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MD 175 (JESSUP RD/ANNAPOLIS RD): FROM WEST OF BROCK BRIDGE ROAD TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

AIR QUALITY ANALYSIS TECHNICAL REPORT

March 2014

Anne Arundel County, Maryland

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

TABLE OF CONTENTS

I. INTRODUCTION

This report presents the results of a review of air quality impacts associated with the proposed widening for MD 175 (Jessup Road/Annapolis Road) from approximately 600 feet west of Brock Bridge Road to approximately 280 feet east of the intersection with MD 295 (Baltimore-Washington Parkway) and MD 175/MD 295 intersection improvements in Anne Arundel County, Maryland. This study is intended as an evaluation of the project level air quality impacts of the proposed improvements. This evaluation is provided to meet the requirements of the Clean Air Act (CAA) and the National Environmental Policy Act (NEPA).

Land use in the vicinity of this portion of MD 175 is a mix of low-density residential, mixed use employment and commercial. Located just west of the interchange is the St. Lawrence Cemetery. The overall study area is approximately 1.19 miles in length (**Figure 1**).

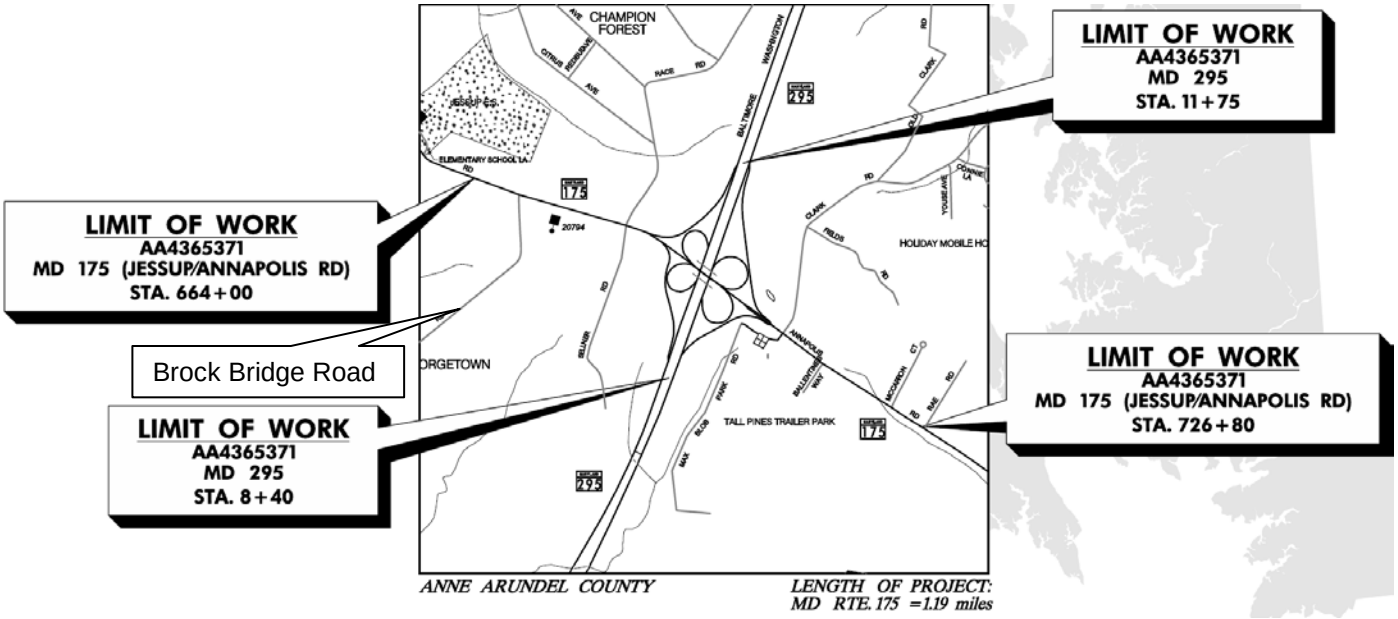


FIGURE 1 – PROJECT LOCATION

The purpose of the project is to improve the existing capacity, traffic operations, intermodal connectivity, and vehicular and pedestrian safety of MD 175, while supporting existing and planned development in the area. The major improvements of the MD 175 corridor consist of widening the existing two to four lane highway from approximately 600 feet west of Brock Bridge Road to approximately 280 feet east of the intersection with MD 295 and reconfiguring the MD 175/MD 295 interchange. The proposed roadway will consist of a four to six lane closed section divided by a grassed median with additional turning lanes at each intersection, with two additional through lanes, one in each direction. The interchange of MD 175 and MD 295 is being altered to remove the existing loop ramps in the southwest and northeast quadrants. The northwest and southeast outer ramps of MD 295 are to be widened, realigned, and given additional turning lanes to accommodate for traffic that would have originally taken the southwest and northeast loops. The project will add improved bicycle and pedestrian facilities along the roadway. Other work activities include grinding, resurfacing, signing, lighting, pavement marking, signal modification and landscaping. See **Appendix A** for project plans.

II. AIR QUALITY BACKGROUND

The Clean Air Act (CAA) Amendments of 1990 and the Final Transportation Conformity Rule [40 CFR Parts 51 and 93] direct the U.S. Environmental Protection Agency (EPA) to implement environmental policies and regulations that will ensure acceptable levels of air quality. Both the Clean Air Act and the Final Transportation Conformity Rule affect proposed transportation projects.

According to the CAA Title I, Section 176 (c) 2; *"No federal agency may approve, accept, or fund any transportation plan, program, or project unless such plan, program, or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act."* The Final Conformity Rule defines conformity as; *"Conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not:*

- *Cause or contribute to any new violation of any NAAQS in any area;*
- *Increase the frequency or severity of any existing violation of any NAAQS in any area; or*
- *Delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area."*

To comply with the CAA, the Environmental Protection Agency (EPA) has issued Proposed Rules, Guidance Clarifications, and Final Rules concerning the Conformity Determination of fine and course particulates ($PM_{2.5}$ and PM_{10}); and Draft and Final Rules concerning quantitative analysis of CO and $PM_{2.5}$ and guidance on analysis of Mobile Source Air Toxics (MSATs). Following is a summary of recent rules and clarifications:

- Transportation Conformity Rule $PM_{2.5}$ and PM_{10} Amendments; March 10, 2006
- Final PM Qualitative Guidance Clarification; June 12, 2009
- Final PM Conformity Rule; March 10, 2010
- Draft Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, May 26, 2010
- Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, December 20, 2010.
- Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in CO Nonattainment and Maintenance Areas, December 2010
- Transportation Conformity Rule Restructuring Amendments, March 2012
- Transportation Conformity Regulations as of April 2012
- Interim Guidance Update on MSAT Analysis in NEPA, December 6, 2012
- Revised Air Quality Standards for Particle Pollution, Annual $PM_{2.5}$ NAAQS, December 14, 2012

As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants. These pollutants, known as criteria pollutants, are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} & $PM_{2.5}$), sulfur dioxide (SO_2), and lead (pb). These federal standards are summarized in **Table 1**. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare, and they account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

Section 107 of the 1977 Clean Air Act Amendment requires that EPA publish a list of all geographic areas in compliance with the NAAQS, as well as those areas not in compliance with the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis. EPA's area designations consist of: Attainment, Unclassified, Maintenance, and Nonattainment. Ambient air quality is monitored through a network of stations to determine conditions throughout the country. EPA reviews the monitoring data, and areas where air pollution levels persistently exceed the NAAQS may be designated "nonattainment" for one or more pollutants. After a nonattainment area improves conditions to meet the standard for a pollutant, it is redesignated as a maintenance area. Typically these designations are applied to entire counties or groups of counties.

TABLE 1
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Primary/ Secondary	Primary Standards		Form
		Level	Averaging Time	
Carbon Monoxide 76 FR 54294	Primary	9 ppm	8-hour	Not to be exceeded more than once per year
		35 ppm	1-hour	
Lead 73 FR 669964	Primary and Secondary	0.15 µg/m^3	Rolling 3-Month Average	Not to be exceeded
Nitrogen Dioxide 75 FR 6464	Primary	100 ppb	1-hour	98th percentile, averaged over 3 years
	Primary and Secondary	53 ppb	Annual	Annual Mean
Particulate Matter (PM_{10}) 71 FR 61144	Primary and Secondary	150 µg/m	24-hour	Not to be exceeded more than once per year on average over 3 years
Particulate Matter ($PM_{2.5}$) 71 FR 61144	Primary	12 µg/m^3	Annual	Annual mean averaged over 3 years
	Secondary	15 µg/m^3	Annual	Annual mean averaged over 3 years
	Primary and Secondary	35 µg/m^3	24-hour	98th percentile, averaged over 3 years
Ozone 73 FR 16436	Primary and Secondary	0.075 ppm	8-hour	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
Sulfur Dioxide 75 FR 35520	Primary	75 ppb	1-hour	Not to be exceeded more than once per year
	Secondary	0.5 ppm	3-hour	

In addition to the criteria pollutants for which there are NAAQS, EPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries). The Clean Air Act (CAA) identified 188 air toxics. In 2001 EPA identified a list of 21 MSATs, and highlighted six of these MSATs as "priority" MSAT.

Gases that trap heat in the atmosphere are often referred to as greenhouse gases (GHG). Greenhouse gases are necessary to life, as we know it, because they keep the planet's surface warmer than it otherwise would be. This is referred to as the Greenhouse Effect. As concentrations of greenhouse gases are increasing, the Earth's temperature appears to be increasing. The principal greenhouse gases that enter the atmosphere because of human activities include carbon dioxide, methane, nitrous oxide, and fluorinated gases.

III. ENVIRONMENTAL ANALYSIS

The MD 175/MD 295 project is located in Anne Arundel County, Maryland, which is included as a part of the Baltimore Metropolitan Statistical Area (MSA). The region has been classified as moderate nonattainment with respect to the eight-hour ozone standard and nonattainment of the 1997 fine particulate ($PM_{2.5}$) standard. A portion of the MSA, the Baltimore Central Business District (CBD), had been non-attainment for carbon monoxide; however, this area has been re-designated as a CO Maintenance Area. This CO Maintenance Area is only the Baltimore CBD and does not extend to Anne Arundel County.

Transportation programs and plans must be evaluated for "conformity" to the applicable SIP provisions before projects can receive Federal funding. A Transportation Improvement Program (TIP) generally presents projects anticipated over the next several years while a Long Range Plan (LRP) covers a longer period. A Metropolitan Planning Organization (MPO) is designated to develop the TIP and LRP for a region, and to document their conformity with SIP provisions. For the Baltimore region, the Baltimore Regional Transportation Board (BRTB), which is part of the Baltimore Metropolitan Council (BMC), serves as the MPO. Anne Arundel County is a member of the BMC.

As the MPO, BRTB develops the TIP and LRP for the region, including Anne Arundel County. Furthermore, it performs the related regional conformity analysis. The current LRP, referred to as the *Long Range Metropolitan Transportation Plan: Plan It 2035,* was adopted by BRTB on November 14, 2011. The latest TIP, covering the period 2012 to 2015, was adopted by BRTB on November 14, 2011. An updated conformity analysis covering both the TIP and LRP was also adopted on November 14, 2011.

At a regional level, a project is considered to be conforming if it is a part of a conforming TIP and LRP. The proposed project is included in the draft 2014-2017 TIP, as it is covered by TIP ID# 61-0605-41, with a year of operation of 2018.

IV. ENVIRONMENTAL CONSEQUENCES

In addition to the regional conformity analysis, any Federally funded project within a nonattainment or maintenance area for carbon monoxide or particulate matter must be analyzed at the project-level. At the project level, the pollutants could possibly have localized ("hot-spot")

levels above the criteria. To satisfy the NEPA air quality assessment purpose, it has been common to analyze project-level CO conditions. Although the MD 175/MD 295 project is not in a CO nonattainment or maintenance area subject to the requirements of 40 CFR 93.116 concerning conformity determination, a qualitative CO assessment has been included. Since Anne Arundel County is a nonattainment area for $PM_{2.5}$, a project-specific $PM_{2.5}$ assessment has also been provided.

The closest MDE air monitoring station for the study area is site 240031003 located at the Anne Arundel County Public Works building, 7409 Baltimore Annapolis Boulevard, Glen Burnie, Maryland. In addition, monitoring data is available at monitoring stations in Essex, Beltsville, Baltimore (city), and at the Lathrop E. Smith Environmental Education Center in Montgomery County, Maryland. All sites are in EPA Region 3. Monitored air quality data within collected at these stations for the years 2010-2012 is presented in **Table 2**. Monitoring information is located in **Appendix B**.

1. Carbon Monoxide (CO) Assessment

A portion of the Baltimore Metropolitan Statistical Area (MSA) is considered to be a maintenance area in terms of carbon monoxide (CO). This maintenance area only encompasses the Central Business District of Baltimore City, which previously had been in nonattainment. Anne Arundel County is not included in the Baltimore maintenance area, and therefore is not a CO nonattainment or a maintenance area. There has not been a local violation of the CO standard since 1988. Code of Federal Regulations Title 40, Part 93-Subpart A (40CFR93A) implements section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 *et seq.*). Paragraph 40 CFR 93.102 (b):*Geographic Applicability* states that the provisions of the subpart apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. Since the study area is not in a CO nonattainment or maintenance area, a hot-spot conformity determination in conformance with 40 CFR 93.116 is not required, and a qualitative assessment considering of local factors is provided hereinafter.

As shown in **Table 2**, the maximum 2010 1-hour monitored CO concentration is 3.0 ppm at Site 240053001, located at 600 Dorsey Road in Essex Maryland. This concentration is only 8.6 percent of the 1-hour CO NAAQS of 35.0 ppm. The maximum 2010 8-hour monitored CO concentration is 2.2 ppm at this same site, which is only 22.2 percent of the 8-hour NAAQS of 9.0 ppm. No CO concentrations exceeding the NAAQS were recorded between 2010 and 2012.

A review of data provided, including traffic data summarized in **Table 3**, demonstrates that the improvements to MD 175 and the MD 175/MD 295 interchange will not result in significant traffic volumes, or changes in vehicle mix or other factors that would cause an increase in emissions relative to the No-Build conditions. The traffic memo reporting traffic data can be found in **Appendix C**.

In conclusion, improvements to MD 175/MD 295 will not cause or contribute to a new violation of the CO NAAQS.

TABLE 2
Ambient Air Quality Data 2010-2012

			Site 240330030 Howard University Beltsville Lab, Beltsville MD			**Site 245100040 Oldtown Fire Station, Baltimore (City) MD**			**Site 240053001 600 Dorsey Road, Essex MD**		
			2010	***2011***	***2012***	***2010***	***2011***	***2012***	***2010***	***2011***	***2012***
Carbon Monoxide (CO) [ppm]	1-Hour	Maximum	1.5	1.7	1.3	2.1	2.3	2.5	3.0	2.3	2.3
		2nd Maximum	1.3	1.3	1.2	1.9	2.2	2.5	2.7	2.3	2.1
		# of Exceedances	0	0	0	0	0	0	0	0	0
	8-Hour	Maximum	1	1.1	1.2	1.5	1.8	2.1	2.2	1.7	1.6
		2nd Maximum	1	0.8	0.9	1.4	1.5	1.6	1.9	1.6	1.6
		# of Exceedances	0	0	0	0	0	0	0	0	0
			Site 240031003 Anne Arundel Co. Public Works Bldg., Glen Burnie MD			**Site 240330030 Howard University Beltsville Lab, Beltsville MD**			**Site 240313001 Lathrop E. Smith Environmental Education Center, Montgomery County MD**		
			2010	***2011***	***2012***	***2010***	***2011***	***2012***	***2010***	***2011***	***2012***
Particulate Matter [ug/m^3]	$PM_{2.5}$	98th Pct. 24-Hour	28	24	23	27	27	25	28	25	23
		Mean Annual	11	10.7	10.2	12.1	11.8	11.3	11.1	10.9	10.3

TABLE 3
Traffic Data: MD 175 over MD 295

	Existing 2013	No-Build 2033	Build 2033
ADT volumes	28,400	43,125	43,125
Percent Trucks (ADT)	5%	5%	5%
Daily Truck Volumes (ADTT) Total	1,420	2,156	2,156

2. Particulate Matter ($PM_{2.5}$) Assessment

The project is located in Anne Arundel County, which is in the Baltimore, MD Fine Particulate Matter ($PM_{2.5}$) Nonattainment Area. This area was designated as nonattainment for $PM_{2.5}$ on January 5, 2005 by EPA. This designation became effective on April 5, 2005, 90 days after EPA's published action in the Federal Register. Transportation conformity for the $PM_{2.5}$ standards applied on April 5, 2006, after the one-year grace period provided by the Clean Air Act. On November 13, 2009 EPA designated nonattainment areas based on the 2006 24-hour $PM_{2.5}$ NAAQS. The Baltimore region was not designated as nonattainment for the 2006 standard, therefore the designations based on the 1997 NAAQS remain in effect.

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: "*PM2.5 and PM10 Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New $PM_{2.5}$ and Existing PM_{10} National Ambient Air Quality Standards*" (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally funded or approved transportation projects in PM_{10} and $PM_{2.5}$ nonattainment and maintenance areas. On December 20, 2010, EPA issued "*Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*", (75 FR 79370), which helps state and local agencies complete quantitative $PM_{2.5}$ and PM_{10} hot-spot analyses for project-level transportation conformity determinations of certain highway and transit projects. This guidance included a two-year grace period until December 20, 2012. Because this project was commenced prior to the end of the grace period, a quantitative analysis is not required for this project.

Projects that require hotspot analysis for $PM_{2.5}$ are those that are *Projects of Air Quality Concern* as enumerated in 40 CFR 93.123(b)(1):

(i) New highway projects that have a significant number of diesel vehicles, and expanded projects that have a significant increase in the number of diesel vehicles;

(ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii) New bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location;

(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violations.

As discussed in the examples of the preamble to the March 10, 2006 Final Rule for $PM_{2.5}$ and PM_{10} Hot-Spot Analyses in Project-Level Transportation Conformity Determinations (71 FR 12491), for projects involving the expansion of an existing highway, 40 CFR 93.123(b)(1)(i) has been interpreted as applying only to projects that would involve a significant increase in the number of diesel transit buses and diesel trucks on the existing facility.

Determination as to whether the MD 175/MD 295 project is a *Project of Air Quality Concern* will be finalized by Interagency Consultation. To assist with the Interagency Consultation process, SHA has prepared the following assessment of the proposed improvements:

- The MD 175/MD 295 Project is considered under the following paragraphs of 40 CFR 93:
    - 40 CFR 92.123(b)(1)(i), as amended, which includes *"New highway projects that have a significant number of diesel vehicles, and expanded projects that have a significant increase in the number of diesel vehicles."*
    - 40 CFR 92.123(b)(1)(ii), which includes "*Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*
- The proposed improvements do not meet the criteria set forth in 40 CFR 93.123(b)(1)(i) or (ii) to be considered a project of "air quality concern" based on the following considerations:
    - The proposed improvements for MD 175 involve widening the existing two to four lane highway to a four to six lane highway from approximately 600 feet west of Brock Bridge Road to approximately 280 feet east of the intersection with MD 295 and reconfiguring the MD 175/MD 295 interchange.
    - As shown in **Table 3**, MD 175 does not carry a significant number of trucks; nor will there be a significant increase in trucks. For both the No-Build and Build conditions, the MD 175 2033 ADT volume is 43,125 vehicles and the average daily number of trucks is 2,156.
- A review of the traffic data demonstrates that there will not be a "significant" increase in the number of trucks from the No-Build condition to the Build. The projected 2033 ADT represents the unconstrained user demand. This demand will not change under a Build scenario, assuming that the real demand includes traffic that has previously shifted to alternate routes in the network due to congestion and returns with the availability of additional capacity. Depicted truck percentages represent the amount of light, medium and heavy truck activity along a given roadway segment. Unless predicated by significant land use changes (heavy truck generators), existing truck percentages are used as the primary factor in determining future percentages. The Build condition will improve operation of the roadway and intersections, relieving system congestion, but will not necessarily induce new truck traffic origin-destination patterns.

- Section 176(c) of the Clean Air Act and the Federal Conformity Rule require that transportation plans and programs conform to the intent of the air quality state implementation plan (SIP) through a regional emissions analysis in $PM_{2.5}$ nonattainment areas. The Baltimore Regional Transportation Board (BRTB) serves as the Metropolitan Planning Organization (MPO), and therefore it is responsible for the regional conformity determination.

- The currently approved BRTB Long Range Metropolitan Transportation Plan (LRP), referred to as *Plan It 2035*, and the *2012-2015 Transportation Improvement Program* (TIP) have been determined to conform to the requirements of the Clean Air Act Amendments of 1990. These represent the currently conforming LRP and TIP in accordance with 40 CFR 93.114. The proposed project is also included in the draft 2014-2017 TIP, as it is covered by TIP ID# 61-0605-41, with a year of operation of 2018.

- The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. Conformity to the requirements of the Clean Air Act Amendments of 1990 means that the transportation activity will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS.

- Based on review and analysis as discussed above, it is determined that the proposed improvements to MD 175/MD 295 in Anne Arundel County will meet the Clean Air Act and 40 CFR 93.109 requirements for Fine Particulate Matter – $PM_{2.5}$. These requirements are met without a hot-spot analysis because the project has not been found to be a project of air quality concern as defined under 40 CFR 93.123(b)(1). The project will not cause or contribute to a new violation of the $PM_{2.5}$ NAAQS, or increase the frequency or severity of an existing violation.

3. MSAT Assessment

The Federal Highway Administration (FHWA) *Guidance Update on Mobile Source Air Toxic Analysis in NEPA* requires an assessment of MSATs under specific conditions. The EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers. These seven MSATs are: acrolein; benzene; 1,3-butadiene; diesel exhaust (organic gases and diesel particulate matter); formaldehyde; naphthalene; and polycyclic organic matter. Since the projected No-Build and Build traffic are substantially the same, as reflected in **Table 3**, the MD 175/MD 295 project will have no meaningful impacts on traffic volumes or vehicle mixes. Therefore in accordance with the above referenced FHWA guidance, the project would be considered a **Project with No Meaningful Potential MSAT Effects**.

The purpose of the project is to improve the existing capacity, traffic operations, intermodal connectivity, and vehicular and pedestrian safety of MD 175, while supporting existing and planned development in the area by widening the existing two to four lane highway from approximately 600 feet west of Brock Bridge Road to approximately 280 feet east of the intersection with MD 295 and reconfiguring the MD 175/MD 295 interchange. The proposed roadway will consist of a four to six lane closed section divided by a grassed median with additional turning lanes at each intersection, with two additional through lanes, one in each direction. The interchange of MD 175 and MD 295 is being altered to remove the existing loop ramps in the southwest and northeast quadrants. The northwest and southeast outer ramps of MD 295 are to be widened, realigned, and given additional turning lanes to accommodate for traffic that would have originally taken the southwest and northeast loops. The project will add improved bicycle and pedestrian facilities along the roadway.

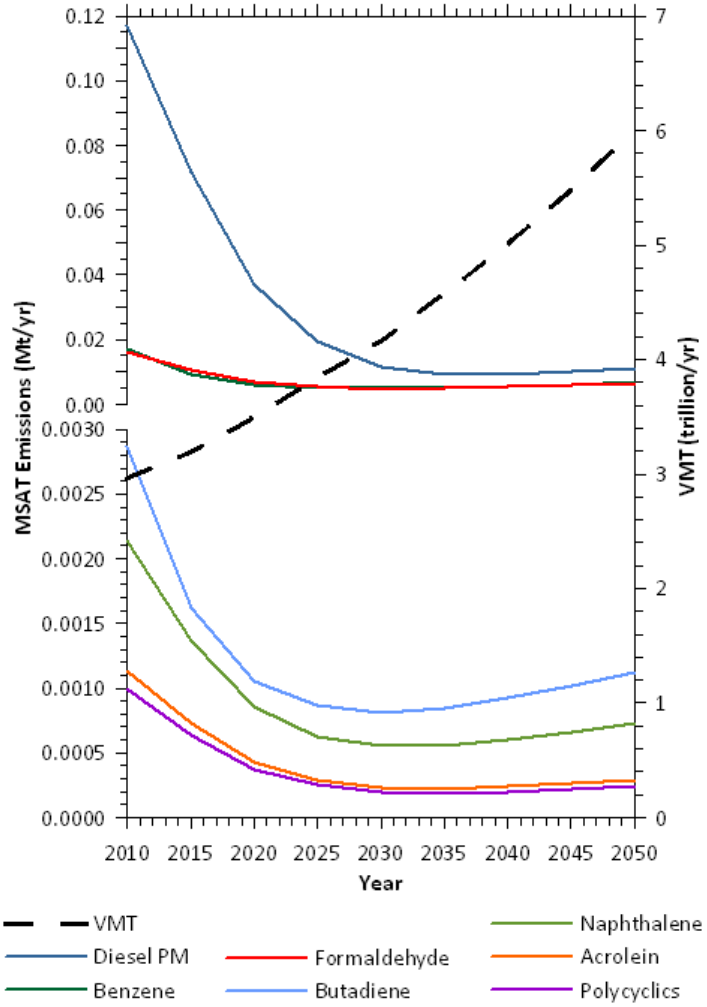
Other work activities include grinding, resurfacing, signing, lighting, pavement marking, signal modification and landscaping.

This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the No-Build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent (see **Figure 2**). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

FIGURE 2:
NATIONAL MSAT EMISSION TRENDS 1999 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOVES2010b MODEL

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-



miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.
Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

4. Greenhouse Gas Assessment

In 2009, Maryland Governor Martin O'Malley and the Maryland General Assembly passed the Greenhouse Gas Emission Reduction Act of 2009 (GGRA). The law requires the State to develop and implement a Plan (the GGRA Plan or the Plan) to reduce GHG emissions 25 percent from the 2006 baseline by 2020. The Plan was published October 2013 and puts the State on track to achieve the 25 percent GHG reduction required by the law while also creating jobs and improving Maryland's economy. Initiatives outlined in the Plan also will help with other environmental priorities, including restoration of the Chesapeake Bay, improving air quality and other critical energy and national security issues. The Plan is the first of the "multi-pollutant" plans the Maryland Department of the Environment (MDE) will be releasing to integrate GHG mitigation with future air quality planning. Currently there are no Federal requirements for consideration of GHG impacts in

transportation planning, however the Maryland Department of Transportation (MDOT) is exploring and implementing transportation strategies to reduce GHG emissions.

While Criteria Pollutant emissions last in the atmosphere for months, CO_2 emissions remain in the atmosphere far longer - over 100 years - and therefore will require a much more sustained, intergenerational effort to reduce production. Much like environmental habitats, Maryland's transportation system is a network of interdependent elements and the interactions and synergy between each part impact the transportation system as a whole. Consequently project-level emissions analyses are less informative than analysis conducted at the regional, state, and national scale. EPA has not identified NAAQS for GHGs, but has finalized standards and adopted regulations to enable the production of a new generation of clean vehicles along with implementing cleaner Fuel Standard regulations to achieve significant reductions of GHG emissions.

One of the main findings of the GGRA Plan is reductions in GHG would be achieved through a broad shift in fuel consumption patterns in the transportation sector including replacing gasoline use with renewable sources. The general GHG reduction strategies presented for the transportation sector in the Plan include: Transportation Technologies such as vehicle emission and fuel standards, on-road technologies and low emission vehicle initiatives; Public Transportation Initiatives; Pricing Initiatives; Evaluating GHG Emission Impact of Major New Transportation Projects; and Bike and Pedestrian Initiatives. While this project is not considered a Major New Transportation Project, it would not preclude any shift in fuel consumption or the implementation of other reduction strategies in the Plan for the transportation sector.

The State Highway Administration will continue to consider Congestion mitigation and other emission reduction and environmental benefits and consequences of all projects prior to implementation.

5. Construction Impacts

The construction phase of the proposed project has the potential to impact the local ambient air quality by generating fugitive dust through activities such as demolition and materials handling. The State Highway Administration has addressed this possibility by establishing "Specifications for Construction and Materials" which specifies procedures to be followed by contractors involved in site work. The Maryland Air and Radiation Management Administration was consulted to determine the adequacy of the "Specifications" in terms of satisfying the requirements of the "Regulations Governing the Control of Air Pollution in the State of Maryland". The Maryland Air and Radiation Management Administration found the specifications to be consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area (COMAR 26.11.06.03D). Mobile source emissions can also be minimized during construction by not permitting idling delivery trucks or other equipment during periods of unloading or other non-active use. The existing number of traffic lanes should be maintained during construction, to the maximum extent possible, and construction schedules should be planned in a manner that will not create traffic disruption and increase air pollutants. Application of these measures will ensure that construction impact of the project is insignificant.

V. AGENCY COORDINATION / INTERAGENCY CONSULTATION

By email dated February 10, 2014, copies of this air quality analysis were circulated to the Federal Highway Administration (FHWA), the Environmental Protection Agency (EPA), the Maryland Department of the Environment (MDE), and the Baltimore Regional Transportation Board (BRTB) for

a 15-day Interagency Consultation review and comment period. Response emails were received from EPA, MDE, and FHWA. All responding agencies did not indicate the project is a project of air quality concern or required a hot-spot analysis. MDE commented on the Greenhouse Gas Assessment and COMAR citation in the Construction Impacts discussion, both of which have been revised. This Air Quality Analysis will be placed on SHA's website for a 15 day public review and comment period. Refer to **Appendix D** for Interagency Consultation correspondence.

APPENDIX

A: PROJECT PLANS

B: MONITORED AMBIENT AIR QUALITY DATA 2010-2012

C: TRAFFIC MEMO

D: INTERAGENCY CONSULTATION EMAILS

APPENDIX A: PROJECT PLANS

APPENDIX B: MONITORED AMBIENT AIR QUALITY DATA 2010-2012

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2010
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8096	3	2.7	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	4500	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8107	1.5	1.3	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	7781	2.1	1.9	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: November 14, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2010
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8107	2.2	1.9	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	4564	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8103	1	1	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	7818	1.5	1.4	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: November 14, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2011
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8230	2.3	2.3	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	8343	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8183	1.7	1.3	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8533	2.3	2.2	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2011
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8224	1.7	1.6	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	8430	0.4	0.3	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8145	1.1	0.8	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8548	1.8	1.5	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2012
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8485	2.3	2.1	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	5921	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
1 HOUR	8182	1.8	0.8	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8571	1.3	1.2	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8626	2.5	2.5	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2012
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8554	1.6	1.6	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	6011	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
8-HR RUN AVG END HOUR	8210	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8651	1.2	0.9	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8713	2.1	1.6	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2010
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	352	36.1	34.7	33.4	33.1	28	11	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	118	32	29.7	21.1	21	21	10.3	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	30	31.5	20	19.1	17.7	32	11.5	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	112	37.3	33.6	28.6	25.2	29	11.6	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	57	20.8	18.4	18.4	17	18	9.2	None	1	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24 HOUR	112	24.4	23.2	21.6	20.7	22	9.5	None	1	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24 HOUR	50	18.6	17.7	17.2	16.9	19	9.1	None	1	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24 HOUR	115	35.7	32.4	24.9	24.9	25	11.5	None	1	240330025	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	Bladensburg	Prince George's	MD	03
24 HOUR	107	34.4	20.3	19.8	18.6	20	9.4	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	12	17.2	14.4	14	13.8	17	9.8	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	112	21.4	21.3	20.9	19.9	21	9.5	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	27	19.3	18.6	15.1	14.2	19	10.1	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2010
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	315	34.8	33.4	33	32.7	32	12	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	178	35.9	28.5	28.3	27.5	28	10.8	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	173	30.5	28.8	27.9	25.9	26	9.2	None	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	352	35.8	33.8	33.1	29.6	28	11.1	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	352	39.5	38.7	38.1	32.6	27	12.1	None	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	161	39	36.8	34.1	31	31	12.6	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	353	38.1	37.7	35.9	35.7	30	12.7	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2011
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	112	26.4	24.7	24.4	22.7	24	10.7	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	110	28.6	27.2	22.8	20.9	23	9.7	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	28	26.8	21.2	20.2	17.5	27	10	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	116	26.7	26.6	26.3	26.3	26	10.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	72	25	24.5	20.6	20.5	25	10.3	None	1	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24 HOUR	108	27	25.4	22.6	21.6	23	10.1	None	1	240330025	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	Bladensburg	Prince George's	MD	03
24 HOUR	123	24.7	22	21.8	21	22	8.7	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	37	24.3	15.1	12.7	12.7	24	8.2	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	118	28.8	25.8	21.1	20.4	21	8.9	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	28	15	13.9	12.7	11.9	15	7.8	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	115	26.4	25.2	23.2	21.7	23	9.9	None	1	245100006	Northeast Police Station, 1900 Argonne Drive	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2011
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	336	37.2	32.1	31.4	30.5	29	10.9	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	306	35	31.3	31.1	29.4	24	10.5	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	118	24.6	24.3	20.6	19.4	21	10.8	None	3	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24-HR BLK AVG	341	38	35.3	34.4	34	28	10.9	Included	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	331	31.8	30.5	30.2	29.9	25	10.9	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	344	76.1	35.3	31.5	29.5	27	11.8	Included	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	340	34.7	32.6	32.5	31.7	28	11.5	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	359	39.5	35.4	32.1	32	29	13.1	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2012
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	119	30.1	23.4	23	21.7	23	10.2	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	112	29.5	22.6	21.5	18.3	22	8.9	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	41	21	18	16.8	13.7	21	9.1	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	116	28.2	25.5	24.7	23.6	25	10.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	121	25	22.3	21.7	20.8	22	8.5	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	43	25	22.1	15.4	13.9	25	8.3	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	97	24.7	23.8	15	14.7	24	7.8	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	35	14.8	14.7	14.2	12.6	15	7.8	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	121	23.8	22.5	22.1	21.8	22	9.3	None	1	245100007	Northwest Police Station, 5271 Reistertown Road	Baltimore	Baltimore (City)	MD	03
24 HOUR	111	23.7	22.6	22.5	20	23	9.6	None	1	245100008	Baltimore City Fire Dept.-Truck Company 20; 5714 Eastern Avenue , Baltimore, Maryland 21224	Baltimore	Baltimore (City)	MD	03
24 HOUR	304	26.3	25.5	24.4	23.7	23	10	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems. <http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2012
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	354	26	25.2	23.3	23.2	22	9.3	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	243	25.8	25.5	25.1	23.2	23	7.9	None	3	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
24-HR BLK AVG	313	24.9	20	19.4	19.1	17	8	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	352	27.9	26.4	26.2	26	24	11.1	None	3	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24-HR BLK AVG	353	30.6	29.4	26.5	25.2	23	10.7	None	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	356	33.1	30.2	29	25	23	10.3	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	355	34.1	30.2	29.9	29.7	25	11.3	None	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	349	38.3	31.8	29.3	29	27	10.8	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	358	29.7	28.7	27.2	27	25	12	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

APPENDIX C: TRAFFIC MEMO

MEMORANDUM

TO: Mr. Dennis German, Chief
Community Design Division
Office of Highway Development

ATTN: Mr. Christopher Weber

FROM: Morteza Tadayon, Chief
Data Services Engineering Division
Office of Planning and Preliminary Engineering

DATE: December 11, 2013

SUBJECT: MD 175 over MD 295 Interchange
Anne Arundel County
Project No: AA436B21
Title Sheet/Loadometer Data

In response to your request for traffic and loadometer data for the subject project, we offer the following:

MD 175 over MD 295

	2013	**2033**
Average Daily Traffic (ADT)	28,400*	43,125*
Design Hour Volume (DHV)	10%	10%
Directional Distribution of DHV	71%	71%
Percent Trucks- ADT	5%	5%
Percent Trucks- DHV	3%	3%

* Note: 2013 and 2033 ADTs consider forecasts developed for the project of "Race Road/Jessup Village Planning Study". Interchange improvements are also considered to be in place under the 2033 condition.

Truck Breakdown:

	ADT	**2A**	**3D**	**2S1**	**2S2**	**3S2**	**3S3**	**Total**
2013	28,400	857	315	14	54	169	11	1,420
2033	43,125	1,301	478	21	82	258	16	2,156

The FHWA Vehicle Classification Data for this project was based upon the following:

FHWA Class	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
2013 ADT	51	23,939	2,990	206	651	223	92	68	169	10	0	0	1	28,400
2013 DHV	5	2,438	312	5	57	13	2	3	5	0	0	0	0	2,840
2033 ADT	77	36,352	4,540	313	988	338	140	103	258	14	0	0	2	43,125
2033 DHV	8	3,702	474	15	80	18	3	5	8	0	0	0	0	4,313

We recommend using Weigh-in-Motion Station 4008-87 to produce the above loadometer data. An electronic copy of the loadometer data and percent of Class 9 through Class 13 (attached) is being sent to the Pavement and Geotechnical Division along with this memorandum.

If you have any questions or concerns, please contact the writer at 410-545-5641 or Ms. Lisa Shemer, Assistant Division Chief, Data Services Engineering Division at 410-545-5640.

By: _____
Jay Zheng, P.E.
Travel Forecasting and Analysis
Data Services Engineering Division

Attachments

cc: Mr. Paulo DeSousa
Mr. Derek Gunn
Ms. Kim Tran
Mr. Daniel Woldehanna

APPENDIX D: INTERAGENCY CONSULTATION EMAILS

Shawn Burnett

From: Mary Jane Rutkowski -MDE- <maryjane.rutkowski@maryland.gov>
Sent: Thursday, March 06, 2014 9:24 AM
To: Christina Brandt
Cc: Brian Hug -MDE-; Roger Thunell -MDE-; Sara Tomlinson; Shawn Burnett
Subject: Re: MD 175 at MD 295 - Air Quality Interagency Consultation

Looks good Chrissy! Thank you

On Thu, Mar 6, 2014 at 7:51 AM, Christina Brandt <CBrandt@sha.state.md.us> wrote:

Good Morning Mary Jane,

Attached is the revised MD 175 report. The climate change and construction impacts sections have been revised by SHA and MDOT based on MDE's comments. Let me know if you have any additional questions and if you agree the project is not of air quality concern.

Thank You!

Chrissy

From: Mary Jane Rutkowski -MDE- [mailto:maryjane.rutkowski@maryland.gov]
Sent: Wednesday, February 12, 2014 10:14 AM
To: Christina Brandt
Cc: Brian Hug -MDE-; Roger Thunell -MDE-; Sara Tomlinson
Subject: Re: MD 175 at MD 295 - Air Quality Interagency Consultation

My pleasure Chrissy! I probably have not reviewed enough of these projects to be familiar with the standard language. We will be happy to work with SHA to draft climate language. Just let me know how you want to proceed and I will work with out folks.

On Wed, Feb 12, 2014 at 8:35 AM, Christina Brandt <CBrandt@sha.state.md.us> wrote:

Hi Mary Jane,

This is the standard climate change language that we have been using in our reports. We would be more than happy to revise it and then send it to MDE to make sure you are comfortable with what we come up with. I will work with Elizabeth Habic, who is our climate change program manager, to develop new language. I will also make the change in the Construction Emissions section. Thanks as always for taking the time to review and comment!

Chrissy

From: Mary Jane Rutkowski -MDE- [mailto:maryjane.rutkowski@maryland.gov]
Sent: Tuesday, February 11, 2014 11:14 AM
To: Christina Brandt
Cc: Brian Hug -MDE-; Diane Franks -MDE-; Roger Thunell -MDE-; Marcia Ways -MDE-
Subject: Re: MD 175 at MD 295 - Air Quality Interagency Consultation

Good Morning Chrissy

> I have only a few comments. The section on pages 11-12 addresses climate change. I think this is the first SHA project that I have reviewed that addresses climate change. I would encourage SHA to write the assessment less from a climate denier's viewpoint and more from Maryland's official point of view. It is insufficient to maintain CO2 emissions: We need reductions from the transportation sector. Also, if this is intended to address Chapter 725, I think it needs to reference the law and specifically address the requirements.
>
> In the section labeled 5. Construction Impacts, there is an error in a citation. COMAR 10.18.06.03 is under the Department of Health and Mental Hygiene.
>
> Thanks for the opportunity to comment. If you have any questions, please feel free to contact me.

On Mon, Feb 10, 2014 at 7:37 AM, Christina Brandt <CBrandt@sha.state.md.us> wrote:

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 175 at MD 295 project located in Anne Arundel County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93 without an additional quantitative hot-spot analysis.

The project is included in the 2012-2015 TIP, as TIP ID# 61-0605-41.

Please review and provide concurrence/comments prior to February 24, 2014.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us

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Shawn Burnett

From: Christina Brandt <CBrandt@sha.state.md.us>
Sent: Monday, February 24, 2014 1:13 PM
To: Nicole M. Hebert; Shawn Burnett
Subject: FW: MD 175 at MD 295 - Air Quality Interagency Consultation

---

From: Khadr, Asrah [mailto:Khadr.Asrah@epa.gov]
Sent: Monday, February 24, 2014 1:08 PM
To: Christina Brandt
Cc: McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory
Subject: RE: MD 175 at MD 295 - Air Quality Interagency Consultation

EPA concurs with SHA's recommendation that this project does not require a quantitative hot-spot analysis.

Asrah Khadr, Environmental Engineer, EIT
U.S. Environmental Protection Agency, Region III
Air Protection Division
Office of Air Program Planning
1650 Arch Street
Philadelphia, PA 19103
Phone: 215-814-2071

From: Christina Brandt [mailto:CBrandt@sha.state.md.us]
Sent: Monday, February 10, 2014 7:38 AM
To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory; Khadr, Asrah; 'mrutkowski@mde.state.md.us'; 'Sara Tomlinson'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 175 at MD 295 - Air Quality Interagency Consultation

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 175 at MD 295 project located in Anne Arundel County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93 without an additional quantitative hot-spot analysis.

The project is included in the 2012-2015 TIP, as TIP ID# 61-0605-41.

Please review and provide concurrence/comments prior to February 24, 2014.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us

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Please consider the environment before printing this email

Shawn Burnett

From: Christina Brandt <CBrandt@sha.state.md.us>
Sent: Tuesday, February 25, 2014 7:46 AM
To: Nicole M. Hebert
Subject: FW: MD 175 at MD 295 - Air Quality Interagency Consultation

---

From: Jeanette.Mar@dot.gov [mailto:Jeanette.Mar@dot.gov]
Sent: Monday, February 24, 2014 6:48 PM
To: Christina Brandt
Subject: RE: MD 175 at MD 295 - Air Quality Interagency Consultation

Hi Chrissy:

I concur that the MD 175 at MD 295 project meets the requirements of the CAA and 40 CFR 93 and does not need an additional quantitative hot-spot analysis.

Thanks!

Jeanette

Jeanette Mar
Environmental Program Manager
FHWA - DelMar Division
10 South Howard Street, Suite 2450
Baltimore, MD 21201
phone (410) 779-7152
fax (410) 962-4054

From: Christina Brandt [mailto:CBrandt@sha.state.md.us]
Sent: Monday, February 10, 2014 7:38 AM
To: 'bhug@mde.state.md.us'; Mar, Jeanette (FHWA); 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'mrutkowski@mde.state.md.us'; 'Sara Tomlinson'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 175 at MD 295 - Air Quality Interagency Consultation

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 175 at MD 295 project located in Anne Arundel County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93 without an additional quantitative hot-spot analysis.

The project is included in the 2012-2015 TIP, as TIP ID# 61-0605-41.

Please review and provide concurrence/comments prior to February 24, 2014.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

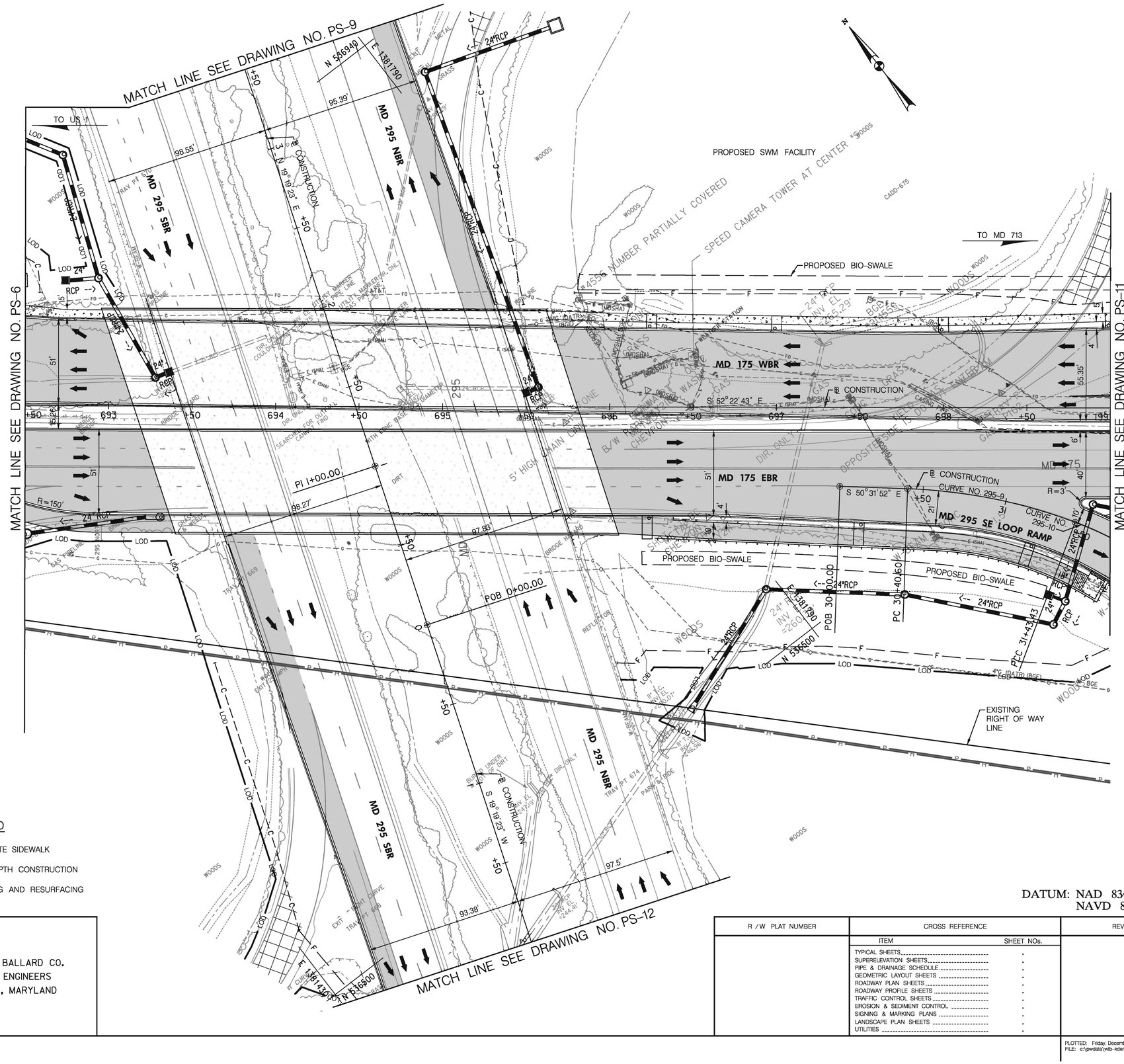
MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us



LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

QUANTITY NOTES

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CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

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

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

R /W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
	ROADWAY PROFILE SHEETS	.	
	TRAFFIC CONTROL SHEETS	.	
	EROSION & SEDIMENT CONTROL	.	
	SIGNING & MARKING PLANS	.	
	LANDSCAPE PLAN SHEETS	.	
	UTILITIES	.	

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

DESIGNED BY JLG
DRAWN BY DAW / KLD
CHECKED BY DFT
F.A.P. NO. SEE TITLE SHEET

COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-10 OF 19 SHEET NO. 25 OF 66

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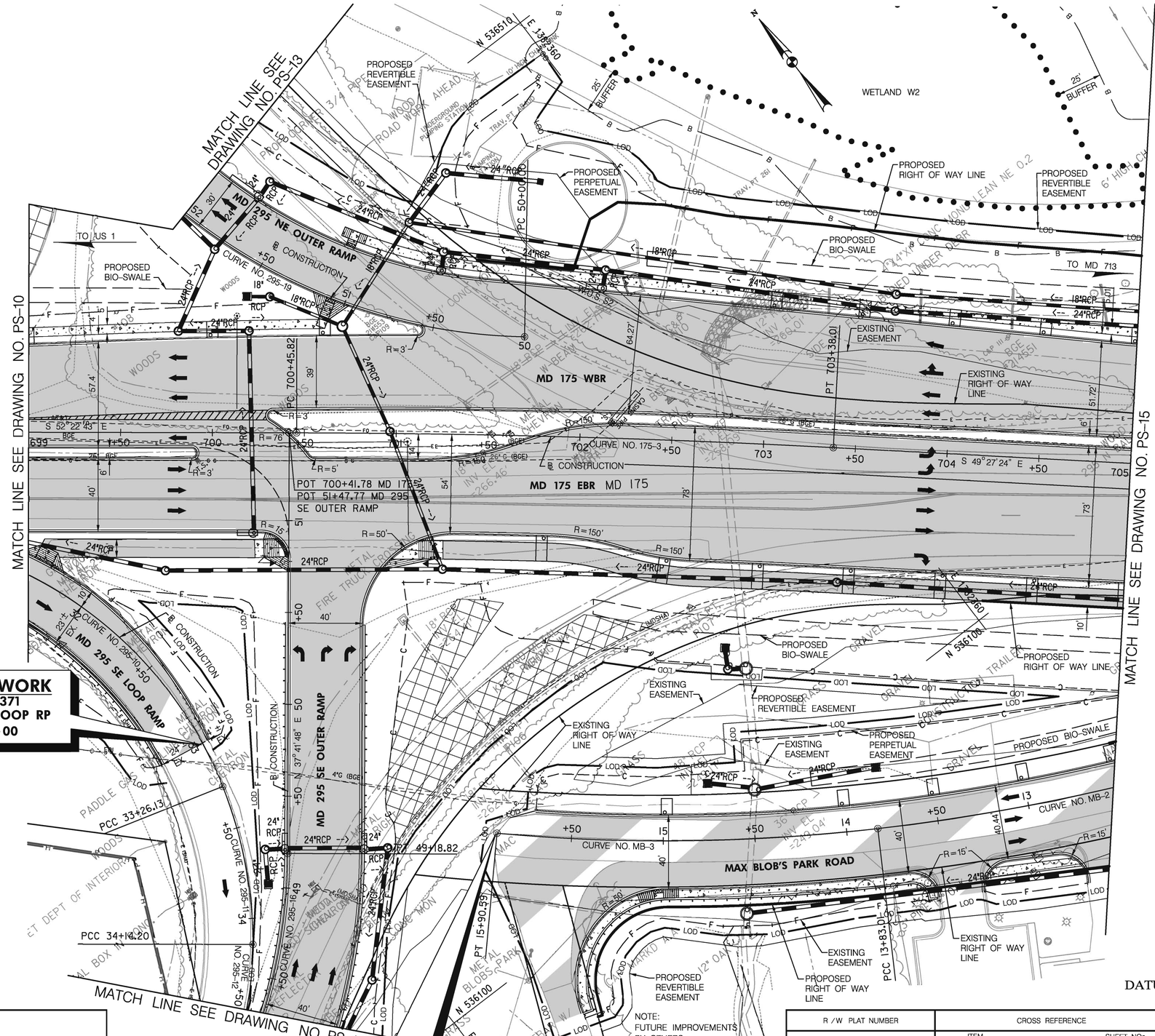

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BY: kld

R / W PLAT NUMBER

CROSS REFERENCE ITEM	SHEET NOs.
TYPICAL SHEETS	.
SUPERELEVATION SHEETS	.
PIPE & DRAINAGE SCHEDULE	.
GEOMETRIC LAYOUT SHEETS	.
ROADWAY PLAN SHEETS	.
ROADWAY PROFILE SHEETS	.
TRAFFIC CONTROL SHEETS	.
EROSION & SEDIMENT CONTROL	.
SIGNING & MARKING PLANS	.
LANDSCAPE PLAN SHEETS	.
UTILITIES	.

REVISIONS

SHA
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STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD
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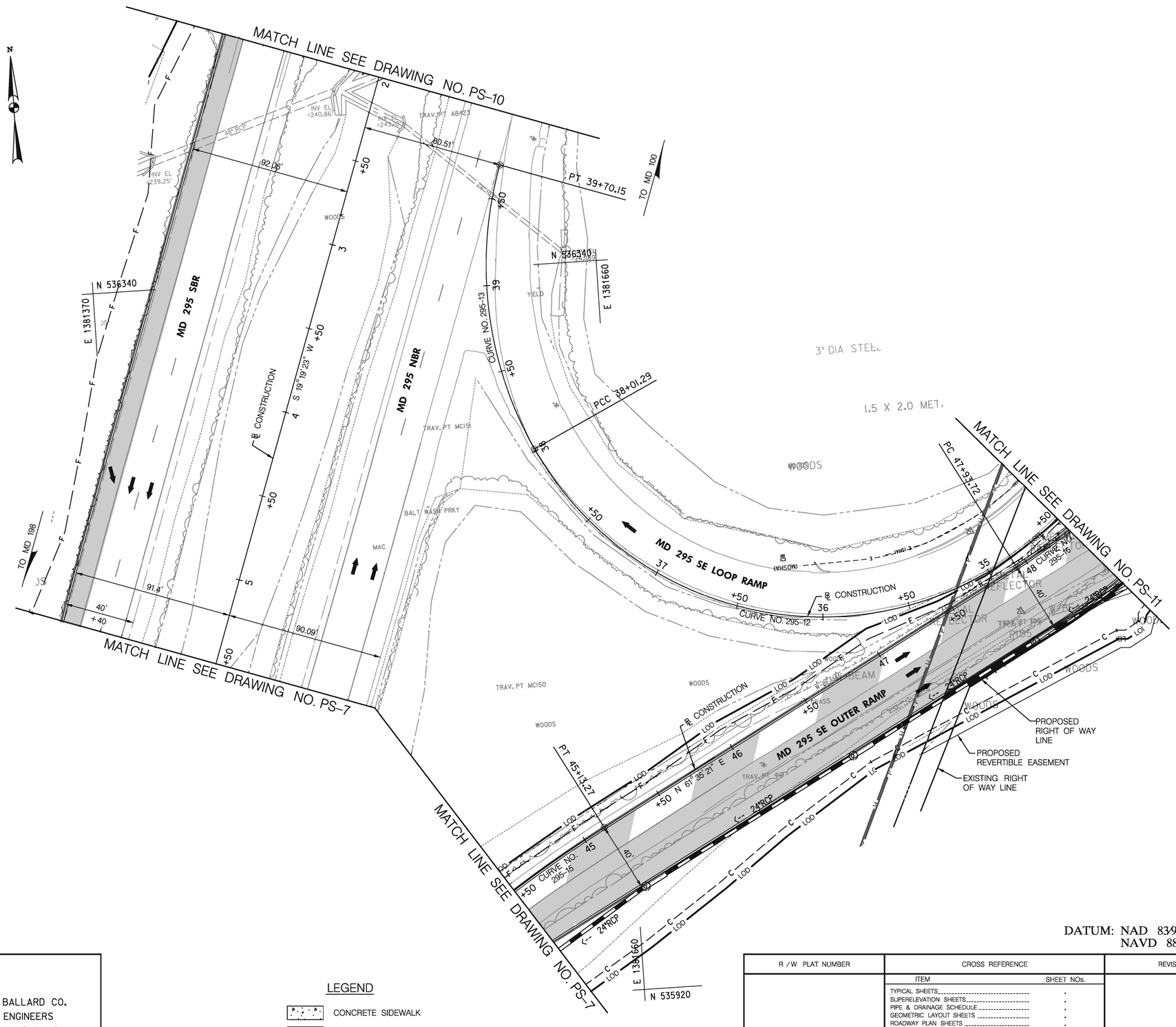

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NAVD 88 Vertical

LEGEND

- CONCRETE SIDEWALK
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- GRINDING AND RESURFACING

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MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

R/W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
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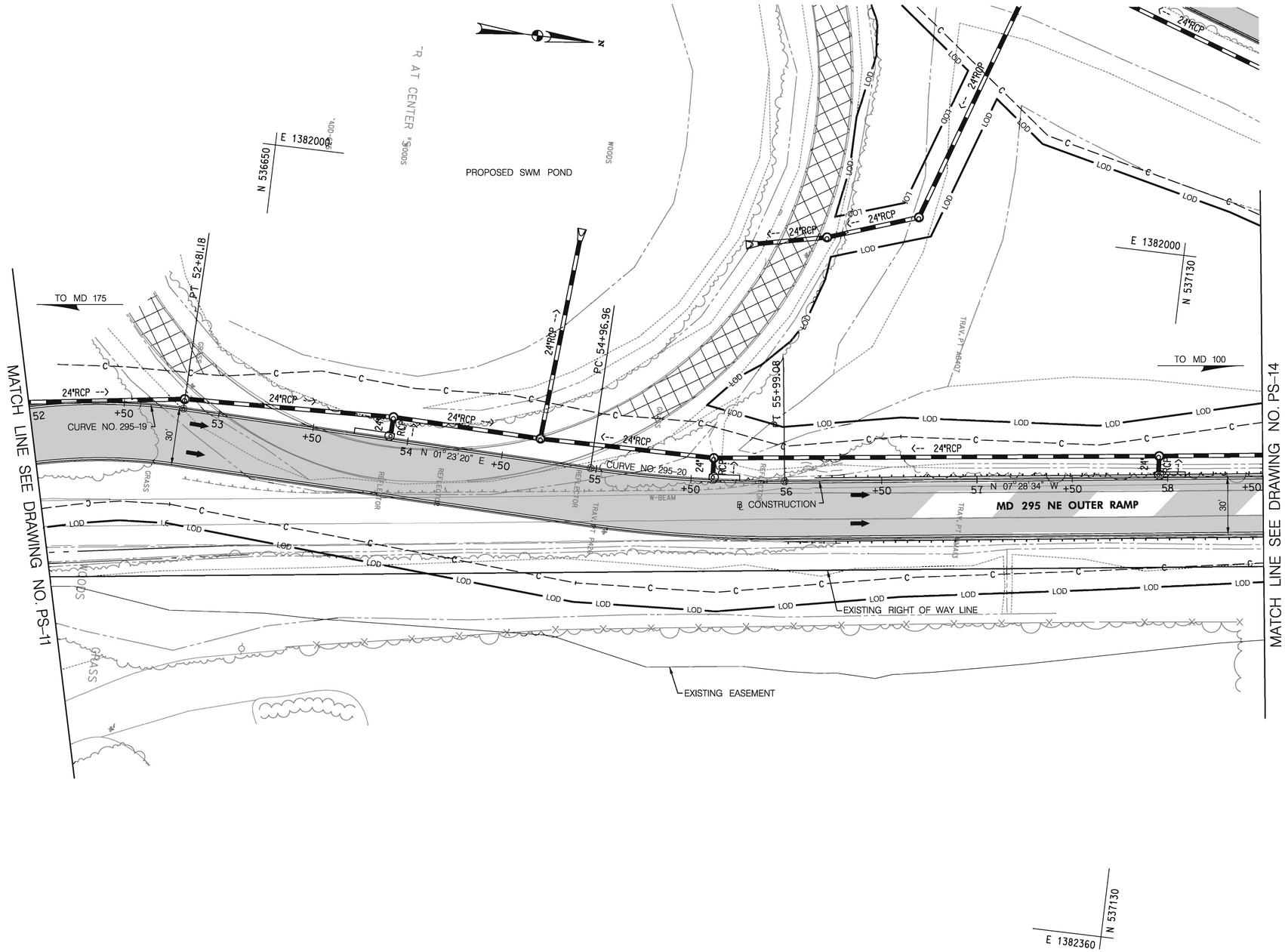

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NAVD 88 Vertical

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- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
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SHEET NO. 28 OF 66

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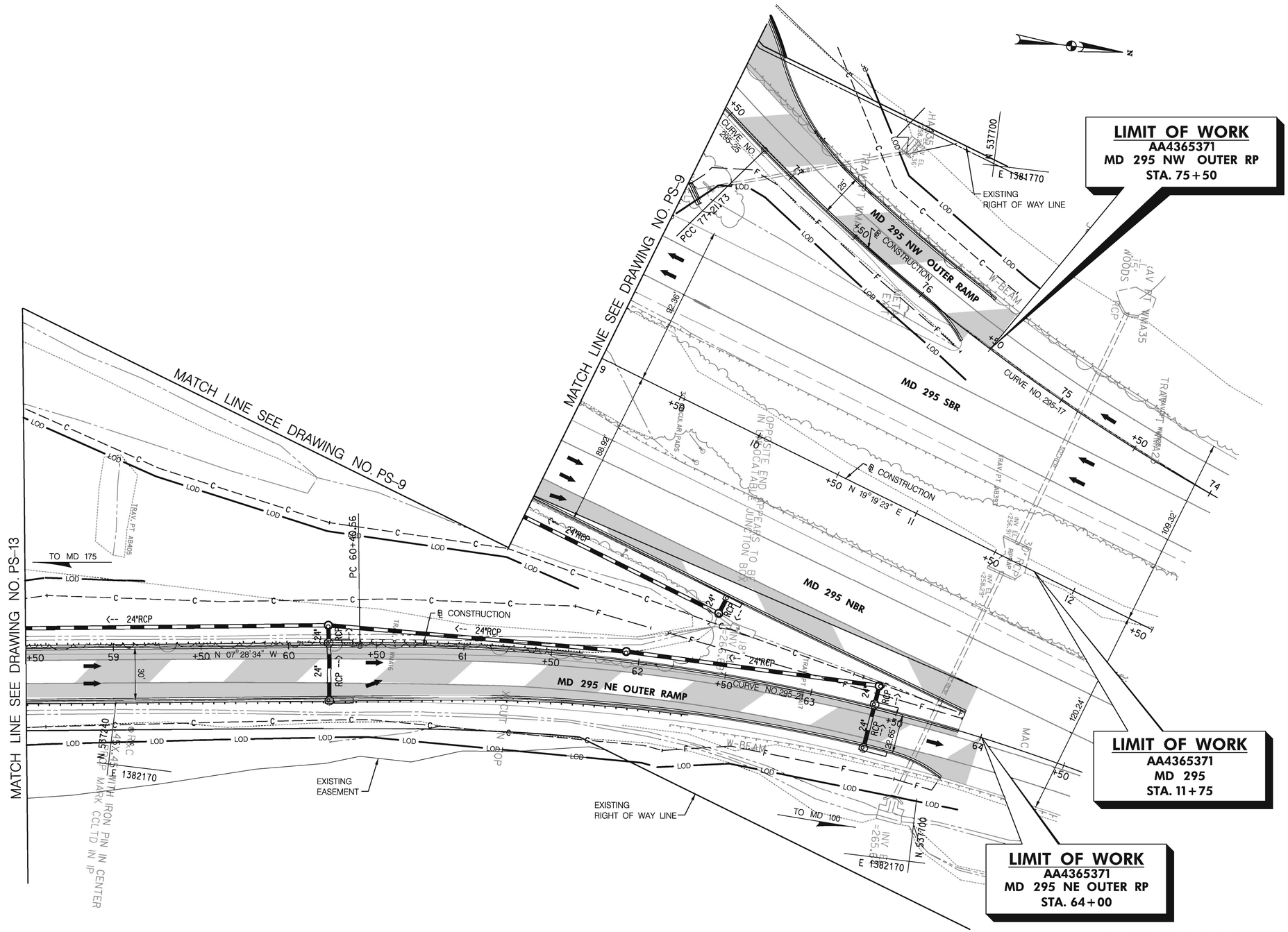

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THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND

BY: kld

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
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DRAWING NO. PS-14 OF 19 SHEET NO. 29 OF 66

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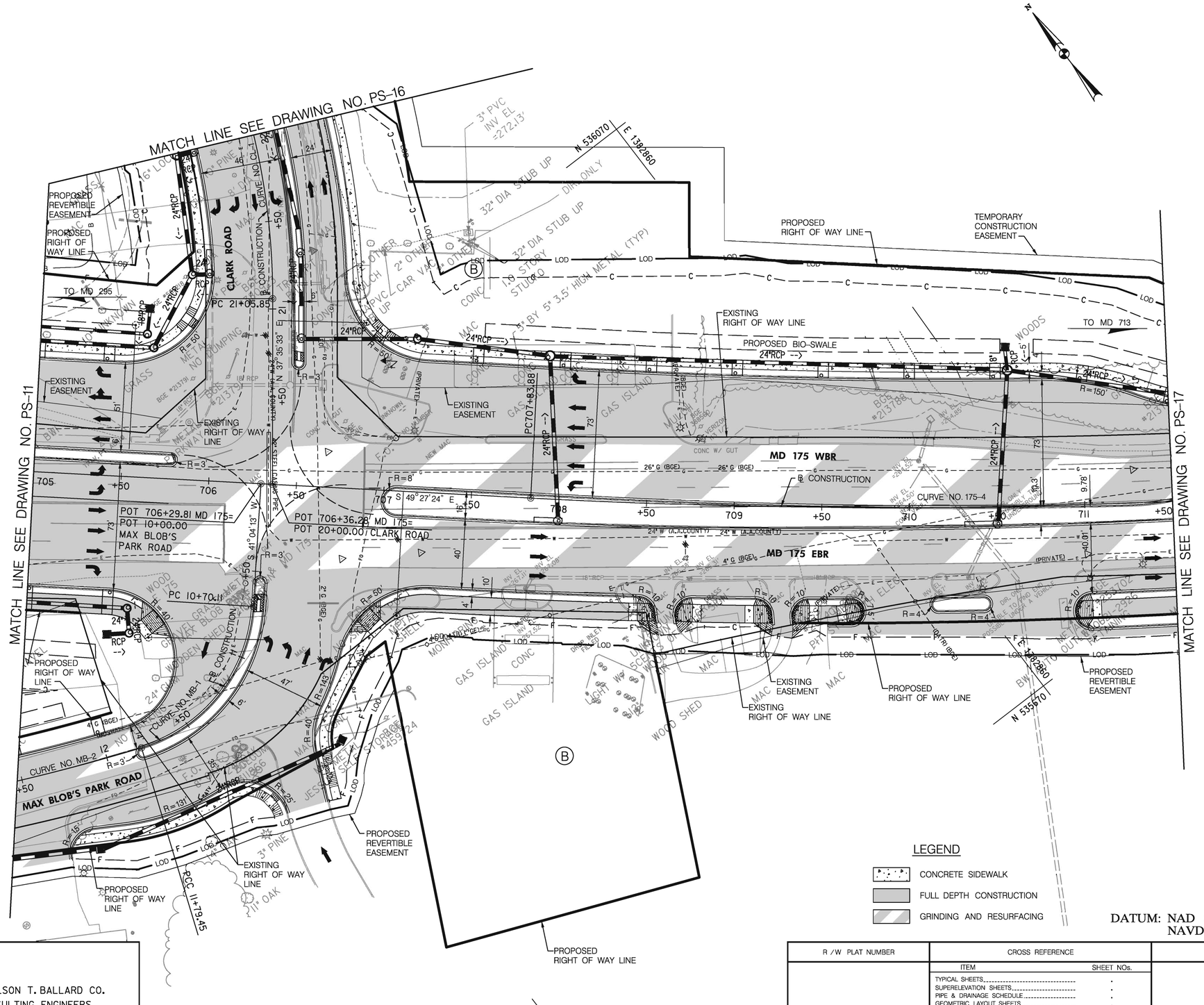

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

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QUANTITY NOTES

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

BY: kld

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
	ROADWAY PROFILE SHEETS	.	
	TRAFFIC CONTROL SHEETS	.	
	EROSION & SEDIMENT CONTROL	.	
	SIGNING & MARKING PLANS	.	
	LANDSCAPE PLAN SHEETS	.	
	UTILITIES	.	

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

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

DESIGNED BY JLG
DRAWN BY DAW / KLD
CHECKED BY DFT
F.A.P. NO. SEE TITLE SHEET

COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-15 OF 19 SHEET NO. 30 OF 66

PLOTTED: Friday, December 13, 2013 AT 03:40 PM
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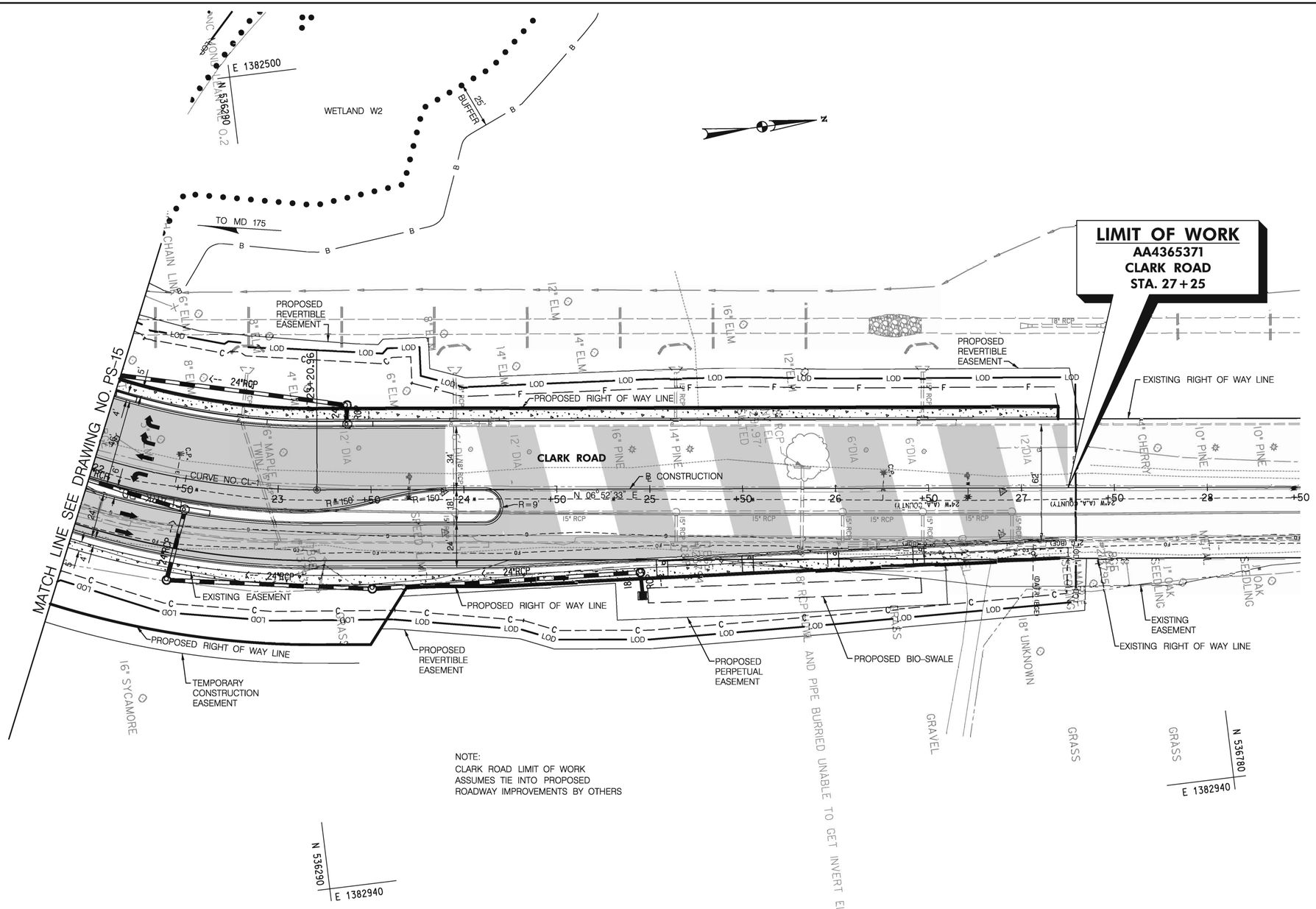

NOTE:
CLARK ROAD LIMIT OF WORK
ASSUMES TIE INTO PROPOSED
ROADWAY IMPROVEMENTS BY OTHERS

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

QUANTITY NOTES

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

BY: kld

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS	.	
	SUPERELEVATION SHEETS	.	
	PIPE & DRAINAGE SCHEDULE	.	
	GEOMETRIC LAYOUT SHEETS	.	
	ROADWAY PLAN SHEETS	.	
	ROADWAY PROFILE SHEETS	.	
	TRAFFIC CONTROL SHEETS	.	
	EROSION & SEDIMENT CONTROL	.	
	SIGNING & MARKING PLANS	.	
	LANDSCAPE PLAN SHEETS	.	
	UTILITIES	.	

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

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD
TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

DESIGNED BY JLG
DRAWN BY DAW / KLD
CHECKED BY DFT
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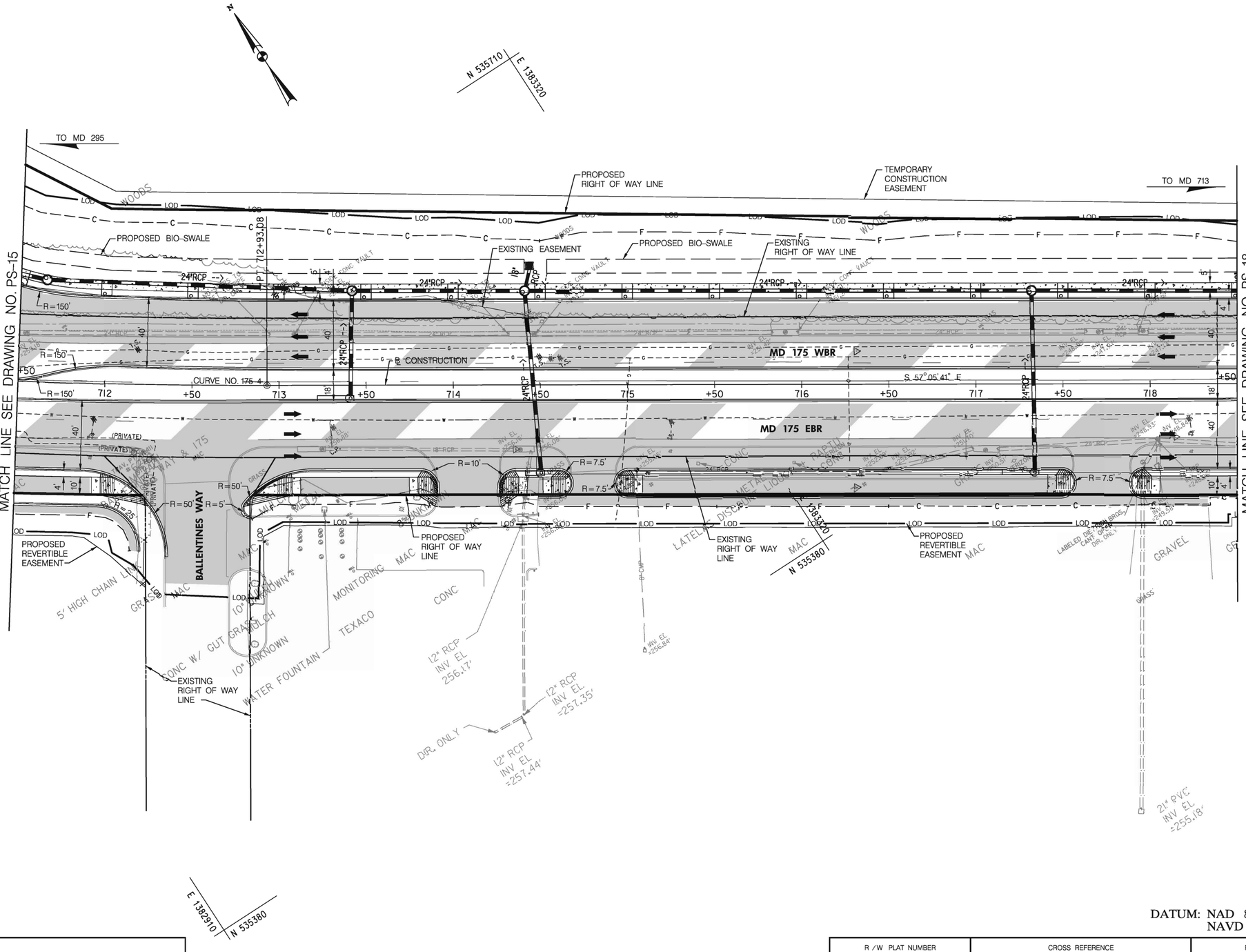
COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-16 OF 19
SHEET NO. 31 OF 66



DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

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

BY: kld –

QUANTITY NOTES

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

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD
TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

R/W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS		
	SUPERELEVATION SHEETS		
	PIPE & DRAINAGE SCHEDULE		
	GEOMETRIC LAYOUT SHEETS		
	ROADWAY PLAN SHEETS		
	ROADWAY PROFILE SHEETS		
	TRAFFIC CONTROL SHEETS		
	EROSION & SEDIMENT CONTROL		
	SIGNING & MARKING PLANS		
	LANDSCAPE PLAN SHEETS		
	UTILITIES		

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

DESIGNED BY JLG
DRAWN BY DAW / KLD
CHECKED BY DFT
F.A.P. NO. SEE TITLE SHEET

COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-17 OF 19 SHEET NO. 32 OF 66

PLOTTED: Friday, December 13, 2013 AT 03:53 PM
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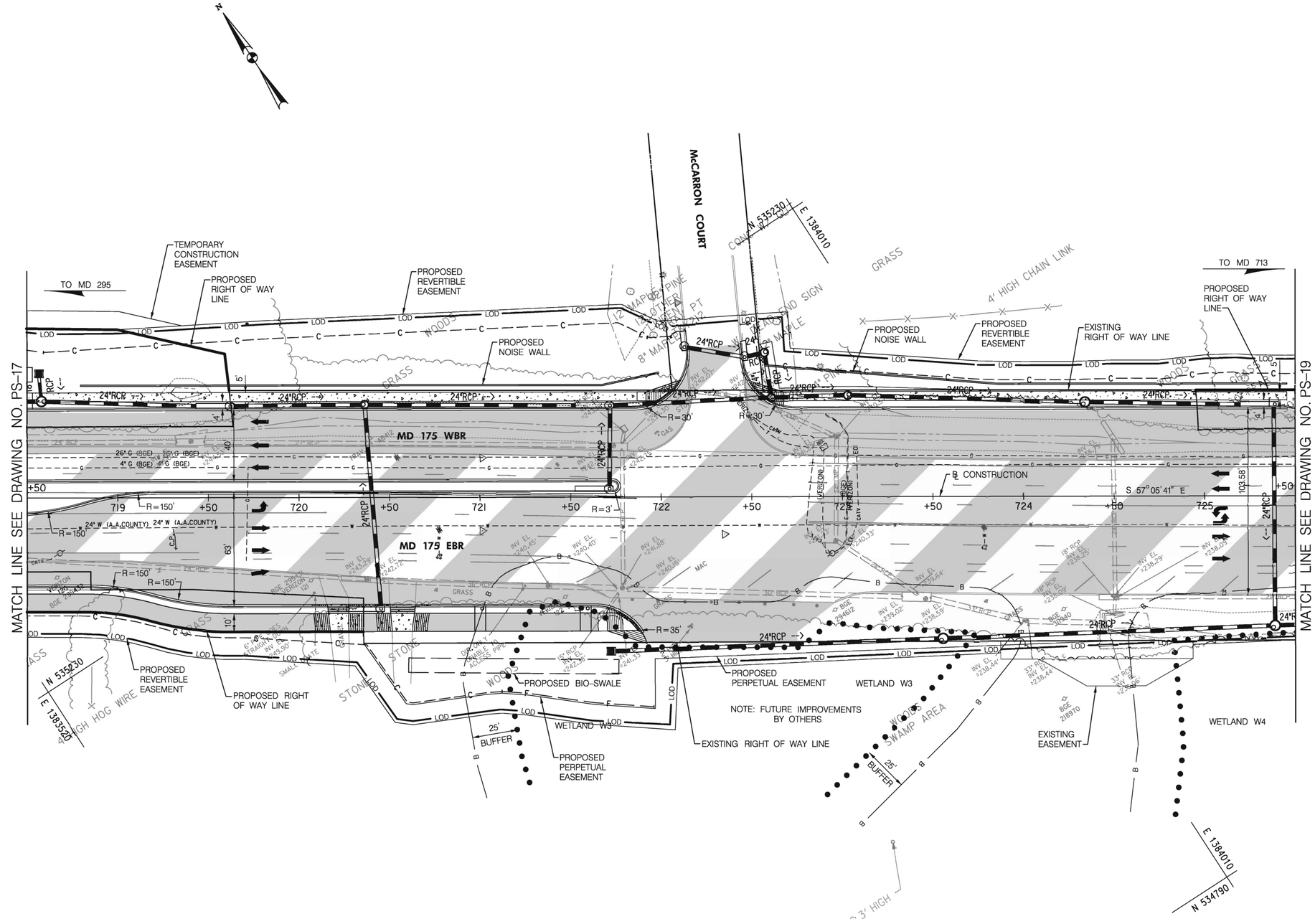

DATUM: NAD 83\91 Horizontal
NAVD 88 Vertical

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

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

BY: kld

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS		
	SUPERELEVATION SHEETS		
	PIPE & DRAINAGE SCHEDULE		
	GEOMETRIC LAYOUT SHEETS		
	ROADWAY PLAN SHEETS		
	ROADWAY PROFILE SHEETS		
	TRAFFIC CONTROL SHEETS		
	EROSION & SEDIMENT CONTROL		
	SIGNING & MARKING PLANS		
	LANDSCAPE PLAN SHEETS		
	UTILITIES		

QUANTITY NOTES

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

MD 175 (JESSUP RD/ANNAPOLIS RD) FROM WEST OF BROCK BRIDGE ROAD
TO EAST OF MD 295 (BALTIMORE-WASHINGTON PARKWAY) INTERCHANGE

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

DESIGNED BY JLG
DRAWN BY DAW / KLD
CHECKED BY DFT
F.A.P. NO. SEE TITLE SHEET
COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-18 OF 19 SHEET NO. 33 OF 66

PLOTTED: Friday, December 13, 2013 AT 04:12 PM
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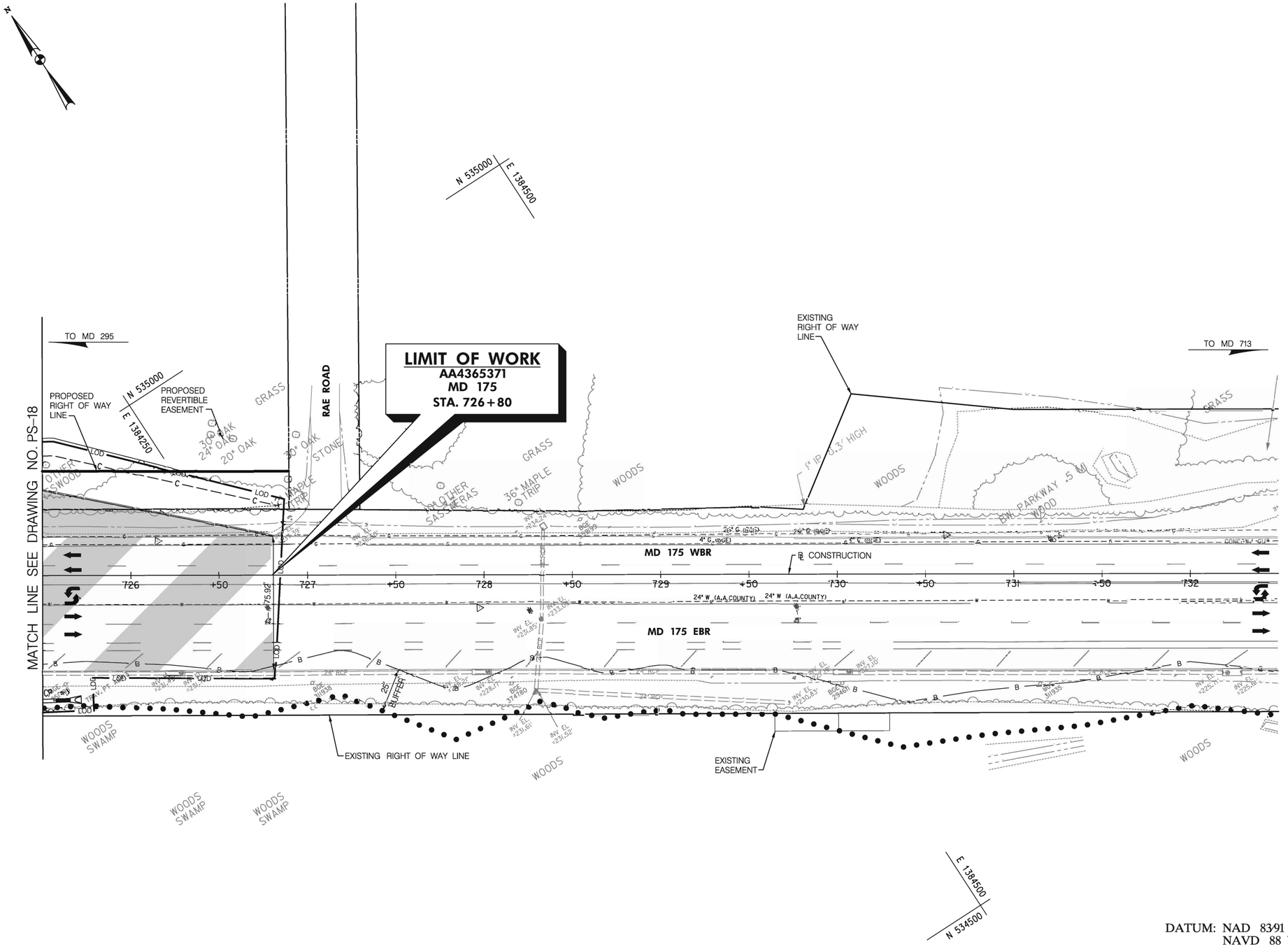
QUANTITY NOTES



DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

LEGEND

- CONCRETE SIDEWALK
- FULL DEPTH CONSTRUCTION
- GRINDING AND RESURFACING

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

BY: kld –

R / W PLAT NUMBER	CROSS REFERENCE		REVISIONS
	ITEM	SHEET NOs.	
	TYPICAL SHEETS		
	SUPERELEVATION SHEETS		
	PIPE & DRAINAGE SCHEDULE		
	GEOMETRIC LAYOUT SHEETS		
	ROADWAY PLAN SHEETS		
	ROADWAY PROFILE SHEETS		
	TRAFFIC CONTROL SHEETS		
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	SIGNING & MARKING PLANS		
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DEPARTMENT OF TRANSPORTATION
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ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE 2014 CONTRACT NO. AA4365371

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DRAWN BY DAW / KLD
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F.A.P. NO. SEE TITLE SHEET

COUNTY ANNE ARUNDEL
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

DRAWING NO. PS-19 OF 19 SHEET NO. 34 OF 66

PLOTTED: Friday, December 13, 2013 AT 04:09 PM
FILE: c:\pwdata\wtb-kdenford\d0558621\prHD-Pl19_MD175over295.dgn

APPENDIX B: MONITORED AMBIENT AIR QUALITY DATA 2010-2012

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2010
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8096	3	2.7	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	4500	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8107	1.5	1.3	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	7781	2.1	1.9	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems. <http://www.epa.gov/airquality/airdata/ad_contacts.html>

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This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: November 14, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2010
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8107	2.2	1.9	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	4564	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8103	1	1	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	7818	1.5	1.4	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: November 14, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2011
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8230	2.3	2.3	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	8343	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8183	1.7	1.3	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8533	2.3	2.2	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2011
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8224	1.7	1.6	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	8430	0.4	0.3	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8145	1.1	0.8	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8548	1.8	1.5	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2012
Exceptional Events: Included (if any)

Duration Description=1 HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
1 HOUR	8485	2.3	2.1	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	5921	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
1 HOUR	8182	1.8	0.8	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
1 HOUR	8571	1.3	1.2	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8626	2.5	2.5	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2012
Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

Duration Description	Obs	First Max	Second Max	Actual Exc	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8-HR RUN AVG END HOUR	8554	1.6	1.6	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	6011	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
8-HR RUN AVG END HOUR	8210	0.4	0.4	0	None	1	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
8-HR RUN AVG END HOUR	8651	1.2	0.9	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8713	2.1	1.6	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2010
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	352	36.1	34.7	33.4	33.1	28	11	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	118	32	29.7	21.1	21	21	10.3	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	30	31.5	20	19.1	17.7	32	11.5	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	112	37.3	33.6	28.6	25.2	29	11.6	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	57	20.8	18.4	18.4	17	18	9.2	None	1	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24 HOUR	112	24.4	23.2	21.6	20.7	22	9.5	None	1	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24 HOUR	50	18.6	17.7	17.2	16.9	19	9.1	None	1	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24 HOUR	115	35.7	32.4	24.9	24.9	25	11.5	None	1	240330025	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	Bladensburg	Prince George's	MD	03
24 HOUR	107	34.4	20.3	19.8	18.6	20	9.4	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	12	17.2	14.4	14	13.8	17	9.8	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	112	21.4	21.3	20.9	19.9	21	9.5	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	27	19.3	18.6	15.1	14.2	19	10.1	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2010
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	315	34.8	33.4	33	32.7	32	12	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	178	35.9	28.5	28.3	27.5	28	10.8	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	173	30.5	28.8	27.9	25.9	26	9.2	None	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	352	35.8	33.8	33.1	29.6	28	11.1	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	352	39.5	38.7	38.1	32.6	27	12.1	None	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	161	39	36.8	34.1	31	31	12.6	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	353	38.1	37.7	35.9	35.7	30	12.7	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2011
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	112	26.4	24.7	24.4	22.7	24	10.7	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	110	28.6	27.2	22.8	20.9	23	9.7	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	28	26.8	21.2	20.2	17.5	27	10	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	116	26.7	26.6	26.3	26.3	26	10.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	72	25	24.5	20.6	20.5	25	10.3	None	1	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24 HOUR	108	27	25.4	22.6	21.6	23	10.1	None	1	240330025	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	Bladensburg	Prince George's	MD	03
24 HOUR	123	24.7	22	21.8	21	22	8.7	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	37	24.3	15.1	12.7	12.7	24	8.2	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	118	28.8	25.8	21.1	20.4	21	8.9	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	28	15	13.9	12.7	11.9	15	7.8	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	115	26.4	25.2	23.2	21.7	23	9.9	None	1	245100006	Northeast Police Station, 1900 Argonne Drive	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2011
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	336	37.2	32.1	31.4	30.5	29	10.9	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	306	35	31.3	31.1	29.4	24	10.5	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	118	24.6	24.3	20.6	19.4	21	10.8	None	3	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24-HR BLK AVG	341	38	35.3	34.4	34	28	10.9	Included	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	331	31.8	30.5	30.2	29.9	25	10.9	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	344	76.1	35.3	31.5	29.5	27	11.8	Included	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	340	34.7	32.6	32.5	31.7	28	11.5	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	359	39.5	35.4	32.1	32	29	13.1	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2012
Exceptional Events: Included (if any)

Duration Description=24 HOUR

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24 HOUR	119	30.1	23.4	23	21.7	23	10.2	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	112	29.5	22.6	21.5	18.3	22	8.9	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	41	21	18	16.8	13.7	21	9.1	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	116	28.2	25.5	24.7	23.6	25	10.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	121	25	22.3	21.7	20.8	22	8.5	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	43	25	22.1	15.4	13.9	25	8.3	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	97	24.7	23.8	15	14.7	24	7.8	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	35	14.8	14.7	14.2	12.6	15	7.8	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	121	23.8	22.5	22.1	21.8	22	9.3	None	1	245100007	Northwest Police Station, 5271 Reistertown Road	Baltimore	Baltimore (City)	MD	03
24 HOUR	111	23.7	22.6	22.5	20	23	9.6	None	1	245100008	Baltimore City Fire Dept.-Truck Company 20; 5714 Eastern Avenue , Baltimore, Maryland 21224	Baltimore	Baltimore (City)	MD	03
24 HOUR	304	26.3	25.5	24.4	23.7	23	10	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2012
Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

Duration Description	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
24-HR BLK AVG	354	26	25.2	23.3	23.2	22	9.3	None	3	240150003	4600 Telegraph Road	Not in a city	Cecil	MD	03
24-HR BLK AVG	243	25.8	25.5	25.1	23.2	23	7.9	None	3	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
24-HR BLK AVG	313	24.9	20	19.4	19.1	17	8	None	3	240230002	Frostburg Reservoir, Finzel	Not in a city	Garrett	MD	03
24-HR BLK AVG	352	27.9	26.4	26.2	26	24	11.1	None	3	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
24-HR BLK AVG	353	30.6	29.4	26.5	25.2	23	10.7	None	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Millington	Kent	MD	03
24-HR BLK AVG	356	33.1	30.2	29	25	23	10.3	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a city	Montgomery	MD	03
24-HR BLK AVG	355	34.1	30.2	29.9	29.7	25	11.3	None	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24-HR BLK AVG	349	38.3	31.8	29.3	29	27	10.8	None	3	240430009	18530 Roxbury Road	Not in a city	Washington	MD	03
24-HR BLK AVG	358	29.7	28.7	27.2	27	25	12	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: December 19, 2013

APPENDIX C: TRAFFIC MEMO

MEMORANDUM

TO: Mr. Dennis German, Chief
Community Design Division
Office of Highway Development

ATTN: Mr. Christopher Weber

FROM: Morteza Tadayon, Chief
Data Services Engineering Division
Office of Planning and Preliminary Engineering

DATE: December 11, 2013

SUBJECT: MD 175 over MD 295 Interchange
Anne Arundel County
Project No: AA436B21
Title Sheet/Loadometer Data

In response to your request for traffic and loadometer data for the subject project, we offer the following:

MD 175 over MD 295

	2013	**2033**
Average Daily Traffic (ADT)	28,400*	43,125*
Design Hour Volume (DHV)	10%	10%
Directional Distribution of DHV	71%	71%
Percent Trucks- ADT	5%	5%
Percent Trucks- DHV	3%	3%

* Note: 2013 and 2033 ADTs consider forecasts developed for the project of "Race Road/Jessup Village Planning Study". Interchange improvements are also considered to be in place under the 2033 condition.

Truck Breakdown:

	ADT	**2A**	**3D**	**2S1**	**2S2**	**3S2**	**3S3**	**Total**
2013	28,400	857	315	14	54	169	11	1,420
2033	43,125	1,301	478	21	82	258	16	2,156

The FHWA Vehicle Classification Data for this project was based upon the following:

FHWA Class	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
2013 ADT	51	23,939	2,990	206	651	223	92	68	169	10	0	0	1	28,400
2013 DHV	5	2,438	312	5	57	13	2	3	5	0	0	0	0	2,840
2033 ADT	77	36,352	4,540	313	988	338	140	103	258	14	0	0	2	43,125
2033 DHV	8	3,702	474	15	80	18	3	5	8	0	0	0	0	4,313

We recommend using Weigh-in-Motion Station 4008-87 to produce the above loadometer data. An electronic copy of the loadometer data and percent of Class 9 through Class 13 (attached) is being sent to the Pavement and Geotechnical Division along with this memorandum.

If you have any questions or concerns, please contact the writer at 410-545-5641 or Ms. Lisa Shemer, Assistant Division Chief, Data Services Engineering Division at 410-545-5640.

By: _____
Jay Zheng, P.E.
Travel Forecasting and Analysis
Data Services Engineering Division

Attachments

cc: Mr. Paulo DeSousa
Mr. Derek Gunn
Ms. Kim Tran
Mr. Daniel Woldehanna

APPENDIX D: INTERAGENCY CONSULTATION EMAILS