is listed as CIP Project No. P501902. This project originally was envisioned as a sidewalk project starting in FY19, however starting with FY21, this project was modified into a sidepath project. The current project cost estimate is $4.73 million, which includes final design cost, utility modification/relocation, easement cost, as well as construction cost. For cost comparison purposes, this equates to an average cost of $5.4 million/mile.

The 70 percent design plan presentation drawings are provided as Attachment A to this report.
Figure 1: Project Limits and Site Vicinity
Mandatory Referral Review

This proposal for the construction of sidepath improvements is required to undergo the Mandatory Referral review process under the Montgomery County Planning Department’s Uniform Standards for Mandatory Referral Review. State law requires all federal, state, and local governments and public utilities to submit proposed projects for a Mandatory Referral review by the Commission. The law requires the Planning Board to review and approve the proposed location, character, grade and extent of any road, park, public way or ground, public (including federal) building or structure, or public utility (whether publicly or privately owned) prior to the project being located, constructed or authorized.

Planning staff acknowledges that the implementation of master plan transportation recommendations is a challenge faced by the applicant in developing design plans to convert desired master plan recommendations into engineering design drawings. The design process up to 35 percent design typically brings clarity with considerably more detail than considered during a master plan, and issues such as environmental impacts, historical impacts, and construction costs may introduce new factors that need to be weighed in developing a final design solution. It is hoped that the Mandatory Referral process aids in this process to develop an optimal or at least an improved design solution.

Recommendations

Staff recommends approval to transmit the following comments to the Montgomery County Department of Transportation:

1. Construction plans must be submitted to the M-NCPPC Department of Parks for review as part of the Park Construction Permit process to ensure that all work is performed in accordance with M-NCPPC standard details, specifications, and policies. No work on parkland may occur until an approved Park Construction Permit is issued for the project.

2. Final easement agreements and any related compensation for the loss of parkland must be agreed to and finalized between MCDOT and M-NCPPC before the issuance of a Park Construction Permit.

3. MCDOT will continue to coordinate with M-NCPPC on the design of the required in-stream structure (crossvane) upstream of the sidepath bridge over the Upper Left Fork of Paint Branch to ensure that a stable stream setting is provided.

4. Design the grade, cross slope and material of the proposed sidepaths to be level across all driveways.

5. While we prefer a 6-foot buffer separation between a sidepath and the curb, the 5-foot buffer proposed is acceptable and consistent with Pedestrian Level of Comfort analyses now in use in the ongoing Montgomery County Pedestrian Master Plan. We do note that the Complete Streets Design Guidelines now under review by the Planning Board would likely recommend a minimum 6-foot-wide buffer on this type of street.

6. Provide a straighter crosswalk on Good Hope Road at Colesberg Street by tightening up the curb radii and setting the sidepath back from the road. Per the draft Complete Streets Design Guidelines, at right angle intersections, the default curb radius should be 15 feet and at the intersection of local streets, the curb radius should be 10 feet.
7. Provide curb ramps and a crosswalk across Good Hope Road at Hopefield Road to connect to an existing sidewalk along the north side of Hopefield Road.

Proposal

Project Description

The Montgomery County Department of Transportation (MCDOT) is proposing to construct pedestrian, bicycle and safety improvements along Good Hope Road between Windmill Lane and Rainbow Drive. This project was initiated by MCDOT based on community concerns about the overall safety of the roadway, especially as it relates to pedestrians.

A project location map showing the regional context and other transportation design projects is provided in Figure 2. It is worth noting the proximity of the Baitur Rahman Mosque as well as two elementary schools, the Briggs Chaney Middle School, and the Good Hope Neighborhood Recreation Center (located at 14715 Good Hope Road) in the project vicinity.

Good Hope Road is classified in the Master Plan of Highways and Transitways (MPOHT) as a two-lane primary residential street between New Hampshire Avenue and Spencerville Road. Currently, Good Hope Road has little to no shoulders and no sidewalks or sidepaths within the project limits. Currently, there is a sidewalk on the east side of Good Hope Road between Cape May Road and Windmill Lane to the south. On the north end of the project, Rainbow Drive has a sidewalk on the south side of the street in both directions off Good Hope Road. When completed, this project will significantly improve bike and pedestrian connectivity and travel in this area of Silver Spring.
**Project Background**

Good Hope Road currently is generally characterized as a two-lane (10-foot wide travel lanes) residential road with little to no shoulders. The posted speed limit along Good Hope Road is 30 miles per hour (mph). The road narrows to 19 feet over the tributary to the Upper Paint Branch (located between Briggs Chaney Road and Hopefield Road).

**Sidepath Design on east side of Good Hope Road between Windmill Lane and Briggs Chaney Road**

The proposed 8-foot wide sidepath will generally have a 5-foot-wide buffer. Sections where no buffer will be provided include the first 75 feet on the north side of Windmill Lane and the last 180 feet approaching Briggs Chaney Road.

**Sidepath Design on west side of Good Hope Road between Briggs Chaney Road and Rainbow Drive**

The proposed 8-foot wide sidepath will generally have a 5-foot or wider buffer, particularly in front of the Mosque property. Sections where no buffer will be provided include approximately 100 feet north of Colesberg Street and approximately 50 feet approaching Rainbow Drive.

![Figure 3 Sidepath Improvements – East Side - Windmill Lane](image_url)
Figure 4 Sidepath Improvements – East Side - Vicinity of Briggs Chaney Road

Figure 5 Sidepath Improvements – West Side in front of Mosque Property
Figure 6  Sidepath Improvements – West Side – Bridge Crossing of Tributary of Upper Paint Branch

Figure 7  Sidepath Improvements – West Side – Vicinity of Colesberg Street
Intersection modifications on Good Hope Road at Briggs Chaney Road

Good Hope Road now intersects with Briggs Chaney Road at a four-way, signalized intersection. Currently, all four approaches have crosswalks; however, only the southeast corner has an accessible ramp. With the proposed improvement, as shown in Figure 9, two of the existing crosswalks would be removed (south and west legs), and the other two (east and north legs) would be improved significantly. Improved crosswalk striping would be provided, with pedestrian signals and ADA ramps on the southeast, northeast and northwest corners.
Typical Cross Sections – Good Hope Road

Figures 10 through 14 show the proposed typical cross sections.
Transportation Analysis

**Design Elements - Transportation**

**General Comment:** In general, the minimum sidepath width required, consistent with the approved Bicycle Master Plan and the ongoing Complete Streets Design Guidelines, is 10 feet; however, this minimum is reduced to 8 feet in Special Protection Areas and areas of environmental concern, particularly through Montgomery Parks land. In the draft Complete Streets Design Guidelines now under public review, 10 feet will be the preferred sidepath width for both agencies; however, the 8-foot minimum width has been retained at MCDOT’s request.

**Master Plan Conformance – Transportation**

The project is in conformance with the 2018 Bicycle Master Plan and the 2018 Master Plan of Highways and Transitways (MPOHT). The 2018 Bicycle Master Plan recommends a sidepath (east side) on Good Hope Road between New Hampshire Avenue and Spencerville Road. The 2018 Master Plan of Highways and Transitways classifies Good Hope Road between New Hampshire Avenue and Spencerville Road as a two-lane primary residential street with a master plan right-of-way of 70 feet.
Historic Resources Analysis

There are no historic resources within the project area.

Environmental Analysis

This project is located within the Upper Paint Branch Special Protection Area and although this is a public project, a Water Quality Plan is encouraged. The Application meets the requirements of Chapter 22A of the Montgomery County Forest Conservation Law and staff has recommended approval of the Water Quality Plan (see Water Quality Plan memo). The Planning Board will decide on this regulatory binding plan in a separate vote from the Mandatory Referral.

Parkland Impacts

The majority of the proposed sidepath construction occurs within the MCDOT Right-of-Way (ROW) and would result in temporary construction impacts on parkland within the Limit of Disturbance (LOD). New construction will not require ROW expansion or additional easements on parkland with the exception of a very narrow, linear sliver of approximately 0.05 acres (2,121 square feet) of perpetual easement requested for a segment of the sidepath along the Upper Paint Branch Stream Valley Park where the existing MCDOT ROW narrows. Areas of parkland impacted are part of the designated Upper Paint Branch Best Natural Area (BNA). BNAs contain the best examples of park natural resources, including features such as large wetlands, high-quality aquatic resources and forests, diverse native vegetation, uniquely spectacular topography, and bedrock formations, and/or unique habitats that are scarce and/or fragile. Parkland in the Upper Paint Branch has been acquired primarily to protect sensitive resources, including a high quality (Class III) fishery with a self-sustaining brown trout population, large areas of forest that provide important habitat for many migratory bird species, three plant species considered rare in the State of Maryland, and several unique archaeological resources.

MCDOT sidepath construction and improvements along Good Hope Road impacts parkland on the east side of Good Hope Road between Windmill Lane and Briggs Chaney Road. In this area, the limit of disturbance on parkland would be approximately 0.46 acres including the 0.05 acres needed for the perpetual easement.

Further north along Good Hope Road, the proposed sidepath is located on the west side of Good Hope Road and will impact another portion of Paint Branch Stream Valley Park, approximately 175 feet south of Hopefield Road. In this area the limit of disturbance on parkland will be approximately 0.04 acres (1,732 square feet); there is no proposed ROW expansion or perpetual easement proposed in this location.

The main areas of parkland impact occur where Good Hope Rd crosses the Upper Gum Springs Tributary and the Upper Left Fork of Paint Branch, necessitating ecological design elements be incorporated into the plan. MCDOT will replace the existing culvert where the sidepath will cross the Upper Gum Springs Tributary. The existing culvert is severely degraded and the upstream side of the culvert is prone to clogging; replacement of the culvert pipe will improve streamflow and a new headwall and pool grading are proposed to reduce susceptibility to clogging. Imbricated rock walls will be built adjacent to the new
endwall to provide slope stabilization. Existing eroded drainage channels that drain into the tributary will be stabilized with vegetated riprap per Parks’ Standard Details. Surface water pooling will be prevented in this area by the inclusion of a trench drain adjacent to the trail and endwall. Additionally, a Jellyfish stormwater management filter will be included in this location to treat the stormwater runoff from the sidepath. MCDOT will remove (at Parks request) an abandoned driveway entrance to the recently acquired property (L.51021F.147) adjacent to Murphy Lane.

At the sidepath crossing of the Upper Left Fork of Paint Branch, a new pedestrian bridge will be built on the western side of Good Hope Road that is separate from the existing roadway bridge. MCDOT will include instream stabilization features (per Parks’ Standard Details) at the new stream crossing to reduce the impacts of the proposed sidepath bridge. Traditional bridge construction techniques generally reduce the stream width and harden the banks, which accelerate stream flows and the erosive force of the water. The inclusion of an instream structure such as a crossvane at the crossing will center the flow of the stream away from the banks and provide grade control to prevent any further incision of the stream channel.

MCDOT will be required to obtain a Park Construction Permit from Montgomery County Department of Parks prior to commencement of any construction activities on parkland. Plans submitted for Park Construction Permit review must include existing topography, utilities, and identify and locate all trees (with size and species) larger than 6” DBH and greater within 100 feet of the proposed Limit of Disturbance on park property. Mitigation for impacts to Park trees (with a 6” DBH or greater) damaged or removed, shall either be (1) replacement planting on parkland at a rate of one inch to one inch diameter or (2) a monetary per inch caliper basis at the rate of $100/diameter inch, to be paid to Montgomery Parks prior to completion of construction. Tree impacts will be determined by an M-NCPPC forester prior to construction based on the Final Design. The Department of Parks will require as much on-site replanting of trees as practicable due to the sensitive ecological context of the site. During Park Construction Permit Review, park staff will work with MCDOT to minimize impacts to parkland to the greatest extent possible and avoid all critical resources identified.

Community Outreach and Notification

This application was noticed in accordance with the Uniform Standards for Mandatory Referral Review. Throughout the project design process, proposed concepts were presented to key stakeholders, as well as the community. The preliminary concept (35% design) was presented at a Public Workshop in May 2019. Feedback on the alternatives was received through in-person comments, comment cards, and email comments, and was used in refining the proposed design.

Conclusion

Based on information provided by the applicant and the analysis contained in this report, staff concludes that the proposed Good Hope Road Shared Use Path project can be designed with some modifications to meet transportation standards as specified on pages 4 and 5 of this staff report.
Attachments

A. Proposed Project Plans
NEW HAMPSHIRE
GOOD HOPE RD
RAINBOW DR
WINDMILL LN
AVE (MD 650)
COLUMBIA PIKE (US-29)
BRIGGS CHANEY RD
SPENCERVILLE RD
(MD 198)
INTERCOUNTY CONNECTOR
70% DESIGN SUBMISSION

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
GOOD HOPE ROAD
SIDEWALK
WINDMILL LANE TO
RAINBOW DRIVE
C. I. P. PROJECT NO. 501902
70% DESIGN SUBMISSION

THE FOLLOWING MONTGOMERY COUNTY STANDARDS ARE REQUIRED FOR THIS PROJECT:
MC-100.01 - COMBINATION CONCRETE CURB AND GUTTER
MC-110.01 - RESIDENTIAL SIDEWALK
MC-301.01 - RESIDENTIAL DRIVEWAY

THE MOST CURRENT VERSION OF THESE STANDARDS CAN BE ACCESSSED AT:
https://www.montgomerycountymd.gov/dot-dte/common/standards.html

ATTENTION
THIS SITE IS WITHIN THE ENVIRONMENTALLY SENSITIVE
UPPER PAINT BRANCH SPECIAL PROTECTION AREA
TO HELP PROTECT THE DELICATE AQUATIC HABITAT
FROM THE IMPACTS OF LAND DEVELOPMENT
THESE PLANS MUST BE STRICTLY ADHERED TO
IF THERE IS A PROBLEM CALL
LEO GALANKO AT 240-777-6242
AND THE MCDPS STAFF MEMBER WILL ASSIST YOU
IN DEVELOPING A SOLUTION BEFORE STREAM IMPACTS OCCUR
(MENTION THAT THE SITE IS WITHIN A SPECIAL PROTECTION AREA WHEN YOU CALL)
"LET'S WORK TOGETHER TO KEEP IT CLEAN"

ACKNOWLEDGED
MONTGOMERY COUNTY DEPT. OF TRANSPORTATION
OWNER/DEVELOPER
LOD IN SPA = 2.85 AC.
### General Notes

1. **Planting**: The planting of trees or shrubs shall be in accordance with the County's Tree Ordinance and the applicable standards. The planting locations shall be determined by the County Forestry Division.

2. **Safety**: All work shall be conducted in a safe manner, and the contractor shall ensure that all workers are properly trained and equipped with personal protective equipment as required by law.

3. **Progress Reports**: Monthly progress reports shall be submitted to the County by the 10th of each month, detailing the progress of the work and any issues encountered.

4. **Inspections**: Regular inspections shall be conducted by the County, and the contractor shall be responsible for ensuring that the work meets the required standards.

5. **Liability**: The contractor shall indemnify and hold harmless the County from and against any claims, losses, or damages arising from the performance of the work.

### Earthwork Summary

#### Class 1 Excavation

- **Cut (from cross section)**: 1,000 CY
- **Fill (from cross section)**: 500 CY
- **Total Cut & Fill**: 1,500 CY

#### Class 2 Excavation

- **Cut (from cross section)**: 200 CY
- **Fill (from cross section)**: 100 CY
- **Total Cut & Fill**: 300 CY

#### Excavation Available for Embankment

- **Total Excavation for Embankment**: 1,800 CY

#### Embankment Required

- **Cut (from cross section)**: 1,000 CY
- **Fill (from cross section)**: 500 CY
- **Total Excavation for Embankment**: 1,500 CY

### Notes

1. All notes shown on the drawings are typical, and exceptions shall be noted on specific plans.
2. The County reserves the right to make changes to the specifications, particularly if the contractor cannot locate the required material.
3. The contractor shall be responsible for obtaining all necessary permits and licenses from the County.
4. The contractor shall ensure that all work is completed in accordance with the County's standards and specifications.

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#### Site Plan

[Diagram of site plan showing excavation areas and embankment locations]

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#### Material Specifications

- **Aggregate**: Local, crushed stone
- **Soil**: Fill material shall be transported from an approved source.

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#### Contact Information

- **County Engineer**: John Doe
- **County Engineer's Office**: 123 County Road
- **Phone**: 555-1234
- **Email**: jdoe@countymail.com

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#### Approval

- **Approval Date**: October 1, 2023
- **Approved By**: John Doe, County Engineer
1. Plan sheet is entirely within Upper Paint Branch Special Protection Area.

NOTE: The trail alignment between STA. 30+00 and STA. 45+25 will be adjusted from what is shown on these plans to minimize impacts to existing utilities. See alternate plans for preliminary design.
NOTE:
The trail alignment between STA. 30+00 and STA. 45+25 will be adjusted from what is shown on these plans to minimize impacts to existing utilities. See alternate plans for preliminary design.
NOTE: THE TRAIL ALIGNMENT BETWEEN STA. 30+00 AND STA. 45+25 WILL BE ADJUSTED FROM WHAT IS SHOWN ON THESE PLANS TO MINIMIZE IMPACTS TO EXISTING UTILITIES. SEE ALTERNATE PLANS FOR PRELIMINARY DESIGN.
BIOSWALE PROFILE: BS-1

EXISTING GROUND

PROPOSED SWALE

BOTTOM

BS-1 SECTION A-A

24" PLANTING MEDIA
6" SAND BED
12" GRAVEL LAYER
UNCOMPACTED SUBGRADE

SWALE BOTTOM DEPTH VARIES PER PROFILE

6' TYP.

EXISTING GROUND

PROPOSED GROUND

RJM ENGINEERING

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications in Montgomery County. In addition to the ASTM C33 specification, sand must meet all of the following conditions:

1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. MSHTO M-6 gradation is also acceptable.
2. Sand must be silica based. Natural, non-liiiquids, limestone based products may be used. If the material is white or gray in color, it is probably not acceptable.
3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has become contaminated by improper storage or installation practices will be rejected.
4. Manufactured sand or stone dust is not acceptable under any circumstance.
Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications in Montgomery County. In addition to the ASTM C33 specification, sand must meet all of the following conditions:

1. Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. MSHTO M-6 gradation is also acceptable.
2. Sand must be silica based; carbonate based products may be used. If the material is white or gray in color, it is probably not acceptable.
3. Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has become contaminated by improper storage or installation practices will be rejected.
4. Manufactured sand or stone dust is not acceptable under any circumstance.
GOOD HOPE ROAD
BRIGGS CHANEY ROAD
MURPHY LANE
15' RIGHT OF WAY FOR MURPHY LANE
STORM DRAIN EASEMENT
EXISTING SIGN TO BE RELOCATED 2.25 SF
RELOCATED SIGN W3-3 18"X 18"
EXISTING SIGNS TO BE RELOCATED 9.25 SF
R1-1 VAR. 36"X 36"
MATCHLINE - SEE SHEET NO. SP-01
MATCHLINE - SEE SHEET NO. SP-03
12' WIDE CROSSWALK
12' WIDE CROSSWALK
SIGNING LEGEND
EXISTING SIGNS TO BE REMOVED
EXISTING SIGNS TO BE RELOCATED
PROPOSED SIGN
PEOPLE'S COUNTY DEPARTMENT OF TRAFFIC ENGINEERING
GOOD HOPE ROAD SIDEWALK
DRAFT NOT FOR CONSTRUCTION
SN-02 SIGNING & MARKING PLAN
JMT
DATE: NOVEMBER 2022
1/2" Scale: 1' = 40' - 20' Scale: 1' = 40'
GOOD HOPE ROAD
RAINBOW DRIVE
EXISTING SIGN TO BE RELOCATED
2.25 SF
RELOCATED SIGN
W8-1 MOD
18"X 18"
EXISTING SIGNS TO BE RELOCATED
7 SF
EXISTING SIGN TO BE RELOCATED
1.5 SF
RELOCATED SIGN
R7-1(1)
12"X 18"
BUMP
20 MPH
MATCHLINE - SEE SHEET NO. 104
P AVEMENT MARKING LEGEND
EXISTING SIGN TO REMAIN
EXISTING SIGN TO BE REMOVED
PROPOSED SIGN
SIGNING LEGEND
### Landscape Plant Schedule

<table>
<thead>
<tr>
<th>KEY</th>
<th>LTI</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>ROOT</th>
<th>COMMENTS</th>
</tr>
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<tbody>
<tr>
<td>10</td>
<td>1</td>
<td>Acer Rubrum Red Sunset</td>
<td>Red Sunset Red Maple</td>
<td>3 CAL</td>
<td>B&amp;B</td>
<td>30’ D.C., AS SHOWN</td>
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<tr>
<td>10</td>
<td>2</td>
<td>Quercus Bicolor</td>
<td>Swamp White Oak</td>
<td>3 CAL</td>
<td>B&amp;B</td>
<td>30’ D.C., AS SHOWN</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>Quercus Phellos</td>
<td>Willow Oak</td>
<td>2 CAL</td>
<td>B&amp;B</td>
<td>30’ D.C., AS SHOWN</td>
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<tr>
<td>10</td>
<td>4</td>
<td>Ulex Erinacea</td>
<td>Speedwell</td>
<td>2’ MHT</td>
<td>CONT</td>
<td>3’ D.C.</td>
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<tr>
<td>10</td>
<td>5</td>
<td>Vigna Unguiculata</td>
<td>Aristidopsis Mays</td>
<td>24’ MHT</td>
<td>CONT</td>
<td>3’ D.C.</td>
</tr>
</tbody>
</table>

*Shrubs will be trimmed with root ball reservation 30’ MHT. See specification for application rate.*

---

**Legend**

- **LTI** - Landscaping Tree Inventory
- **MAP** - Map Key
- **RTR** - Right of Way
- **BIOSWALE** - Bioswale
- **SIDEWALK** - Sidewalk
- **SEWER** - Sewer
- **STORM DRAIN** - Storm Drain
- **WATER MAIN** - Water Main
- **DRAIN** - Drain
- **PLANT** - Plant
- **TREE** - Tree
- **BORDER** - Border
### Landscape Plant Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Qty</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Root</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Acer Rubrum Red Sunset 10</td>
<td>Red Sunset Maple 10</td>
<td>2&quot; CAL</td>
<td>30' D.C.</td>
<td>AS SHOWN</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Quercus Phellos Will 10</td>
<td>Yellow Oak 10</td>
<td>3&quot; CAL</td>
<td>30' D.C.</td>
<td>AS SHOWN</td>
</tr>
</tbody>
</table>

**Note:** Slight revisions may be needed with root vastation size for final design establishment. See specifications for application rates.

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**Site Location:**
- **15031 Good Hope Road**
- **1601 Hopefield Road**
- **15304 Good Hope Road**

**Easements:**
- Slope Easement
- P.U.E. Easement

**Offset:**
- Offset 10' from edge of sidewalk
- Offset 10' from edge of sidewalk
- Offset 5' from bottom of bioswale
- Offset 5' from bottom of bioswale

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**Legend:**
- **SPI:** Site Protection Elevation
- **LOI:** Line of Interface
- **LOD:** Line of Drainage
- **TPH:** Tree Protection Eaves

---

**Not for Construction**

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**Matchline:** See Sheet No. LS-05

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**Sheet No:** LS-04

---

**Scale:** 1" = 40' (or as shown on the scale on the sheet)
### Landscape Plant Schedule

<table>
<thead>
<tr>
<th>ZONE</th>
<th>QTY</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>ROOT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-pol</td>
<td>02</td>
<td>ACER rubrum</td>
<td>RED SUNSET</td>
<td>2’ CAL</td>
<td>BBM</td>
<td>30’ O.C.</td>
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<tr>
<td>CV</td>
<td>04</td>
<td>OPHIOGLOUS VERSI</td>
<td>WATER RING</td>
<td>2’ CAL</td>
<td>BBM</td>
<td>20’ O.C.</td>
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<tr>
<td>G</td>
<td>02</td>
<td>GROSSIS BROCURI</td>
<td>WHITE DOE</td>
<td>2’ CAL</td>
<td>BBM</td>
<td>30’ O.C.</td>
</tr>
<tr>
<td>TO</td>
<td>12</td>
<td>TRILIA OCCIDENTALIS</td>
<td>AMERICAN ARBUT</td>
<td>8’ XST</td>
<td>BBM</td>
<td>10’ O.C.</td>
</tr>
</tbody>
</table>

\*NOTE: QTY 01 - 1 (ONE) PLANT PER H-ZONE. 12 (TWELVE) TOTAL H-PLANTS. 1 (ONE) PLANT PER EXAMPLE BLOCK (81 XST).}

**Slope Easement**
- Offset 10’ from edge of sidewalk

**Swale**
- Offset 10’ from edge of sidewalk
- Offset 5’ from bottom of bioswale

**Bioswale**
- BS-2

**Other**
- Sheet LS-04
- Sheet LS-06
NO. 14 GAUGE WIRE FABRIC WITH 2" x 4" OPENINGS AROUND INDIVIDUAL TREES AND SHRUBS OR SHRUB BED AND FASTEN TO STAKES.

6' HARDWOOD GUYING STAKE 2' INTO THE GROUND WITH A MINIMUM OF 2 STAKES PER CAGE.

TREE PLANTING DETAIL
NOT TO SCALE

SHRUB PLANTING DETAIL
NOT TO SCALE

SHRUB DEER PROTECTION
NOT TO SCALE

ROOT PRUNING PRIOR TO CONSTRUCTION

CROWN PRUNING
NOT TO SCALE

MONTEREY COUNTY DEPARTMENT OF
PUBLIC WORKS

LE-07 LANDSCAPE DETAIL SHEET
GOOD HOPE ROAD
SIDEWALK

DRAFT
NOT FOR CONSTRUCTION

JMT
<table>
<thead>
<tr>
<th>No.</th>
<th>City</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Root</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>AB 12 ACEI RUBRO TET SAGET</td>
<td>TED SAGET RED WINE</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>CE 16 CELEI OCCIDENTAL</td>
<td>CELEI OCCIDENTAL</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CH 10 CHAMOEYO WIDE APPEX</td>
<td>WATERKING WATERSHED</td>
<td>2&quot; CAL</td>
<td>20' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>HY 5 HYPOBIOSIS TETRAGL</td>
<td>TETRAGL</td>
<td>2&quot; CAL</td>
<td>32' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>HY 10 HYPOBIOSIS TETRAGL</td>
<td>TETRAGL</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>HY 10 HYPOBIOSIS TETRAGL</td>
<td>TETRAGL</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
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<tr>
<td>8</td>
<td>QN 8 QUERUS MEOGR</td>
<td>WAMP MEGR</td>
<td>2&quot; CAL</td>
<td>32' O.C.</td>
<td>AS SHOWN</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>QN 19 QUERUS MEOGR</td>
<td>WAMP MEGR</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
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</tr>
<tr>
<td>7</td>
<td>QN 19 QUERUS MEOGR</td>
<td>WAMP MEGR</td>
<td>2&quot; CAL</td>
<td>30' O.C.</td>
<td>AS SHOWN</td>
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<tr>
<td>ND 27 TIGA OCCIDENTAL</td>
<td>TIGA OCCIDENTAL</td>
<td>8&quot; PCT</td>
<td>60' O.C.</td>
<td>AS SHOWN</td>
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</tr>
</tbody>
</table>

*SHADE TREE TO FULFILL MONTGOMERY COUNTY TREE CANOPY REQUIREMENT*
1. All work shall be performed by a Licensed Pesticide Applicator, under the supervision of a Maryland Licensed Urban Forester or other similarly qualified professional with a sufficient education and experience in invasive species and integrated pest management techniques.

2. Contractor shall retain all permits required.

3. An integrated pest management (IPM) plan specifically for invasive species shall be submitted to and approved by M-NCPPC. This plan shall include areas of treatment, techniques, and types of treatment to be used.

4. Areas within the LOD should be cut to the ground and cleared of all vegetation material. Outside of LOD (a minimum additional distance of 50 feet), the clearing should be done manually (machete, weed trimmer, or chainsaw), under the supervision of a M-NCPPC staff. Invasive vegetation is treated by herbicides applied. See HERBICIDE REMOVAL SPECIFICATIONS for details of type and strength of herbicides. The spraying is done under the supervision of a M-NCPPC staff. Removal may require three applications of herbicides.

5. The use of a quality surfactant with herbicides is recommended for improved control. See HERBICIDE LABELS.

6. All products and material safety data sheets (MSDS) shall be on site during any application of herbicides.

7. The use of a quality surfactant with herbicides is recommended for improved control. See HERBICIDE LABELS.

8. All plants on the Maryland Natural resources natural invasive species and invasive species use shall be eradicated from all areas within the LOD and a maximum additional distance of 50 feet between the limits of clearing and grading.

9. The conductivity of a tree preservation plan shall be submitted to and approved by M-NCPPC.

10. Tree signs stating "Tree preservation area" shall be affixed to the tree preservation fence at least every 30 feet. Signs shall include both English and Spanish as shown on detail.