



SHA CTP Project No. MO344M21, MD 355, Phase 2, Montrose Parkway, Design Review

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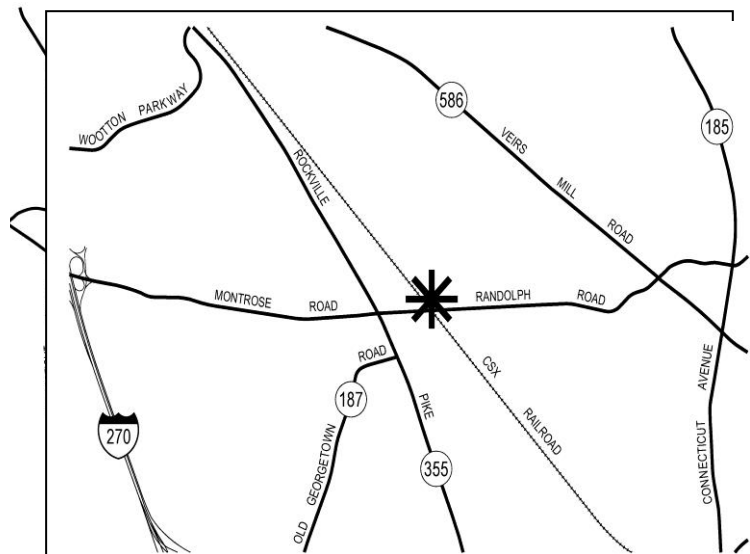
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Completed: 3/14/13

Description

MD 355 Phase 2 Montrose Parkway is a Maryland State Highway Administration (SHA) Consolidated Transportation Program (CTP) project that is being funded by the Montgomery County Department of Transportation (MCDOT) to construct Montrose Parkway as a four-lane parkway between Rockville Pike (MD 355) and Parklawn Drive. The project includes a 10-foot wide shared-use path and 5-foot wide sidewalks.

This 0.62-mile long project is located within the White Flint II Sector Plan and North Bethesda/Garrett Park Master Plan areas.



Summary

This project would construct the segment of Montrose Parkway between its current terminus east of the existing Montrose Parkway/Rockville Pike (MD 355) interchange and Parklawn Drive. As shown in Attachment 1, the project description form (pdf), this project includes a bridge over Nebel Street and the CSX railroad tracks and includes a “single point urban” interchange at Parklawn Drive. Refer to Attachment 2 for a location map with the project limits.

The purpose of this design review is to solicit the Planning Board’s comments on the preliminary design that will subsequently develop in greater detail for presentation to the Board as a Mandatory Referral later this year. Planning Department staff is requesting that the Planning Board’s comments and recommendations on two issues below be transmitted to MCDOT and SHA:

1. Whether the at-grade CSX railroad crossing at Randolph Road should be retained after construction of this portion of Montrose Parkway, a decision that will affect:
 - a. The planned intersection design at Montrose Parkway and Chapman Avenue/Maple Avenue;
 - b. The planned connection between Chapman Avenue and Nebel Street north of Montrose Parkway;
 - c. The realignment of Randolph Road to connect between Chapman Avenue and Nebel Street south of Montrose Parkway.

2. Whether Montrose Parkway at Parklawn Drive should be designed as a grade-separated interchange or as an at-grade intersection.

Background

Previous Board Action

The Board reviewed and approved the Mandatory Referral for Phase 1 of the State's project, for a grade-separated interchange at Montrose Parkway and MD 355, on December 7, 2006. (The subject project is Phase 2.)

Nearby Related Transportation Projects

The following are nearby related transportation projects being planned and designed as shown on Attachment 3:

1. Chapman Avenue Extended (now Maple Avenue), MCDOT Capital Improvements Program (CIP) Project 5000719: Chapman Avenue Extended would construct a road between Randolph Road and Old Georgetown Road. Within the proposed 70-foot wide closed section right-of way will be: five-foot wide sidewalks on both sides, landscape panels of varying widths up to eight feet wide on each side of the road, streetlights, storm drainage, and stormwater management. Existing utilities will be moved underground. This project would improve local traffic circulation in the White Flint area. Design plans were completed in 2010. Construction is estimated to start in winter 2014 and end in fall 2015.
2. Montrose Parkway East, MCDOT CIP Project 500719: This project would construct a 4-lane divided parkway from Parklawn Drive to Veirs Mill Road (MD 586). The Planning Board reviewed and approved the County's Montrose Parkway East project on November 1, 2007. The project includes an improvement at the intersection with Veirs Mill Road. The final design phase is estimated to end in June 2013. Construction of this CIP project is scheduled to begin in 2018 and be finished in December 2020.
3. White Flint District West (west of MD 355), MCDOT CIP Project 501116: This project is for the completion of preliminary engineering for 35% plans, initial land acquisition for one new road, one relocated road, improvements to three existing roads, and one new bikeway in the White Flint District West area to satisfy the Sector Plan's Stage 1 requirements. Various improvements to the roads will include new traffic lanes, shared-use paths, the undergrounding of overhead utility lines, other utility relocations, and streetscaping. The project also includes the estimated final design, construction, and land acquisition costs for the projects approved in Resolution No. 16-1570, White Flint Sector Plan Implementation Strategy and Infrastructure Improvement List, Action items No. 7 and 10. These projects will become stand-alone projects once preliminary engineering for 35% is complete and final construction costs can be determined.
4. White Flint District East (east of MD 355), MCDOT CIP Project 501204: This project provides for completing preliminary engineering for 35% plans, for three new roads and one bridge in the White Flint District East area. All the roadway segments will be designed in FY 2012-2013. Various improvements to the roads will include new traffic lanes, shared use paths, the undergrounding of overhead utility lines, other utility relocations and streetscaping. The project also includes the estimated final design and construction costs for a bridge across the White Flint Metro Station, which is included in Resolution No. 16-1570, White Flint Sector Plan Implementation Strategy and Infrastructure Improvement List, Action item No. 12. These projects will become stand-alone projects once preliminary engineering for 35%

plans is complete and final construction costs can be accurately determined. This project assumes the developers will dedicate the land needed for this project.

5. White Flint Traffic Analysis and Mitigation, MCDOT CIP Project 501202: This project is in direct response to requirements of the approved 2010 White Flint Sector Plan. It is composed of three components with the overall goal of mitigating the traffic impacts on communities and major intersections outside of and surrounding the White Flint Sector Plan area that will occur as a result of development densities approved under the new White Flint Sector Plan. The project has three study components: Cut-through traffic monitoring and mitigation, capacity improvements to address congested intersections, and a study of strategies and implementation techniques to achieve the Sector Plan's modal split goal.
6. MD 355 from Nicholson Lane to 0.1 mile north of Old Georgetown Road (MD 187), SHA Capital Transportation Program (CTP) Project MO1165177: This project includes streetscape, resurfacing, and ADA improvements and is under construction with an anticipated completion date of September 2013.

The following are nearby related transportation projects already constructed are as follows:

1. MD 355 Interchange Phase I: This SHA project constructed a grade-separated interchange of Montrose Parkway at MD 355 as Phase I of a two-phase SHA project. It was completed in fall 2010.
2. Montrose Parkway West: This project constructed the four-lane divided roadway from 200 feet east of Tildenwood Drive to Old Georgetown Road and widened Montrose Road from four to six lanes between Tower Oaks Boulevard and Montrose Parkway. It was completed in 2008.

Master Plan Consistency – Roadway

The project is consistent with the Master Plan with respect to the recommendation for Montrose Parkway as a four-lane divided arterial. Pedestrians would be accommodated along Montrose Parkway via a 5-foot wide concrete sidewalk with handicapped ramps along the south side and a 10-foot wide asphalt shared use path on the north side.

Montrose Parkway

The 1992 North Bethesda/Garrett Park Master Plan recommends Montrose Parkway as a four-lane divided arterial, A-90, with a 300-foot right-of-way, landscaped median, and a hiker-biker trail/Class I bikeway between Montrose Road and Parklawn Drive. On page 154, it states that "it would have points of access to Rockville Pike and/or Old Georgetown Road, be grade-separated at Rockville Pike, Randolph Road, and the CSX Railroad...". These three grade separations are also shown in Figure 1 below from the North Bethesda/Garrett Park Master Plan's Figure 56 on page 159. No specific recommendation is made for an interchange at Parklawn Drive on either page.

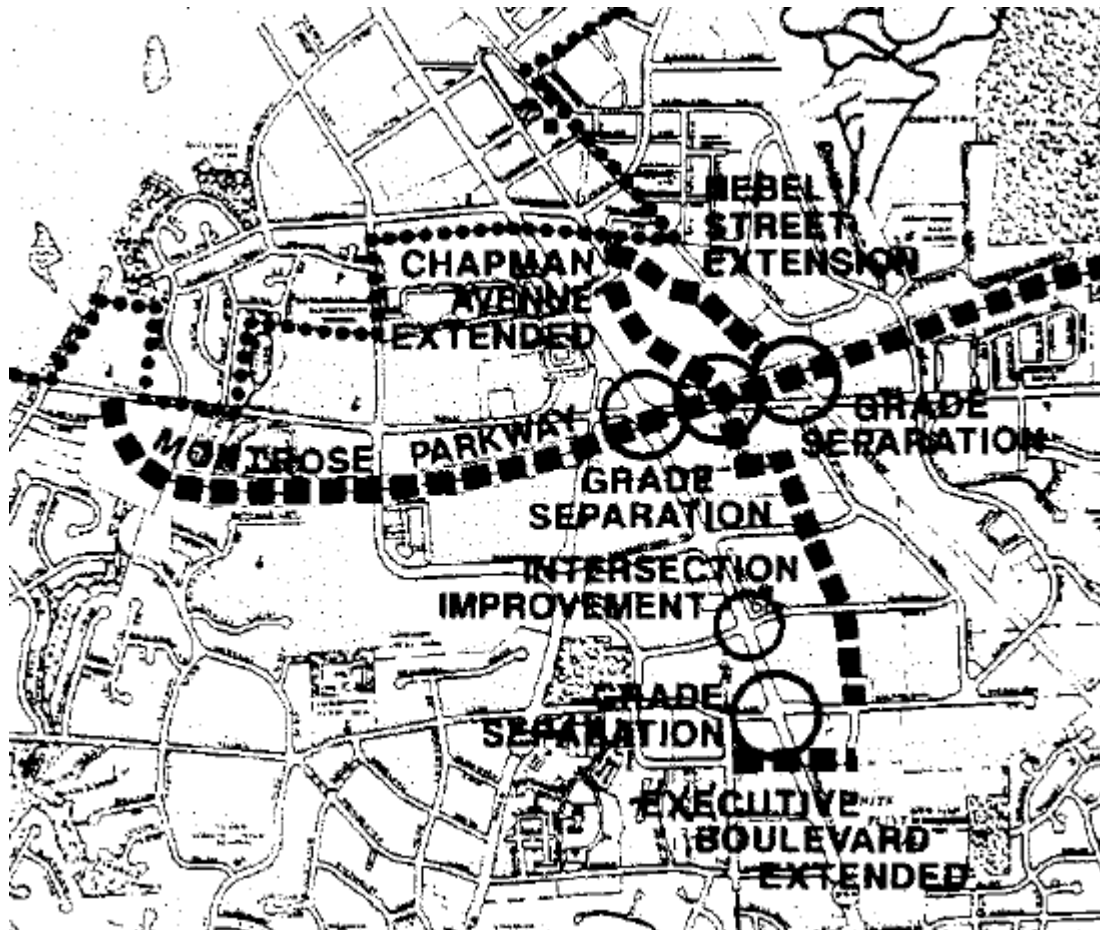
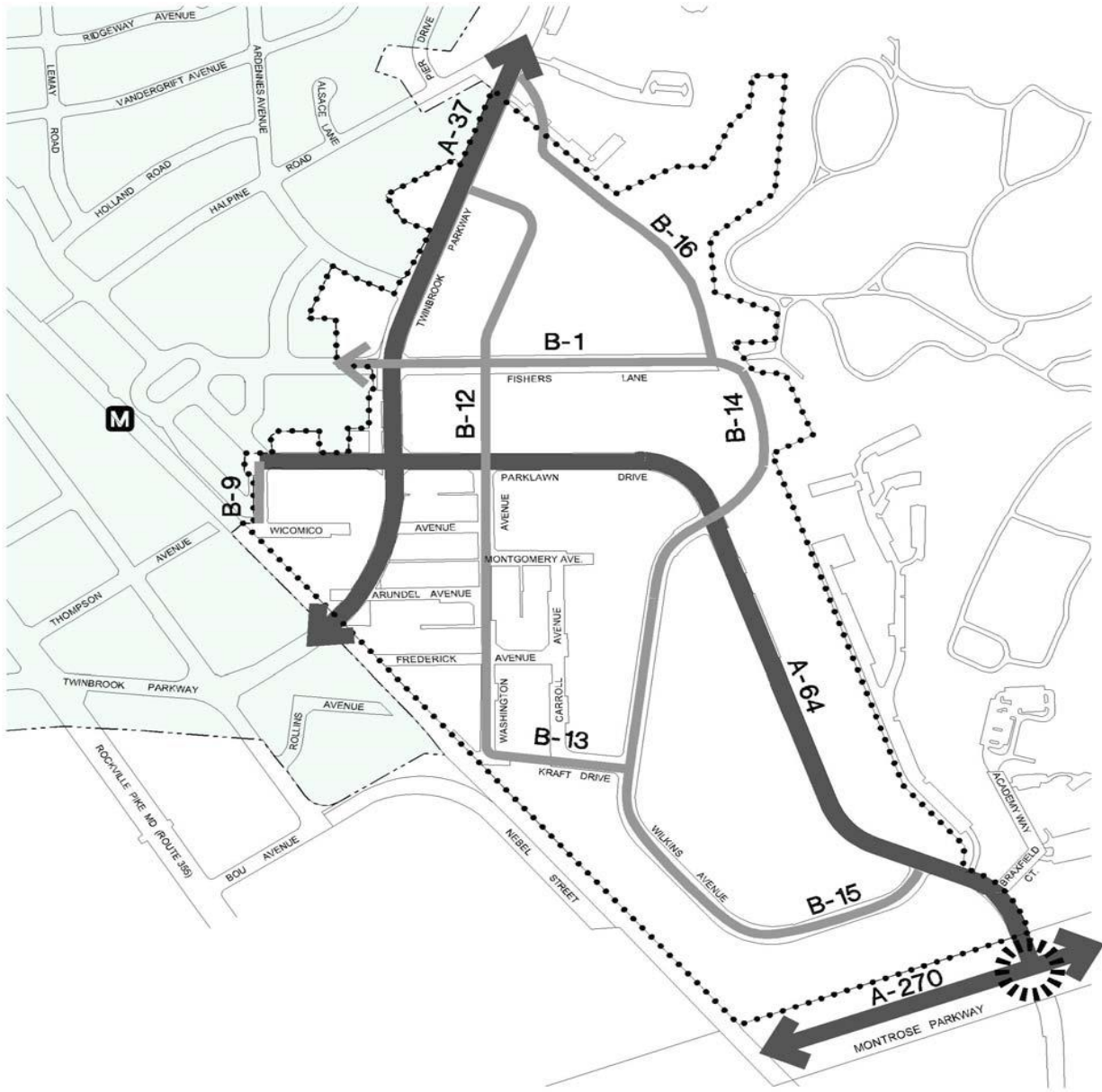



Figure 1: Three Grade Separation Intersections shown in the North Bethesda/Garrett Park Master Plan

While an interchange at Parklawn Drive was not recommended in the Master Plan, it was assumed in the planning and preliminary design of Montrose Parkway at least as far back as 2006 even though it was not included in that project, nor was it included in the State’s original design for the subject project, which would have tied back into Randolph Road just west of Parklawn Drive.

This assumption of an interchange at Parklawn Drive was carried forward in the two nearby Sector Plans: Twinbrook Sector Plan and White Flint Sector Plan. Although outside both sector plan areas, an interchange at Parklawn Drive is shown in the Street Classifications illustration on page 23 of the 2009 Twinbrook Sector Plan and in Map 46, “Existing and Proposed Street Network on page 51 of the 2010 White Flint Sector Plan (refer to Figures 2 and 3 below).



- A-64** Master Plan of Highways Road Number
 - M** Metro Station
 - City of Rockville
 - Sector Plan Boundary/Transit Station Development Area
 - Arterial Street
 - Business Street
 - Proposed Interchange
- 




Figure 2: Street Classifications in the Twinbrook Sector Plan

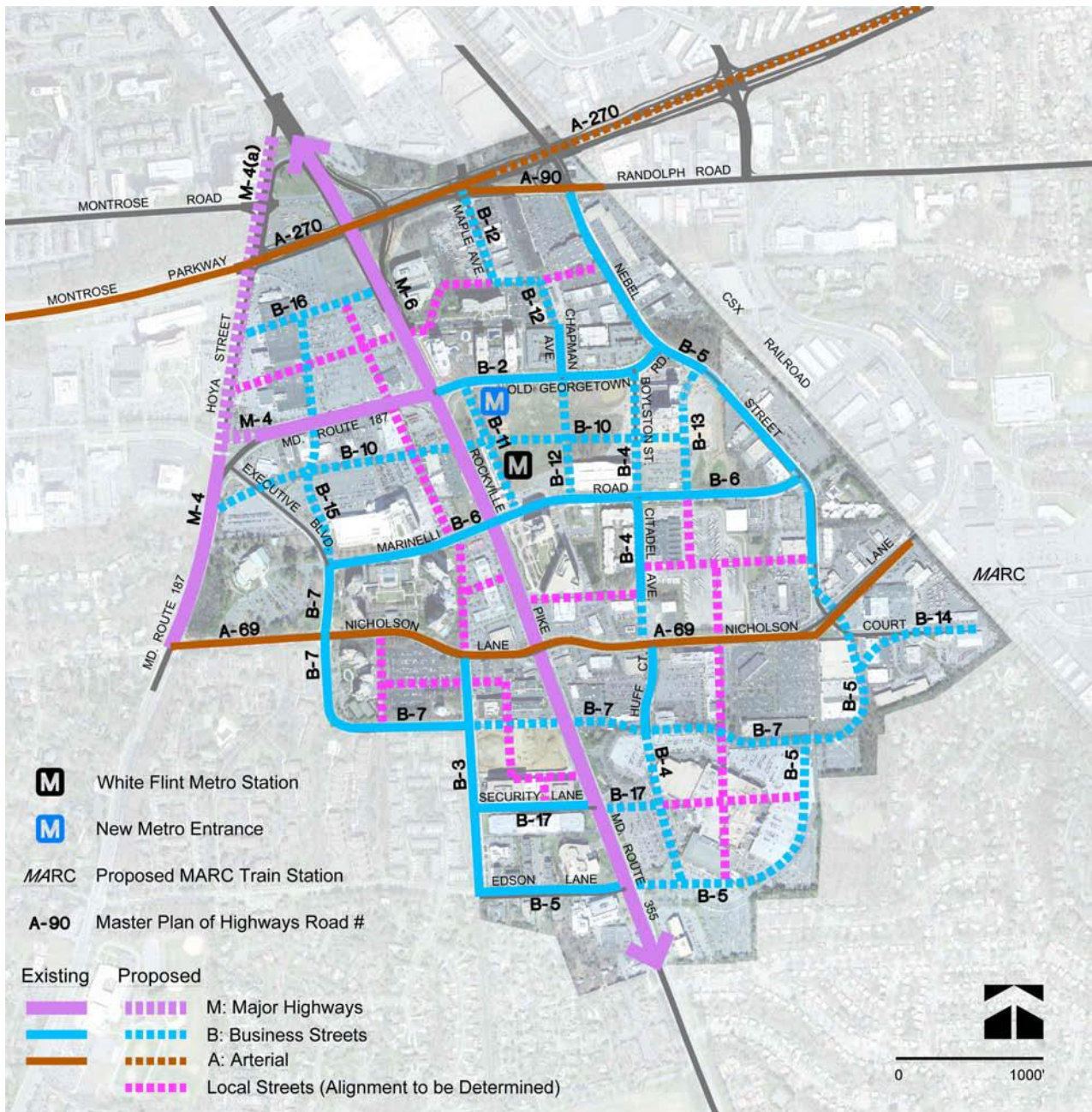


Figure 3: Existing and Proposed Street Network in the White Flint Sector Plan

Randolph Road

At the CSX railroad crossing at Randolph Road, improved safety barriers are recommended. The Master Plan’s discussion is provided as Attachment 4 for the overall vision of the Montrose Parkway between Tildenwood Drive and Veirs Mill Road.

Countywide Transit Corridors

None of the Planning Staff's currently recommended Bus Rapid Transit corridors utilize the subject segment of Montrose Parkway although the 1992 North Bethesda/Garrett Park Master Plan recommended such a future transitway alignment. Instead, the Staff Draft recommends a BRT alignment northward on Parklawn Drive and turning east onto Randolph Road, but also recommends that an alignment along Nebel Street be considered during Facility Planning if the at-grade railroad crossing at Randolph Road is retained.

Master-Plan Consistency - Bikeways

The *1992 North Bethesda/Garrett Park Master Plan* recommends a hiker-biker trail/Class I bikeway along Montrose Parkway.

The 2005 Countywide Bikeways Functional Master Plan recommends a shared-use path, SP-50, along Montrose Parkway, and bike lanes along Parklawn Drive and Nebel Street, BL-27 and BL-26, respectively.

In the proposed design, the recommended shared-used path is provided along the north side of Montrose Parkway, and bike lanes are provided on Parklawn Drive and Nebel Street. The project also proposes a shared-use path to provide connectivity to the recommended bike lanes along Parklawn Drive and Nebel Street, BL-27 and BL-26, respectively. Thus, the project is consistent with the two Master Plans.

Issues

Issue #1: Whether the at-grade CSX railroad crossing at Randolph Road should remain open to through Randolph Road traffic

SHA is currently considering two alternatives – Alternative 1 with Randolph Road closure at the CSX railroad crossing and Alternative 2 with a Randolph Road at-grade crossing at the CSX railroad tracks (refer to Figures 3 and 4, respectively below). On Figures 4 and 5, the proposed new roadways are shown in blue, the removed segment of Randolph Road is shown in red, and the existing Maple Avenue and Nebel Street is shown in yellow and orange. For both alternatives, Montrose Parkway is proposed to be constructed over the CSX railroad crossing between Chapman Avenue/Maple Avenue and Parklawn Drive.

SHA recommends Alternative 1 because it is listed as having a high accident probability based on the Federal Railroad Administration's (FRA) Accident Prediction Report for Public at-Grade Highway-Rail Crossing at this location. Twenty (21) collisions in total, between a rail vehicle and a roadway user, have been reported to FRA in the past 35 years. Of these two (2) have involved pedestrians, three (3) have resulted in fatalities and five (5) have resulted in injuries. The FRA's Accident Prediction System currently ranks the CSX railroad crossing at Randolph Road as the fourth most accident prone crossing of the nearly 700 crossings in the State of Maryland as of December 31, 2011. Refer to Attachment 5 for FRA's top ranked crossings.

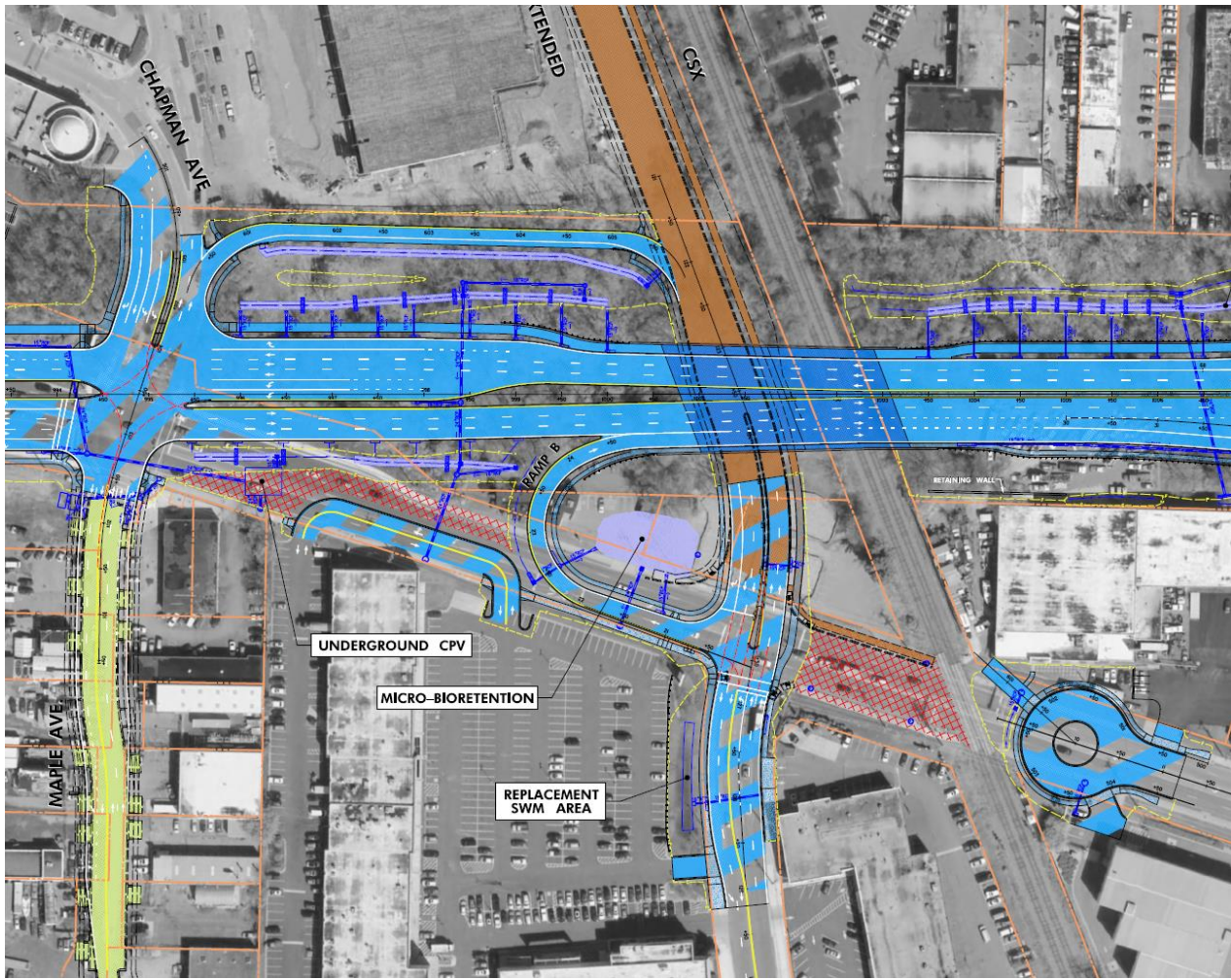


Figure 4: Alternative 1: Randolph Road Closed

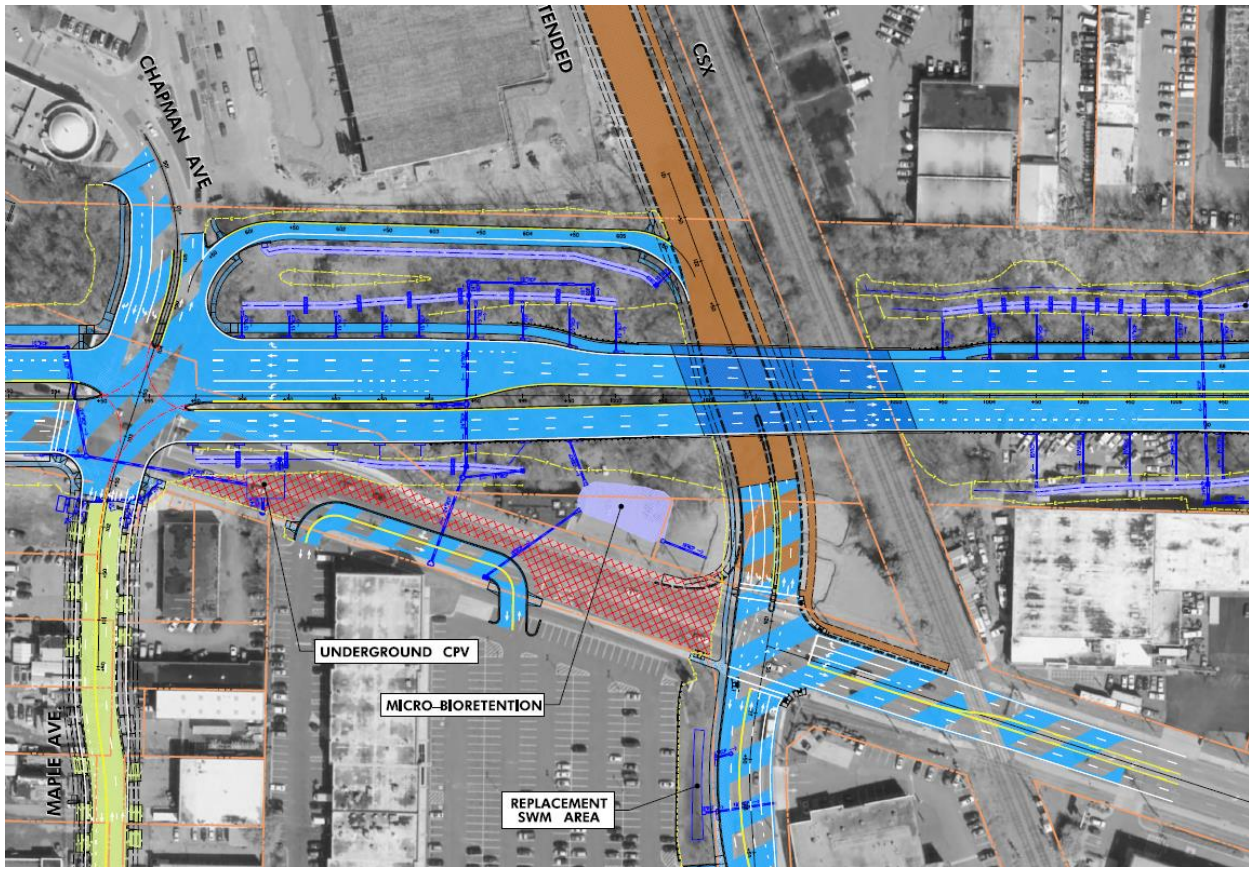


Figure 5: Alternative 2: Randolph Road Open

The FRA Report predictions are based on the existing conditions in addition to the historical and quantitative data.

The existing conditions include:

1. The type of warning device present: Gates;
2. The number of railroad tracks crossed by the roadway: Two (2) tracks; and
3. The number of roadway traffic lanes crossed by the tracks: Four (4) lanes.

The quantitative data include:

1. The number of reported train-vehicle collisions: One (1) between 2007 and 2011;
2. The total number of trains per day: 31 trains;
3. The maximum allowable train speed through the crossing: 79 mph; and
4. The forecasted annual average daily traffic (AADT) for the crossed roadway: 41,000 vehicles per day.

AADT is the total two-way volume of vehicle traffic of a roadway for a year divided by 365 days and represents a typical 24-hour volume in vehicles per day. The AADT must be significantly lower to change the predicted number of collisions. However, if the CSX railroad crossing remains open at Randolph Road, the heavier through east-west traffic volume would shift to Montrose Parkway leaving a much smaller traffic volume consisting of mostly local traffic. The projected AADT for Randolph Road would be reduced from a projected 41,000, without Montrose Parkway, to 24,000 vehicles per day with Montrose Parkway or by 17,000 vehicles per day.

SHA noted that this reduction is not significant when compared to the current AADT that averages 29,000 vehicles per day. While this reduction would have an impact on the accident prediction model, which utilizes the projected AADT, the potential for collisions will not be eliminated nor will this AADT reduction result in a safer railroad crossing. In addition, the current crossing already includes gates, warning devices, and a traffic signal that greatly limits any opportunities for improvement (short of a closure) while still is ranking high in the accident prediction model.

The 1992 North Bethesda/Garrett Park Master Plan, 2010 White Flint Sector Plan, and 2005 Countywide Functional Bikeways Master Plan recommend, however, maintaining the at-grade railroad crossing at Randolph Road. Further, the on-going capacity analysis, thus far, has indicated that the roadway network connection across the CSX railroad crossing provides an alternative east-west route and reduces the traffic demand at the nearby intersections along Montrose Parkway. (Refer to Attachment 6, the MCDOT's Arthur Holmes letter to Rose Krasnow dated May 23, 2012.)

The general pros and cons of closing or remaining open are discussed below:

If the CSX railroad crossing at Randolph Road was closed:

1. Pro: The potential for train-vehicle collisions would be eliminated.
2. Pro: The noise of the train's whistle required of trains approaching at-grade roadway crossings could be eliminated.
3. Con: Local circulation will be cut off for the businesses and communities located on opposite sides of the CSX railroad crossing. The local circulation is supported in the 1992 North Bethesda/Garrett Park Master Plan, 2010 White Flint Sector Plan, and 2005 Countywide Functional Bikeways Master Plan, that recommends maintaining the at-grade railroad crossing at Randolph Road.
4. Con: Congestion levels at other intersections will increase to accommodate the diverted traffic.
5. Con: Closure will require an "on ramp" to Montrose Parkway from Nebel Street to accommodate the impacted circulation routes.

If the CSX railroad crossing Randolph Road remains open:

1. Con: The potential for train-vehicle collisions would remain.
2. Con: The noise of the train's whistle required of trains approaching at-grade roadway crossings will only be eliminated if the area is re-categorized as residential.
3. Pro: Local circulation and access to businesses is maintained.
4. Pro: The on-going capacity analysis, thus far, has indicated that the roadway network connection across the CSX railroad crossing provides an alternative east-west route for local traffic that would reduce the traffic demand at the nearby intersections along Montrose Parkway.
5. Pro: No access ramp from Nebel Street to Montrose Parkway is necessary, saving cost and reducing the impacts on developable land area.
6. Pro: Elimination of the need for a shared-use path and lane on the bridge, saving cost.
7. Pro: Additional physical safety measures can be put in place to minimize potential collisions. As discussed above, SHA noted that additional safety measures would improve safety, but the safety would not increase substantially since major safety features are already present.

Issue #1a: The planned intersection design at Montrose Parkway and Chapman Avenue/Maple Avenue

With the closure and removal of the Randolph Road segment between Maple Avenue/Chapman Avenue and Nebel Street, this intersection provides the necessary access to the existing and future land uses to the north and south of Montrose Parkway with the design remaining as shown in the alternatives above, with up to nine (9) east-west lanes and six (6) north-south lanes. Figure 6 below shows the proposed intersection design.

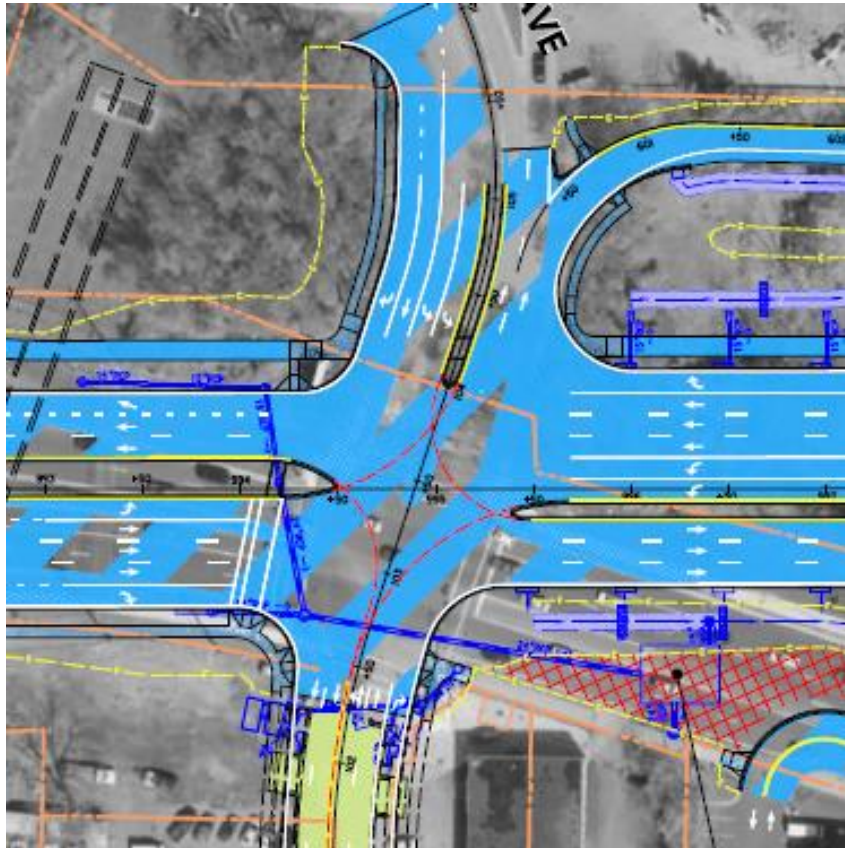


Figure 6: Montrose Parkway, Chapman Avenue/Maple Avenue Intersection

If Randolph Road remains open and with other adjustments to turn lane lengths at this intersection, reducing the number and length of lanes there should be seriously considered. A narrower roadway with fewer lanes would be a more compatible pedestrian-friendly, transit-oriented environment while providing the minimum necessary lanes to maintain acceptable levels of congestion. The desirable lane configuration for each approach at this intersection could be reduced to:

- Eastbound Montrose Parkway: one left, two through, one right;
- Westbound Montrose Parkway: one right/through, two through, one left;
- Northbound Maple Avenue: one left/through, one through, one right; and
- Southbound Chapman Avenue: one right, one through, one left.

Issue #1b: The planned connection between Chapman Avenue and Nebel Street north of Montrose Parkway

The current plans (both alternatives) propose a one-way eastbound connection from Chapman Avenue to Nebel Street to the north of Montrose Parkway. This connection would function as a partial jug handle to provide limited access from eastbound and westbound Montrose Parkway and northbound Maple Avenue to southbound Nebel Street only. With the removal of the Randolph Road segment between Maple Avenue/Chapman Avenue and Nebel Street, motorists traveling on southbound Chapman Avenue cannot access Nebel Street and those traveling on Nebel Street cannot access Chapman Avenue. The only connection between these roads is recommended in the White Flint Sector Plan as a future “local street” on the south side of the Montrose Shopping Center (south of the Montrose Parkway).

The Planning Department staff recommends changing this one-way eastbound connection to a two-way connection. The two-way connection would provide access for all movements between Maple Avenue/Chapman Avenue and Nebel Street, with adjustments to Chapman Avenue, itself, and a full-movement intersection at Nebel Street and the connecting roadway. The parallel connection would function more like a street grid with better interconnectivity than a freeway ramp. A reduction in the number of lanes at the Chapman Avenue/Montrose Parkway intersection would help provide a greater separation of this two-way connection from Montrose Parkway and make turning movements safer. Figure 7 shows the staff recommended change in yellow.

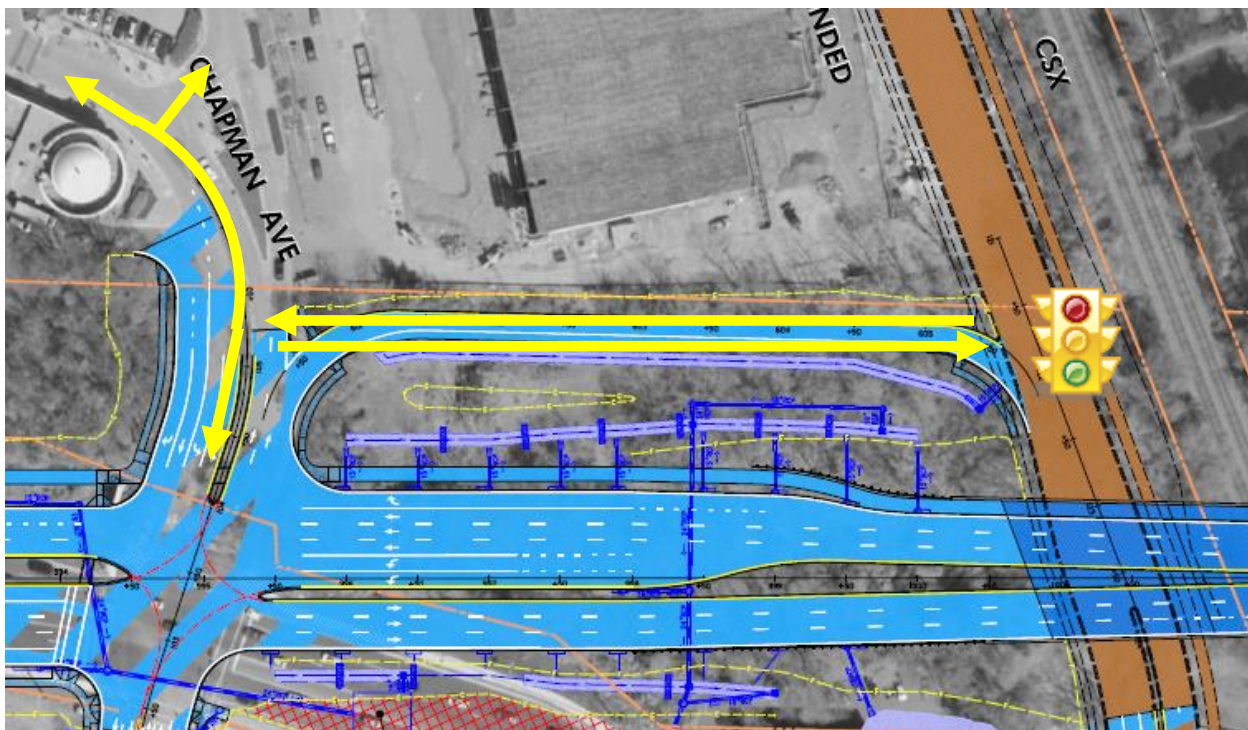


Figure 7: Proposed Modifications to Chapman Avenue-Nebel Street Connection

Issue #1c: Randolph Road realignment to connect between Chapman Avenue and Nebel Street south of Montrose Parkway.

The current plans propose replacing the Randolph Road segment between Maple Avenue/Chapman Avenue and Nebel Street with a driveway connection between the existing east and west parking areas within the Montrose Shopping Center. The Planning Department staff view this driveway connection as a short-term access solution until the White Flint Sector Plan’s “local street” is built. But, if Randolph Road remains open, a more useful connection could be created from the intersection of Randolph Road with Nebel Street and allow access for the Shopping Center’s parking area. Figure 8 shows the staff recommended change in yellow.

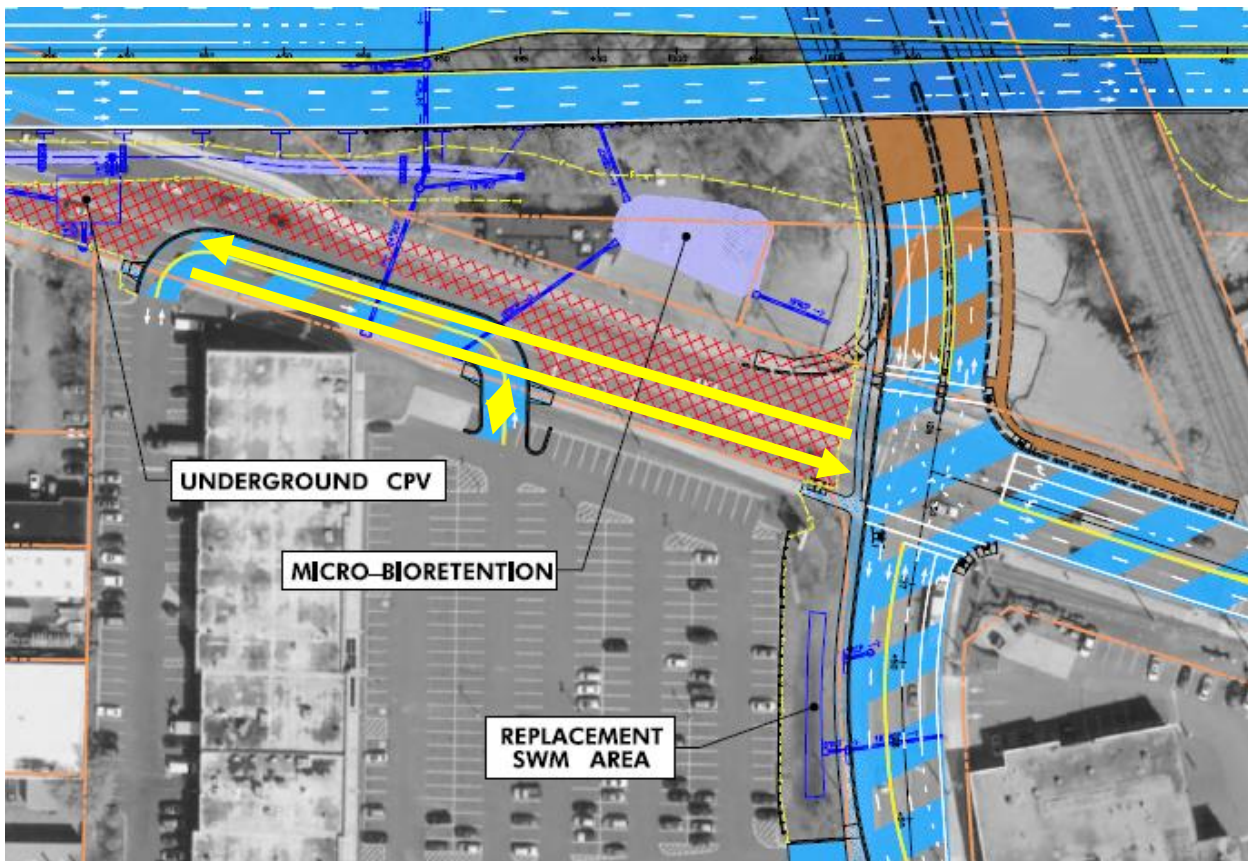


Figure 8: Proposed Modifications Continuing Randolph Road to the West of Nebel Street

Issue #2: The intersection of Montrose Parkway and Parklawn Drive is being designed as an interchange

Master/Sector Plan Recommendations

The 2009 Twinbrook Sector Plan reflects an interchange at this location, although this area is outside of the Sector Plan boundary. To promote smart growth, walkable, transit-oriented communities, the interchange will be reconsidered in our upcoming White Flint II Sector Plan. At this time, Planning Department staff believes that an at-grade Montrose Parkway/Parklawn Drive intersection, in place of the current interchange design, may further the smart growth principles we are proposing in our sector plans. As shown on Figure 9, a Montrose Parkway/Parklawn Drive interchange would create more of a barrier between the Twinbrook communities and the White Flint II communities. Alternatively, an at-grade intersection would support the current planning practice of reducing vehicular barriers by improving pedestrian and bicyclist-friendly connections, a goal of the upcoming White Flint II Sector Plan.

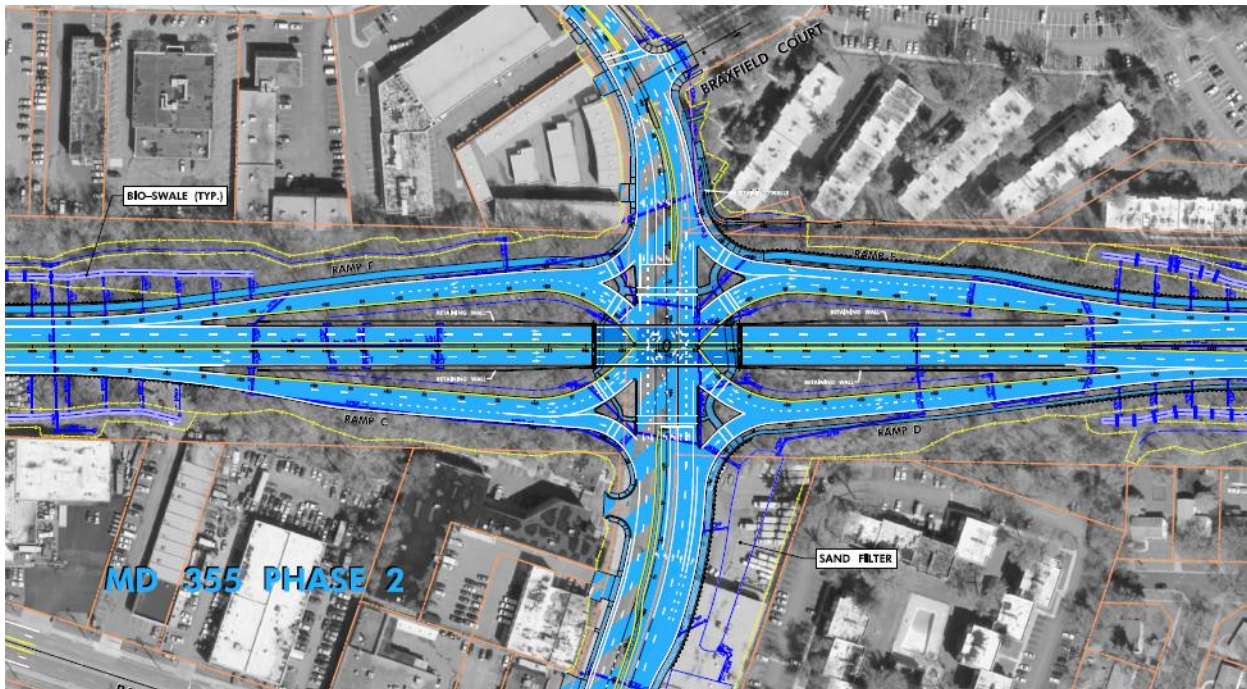


Figure 9: Parklawn Drive-Montrose Parkway Interchange

If an at-grade intersection at Montrose Parkway and Parklawn Drive is feasible, our current effort on the White Flint II Sector Plan could include a recommendation to provide the at-grade connection rather than an interchange and look at alternative means to reduce congestion and vehicle trips. It seems appropriate to analyze these various projects in the larger context of the upcoming Sector Plan effort if initial studies show they are at least feasible.

Impact to SHA Project

A letter from the Planning Department Director to MCDOT dated October 4, 2012, (Attachment 7) was sent to MCDOT requesting that MCDOT and SHA perform a reassessment for the need for the grade-separated Parklawn Drive interchange, in favor of an at-grade intersection. As responded in MCDOT letter dated November 27, 2012 (Attachment 8), MCDOT, in collaboration with SHA, has done a brief re-evaluation that indicated that an at-grade intersection would work with significantly less efficiency than a grade-separated interchange. It also indicated that an at-grade intersection at Parklawn Drive could be less pedestrian and bicycle friendly due to the increased number of lanes, needed to accommodate the projected traffic volumes and that the interchange would improve safety by separating conflicting traffic flow of vehicles, pedestrians, and bicyclists.

Both the subject project and the County’s Montrose Parkway East project between Parklawn Drive and Veirs Mill Road are scheduled to open at the same time but the construction is not scheduled to begin for almost five years. Therefore, while there would be a delay in completing the design, there would be no delay in construction and perhaps a significant reduction in construction costs for the County as this project is currently 100% County funded.

We recommend that the Planning Board ask MCDOT and SHA to provide an analysis that compares the traffic operations of an at-grade intersection to the current interchange design and to provide a preliminary design of an at-grade intersection for review in advance of or in conjunction with the Mandatory Referral submission of this project.

Other Project Topics

Existing Conditions

The existing right-of-way is a wooded area currently owned by the State.

Forest Conservation and Environmental Requirements

As a SHA project, forest conservation is reviewed and approved by the State Department of Natural Resources.

Proposed Roadway Typical Sections

As shown in Attachment 9, the typical sections include a four-lane divided parkway with turning lanes at the intersection with Maple Avenue/Chapman Avenue, a single-point urban interchange at Parklawn Drive, 10-foot-wide asphalt bike path, and 5-foot wide sidewalks. An extra through lane is added along some segments to reduce adverse weaving problems approaching Chapman Avenue/Maple Avenue intersection.

Right-of-Way Acquisition

Additional right-of-way must be acquired beyond the 300-foot master planned right-of-way to accommodate a single-point urban interchange at Parklawn Drive in the northeastern quadrant of this interchange.

Park Impacts

The subject project does not impact parkland. (Parkland is impacted by the MCDOT's Montrose Parkway East project.)

Noise Assessment

A noise assessment is being conducted in accordance with the MCDOT criteria for the existing apartments in the northeast corner of the proposed interchange at Parklawn Drive. The results of this assessment are expected to become available by this summer.

Historic Preservation

The historic Montrose School is located outside the project limits. No other historic resource is located near the project limits of the subject project.

Utilities and Proposed Street Lighting

The following utility companies have facilities located within the limit of work for this project:

- Verizon
- PEPCO
- Washington Gas Light Company
- Washington Suburban Sanitary Commission (WSSC)
- Comcast
- MCDOT (fiber optic and interconnect)
- Zayo Group (formerly AboveNet and FiberGate)

Utility relocation cost is estimated at \$5,413,700.

Vehicular Traffic Volume

The annual average daily traffic (AADT) for Randolph Road is projected to increase from an average of 29,000 vehicles per day in 2011 to 41,000 vehicles per day in 2030 between Nebel Street and Parklawn Drive.

Intersection Congestion Levels

SHA prepared a study for several alternate scenarios for maintaining or closing the at-grade CSX crossing at Randolph Road. In Attachment 10: Alternative Analysis dated November 2011 from SHA’s Travel Forecasting Division, the analysis compared the 2030 Build Scenarios of the following:

- Figure B-3: Randolph Road Open (At-Grade CSX Crossing) – Original Concept
- Figure C-2: Randolph Road Open (At-Grade CSX Crossing) – Eliminate Nebel Street Ramps
- Figure D-2: Randolph Road Cul-De-Sac (Close At-Grade CSX Crossing) – Eliminate eastbound Nebel Street Ramps
- Figure D-3: Randolph Road Cul-De-Sac (Close At-Grade CSX Crossing) – Eliminate eastbound Nebel Street Ramps and add an additional lane on eastbound Montrose Parkway from Maple Avenue to Parklawn Drive Ramp

A summary comparing the 2030 PM Peak Build Scenario of the options is as follows:

Figure	System Delays (hours)	Delay per Vehicle (minutes)	Denied Entry (vehicles)	Montrose Parkway Weave between Ramps (AM/PM Level of Service)	Project Cost* Increase / Decrease Compared to Original Concept
B-3	2,556	11	5,715	B/C	n/a
C-2	565	2	631	n/a	\$1.17 M decrease
D-2	1,890	7	3,463	C/E	\$0.89 M increase
D-3	275	1	70	B/D	\$5.58 M increase

*Excludes cost of right-of-way and utility relocations. See Attachment 10 for detailed comparison matrix.

Based on the results of this analysis, it was determined that the alternative D-3 (Closure of the CSX Crossing at Randolph Road) would create the greatest benefit in system wide operations as well as safety.

Public Outreach

A briefing with the White Flint Implementation Advisory Committee was held on March 11, 2013. The briefing consisted of a presentation of the proposed improvements for the MD 355 Phase 2 Project focusing on the Randolph Road closure alternative. Related to the subject Phase 2 project, the Committee expressed concern that closing Randolph Road at the CSX tracks would close a necessary east-west connection across the tracks where Nicholson Lane-Parklawn Drive is the only other crossing. Committee did not support the subject project and they plan to submit written comments and/or testify at this Planning Board hearing.

Conclusion

The project is at the 30% design stage and this is the most appropriate point at which major design issues should be addressed and decided. The Planning Department staff believes that SHA has worked diligently to ensure that the design is in compliance with the applicable master plans and standards, at the direction of MCDOT. We recommend that the Planning Board receive the briefing on the project and the issues outlined above and provide comments and recommendations to SHA and MCDOT as to how this project should be pursued.

EA:LC:JS:ha

Attachments:

1. Project Description Form for the subject project (SHA CTP page 19)
2. Location Map with the Project Limits
3. Nearby Transportation Projects
4. Overall vision of the Montrose Parkway between Tildenwood Drive and Veirs Mill Road
5. Copy of FRA's Web Accident Prediction Report (Top 30 ranked crossings)
6. Letter from SHA to M-NCPPC dated May 23, 2012
7. Letter from M-NCPPC to MCDOT dated October 4, 2012
8. Letter from MCDOT to M-NCPPC dated November 27, 2012
9. Proposed Roadway Typical Sections
10. Alternative Analysis dated November 2011 from SHA's Travel Forecasting Division

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 19

SECONDARY DEVELOPMENT AND EVALUATION PROGRAM

PROJECT: MD 355, Rockville Pike

DESCRIPTION: Construct a CSX Railroad grade separated crossing and interchange improvements at Parklawn Drive. Sidewalks will be included where appropriate. Wide curb lanes will accommodate bicycles.

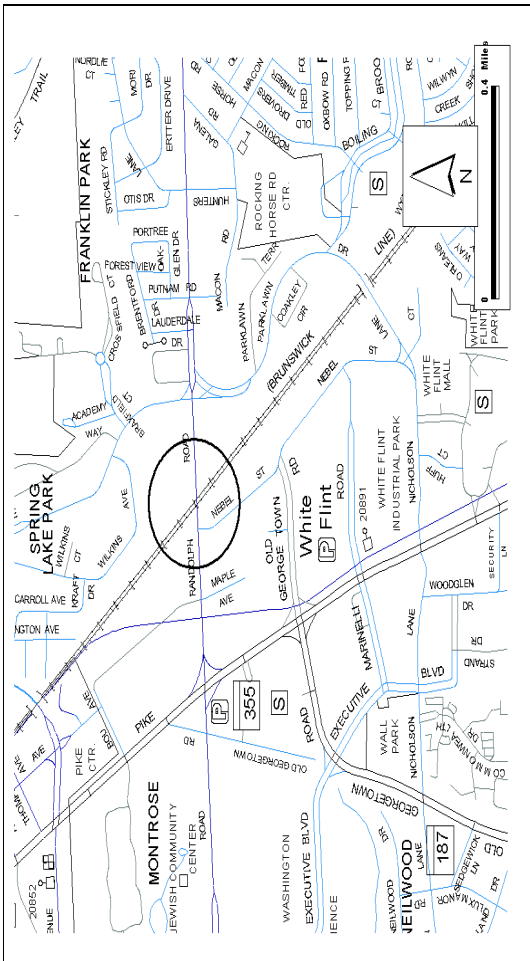
JUSTIFICATION: This project would improve safety and relieve traffic congestion that occurs at the Parklawn Drive intersection and at the CSX Railroad crossing.

SMART GROWTH STATUS: Project Not Location Specific Not Subject to PFA Law
 Project Inside PFA Grandfathered
 Project Outside PFA Exception Will Be Required
 PFA Status Yet To Be Determined Exception Granted

ASSOCIATED IMPROVEMENTS:
 InterCounty Connector (Line 2)
 Montrose Parkway East (Montgomery County Project)

STATUS: Engineering underway. County is contributing \$9.0 million to engineering. The cost shown is SHA share only.

SIGNIFICANT CHANGE FROM FY 2011 - 16 CTP: None.



POTENTIAL FUNDING SOURCE:		<input checked="" type="checkbox"/> SPECIAL <input checked="" type="checkbox"/> FEDERAL <input type="checkbox"/> GENERAL <input type="checkbox"/> OTHER			
PHASE	ESTIMATED COST (\$000)	PROJECT CASH FLOW		SIX YEAR TOTAL	BALANCE TO COMPLETE
		EXPEND THRU 2011	CURRENT YEAR 2012		
Planning	1,860	0	0	0	0
Engineering	0	0	0	0	0
Right-of-way	0	0	0	0	0
Construction	0	0	0	0	0
Total	1,860	0	0	0	0
Federal-Aid	0	0	0	0	0

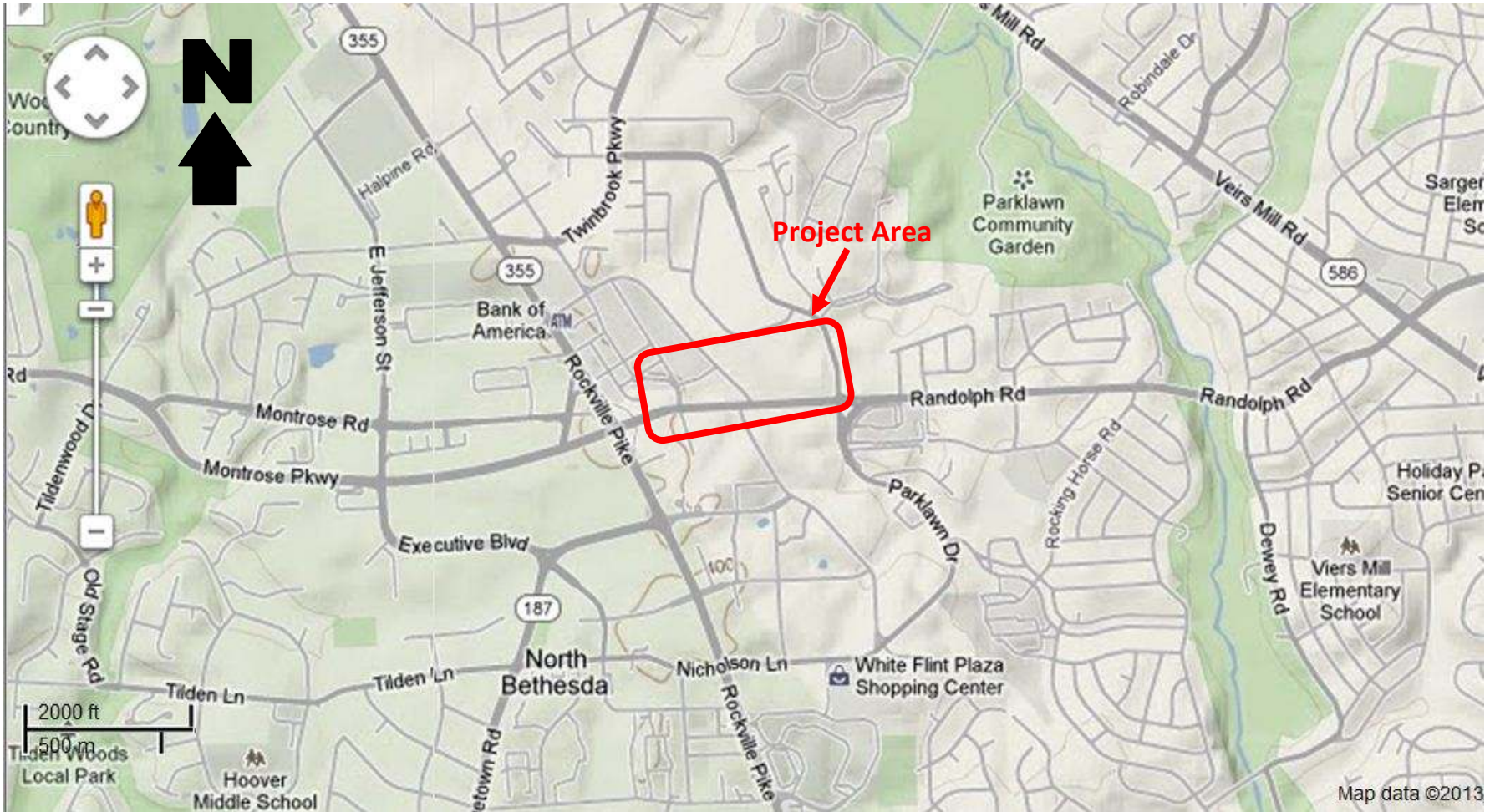
CLASSIFICATION:

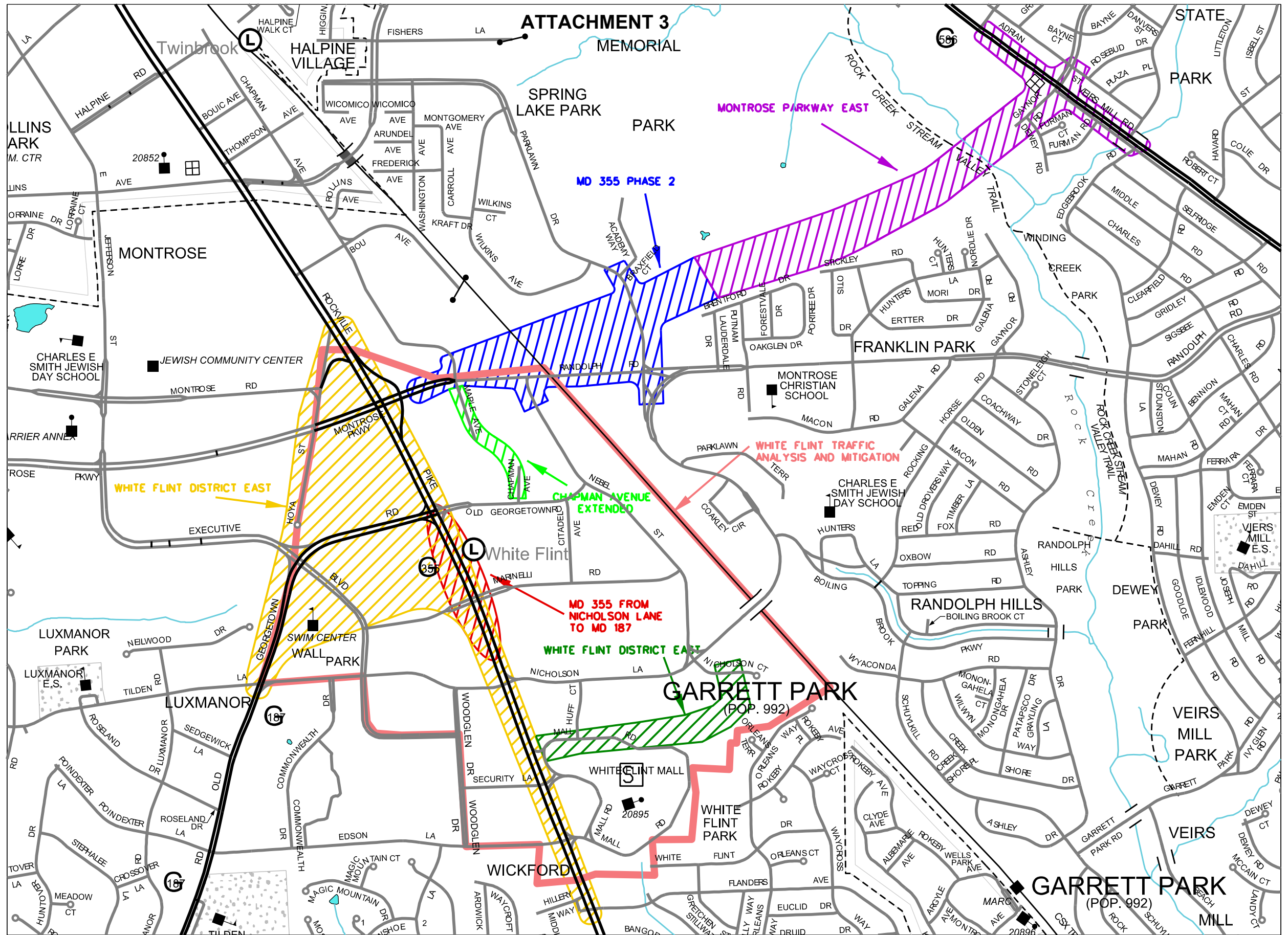
STATE - Intermediate Arterial
FEDERAL - Other Principal Arterial
STATE SYSTEM: Secondary
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2011) - 54,200 (MD 355)
PROJECTED (2030) - 98,125 (MD 355)

ATTACHMENT 2

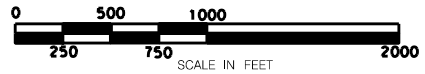
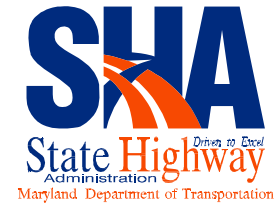
MO3445170- MD 355 phase 2 Montrose Parkway from Chapman Avenue to Parklawn Drive

Project Location map





MD 355 PHASE 2
 MONTROSE PARKWAY FROM CHAPMAN AVENUE TO PARKLAWN DRIVE
 ADJACENT PROJECTS





- **Data collection:** require employers to collect and submit data on employee commute characteristics for use in planning and monitoring programs, or to cooperate with TMD surveys.
- **Information dissemination:** require employers to provide employees with information on alternative commute modes, alternative work hours, and other ridesharing measures. This information could be prepared by the TMD staff.
- **Transportation coordinators:** require employers to designate an employee as a transportation coordinator to implement the traffic reduction programs.
- Encourage transit accessible land-use patterns. The layout and orientation of development can have a major bearing on the decision by workers and residents to use transit. This policy entails a variety of different actions, some of which are being developed as part of the Transit- and Pedestrian-Oriented Neighborhood Study currently underway in the Planning Department. This Master Plan encourages appropriate modification to regulatory procedures and guidelines and the development of transit accessible patterns in North Bethesda.
- Hold fare increases to the minimum. Transit ridership in an auto-oriented environment such as North Bethesda is very sensitive to transit fares. Most riders have a choice between transit and the auto and make this choice based on a variety of factors, with fares usually weighted very strongly. Even with improved service levels, higher fares will make increasing ridership difficult.
- Increase or institute parking charges and decrease parking supply. There is a good deal of evidence that the cost and availability of parking is a critical variable in estimating the level of auto versus transit use in an area. Free parking, or relatively inexpensive parking, makes the choice to drive very easy. This Master Plan recommends that a mechanism be instituted in North Bethesda to ensure that free parking for commuters is virtually eliminated for both new and existing development. If possible, any money collected through surcharges or other means by the public should be used to keep fares low.

Roadway System Improvements

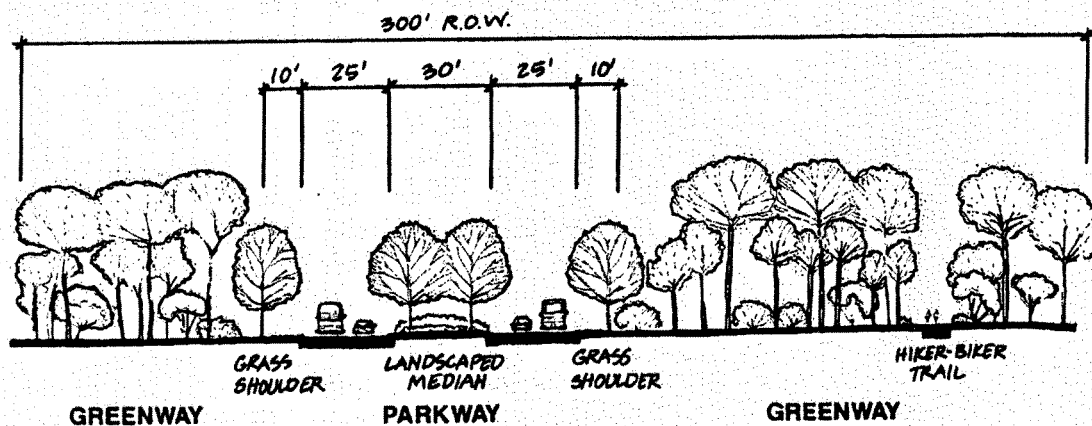
- Construct the Montrose Parkway from Montrose Road to Veirs Mill Road and maintain the remainder of the right-of-way to the west side of the connection to Montrose Road for a possible future transitway. This Master Plan envisions a divided four-lane parkway with a wide landscaped median in a portion of the former Rockville Facility right-of-way, from east of Tildenwood Lane to Veirs Mill Road. The precise alignment near the western terminus of the parkway will be determined in a future engineering study which will take into account the potential access to affected properties, environmental constraints, and appropriate road design, among other factors. It would have points of access to Rockville Pike and/or Old Georgetown Road, be grade-separated at Rockville Pike, Randolph Road, and the CSX Railroad, and would connect with Veirs Mill Road using the

old alignment of Gaynor Road. This recommendation also includes a configuration at Veirs Mill Road that would not allow any through movement to Parkland Drive from this new road. This Plan does not recommend any elevated structure at the intersection of the proposed Montrose Parkway and Veirs Mill Road. This intersection will be further addressed during the preparation of the Aspen Hill Master Plan.

In the segment of the Montrose Parkway east of Parklawn Drive, this Master Plan also endorses as an equivalent option a three-lane undivided roadway cross-section. Under this option the center lane would be reversible, operating westbound in the morning peak hours and eastbound during the evening peak hours. The lane may be for general use, or it could be reserved for high-occupancy vehicles or for buses only. Both the four-lane divided and three-lane undivided options should be evaluated, and the final selection should be made by resolution of the County Council.

This road is essential to future capacity for east and west vehicular movement across the planning area. The two existing roads, Montrose/Randolph Roads and Twinbrook Parkway, are currently congested and have high accident rates. **Future growth in the region, even with little growth in North Bethesda, makes the provision of additional capacity essential.** The parkway would add capacity, replacing capacity removed by the deletion of the Aspen Hill Road Extension. A parkway-type road, with wide medians, could be easily accommodated in the current 300-foot right-of-way with inclusion of a hiker/biker trail in a linear greenway. Additional recommendations for this new roadway include a 45 mph planned speed and prohibitions against trucks. Figure 54 shows the proposed alignment, noting recommendations concerning related actions. An illustrative section is shown below.

MONTROSE PARKWAY AND GREENWAY - ILLUSTRATIVE SECTION

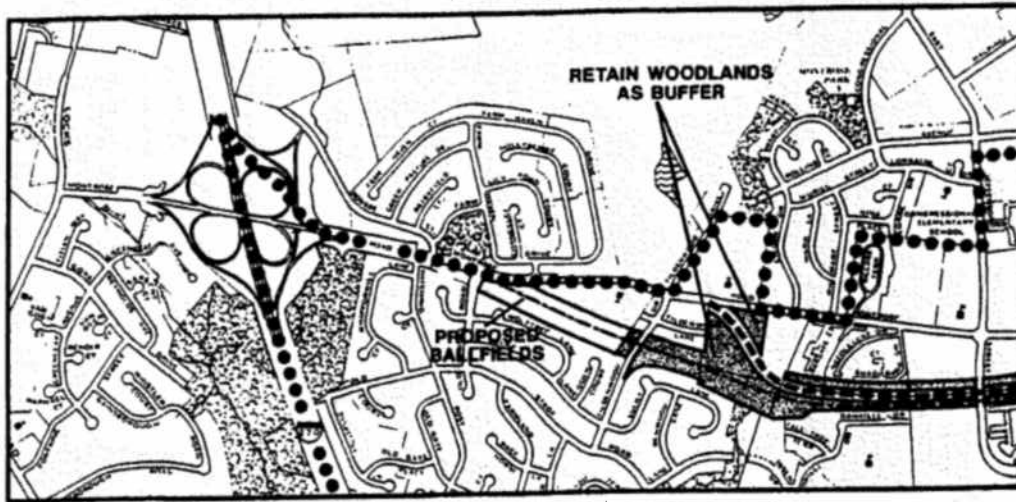


In the long-term future, beyond the time frame of this Master Plan, a transitway link to the Shady Grove transitway and Prince George's County may be desirable.



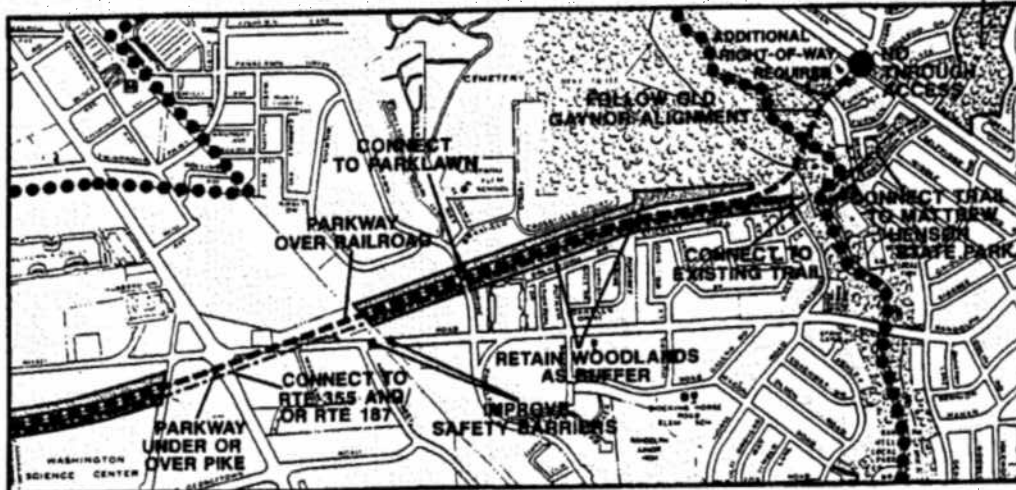
For this reason, the entire right-of-way from I-270 to Veirs Mill Road should be maintained for future transportation purposes. This Plan does not envision a roadway connection east of that shown on the accompanying maps.

- Provide Local Circulation Roads serving the Metro station areas. Figure 55 shows two new routes developed by linking together existing roads, serving existing and future activity centers. These roads would allow vehicles access and circulation through current and planned development in this area without the need to use MD 355 (Rockville Pike). This would ease congestion and increase safety and convenience. Many of the new sections can be constructed through agreements when the major parcels are developed. However, the southern link, using Executive Boulevard Extended through the site of the Colonial Manor Motel, may possibly require public acquisition, as may other segments. It is envisioned that Chapman Avenue Extended would be a non-divided Business District Street, with two travel lanes and two parking lanes. Nebel Street Extended would require four travel lanes at all times because of its higher emphasis on longer trips.
- Increase highway capacity at selected locations. (Figure 56 summarizes the recommended highway improvements). **The increase in traffic from regional and North Bethesda growth, even with conservative demand management assumptions, will necessitate major modifications to the highway network.** Traditionally, Master Plans do not specify intersection layouts, as this should be done when the demand numbers warrant actual construction. However, when grade separation or new interchanges are envisioned, these are to be included in the Plan. This Plan includes several such locations.
 - A direct connection should be made between the I-270 east spur and Rock Spring Park, connecting with Rock Spring Drive. This would provide a way for trips destined for the employment and residential uses here to bypass the more local roadway system and the current Old Georgetown Road interchange. This proposal would substantially reduce congestion on both Democracy Boulevard and Old Georgetown Road south of the I-270 east spur.
 - Widen the I-270 spurs, both east and west, by an additional lane in the median, providing for three lanes in each direction. Current patterns of congestion as well as future volumes projected for these roadways make this additional capacity essential and the increased lanes were included in the transportation network for all alternatives. If collector-distributor lanes or other means of providing for better access to the current and future interchanges are needed, these would be in accordance with this Master Plan.
 - The Fernwood Road bridge over the I-270 spur should be connected to the I-270 spur to and from the north via ramps. More extensive ramping appears difficult to construct from an engineering perspective, although it would not be incompatible with this Master Plan if designs can be devised. The ramps to and from the north would be suitable for HOV-only use, as part of a system including the I-270 bus/HOV lanes. Facilities providing for convenient transfers to




MONTROSE PARKWAY WEST

MATTHEW HENSON STATE PARK



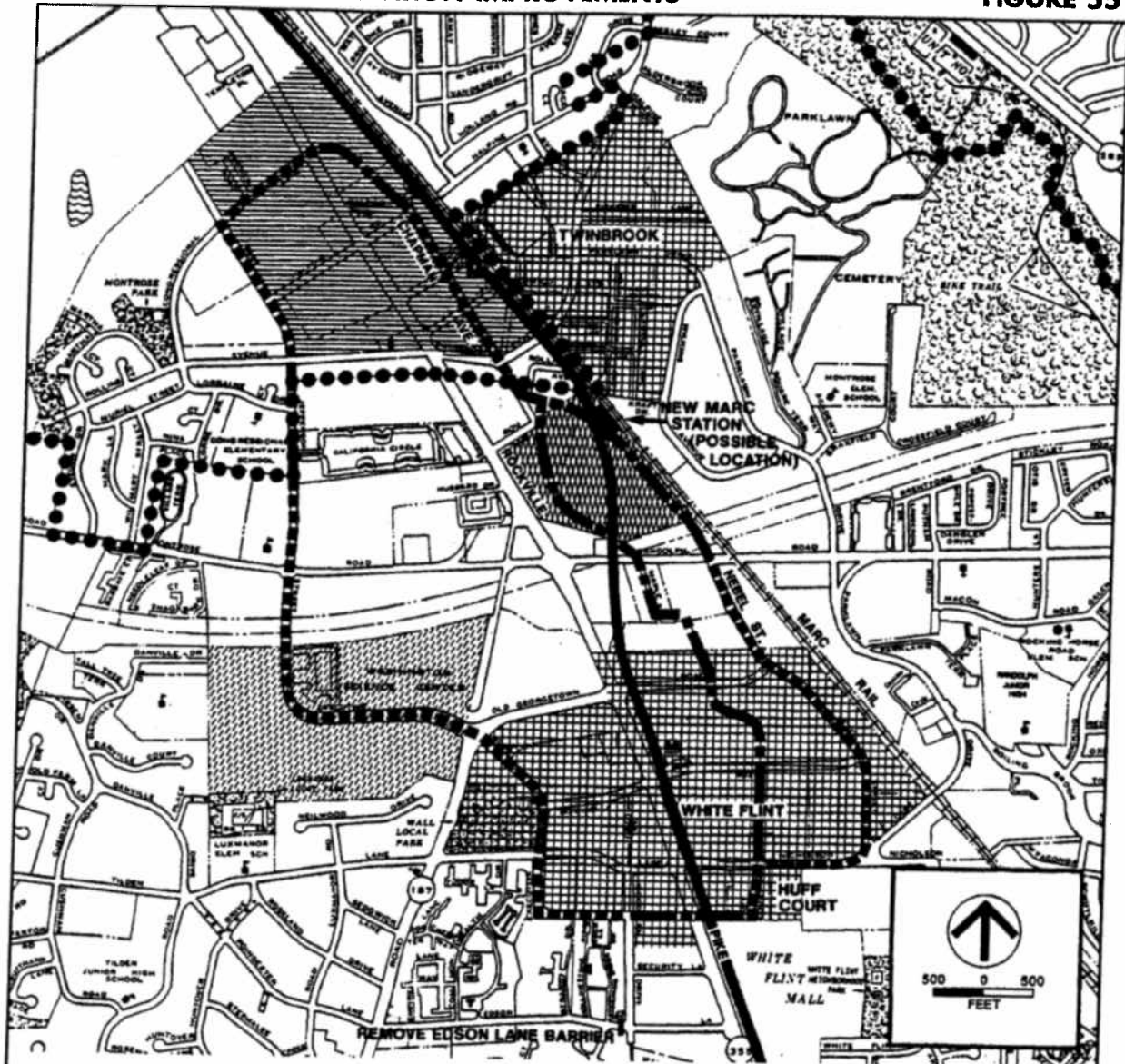
MONTROSE PARKWAY EAST

(Using Primarily the R-O-W for the Previous Rockville Facility)










- Four-Lane Divided Parkway With Landscaped Median
- Hiker-Biker Trail
-  Woodland Buffer

PROPOSED LOCAL CIRCULATION IMPROVEMENTS

FIGURE 55



page
158

- | | | | |
|---|---|--|-------------------------------|
|  | Sector Plan Areas |  | Existing Street System |
|  | Metro Performance District (City of Rockville) |  | Proposed Street System |
|  | Washington Science Center |  | Marc Rail |
|  | Montrose Crossing |  | Metro |
| | |  | Metro Station |

PROPOSED HIGHWAY CAPACITY IMPROVEMENTS

FIGURE 56



page
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(See Urban Design Graphics for Additional Minor Streets)



Annual WBAPS 2012

WEB ACCIDENT PREDICTION SYSTEM

Accident Prediction Report for
Public at-Grade Highway-Rail Crossings

Including:

Disclaimer/Abbreviation Key
Accident Prediction List

Provided by:

Federal Railroad Administration
Office of Safety Analysis
Highway-Rail Crossing Safety & Trespass Prevention

Data Contained in this Report:

STATE: MD

Date Prepared: 2/19/2013



U.S. Department
of Transportation
Federal Railroad
Administration

USING DATA PRODUCED BY WBAPS (Web Accident Prediction System)

1200 New Jersey Avenue, SE
Third Floor West
Washington, DC 20590

WBAPS generates reports listing public highway-rail intersections for a State, County, City or railroad ranked by predicted collisions per year. These reports include brief lists of the Inventory record and the collisions over the last 10 years along with a list of contacts for further information. These data were produced by the Federal Railroad Administration's Web Accident Prediction System (WBAPS).

WBAPS is a computer model which provides the user an analytical tool, which combined with other site-specific information, can assist in determining where scarce highway-rail grade crossing resources can best be directed. This computer model does not rank crossings in terms of most to least dangerous. Use of WBAPS data in this manner is incorrect and misleading.

WBAPS provides the same reports as PCAPS, which is FRA's PC Accident Prediction System. PCAPS was originally developed as a tool to alert law enforcement and local officials of the important need to improve safety at public highway-rail intersections within their jurisdictions. It has since become an indispensable information resource which is helping the FRA, States, railroads, Operation Lifesaver and others, to raise the awareness of the potential dangers at public highway-rail intersections. The PCAPS/WBAPS output enables State and local highway and law enforcement agencies identify public highway-rail crossing locations which may require additional or specialized attention. It is also a tool which can be used by state highway authorities and railroads to nominate particular crossings which may require physical safety improvements or enhancements.

The WBAPS accident prediction formula is based upon two independent factors (variables) which includes (1) basic data about a crossing's physical and operating characteristics and (2) five years of accident history data at the crossing. These data are obtained from the FRA's inventory and accident/incident files which are subject to keypunch and submission errors. Although every attempt is made to find and correct errors, there is still a possibility that some errors still exist. Erroneous, inaccurate and non-current data will alter WBAPS accident prediction values. While approximately 100,000 inventory file changes and updates are voluntarily provided annually by States and railroads and processed by FRA into the National Inventory File, data records for specific crossings may not be completely current. Only the intended users (States and railroads) are really knowledgeable as to how current the inventory data is for a particular State, railroad, or location.

It is important to understand the type of information produced by WBAPS and the limitations on the application of the output data. WBAPS does not state that specific crossings are the most dangerous. Rather, the WBAPS data provides an indication that conditions are such that one crossing may possibly be more hazardous than another based on the specific data that is in the program. It is only one of many tools which can be used to assist individual States, railroads and local highway authorities in determining where and how to initially focus attention for improving safety at public highway-rail intersections. WBAPS is designed to nominate crossings for further evaluation based only upon the physical and operating characteristics of specific crossings as voluntarily reported and updated by States and railroads and five years of accident history data.

PCAPS and WBAPS software are not designed to single out specific crossings without considering the many other factors which may influence accident rates or probabilities. State highway planners may or may not use PCAPS/WBAPS accident prediction model. Some States utilize their own formula or model which may include other geographic and site-specific factors. At best, PCAPS and WBAPS software and data nominates crossings for further on-the-ground review by knowledgeable highway traffic engineers and specialists. The output information is not the end or final product and the WBAPS data should not be used for non-intended purposes.

It should also be noted that there are certain characteristics or factors which are not, nor can be, included in the WBAPS database. These include sight-distance, highway congestion, bus or hazardous material traffic, local topography, and passenger exposure (train or vehicle), etc. Be aware that PCAPS/WBAPS is only one model and that other accident prediction models which may be used by States may yield different, by just as valid, results for ranking crossings for safety improvements.

Finally, it should be noted that this database is not the sole indicator of the condition of a specific public highway-rail intersection. The WBAPS output must be considered as a supplement to the information needed to undertake specific actions aimed at enhancing highway-rail crossing safety at locations across the U.S. The authority and jurisdiction to appropriate resources towards the safety improvement or elimination of specific crossings lies with the individual States.



ABBREVIATION KEY

for use with WBAPS Reports

The lists produced are only for public at-grade highway-rail intersections for the entity listed at the top of the page. The parameters shown are those used in the collision prediction calculation.

RANK:	Crossings are listed in order and ranked with the highest collision prediction value first.
PRED COLLS:	The accident prediction value is the probability that a collision between a train and a highway vehicle will occur at the crossing in a year.
CROSSING:	The unique sight specific identifying DOT/AAR Crossing Inventory Number.
RR:	The alphabetic abbreviation for the railroad name.
CITY:	The city in (or near) which the crossing is located.
ROAD:	The name of the road, street, or highway (if provided) where the crossing is located.
NUM OF COLLISIONS:	The number of accidents reported to FRA in each of the years indicated. Note: Most recent year is partial year (data is not for the complete calendar year) unless Accidents per Year is 'AS OF DECEMBER 31'.
DATE CHG:	The date of the latest change of the warning device category at the crossing which impacts the collision prediction calculation, e.g., a change from crossbucks to flashing lights, or flashing lights to gates. The accident prediction calculation utilizes three different formulas, on each for (1) passive devices, (2) flashing lights only, and (3) flashing lights with gates. When a date is shown, the collision history prior to the indicated year-month is not included in calculating the accident prediction value.
WD:	The type of warning device shown on the current Inventory record for the crossing where: FQ=Four Quad Gates; GT = All Other Gates; FL = Flashing lights; HS = Wigwags, Highway Signals, Bells, or Other Activated; SP = Special Protection (e.g., a flagman); SS = Stop Signs; XB = Crossbucks; OS = Other Signs or Signals; NO = No Signs or Signals.
TOT TRNS:	Number of total trains per day.
TOT TRKS:	Total number of railroad tracks between the warning devices at the crossing.
TTBL SPD:	The maximum timetable (allowable) speed for trains through the crossing.
HWY PVD:	Is the highway paved on both sides of the crossing?
HWY LNS:	The number of highway traffic lanes crossing the tracks at the crossing.
AADT:	The Average Annual Daily Traffic count for highway vehicles using the crossing.



PUBLIC HIGHWAY-RAIL CROSSINGS RANKED BY PREDICTED ACCIDENTS PER YEAR AS OF 12/31/2011*

*Num of Collisions: Most recent year is partial year (data is not for the complete calendar year) unless Accidents per Year is 'AS OF DECEMBER 31'.

RANK	PRED COLLS.	CROSSING	RR	STATE	COUNTY	CITY	ROAD	NUM OF COLLISIONS					DATE CHG	W D	TOT TRN	TOT TRK	TTBL SPD	HWY PVD	HWY LNS	AADT
								11*	10	09	08	07								
1	0.156640	140253T	CSX	MD	PRINCE GEOR	HYATTSVILLE	DECATUR STREET	0	1	0	1	2		FL	21	1	25	YES	2	8,000
2	0.133549	140507F	CSX	MD	MONTGOMERY	GAITHERSBURG	S SUMMIT AVE	1	0	1	0	0		GT	31	3	75	YES	3	15,000
3	0.115177	140869S	CSX	MD	BALTIMORE (BALTIMORE	HOLLINS FERRY	1	0	0	1	0		GT	14	3	50	YES	4	6,000
4	0.103773	140494G	CSX	MD	MONTGOMERY	ROCKVILLE	RANDOLPH ROAD	0	0	1	0	0		GT	31	2	79	YES	4	41,000
5	0.077086	140488D	CSX	MD	MONTGOMERY	SILVER SPRI	FOREST GLEN RD	1	0	0	0	0		GT	31	2	55	YES	2	11,400
6	0.075771	140509U	CSX	MD	MONTGOMERY	GAITHERSBURG	CHESTNUT STREET	0	0	0	1	0		GT	31	2	65	YES	2	10,500
7	0.063621	144684Y	CSX	MD	ALLEGANY	CUMBERLAND	BALTIMORE STRE	1	0	0	0	0		GT	21	4	25	YES	2	6,368
8	0.061946	140815L	CSX	MD	HARFORD	JOPPA	JOPPA RD	1	0	0	1	0		FL	13	1	50	YES	2	1,666
9	0.060341	140512C	CSX	MD	MONTGOMERY	GAITHERSBURG	METROPOLITANG R	0	0	1	0	1		GT	30	2	79	YES	2	50
10	0.059830	140905K	CSX	MD	PRINCE GEOR	RIVERDALE	QUEENSBURY RD	0	0	1	0	0		GT	17	2	70	YES	2	6,000
11	0.056668	530843S	MDT	MD	BALTIMORE	COCKEYSVILLE	TIMONIUM RD	0	0	0	0	0		GT	90	3	50	YES	4	30,491
12	0.055654	140254A	CSX	MD	PRINCE GEOR	HYATTSVILLE	BALTIMORE AVEN	0	0	0	0	1		FL	13	1	20	YES	3	10,950
13	0.052730	140804Y	CSX	MD	HARFORD	ABERDEEN	WEST BELAIR AVE	0	1	0	0	0		GT	13	1	50	YES	2	6,200
14	0.048160	145061T	CSX	MD	ALLEGANY	ELLERSLIE	SHELLSBURG ROAD	1	0	0	0	0		GT	16	2	60	YES	2	1,650
15	0.047823	526402M	MDDE	MD	QUEEN ANNE'S	BARCLAY	ROUTE 313	1	0	0	0	0		XB	2	1	20	YES	2	2,650
16	0.046631	532057V	MDDE	MD	DORCHESTER	HURLOCK	NEALSON ST.	0	0	1	0	0		XB	3	2	10	YES	2	1,900
17	0.045926	532058C	MDDE	MD	DORCHESTER	HURLOCK	RAILROAD AVE.	1	0	0	0	0		XB	2	2	10	YES	2	2,625
18	0.045832	140789Y	CSX	MD	CECIL	CHILDS	JACKSON STATION	0	1	0	0	1		FL	14	2	50	YES	2	300
19	0.045393	140465W	MDT	MD	FREDERICK	FREDERICK	SOUTH ST	0	0	0	0	1		FL	10	1	30	YES	2	4,624
20	0.043734	530252N	NS	MD	SOMERSET	PRINCESS AN		1	0	0	0	1		XB	2	1	10	NO	2	75
21	0.041536	530840W	MDT	MD	BALTIMORE	BALTIMORE	SEMINARY AVE	0	0	0	0	0		GT	98	2	50	YES	2	7,675
22	0.041189	530213X	NS	MD	WICOMICO	DELMAR	CONNELLY MILL	0	0	0	1	0		SS	4	2	10	YES	2	600
23	0.040963	845048M	MDT	MD	ANNE ARUNDEL	BALTIMORE	BROADVIEW BLVD	0	0	0	0	0		GT	110	2	45	YES	2	5,000
24	0.039534	532064F	MDDE	MD	DORCHESTER	LINKWOOD	US 50	1	0	0	0	0		FL	2	1	20	YES	4	7,075
25	0.037367	144701M	CSX	MD	ALLEGANY	CUMBERLAND	MOSS AVE	0	0	1	0	0		GT	7	2	35	YES	2	1,025
26	0.036402	140370N	CSX	MD	BALTIMORE	BALTIMORE	CHEMICAL ROAD	1	0	0	0	0		XB	4	1	10	YES	2	1,100
27	0.036094	530212R	NS	MD	WICOMICO	DELMAR	FOSKEY LANE	0	1	0	0	0		SS	4	2	10	YES	2	275
28	0.035800	141518W	CSX	MD	BALTIMORE	BALTIMORE	68TH STREET	0	0	0	0	0		SS	13	2	50	YES	2	2,300
29	0.035339	140239X	CSX	MD	BALTIMORE	HALETHORPE	HOLLINS FERRY	0	0	0	0	0		FL	55	3	50	YES	2	6,969
30	0.035314	140416A	CSX	MD	CARROLL	WOODBINE	WASHINGTON RD	1	0	0	0	0		FL	10	1	30	YES	2	1,600

TTL: 1.775823

12 4 6 5 7



Martin O'Malley, *Governor*
 Anthony G. Brown, *Lt. Governor*

Beverley K. Swain-Staley, *Secretary*
 Melinda E. Peters, *Administrator*

MARYLAND DEPARTMENT OF TRANSPORTATION

May 23, 2012

Ms. Françoise Carrier
 Chair
 Montgomery County Planning Board
 8787 Georgia Avenue
 Silver Spring MD 20910

Dear Ms. Carrier:

I am writing to request that the Montgomery County Planning Board give careful attention to the closure of Randolph Road across CSX's tracks as part of its decision-making on the White Flint 2 area master plan. The Maryland State Highway Administration (SHA) appreciates this opportunity to partner with the Planning Board in improving roadway safety for the traveling public.

As you know, SHA is currently working on the design of its MD 355 Phase 2 project, located in White Flint. Two alternatives are being proposed: one involving construction of the master planned bridge over CSX Transportation's (CSX) rail line, closure of the public at-grade highway-rail crossing at Randolph Road and the rail line, and the construction of additional lanes on Maple Avenue (Chapman Avenue Extended) at the intersection with Randolph Road to accommodate the projected traffic/turning movements; and another involving construction of the master planned bridge and retention of the at-grade highway-rail crossing. The Maryland-National Capital Park and Planning Commission's (M-NCPPC) White Flint Sector Plan, adopted March 2010, and the North Bethesda Garrett Park (NB/GP) Master Plan, adopted July 1992, both maintain this crossing as open to highway traffic. The 2005 Countywide Bikeways Functional Master Plan also proposes the addition of bike lanes, BL-15, and a shared use path, SP-25, on Randolph Road at the crossing.

SHA completed its MD 355 Phase 1 project, which converted the at-grade intersection of MD 355 and Randolph Road/Montrose Road into a grade-separated interchange with Montrose Parkway. In Phase 2 (see attachment), Montrose Parkway will be extended from MD 355 to Parklawn Drive and will connect with Montgomery County's Montrose Parkway East project. Montrose Parkway is designated as "A-270," a four-lane, divided arterial in the NB/GP Master Plan, and is proposed to have a four-lane section, with auxiliary lanes in both directions.

My telephone number/toll-free number is 410-545-0400 or 1-800-206-0770
 Maryland Relay Service for Impaired Hearing or Speech 1.800.735.2258 Statewide Toll Free

Street Address: 707 North Calvert Street * Baltimore, Maryland 21202 * Phone 410.545.0300 * www.roads.maryland.gov

Two bridges are proposed on Montrose Parkway: one to carry Montrose Parkway over Nebel Street and the CSX tracks; and another over Parklawn Drive. The overpass for the CSX rail line and Nebel Street will eliminate conflicts between trains and highway traffic. This project is in the preliminary engineering stage, and is expected to be advertised for construction in August 2013.

If the highway-rail crossing is closed to highway traffic, vehicles traveling westbound on Randolph Road will be able to utilize Montrose Parkway to reach destinations west of the CSX rail line via the interchange with Parklawn Drive. Vehicles on an eastbound approach from MD 355 will also be able to reach destinations east of the CSX rail line via the interchange at Parklawn Drive. The proposed closure of Randolph Road at the railroad tracks will also cause shifts to the 2005 Countywide Bikeways Functional Master Plan's bike lanes, BL-15, and the shared use path, SP 25.

Despite these impacts, it is SHA's opinion that the resulting increased safety to bicyclists in the area far outweighs the increased travel time they will experience. SHA recognizes the importance of maintaining the integrity of the bicycle and pedestrian network and will include the necessary improvements to maintain this integrity as part of the project. The project will include a 10-foot shared-use path, along the north side of Montrose Parkway, which will connect with Parklawn Drive and continue beyond the interchange to the proposed Montrose Parkway east project. Pedestrians and bicyclists, using the shared-use path on the north side of Montrose Parkway, will be able to traverse Parklawn Drive via a crosswalk at the intersection with Braxfield Court, north of the interchange. In addition, a five-foot sidewalk, along the south side of Montrose Parkway, is proposed to connect with the sidewalk on Parklawn Drive. Parklawn Drive will have a 10-foot sidewalk on the west side and a five-foot sidewalk on the east side that will connect with the proposed sidewalks on the south side of Montrose Parkway. Parklawn Drive will also remain accessible to pedestrians through movement via crossing points in the proposed interchange that will go under the proposed overpass of Montrose Parkway. Additional coordination is ongoing with M-NCPPC and Montgomery County Department of Transportation (MCDOT) to incorporate additional improvements for the bicycle and pedestrian network.

Based on the Federal Railroad Administration's (FRA) "Accident Prediction Report for Public at-Grade Highway-Rail Crossings," out of almost 700 public at-grade highway-rail crossings statewide, the Randolph Road crossing is the third most susceptible for collisions. Twenty collisions at this crossing were reported to the FRA over the past 35 years. According to the national highway-rail crossing inventory, over 30 trains per day utilize the Randolph Road and CSX rail line crossing. This rail traffic includes MARC and Amtrak passenger trains.

Ms. Françoise Carrier
Page Three

SHA has been working with MCDOT to develop alternatives that will address safety and traffic flow concerns at this intersection, and the entire interchange system. Based on the findings of multiple traffic studies and FRA's accident prediction report, SHA and MCDOT have agreed that the closing of Randolph Road at the CSX tracks provides the safest, most efficient, alternative.

Thank you, again, for the opportunity to partner with the Planning Board in improving roadway safety for the traveling public, and for your anticipated response to this letter. If you have any additional questions or comments, please do not hesitate to contact Mr. Luis Gonzalez, Project Engineer, Highway Design Division, SHA at 410-545-8826, toll-free 1-888-228-5003 or via email at lgonzalez@sha.state.md.us. He will be pleased to assist you.

Sincerely,



Melinda B. Peters
Administrator

Attachment: MD 355 Phase 2 Concept Plan-Randolph Road Closure at CSX

cc: Mr. Ed Axler, Area 2 Transportation Planner, M-NCPPC
Mr. Edgar Gonzalez, Deputy Director for Transportation Policy, MCDOT
Mr. Nkosi Yearwood, Area 2 Planner, M-NCPPC
Mr. Luis A. Gonzalez, Project Engineer, Highway Design Division, SHA

Ms. Françoise Carrier
Page Four

bcc: Ms. MarieFrance Guiteau, Project Manager, Highway Design Division, SHA
Ms. Reena Mathews, Regional Coordinator, Regional Intermodal Planning Division,
SHA
Mr. Kirk G. McClelland, Director, Office of Highway Development, SHA
Ms. Barbara L. Solberg, Chief, Highway Design Division, SHA
Mr. Brian Young, District Engineer, SHA

ATTACHMENT 7



MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

October 4, 2012

Arthur Holmes, Director
Montgomery County Department of Transportation
Executive Office Building
101 Monroe Street, 10th Floor
Rockville, Maryland 20850

Subject: MD 355, Phase 2 Montrose Parkway East
CIP Project No. 500717

Art
Dear Mr. Holmes:

As you know, the Maryland State Highway Administration (SHA) is currently conducting a planning study of the Montrose Parkway East/CSX grade-separation project. In a recent meeting with SHA, we asked whether the Montrose Parkway/Parklawn Drive interchange included in that project is needed for the area's transportation network to function adequately. Since your Department is supervising SHA's work, we are writing to request that you direct SHA to perform a re-assessment of the need for the Parklawn Drive interchange.

The 2009 *Twinbrook Sector Plan* recommends an interchange at this location. However, smart growth promotes walkable, transit-oriented communities, and in our upcoming White Flint II Sector Plan, this interchange will be reconsidered. We believe that an at-grade Montrose Parkway East/Parklawn Drive intersection, in place of the current interchange design, may be further in keeping with the smart growth principles we are proposing in all our sector plans. A Montrose Parkway/Parklawn Drive interchange would create more of a barrier between the Twinbrook communities and the White Flint II communities. Alternatively, an intersection would support the current planning practice of reducing vehicular barriers by improving pedestrian and bicyclist-friendly connections, a goal of the upcoming White Flint II Sector Plan.

If an at-grade intersection at Montrose Parkway East and Parklawn Drive is feasible, our current effort on the White Flint II Sector Plan could include a recommendation to provide the at-grade connection rather than an interchange. As you know, both MCDOT and SHA have requested that we consider removal of the at-grade Randolph Road crossing of the CSX tracks as part of the same master plan effort; it seems appropriate to analyze these various projects in the larger context of the upcoming Sector Plan effort, if initial studies show they are at least feasible.

Mr. Arthur Holmes

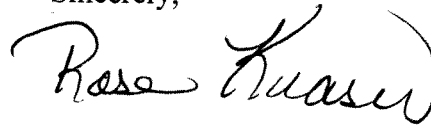
October 4, 2012

Page Two

Given the current project schedule, the request for this re-assessment should have a minimal impact to the MD 355, Phase 2 project schedule. Further, if an at-grade intersection is found to operate at an acceptable congestion level, the construction cost could be considerably less than the current interchange design; an important CIP consideration since the County now intends to fund both the Montrose Parkway East/CSX grade-separation project as well as the Montrose Parkway East project.

We look forward to your timely response. Thank you for your attention to this matter. If you have any questions or comments concerning our request please call Ed Axler at 301-495-4536.

Sincerely,

A handwritten signature in black ink that reads "Rose Krasnow". The signature is written in a cursive style with a large, sweeping initial "R".

Rose Krasnow
Acting Director

RK:pw:ha:kg:js:ea



DEPARTMENT OF TRANSPORTATION

Isiah Leggett
County Executive

November 27, 2012

Arthur Holmes, Jr.
Director

Ms. Rose Krasnow, Acting Director
Montgomery County Planning Department
Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Subject: MD 355, Phase 2 Montrose Parkway East
CIP Project No. 500717

Dear Ms. Krasnow:

Thank you for your letter of October 4, 2012, regarding the subject project. You asked that we direct State Highway Administration (SHA) to perform a reassessment of the need for the grade-separated Parklawn Drive Interchange, in favor of an at-grade intersection instead. Our understanding is that your request is based on the belief that an at-grade intersection may be further in keeping with smart growth principles such as walkable transit oriented communities. We believe that an adequate analysis of such option has been done and presented to the Planning Board. Additionally such a major reassessment would require more funding which Montgomery County Department of Transportation (MCDOT) does not have.

MCDOT, in collaboration with SHA, has done a brief reevaluation of why we are considering a grade-separation, and has determined that it is unlikely for an at-grade intersection to be the improved pedestrian and bicycle-friendly option that some may foresee. Grade-separated interchanges, properly designed to take into account pedestrian and bicyclist movements, are not mobility barriers. If anything, they improve safety and reduce barriers by separating conflicting flows of motor vehicles, pedestrians and bicyclists.

Staff from MCDOT and SHA have also looked at master plan, facility planning, and travel analysis issues. Master plans show the envisioned transportation system that the County Council approves and the M-NCPPC adopts. With respect to this particular grade-separation, every plan amendment in the vicinity of this location from the 1992 *North Bethesda-Garrett Park Master Plan* until today, including the 2009 *Twinbrook Sector Plan* and the recently completed 2010 *White Flint [1] Sector Plan*, have either explicitly shown this grade-separation or included it in the modeling which was done for the transportation element of the plan. Therefore, a grade-separation is the Council approved, M-NCPPC adopted vision that has been fully vetted through extensive public coordination/participation processes. Furthermore, the 1992 Plan already showed that a grade-separation was needed based on the land uses and densities created by it. Each of the later amendments has added more land uses and more density on top of that contained in the 1992 Plan. This intuitively suggests that a grade-separation (which better serves the movement of people, goods, and commercial and emergency services) should be retained, rather than be replaced by a less functional at-grade intersection.

Office of the Director

101 Monroe Street, 10th Floor • Rockville, Maryland 20850 • 240-777-7170 • 240-777-7178 FAX

www.montgomerycountymd.gov

Located one block west of the Rockville Metro Station

RECEIVED
2012 DEC 11 AM 11:49
MONTGOMERY COUNTY DEPARTMENT

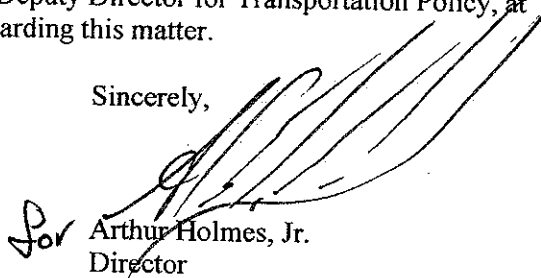
Ms. Rose Krasnow
November 27, 2012
Page 2

We also want to note that during our 2004 Facility Planning work (where M-NCPPC was represented by several staff members), a proposed at-grade intersection of Montrose Parkway East at Parklawn Drive was studied as "Parklawn Option 1". At that time, it was found that Parklawn Option 1 would need to have a total of nine lanes on Montrose Parkway East and eight lanes would be needed on Parklawn Drive to accommodate the volumes projected in 2004. Given our recent experience with the traffic study for White Flint (1), this number of lanes would be contrary to the concepts of TOD and pedestrian safety and convenience envisioned in the concepts. The necessarily large paving widths would not foster a very pedestrian-friendly environment and additionally would require considerable extra right-of-way acquisition along Parklawn Drive. Also, it was noted in the study, that because of the proximity of the bridge over the CSX tracks to the Parklawn Drive intersection, it would be difficult to achieve the vertical clearance needed for Montrose Parkway East to tie-in to the CSX Bridge. The necessary grades present a significant challenge to meet ADA requirements.

Finally, at our request SHA's Travel Forecasting and Analysis Division did a quick theoretical analysis to compare an at-grade intersection with similar lane configuration and footprint to the current grade-separation design based on current land uses and densities. The analysis was performed while maintaining the same amount of turn lanes as the grade-separated alternative while providing additional storage length for the left-turn lanes to accommodate the ensuing queues. The analysis concludes that a grade-separated design works with 50% better efficiency in the PM peak hours and 80% better efficiency in the AM peak hours than an at-grade option. The analysis further shows that an at-grade option would function at level of service F (234.5 seconds/vehicle of delay) with approximately four times more delay than a grade-separated option which would have an overall level of service D (54.5 seconds/vehicle of delay). We believe that these impacts will have a substantial negative effect on the overall network efficiency, and that it will result in higher emissions of pollutants into the atmosphere.

Therefore, in consideration of all of the factors explained above, MCDOT declines to request that SHA do any further at-grade reassessment. We believe that a bicyclist- and pedestrian-friendly interchange can be designed, that it will not be a mobility barrier, and that it will provide a safer alternative. Please contact Mr. Edgar Gonzalez, Deputy Director for Transportation Policy, at 240-777-7185 should you have any questions regarding this matter.

Sincerely,

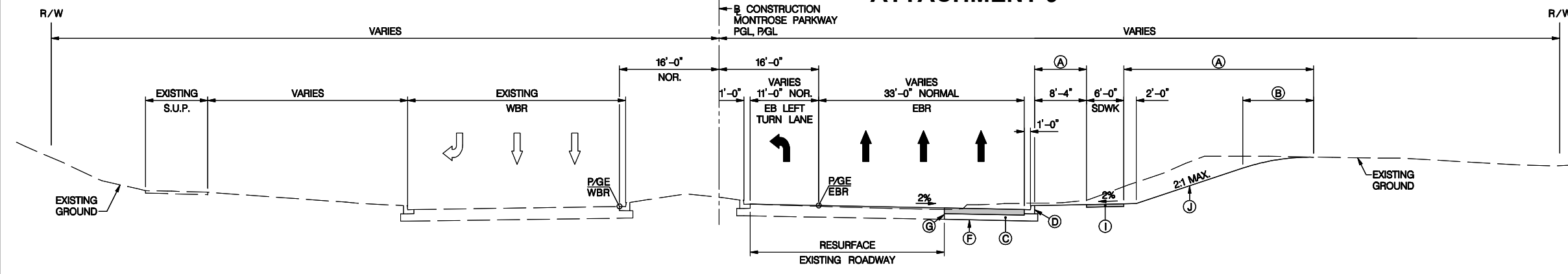

For Arthur Holmes, Jr.
Director

AH:sp

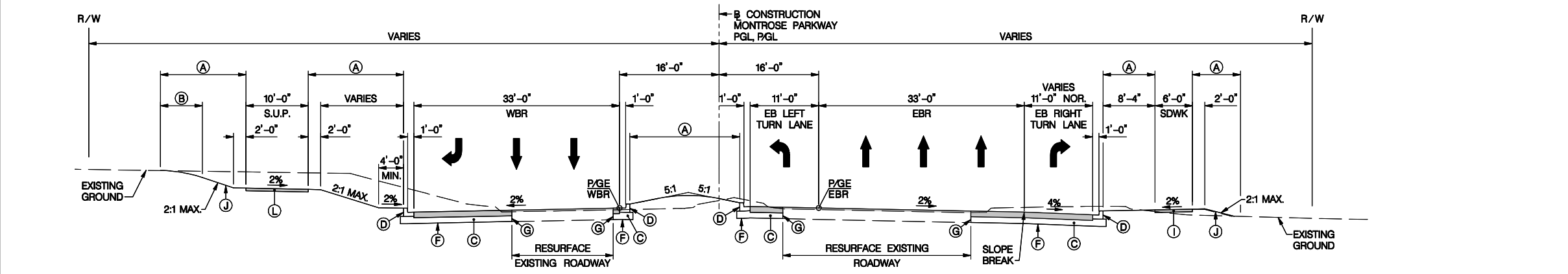
cc: Edgar Gonzalez, MCDOT

bcc: Luis Gonzalez, SHA
Bruce Johnston, MCDOT
Bob Simpson, MCDOT

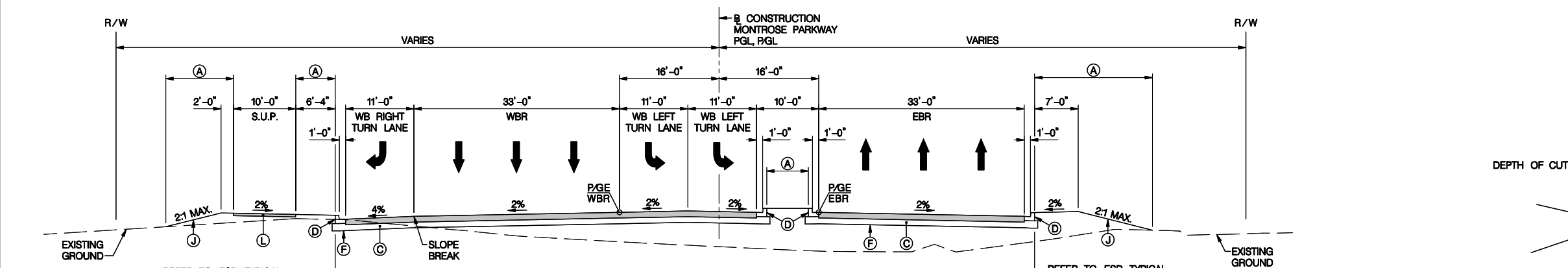
ATTACHMENT 9



MONTROSE PARKWAY
STA. 166+15 TO STA. 167+90.72 BK. = STA. 991+76.31 AHD.

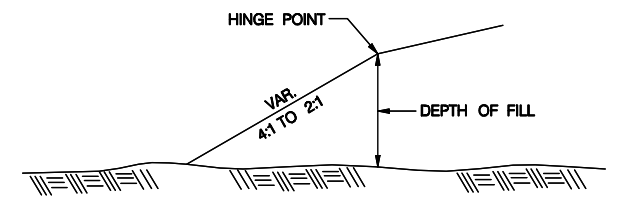


MONTROSE PARKWAY
STA. 991+76.31 AHD. TO STA. 994+75



MONTROSE PARKWAY
STA. 994+75 TO STA. 998+00

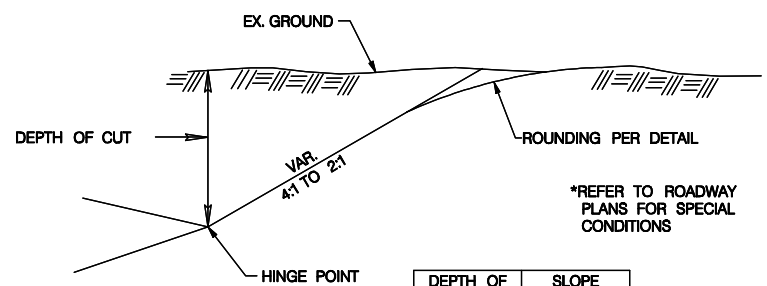
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 - SEED AND MULCH ON ALL SIDE SLOPES EXCEPT WHERE SOD IS PROPOSED OR DITCH LININGS ARE TO BE RIPRAP OR CONCRETE. (REFER TO THE CONTRACT DOCUMENT FOR LANDSCAPING FEATURES)
 - (B) SLOPE ROUNDING - SEE DETAILS ON THIS SHEET
 - (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
 - (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
 - (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
 - (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
 - (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
 - (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
 - (I) 5" CONCRETE SIDEWALK
 - (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
 - (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
 - (L) SHARED USE PATH
 - (M) PAVEMENT REMOVAL



SLOPE RATIO *	HEIGHT OF EMBANKMENT
4:1	0' TO 5'
3:1	>5' TO 10'
2:1	>10'

*REFER TO ROADWAY PLANS FOR SPECIAL CONDITIONS

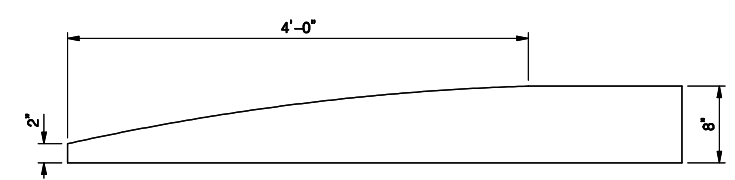
TYPICAL FILL SLOPE RATIOS



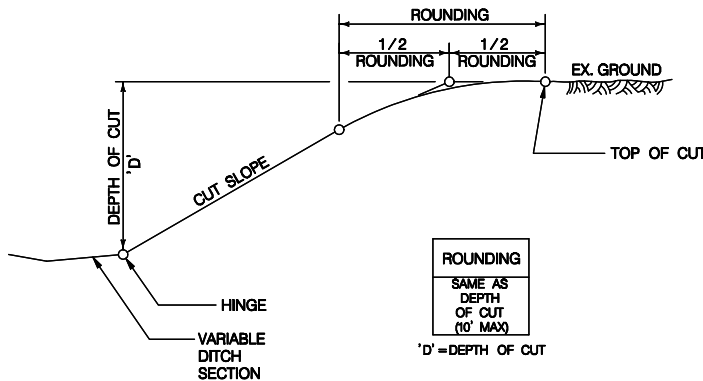
DEPTH OF CUT *	SLOPE RATIO
0' TO 5'	4:1
>5' TO 10'	3:1
> 10	2:1

*REFER TO ROADWAY PLANS FOR SPECIAL CONDITIONS

TYPICAL CUT SLOPE RATIOS



CURB NOSE DOWN DETAIL



CUT SLOPE ROUNDING

ROUNDING
SAME AS DEPTH OF CUT (10' MAX)
'D' = DEPTH OF CUT

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION
MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

TYPICAL SECTIONS

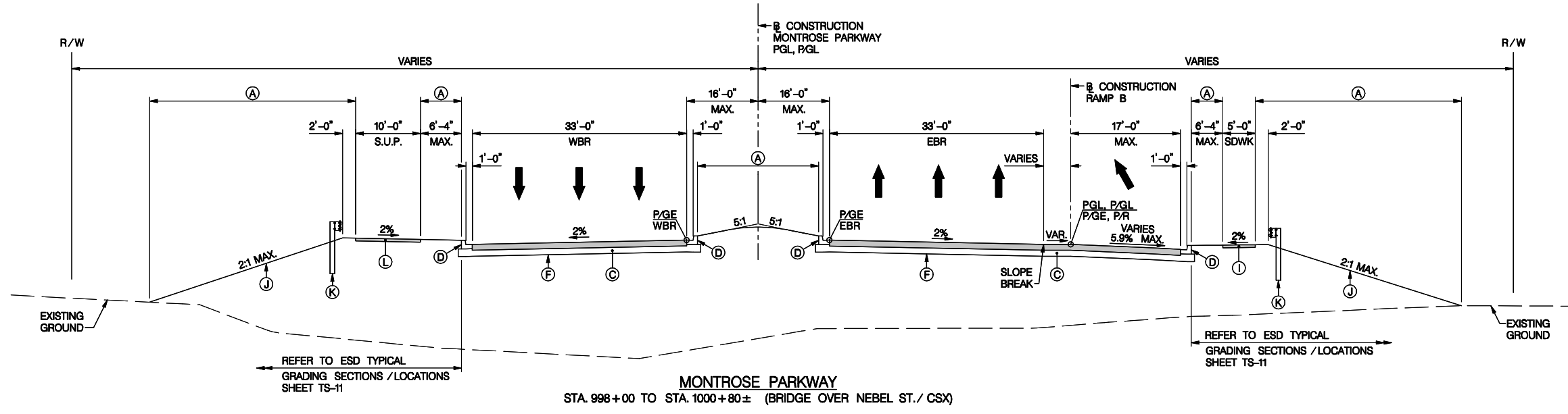
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DESIGNED BY	DKL	COUNTY	MONTGOMERY
DRAWN BY	ERF	LOGMILE	_____
CHECKED BY	_____		
F.A.P. NO.	_____		
DRAWING NO.	TS-1	OF	11
		SHEET NO.	3 OF 122

THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

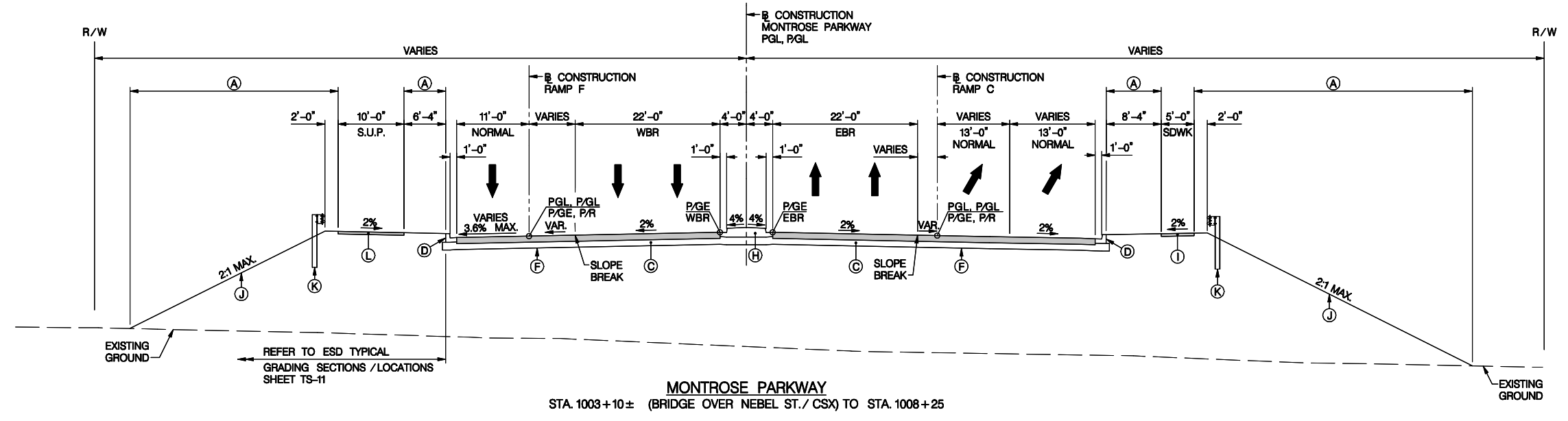
BY: daw

TYPICAL SECTION LEGEND

- (A) PLACE 4" TOPSOIL FOR SIDE SLOPES FLATTER THAN 2:1, FOR 2:1 SIDE SLOPES, PLACE 2" TOPSOIL.
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- (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



MONTROSE PARKWAY
STA. 998+00 TO STA. 1000+80± (BRIDGE OVER NEBEL ST./ CSX)



MONTROSE PARKWAY
STA. 1003+10± (BRIDGE OVER NEBEL ST./ CSX) TO STA. 1008+25

BY: daw -
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

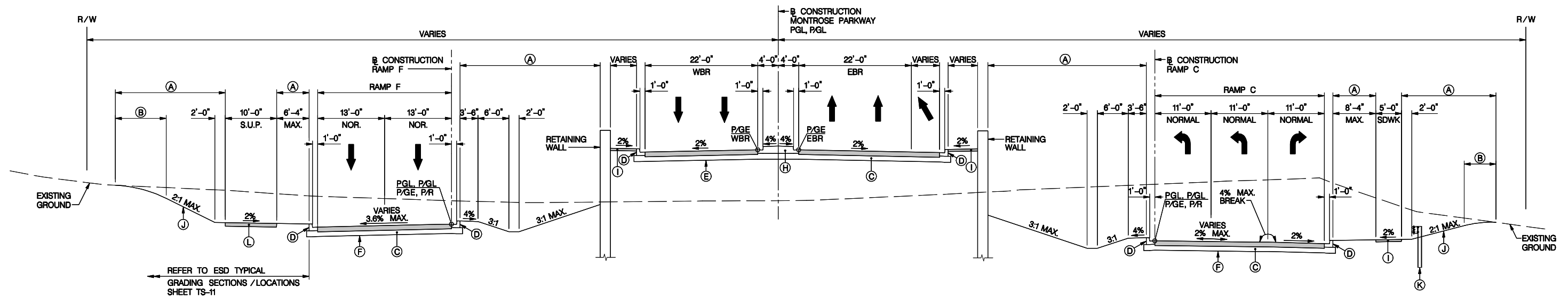
SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

REVISIONS	TYPICAL SECTIONS	
	SCALE 1" = 10'	ADVERTISED DATE _____ CONTRACT NO. M0344M21
	DESIGNED BY <u>DKL</u>	COUNTY <u>MONTGOMERY</u>
	DRAWN BY <u>DAW</u>	LOGMILE _____
	CHECKED BY <u>ERF</u>	
	F.A.P. NO. _____	
	DRAWING NO. TS-2	OF 11 SHEET NO. 4 OF 122

TYPICAL SECTION LEGEND

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- (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
- (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
- (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
- (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
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- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



MONTROSE PARKWAY
STA. 1008+25 TO STA. 1014+50

REFER TO ESD TYPICAL GRADING SECTIONS / LOCATIONS SHEET TS-11

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

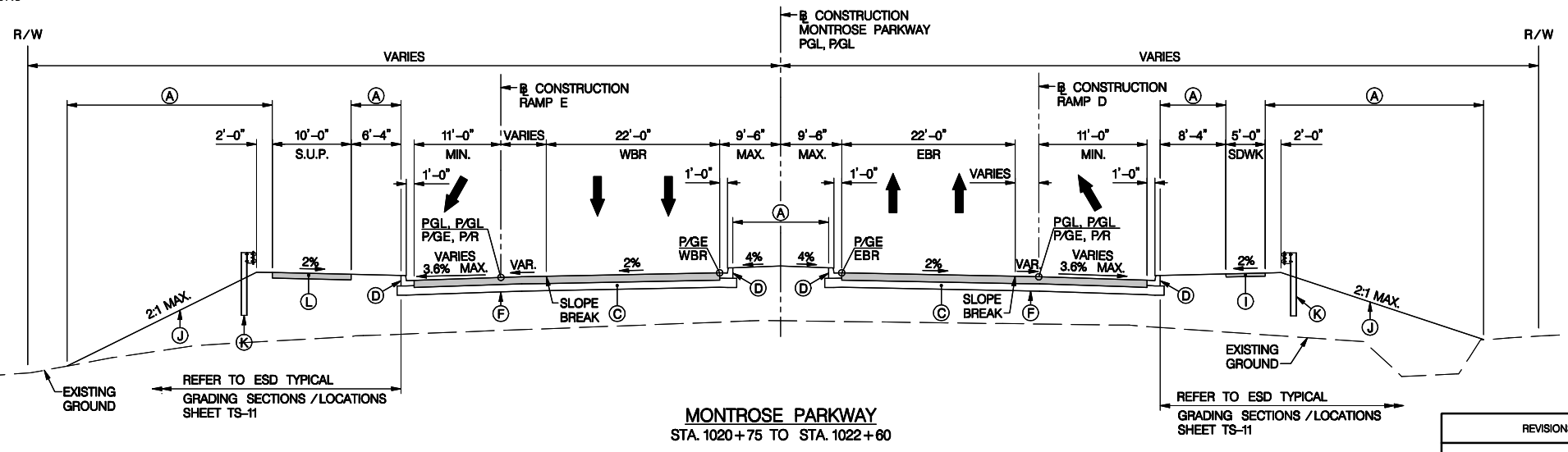
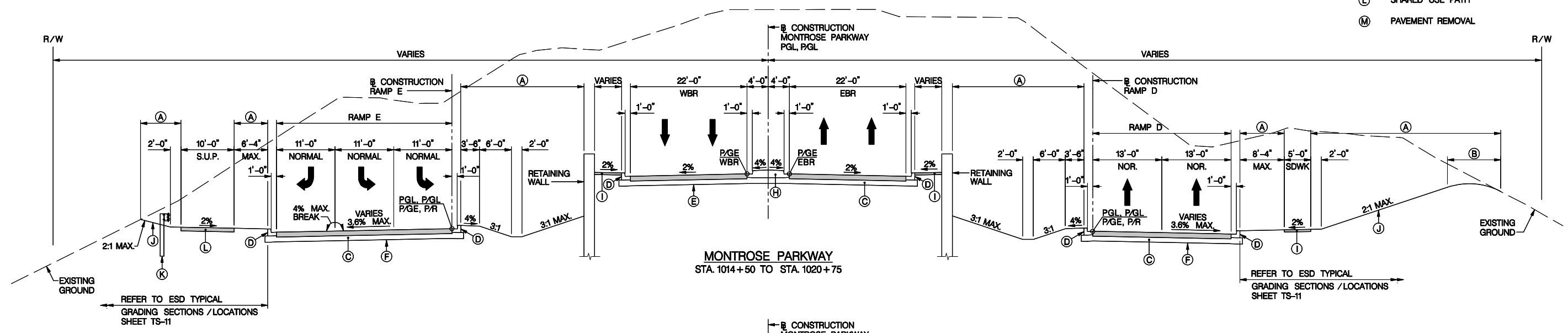
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	DESIGNED BY <u>DKL</u>	COUNTY <u>MONTGOMERY</u>
	DRAWN BY <u>DAW</u>	LOGMILE _____
	CHECKED BY <u>ERF</u>	
	F.A.P. NO. _____	
	DRAWING NO. TS-3	OF 11 SHEET NO. 5 OF 122

THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

BY: daw

TYPICAL SECTION LEGEND

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- (M) PAVEMENT REMOVAL



SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

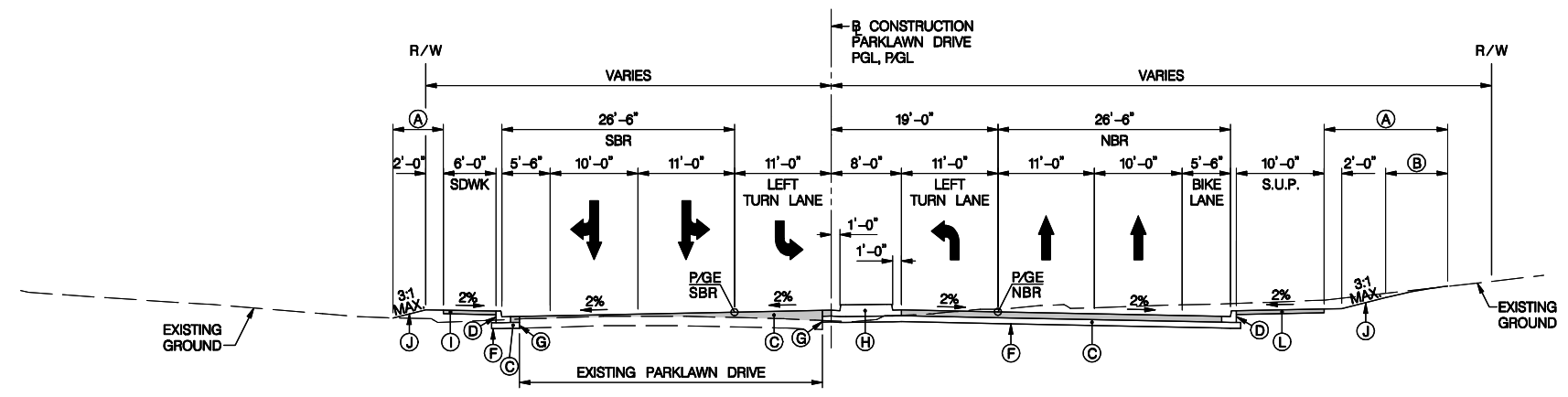
MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

REVISIONS		TYPICAL SECTIONS	
SCALE 1" = 10' ADVERTISED DATE _____ CONTRACT NO. M0344M21			
DESIGNED BY <u>DKL</u>	COUNTY <u>MONTGOMERY</u>		
DRAWN BY <u>DAW</u>	LOGMILE _____		
CHECKED BY <u>ERF</u>			
F.A.P. NO. _____			
DRAWING NO. TS-4	OF 11	SHEET NO. 6	OF 122

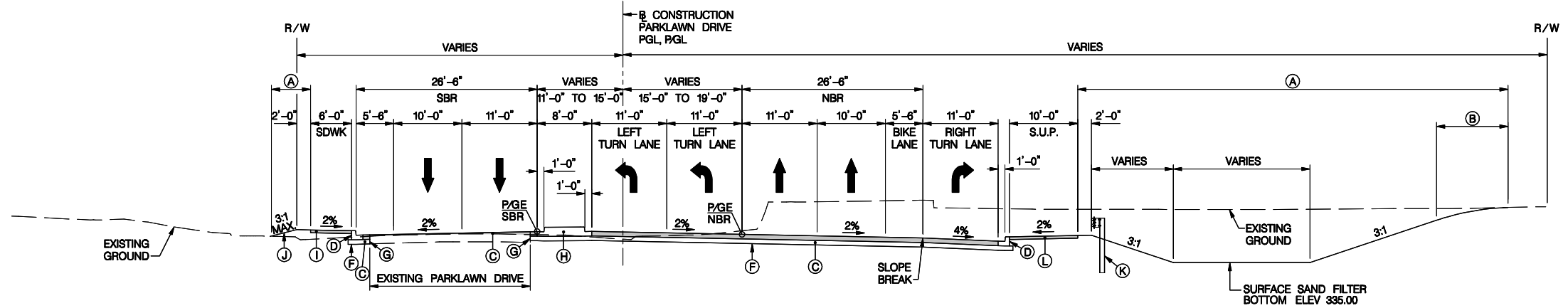
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

TYPICAL SECTION LEGEND

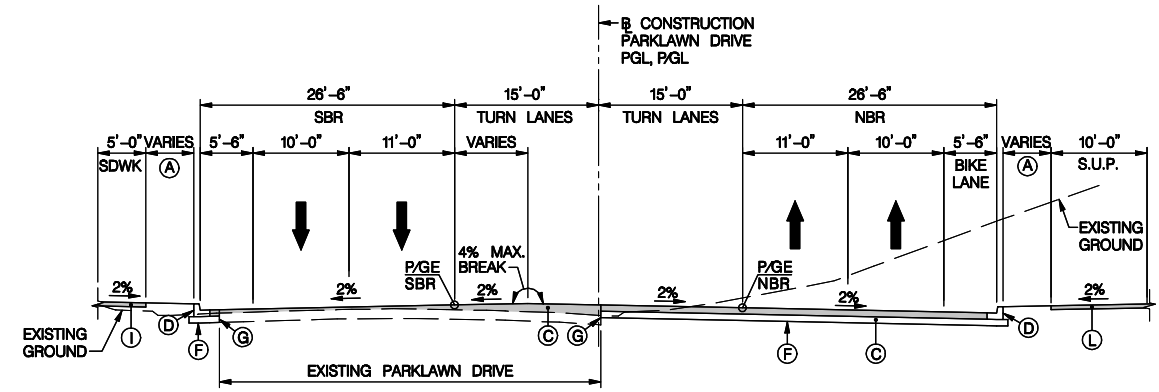
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- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



PARKLAWN DRIVE
 STA. 70+85 TO STA. 73+00±
 (MODIFIED MONT. CO. STD. MC-2004.08A)
 (TARGET SPEED=30 MPH)



PARKLAWN DRIVE
 STA. 73+00± TO STA. 76+00
 (TARGET SPEED=30 MPH)



PARKLAWN DRIVE
 STA. 76+00 TO STA. 78+25 (UNDER MONTROSE PKWY BRIDGE)
 (TARGET SPEED=30 MPH)

THE WILSON T. BALLARD CO.
 CONSULTING ENGINEERS
 OWINGS MILLS, MARYLAND

BY: daw

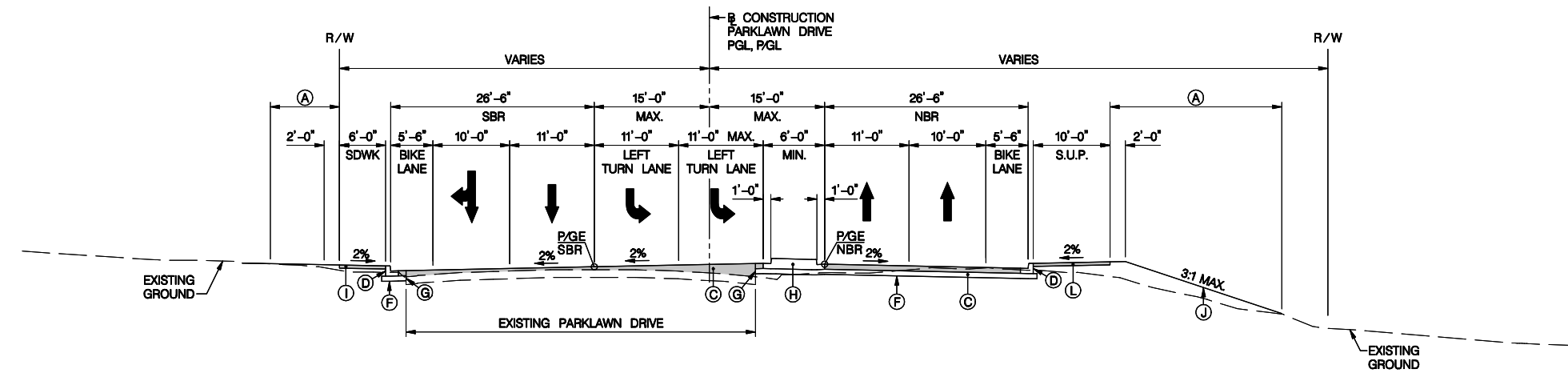
SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
 MONTROSE PARKWAY FROM WEST OF
 MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

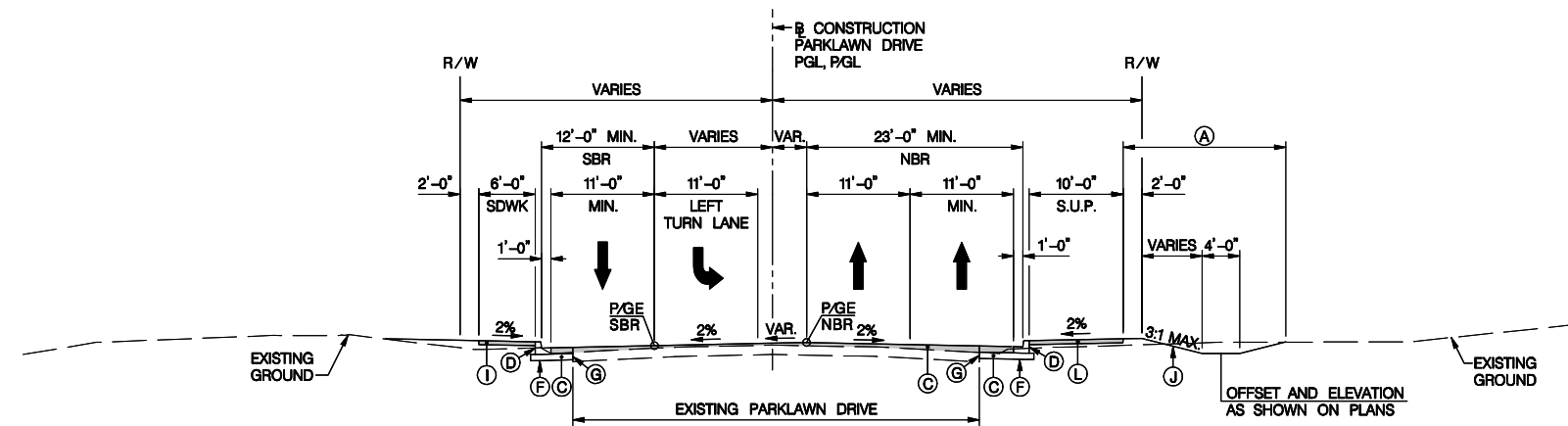
REVISIONS	TYPICAL SECTIONS
	SCALE 1" = 10' ADVERTISED DATE _____ CONTRACT NO. M0344M21
	DESIGNED BY <u>DKL</u> COUNTY <u>MONTGOMERY</u>
	DRAWN BY <u>DAW</u> LOGMILE _____
	CHECKED BY <u>ERF</u>
	F.A.P. NO. _____
	DRAWING NO. TS-6 OF 11 SHEET NO. 8 OF 122

TYPICAL SECTION LEGEND

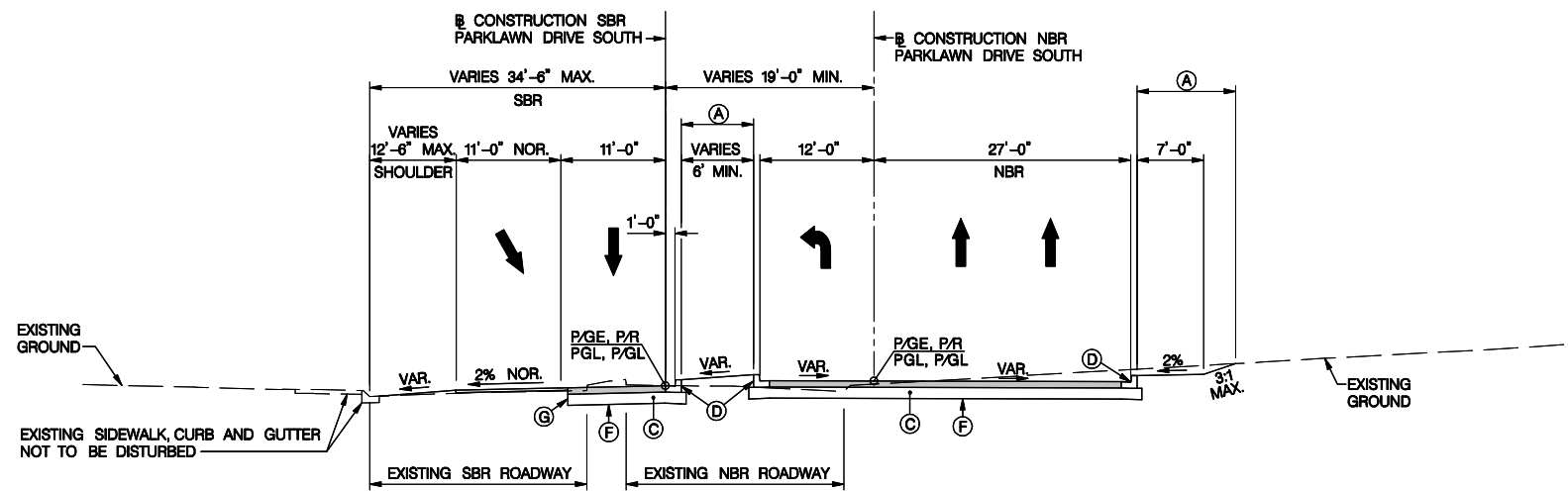
- (A) PLACE 4" TOPSOIL FOR SIDE SLOPES FLATTER THAN 2:1, FOR 2:1 SIDE SLOPES, PLACE 2" TOPSOIL.
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- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



PARKLAWN DRIVE
STA. 78+25 TO STA. 80+50
(TARGET SPEED=30 MPH)



PARKLAWN DRIVE
STA. 80+50 TO STA. 82+05
(TARGET SPEED=30 MPH)



PARKLAWN DRIVE SOUTH
SBR STA. 267+27.80 TO STA. 270+10
NBR STA. 367+85 TO STA. 370+10

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OWINGS MILLS, MARYLAND

BY: daw

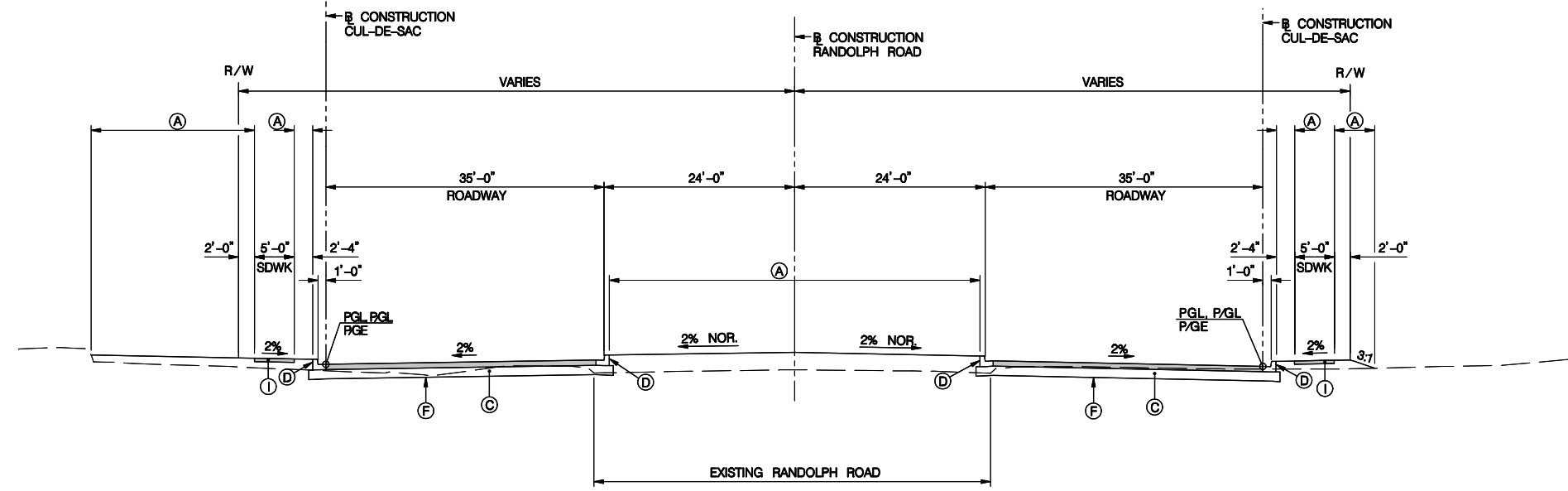
SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

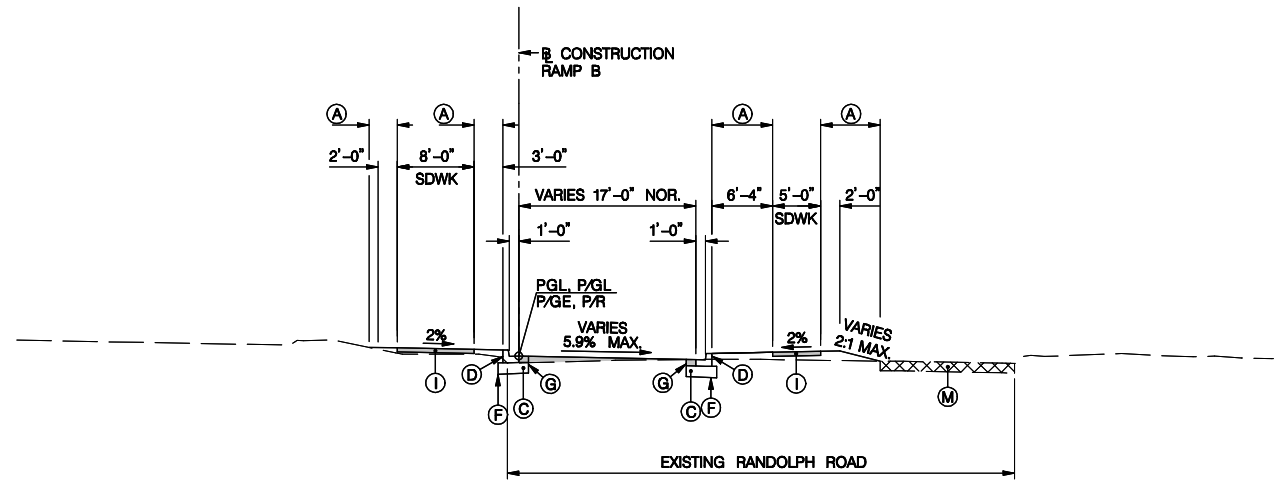
REVISIONS		TYPICAL SECTIONS	
SCALE 1" = 10'		ADVERTISED DATE	CONTRACT NO. M0344M21
DESIGNED BY	DKL	COUNTY	MONTGOMERY
DRAWN BY	DAW	LOGMILE	
CHECKED BY	ERF		
F.A.P. NO.			
DRAWING NO.	TS-7	OF	11
		SHEET NO.	9 OF 122

TYPICAL SECTION LEGEND

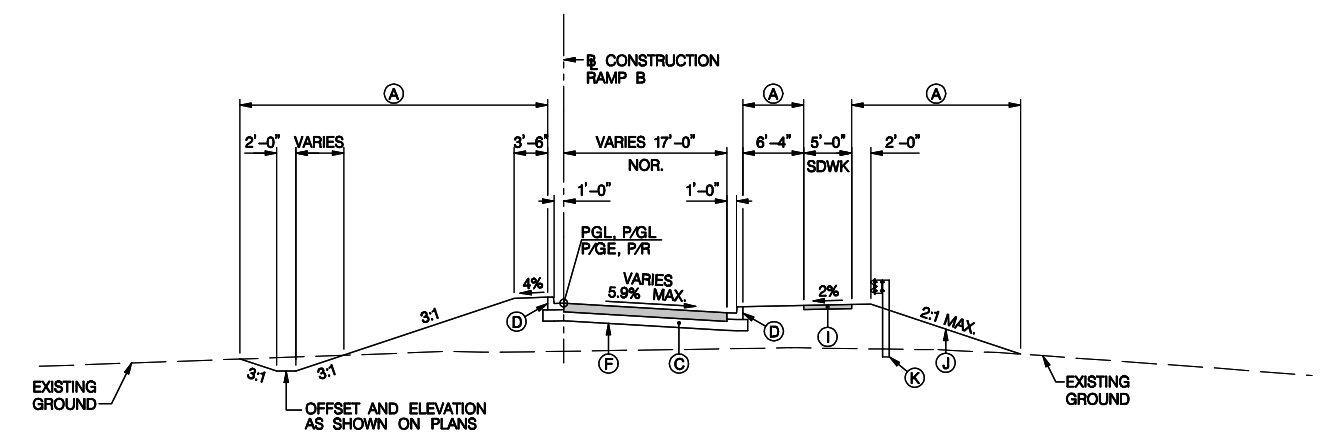
- (A) PLACE 4" TOPSOIL FOR SIDE SLOPES FLATTER THAN 2:1, FOR 2:1 SIDE SLOPES, PLACE 2" TOPSOIL.
- SEED AND MULCH ON ALL SIDE SLOPES EXCEPT WHERE SOD IS PROPOSED OR DITCH LININGS ARE TO BE RIPRAP OR CONCRETE. (REFER TO THE CONTRACT DOCUMENT FOR LANDSCAPING FEATURES)
- (B) SLOPE ROUNDING - SEE DETAILS ON THIS SHEET
- (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
- (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
- (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
- (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
- (I) 5" CONCRETE SIDEWALK
- (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



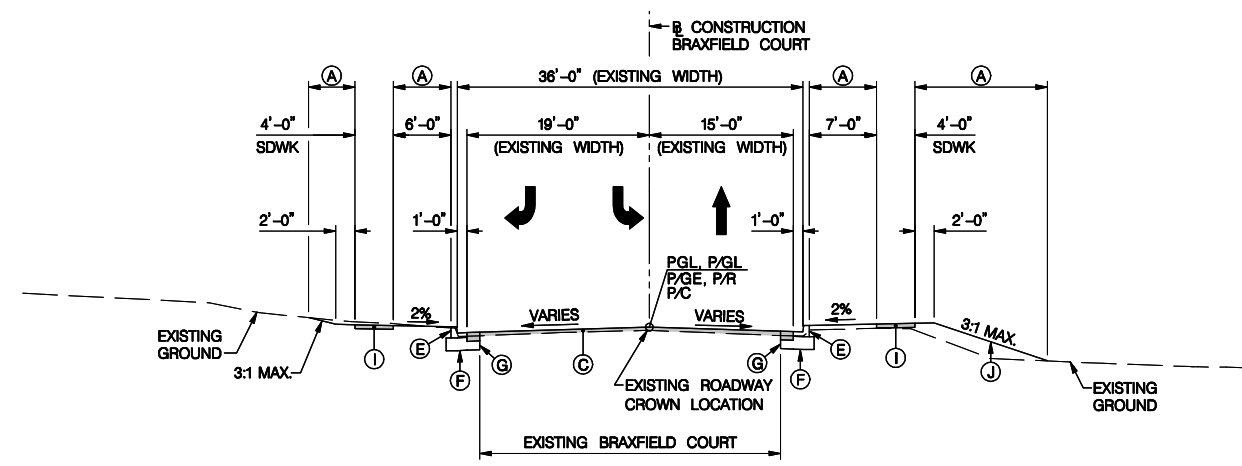
RANDOLPH ROAD CUL-DE-SAC
STA. 9+40± TO STA. 11+43.77



RAMP B
STA. 20+50 TO STA. 22+50



RAMP B
STA. 22+50 TO STA. 24+83.16



BRAXFIELD COURT
STA. 90+40± TO STA. 90+85

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BY: daw

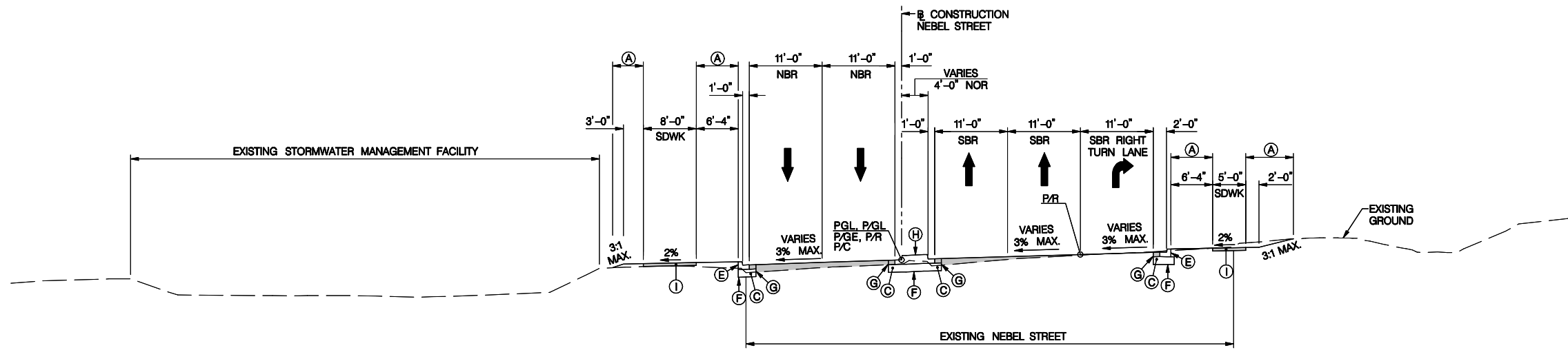
SHA STATE OF MARYLAND
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HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

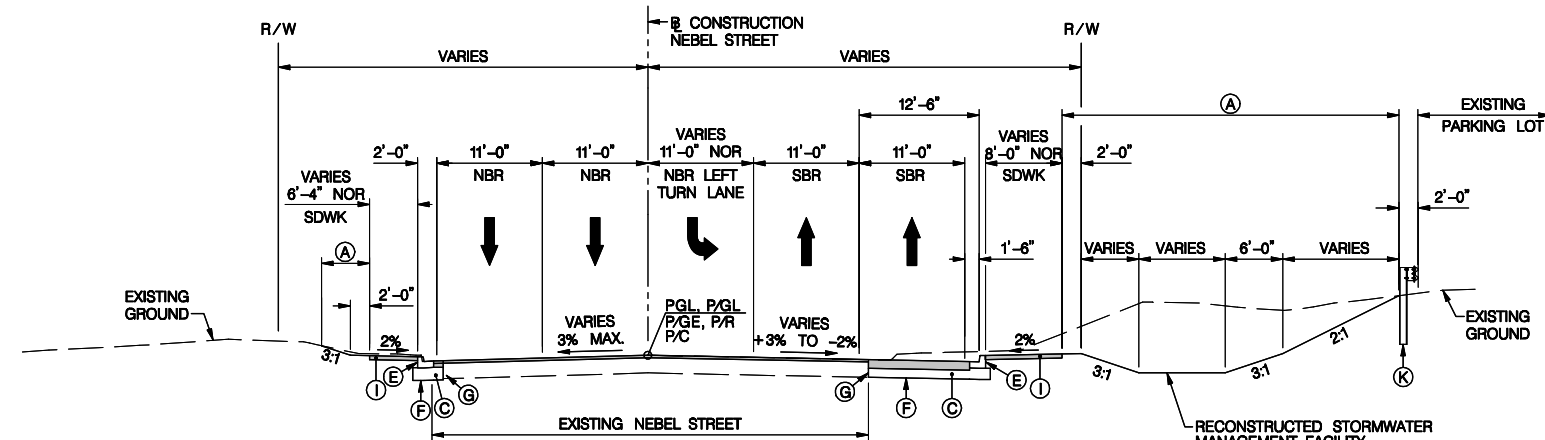
REVISIONS		TYPICAL SECTIONS	
SCALE 1" = 10'		ADVERTISED DATE	CONTRACT NO. MC344M21
DESIGNED BY	DKL	COUNTY	MONTGOMERY
DRAWN BY	DAW	LOGMILE	
CHECKED BY	ERF		
F.A.P. NO.			
DRAWING NO.	TS-8	OF 11	SHEET NO. 10 OF 122

TYPICAL SECTION LEGEND

- (A) PLACE 4" TOPSOIL FOR SIDE SLOPES FLATTER THAN 2:1, FOR 2:1 SIDE SLOPES, PLACE 2" TOPSOIL.
SEED AND MULCH ON ALL SIDE SLOPES EXCEPT WHERE SOD IS PROPOSED OR DITCH LININGS ARE TO BE RIPRAP OR CONCRETE. (REFER TO THE CONTRACT DOCUMENT FOR LANDSCAPING FEATURES)
- (B) SLOPE ROUNDING - SEE DETAILS ON THIS SHEET
- (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
- (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
- (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
- (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
- (I) 5" CONCRETE SIDEWALK
- (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



NEBEL STREET
STA. 124+50 TO STA. 126+60±
(TARGET SPEED=30 MPH)



NOTE:
HOLD EXISTING NBR CURB
STA. 126+50 TO STA. 129+19.

NEBEL STREET
STA. 126+60± TO STA. 129+19±
(TARGET SPEED=30 MPH)

NOTE:
NEBEL STREET TYPICAL BASED
ON MODIFIED MONTGOMERY COUNTY DOT
BUSINESS DISTRICT STREET TYPICAL SECTIONS
(STD NOS. MC-2005.01 AND MC-2005.04)



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

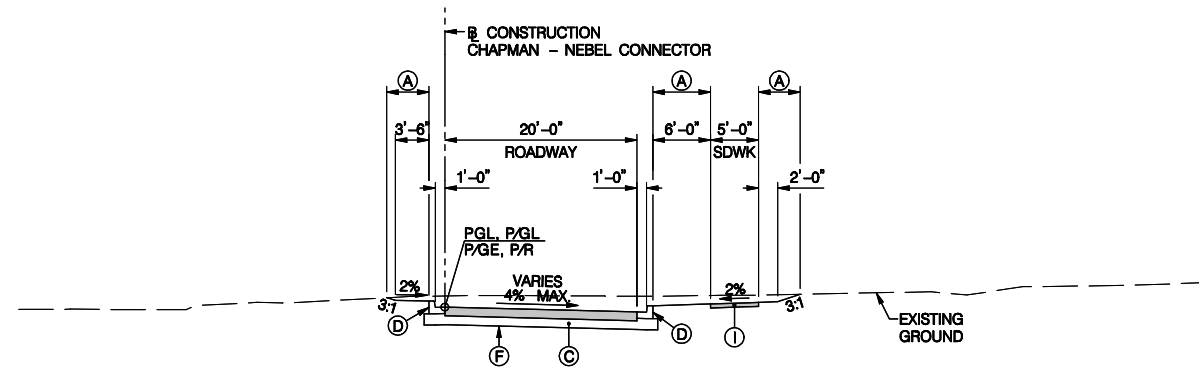
REVISIONS	TYPICAL SECTIONS	
	SCALE 1" = 10'	ADVERTISED DATE _____ CONTRACT NO. M0344M21
	DESIGNED BY DKL	COUNTY MONTGOMERY
	DRAWN BY DAW	LOGMILE _____
	CHECKED BY ERF	
	F.A.P. NO. _____	
	DRAWING NO. TS-9	OF 11 SHEET NO. 11 OF 122

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CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

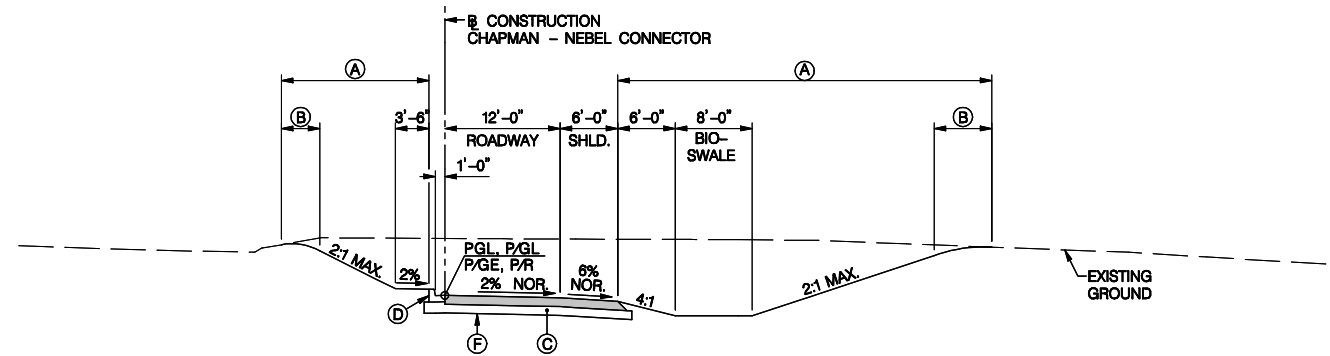
BY: daw

TYPICAL SECTION LEGEND

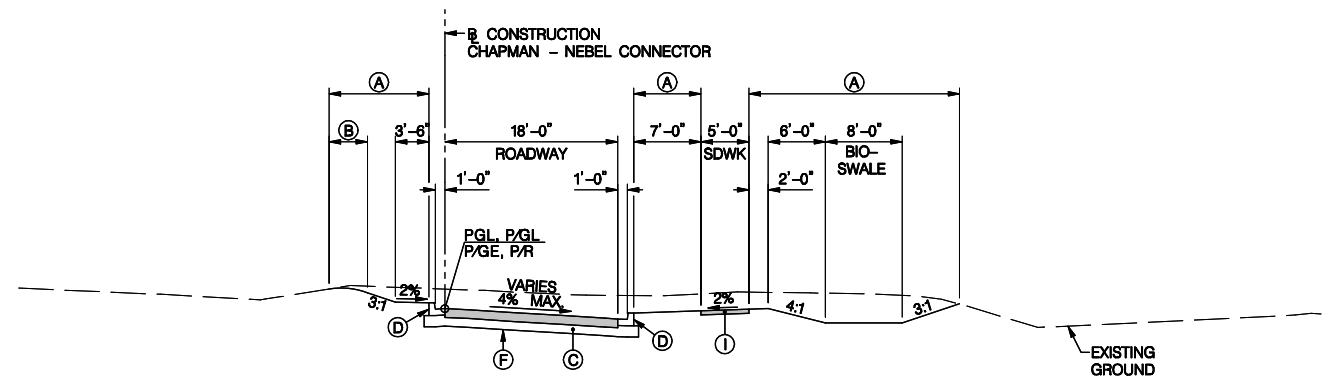
- (A) PLACE 4" TOPSOIL FOR SIDE SLOPES FLATTER THAN 2:1, FOR 2:1 SIDE SLOPES, PLACE 2" TOPSOIL.
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- (B) SLOPE ROUNDING - SEE DETAILS ON THIS SHEET
- (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
- (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
- (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
- (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
- (I) 5" CONCRETE SIDEWALK
- (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
- (K) TRAFFIC BARRIER W-BEAM WHERE SHOWN ON PLANS - SHA STANDARD NOS. MD-605.21 AND MD-605.25
- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



CHAPMAN - NEBEL CONNECTOR
 STA. 600+00 TO STA. 601+23.37
 (TARGET SPEED = 15 MPH)



CHAPMAN - NEBEL CONNECTOR
 STA. 601+23.37 TO STA. 605+01.02
 (TARGET SPEED = 15 MPH)



CHAPMAN - NEBEL CONNECTOR
 STA. 605+01.02 TO STA. 605+99.81
 (TARGET SPEED = 15 MPH)

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 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
 MONTROSE PARKWAY FROM WEST OF
 MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

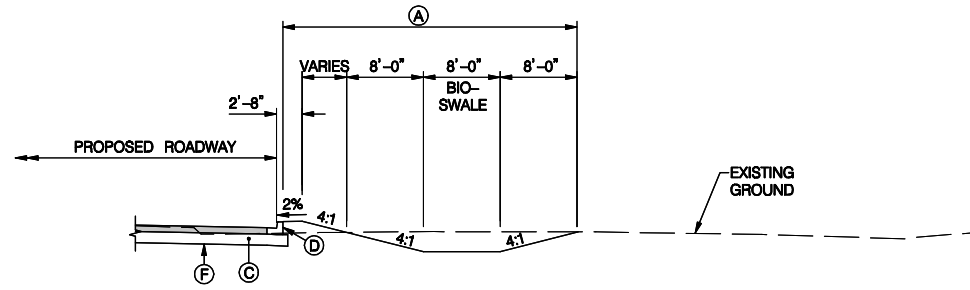
REVISIONS		TYPICAL SECTIONS	
SCALE 1" = 10'		ADVERTISED DATE	CONTRACT NO. MC344M21
DESIGNED BY	DKL	COUNTY	MONTGOMERY
DRAWN BY	DAW	LOGMILE	
CHECKED BY	ERF		
F.A.P. NO.			
DRAWING NO.	TS-10	OF 11	SHEET NO. 12 OF 122

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 CONSULTING ENGINEERS
 OWINGS MILLS, MARYLAND

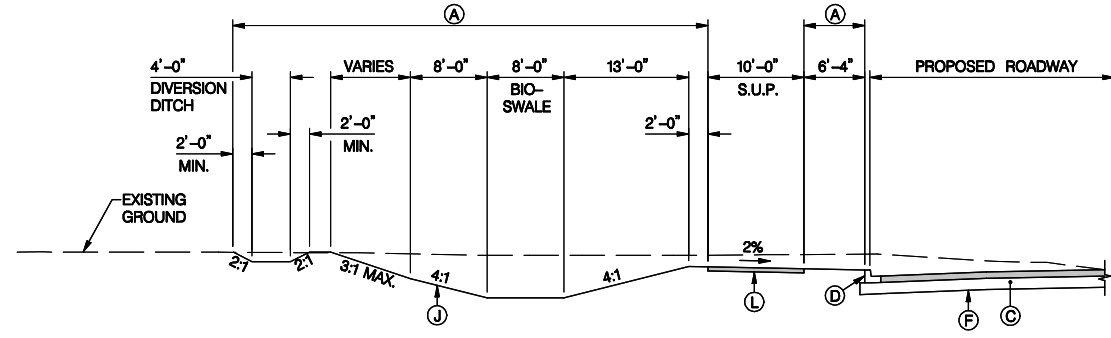
BY: daw

TYPICAL SECTION LEGEND

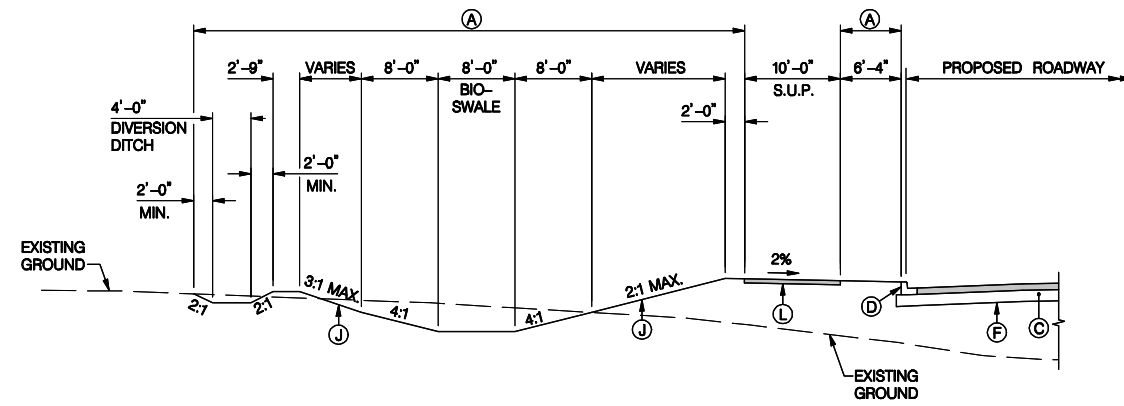
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- (B) SLOPE ROUNDING - SEE DETAILS ON THIS SHEET
- (C) ROADWAY PAVING SECTION - SEE DETAILS ON SHEET NO. PD-1
- (D) TYPE A COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (E) TYPE D COMBINATION CONCRETE CURB AND GUTTER - SHA STANDARD NO. MD-620.02
- (F) LIMIT OF CLASS 1 EXCAVATION AND TOP OF SUBGRADE
- (G) SAW CUT FULL DEPTH EXISTING PAVEMENT - SEE DETAIL ON SHEET NO. PD-1
- (H) STANDARD CONCRETE MONOLITHIC MEDIAN TYPE 'A' - SHA STANDARD NO. MD-645.01
- (I) 5" CONCRETE SIDEWALK
- (J) SLOPE RATIO - SEE DETAIL ON THIS SHEET
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- (L) SHARED USE PATH
- (M) PAVEMENT REMOVAL



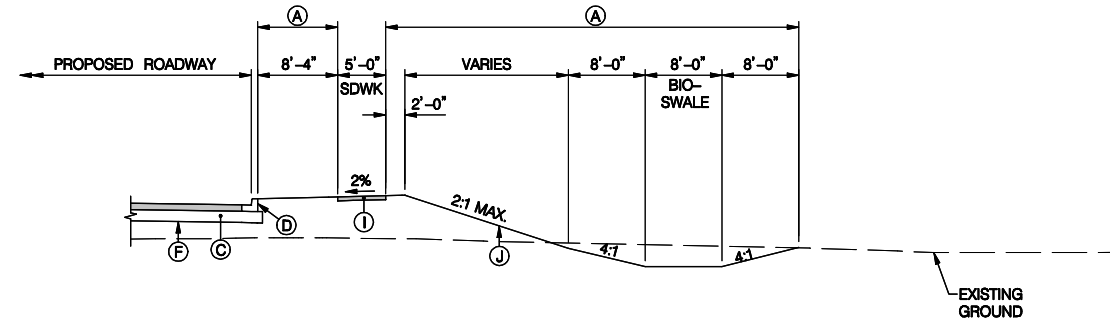
MONTROSE PARKWAY - TYPICAL ESD GRADING - CLOSED SECTION WITHOUT SIDEWALK IN FILL
RT. STA. 995+50 TO STA. 996+45
RT. STA. 997+24.25 TO STA. 999+00



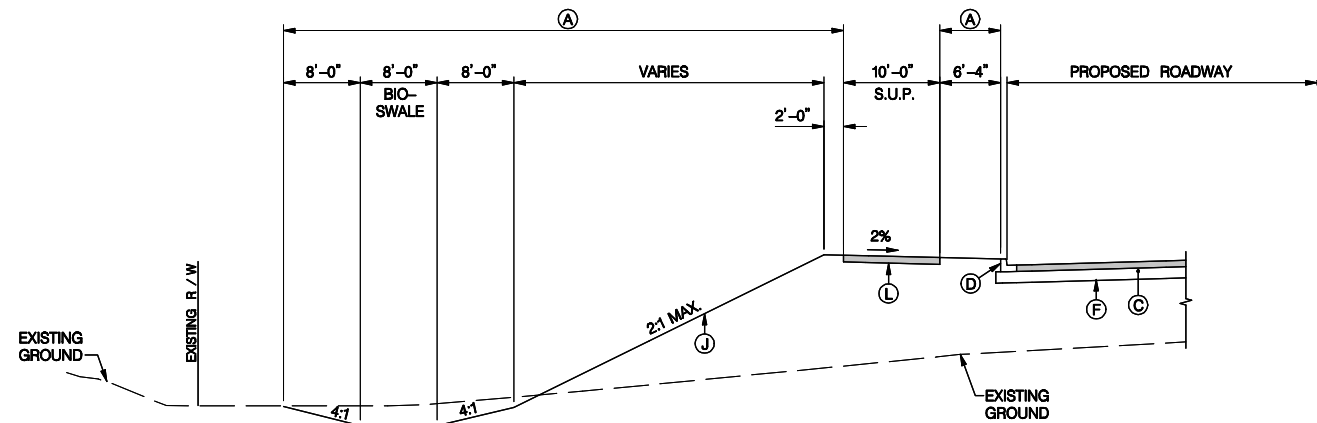
MONTROSE PARKWAY - TYPICAL ESD GRADING - CLOSED SECTION WITH S.U.P. IN CUT
LT. STA. 996+00 TO STA. 997+75



MONTROSE PARKWAY - TYPICAL ESD GRADING - CLOSED SECTION WITH S.U.P. IN FILL
LT. STA. 997+75 TO STA. 1000+00
LT. STA. 1003+50 TO STA. 1009+00



MONTROSE PARKWAY - TYPICAL ESD GRADING - CLOSED SECTION WITH SIDEWALK IN FILL
RT. STA. 1020+50 TO STA. 1022+50



MONTROSE PARKWAY - TYPICAL ESD GRADING - CLOSED SECTION WITH S.U.P. IN FILL
LT. STA. 1020+50 TO STA. 1022+50

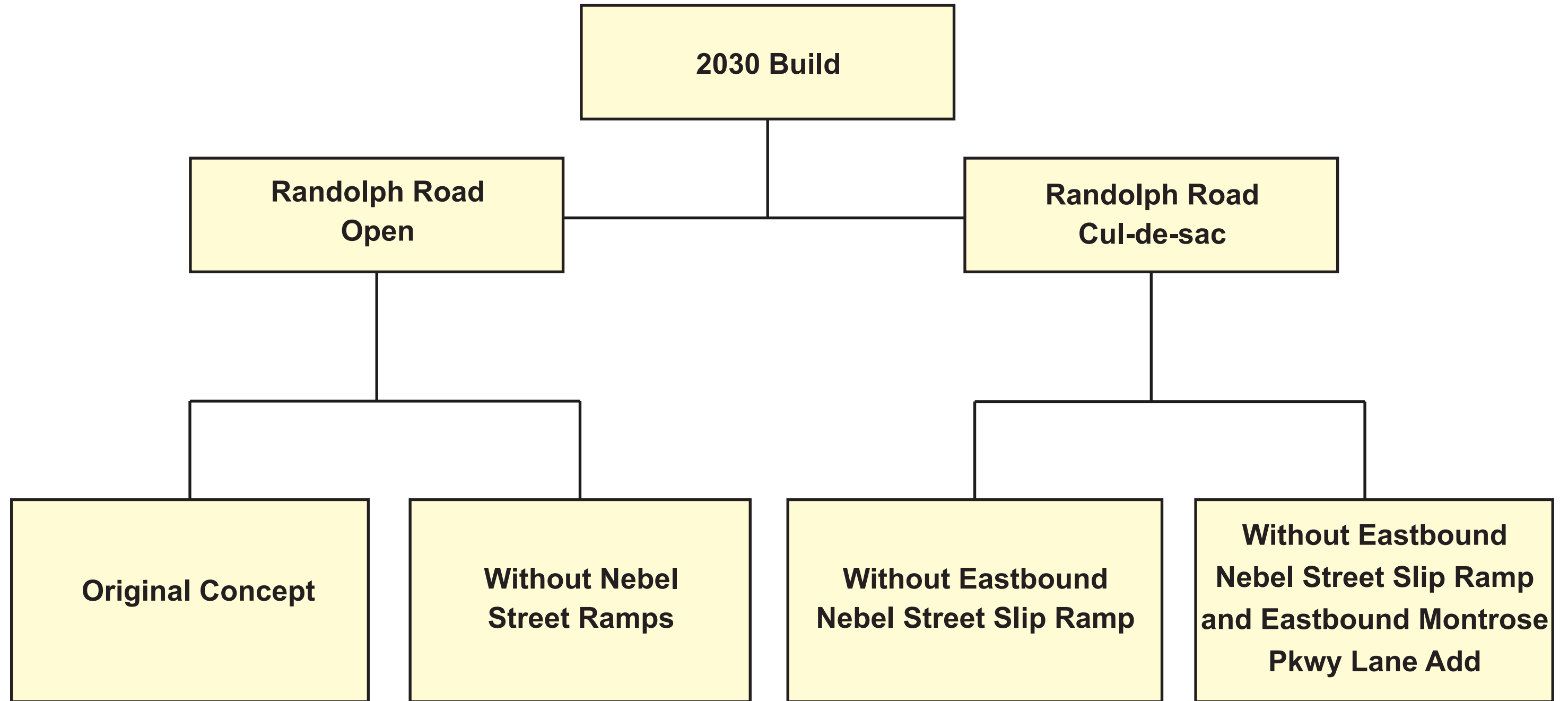
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

BY: daw

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 355 PHASE 2
MONTROSE PARKWAY FROM WEST OF
MAPLE / CHAPMAN AVENUE TO EAST OF PARKLAWN DRIVE

REVISIONS		TYPICAL SECTIONS	
SCALE 1" = 10'		ADVERTISED DATE	CONTRACT NO. MC344M21
DESIGNED BY	DKL	COUNTY	MONTGOMERY
DRAWN BY	DAW	LOGMILE	
CHECKED BY	ERF		
F.A.P. NO.			
DRAWING NO.	TS-11	OF 11	SHEET NO. 13 OF 122



LEGEND

- Original Concept Lane Use
- (X) Intersection LOS (PM Peak)
- █ A-C Arterial LOS (PM Peak)
- █ D Arterial LOS (PM Peak)
- █ E Arterial LOS (PM Peak)
- █ F Arterial LOS (PM Peak)
- ⊛ Congestion Hotspot (PM Peak)
- LOS Level of Service
- MOE Measure of Effectiveness
- Project Improvements

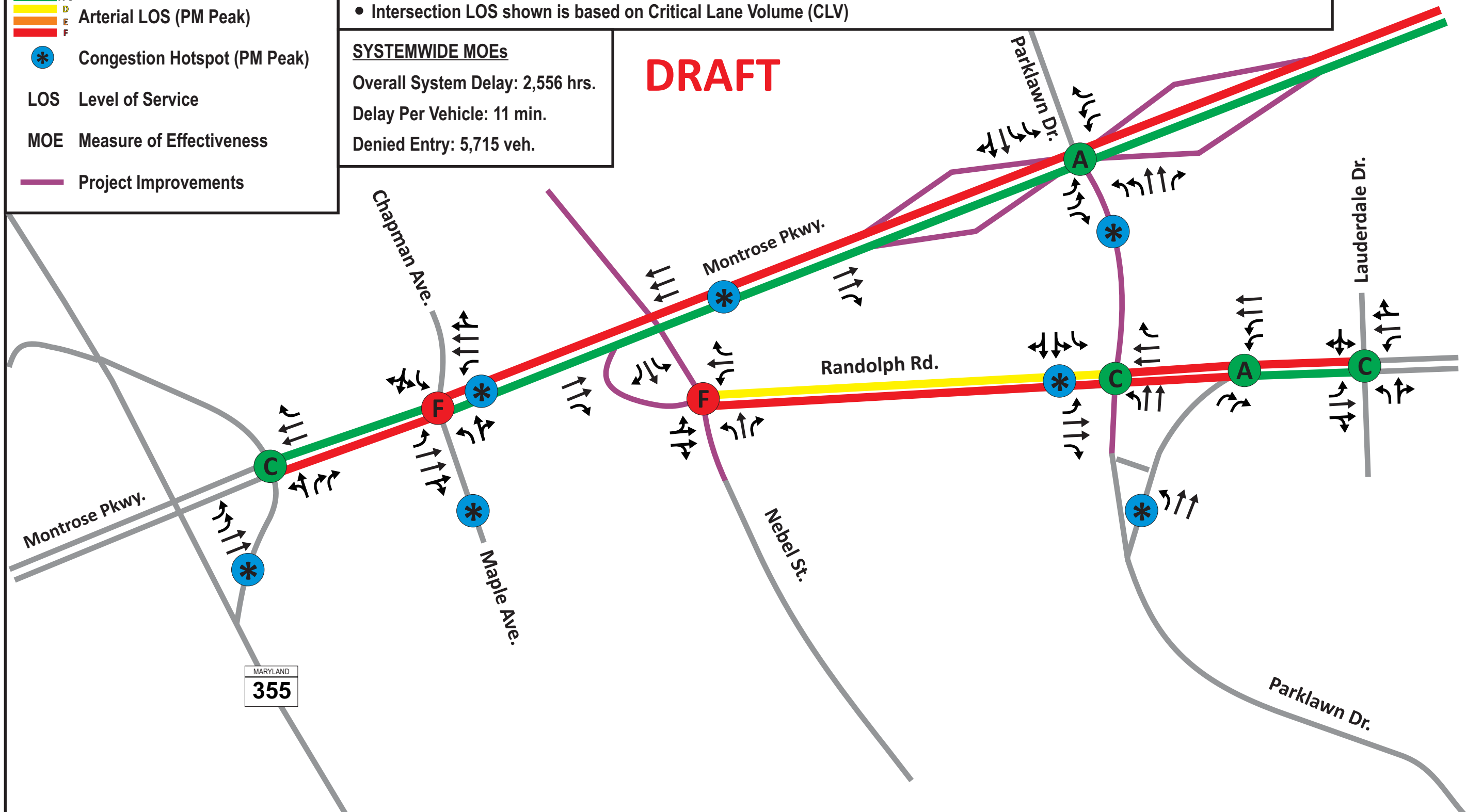
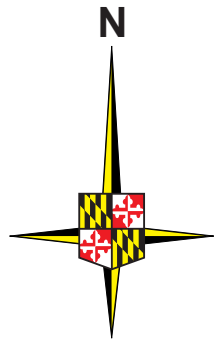
NOTE:

- Systemwide MOEs and Intersection/Arterial LOS shown are for PM Peak only since the values are mostly worse than AM Peak
- LOS color coding is based on SHA congestion mapping
- Arterial LOS shown is based on SimTraffic output
- Intersection LOS shown is based on Critical Lane Volume (CLV)

SYSTEMWIDE MOEs

Overall System Delay: 2,556 hrs.
 Delay Per Vehicle: 11 min.
 Denied Entry: 5,715 veh.

DRAFT



Travel Forecasting & Analysis Division

**MD 355 Phase 2 /
Montrose Parkway East**

Figure B-3
 2030 Proposed Lane Use and PM Peak
 Intersection/Arterial LOS - Original Concept

November 2011

LEGEND

- (X) Intersection LOS (PM Peak)
- █ A-C
- █ D
- █ E
- █ F
- Arterial LOS (PM Peak)
- * Congestion Hotspot (PM Peak)
- LOS Level of Service
- MOE Measure of Effectiveness
- █ Project Improvements
- Original Concept Lane Use
- Conversion of Existing Lane
- Proposed Additional Lane

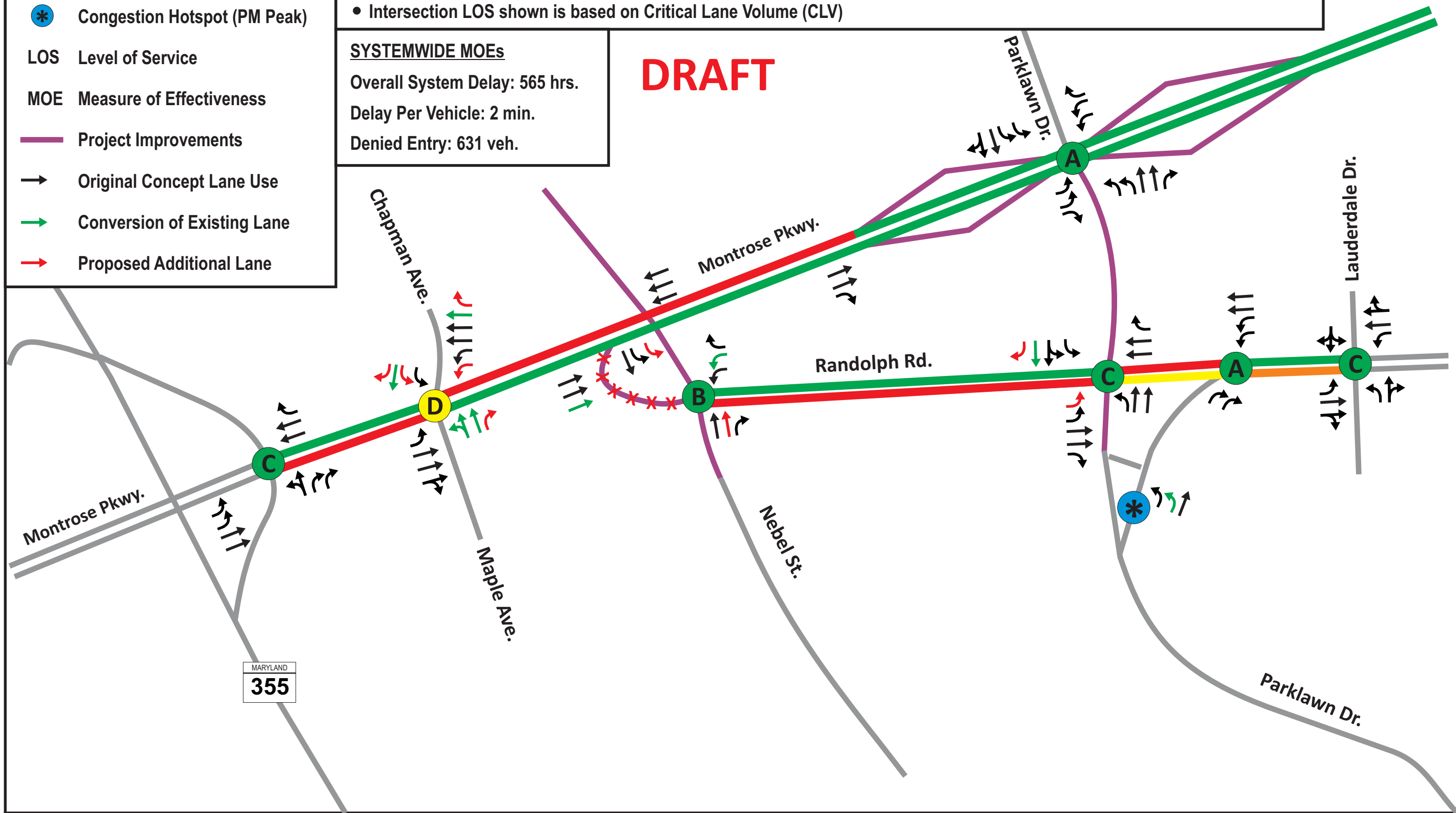
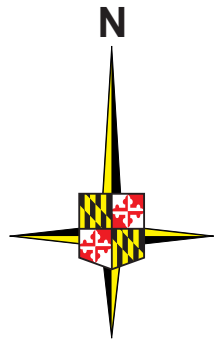
NOTE:

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- LOS color coding is based on SHA congestion mapping
- Arterial LOS shown is based on SimTraffic output
- Intersection LOS shown is based on Critical Lane Volume (CLV)

SYSTEMWIDE MOEs

Overall System Delay: 565 hrs.
 Delay Per Vehicle: 2 min.
 Denied Entry: 631 veh.

DRAFT



LEGEND

- X Intersection LOS (PM Peak)
- A-C
- D
- E
- F
- * Congestion Hotspot (PM Peak)
- LOS Level of Service
- MOE Measure of Effectiveness
- Project Improvements
- Original Concept Lane Use
- Conversion of Existing Lane
- Proposed Additional Lane

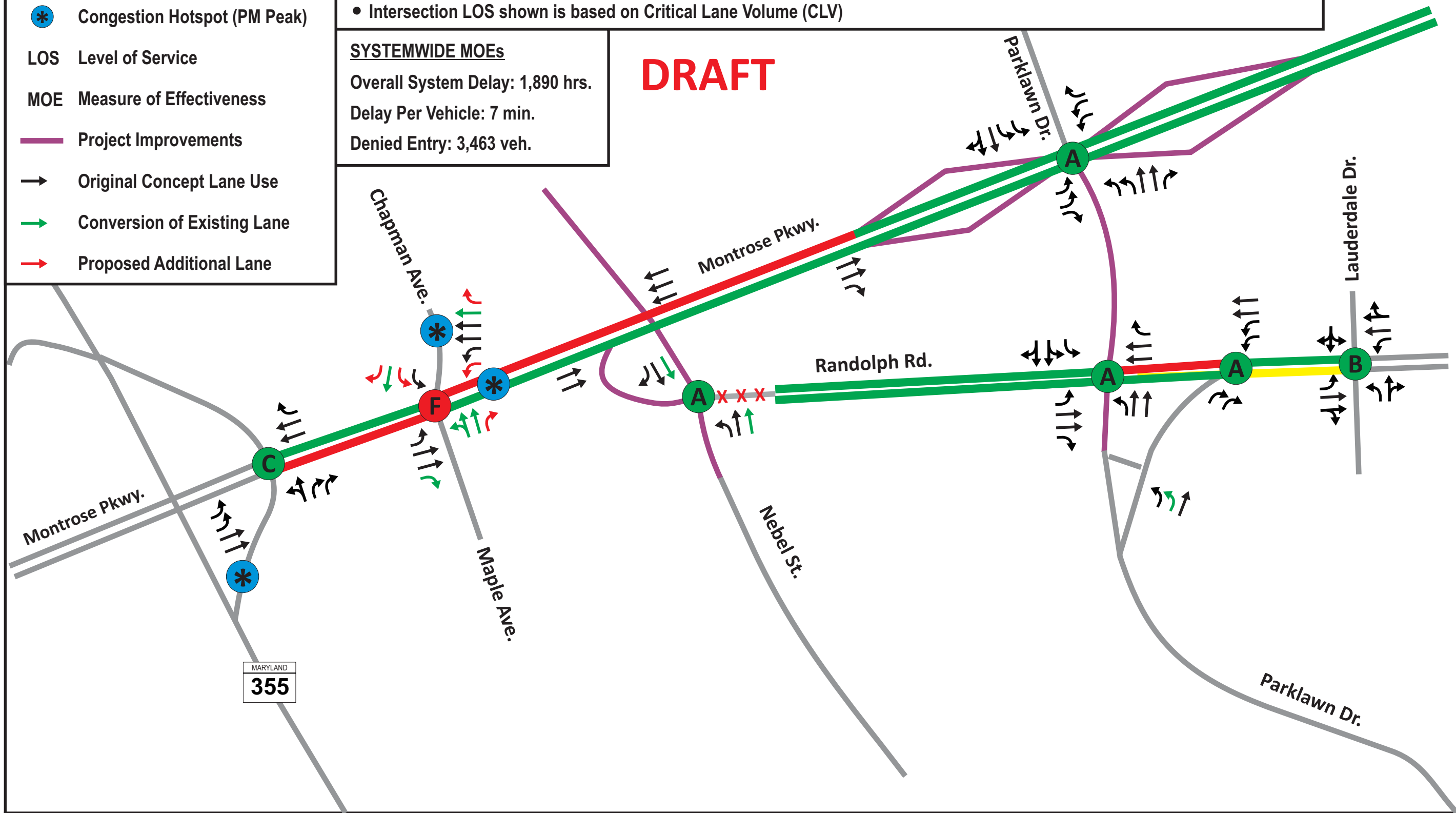
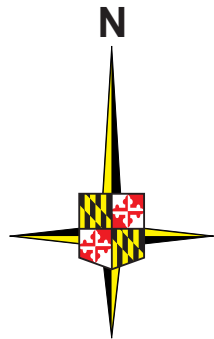
NOTE:

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- Arterial LOS shown is based on SimTraffic output
- Intersection LOS shown is based on Critical Lane Volume (CLV)

SYSTEMWIDE MOEs

Overall System Delay: 1,890 hrs.
 Delay Per Vehicle: 7 min.
 Denied Entry: 3,463 veh.

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Travel Forecasting & Analysis Division

**MD 355 Phase 2 /
Montrose Parkway East**

Figure D-2

2030 Proposed Lane Use and
PM Peak Intersection/Arterial LOS -
Randolph cul-de-sac

November 2011

LEGEND

- X Intersection LOS (PM Peak)
- A-C
- D
- E
- F
- * Congestion Hotspot (PM Peak)
- LOS Level of Service
- MOE Measure of Effectiveness
- Project Improvements
- Original Concept Lane Use
- Conversion of Existing Lane
- Proposed Additional Lane
- #1 Length of Additional Pavement is 500 ft.
- #2 Length of Additional Pavement is 800 ft.

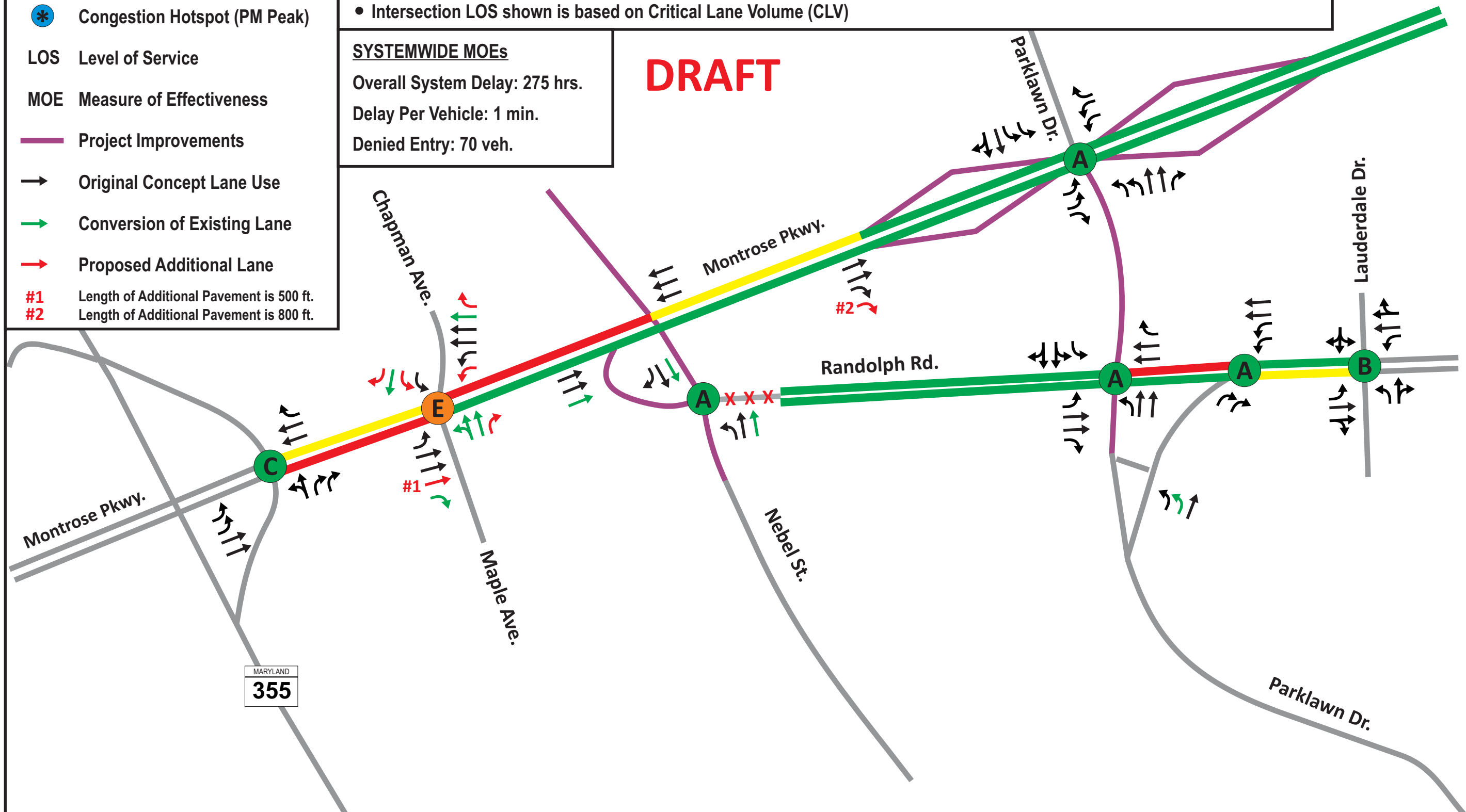
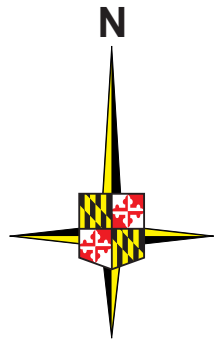
NOTE:

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- LOS color coding is based on SHA congestion mapping
- Arterial LOS shown is based on SimTraffic output
- Intersection LOS shown is based on Critical Lane Volume (CLV)

SYSTEMWIDE MOEs

Overall System Delay: 275 hrs.
 Delay Per Vehicle: 1 min.
 Denied Entry: 70 veh.

DRAFT



Travel Forecasting & Analysis Division

**MD 355 Phase 2 /
Montrose Parkway East**

Figure D-3

2030 Proposed Lane Use and PM Peak Intersection/Arterial LOS - Randolph cul-de-sac with Eastbound Lane Add

November 2011