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MD 210 AT KERBY HILL ROAD/LIVINGSTON ROAD INTERCHANGE IMPROVEMENTS

AIR QUALITY ANALYSIS TECHNICAL REPORT

December 2013

Prince George's County, Maryland



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**



**MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION**

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I. INTRODUCTION

This report presents the results of a review of air quality impacts associated with the proposed improvements at the intersection of MD 210 and Kerby Hill Road/Livingston Road in Prince George's County, Maryland (**Figure 1**). 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).

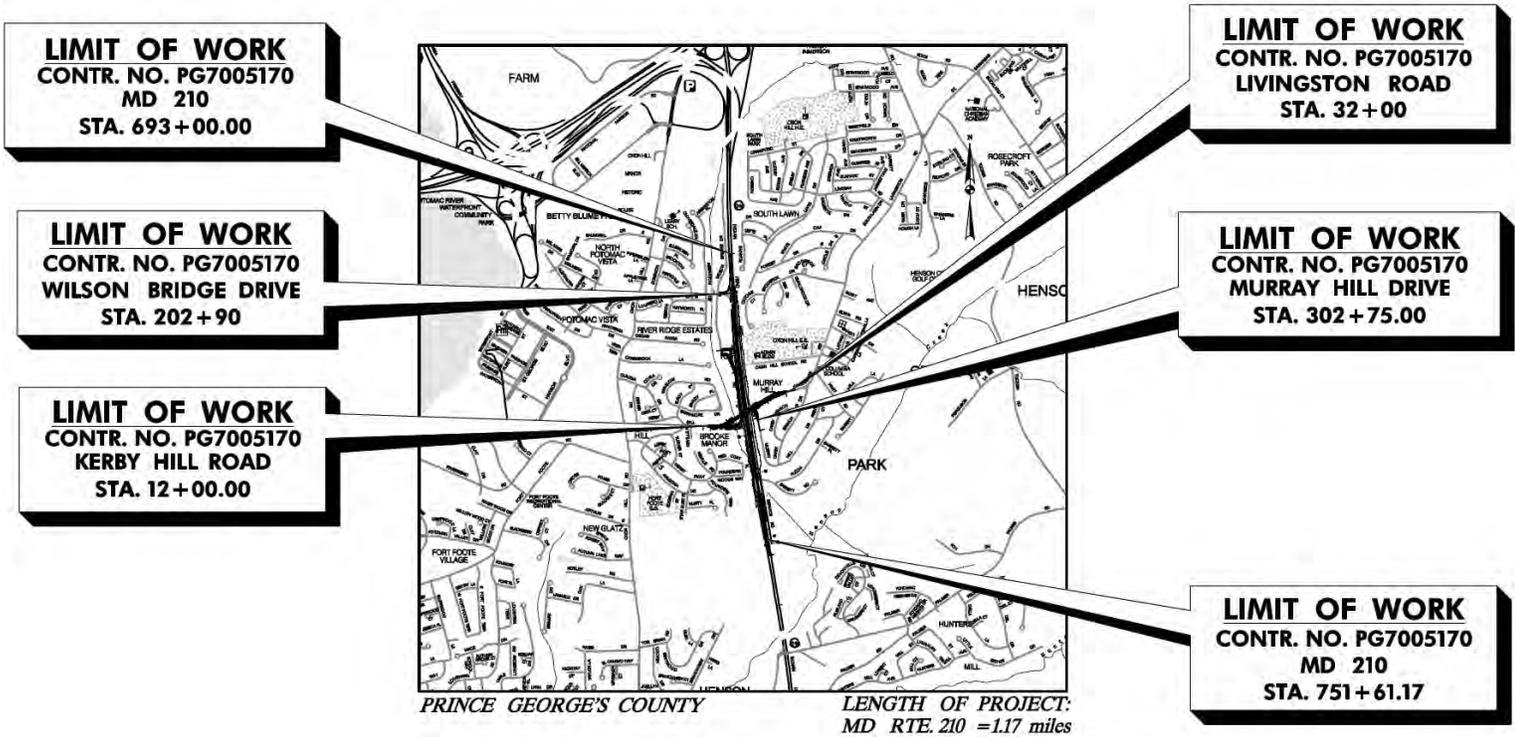


FIGURE 1 – STUDY AREA

The project limits extend along MD 210 from 0.59 mile north of Kerby Hill Road/Livingston Road to 0.52 mile south of Kerby Hill Road/Livingston Road, and along Kerby Hill Road/Livingston Road from 0.18 mile west of MD 210 to 0.2 mile east of MD 210. MD 210 runs north-south and is classified as an urban freeway expressway in the Functional Classification System. The existing (2013) Average Daily Traffic (ADT) on MD 210 is 81,750 vehicles per day (VPD), projected to be 102,850 VPD in 2035. Trucks account for six percent of the current and future ADT. Increased development along the MD 210 corridor has caused severe congestion during peak hours. It is anticipated that the construction of this interchange will relieve traffic congestion and improve safety along MD 210 and local roadways within the project limits. Having been designed to improve efficiency of traffic operation at the intersection, rather than increase corridor capacity, no change is expected between the no-build and build traffic volume or vehicle mix.

Project work consists of re-aligning Kerby Hill Road to line up with Livingston Road, connecting Kerby Hill Road and Livingston Road with a bridge over MD 210, adding a service road west of MD 210 with a ramp to Kerby Hill Road, and adding off and on ramps connecting the bridge to median of MD 210. Bike and pedestrian upgrades will be installed within the project limits where appropriate including bicycle compatible lanes and a five-foot wide sidewalk behind the curb along Kerby Hill Road and Livingston Road as well as the connecting overpass. Bike travel is to be accommodated

along MD 210 by its allowance on the eight to ten-foot shoulder. Additional work consists of roadway resurfacing, pavement removal, installation/upgrade/modification of sidewalks, retaining walls, fencing, concrete barriers, traffic signal removal, landscaping, and stormwater management facility installation.

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) and FHWA have issued Proposed Rules, Guidance Clarifications, and Final Rules concerning the Conformity Determination of fine and coarse particulates (PM_{2.5} and PM₁₀), 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 PM₁₀ 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 PM₁₀ Nonattainment and Maintenance Areas; May 26, 2010
Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ 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 (NO₂), ozone (O₃), particulate matter (PM₁₀ & PM_{2.5}), sulfur dioxide (SO₂), 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.

**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	98 th 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	98 th 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	

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: Unclassified, Attainment, Nonattainment, and Maintenance. 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.

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 Mobile Source Air Toxics (MSATs), and highlighted six of these MSATs as “priority” MSATs.

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 overall 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 210 at Kerby Hill Road/Livingston Road project is located in Prince George’s County, Maryland, which is included as a part of the Washington, DC-MD-VA Metropolitan Statistical Area (MSA). The region has been classified as marginal nonattainment with respect to the 2008 eight-hour ozone standard and nonattainment of the 1997 fine particulate (PM_{2.5}) annual standard. A portion of the MSA, election districts 2, 6, 12, 16, 17, 18 in Prince George’s County, had been non-attainment for carbon monoxide; however, this area has been re-designated as a CO Maintenance Area. As shown in **Figure 2**, the project is located in District 12, which is a CO Maintenance Area.

Transportation programs and plans must be evaluated for “conformity” to the applicable State Implementation Plan (SIP) provisions before projects can receive Federal funding. In addition, they must be in the current Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP). A TIP generally presents projects anticipated over the next several years while the CLRP covers a longer period. A Metropolitan Planning Organization (MPO) is designated to develop the TIP and CLRP for a region, and to document their conformity with SIP provisions. For the Washington, DC region, the National Capital Region Transportation Planning Board (NCRTPB), which is part of the Metropolitan Washington Council of Governments (MWCOCG), serves as the MPO for the MSA. Prince George’s County is a member of the NCRTPB.

As the MPO, NCRTPB develops the TIP and CLRP for the region, including Prince George’s County. Furthermore, it performs the related regional conformity analysis. The current CLRP, referred to as the *2012 National Capital Region’s Financially Constrained Long-Range Transportation Plan*, was adopted by NCRTPB on July 18, 2012. The latest TIP, covering the period FY 2013 to 2018, was also adopted by NCRTPB on July 18, 2012. An updated regional conformity analysis covering both the TIP and CLRP was adopted in on July 18, 2012, as well. At a regional level, a project is considered to be conforming if it is a part of a conforming TIP and CLRP. The proposed project is included in the 2013 CLRP (CLRP ID 1199) and the FY 2013-2018 TIP (TIP ID 4879) for the Washington Metropolitan Region.

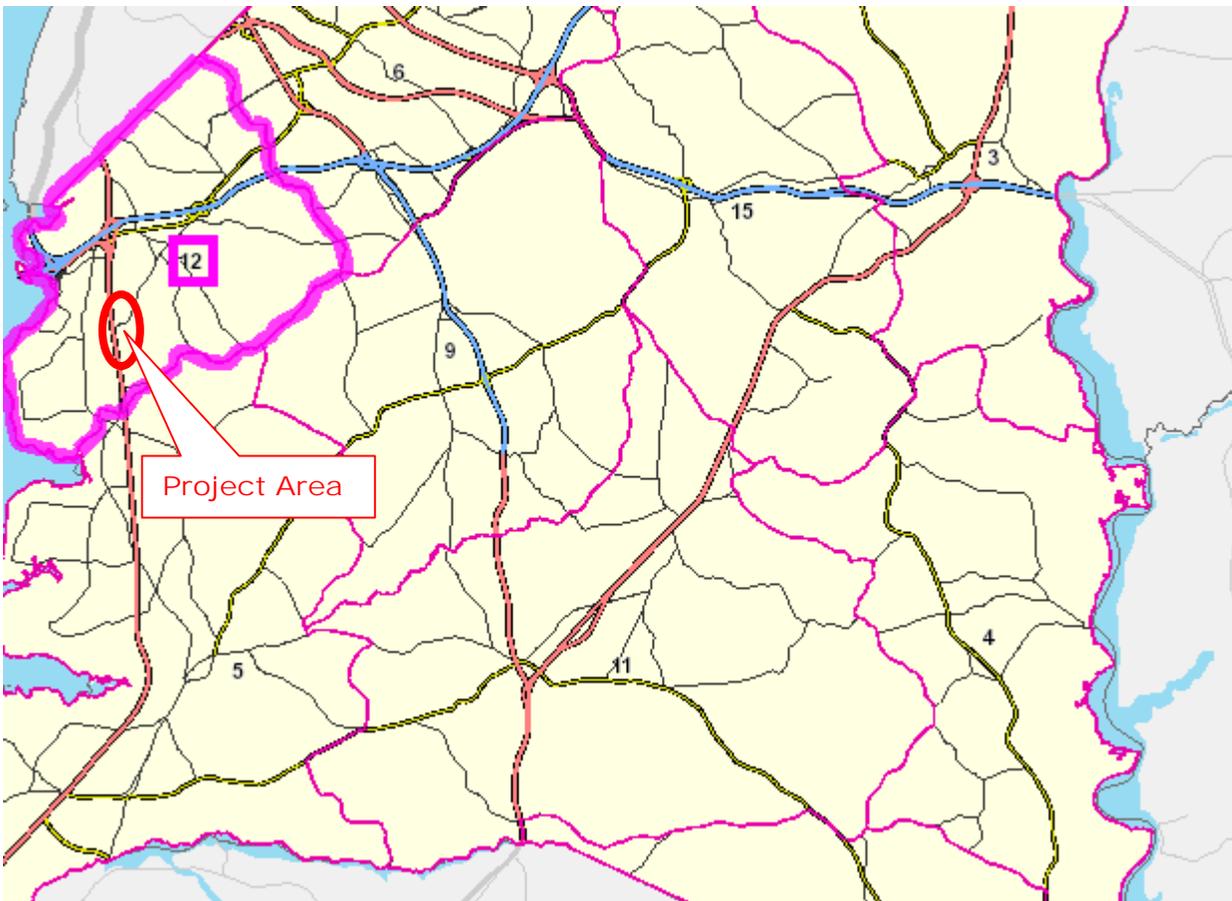


FIGURE 2 – PRINCE GEORGE’S COUNTY ELECTION DISTRICTS

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. The MD 210 at Kerby Hill Road/Livingston Road project is in a CO maintenance area subject to the requirements of 40 CFR 93.116 concerning conformity determination, therefore a CO assessment has been provided below. Since Prince George’s County has been designated as a nonattainment area for PM_{2.5}, a project-specific PM_{2.5} assessment has also been provided.

The Division of Air Quality, within the Maryland Department of the Environment is responsible for implementing and enforcing regulations to ensure that the air that Maryland citizens breathe is clean and healthful. This mission is accomplished through several methods, including air pollution monitoring. The MDE CO air monitoring stations nearest to the study area are located at the Howard University Laboratory in Beltsville, Maryland, and the Verizon Phone Company in NW Washington, DC. The MDE PM_{2.5} air monitoring stations nearest to the study area are located at the Howard University Laboratory in Beltsville, Maryland, and the Lathrop E. Smith Environmental Education Center in Rockville, Maryland. These sites are in EPA Region 3. Monitored air quality data within or near the study area for the years 2010-2012 is presented in **Table 2**, as discussed in the subsequent sections.

TABLE 2
Ambient Air Quality Monitoring Data 2010-2012

			Site 11010023 2055 L Street NW Washington, D.C.			Site 240330030 12003 Old Baltimore Pike Beltsville, Maryland			Site 240313001 5110 Meadows Lane Rockville, Maryland		
			2010	2011	2012	2010	2011	2012	2010	2011	2012
Carbon Monoxide (CO) [ppm]	1-Hour	Maximum	2.8	5	2.5	1.5	1.7	1.3	-	-	-
		2nd Maximum	2.7	4.2	2.2	1.3	1.3	1.2	-	-	-
		# of Exceedances	0	0	0	0	0	0	-	-	-
	8-Hour	Maximum	2.4	2.2	2	1	1.1	1.2	-	-	-
		2nd Maximum	2	1.9	1.9	1	0.8	0.9	-	-	-
		# of Exceedances	0	0	0	0	0	0	-	-	-
Particulate Matter [ug/m ³]	PM _{2.5}	98th Pct. 24-Hour	-	-	-	20	22	25	19	-	23
		# of Exceedances	-	-	-	0	0	0	0	-	0
		Mean Annual	-	-	-	9.4	8.7	8.5	9.1	-	10.3
		# of Exceedances	-	-	-	0	0	0	0	-	0

1. Carbon Monoxide (CO) Assessment

A portion of the Washington DC-MD-VA Metropolitan Statistical Area (MSA) is considered to be a moderate maintenance area in terms of carbon monoxide (CO). This maintenance area encompasses Election Districts 2, 6, 12, 16, 17, 18 in Prince George's County. The project area is located in Election District 12. 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 40CFR93.102(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 in a CO maintenance area, a project level hot-spot conformity determination in conformance with 40 CFR 93.116 is required. A qualitative assessment considering local factors in conformance with 40 CFR 93.123(a)(2)(ii) is provided hereinafter.

As shown in **Table 2**, the maximum 1-hour monitored CO concentration is 5 ppm at site 11010023, located at 2055 L Street NW Washington, DC, was recorded in 2011. This concentration is 14.3 percent of the 1-hour CO NAAQS of 35.0 ppm. The maximum 2011 8-hour monitored CO concentration is 2.2 ppm at this same site, which is 24.4 percent of the 8-hour NAAQS of 9.0 ppm.

In the 2004 Final Environmental Impact Statement (FEIS), a microscale analysis for 1-hour and 8-hour CO concentrations in both the build year (2010) and design year (2020) was conducted using MOBILE3 and CALINE3 to compare estimated concentrations to the CO State/National Ambient Air Quality Standards (S/NAAQS). This analysis demonstrated that for the Selected Alternative, there would be no violations of the 1-Hour or 8-Hour S/NAAQS, as shown in **Table 3**.

TABLE 3
2004 FEIS CO CONCENTRATIONS

Condition	1-Hour (ppm)	8-Hour (ppm)
S/NAAQS	35	9
Selected Alternative Max (% of S/NAAQS) 2005	10.4 (29.7%)	5.7 (63.3%)
Selected Alternative Max (% of S/NAAQS) 2020	10.8 (30.9%)	6.0 (66.7%)

A review of data provided, including traffic data summarized in **Table 4**, demonstrates that the improvements to MD 210 at Kerby Hill Road/Livingston Road will not result in significant traffic volumes, changes in vehicle mix, or other factors that would cause an increase in CO emissions relative to the no-build conditions. This project has been designed to improve efficiency of traffic operation at the intersection, rather than increase corridor capacity; therefore, no noticeable change is expected between the no-build and build traffic volumes or vehicle mix.

TABLE 4
TRAFFIC DATA: MD 210 N of Kerby Hill Road/Livingston Road

	2013	2017 No Build	2017 Build	2035 No Build	2035 Build
ADT	81,750	85,525	85,525	102,850	102,850
% Trucks	6%	6%	6%	6%	6%
# Trucks	4,905	5,132	5,132	6,171	6,171

In conclusion, because the monitored data in **Tables 2** and **3** demonstrate that monitored and predicted CO concentrations are a small percentage of the CO NAAQS and because **Table 4** demonstrates that there will be no significant changes in traffic volumes or vehicle mix, improvements to the intersection of MD 210 at Kerby Hill Road/Livingston Road will not cause or contribute to a new violation of the CO NAAQS.

2. Particulate Matter (PM_{2.5}) Assessment

The project is located in Prince George's County, which is in the Washington DC-MD-VA Fine Particulate Matter (PM_{2.5}) Nonattainment Area. This area was designated as nonattainment for PM_{2.5} based on 1997 NAAQS 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 Washington DC-MD-VA 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: "*PM_{2.5} and PM₁₀ Hot-Spot Analyses in Project-level*

Transportation Conformity Determinations for the New PM_{2.5} and Existing PM₁₀ 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 PM₁₀ 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 PM₁₀ Nonattainment and Maintenance Areas*”, (75 FR 79370), which helps state and local agencies complete quantitative PM_{2.5} and PM₁₀ 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.

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 PM₁₀ 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 PM₁₀ 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 210 at Kerby Hill Road/Livingston Road 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 210 at Kerby Hill Road/Livingston Road project is considered under the following paragraphs of 40 CFR 93:
 - 40 CFR 93.123(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.*”
- The proposed improvements do not meet the criteria set forth in 40 CFR 93.123(b)(1)(i) to be considered a project of “air quality concern” based on the following considerations:
 - The project involves conversion of an existing at-grade intersection to a grade separated interchange to reduce roadway congestion and improve traffic flow and safety at the intersection. Pedestrian safety and transit access are also important features in the scope.
 - As shown in **Table 4**, MD 210 does not carry a significant number of diesel vehicles; nor will there be a significant increase in diesel vehicles between the Build and No-Build conditions.
 - Since the project consists primarily of safety and operational improvements and will not add any through lanes it does not add through capacity to any road in the study area.

- o The construction will not result in meaningful changes between no-build and build traffic volumes, vehicle mix, or location of the existing facility. A review of the traffic data demonstrates that there will not be a "significant" increase in the number of trucks. Unless predicated by significant land use changes (heavy truck generators), existing truck percentages are used as the primary factor in determining future percentages.
- 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 National Capital Regional Transportation Planning Board (NCRTPB) serves as the Metropolitan Planning Organization (MPO), and therefore it is responsible for the regional conformity determination.
- The currently approved NCRTPB Constrained Long Range Plan (CLRP), referred to as the *2012 Constrained Long Range Plan*, and the *2013-2018 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 CLRP and TIP in accordance with 40 CFR 93.114. The proposed project is included in the 2013 CLRP (CLRP ID 1199) and the FY 2013-2018 TIP (TIP ID 4879) for the Washington Metropolitan Region.
- 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 of the MD 210 at Kerby Hill Road/Livingston Road intersection project in Prince George's 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

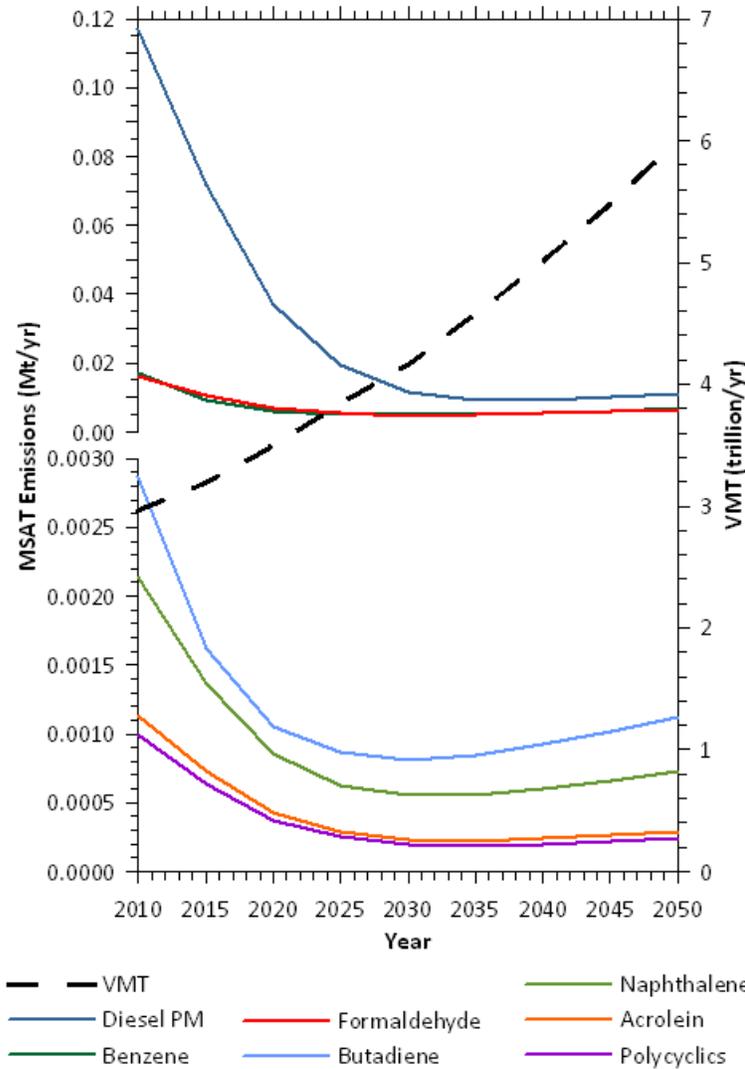
The Federal Highway Administration (FHWA) *Guidance Update on Mobile Source Air Toxic Analysis in NEPA* requires an assessment of Mobile Source Air Toxics (MSAT) under specific conditions. The EPA identified seven compounds with significant contributions from mobile sources that are among the national 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 Build and No-Build traffic volumes and vehicle mixes are substantially the same, as reflected in **Table 4**, the 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 this project is to reduce roadway congestion and improve traffic flow and safety at the intersection and improve pedestrian safety and transit access by constructing a grade separated interchange. The proposed design provides on and off ramps from north and south bound MD 210 to Kerby Hill Road/Livingston Road, as well as a service road along SB MD 210

connecting with Kerby Hill Road. This project has been determined to generate minimal air quality impacts for CAA 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 3**). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

**FIGURE 3:
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

From a NEPA perspective, it is analytically problematic to conduct a project level cumulative effects analysis of greenhouse gas emissions on a global-scale problem. Also, while Criteria Pollutant emissions last in the atmosphere for months, CO₂ emissions remain in the atmosphere far longer - over 100 years - and therefore require a much more sustained, intergenerational effort. Finally, due to the interactions between elements of the transportation system as a whole, project-level emissions analyses would be less informative than ones conducted at regional, state, or national levels. Because of these concerns, FHWA concluded that the CO₂ emissions cannot be usefully evaluated in the same way that other vehicle emissions are addressed. However, it can be stated that estimates of CO₂ emissions, a primary factor in greenhouse gases, are based on the amount of direct energy required. The direct energy values represent the energy required for vehicle propulsion. This energy is a function of traffic characteristics such as volume, speed, distance traveled, vehicle mix, and thermal value of the fuel being used. A review of traffic data for the project reveals that, because there will not be a significant change in traffic volumes from the No-build to Build conditions, CO₂ emission burdens will most likely result in almost no change as compared to the existing conditions.

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 greenhouse gas (GHG) emissions 25 percent from a 2006 baseline by 2020. The Greenhouse Gas Emissions Reduction Act Plan was published July 25, 2013. The Plan 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.

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 (Code of Maryland Regulations 10.18.06.03 D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area. 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

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 National Capital Regional Transportation Planning Board (NCRTPB) via email dated November 27, 2013 for a 15-day Interagency Consultation review and comment period. While FHWA noted a minor editorial comment, which has been addressed, all agencies concurred that the project did not require quantitative hot-spot analysis. This Air Quality Analysis will be placed on SHA's website for a 15 day public review and comment period.

APPENDIX

A: MONITORED AMBIENT AIR QUALITY DATA 2010-2012

B: TRAFFIC DATA

C: INTERAGENCY CONSULTATION

D: PROJECT MAPPING



APPENDIX A: MONITORED AMBIENT AIR QUALITY DATA 2010-2012



2010 CO MONITOR DATA

Duration Description	EPA Region	State	County	City	CBSA	Address	Site ID	POC	Exc Events	Obs	First Max	Second Max	Actual Exceedances
1 HOUR	3	DC	District of Columbia	Washington	Washington-Arlin	Verizon Phone Co.2055 L St. N.W.	110010023	1	None	8688	2.8	2.7	0
1 HOUR	3	DC	District of Columbia	Washington	Washington-Arlin	420 34th Street N.E.,Washington, Dc 20019	110010041	1	None	8568	3.7	3.7	0
1 HOUR	3	MD	Prince George's	Beltsville	Washington-Arlin	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	8107	1.5	1.3	0
1 HOUR	3	VA	Arlington	Arlington	Washington-Arlin	S 18th And Hayes St	510130020	1	None	8516	2.3	2.2	0
1 HOUR	3	VA	Alexandria City	Alexandria	Washington-Arlin	517 N Saint Asaph St, Alexandria Health	515100009	1	None	8524	2.3	2	0
8-HR RUN AVG END HOUR	3	DC	District of Columbia	Washington	Washington-Arlin	Verizon Phone Co.2055 L St. N.W.	110010023	1	None	8755	2.4	2	0
8-HR RUN AVG END HOUR	3	DC	District of Columbia	Washington	Washington-Arlin	420 34th Street N.E.,Washington, Dc 20019	110010041	1	None	8608	3.5	3.1	0
8-HR RUN AVG END HOUR	3	MD	Prince George's	Beltsville	Washington-Arlin	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	8103	1	1	0
8-HR RUN AVG END HOUR	3	VA	Arlington	Arlington	Washington-Arlin	S 18th And Hayes St	510130020	1	None	8559	1.8	1.7	0
8-HR RUN AVG END HOUR	3	VA	Alexandria City	Alexandria	Washington-Arlin	517 N Saint Asaph St, Alexandria Health	515100009	1	None	8561	1.8	1.6	0

2011 CO MONITOR DATA

Duration Description	EPA Region	State	County	City	CBSA	Address	Site ID	POC	Exc Events	Obs	First Max	Second Max	Actual Exceedances
1 HOUR	3	DC	District of Columbia	Washington	Washington-A	Verizon Phone Co.2055 L St. N.W.	110010023	1	None	8680	5	4.2	0
1 HOUR	3	DC	District of Columbia	Washington	Washington-A	420 34th Street N.E.,Washington, Dc 20019	110010041	1	None	8561	2.7	2.7	0
1 HOUR	3	DC	District of Columbia	Washington	Washington-A	2500 1st Street, N.W. Washington Dc	110010043	1	None	2734	3.1	3	0
1 HOUR	3	MD	Prince George's	Beltsville	Washington-A	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	8183	1.7	1.3	0
1 HOUR	3	VA	Arlington	Arlington	Washington-A	S 18th And Hayes St	510130020	1	None	8675	4.2	1.9	0
1 HOUR	3	VA	Alexandria City	Alexandria	Washington-A	517 N Saint Asaph St, Alexandria Health	515100009	1	None	8527	5.7	1.7	0
8-HR RUN AVG END HOUR	3	DC	District of Columbia	Washington	Washington-A	Verizon Phone Co.2055 L St. N.W.	110010023	1	None	8748	2.2	1.9	0
8-HR RUN AVG END HOUR	3	DC	District of Columbia	Washington	Washington-A	420 34th Street N.E., Washington, Dc 20019	110010041	1	None	8590	2.5	2.3	0
8-HR RUN AVG END HOUR	3	DC	District of Columbia	Washington	Washington-A	2500 1st Street, N.W. Washington Dc	110010043	1	None	2730	2.5	2.4	0
8-HR RUN AVG END HOUR	3	MD	Prince George's	Beltsville	Washington-A	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	8145	1.1	0.8	0
8-HR RUN AVG END HOUR	3	VA	Arlington	Arlington	Washington-A	S 18th And Hayes St	510130020	1	None	8704	1.4	1.4	0
8-HR RUN AVG END HOUR	3	VA	Alexandria City	Alexandria	Washington-A	517 N Saint Asaph St, Alexandria Health	515100009	1	None	8540	1.4	1.4	0

Monitor Values Report

Geographic Area: Washington-Arlington-Alexandria, DC-VA-MD-WV

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	8712	2.5	2.2	0	None	1	110010023	Verizon Phone Co.2055 L St. N.W.	Washington	District of Columbia	DC	03
1 HOUR	8633	2.9	2.9	0	None	1	110010041	420 34th Street N.E.,Washington, Dc 20019	Washington	District of Columbia	DC	03
1 HOUR	5754	2.5	2.4	0	None	1	110010043	2500 1st Street, N.W. Washington Dc	Washington	District of Columbia	DC	03
1 HOUR	8571	1.3	1.2	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike Beltsville	Beltsville	Prince George's	MD	03
1 HOUR	8569	1.7	1.6	0	None	1	510130020	S 18th And Hayes St	Arlington	Arlington	VA	03
1 HOUR	5509	1.4	1.4	0	None	1	515100009	517 N Saint Asaph St, Alexandria Health	Alexandria	Alexandria City	VA	03
1 HOUR	3092	1.9	1.7	0	None	1	515100021	3200 Colvin Street	Not in a city	Alexandria City	VA	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 7, 2013

Monitor Values Report

Geographic Area: Washington-Arlington-Alexandria, DC-VA-MD-WV

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	8779	2	1.9	0	None	1	110010023	Verizon Phone Co.2055 L St. N.W.	Washington	District of Columbia	DC	03
8-HR RUN AVG END HOUR	8680	2.8	2.5	0	None	1	110010041	420 34th Street N.E.,Washington, Dc 20019	Washington	District of Columbia	DC	03
8-HR RUN AVG END HOUR	5735	1.9	1.8	0	None	1	110010043	2500 1st Street, N.W. Washington Dc	Washington	District of Columbia	DC	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	8606	1.6	1.4	0	None	1	510130020	S 18th And Hayes St	Arlington	Arlington	VA	03
8-HR RUN AVG END HOUR	5512	1.1	1	0	None	1	515100009	517 N Saint Asaph St, Alexandria Health	Alexandria	Alexandria City	VA	03
8-HR RUN AVG END HOUR	3100	1.6	1.6	0	None	1	515100021	3200 Colvin Street	Not in a city	Alexandria City	VA	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 7, 2013

2010 PM 2.5 MONITOR DATA

Duration Description	EPA Region	State	County	City	CBSA	Address	Site ID	POC	Exc Event	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Arithmetic Mean
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	420 34th Street N.E., Washington, Dc 20019	110010041	1	None	339	62.2	36.8	35.9	35.1	28	11
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	420 34th Street N.E., Washington, Dc 20019	110010041	2	None	59	37.1	25.8	20.1	19.3	26	11.4
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	Park Services Office 1100 Ohio Drive	110010042	1	None	116	35.1	25.2	23.2	22.5	23	11
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	2500 1st Street, N.W. Washington Dc	110010043	1	None	336	34.1	33	31.1	30.3	26	10.5
24 HOUR	3	MD	Montgomery	Rockville	Washington-Arl	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	240313001	1	None	50	18.6	17.7	17.2	16.9	19	9.1
24 HOUR	3	MD	Prince George's	Bladensburg	Washington-Arl	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	240330025	1	None	115	35.7	32.4	24.9	24.9	25	11.5
24 HOUR	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	107	34.4	20.3	19.8	18.6	20	9.4
24 HOUR	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	2	None	12	17.2	14.4	14	13.8	17	9.8
24 HOUR	3	MD	Prince George's	Greater Upper Marlboro	Washington-Arl	Pg County Equestrian Center, 14900 Pennsylvania Ave.	240338003	1	None	112	21.4	21.3	20.9	19.9	21	9.5
24 HOUR	3	MD	Prince George's	Greater Upper Marlboro	Washington-Arl	Pg County Equestrian Center, 14900 Pennsylvania Ave.	240338003	2	None	27	19.3	18.6	15.1	14.2	19	10.1
24 HOUR	3	VA	Arlington	Arlington	Washington-Arl	S 18th And Hayes St	510130020	1	None	108	34.1	23	21.8	20.5	22	10.3
24 HOUR	3	VA	Arlington	Arlington	Washington-Arl	S 18th And Hayes St	510130020	2	None	101	34.6	23.4	22.1	20.4	22	10.4
24 HOUR	3	VA	Fairfax	Groveton	Washington-Arl	Sta. 46-B9, Lee Park, Telegraph Road	510590030	1	None	358	35.5	33.7	31.8	30.7	24	9.9
24 HOUR	3	VA	Fairfax	Annandale	Washington-Arl	6507 Columbia Pike	510591005	1	None	55	20.4	18.9	17.1	16.2	19	9.7
24 HOUR	3	VA	Fairfax	McLean	Washington-Arl	Lewinsville 1437 Balls Hill Rd	510595001	1	None	56	20	19.8	19.4	18.9	20	10.5
24 HOUR	3	VA	Loudoun	Not in a city	Washington-Arl	38-I, Broad Run High School, Ashburn	511071005	1	None	117	36.9	23.4	19.6	19.6	20	10.3
24 HOUR	3	VA	Alexandria City	Alexandria	Washington-Arl	517 N Saint Asaph St, Alexandria Health	515100009	1	None	116	36.2	28.6	24	23.2	24	11.3
24-HR BLK AVG	3	MD	Montgomery	Rockville	Washington-Arl	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	240313001	3	None	352	35.8	33.8	33.1	29.6	28	11.1
24-HR BLK AVG	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	3	None	352	39.5	38.7	38.1	32.6	27	12.1

2011 PM 2.5 MONITOR DATA

Duration Description	EPA Region	State	County	City	CBSA	Address	Site ID	POC	Exc Events	Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Arithmetic Mean
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	420 34th Street N.E.,Washington, Dc 20019	110010041	1	None	340	34	28.1	27.8	26.8	25	10.4
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	420 34th Street N.E.,Washington, Dc 20019	110010041	2	None	60	29.2	25	20.7	18.1	25	9.4
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	Park Services Office 1100 Ohio Drive	110010042	1	None	124	30.7	26.9	26.2	24.7	26	10.2
24 HOUR	3	DC	District of Columbia	Washington	Washington-Arl	2500 1st Street, N.W. Washington Dc	110010043	1	None	336	30.6	30.2	27.4	27.3	25	10.3
24 HOUR	3	MD	Prince George's	Bladensburg	Washington-Arl	Bladensburg Volunteer Fire Department, 4213 Edmondson Road	240330025	1	None	108	27	25.4	22.6	21.6	23	10.1
24 HOUR	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	1	None	123	24.7	22	21.8	21	22	8.7
24 HOUR	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	2	None	37	24.3	15.1	12.7	12.7	24	8.2
24 HOUR	3	MD	Prince George's	Greater Upper Marlboro	Washington-Arl	Pg County Equestrian Center, 14900 Pennsylvania Ave.	240338003	1	None	118	28.8	25.8	21.1	20.4	21	8.9
24 HOUR	3	MD	Prince George's	Greater Upper Marlboro	Washington-Arl	Pg County Equestrian Center, 14900 Pennsylvania Ave.	240338003	2	None	28	15	13.9	12.7	11.9	15	7.8
24 HOUR	3	VA	Arlington	Arlington	Washington-Arl	S 18th And Hayes St	510130020	1	None	56	23.5	21.2	18.1	16.3	21	10.1
24 HOUR	3	VA	Arlington	Arlington	Washington-Arl	S 18th And Hayes St	510130020	2	None	53	23.6	21.9	17.8	16.6	22	10.4
24 HOUR	3	VA	Fairfax	Groveton	Washington-Arl	Sta. 46-B9, Lee Park, Telegraph Road	510590030	1	None	353	29	27.8	27.3	26.5	24	9.2
24 HOUR	3	VA	Loudoun	Not in a city	Washington-Arl	38-I, Broad Run High School, Ashburn	511071005	1	None	118	23.7	23.1	20.5	20.4	21	9.1
24 HOUR	3	VA	Alexandria City	Alexandria	Washington-Arl	517 N Saint Asaph St, Alexandria Health	515100009	1	None	112	26.4	25.7	22.4	21.5	22	10.2
24-HR BLK AVG	3	DC	District of Columbia	Washington	Washington-Arl	2500 1st Street, N.W. Washington Dc	110010043	4	None	305	32.4	30.1	30	26.3	24	10.8
24-HR BLK AVG	3	MD	Montgomery	Rockville	Washington-Arl	Lathrop E. Smith Environmental Education Center, 5110 Meadows Lane	240313001	3	None	331	31.8	30.5	30.2	29.9	25	10.9
24-HR BLK AVG	3	MD	Prince George's	Beltsville	Washington-Arl	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	240330030	3	Included	344	76.1	35.3	31.5	29.5	27	11.8

Monitor Values Report

Geographic Area: Washington-Arlington-Alexandria, DC-VA-MD-WV

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	331	35.5	33.8	31.6	30.8	28	9.8	None	1	110010041	420 34th Street N.E.,Washington, Dc 20019	Washington	District of Columbia	DC	03
24 HOUR	112	31.2	27.7	24.3	22.5	24	9.8	None	1	110010042	Park Services Office 1100 Ohio Drive	Washington	District of Columbia	DC	03
24 HOUR	360	34.1	31.9	28.4	26.1	24	9.6	None	1	110010043	2500 1st Street, N.W. Washington Dc	Washington	District of Columbia	DC	03
24 HOUR	120	31	23.6	23.5	22	24	9.3	None	2	110010043	2500 1st Street, N.W. Washington Dc	Washington	District of Columbia	DC	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	96	24.7	23.8	15	14.7	24	7.9	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	119	33.4	22.1	21.8	20.8	22	9.4	None	1	510130020	S 18th And Hayes St	Arlington	Arlington	VA	03
24 HOUR	115	33.5	22.2	21.8	20.9	22	9.5	None	2	510130020	S 18th And Hayes St	Arlington	Arlington	VA	03
24 HOUR	346	38.1	26.6	26.2	21.5	21	8.7	None	1	510590030	Sta. 46-B9, Lee Park, Telegraph Road	Groveton	Fairfax	VA	03

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Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: November 7, 2013

Monitor Values Report

Geographic Area: Washington-Arlington-Alexandria, DC-VA-MD-WV

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	349	37.3	37	34.7	33.8	28	11.6	Included	4	110010043	2500 1st Street, N.W. Washington Dc	Washington	District of Columbia	DC	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

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Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: November 7, 2013

APPENDIX B: TRAFFIC DATA





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

Darrell B. Mobley, Acting Secretary
Melinda B. Peters, Administrator

MARYLAND DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Ms. Barbara Solberg, Chief
Highway Design Division
Office of Highway Development

ATTN: Mr. James Gray
Project Manager

FROM: Morteza Tadayon, Chief
Travel Forecasting and Analysis Division
Office of Planning and Preliminary Engineering

DATE: January 11, 2013

SUBJECT: MD 210 at Kerby Hill Road Interchange Construction
Title Sheet/Loadometer Data
Prince George's County
Project Number: PG700B21

In response to your recent request for title sheet traffic, loadometer data and turning movement counts corresponding to the above location for the years 2013, 2017(estimated build year) and 2035, we offer the following information:

MD 210 North of Kerby Hill Road/Livingston Road:

	<u>2013</u>	<u>2017</u>	<u>2035</u>
Average Daily Traffic (ADT)	81,750	85,525	102,850
Design Hour Volume (DHV)	7%	7%	7%
Directional Distribution of DHV	78%	78%	78%
Percent Trucks- ADT	6%	6%	6%
Percent Trucks- DHV	5%	5%	5%

Truck Data Breakdown:

	2A	3D	2S1	2S2	3S2	3S3	Total
2013	2786	905	87	349	628	150	4905
2017	2916	947	91	365	157	157	5133
2035	3504	1139	110	439	790	189	6171

Ms. Barbara Solberg
Page Two

We recommend using Weigh-in-Motion Station 5010-88 to produce the needed loadometer data. An electronic copy of the loadometer data has been forwarded as an attachment to this memorandum to the Pavement and Geotechnical Division.

The average daily and design hour traffic volumes for FHWA vehicle Classes 1-13 are provided in the following table:

Class	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Average Daily Volume	110	67984	8998	496	2150	787	72	414	596	139	3	0	0	81750
Design Hour Volume	5	3778	469	13	89	32	1	32	16	7	0	0	0	4442

In addition, we have also provided turning movement counts for the following locations:

- MD 210 at Kerby Hill Road
- MD 414 (Oxon Hill Road) at National Avenue
- MD 414 (Oxon Hill Road) at Harbor View Road
- MD 414 (Oxon Hill Road) at Bald Eagle Road
- MD 414 (Oxon Hill Road) at Livingston Road
- Livingston Road at St Barnabas Road
- MD 414 (Oxon Hill Road) at Ramp on/off I-495 (Capital Beltway) EB
- MD 414 (Oxon Hill Road) at Ramp off NB MD 210

If you have any questions or concerns, please contact the writer at 410-545-5648 or Ms. Lisa Shemer, Assistant Division Chief, Travel Forecasting and Analysis Division at 410-545-5640.

By:


Marion Milton
Data Services Engineering Division

Attachment: Turning Movement Counts (8)

cc: Mr. Paulo DeSousa
Mr. Shekhar Murkute
Mr. John Thomas
Ms. Kim Tran

APPENDIX C: INTERAGENCY CONSULTATION



Shawn Burnett

From: Joan Rohlfs [jrohlfs@mwkog.org]
Sent: Wednesday, November 27, 2013 10:39 AM
To: Christina Brandt; 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'molly.berger@maryland.gov'
Cc: Shawn Burnett; Nicole M. Hebert
Subject: RE: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

The National Capital Region Transportation Planning Board's air quality conformity determination of the 2013 Constrained Long Range Plan and the FY2013-2018 TIP shows both plans to be within the approved 2009 and 2010 Motor Vehicle Emissions Budgets for the metropolitan Washington region. As the MD 210 at Kirby Hill/Livingston Road project was included in the FY2013-2018 TIP, the project meets the requirements of the Clean Air Act and needs no further quantitative hot-spot analysis.

Joan Rohlfs
Environmental Resources Program Director
Metropolitan Washington Council of Governments
777 North Capitol St., NE
Washington, D.C. 20002-4239
Tel: 202-962-3358
Fax: 202-962-3203

From: Christina Brandt [mailto:CBrandt@sha.state.md.us]
Sent: Wednesday, November 27, 2013 9:54 AM
To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'molly.berger@maryland.gov'; Joan Rohlfs
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 210 at Kirby Hill/Livingston Rd project located in Prince George's 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 FY 2013-2018 TIP as Project ID 4879.

Please review and provide concurrence/comments prior to December 11, 2013.

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: Tuesday, December 03, 2013 11:35 AM
To: Shawn Burnett
Subject: FW: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

From: Molly Berger -MDE- [mailto:molly.berger@maryland.gov]
Sent: Tuesday, December 03, 2013 11:33 AM
To: Christina Brandt
Subject: Re: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

Chrissy,

MDE is fine with the MD 210 at Kirby Hill/Livingston Road Air Quality Analysis.

Thanks,

Molly

On Wed, Nov 27, 2013 at 9:54 AM, Christina Brandt <CBrandt@sha.state.md.us> wrote:

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 210 at Kirby Hill/Livingston Rd project located in Prince George's 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 FY 2013-2018 TIP as Project ID 4879.

Please review and provide concurrence/comments prior to December 11, 2013.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

12/13/2013

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: [410-545-2874](tel:410-545-2874)

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



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--

Molly Berger

Natural Resource Planner

Air Quality Planning Program, ARMA

Maryland Department of the Environment

1800 Washington Blvd.

Baltimore MD 21230

Phone: 410.537.3234

Email: molly.berger@maryland.gov



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12/13/2013

Jen Rohrer

From: Christina Brandt <CBrandt@sha.state.md.us>
Sent: Tuesday, December 10, 2013 6:02 PM
To: Shawn Burnett; Nicole M. Hebert
Subject: FW: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

From: Khadr, Asrah [<mailto:Khadr.Asrah@epa.gov>]
Sent: Tuesday, December 10, 2013 4:53 PM
To: Christina Brandt
Cc: Becoat, gregory; Rudnick, Barbara; McCurdy, Alaina
Subject: RE: MD 210 at Kirby Hill/Livingston Rd - 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: Wednesday, November 27, 2013 9:54 AM
To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory; Khadr, Asrah; 'molly.berger@maryland.gov'; 'jrohlf@mwcog.org'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

Good Morning,

Attached is the PM2.5 Conformity Determination for the MD 210 at Kirby Hill/Livingston Rd project located in Prince George's 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 FY 2013-2018 TIP as Project ID 4879.

Please review and provide concurrence/comments prior to December 11, 2013.

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: Thursday, December 12, 2013 9:27 PM
To: Shawn Burnett
Subject: FW: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

From: Jeanette.Mar@dot.gov [mailto:Jeanette.Mar@dot.gov]
Sent: Thursday, December 12, 2013 7:11 PM
To: Christina Brandt
Subject: RE: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

Chrissy:

I concur that the MD 210 at Kirby Hill/Livingston Road project meets the requirements of the CAA and 40 CFR 93 and does not need an additional quantitative hot-spot analysis.

I have one minor editorial comment on page 2, please change "Mobile Air Source Toxics" to "Mobile Source Air Toxics".

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: Wednesday, November 27, 2013 9:54 AM
To: 'bhug@mde.state.md.us'; Mar, Jeanette (FHWA); 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat,gregory'; 'Khadr, Asrah'; 'molly.berger@maryland.gov'; 'jrohlf@mwcog.org'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 210 at Kirby Hill/Livingston Rd - Air Quality Interagency Consultation

Good Morning,

Attached is the PM_{2.5} Conformity Determination for the MD 210 at Kirby Hill/Livingston Rd project located in Prince George's 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 FY 2013-2018 TIP as Project ID 4879.

Please review and provide concurrence/comments prior to December 11, 2013.

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

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APPENDIX D: PROJECT MAPPING





INDEX OF SHEETS
SEE SHEET 2

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
PLANS OF PROPOSED HIGHWAY
S.H.A. CONTRACT NO. PG7005170
FEDERAL AID PROJECT NO.
MD 210 AT KERBY HILL RD /LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

AASHTO DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2001 PUBLICATION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MUTCD

ALL WORK ON THIS PROJECT SHALL CONFORM TO: THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008 REVISIONS THEREOF OR ADDITIONS THERETO; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK; THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

COMPLETENESS OF DOCUMENTS

THE STATE HIGHWAY ADMINISTRATION SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM THE STATE HIGHWAY ADMINISTRATION'S CASHIER'S OFFICE. FAILURE TO ATTACH ADDENDA MAY CAUSE THE BID TO BE IRREGULAR.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY AND HANDICAPPED IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION

ENVIRONMENTAL INFORMATION

MDE # ##-XX-####

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. XX1234567 SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATIONS BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND REMEDIATION PROGRAM.

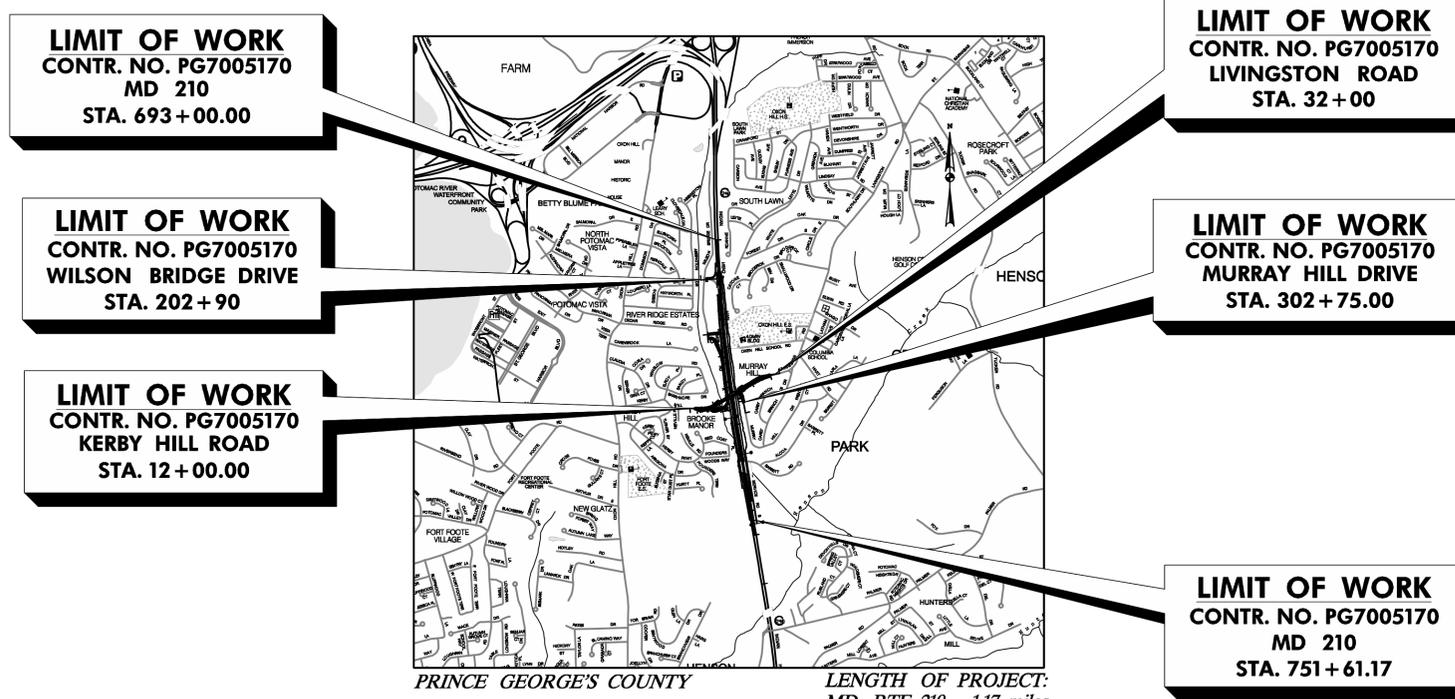
SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

STANDARD STABILIZATION NOTE :

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDER DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION :

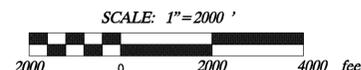
I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.



Maryland Department of Transportation
State Highway Administration

Office of Highway Development
Preliminary Investigation
 DATED May 29, 2013

HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88



R-O-W PLAT NUMBERS	SURVEY BOOK NUMBERS
112021	31381
158016	16946
A-7415	24908
A-2554	31446
A-9426	25124
A-2463	25150
A-2549	
A-2554	
30229	
30230	

DESIGN DESIGNATION			
ROADWAY	MD 210		
CONTROLS / YEARS	2013	2017	2035
AVERAGE DAILY TRAFFIC (A.D.T.)	81,750	85,525	102,850
DESIGN HOURLY VOLUME (D.H.V.)	7%	7%	7%
DIRECTIONAL DISTRIBUTION	78%	78%	78%
% TRUCKS - A.D.T.	6%	6%	6%
% TRUCKS - D.H.V.	5%	5%	5%
DESIGN SPEED M. P. H.	55		
FUNCTIONAL CLASSIFICATION	URBAN FREEWAY EXPRESSWAY		
CONTROL OF ACCESS	PARTIAL		
INTENSITY OF DEVELOPMENT	RURAL		
TERRAIN	ROLLING		
ANTICIPATED POSTED SPEED	45		

REVISIONS	
NOTE: See Sheet No. 2 for List of Revised Sheet Numbers	

REVIEWED AND APPROVAL RECOMMENDED DATE

 CHIEF, HIGHWAY DESIGN DIVISION

APPROVAL RECOMMENDED DATE

 DIRECTOR, OFFICE OF HIGHWAY DEVELOPMENT

APPROVED DATE

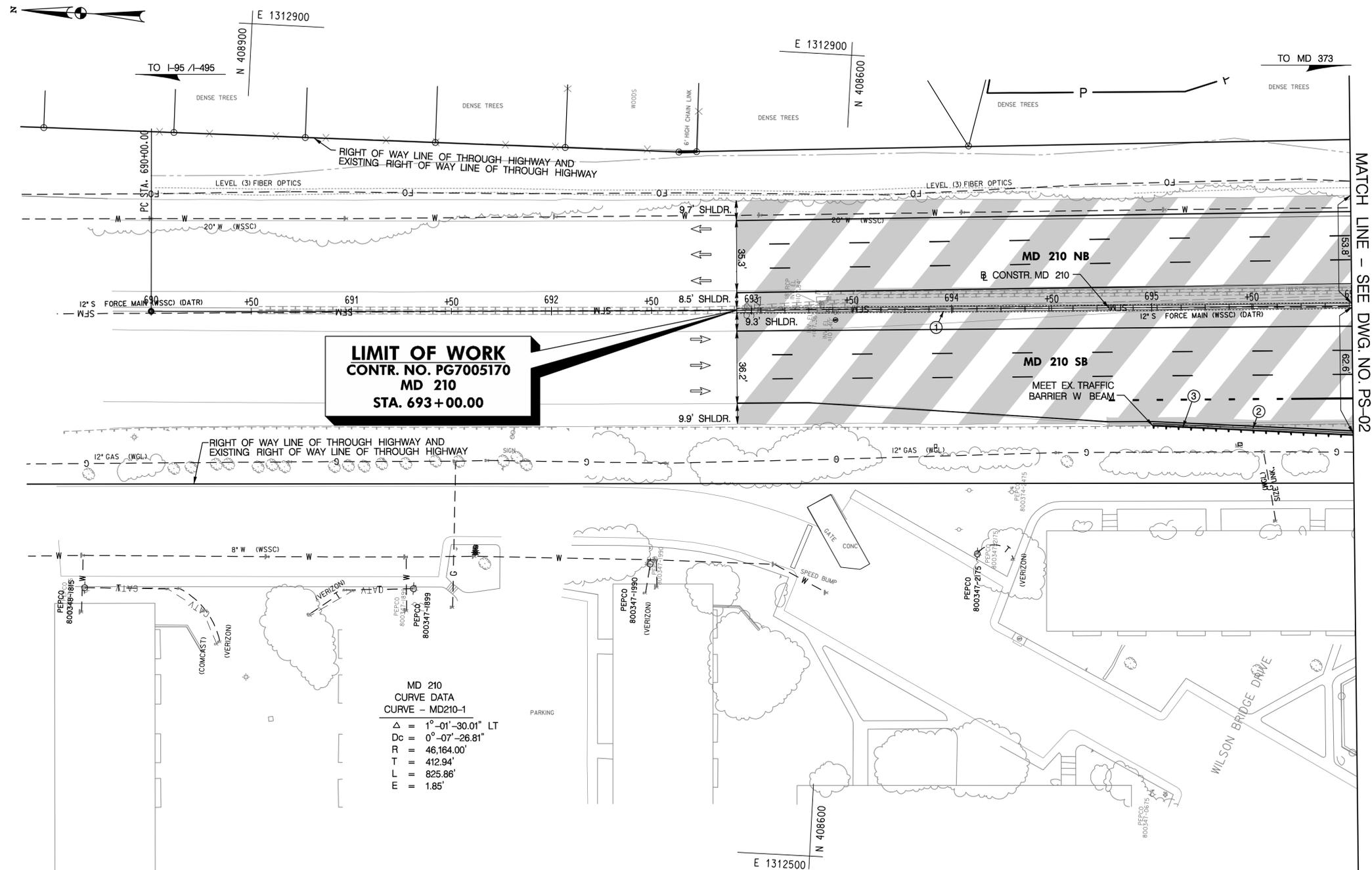
 DEPUTY ADMINISTRATOR / CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE AND ENVIRONMENT

WHITNEY BAILEY COX & MAGNANI, LLC
 849 Fairmount Ave., Suite 100 Baltimore, MD 21288
 Tel. 410-512-4500 Fax: 410-524-4100
 www.wbcm.com

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

BY: MLEDEBUR

- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST



MD 210
 CURVE DATA
 CURVE - MD210-1
 Δ = 1°-01'-30.01" LT
 Dc = 0°-07'-26.81"
 R = 46,164.00'
 T = 412.94'
 L = 825.86'
 E = 1.85'



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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
 INTERCHANGE IMPROVEMENTS

DATUM: NAD 8391 Horizontal
 NAVD 88 Vertical

ROADWAY LEGEND	R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS.....	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS.....	
BRIDGE STRUCTURE		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 APRIL 2013 CONTRACT NO. PG7005170			
DESIGNED BY	WML	COUNTY	PRINCE GEORGE'S
DRAWN BY	CEOCSY	LOGMILE	
CHECKED BY	SMU	HORIZONTAL SCALE	
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO.	PS-01	OF	15
		SHEET NO.	14 OF 96

BY: mledibur

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 Tel. 410-512-4500 Fax: 410-524-4100
 www.wbcm.com

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

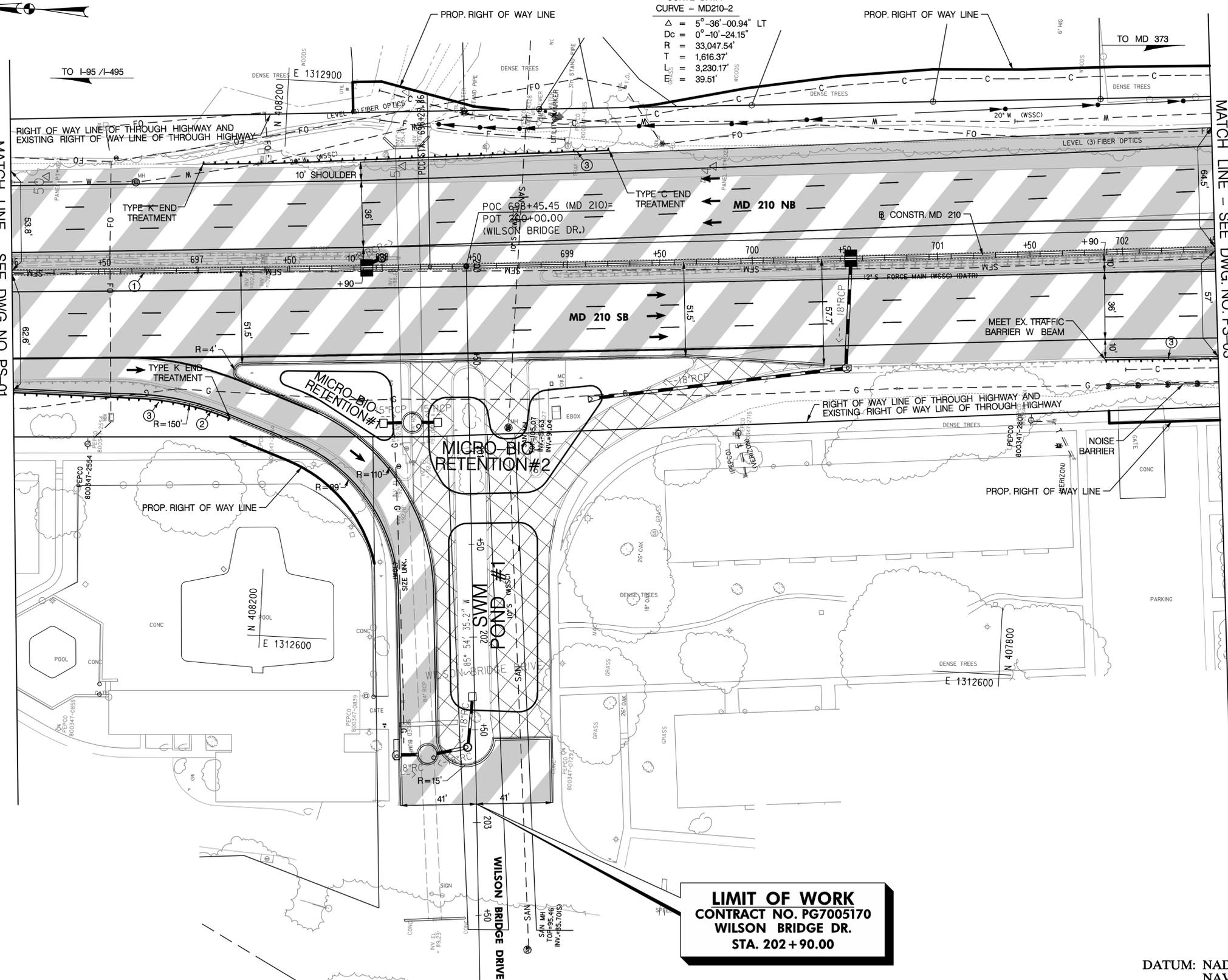
- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST

MD 210
CURVE DATA
CURVE - MD210-2
 $\Delta = 5^{\circ}-36'-00.94" \text{ LT}$
 $D_c = 0^{\circ}-10'-24.15"$
 $R = 33,047.54'$
 $T = 1,616.37'$
 $L = 3,230.17'$
 $E = 39.51'$



MATCH LINE - SEE DWG. NO. PS-01

MATCH LINE - SEE DWG. NO. PS-03



LIMIT OF WORK
CONTRACT NO. PG7005170
WILSON BRIDGE DR.
STA. 202+90.00

DATUM: NAD 8391 Horizontal
 NAVD 88 Vertical



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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
 INTERCHANGE IMPROVEMENTS

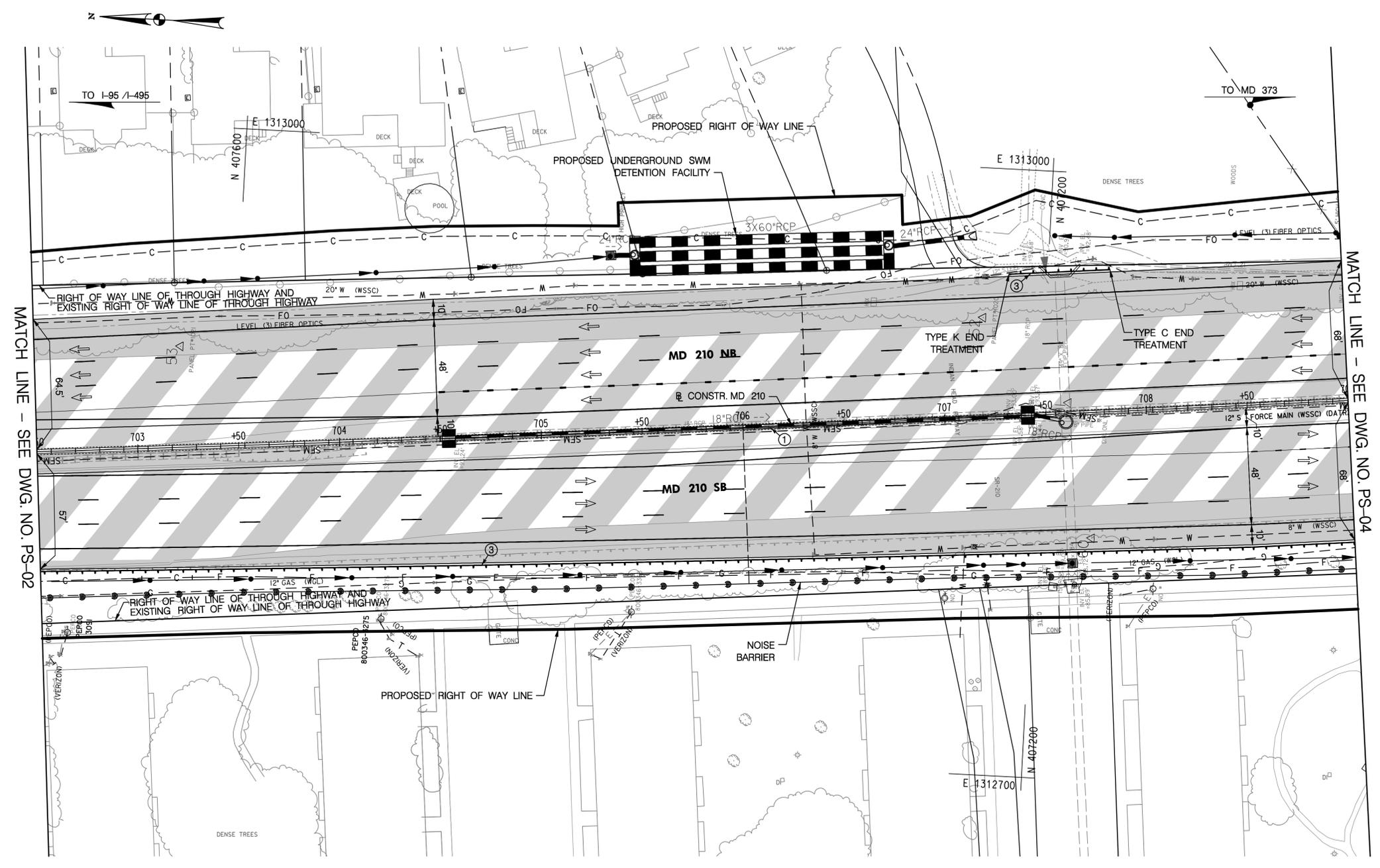
ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS.....	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS.....	
BRIDGE STRUCTURE		PIPE & DRAINAGE SCHEDULE.....	
		GEOMETRIC LAYOUT SHEETS.....	
		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 APRIL 2013 CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-02	OF 15 SHEET NO. 15 OF 96

BY: mledibur

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 www.wbcm.com

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

MD 210 @ KERBY HILL RD LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		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	

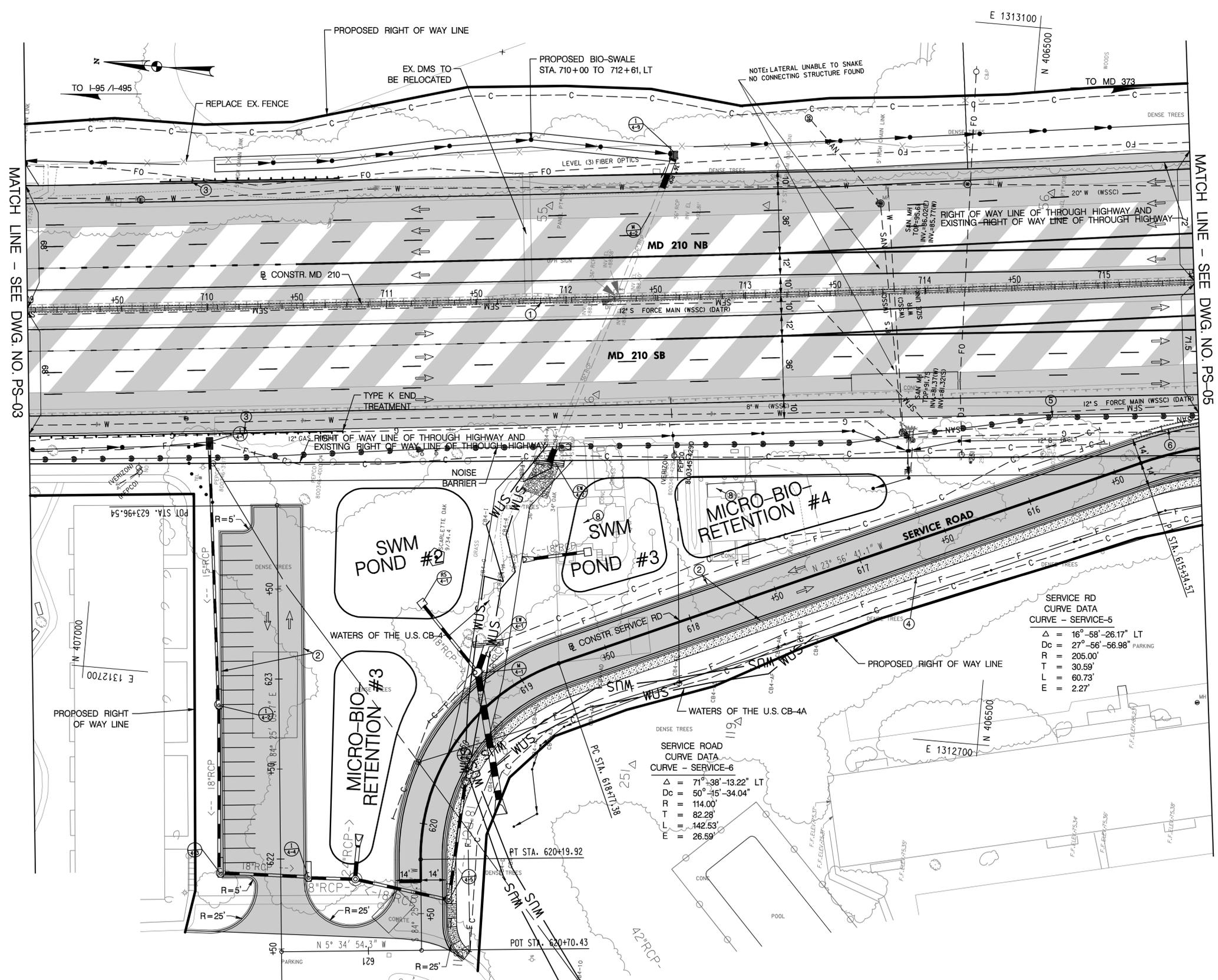
ROADWAY PLAN			
SCALE 1" = 30' ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170			
DESIGNED BY	WML	COUNTY	PRINCE GEORGE'S
DRAWN BY	CEOCSY	LOGMILE	
CHECKED BY	SMU	HORIZONTAL SCALE	
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO.	PS-03	OF	15
SHEET NO.	16	OF	96

BY: mledibur

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Tel. 410-512-4500 Fax: 410-524-4100
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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

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- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER 12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ④ 5" CONCRETE SIDEWALK
- ⑤ RETAINING WALL /NOISE BARRIER
- ⑥ 42 INCH F SHAPE CONCRETE TRAFFIC BARRIER SINGLE FACE
- ⑧ REMOVAL OF EXISTING BUILDING



SERVICE RD CURVE DATA
CURVE - SERVICE-5

Δ	= 16°-58'-26.17" LT
Dc	= 27°-56'-56.98" PARKING
R	= 205.00'
T	= 30.59'
L	= 60.73'
E	= 2.27'

SERVICE ROAD CURVE DATA
CURVE - SERVICE-6

Δ	= 71°-38'-13.22" LT
Dc	= 50°-15'-34.04"
R	= 114.00'
T	= 82.28'
L	= 142.53'
E	= 26.59'

ROADWAY LEGEND

[Symbol]	FULL DEPTH RECONSTRUCTION
[Symbol]	GRIND & VARIABLE DEPTH OVERLAY
[Symbol]	EXISTING SIDEWALK/PAVEMENT REMOVAL
[Symbol]	BRIDGE STRUCTURE

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	

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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY PLAN

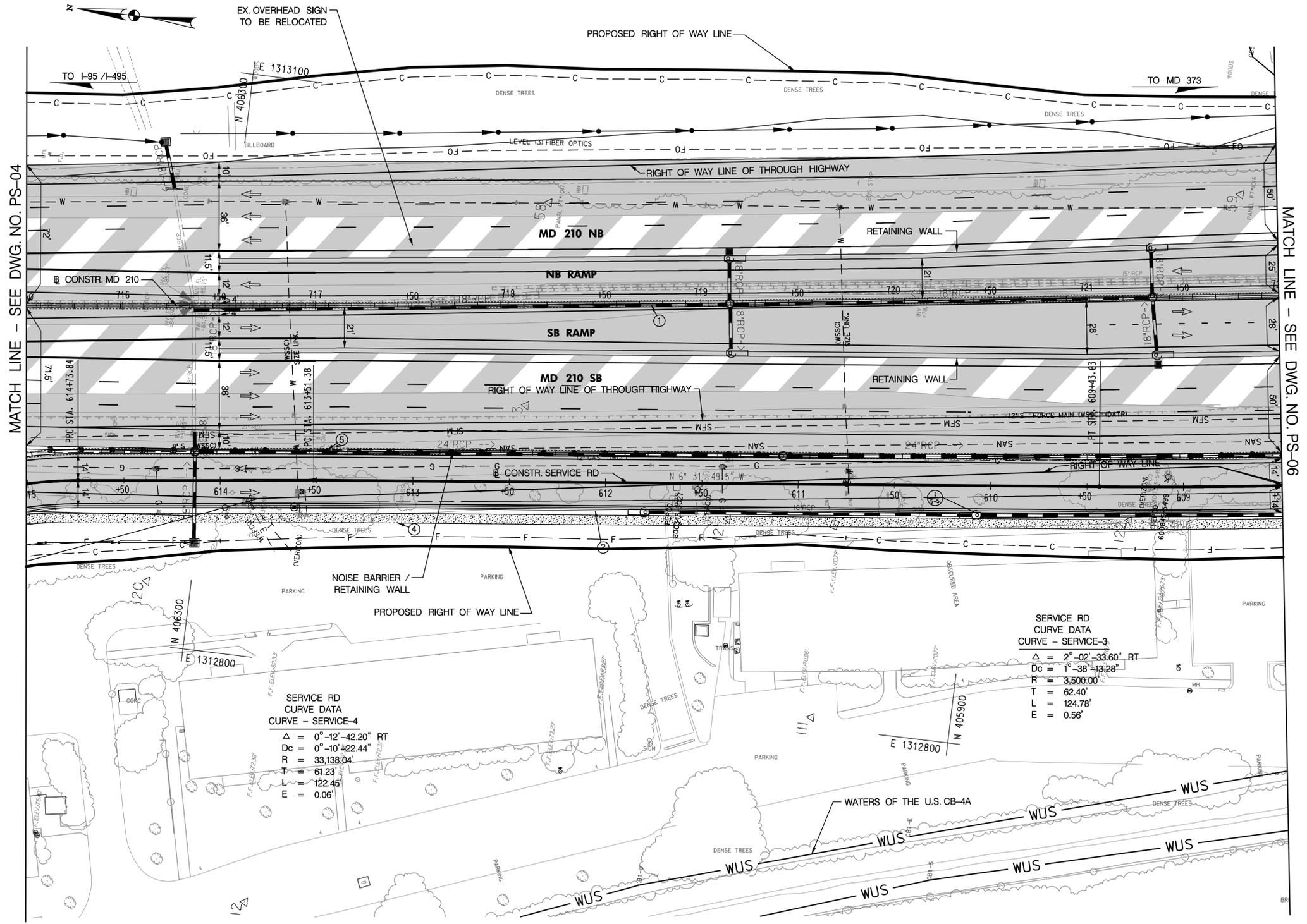
SCALE 1" = 30'	ADVERTISED DATE APRIL 2013	CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S	
DRAWN BY CEOCSY	LOGMILE	
CHECKED BY SMU	HORIZONTAL SCALE	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO. PS-04	OF 15	SHEET NO. 17 OF 96



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BY: mledibur

- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ④ 5" CONCRETE SIDEWALK
- ⑤ RETAINING WALL /NOISE BARRIER



MATCH LINE - SEE DWG. NO. PS-04

MATCH LINE - SEE DWG. NO. PS-06



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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		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	

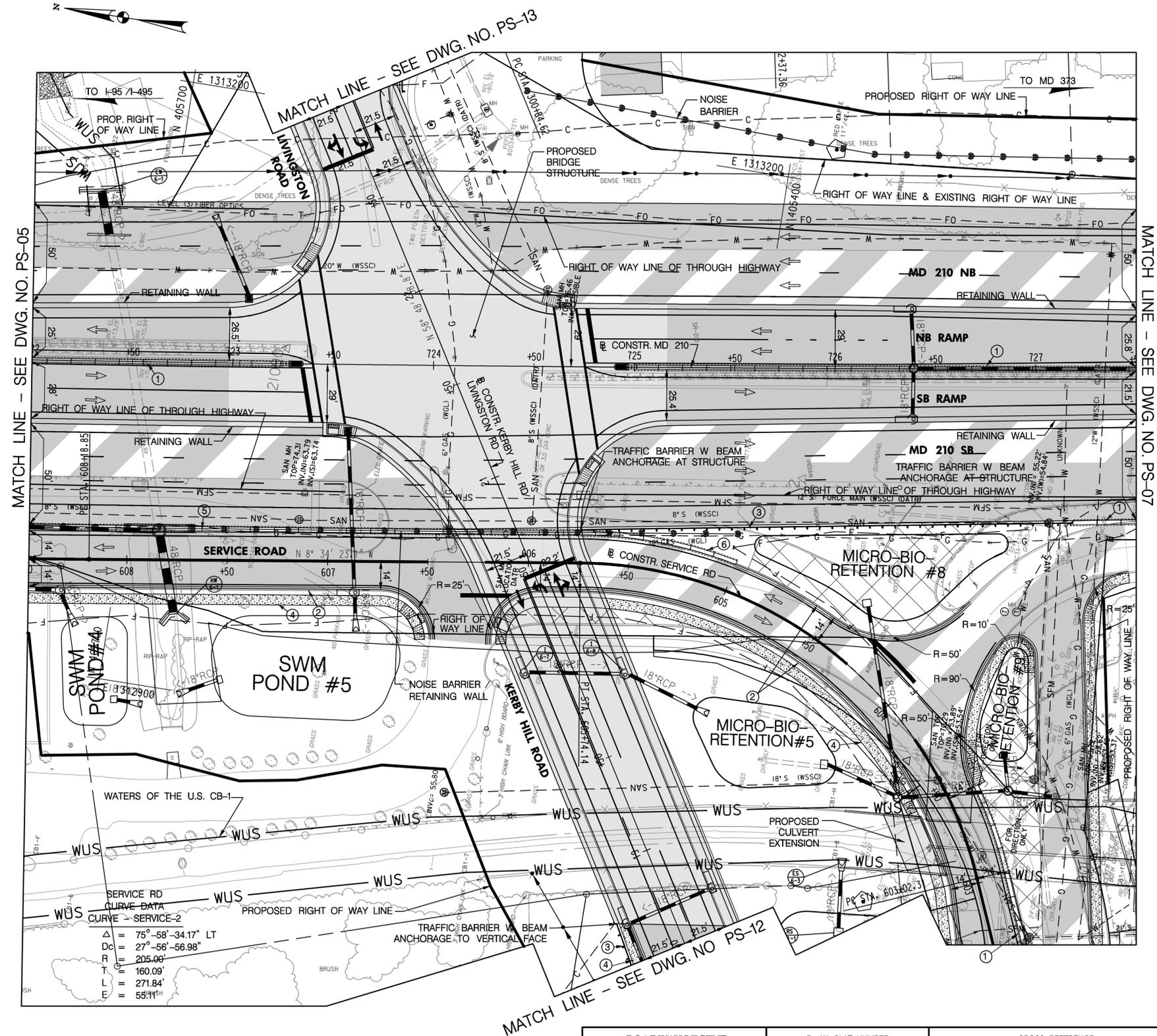
ROADWAY PLAN	
SCALE 1" = 30'	ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-05	OF 15 SHEET NO. 18 OF 96

BY: mledibur

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WBCM
ARCHITECTURE ENGINEERING CONSTRUCTION

- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ④ 5" CONCRETE SIDEWALK
- ⑤ RETAINING WALL /NOISE BARRIER
- ⑥ 42 INCH F SHAPE CONCRETE TARRFFIC BARRIER SINGLE FACE



MATCH LINE - SEE DWG. NO. PS-05

MATCH LINE - SEE DWG. NO. PS-07

SERVICE RD CURVE DATA
 CURVE -> SERVICE-2
 $\Delta = 75^\circ - 58' - 34.17''$ LT
 $D_c = 27^\circ - 56' - 56.98''$
 $R = 205.00'$
 $L = 160.09'$
 $T = 271.84'$
 $E = 55.1145'$

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE
FULL DEPTH RECONSTRUCTION		
GRIND & VARIABLE DEPTH OVERLAY		
EXISTING SIDEWALK/PAVEMENT REMOVAL		
BRIDGE STRUCTURE		

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 HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
 INTERCHANGE IMPROVEMENTS

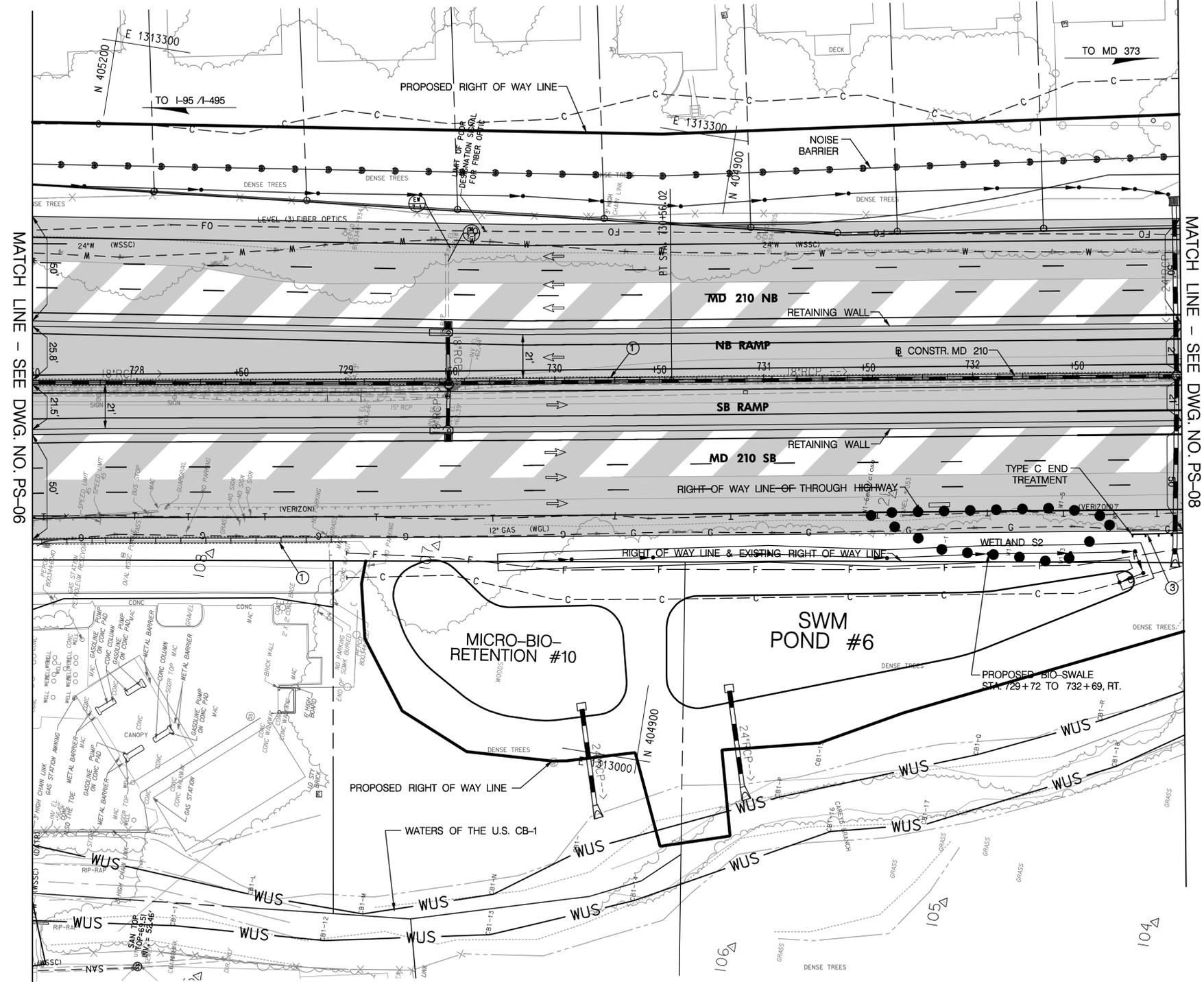
ROADWAY PLAN

SCALE 1" = 30'	ADVERTISED DATE APRIL 2013	CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S	
DRAWN BY CEOCSY	LOGMILE	
CHECKED BY SMU	HORIZONTAL SCALE	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO. PS-06	OF 15	SHEET NO. 19 OF 96

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WBCM
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- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST



MATCH LINE - SEE DWG. NO. PS-06

MATCH LINE - SEE DWG. NO. PS-08



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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		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	

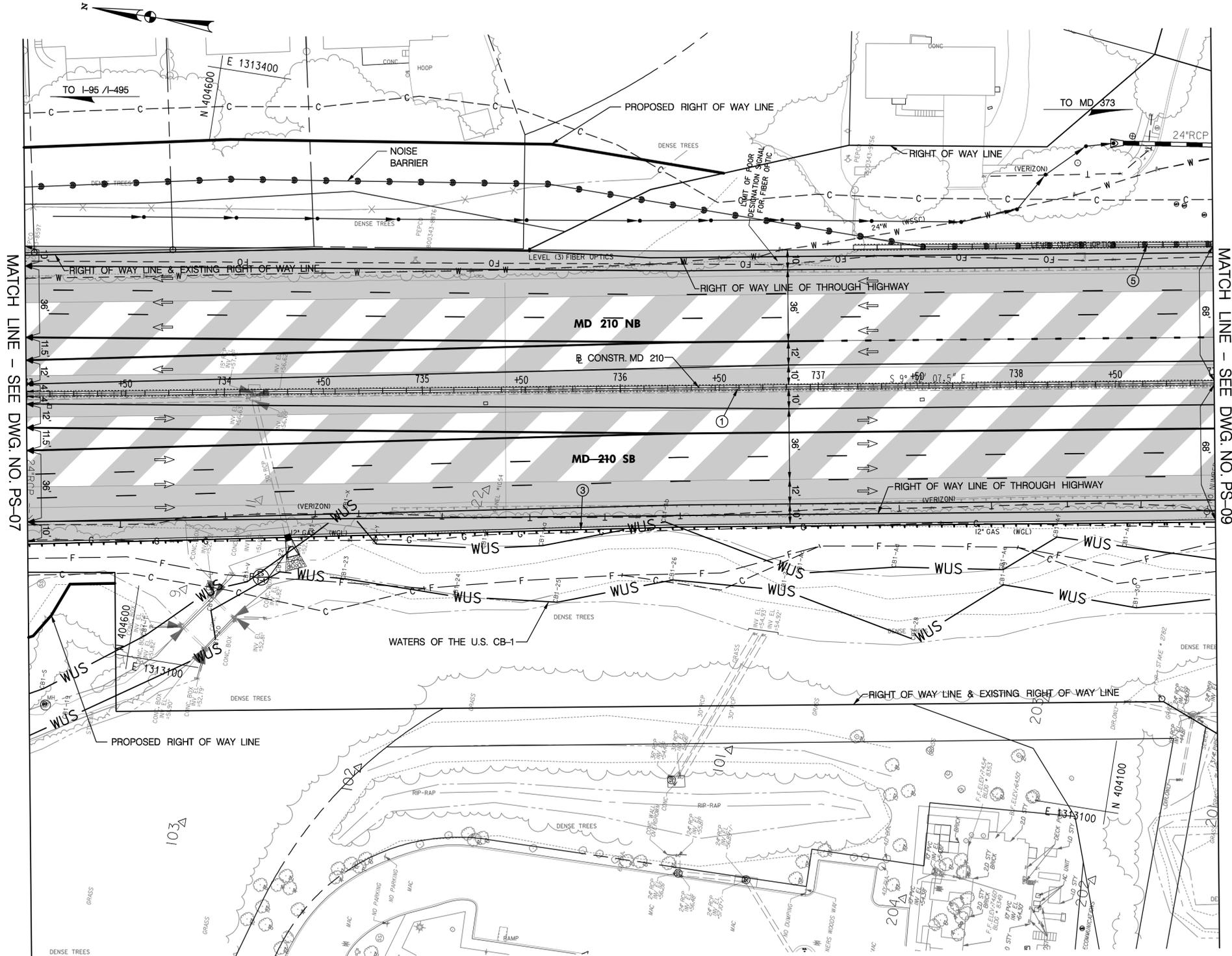
ROADWAY PLAN	
SCALE 1" = 30'	ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-07	OF 15 SHEET NO. 20 OF 96

BY: miedebur -

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ARCHITECTURE ENGINEERING CONSTRUCTION

- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ⑤ RETAINING WALL /NOISE BARRIER



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MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		PIPE & DRAINAGE SCHEDULE	
		GEOMETRIC LAYOUT SHEETS	
		ROADWAY PLAN SHEETS	
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ROADWAY PLAN	
SCALE 1" = 30'	ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-08	OF 15 SHEET NO. 21 OF 96



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- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ⑤ RETAINING WALL /NOISE BARRIER
- ⑦ TRAFFIC BARRIER W BEAM MEDIAN BARRIER



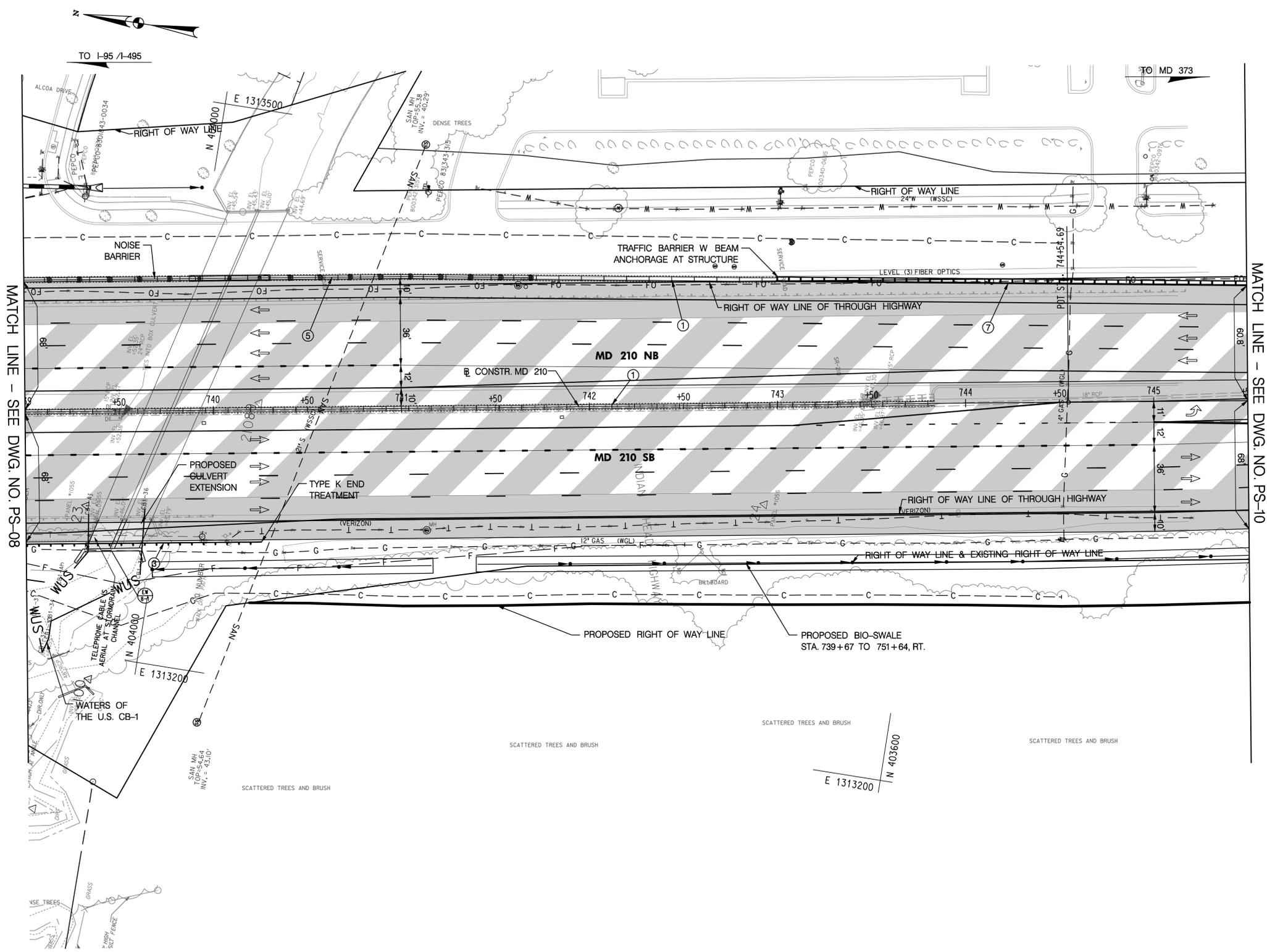
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DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170	
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DRAWN BY CEOCSY LOGMILE	
CHECKED BY SMU HORIZONTAL SCALE	
F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE	
DRAWING NO. PS-09 OF 15	SHEET NO. 22 OF 96

ROADWAY LEGEND	R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS.....	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS.....	
BRIDGE STRUCTURE		PIPE & DRAINAGE SCHEDULE.....	
		GEOMETRIC LAYOUT SHEETS.....	
		ROADWAY PLAN SHEETS.....	
		ROADWAY PROFILE SHEETS.....	
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		UTILITIES.....	



BY: miedebur

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⑦ TRAFFIC BARRIER W BEAM MEDIAN BARRIER



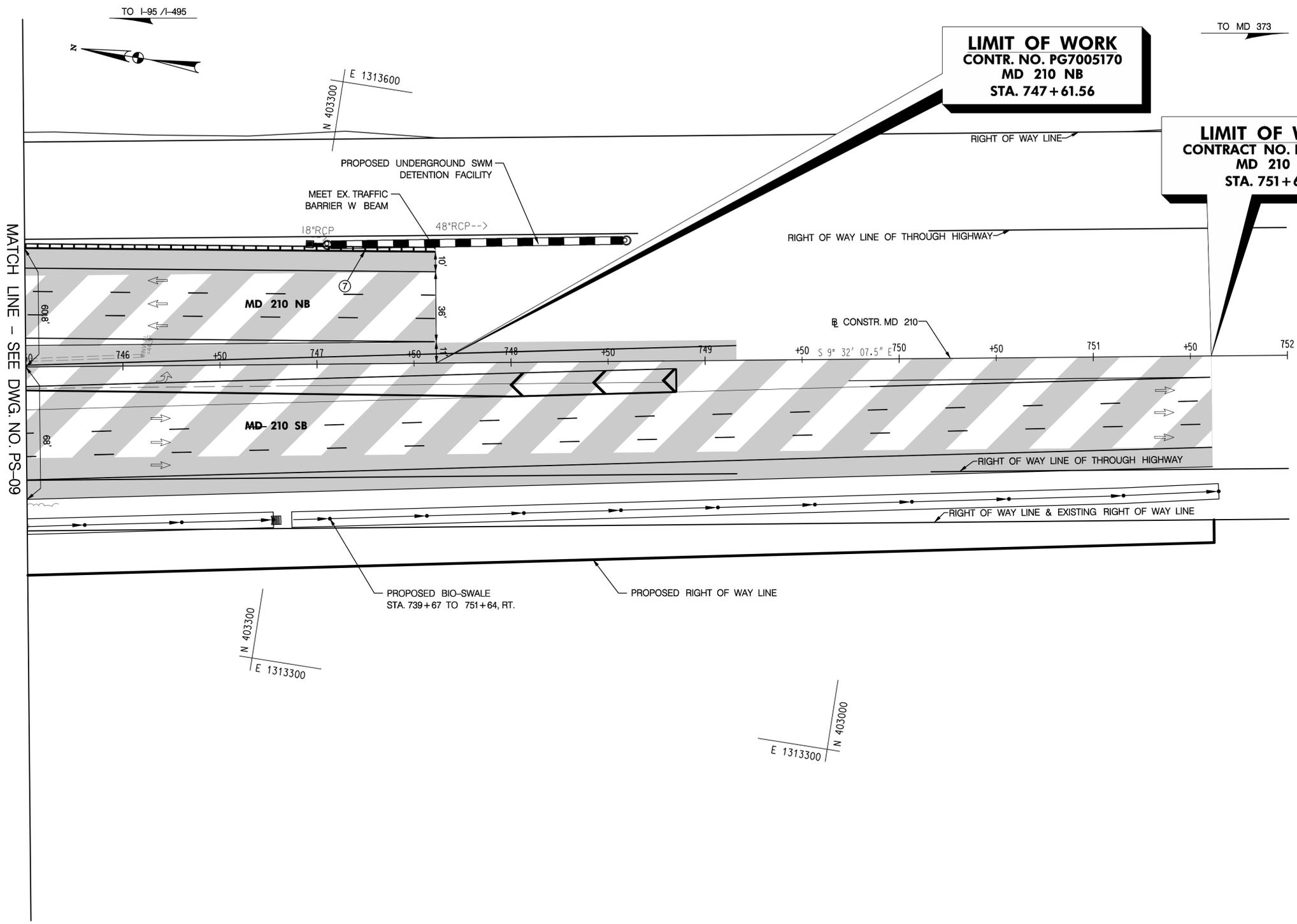
STATE OF MARYLAND
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HIGHWAY DESIGN DIVISION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
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ROADWAY PLAN

SCALE 1" = 30' ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170	
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-10	OF 15 SHEET NO. 23 OF 96

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOs.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		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	



BY: mledibur

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ARCHITECTURE ENGINEERING CONSTRUCTION

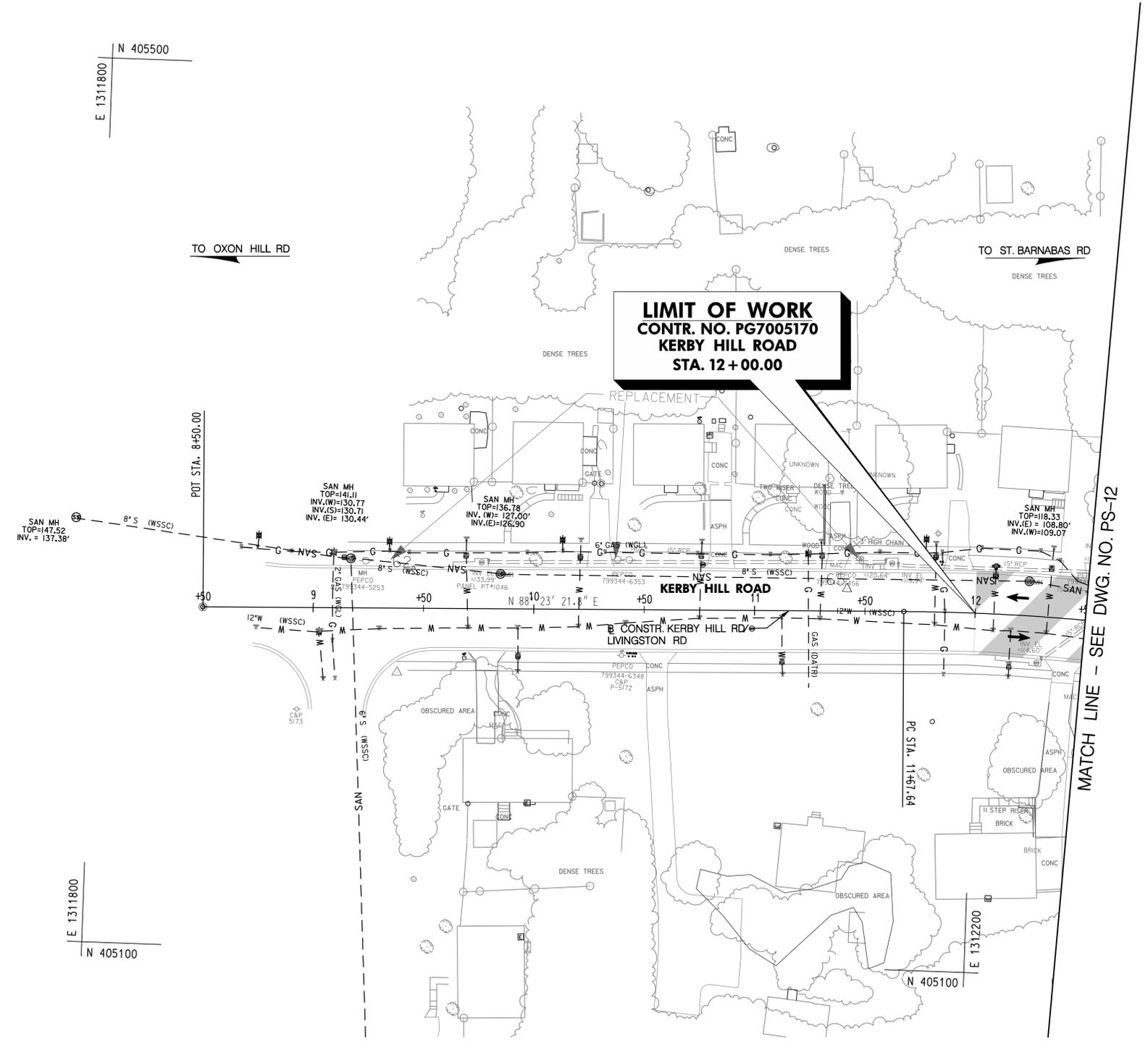


N 405500
E 1311800

TO OXON HILL RD

TO ST. BARNABAS RD

LIMIT OF WORK
CONTR. NO. PG7005170
KERBY HILL ROAD
STA. 12+00.00



E 1311800
N 405100



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

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND		R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS	ROADWAY PLAN	
	FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.		SCALE 1" = 30' ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170	
	GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS		DESIGNED BY WML COUNTY PRINCE GEORGE'S	
	EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS		DRAWN BY CEOCSY LOGMILE	
	BRIDGE STRUCTURE		PIPE & DRAINAGE SCHEDULE		CHECKED BY SMU HORIZONTAL SCALE	
			GEOMETRIC LAYOUT SHEETS		F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE	
			ROADWAY PLAN SHEETS		DRAWING NO. PS-11 OF 15 SHEET NO. 24 OF 96	
			ROADWAY PROFILE SHEETS			
			TRAFFIC CONTROL SHEETS			
			EROSION & SEDIMENT CONTROL			
			SIGNING & MARKING PLANS			
			LANDSCAPE PLAN SHEETS			
			UTILITIES			

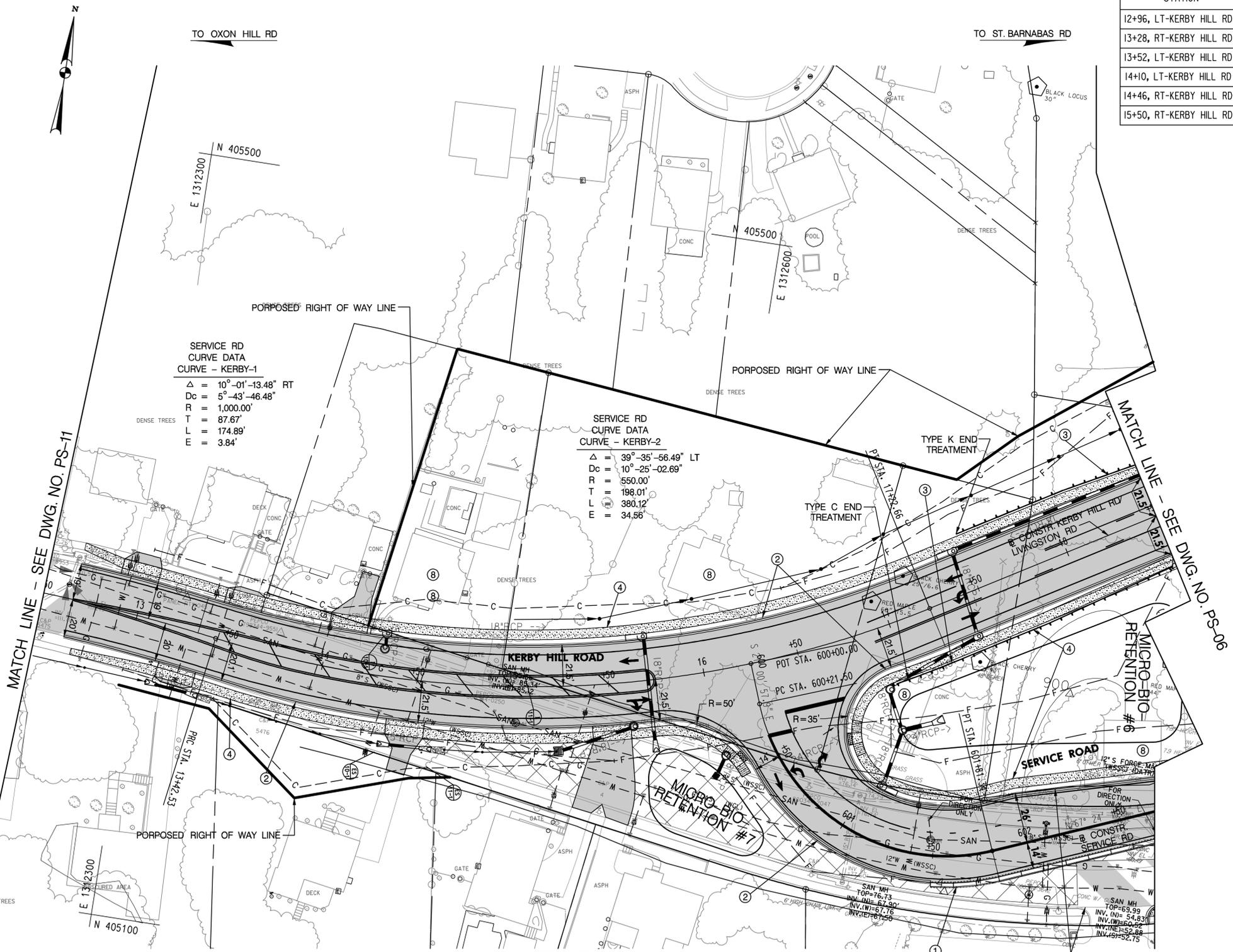
BY: mledibur

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Tel. 410-512-4500 Fax: 410-524-4100
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ENTRANCE SCHEDULE	
STATION	REMARKS
12+96, LT-KERBY HILL RD	STD. NO. 630.01
13+28, RT-KERBY HILL RD	STD. NO. 630.01
13+52, LT-KERBY HILL RD	STD. NO. 630.01
14+10, LT-KERBY HILL RD	STD. NO. 630.01
14+46, RT-KERBY HILL RD	STD. NO. 630.01
15+50, RT-KERBY HILL RD	STD. NO. 630.01

- ① 42 INCH F SHAPE CONCRETE MEDIAN TRAFFIC BARRIER.
- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER 12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ④ 5" CONCRETE SIDEWALK
- ⑤ REMOVAL OF EXISTING BUILDING



SHA STATE OF MARYLAND
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 STATE HIGHWAY ADMINISTRATION
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MD 210 @ KERBY HILL RD/LIVINGSTON RD
 INTERCHANGE IMPROVEMENTS

ROADWAY PLAN

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DESIGNED BY WML	COUNTY PRINCE GEORGE'S	
DRAWN BY CEOCSY	LOGMILE	
CHECKED BY SMU	HORIZONTAL SCALE	
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO. PS-12	OF 15	SHEET NO. 25 OF 96

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.	
GRIND & VARIABLE DEPTH OVERLAY		TYPICAL SHEETS	
EXISTING SIDEWALK/PAVEMENT REMOVAL		SUPERELEVATION SHEETS	
BRIDGE STRUCTURE		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	

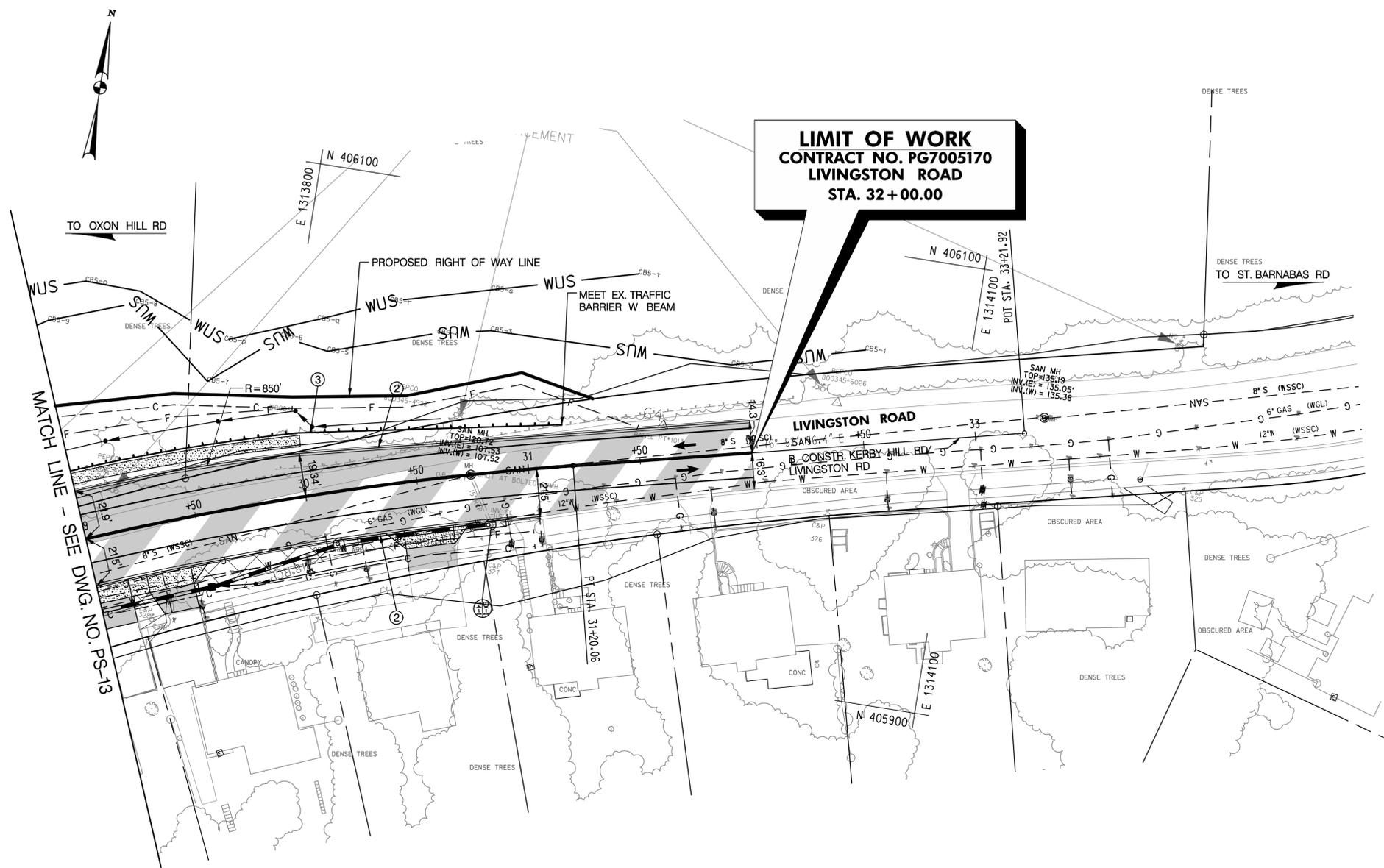
BY: mledbur

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

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- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST

LIMIT OF WORK
CONTRACT NO. PG7005170
LIVINGSTON ROAD
STA. 32+00.00



ENTRANCE SCHEDULE	
STATION	REMARKS
29+05, RT-LIVINGSTON RD	STD. NO. 630.03
29+33, RT-LIVINGSTON RD	STD. NO. 630.03
30+52, RT-LIVINGSTON RD	STD. NO. 630.03

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 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

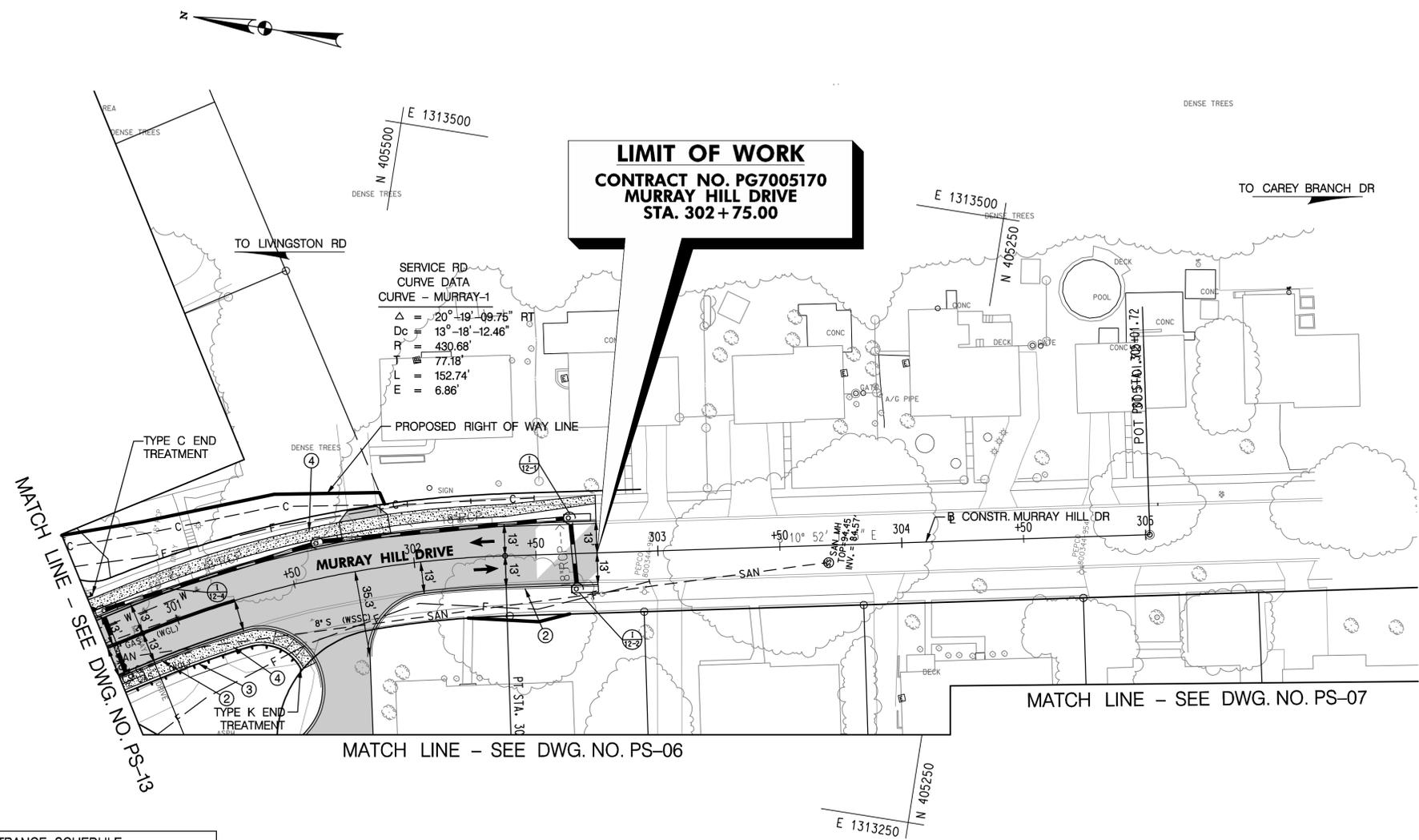
MD 210 @ KERBY HILL RD/LIVINGSTON RD
 INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS																								
<ul style="list-style-type: none"> FULL DEPTH RECONSTRUCTION GRIND & VARIABLE DEPTH OVERLAY EXISTING SIDEWALK/PAVEMENT REMOVAL BRIDGE STRUCTURE 		<table border="1"> <thead> <tr> <th>ITEM</th> <th>SHEET NOs.</th> </tr> </thead> <tbody> <tr><td>TYPICAL SHEETS</td><td>.....</td></tr> <tr><td>SUPERELEVATION SHEETS</td><td>.....</td></tr> <tr><td>PIPE & DRAINAGE SCHEDULE</td><td>.....</td></tr> <tr><td>GEOMETRIC LAYOUT SHEETS</td><td>.....</td></tr> <tr><td>ROADWAY PLAN SHEETS</td><td>.....</td></tr> <tr><td>ROADWAY PROFILE SHEETS</td><td>.....</td></tr> <tr><td>TRAFFIC CONTROL SHEETS</td><td>.....</td></tr> <tr><td>EROSION & SEDIMENT CONTROL</td><td>.....</td></tr> <tr><td>SIGNING & MARKING PLANS</td><td>.....</td></tr> <tr><td>LANDSCAPE PLAN SHEETS</td><td>.....</td></tr> <tr><td>UTILITIES</td><td>.....</td></tr> </tbody> </table>	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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ROADWAY PLAN	
SCALE 1" = 30'	ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170
DESIGNED BY WML	COUNTY PRINCE GEORGE'S
DRAWN BY CEOCSY	LOGMILE
CHECKED BY SMU	HORIZONTAL SCALE
F.A.P. NO. SEE TITLE SHEET	VERTICAL SCALE
DRAWING NO. PS-14	OF 15 SHEET NO. 27 OF 96



- ② STD. TYPE 'A' COMBINATION CURB AND GUTTER
12" GUTTER PAN, 10" DEPTH.
- ③ TRAFFIC BARRIER W BEAM USING 6 FOOT POST
- ④ 5" CONCRETE SIDEWALK



SERVICE RD
CURVE DATA
CURVE - MURRAY-1

Δ =	20°-19'-09.76" RT
Dc =	13°-18'-12.46"
R =	430.68'
T =	77.18'
L =	152.74'
E =	6.86'

ENTRANCE SCHEDULE	
STATION	REMARKS
301+83, LT-MURRAY HILL DR	STD. NO. 630.01

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STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS																								
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UTILITIES																										

ROADWAY PLAN			
SCALE 1" = 30' ADVERTISED DATE APRIL 2013 CONTRACT NO. PG7005170			
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DRAWN BY	CEOCSY	LOGMILE	
CHECKED BY	SMU	HORIZONTAL SCALE	
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO.	PS - 15	OF	15
		SHEET NO.	28 OF 96

