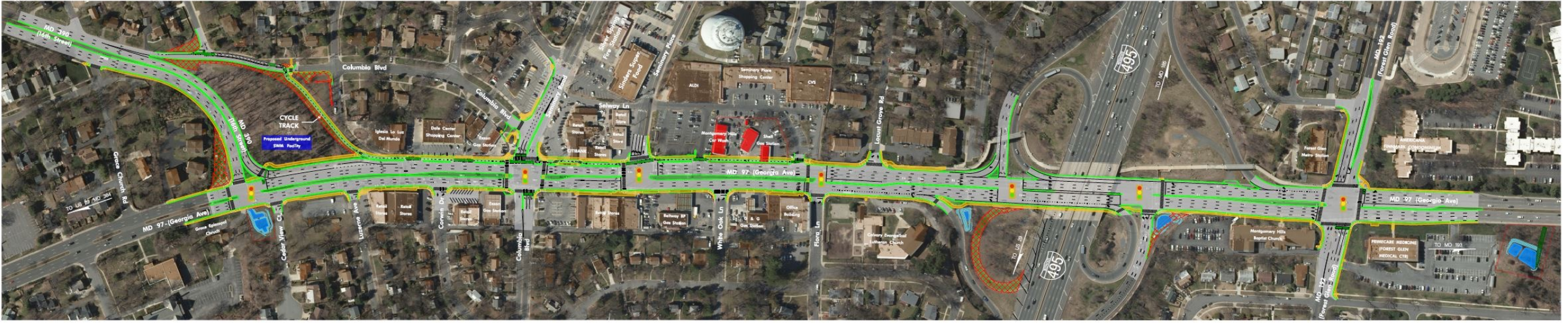




MD 97 PROPOSED IMPROVEMENTS (ALTERNATE 5B MODIFIED)

Legend

Sidewalk	Pavement Removal	Building	Green Space
Pavement	Stormwater Management Facility	Potential Total Take	Traffic Signal



Montgomery Planning | Countywide Planning and Policy Division

09/23/2021
 Agenda item 4

Montgomery Hills MD 97 Design Project

Mandatory Referral # MR2021033



Presentation Outline

- **Project Introduction**
- **Design Element Review**
- **Environmental Analysis**
- **Master Plan Conformity - Parkland**
- **Master Plan Conformity - Transportation**
- **Recommendations**
- **Discussion**

Project Introduction – Project Details

- **Project Proponent:** Maryland Department of Transportation State Highway Administration
- **Project Limits:** Georgia Avenue from Grace Church Road to Forest Glen Road and 16th Streets from Grace Church Road to Georgia Avenue
- **Total distance:** 4,230 feet on Georgia Avenue, 1,145 feet on 16th Street
- **Stage of design plans:** 30 Percent Design
- **Scheduled to Finish Design:** FY23
 - Project not funded for construction

Project Introduction – Details

- Removal of the existing center, reversible travel lane on Georgia Avenue.
- Construction of a center median.
- Closure of the existing 16th Street southbound road alignment/carriageway between MD 97 and Columbia Boulevard/Grace Church Road and reconstruction of the northbound 16th alignment/carriageway to accommodate two-way traffic flow.
- Construction of 8-foot-wide two-way separated bike lanes on the west side of Georgia Avenue between Flora Lane and Grace Church Road.
- Sidewalk improvements on Georgia Avenue along the project extents to provide sidewalks compatible with the Americans with Disability Act (ADA) requirements. This includes relocating sidewalks to avoid the placement of utility poles within the sidewalk area.

Project Introduction – Details

- Construction of 8-foot-wide two-way separated bike lanes on the alignment of the current southbound 16th Street connecting into Columbia Boulevard near Hanover Street.
- Proposed floating bus stop on southbound Georgia Avenue between Seminary Road and Seminary Place.
- Closure of the I-495 loop off-ramp from the Inner Loop to northbound Georgia Avenue (southeast quadrant of interchange).
- Traffic signal and geometric modifications to the existing I-495 off-ramp from the Inner Loop to southbound Georgia Avenue to accommodate all traffic exiting onto MD 97.
- New traffic signal on Georgia Avenue at Flora Lane.
- Traffic signal improvements on Georgia Avenue at Forest Glen Road, the I-495 ramp signals, Seminary Place, Seminary Lane/Columbia Boulevard, and 16th Street.
- After the project is completed, MDOT SHA will be donating the land between 16th Street and Georgia Avenue over to Montgomery County to be potentially be used as parkland as described in the Forest Glen/Montgomery Hills Sector Plan.



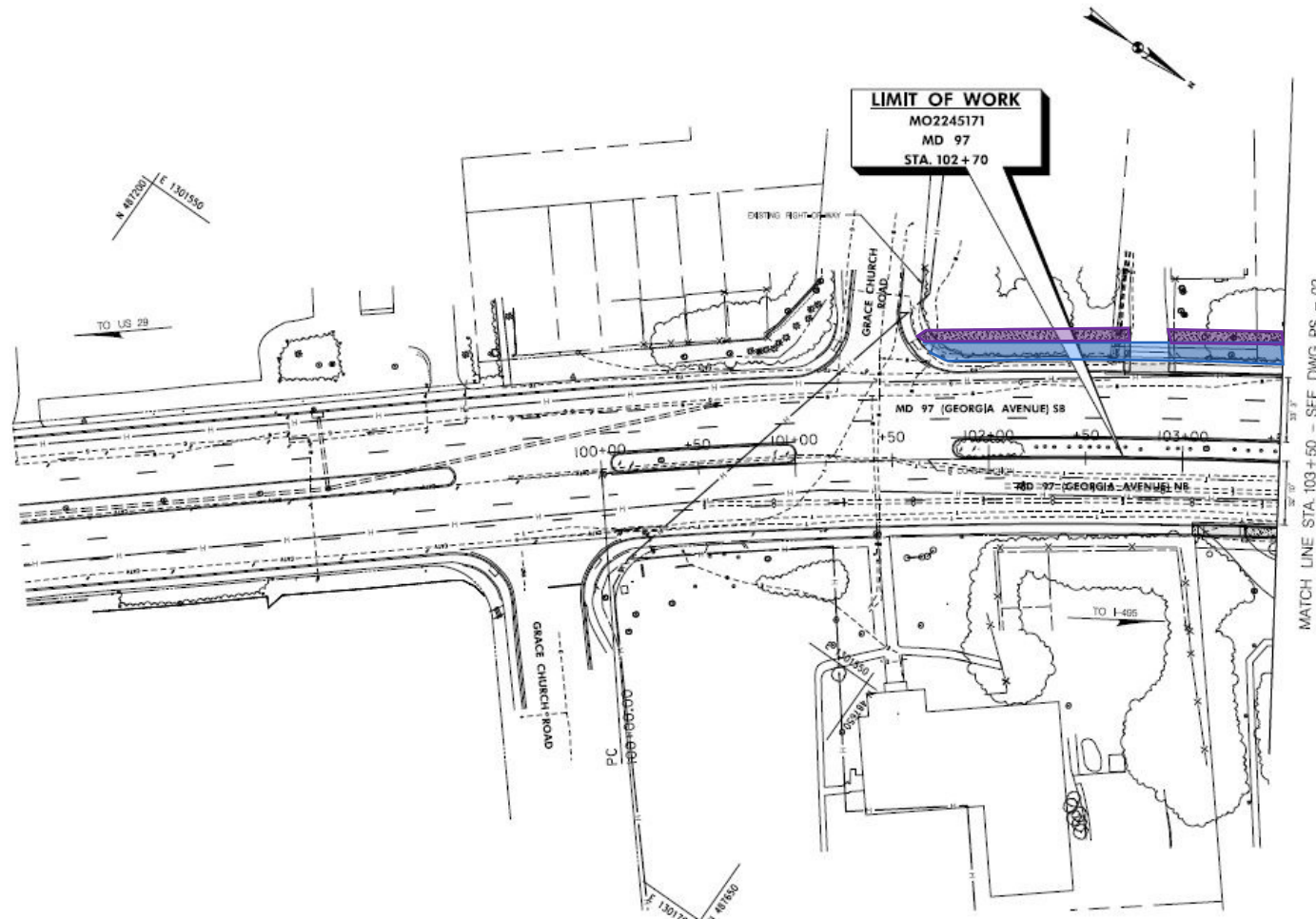
Project Introduction – Context

- Existing Georgia Avenue (MD 97) is a six to seven-lane principal urban arterial – carries approximately 69,000 vehicles per day (2019).
- Existing sidewalks on both sides – narrow/ 5’ typical with no buffer, many utility poles within sidewalk area.
- Planned bikeways per the 2018 Bicycle Master Plan:
 - Two-way separated bike lanes along the southbound side of Georgia Avenue between 16th Street and Lansdowne Way (I-495 Inner Loop Ramps)
 - Two-way separated bike lanes on the northbound side of 16th Street between Colesville Road and Georgia Avenue

Design Element Review – Plan View

Ped/Bike Facilities

- 8' - Sep Bike Lanes
- 8' Sidewalk/Path
- 5' Sidepath



QUANTITIES UNDER CONSTRUCTION

ROADWAY LEGEND		R/W PLAT NUMBER	REVISIONS
	FULL DEPTH RECONSTRUCTION		
	ACCESS ROAD WITH CELLULAR COMPARTMENT LOAD SUPPORT SYSTEM		
	STAMP CONCRETE (SEE LANDSCAPE DETAIL SHEET)		
	PARTIAL DEPTH RECONSTRUCTION		
	EXISTING SIDEWALK/PAVEMENT REMOVAL		

ROADWAY PLAN			
SCALE: 1" = 20'	DATE: _____	SA: _____	CONTRACT NO.: _____
DESIGNED BY: _____	COUNTY: MONTGOMERY		
DRAWN BY: _____	LOCALITY: _____		
CHECKED BY: _____	HORIZONTAL SCALE: _____		
DATE/REV: _____	VERTICAL SCALE: _____		
DRAWING NO. PS-01	OF 10	SHEET NO. _____	OF 76

M.D.T.
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

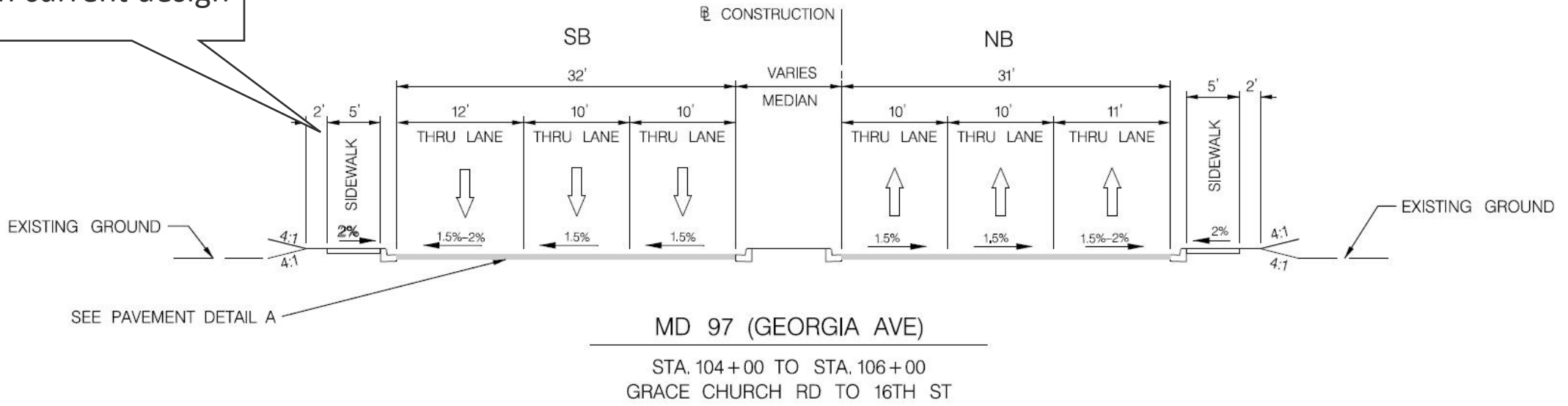
HIGHWAY DESIGN DIVISION
 MD 97 (GEORGIA AVENUE)
 FROM MD 380 (6TH STREET)
 TO MD 182 (FOREST GLEN ROAD)
 WIDEN AND RESURFACE

BY: ITWADDW

4/21/2021 10:00:01
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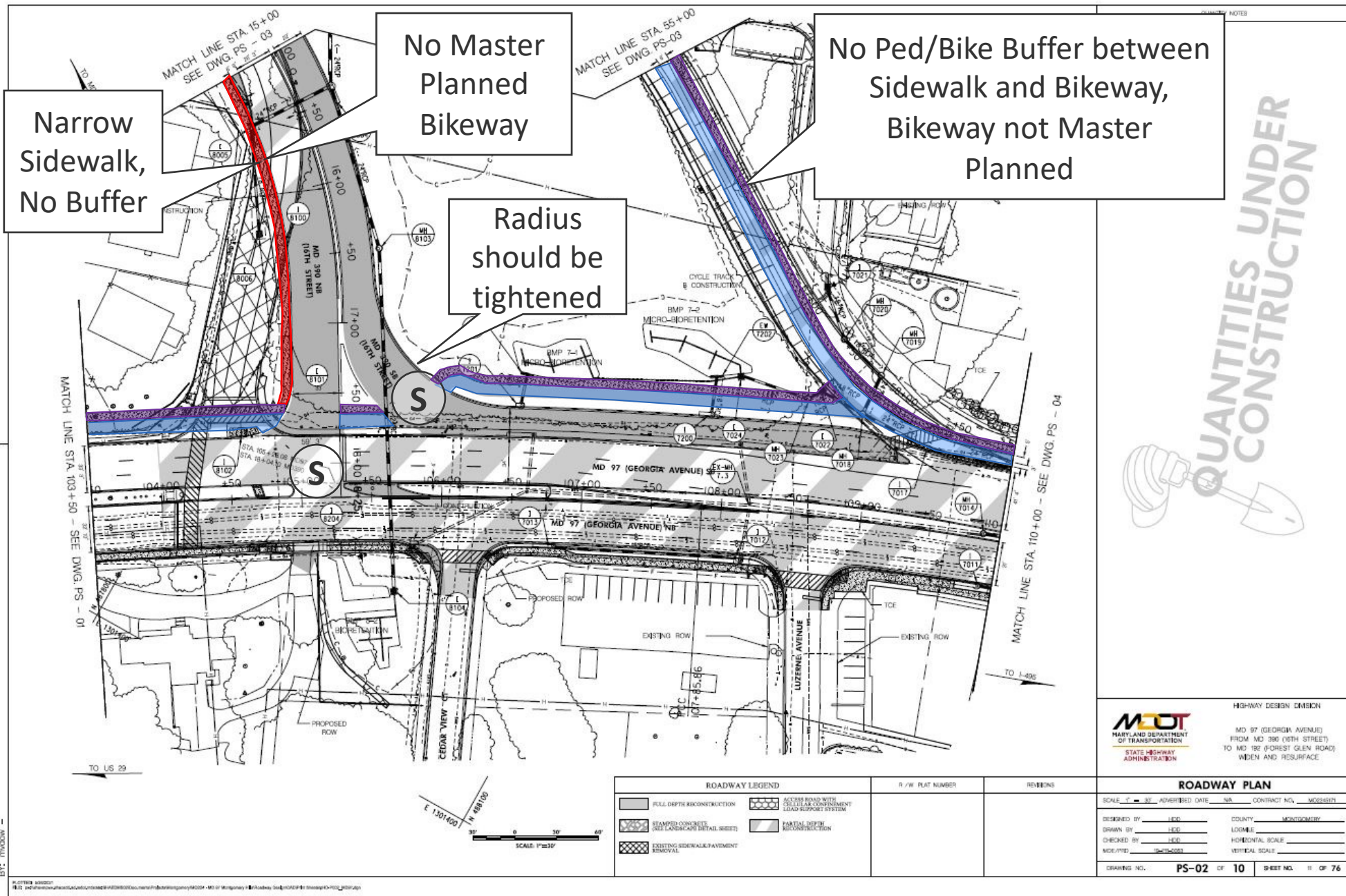
Design Element Review – Cross Sections

Separated Bike Lane not shown in current design



Georgia Avenue – South of 16th Street

Design Element Review – Plan View

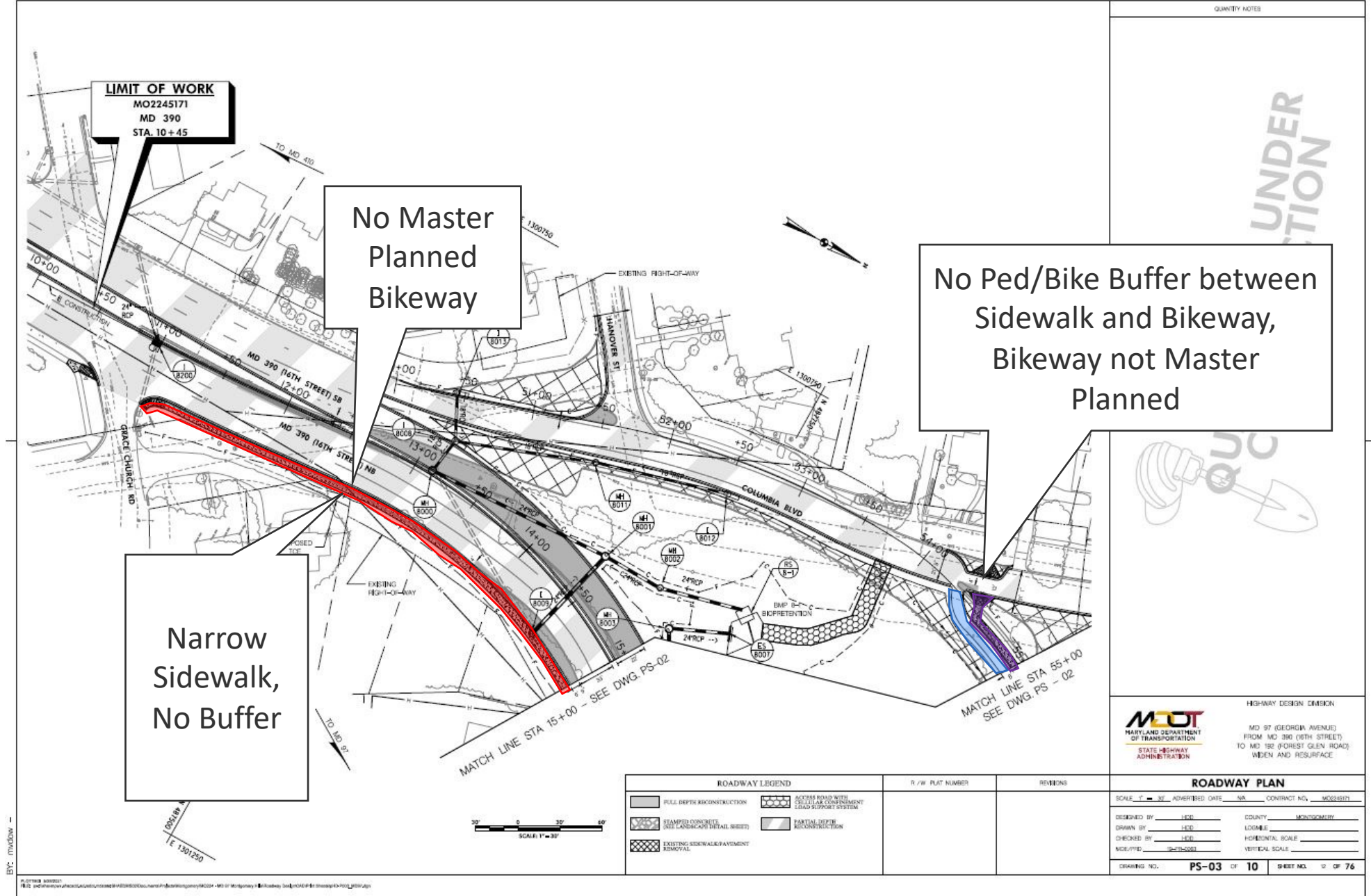


QUANTITIES UNDER CONSTRUCTION

Design Element Review – Plan View

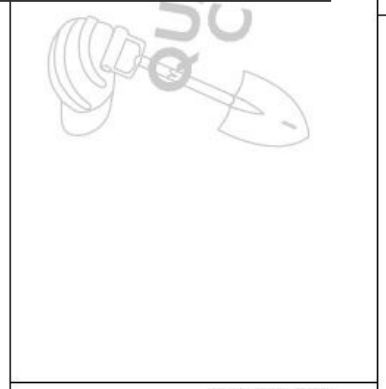
Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidepath



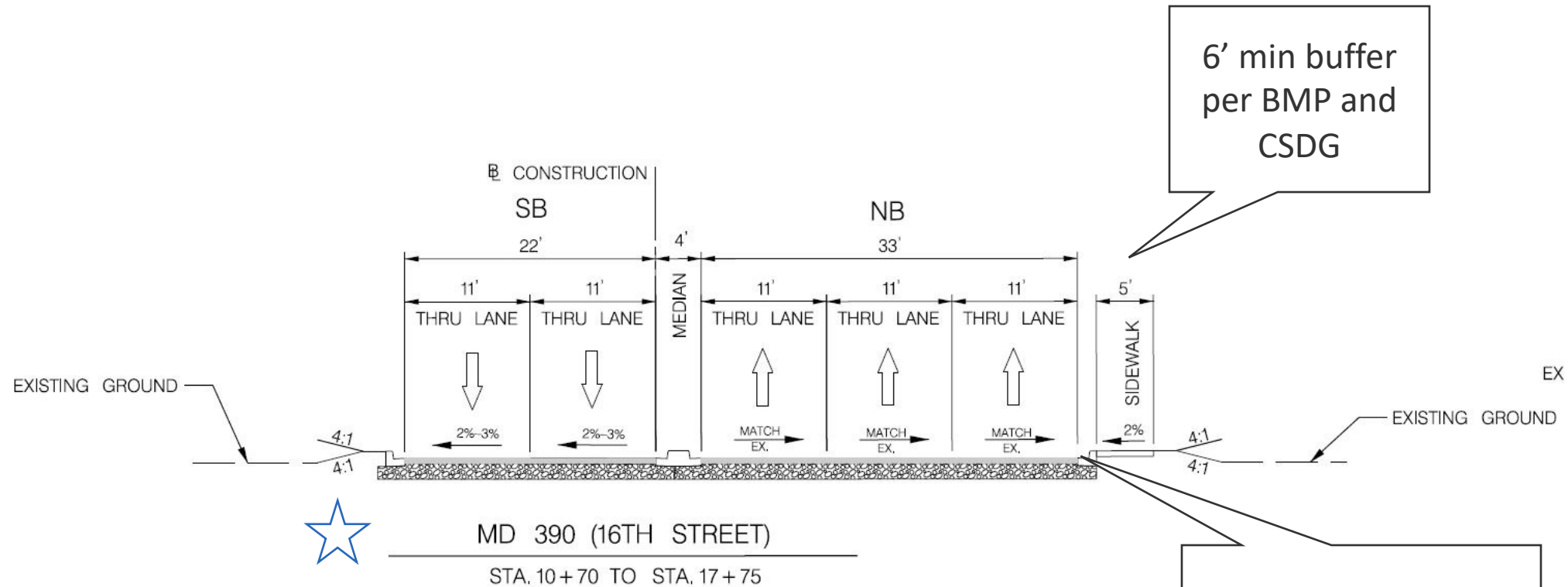
QUANTITY NOTES

UNDER
CONSTRUCTION



 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		HIGHWAY DESIGN DIVISION MD 97 (GEORGIA AVENUE) FROM MD 390 (16TH STREET) TO MD 155 (FOREST GLEN ROAD) WIDEN AND RESURFACE	
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DATE/PLO: 10/20/2021	VERTICAL SCALE: _____		
DRAWING NO.: PS-03 OF 10		SHEET NO. 12 OF 76	

Design Element Review – Cross Sections

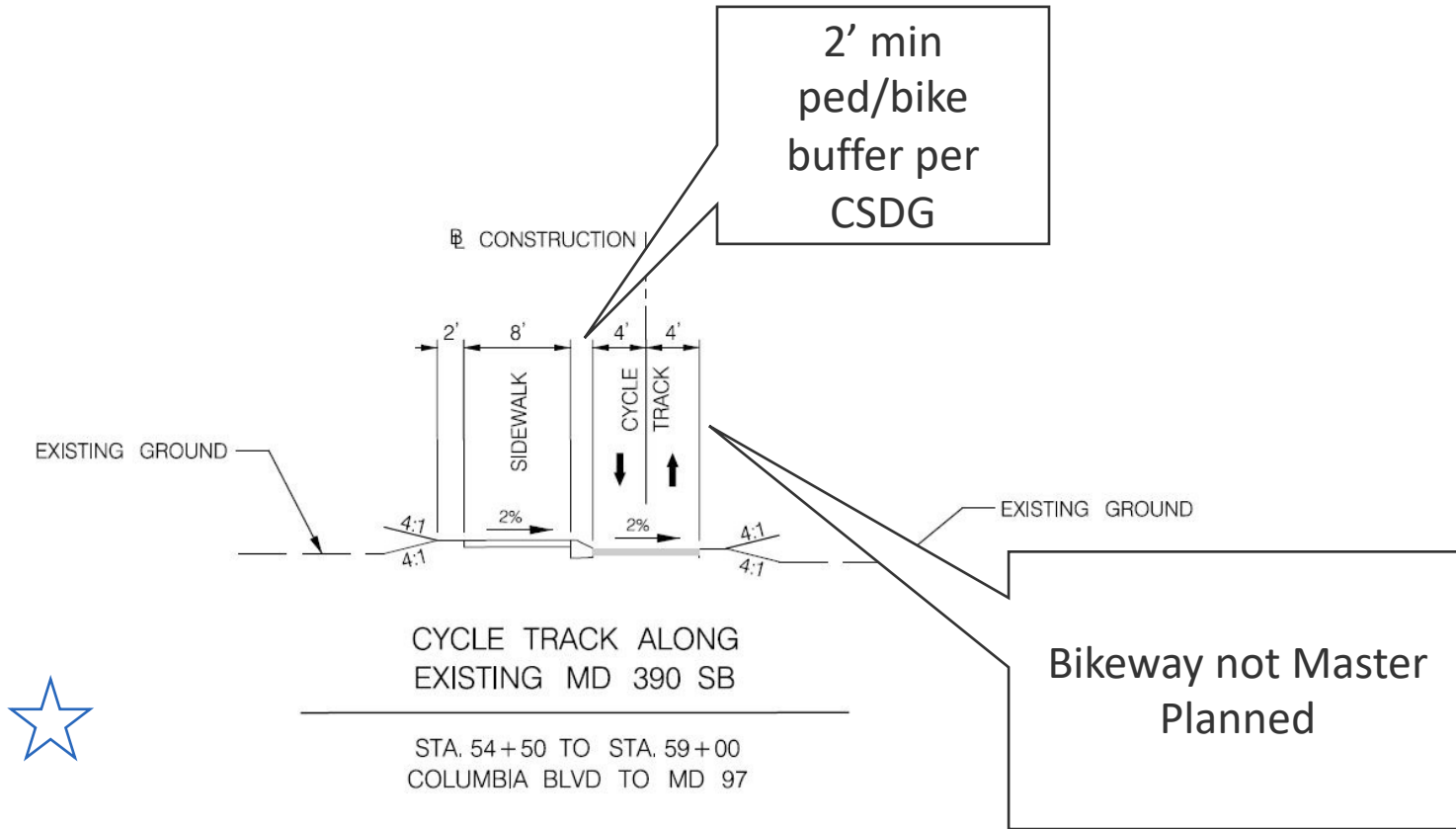


6' min buffer per BMP and CSDG

Master Planned Separated Bike Lanes not included

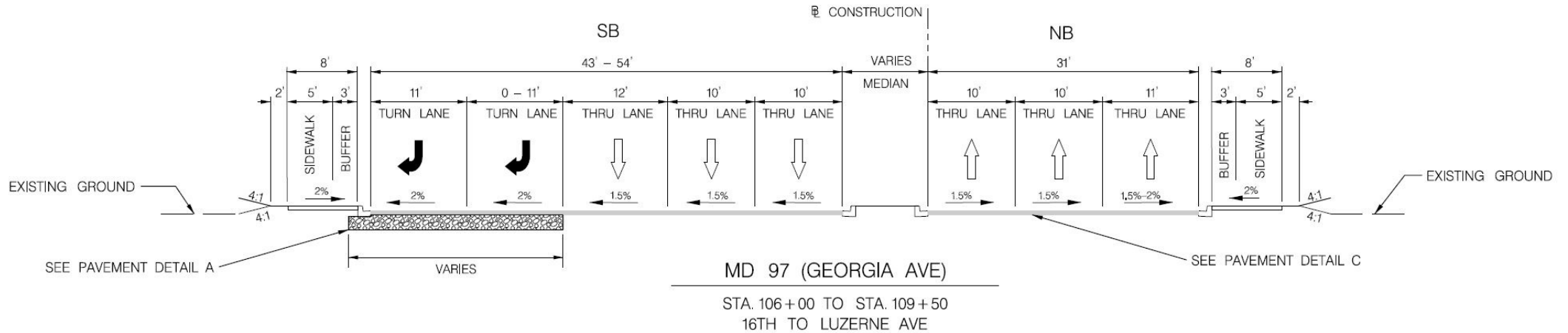
16th Street Cross Section west of Georgia Avenue

Design Element Review – Cross Sections



16th Street Separated Bike Lanes and Sidewalk on Existing Southbound Carriageway

Design Element Review – Cross Sections

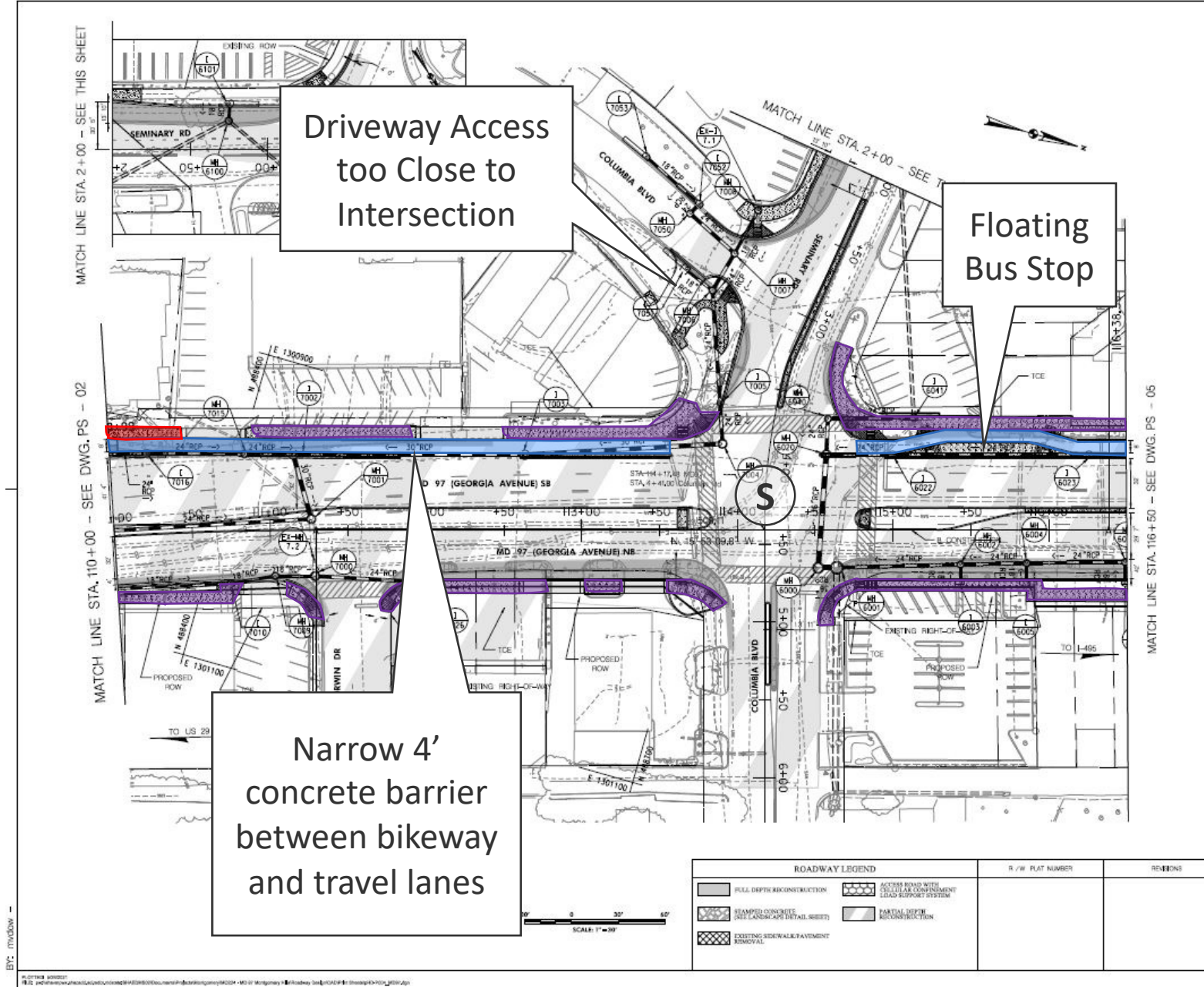


Georgia Avenue – north of 16th Street to Luzerne Avenue

Design Element Review – Plan View


Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidepath



QUANTITY NOTES

QUANTITIES UNDER CONSTRUCTION



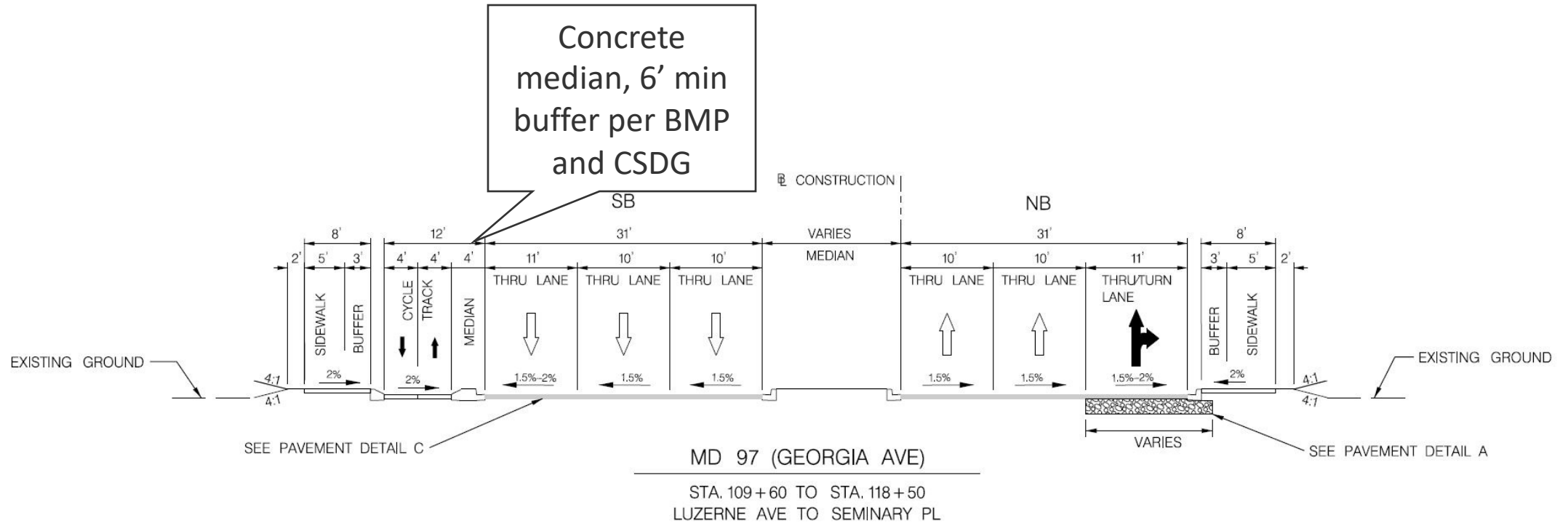
MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY DESIGN DIVISION
MD 97 (GEORGIA AVENUE)
FROM MD 380 (16TH STREET)
TO MD 198 (FOREST GLEN ROAD)
WIDEN AND RESURFACE

ROADWAY LEGEND		R/W PLAT NUMBER	REVISIONS
	FULL DEPTH RECONSTRUCTION		
	STAMPED CONCRETE (SEE LANDSCAPE DETAIL SHEET)		
	EXISTING SIDEWALK PAVEMENT REMOVAL		
	ACCESS ROAD WITH CELLULAR CONFINEMENT LEAD EQUIPMENT SYSTEM		
	PARTIAL DEPTH RECONSTRUCTION		

ROADWAY PLAN			
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MODIFIED BY: <u>HEID</u>	VERTICAL SCALE: _____		
DRAWING NO. PS-04	OF 10	SHEET NO. 10	OF 76

Design Element Review – Cross Sections



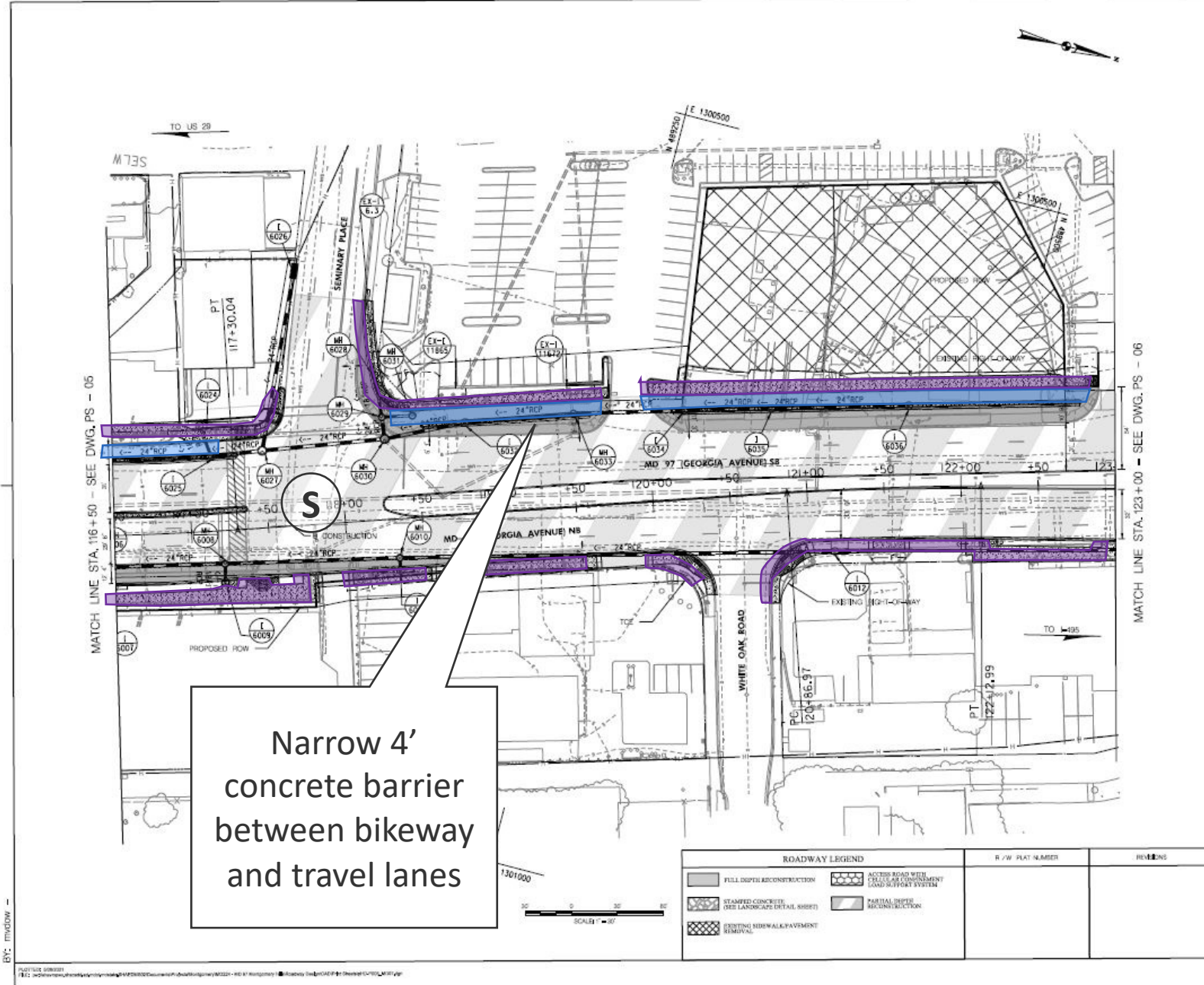
Georgia Avenue – Luzerne Avenue to Seminary Place

Design Element Review – Plan View

Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidepath

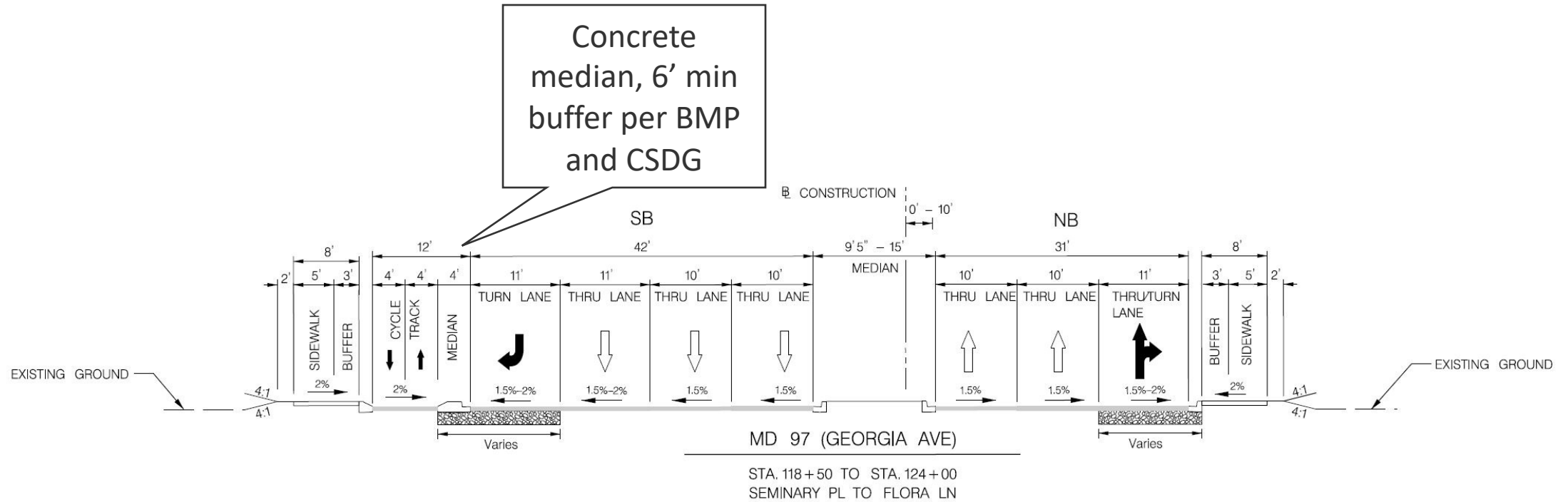
Narrow 4' concrete barrier between bikeway and travel lanes



QUANTITIES UNDER CONSTRUCTION

 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		HIGHWAY DESIGN DIVISION MD 97 (GEORGIA AVENUE) FROM MD 390 (16TH STREET) TO MD 392 (FOREST GLEN ROAD) WIDEN AND RESURFACE	
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DATE: 10/20/2021	VERTICAL SCALE: _____		
DRAWING NO. PS-05	OF 10	SHEET NO. 14	OF 76

Design Element Review – Cross Sections



Georgia Avenue – Seminary Place to Flora Lane

Design Element Review – Bikeway Facility Design

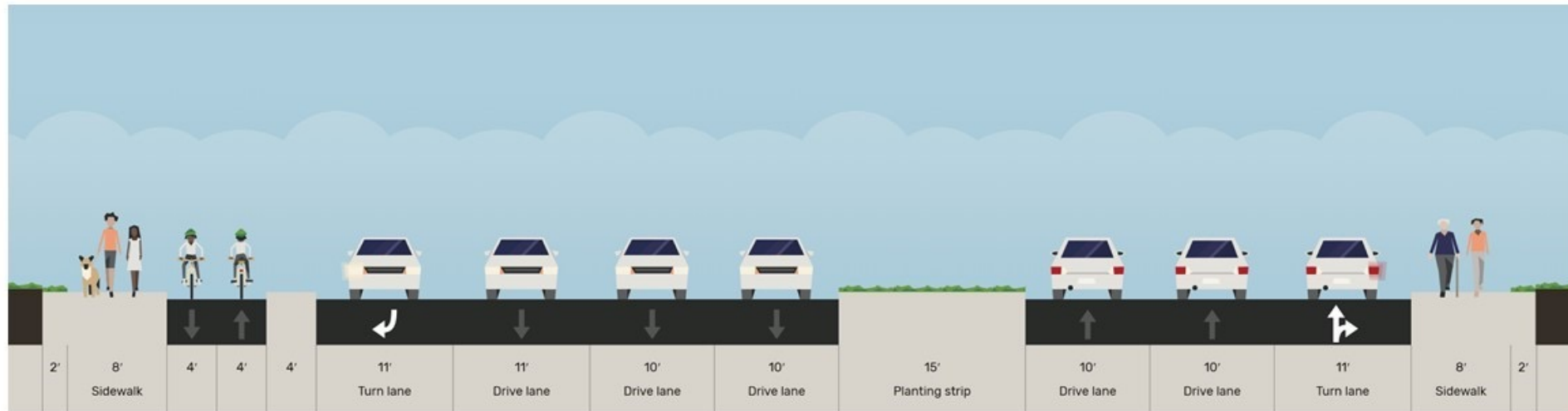


MDOT / SHA Proposal
(retrofit)



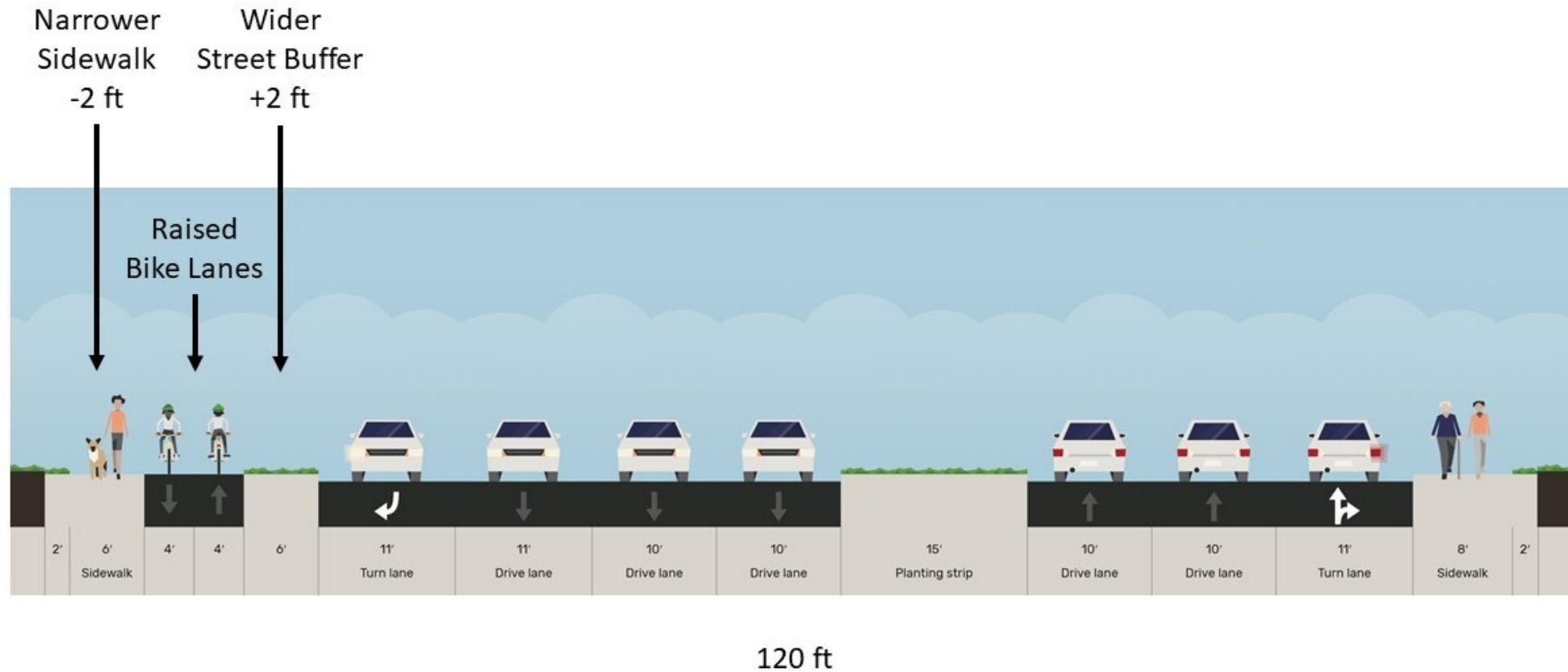
Montgomery Planning Proposal
(permanent)

Design Element Review – MDOT SHA Cross Section



120 ft

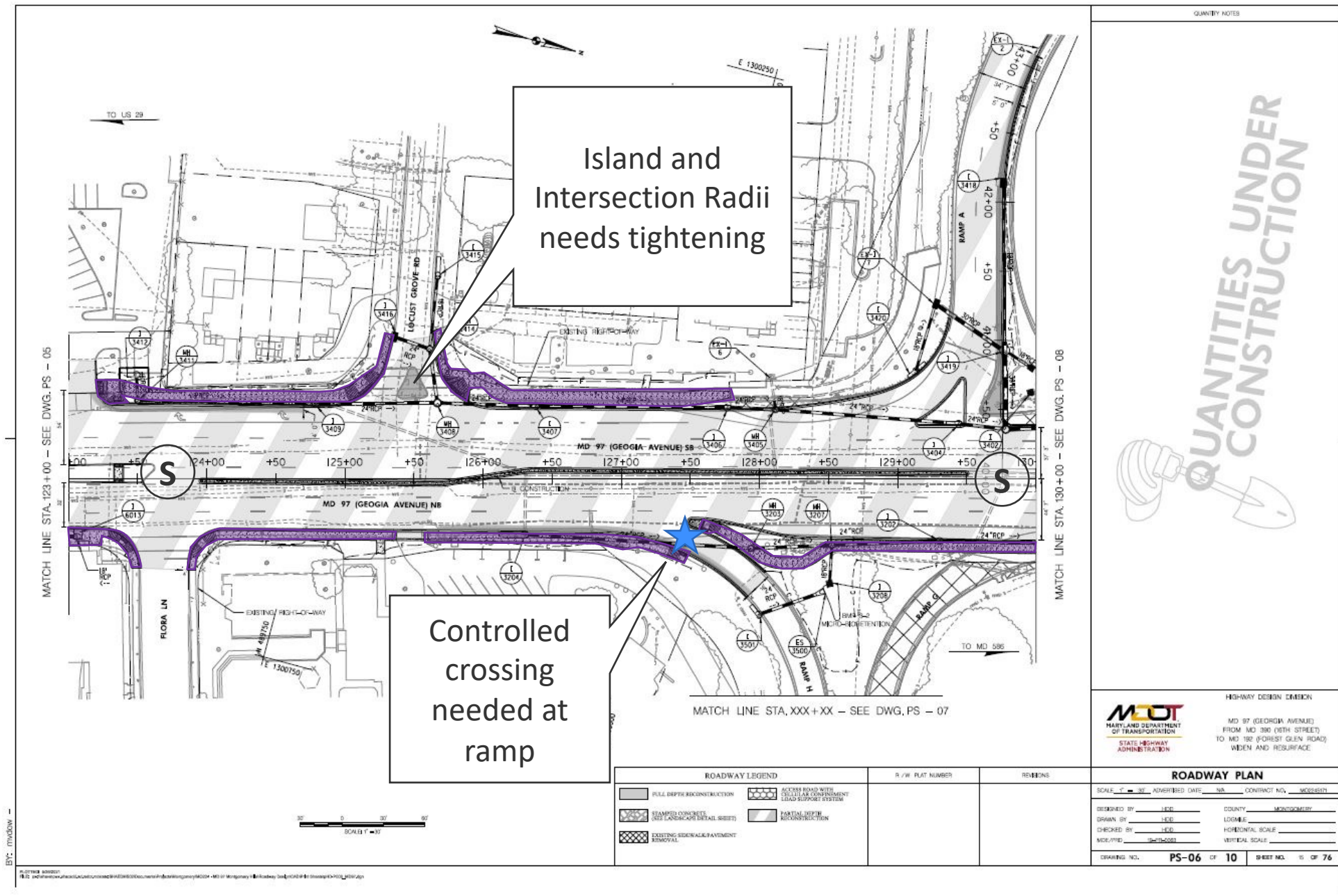
Design Element Review – Staff Proposed Cross Section



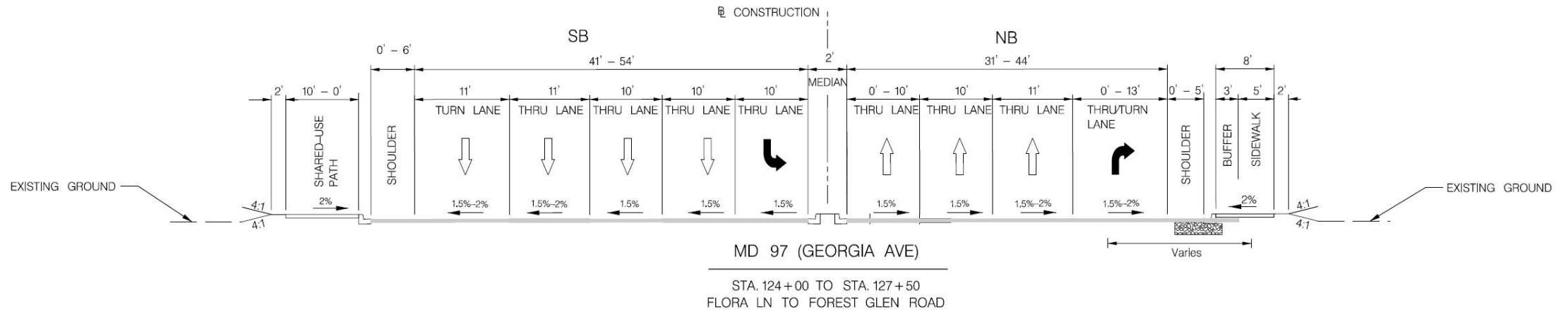
Design Element Review – Plan View

Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidepath



Design Element Review – Cross Sections

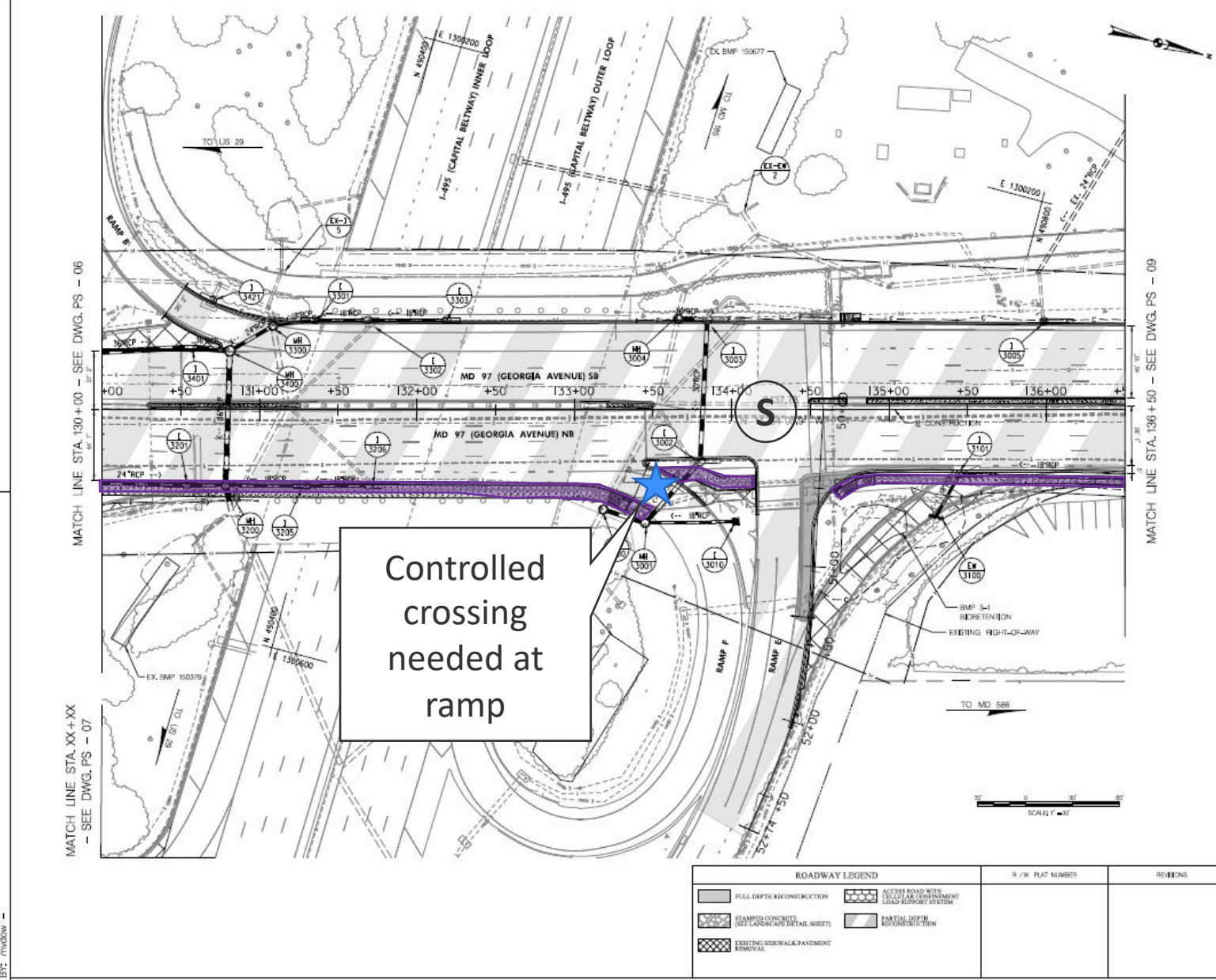


Georgia Avenue – Flora Lane to Locust Grove Road

Design Element Review – Plan View

Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidepath



Controlled crossing needed at ramp

QUANTITY NOTES

QUANTITIES UNDER CONSTRUCTION

HIGHWAY DESIGN DESIGNER


MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION




MD 97 (GEORGIA AVENUE) FROM MD 380 (15TH STREET) TO MD 192 (FOREST GLEN ROAD) WIDEN AND RESURFACE

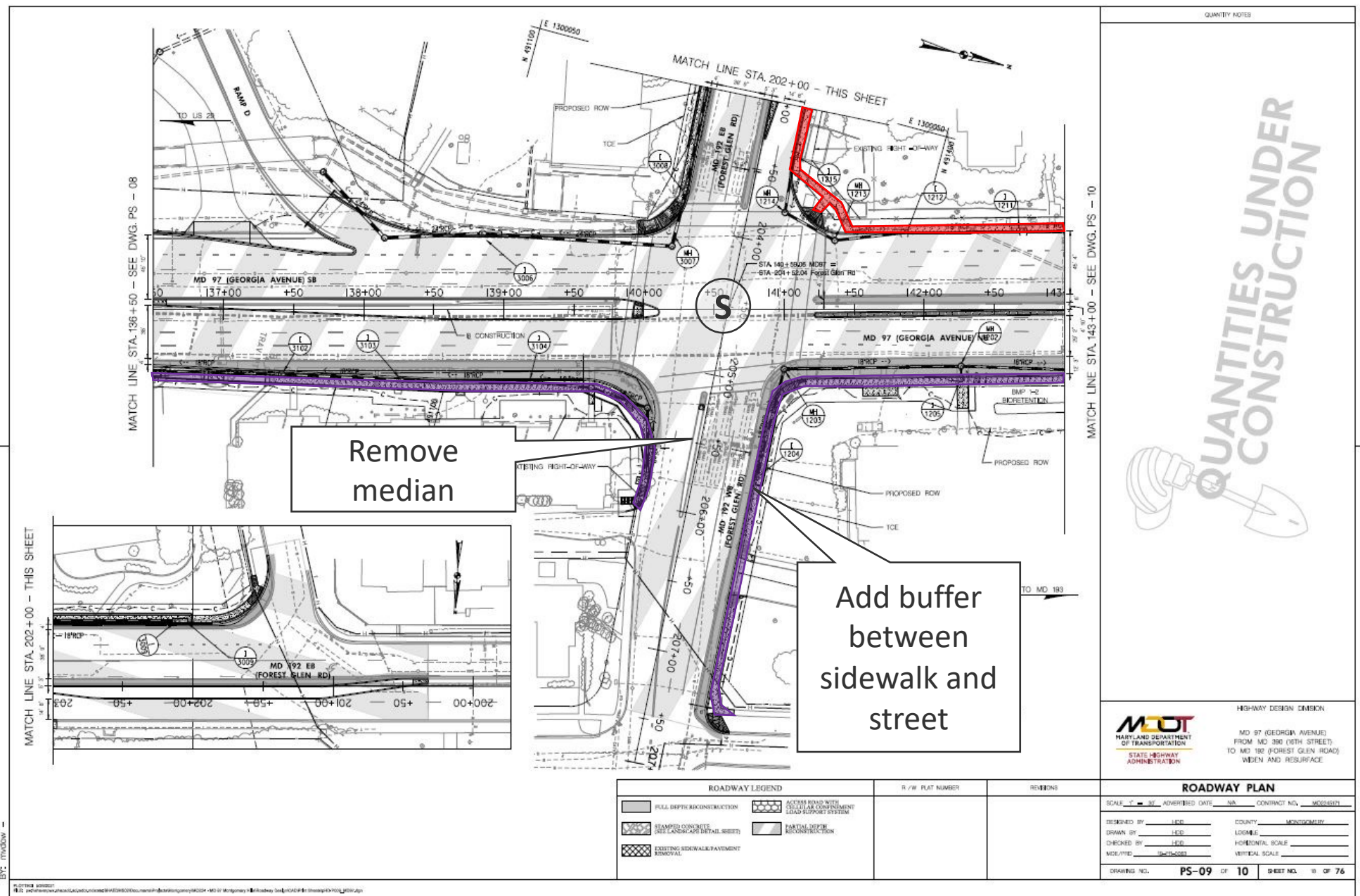
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 CHECKED BY: JEE HORIZONTAL SCALE: _____
 DATE: 10/15/2021 VERTICAL SCALE: _____
 DRAWING NO. **PS-08** OF **10** SHEET NO. **17** OF **76**

ROADWAY LEGEND		R/W PLAT NUMBER	REVISIONS
	FULL DEPTH RECONSTRUCTION		
	STAMPED CONCRETE (SEE LANDSCAPE DETAIL SHEET)		
	EXISTING SIDEWALK PAVEMENT REMOVAL		
	SECTION ROAD WITH CELLULAR COMPARTMENT LOAD SUPPORT SYSTEM		
	PARTIAL DEPTH RECONSTRUCTION		

Design Element Review – Plan View

Ped/Bike Facilities

- 8'-Sep. Bike Lanes 
- 8' Sidewalk/path 
- 5' Sidewalk 



QUANTITIES UNDER CONSTRUCTION

MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

HIGHWAY DESIGN DIVISION

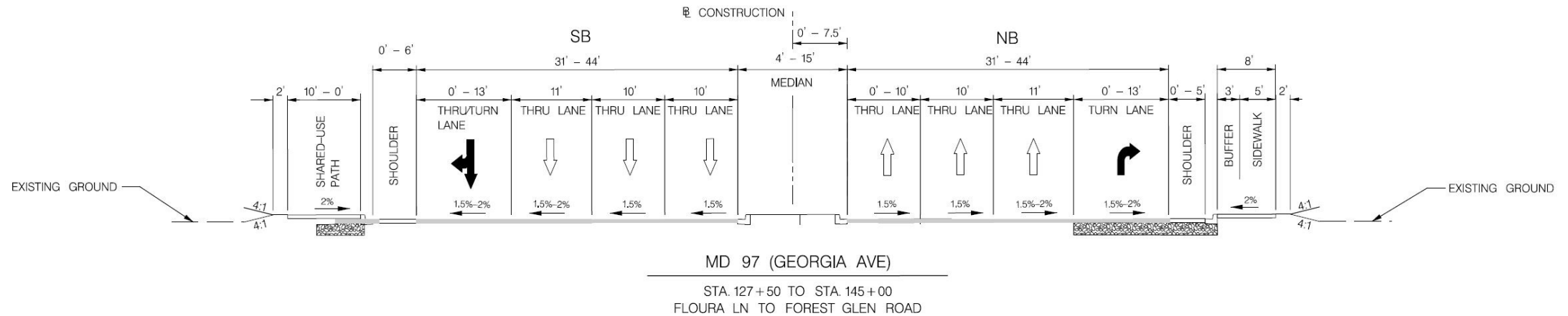
MD 97 (GEORGIA AVENUE) FROM MD 386 (WITH STREET) TO MD 182 (FOREST GLEN ROAD) WBEI AND RESURFACE

SCALE: 1" = 40' ADVERTISED DATE: NA CONTRACT NO.: MDS021033

DESIGNED BY: LEO COUNTY: MONTGOMERY
 DRAWN BY: LEO LOCAL: _____
 CHECKED BY: LEO HORIZONTAL SCALE: _____
 DATE/TIME: 12/15/2021 VERTICAL SCALE: _____

DRAWING NO. **PS-09** OF **10** SHEET NO. **10** OF **76**

Design Element Review – Cross Sections

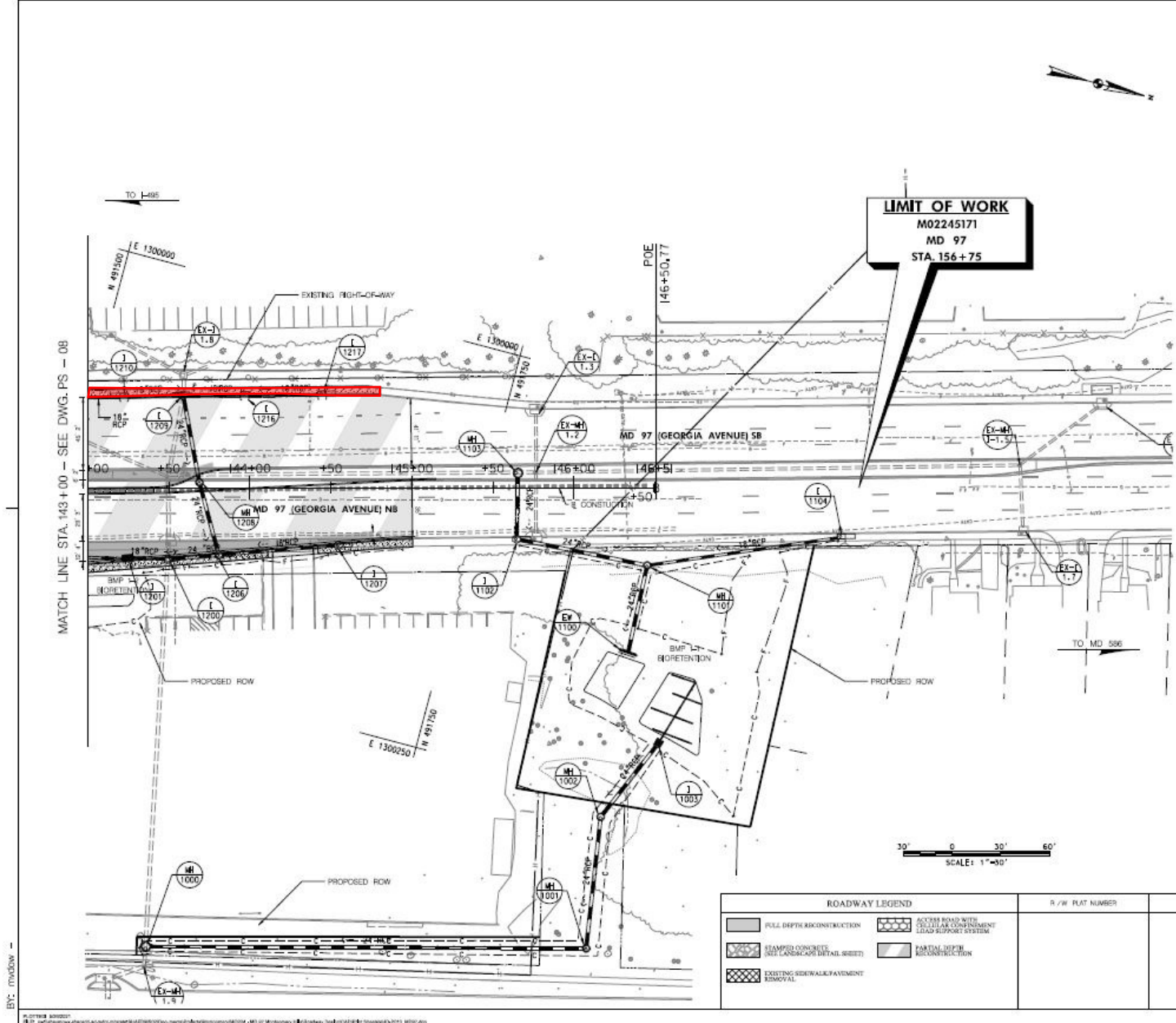


Georgia Avenue – Locust Grove Road to Forest Glen Road

Design Element Review – Plan View

Ped/Bike Facilities

- 8'-Sep. Bike Lanes
- 8' Sidewalk/path
- 5' Sidewalk



QUANTITIES UNDER CONSTRUCTION

ROADWAY LEGEND		R/W PLAT NUMBER	REVISIONS
	FULL DEPTH RECONSTRUCTION		
	STAMPED CONCRETE (SEE LANDSCAPE DETAIL SHEET)		
	EXISTING SIDEWALK PAVEMENT REMOVAL		
	ACCESS ROAD WITH CELLULAR CONFINEMENT LEAD SUPPORT SYSTEM		
	PARTIAL DEPTH RECONSTRUCTION		

ROADWAY PLAN			
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DESIGNED BY: JED	COUNTY: MONTGOMERY		
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DATE: 10/21/2021	VERTICAL SCALE: _____		
DRAWING NO. PS-10	OF 10	SHEET NO. 10	OF 76

MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION
 MD 97 (GEORGIA AVENUE) FROM MD 380 (16TH STREET) TO MD 182 (FOREST GLEN ROAD) WIDEN AND RESURFACE

Environmental Analysis – Forest Conservation and SWM

- Application is subject to Forest Conservation Law, but is exempt from the requirement to submit an FCP
 - Under Chapter 22A-5(e) – “the requirements of Article II do not apply to...a State, County, or municipal highway construction activity that is subject to Section 5-103 of the Natural Resources Article of the Maryland Code, or Section 22A-9.”
 - This Application is for a State highway construction and is subject to review under state reforestation law.
- Environmental Guidelines have been met
 - Environmental Guidelines permit disturbance for unavoidable roadway and right-of-way work.
 - Proposed work includes a Master Plan recommended bikeway, sidewalk improvement, and stormwater facilities.
 - Disturbance has been minimized to avoid major tree and environmental impacts, and the ultimate project will result improved stormwater treatment as well as increased pedestrian and bicyclist safety.
- Storm Water Management
 - At the time of plan review, final design for all stormwater treatment facilities were not yet available.
 - Maryland Department of the Environment (MDE) required sediment/erosion control measures to be used during construction.
 - Final design proposals for stormwater management will include both above ground and underground, covered, stormwater management facilities. Underground treatment will be used on 16th street parcel to be dedicated to



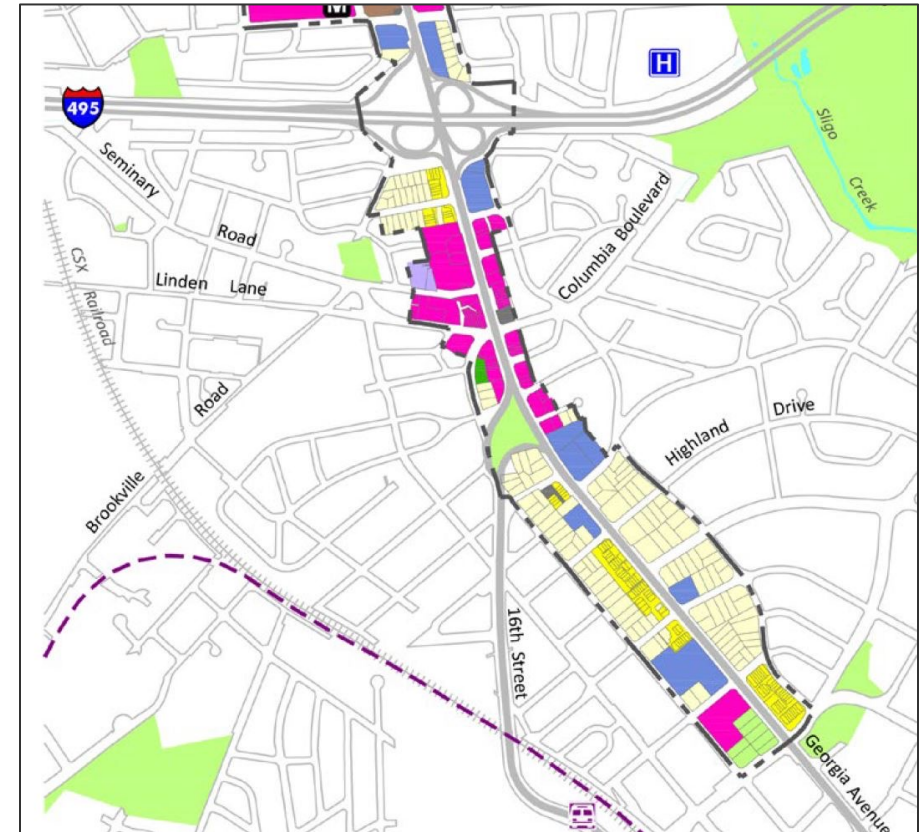
Master Plan Conformity- Parkland

Recommendation from Forest Glen/Montgomery Hills Sector Plan (2020):

“Transform underutilized, state-owned property at the intersection of Georgia Avenue and 16th Street into a new gateway urban recreational park. The gateway space would mark the entrance of the community and provide for a much-needed athletic field in this area of

the County.” (page 55).

Table 5 in Sector Plan (page 55) identifies future park as urban recreational park, estimated size 3 acres.



Excerpt from Forest Glen/Montgomery Hills Sector Plan:
Map 23: Recommended Land Use

Master Plan Conformity- Parkland



Excerpt from page 83 of Forest Glen/Montgomery Hills Sector Plan:
Reimagined SHA Right-of-Way / Georgia Avenue and 16th Street intersection

Master Plan Conformity - Transportation

- The Master Plan of Highways and Transitways recommends Georgia Avenue (MD 97) as a six-lane Major Highway with planned BRT in mixed traffic within a 120-foot wide right of way. 16th Street (MD 390) is a six-lane Major Highway within a 120-foot wide right of way and only 4 future lanes planned. This 6 to 4 lane reduction will occur on 16th Street at the Woodside Purple Line station to the south.
- The Bicycle Master Plan recommends:
 - Georgia Avenue - a separated bikeway – two-way separated bike lanes along the southbound direction of Georgia Avenue between the I-495 Inner Loop ramp and 16th Street, and
 - 16th Street – separated bikeway – two-way separated bike lanes along the northbound direction of 16th Street between Colesville Road and Georgia Avenue

Recommendations

1. **Instead of constructing separated bike lanes on Georgia Avenue (MD 97) between 16th Street (MD 390) and Grace Church Road, the project should be modified as follows:**
 - a) **Northbound 16th Street between Georgia Avenue and Grace Church Road: Shift 16th Street to the north and construct 8-foot wide two-way separated bike lanes, 2-foot wide ped/bike buffer, 6-foot-wide sidewalk and 6-foot-wide street buffer on the south side of 16th Street. The separated bike lanes should be located at curb level (8 inches above the street) and the sidewalk should be located 3 inches above the separated bike lanes with a rolled curb. This is a critical bike facility recommended in the 2018 approved Montgomery County Bicycle Master Plan to connect bike users along Georgia Avenue with the Woodside Purple Line station (under construction) and into Downtown Silver Spring and points south into Washington DC. These recommendations were included in the 2018 Bicycle Master Plan, the 2017 Greater Lyttonsville Sector Plan, and the 2020 Forest Glen/Montgomery Hills Sector Plan.**
 - b) **Georgia Avenue between 16th Street and Grace Church Road: Construct a 6-foot-wide sidewalk with a 6-foot-wide buffer from traffic on the west side of the road.**

Recommendations (Continued)

2. The separated bike lanes proposed to use the existing southbound 16th Street carriageway should be truncated and terminated at Luzerne Avenue. A bikeway is not master planned to the west of Luzerne Avenue, and the provision of the separated bike lanes on the south side of 16th Street, as stated in comment #1, is of paramount importance to the development of a cohesive bicycle network in this portion of Silver Spring.
3. The portion of land between 16th Street, MD 97 and Luzerne Avenue, will be conveyed in-fee to M-NCPPC as recommended in the *Forest Glen/Montgomery Hills Sector Plan* prior to substantial completion of the project. The design of the SHA improvements need to accommodate the construction of a rectangular athletic field and other park amenities by M-NCPPC. The land conveyance boundary and any project impacts to the future parkland need to be finalized through the Park Construction Permit review process. Planning staff request that unused portions of the southbound 16th Street Right-of-Way be included in that dedication.

Recommendations (Continued)

4. In general, the provision of narrow sidewalks along arterial roadways with no buffers is incompatible with the Vision Zero/Context Driven/Complete Streets priorities of both MDOT SHA and Montgomery County. Montgomery County is developing a Pedestrian Master Plan, and Planning staff anticipate recommending, as a countywide policy, that new sidewalk construction or retrofits achieve a Pedestrian Level of Comfort score of 2 or better.¹ In the 16th Street context, with a 35 mph posted speed limit and a 5-foot sidewalk, the landscape buffer would need to be at least 8 feet to achieve this condition.
5. The radius provided at the southbound dual right-turn lanes on Georgia Avenue at 16th Street (estimated at 100 feet approximately) should be made tighter than the current design. There is no need to process southbound right turns at a high rate of speed, particularly given that a future park will be located adjacent to this corner. A

¹ Montgomery County evaluates pedestrian adequacy using a comprehensive methodology called the Pedestrian Level of Comfort (PLOC). This has been developed as part of the ongoing Pedestrian Master Plan and is described in detail in the [PLOC methodology documentation](#). On a scale of 1 (very comfortable) to 4 (undesirable), a PLOC of 2 is defined as somewhat comfortable.

Recommendations (Continued)

6. **Modify the west side of Georgia Avenue between Flora Lane and Luzerne Avenue as follows: provide a 6-foot-wide sidewalk, 8-foot-wide separated bike lanes and 6-foot-wide grass buffer. The separated bike lanes should be located at curb level (8 inches above the street) and the sidewalk should be located 3 inches above the separated bike lanes with a rolled curb. While the 6-foot-wide sidewalk (5-foot-wide sidewalk with one-foot-wide buffer) would be substandard for this street type (it would still meet ADA standards), it could be expanded with redevelopment, and the proposed separated bike lanes would have a comfortable level of traffic stress, per Appendix D of the 2018 Bicycle Master Plan. This modification would have safety benefits and would result in future design savings with the bike facility not needing to be reconstructed when redevelopment occurs.**

Recommendations (Continued)

7. **With regard to complete parcels to be acquired by MDOT SHA (car wash and Shell gas station):**
 - a) **Full width facilities should be provided, including an 8-foot-wide street buffer, 8-foot-wide separated bike lanes, a 3-foot-wide ped/bike buffer, and an 8-foot-wide sidewalk.**
 - b) **Consideration should be given to requiring consolidated access with the adjacent shopping center parcel. Tying continuance of the existing curb cut at station 119+90 with the agreement to an interparcel access agreement with the owner of the acquired properties should be considered. This is needed if MDOT SHA sells these parcels in the future.**
8. **The parcel located on the southwest quadrant of the MD 97/Seminary Road intersection has been designed with an extra access onto Columbia Boulevard. This driveway, as shown on plan PS-04, is too close to the intersection of Seminary Road with Columbia Boulevard, and this parcel already has one access point on Columbia Boulevard. This driveway should be removed from the design.**

Recommendations (Continued)

9. The two I-495 on-ramps from northbound MD 97 should have protected crossings (signals) for pedestrians and bicyclists.
10. Remove the island and tighten the turn radius at the intersection of MD 97 and Locust Grove Road.
11. Eliminate the median on Forest Glen Road east of Georgia Avenue and use the space to provide a buffer between the sidewalks and the street.
12. Bike signals should be included in the design for the separated bike lanes.
13. Protected intersections are needed to improve safety for pedestrians and bicyclists where the separated bike lanes and sidepaths intersect with Seminary Place, Seminary Lane and 16th Street.

Recommendations (Continued)

14. MDOT SHA should coordinate with the Montgomery County Department of Transportation on the proposed floating bus stop on southbound MD 97 at Seminary Road. This coordination is essential to ensure consistency in the development of this new design treatment within Montgomery County given the lack of a definitive Federal standard. Additionally, MCDOT has implemented a floating bus stop successfully on 2nd Avenue in downtown Silver Spring and lessons learned from that experience could apply at this location, particularly in developing accommodations for individuals with visual and physical impairments.
15. The 35 mph design speed used for the MD 97 Montgomery Hills Design Project is inconsistent with the Master Planned 25 mph target speed. Staff urges MDOT SHA to modify the design to a lower speed threshold and in addressing a response to this comment, MDOT SHA should explain how the target speed of 25 mph will be achieved along this corridor due to specific design elements incorporated into the project, including narrow travel lanes, signal timing and other measures.



MD 97 PROPOSED IMPROVEMENTS (ALTERNATE 5B MODIFIED)

Legend

Sidewalk	Pavement Removal	Building	Green Space
Pavement	Stormwater Management Facility	Potential Total Take	Traffic Signal



Montgomery Planning | Countywide Planning and Policy Division

09/23/2021
 Agenda item 4

Montgomery Hills MD 97 Design Project

Mandatory Referral # MR2021033

