State Highway Administration
Maryland Department of Transportation

February 18, 2015

MD 210 - Livingston Road / Kerby Hill Road Interchange - PG7005170

Technical Proposal

Prepared by:

CORMAN CONSTRUCTION

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

Copy

TABLE OF CONTENTS

2.09.01 Cover Letter
JMT's Professional Liability Insurance Certification
Addenda / Questions and Responses

2.09.02 Project Technical Elements & Approach **01**

2.09.03 Project Schedule & Project Management **13**

2.09.04 Environmental Approach **27**

2.09.05 Legal & Financial Information **33**
Teaming Agreement 35
Subcontract Between Corman and JMT 39
JMT's Professional Liability Insurance Certification 55

Appendix
ATC 03 59
ATC 04 65
ATC 05 75
ATC 06 81
ATC 07 89
ATC 12 97
ATC 13 105
ATC 14 115
ATC 15 121
ATC 16 127
ATC 17 135
ATC 18 141
ATC 19 149
ATC 20 155
ATC 23 161
ATC 24 167
ATC 25 183

2.09.01 Cover Letter

JMT Professional Liability Insurance Certification
Addenda / Questions and Responses

Addendum 1

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

November 20, 2014

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 1

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **January 28, 2015** and the Price Proposal submission date is still scheduled for **February 10, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document as well as updates to the Additional Information being provided:

REQUEST FOR PROPOSALS

Page No.	Description
112	REVISED TC 2.07.03; Appendices G to include Pavement Details and renamed I. Design Files/Other Pertinent Information.
113	REVISED TC 2.07.03 to add Conceptual Project Schedule under I.
131	DELETED the bullets for, "Design and construction management including quality control and partnering with the Administration" and "Safety management including for all roadway users, workers, site visitors, and others." from TC 2.09.03 B.
132-133	REVISED TC 2.09.05 to limit Legal & Financial Information to 1 page. DELETED TC 2.09.05 Part C. REVISED TC 2.10.01 to state "Alternate bids using foreign steel will not be allowed for this contract." Replaced page 133 due to revisions and deletions to Sections 2.09.05 and Section 2.10.01 of the RFP Package resulting in text shifts.
150	REVISED TC 3.05.05 to require "A description of any potential mitigating features" as part of the minimum information required for a Design Exception.
157	REVISED TC 3.05.18 to define the requirement for pricing the approved advanced clearing and grubbing plans for utility installation.

Addendum 1

Contract No.: PG7005170
Addendum No. 1
November 20, 2014
Page 2

195	REVISED TC 3.09.08.01 to add "where feasible" to the end of the first sentence.
195	REVISED TC 3.09.08.03 to add "unless it is determine that the installation of traffic barrier w-beam is not feasible" to the end of the first sentence.
220-229	REVISED TC 3.10.06 – Project-Specific Data and Criteria for pavement design in its entirety.
248	REVISED TC 3.11.04.01.02 J 5) – to replaced "roadway surface" with "parapet".
253	REVISED TC 3.11.04.03.03 to add "I. The DB Team shall determine if noise absorptive treatments are required on the retaining walls in order to satisfy the noise abatement requirements of this project. If absorptive treatments are required, the DB Team shall meet all aesthetic requirements outlined in Section 3.11.05-Structure Aesthetics."
254	REVISED TC 3.11.04.04.01 – Description; to delete "If the Design-Builder proposes to eliminate or introduce new noise barriers to the project, the proposed changes shall be submitted in writing to the Office of Highway Development (OHD) for review. OHD may then develop any site-specific requirements beyond those provided by the Design-Builder, to be used in the design of the structures."
254	REVISED TC 3.11.04.04.04 C. to read "The vertical profile of the top of noise barrier shall be equal to or above the acoustic profile."
255	REVISED TC 3.11.04.04.04 D. to state "….7 ft. above the finished ground line."
255	REVISED TC 3.11.04.04.04 F. to state "….shall be a minimum of 2 in…."
339	REVISED the contact information for Comcast in TC 3.15.01.02.
353	REVISED Design Consultant to add 3. GAI Consultants, Inc. in TC 3.15.01.07.08.06
453-453A	REVISED TC 7.10 to include requirements for Cost Breakdown related to the LS Design Engineering item and revised reference to 112 to read 109 in last paragraph on page 453.
693-694	DELETED SP Third Party Concrete Testing

NOTICE TO CONTRACTORS

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Additional Information on ProjectWise:

Addendum 1

Contract No.: PG7005170
Addendum No. 1
November 20, 2014
Page 3

ADDED Pavement Details at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\
PG7005170\G-Appendices\05-Pavement Details\

ADDED Conceptual Project Schedules at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\
PG7005170\I-Design Files – Other Pertinent Information\14 – Conceptual Project Schedules

REPLACED Geometric Layout Sheet No. 12 thru 17 at the following location on ProjectWise:
pw:\\ SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design Build\
PG7005170\H-Compiled Concept Plans\01-Compiled Concept Plans\

REPLACED Roadway Plan Sheet No. 18 thru 42 at the following location on ProjectWise:
pw:\\ SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design
Build\PG7005170\ H-Compiled Concept Plans\01-Compiled Concept Plans\

REPLACED General Plan and Elevation Sheet No. 64 at the following location on ProjectWise:
pw:\\ SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design
Build\PG7005170\H-Compiled Concept Plans\01-Compiled Concept Plans\

REPLACED Utilities Relocation Concept Plan Sheet No. 123 thru 145 at the following location on ProjectWise:
pw:\\ SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\ Design Build\
PG7005170\H -Compiled Concept Plans\01-Compiled Concept Plans\

REPLACED Electric and Communication Relocation Concept Plan Sheet No. 146 thru 168 at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design Build\
PG7005170\H -Compiled Concept Plans\01-Compiled Concept Plans\

ADDED Comcast Utility Construction Plans at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design Build\
PG7005170\H -Compiled Concept Plans\01-Compiled Concept Plans\

REPLACED pGS-P003_MD210.dgn, pGS-P004_MD210.dgn, pGS-P007_MD210.dgn, and pGSP008_MD210.dgn at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-
Build\PG7005170\H - Conceptual Plan Sheets\07-Geometry Sheets\

ADDED As-built plans and the inspection report for Small Structure No. 16227X01at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMSO1\Documents\Design Build\
PG7005170 \H -Compiled Concept Plans\14-MD210 As-Builts\

REPLACED baselines_100scale.dgn at the following locations on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-
Build\PG7005170\I - Design Files\01-Roadway Design File\
And:

Addendum 1

Contract No.: PG7005170
Addendum No. 1
November 20, 2014
Page 4

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files\02-Horizontal Baseline\

ADDED Auto-Turn design file: aturn_md210.dgn, to the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design Build\PG7005170\I - Design Files\01-Roadway Design File\

REPLACED mDD-001_MD210.dgn at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files\10-Conceptual Drainage File\

Questions regarding this Addendum No. 1 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

FOR DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 2

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

November 25, 2014

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 2

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **January 28, 2015** and the Price Proposal submission date is still scheduled for **February 10, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
121	REVISED TC 2.08.02.8 to change the ATC submittal date to December 9, 2014.
121	REVISED TC 2.08.02.8 to include an ATC re-submittal date of January 7, 2014.

Questions regarding this Addendum No. 2 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

for

DOUGLAS H. SIMMONS, DEPUTY ADMINISTRATOR/CHIEF ENGINEER FOR
PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 3

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

December 22, 2014

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 3

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is rescheduled for **February 18, 2015** and the Price Proposal submission date is rescheduled for **March 3, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
57A-57B	ADDED Notice to Contractors to define the provisions associated with a "No Excuse Bonus" in order to expedite construction and minimize inconveniences to the traveling public.
118	REVISED the Letter of Interest (LOI) due date to February 11, 2015.
120	REVISED the Final Date for Receipt of Proposer's Questions to February 4, 2015.
121-122	REVISED paragraph four to allow additional ATC's directly related to the modifications in Addendum No. 3. Replaced page 122 due to revisions on page 121 resulting in text shifts.
124-125	REVISED the Technical Proposal due date to February 18, 2015 and the Price Proposal due date to March 3, 2015.
130-131	REVISED last paragraph under TC 2.09.03. Replaced page 131 due to revisions on page 130 resulting in text shifts.
133	REVISED TC 2.10.02 & 2.10.03 and their references to Wetland and/or Waterway Impact Reduction and Forest Impact Reduction Incentives. Corrected overlapping text as a result of Addendum No. 1, page 133.

Addendum 3

Contract No.: PG7005170
Addendum No. 3
December 22, 2014
Page 2

	ADDED New Sections TC 2.10.08 – Contract Time.
137-137A	REVISED TC 2.11.03 to include the methodology to determine the Adjusted Price. Added page 137A due to revisions on page 137 resulting in text shifts.
140	REVISED 2.11.08, first paragraph, and last sentence, to replace the term "Price" with "Adjusted Price Proposal".
184-185	REVISED TC 3.07.04 to include the remaining 3 properties and the results of the Hazardous Material Survey.
361	REVISED first paragraph under TC 3.15.01.07.09.06.
389-390	REVISED TC 3.17.03.03.03 A. to define the requirements for the water quality credit and debit.
395-395B	REVISED to include the requirements for the acoustical optimization process and methodologies.
395C-396	REVISED 3.18.01; 4., to define sound-absorptive treatment requirements and their approximate locations.
847	REVISED Contract Time to be entered by Proposer.

NOTICE TO CONTRACTORS

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Additional Information on ProjectWise:

ADDED Hazardous Material Survey Report 2 at the following location on ProjectWise:
pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\PG7005170\J-Environmental Documents\03-\Hazardous Material Survey Report

ADDED gINT file at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\PG7005170\G-Appendices\02-\Soil Survey Boring Logs

ADDED Noise Analysis Spread Sheet at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\PG7005170\I-Design Files/Other Pertinent Information\12-\Noise Barrier Spread Sheets

ADDED revised 7MD210.dtm at the following location on ProjectWise:

Addendum 3

Contract No.: PG7005170
Addendum No. 3
December 22, 2014
Page 3

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\
PG7005170\B-Survey & Topographic Files\06-\Existing Surface file

ADDED As-Builts for Retaining Wall 16228RO

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\
PG7005170\H-Conceptual Plan Sheets\14-MD 210 As-Builts\ Retaining Wall 16228RO

Questions regarding this Addendum No. 3 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR
PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 4

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

January 21, 2015

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 4

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **February 18, 2015** and the Price Proposal submission date is still scheduled for **March 3, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
37-40A	REPLACED Federal Wage Rates dated 01/02/2015.
112	REVISED G. Appendices to include Traffic Control Design Requests
113	REVISED to include "L" Office of Structures, Policies and Proceedures
130	REVISED last paragraph to state "18" months.
132	REVISED to eliminate duplicated TC 2.10.02
150-150A	REVISED to note approved design exceptions for design elements associated with Kerby Hill Road and Livingston Road
185	REVISED TC 3.07.05 to change "four" to "two" cellular phones.
189-190	REVISED Design Criteria for Kerby Hill Road, Livingston Road and Murray Hill Drive and added asterisk with statement associated with SE Transition for Kerby Hill Road.

Addendum 4

Contract No.: PG7005170
Addendum No. 4
January 21, 2015
Page 2

207	REVISED TC 3.10.03.02.05.02 to reference 2014 SHA Pavement Design Guide.
221	REVISED first paragraph to state "All new asphalt construction/reconstruction/base widening shall be a minimum of four feet wide".
228	REVISED TC 3.10.06.06 to update the requirements for Flexible Roadway Elements 2, 3, 4.
231	REVISED Table 1 to include AASHTO Standard Bridge Design Specifications.
371-371B	REVISED 3.16.04.06 to include parameters associated with detouring traffic at the Kerby Hill Road/Livingston Road intersection. Added pages 371A-371B to account for text shifts.
373	REVISED Type 1 Lane Closure
380-380A	REVISED 3.16.06 D)
394	REVISED Station limits for Noise Barrier System 4 (NB04) based on the deletion of a portion of NB04 from this Contract.
395B	REVISED to note that the Type I Technical Noise Analysis Report was revised January 16, 2015.

NOTICE TO CONTRACTORS

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Additional Information on ProjectWise:

ADDED Revised Noise Abatement Report dated January 16, 2015 at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\PG7005170\J-Environmental Documents\02-\Noise Abatement Report

ADDED Revised Advanced Clearing Plans and MDE Comments dated January 8, 2015 at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate: SHAEDMSO1\Documents\Design Build\PG7005170\F-Advanced E&S Clearing & Grubbing\1. Advanced E&S Clearing & Grubbing Plan

Addendum 4

Contract No.: PG7005170
Addendum No. 4
January 21, 2015
Page 3

ADDED Revised Concept Roadway Plans to reflect the revised alignment of Noise Barrier 4 at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\01-Compiled Concept Plans\

ADDED Revised proposed right of way file to reflect the revised noise wall alignment at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\D - Right-of-Way\03-Proposed Right-of-Way Line File\

ADDED Revised highway model file and limits of disturbance model file to reflect the revised noise wall alignment at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\01-Roadway Design File\

ADDED Revised drainage model file to remove storm drainage along the location of the removed noise wall at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\10-Conceptual Drainage File\

ADDED Revised processing spreadsheet for revised noise wall alignment at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\13-TMN Data Files\05_Final Report\BarrSys4\PG700_BarrSys4_PEPCOalign-a_BarrAnalysis_l-o-s_dgn_BG_SF.xlsx

ADDED Revised TMN runs and line of sight check for revised noise wall alignment at the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I – Design Files & Other Pertinent Information\13-TMN Data Files \BarrSys4\PEPCOalign-g\

Addendum 4

Contract No.: PG7005170
Addendum No. 4
January 21, 2015
Page 4

Questions regarding this Addendum No. 4 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 5

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

January 30, 2015

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 5

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **February 18, 2015** and the Price Proposal submission date is still scheduled for **March 3, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
150	REVISED approved design exceptions.
189	REVISED Design Criteria for Kerby Hill Road and Livingston Road.
190	REVISED Design Criteria for Murray Hill Dr. and included statement to note for design standards for Prince George's County roads.
238	REVISE 3.11.03.04.03 Wind Loads, to remove reference to "noise walls".
254	REVISED 3.11.04.04.02 to eliminate LRFD design requirements and replaced with "AASHTO Standard Bridge Design Specifications".

Addendum 5

Contract No.: PG7005170
Addendum No. 5
January 30, 2015
Page 2

Questions regarding this Addendum No. 5 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 6

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

February 06, 2015

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 6

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **February 18, 2015** and the Price Proposal submission date is still scheduled for **March 3, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
64A-64B	ADDED LOI for Stormwater Management Concept.
112	REVISED G. Appendices to remove "Interchange Traffic Analyses" and "Maintenance of Traffic Options Evaluation Report" and associated files.
113	REVISED I. Design Files/Other Pertinent Information to include "Interchange Traffic Analyses" and "Maintenance of Traffic Options Evaluation Report" and associated files.
196	REVISED to eliminate the first sentence of the last paragraph under 3.09.09.
297	REVISED Priority No. 14 in Table 1 "Guidelines for Landscape" to Maryland State Highway Administration Stormwater Management Site Design Criteria.
344	REVISED 3.15.01.06.02.05 to eliminate utility access road requirements and added reference to Utility Access Road and its requirements.
350	REVISED Utility Access Road requirements and access road section.

Addendum 6

Contract No.: PG7005170
Addendum No. 6
February 06, 2015
Page 2

NOTICE TO CONTRACTORS

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Additional Information on ProjectWise:

MOVED "Interchange Traffic Analyses" and "Maintenance of Traffic Options Evaluation Report" and associated files to the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\16-Traffic Analyses

Questions regarding this Addendum No. 6 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

For

DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Addendum 7

MARYLAND STATE HIGHWAY ADMINISTRATION
OFFICE OF HIGHWAY DEVELOPMENT
707 NORTH CALVERT STREET
BALTIMORE, MARYLAND 21202

February 11, 2015

Contract No. PG7005170
F.A.P. No. AC-NHPP-263-1(22)N
& HP-1755(2)N
Description: MD 210 at
Livingston/Kerby Hill Road
Interchange

ADDENDUM NO. 7

To All Parties Invited to Submit Proposals:

Please be advised that the Technical Proposal submission date for this contract is still scheduled for **February 18, 2015** and the Price Proposal submission date is still scheduled for **March 3, 2015**.

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Request for Proposals (RFP) document:

REQUEST FOR PROPOSALS

Page No.	Description
257	REVISED 3.11.05.02 to change the Finish for Noise Barriers for both the highway and residential side.
296-297	REVISED Priority No. 15 in Table 1 "Guidelines for Landscape" to the No. 2 priority. Priorities 2 through 14 have been reduced by one priority each and are now priorities 3 through 15.
542A-B	ADDED Special Provision "SECTION 498 – ABSORPTIVE NOISE BARRIER GROUND MOUNTED SYSTEM".

NOTICE TO CONTRACTORS

The attention of prospective proposers is directed to the following revisions, additions and/or deletions to the Additional Information on ProjectWise:

ADDED the February 9, 2015 Advance Clearing and Grubbing plans and point-by-point responses to the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\F - Advanced E&S Clearing & Grubbing\1. Advanced E&S Clearing & Grubbing Plan\

Contract No.: PG7005170
Addendum No. 7
February 11, 2015
Page 2

Questions regarding this Addendum No. 7 or the project in general may be directed in writing to:

Mr. Jason A. Ridgway
Director, Office of Highway Development
State Highway Administration
e-mail address: PG7005170_MD_210@sha.state.md.us

DOUGLAS H. SIMMONS, DEPUTY ADMINSTRATOR/CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE, AND ENVIRONMENT.

Questions and Responses

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Request for Proposals
Questions and Responses

The following question was received on October 31, 2014.

Question 1:
When will the Concept SWM Report be available and what is the status with MDE?

Response 1:
A draft Concept SWM Report dated April 2014 and MDE review comments dated September 12, 2014 have been posted to ProjectWise at the following location:

pw://SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01/Documents/Design-Build/PG7005170/K - Stormwater Management & Surface Drainage Info./02-Concept SWM Report/

The revised Concept SWM Report is expected to be submitted to MDE in mid-November 2014 and will be posted to Projectwise once available.

The following questions were received November 7, 2014.

Question 2:
Section 2.09.03 Project Schedule and Project Management: Can the project schedule be excluded from the 14 page limit? It will be difficult to get all of the Team's approach to all of the other items required in this section appropriately written in 14.

Response 2:
No, the Project Schedule will remain as part of the 14 page limit. The Administration, however, will reduce the elements required as part of the Project Management Plan as part of Addendum No. 1, but retain the 14 page limit.

Question 3:
The reforestation Law Project Review sheet states that SHA is responsible for off-site replacement. Please clarify whether or not SHA has a mitigation site in mind for this project. If so, will SHA be responsible for all plantings that may be required to meet reforestation sites if needed. If not, will SHA expect the contractor to pay any fee in-lieu requirements?

If it is not possible to meet the 7.23 acres of reforestation on-site will SHA complete a new reforestation site review. Will SHA be responsible for any additional off-site responsibilities?

Response 3:
The Administration has not identified a mitigation site for this project. The Administration will either provide the off-site mitigation if a site is identified or it will pay into the MD Reforestation

1

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Law Fund if it does not identify an off-site mitigation site. The Design-Builder will not have any responsibility related to the 6.85 acres of off-site replacement.

The Design-Builder shall determine whether the conditions of the approved Reforestation Site Review can be achieved using the current concept design as shown in the approved Reforestation Site Review included in the RFP. If the Design-Builder determines that the conditions of the approved Reforestation Site Review cannot be achieved, it shall provide documentation that demonstrates to the Administration that the conditions cannot be met. If the Administration concurs that conditions of the Reforestation Site Review cannot be achieved, the Administration will be responsible for obtaining a modified Reforestation Site Review from Maryland DNR. The Administration will be responsible for any off-site mitigation where on-site mitigation was not feasible under the Administration's concept design.

Question 4:
Can SHA provide the MicroStation CADD files for the concept utility relocation plans provided in the RFP?

Response 4:
The concept utility relocation CADD files are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\13-Utility Plans\

Question 5:
In the Concept Plans there are some areas where the stringer spacing is greater than the 10' maximum allowed by the standard deck reinforcing details. Are special design details required for these areas of the deck?

Response 5:
Any areas of the deck where the standard deck reinforcing details do not apply or where the spacing of the stringers is greater than what is allowed by the standards will need to be designed and detailed by the Design-Builder.

Question 6:
Can standard bronze bearings be used for the bearings within 45' of the bridge centerlines and spherical bearing be used outside these limits, i.e. can a mixture of standard and spherical bearings be used on the same substructure unit?

Response 6:
As long as the two types of bearings are designed to work together as a unit, standard and spherical bearings can be used on the same substructure unit as described above.

Question 7:
There are discrepancies between the Noise Barrier System 3 alignment shown in the noise analysis model and the Concept Plans. Please clarify the discrepancy.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 7:
The discrepancies in horizontal alignment are due to adjustments to the noise barrier offset after the noise analysis was completed. These adjustments were determined to have a negligible effect on the analysis. The horizontal alignment is only conceptual. It is the Design-Builder's responsibility to design final horizontal alignment to meet the requirements of TC 3.18 including not reducing the line of sight break or noise reduction.

Question 8:
Can Auto-Turn analysis data be provided? Is a WB-67 the design vehicle that should be accommodated?

Response 8:
Auto-turn analysis data has been posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files\01-Roadway Design File\

The final design must accommodate design vehicles as specified in TC 3.09.07.

Question 9:
Provide clarification on the accommodation of future HOV lanes and any requirements related to accommodation of the roadway, noise walls, drainage, etc.

Response 9:
The 2004 FEIS stated that the "median would be widened to provide the Alternative 5C (concurrent HOV) footprint in the vicinity of the interchanges so as to not preclude additional improvements in the future. Bridge abutments for the side road overpasses would be set consistent with the Alternative 5C footprint, but the mainline lanes would generally coincide with the existing roadway pavement between the interchanges. Where needed, the right-of-way for the Alternative 5C footprint would be preserved through the development review process for the potential additional lane or other improvements in each direction throughout." The subsequent VE study also considered the potential for future HOV lanes by allowing for the median ramps to become HOV ramps if HOV lanes were added. To comply with the NEPA requirements the bridge elements should not preclude the addition of HOV lanes in the future. Other elements of the project such as roadway, noise walls, and drainage are not required to be designed and constructed to meet the future HOV lanes; however, are encouraged to be designed and constructed to accommodate the future HOV lanes where feasible.

Question 10:
What sections of the existing barriers are required to be replaced due to maintenance issues as opposed to being replaced only if they are impacted by construction?

Response 10:
See section 3.09.08 of the RFP for specific direction on replacement of existing barrier.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 11:
When is the 7' sidewalk offset required for the County roadways? When can it be less than 7'?

Response 11:
The 7 foot sidewalk offset is required for County roadways where it can be installed within the existing conditions and physical constraints, such as the Right-of-Way and Easements. In areas where a 7 foot green space cannot be installed, it may be reduced to a 3 foot green space. If the 3 foot green space cannot be provided, then a hardscape buffer shall be provided or the sidewalk placed adjacent to the curb.

Question 12:
Provide clarification on the Design Speed requirements for the County roads.

Response 12:
See section 3.09.04.01 for design speed requirements for the County roads. Please refer to County design criteria Table I-2 found under Specifications and Standards for Roadways and Bridges on the County's webpage for additional information pertaining to the roadway classification specified in the RFP. The design criteria in the RFP will be updated in a future Addendum to match the County design criteria for the functional classifications.

The State will be obtaining a design exception from the County for road criteria that is not met in the concept plans.

Question 13:
Can speed reductions be implemented during construction?

Response 13:
Speed reductions along MD 210 during construction can be implemented with District Engineer approval of a temporary Memorandum of Agreement (MOA) for a reduced speed limit within a work zone.

Question 14:
Can existing median crossovers be closed during construction, including the intersection at Wilson Bridge Drive?

Response 14:
Existing median crossover maybe closed during construction provided the Design-Build Team considers those closures in their Traffic Management Plan (TMP) and in accordance with 3.16.05.04.

Question 15:
The coping shown in the concept plans typical section for the retaining wall/median traffic barrier that supports the noise barrier by the service road extends beyond the face of the traffic barrier. Is this an acceptable design?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 15:
No. This conceptual detail is in error. All retaining wall copings and parapets need to be placed behind the face of the traffic barrier.

Question 16:
OOS requires a 500 PSI reduction in concrete strength, but this is not indicated in the RFP. Is this requirement necessary for this project?

Response 16:
All design shall be in accordance with the Office of Structures (OOS) Policies and Procedures Manual as listed on page 231 in Table 1 – Guidelines for Structures. The standard General Notes design parameters shall also be adhered to.

Question 17:
What are the requirements for deflection offsets of the various types of traffic barrier?

Response 17:
Minimum deflection offsets are defined in the Guidelines for Traffic Barrier Placement and End Treatment Design.

Question 18:
Page 693, Third Party Concrete Testing for Traffic Items: Why is independent testing required for traffic items? Can SHA inspectors test these items since they will be testing other concrete during construction?

Response 18:
The Special Provision will be removed as part of Addendum No. 1.

Question 19:
TC 3.11.03.06.03 deep foundation requirements do not seem practical for this project site. LRFD requirements and RFP requirements pose considerable risk. Can SHA review these requirements for practicality?

Response 19:
The conditions in chart on page 243 do not need to be met. Foundations need to meet the AASTHO LRFD design specification requirements.

Question 20:
Please clarify water quality requirements for this project. TC 3.17.03.03.02 states that, "The Design-Build Team shall not exceed the net debit or reduce the net credit shown on the WQSS," however, the WQSS has not been approved by MDE.

Response 20:
The water quality requirements will be clarified in a future Addendum.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

The following questions were received November 10, 2014.

Question 21:
Please provide clarification on the need for traffic barrier including at the retaining walls and what type of barrier is required.

Response 21:
As per the requirements of the SHA Guidelines for Traffic Barrier Placement and End Treatment Design and the AASHTO Roadside Design Guide, barrier will be required to protect any hazards within the clear zone including retaining walls. Barrier selection shall be as per the requirements of the RFP, the SHA Guidelines for Traffic Barrier Placement and End Treatment Design, and other applicable guidelines.

Question 22:
Page 395, 3.18.01 1 C, says if there is a change proposed to the top of noise wall profile, then analysis shall be in consultation with Noise Team. It doesn't say how to document this or what happens if there is a change in noise wall horizontal geometry. Nor is there guidance that talks about needed noise analysis due to changing roadway geometry.

Response 22:
The requirements for changes in the noise wall profiles and alignments have been included in Addendum No. 3.

Question 23:
Page 254, 3.11.04.04.04 C, states that the top of the noise barrier shall be above the acoustic profile, which has a level top. Can the top of barrier coincide with the noise profile?

Response 23:
Yes, the noise barrier may be equal to or above the noise profile provided that the requirements for noise abatement are met. Addendum No. 1 revises Page 254, 3.11.04.04.04 C to clarify this.

Question 24:
Page 396, 3.18.01 4, says "sound-reflective treatment"? Should it say "sound-absorptive treatment"? What are the treatment requirements?

Response 24:
The noise barriers shall have a sound-absorptive treatment at specific locations. These locations and the treatment requirements were included in Addendum No. 3.

Question 25:
The TNM file shows an approx. 30' step in the noise barrier system 1 between where it goes up to the Kerby Hill Road bridge No.1630700 to how it goes under the bridge. This single step of

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

approx. 30' does not follow the top of wall maximum allowed step stated in the RFP. How is this 30' step being accomplished to meet the RFP?

Response 25:
An exception is allowed for this instance since transitioning the Top of Wall down in this area would expose the apartment buildings.

Question 26:
The barrier on the bridge does not appear to be providing attenuation in the model, but is labeled as a noise barrier. Please clarify.

Response 26:
Specific abatement levels for the bridge barrier were not generated, as its primary purpose was to block line-of-sight. It will provide some noise reduction, but it will likely be incidental compared to the rest of Barrier System 1.

Question 27:
Page 248, J.5, says barrier on the bridge needs to be min 13' above road surface; Concept Plan sheet 72 & 73 (S01-9&10) show the noise barrier being 13' above the parapet. Please clarify.

Response 27:
Addendum No. 1 revises Page 248, J.5, to say 13' above the parapet.

Question 28:
Page 255, 3.11.04.04.04 F, says 3"min and 12" max step. Page 395, 3.18.01 2. C, says 6" maximum step. Please clarify.

Response 28:
Addendum No. 1 revises the 3" minimum to 2" minimum and 6" maximum to 12" maximum for both sections.

Question 29:
Page 255, 3.11.04.04.04 D, says min height shall be 6' above finished grade. Page 395, 3.18.01 2.d, says 7' min height above finished grade; Page 248, J.5, says 1' increments. Please clarify.

Response 29:
Addendum No. 1 revises all instances to 7' above finished grade. The purpose of this height is to prevent people from climbing the noise barrier and walking on top of it.

Question 30:
Page 255, 3.11.04.04.05 A, says a single type of post shall be used for an entire length of noise barrier, but Page 248 J.4 says steel posts required for bridge mounting. Please clarify.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 30:
A single type of post shall be used for each mounting application such as ground mounted versus structure mounted barriers. A single type of post is not required for all noise barriers on the project.

Question 31:
There is a discrepancy between the floodplain shown on the Roadway Concept Plans and Structure Concept plans. Which is correct?

Response 31:
The floodplain shown on the Roadway Concept Plans is correct. Addendum No. 1 provides corrected Structural Concept plans, which are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets

The correct floodplain file is posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\ B - Survey & Topgraphic Files\05-Environmental Features File\

Question 32:
Are there any inspection reports or other information available for the culvert that is to be extended at approximately Sta. 698+00?

Response 32:
Addendum No. 1 provides as-built plans and the inspection report for Small Structure No. 16227X01, which are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\

Question 33:
What is the status of the additional Hazmat Reports?

Response 33:
The remaining Hazmat Reports are expected to be available prior to the due date for Technical Proposals. The surveys are currently complete and the report is being developed.

Question 34:
If the DBT uses the SHA pavement sections than there is no FWD requirement. Is this assumption correct?

Response 34:
FWD is not required if the SHA pavement sections are implemented.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 35:
The RFP requires that positive drainage be provided for the entire pavement structure. Does this include the existing pavement structure?

Response 35:
Yes, the Design-Builder shall provide a positive drainage system to adequately drain the entire pavement structure along both sides of MD 210 within the project limits.

Question 36:
Is it required to perform pavement cores for the mainline and perform a pavement evaluation of the existing mainline to carry future traffic?

Also, is it part of the contract for the DB to performed rehabilitation of the existing pavements if the pavement evaluation indicates the pavement section to be inadequate? See Section 3.10.03.02.05.02.03 & .04.

Response 36:
The Design-Builder is required to perform pavement cores and a pavement evaluation of the existing mainline only if the Design-Builder decides not to use the provided pavement sections.

The Design-Builder is responsible to provide design and construction of pavement improvements for all existing roadway elements, according to Section 3.10.03.02.05.02.03, if the Design-Builder decides not to use the provided pavement sections.

The Design-Builder shall develop pavement sections for any Roadway element that is needed but not outlined in TC Section 3.10.06.

Question 37:
The RFP contains inadequate information to determine undercut of unsuitable material. How will this be handled should it become an issue?

Response 37:
It is Design-Builder's responsibility to determine the adequacy of the geotechnical information provided. As stated in TC 3.14, a preliminary geotechnical subsurface investigation was conducted by SHA and the preliminary geotechnical subsurface investigation data was provided to all prospective proposers. It is the Design-Builder's responsibility to perform a reasonable site inspection including any geotechnical investigation it determines necessary to properly price the Work.

Question 38:
What are the requirements in the event that the Design-Builder proposes a non-standard noise wall?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 38:
If the Design-Builder proposes a non-standard, non-proprietary noise barrier (i.e. block walls used under power lines, or posts with screw on flanges, the use of grade beams, double wide panels, earth retaining panels up to 6', double wide doors, noise absorptive treatments, etc.), the barrier shall be designed in accordance with AASTHO Standard Bridge Design Specifications. This AASTHO Standard Specification will be added to Table 1 of TC 3.11 for the design of noise barriers in a future Addendum. Non-standard noise barrier shall still be in accordance with Sections 3.11.04.04, 3.11.05.02, and 3.18.

If the Design-Builder proposes a proprietary noise barrier that has not been preapproved by SHA, the noise barrier shall meet the LRFD design standards and shall be submitted to the Administration per the Draft Policy and Procedure Memorandum No. D-94-45(4) for the Proprietary Noise Barrier Approval Process. This process may take 2 to 6 months (or longer) and approval is not guaranteed. The Draft Policy and Procedure Memorandum No. D-94-45(4) for the Proprietary Noise Barrier Approval Process posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\L Office of Structures, Policy and Procedures\D-94-45_Proprietary Noise Barrier Approval Process.pdf.

Question 39:
What section of the proposed utilities are facility betterments as opposed to replacement of the facility due to impacts? Is the waterline replacement at the north end of the project for betterment (Sta. 680+00-684+00 RT)?

Response 39:
Replacement of the 12" water main along the Kerby Hill Road between Sta. 13+30 to Sta. 16+05 (Service Road Sta. 70+50) shall be included as "Betterment" for WSSC. The waterline section between Sta. 680+00-684+00 RT is included for replacement in order to maintain cathodic protection between the relocated waterline to the south and the relocated vault to the north.

The following questions were received November 20, 2014.

Question 40:
Can SHA please provide cross sections for the MD 210 project if they are available?

Response 40:
Conceptual Cross Section CAD files are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\05-Conceptual Cross Section Files\

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 41:
We are not able to locate Bridge No. 1630700 General Plan and Elevation (file name: pBR-GP01_md210_B1.dgn) file on the ProjectWise server. Will SHA please post this file?

Response 41:
Bridge No. 1630700 General Plan and Elevation (file name: pBR-GP01_md210_B1.dgn) is posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\12-Structure Plans\pBR-GP01_md210_B1.dgn

Question 42:
Can SHA provide the latest MDE submittal plans and comment responses?

Response 42:
The latest plans and comment responses for the Advance Clearing are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\F - Advanced E&S Clearing & Grubbing\1. Advanced E&S Clearing & Grubbing Plan\

The latest Concept SWM Report and response to comments are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\K - Stormwater Management & Surface Drainage Info.\02-Concept SWM Report\

Question 43:
Are any Design Exceptions required for this project based on the Concept Design?

Response 43:
The Administration has identified that design exceptions will be required for the MD 210 inside and outside shoulders identified in TC 3.09.05 at certain locations. The Administration will acquire the necessary design exceptions prior to due date of the technical proposal and provide it to the proposers. The Request for Proposals will be modified as part of a future addendum to address these design exceptions.

Question 44:
Section 3.10.03.02.05.03 on RFP page 210 states "The Design-Builder shall design and provide a positive drainage system to adequately drain the entire pavement structure." Is this for proposed pavement, or existing and proposed pavement? If for existing and proposed, how can bidders determine the existence/condition of the existing pavement structure drainage?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 44:
This requirement is for existing and proposed pavement. The Design-Builder is expected to determine the existence/condition of the existing drainage system from site inspections (eg. as-built plan reviews, field identification of existing underdrain outlets) and information from the soil exploration survey.

Question 45:
Have any commitments been made to utility companies, property owners, community groups, etc., that the Design Build Team must meet, that are not included in the Contract Documents?

Response 45:
The RFP contains all of the project requirements.

Question 46:
Are there any requirements on the RFP Concept plans that are not written in the RFP or other written Contract Documents?

Response 46:
The Concept Plans are provided as Additional Information only. All contract requirements are written in the RFP. The term "Requirement" is noted on the Concept Plans as a reference for the prospective Design Build Teams.

Question 47:
Section 3.17.03.01.01.C on RFP page 386 states "Repair or replace all existing pipes and drainage structures failing to meet structural integrity or hydraulic requirements." There are dozens of existing drainage structures and thousands of feet of existing pipe in the project area that the Concept Plans show as remaining in service. Will SHA provide information to all bidders on the condition of these structure/pipes (i.e. video inspection like was provided for the PG758 project)? If not, does SHA expect each of the bidders to inspect all existing drainage structures and pipes before submitting responsible bids?

Response 47:
No video inspection or additional as-builts will be provided to the bidders. Please refer to RFP section 3.17.03.01.01.C for inspection of existing facilities.

Question 48:
Would SHA consider providing a bid quantity for undercuts or subgrade improvements since geotechnical data does not include adequate laboratory test results to estimate these quantities?

Response 48:
See Response 37.

Question 49:
Can SHA provide the Network Level Pavement Condition Data for MD 210 to all bidders?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 49:
The following performance data is posted on ProjectWise at the noted location:

1. IRI and Rutting.pdf: IRI – Average from 1995 to 2013
2. IRI and Rutting.pdf: Rutting – Average from 1995 to 2013
3. Friction.pdf: Friction Number – Average from 1984 to 2014
4. Cracking Index.pdf: Cracking Index – Average from 2010 to 2013

pw://SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01/Documents/Design-Build/PG7005170/I - Design Files & Other Pertinent Information

Question 50:
Is there any additional geotechnical data available for project, and if so can SHA provide it to all proposers? Does SHA have superior knowledge of the geotechnical conditions that will be encountered during construction that they have not provided to proposers?

Response 50:
All geotechnical data available for the project has been provided. SHA does not have superior knowledge of the geotechnical conditions that will be encountered during construction that they have not provided to proposers.

Question 51:
Section 3.10.06.04.07.02.01 on RFP Page 226 states "An additional 1 foot width maximum excavation may be used for curb and gutter form placement." On previous SHA projects we have not been allowed to place HMA pavement between a gutter pan and existing pavement edge that was less than 4' wide, because of poor HMA compaction. In locations were we are widening 1' to 4' and placing a curb/gutter or concrete barrier, will we be allowed to use the full depth HMA pavement section from Section 3.10.06.04.01.01 on this project, or do we have to use Jointed Plain Portland Cement Concrete Mix 3 with 2" HMA surface?

Response 51:
Section 3.10.06.04.07.02.01 refers to curb and gutter replacement and does not refer to narrow base widening (<4'). It is State practice to limit the base widening using an asphalt section to minimum of 4'. It is also State practice to perform narrow base widening (< 4') using concrete under the surface asphalt layer. Pavement section under 3.10.06.04.01.01 is for base widening > 4'. If base widening narrower than 4' is needed, the contractor has to design a pavement section and submit it to the Engineer for review and approval. The RFP will be modified by a future Addendum to clarify requirements for base widening narrower than 4 feet.

Question 52:
Concept plan Sheet 27 (PS-07 of 25) shows required lengthening of the upstream end of the existing 12' x 8' box Culvert at Sta. 698+/-, and a junction box being constructed on the culvert. Will SHA provide as-built plans and inspection reports of the culvert? Has a concept plan been developed for the construction required on this box culvert, and have these designs been reviewed/approved by SHA Office of Structures? It appears the downstream end of this culvert

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

was extended with an 84" RCP at some time it the past. Will SHA provide as-built plans of the extension? Will proposers have to perform hydraulic analysis on this box culvert/pipe system before submitting a responsible proposal, and how is this possible without as built plans?

Response 52:
Additional as-built plans, inspection reports, and photos for Structure Nos. 160225, 160226, and 160227, have been posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\

A concept plan has not been developed for the construction required on this culvert. The Administration has no additional as-built or inspection data for the downstream structure. The Design-Builder is responsible for obtaining any additional information required to submit a responsible proposal and for completing the final design, including the hydrologic and hydraulic analysis, for submission. All final design aspects (structural, hydrologic, hydraulics) for the pipe would be submitted per the RFP.

Question 53:
The Concept Plans show a new manhole constructed on the (apparent) 84" RCP at Sta. 202+60+/-. How can bidders determine the elevation and condition of the (apparent) 84" RCP at the proposed manhole?

Response 53:
Additional as-built plans, inspection reports, and photos for Structure Nos. 160225, 160226, and 160227, have been posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\

The Administration has no additional data for this structure. The Design-Builder is responsible for obtaining any additional information required to submit a responsible proposal and for completing the final design, including the hydrologic and hydraulic analysis, for submission. All final design aspects (structural, hydrologic, hydraulics) for the manhole would be submitted per the RFP.

Question 54:
The Concept plans and the SWM show Micro Bio-Retention #1 proposed over the box culvert/RCP. Has SHA determined there is enough vertical clearance for this? Will there be an infiltration problem from the bottom of the Bio Micro-Retention facility because of the culvert/RCP that will cause MDE to not approve it?

Response 54:
The Concept plans have been revised so Micro Bio-Retention #1 is no longer overlapping the existing 84" RCP. The conceptual stormwater design is only to demonstrate that the stormwater

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

needs can be met within the project corridor. It is the Design-Builder's responsibility to complete the stormwater management per the requirements of the RFP.

Question 55:
Page 390 of the RFP states that the designer is to "locate structural BMPs so that the 2-year water surface elevation limit at its closest point is a minimum distance of 15 feet from the edge of pavement." Does this still apply if a noise wall is proposed between a facility and the edge of pavement?

Response 55:
The exclusion of the 2-year water surface elevations still applies to the edge of pavement if a noise wall is proposed between a structural BMP and the edge of pavement.

Question 56:
Are there restrictions on storm water surface elevations close to any of the proposed noise walls? (i.e. minimum freeboard from existing/proposed. ditches, freeboard or distance from stormwater facility ponding, freeboard or distance from flood elevations from Carey Branch.)

Response 56:
Storm water surface elevations and the freeboard or distance from flood elevation associated with are defined by the MDE stormwater management guidelines, water and waterway permitting, and SHA drainage guidelines. If ponding against noise walls is proposed, the walls would have to be structurally design to meet those conditions.

Question 57:
Page 388 of the RFP states "Size all added or replaced storm drain so that the 100 year hydraulic grade line remains below the top of all added, replaced, and existing structures located on interstates." Please verify that the 25 year hydraulic grade line is the design criteria for non-interstate roads on this project.

Response 57:
For non-interstates, please refer to the Highway Drainage Manual (I-4-B-1), which states "The hydraulic gradient for the 25 year storm must be below the top of the manhole covers and inlet grates, and below the top of curb for the 100-year storm."

Question 58:
POI 2 in the SWM Report is located at a 48" stormdrain outfall that ties directly into Carey Branch close to the proposed right of way and, according to the topographic survey, is directly upstream of a ditch failure. Does SHA anticipate having to stabilize this existing outfall and possibly requiring an easement (in those locations or at any of the other existing storm drain outfalls)?

Response 58:
It appears the question is referencing the old SWM report (April 2014) POI-2. The latest SWM Concept report can be found as part of the additional information on ProjectWise. The assumed

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

location that the question is referencing correlates to POI-17 under the current naming convention as shown in the latest Concept SWM Report. At this location (Sta 707+60 RT), the 48" RCP outfalls into the existing concrete channel. The survey (September 2014) does notate a "ditch failure" in the concrete channel downstream of POI-17. A site visit was conducted in January 2015 and there was only minor cracking in the concrete; no evidence of a ditch failure in this area was observed, nor any other outfalls that were in need of improvement. Under the concept design, there is no increase in flow at POI-17 that would necessitate a variance or outfall repair.

In the latest SWM Concept submitted to MDE, a variance is being requested for the outfalls that experience slight increases. These outfalls were found to be stable as of our site visit in October 2014 and are noted in the latest SWM Report. An additional visit was conducted in January 2015 for POI 14 and POI-17. These outfalls were also found to be stable. There are no outfall stabilizations required as part of the project per the latest SWM Concept.

If the Design-Build Team's (DBT) final design creates an additional increase at the variance locations or an increase at any other outfall location, MDE may require outfall improvements at those locations. It is the DBT's responsibility to ensure that all outfalls affected by their final design are stable in accordance with the RFP.

Question 59:
Page 387 of the RFP states "No breaks in curb, such as curb cuts, are allowed for drainage purposes." Please verify that this applies only to roadway design and not the proposed parking areas.

Response 59:
No breaks in curb, such as curb cuts, are allowed for drainage proposes. This includes the proposed parking areas.

Question 60:
On page 395 of the RFP, 3.18.01 1.c says if the proposed top of noise wall profile is changed, then analysis shall be in consultation with Noise Team. On page 153 3.05.10 states "The Design-Build Team shall perform any required acoustical analyses…" We cannot find noise study/analysis/report requirements in the Contract Documents. Does the design builder decide the noise study/analysis/report requirements?

Response 60:
The requirements for noise analysis will be defined in a future Addendum.

Question 61:
RFP page 196, Section 3.09.10 states: "Noise walls shall be on the roadway side of the shared use path, including on structures." RFP page 247, Section 3.11.04.01.02.E.1 states: "The parapet located on the west side of Bridge No. 1630700 shall be made wide enough to accommodate the bridge mounted noise barrier." Where does the noise barrier on Bridge No. 1630700 need to go?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 61:
There is no shared use path on Bridge No. 1630700, therefore RFP page 196, Section 3.09.10 does not apply. Bridge No. 1630700 includes a sidewalk. The noise barrier shall go on the parapet as noted in RFP page 247, Section 3.11.04.01.02.E.1.

Question 62:
On RFP 341, 3.15.01.06.01 states "Conceptual PEPCO relocation plans are being provided to the DBT for information purposes to demonstrate the intent of the final design and relocations to be performed by PEPCO….If the DBT impacts PEPCO's relocated facilities, the cost of the redesign and relocation shall be 100% the DBT's responsibility." 3.15.01.06.02 on RFP pages 342-343 states "Conceptual Verizon relocation plans are being provided to the DBT for information purposes to demonstrate the intent of the final design and relocations to be performed by Verizon….If the DBT impacts Verizon's relocated facilities, the cost of the redesign and relocation shall be 100% the DBT's responsibility." Since both the SHA and the PEPCO/Verizon plans are conceptual, how does SHA know the actual utility relocations will be out of the way of the actual SHA project? Does SHA guarantee if the design builder follows the SHA Concept Plans, the relocated PEPCO/Verizon lines will not be impacted? And if the design builder follows the SHA concept plans, does SHA guarantee the Concept Plan meets all Project Requirements? If not how can bidders submit responsible bids without knowing where the PEPCO/Verizon relocation will be? (Since the provided PEPCO/Verizon relocation plans are only "for information purposes to demonstrate the intent of the final design….")

Response 62:
The proposers are expected to submit responsible bids that account for the relocation of PEPCO and Verizon's facilities as shown in the Concept utility relocation plans. The Concept utility relocation plans have been reviewed and approved by SHA, PEPCO, and Verizon and no conflicts with the Concept roadway plans have been identified.

Question 63:
Can the Administration provide the gINT files for the borings shown in the RFP?

Response 63:
The gINT files are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\G-Appendices\02-Soil Survey Boring Logs

Question 64:
Has a Hydrologic & Hydraulic Analysis been performed on Carey Branch? If so, can this information be released to the Design-Build teams?

Response 64:
An H & H Analysis has been performed on Carey Branch based on the Concept Design Plans. The report has been posted to ProjectWise at the following location:

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

pw://SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01/Documents/Design-Build/PG7005170/I - Design Files & Other Pertinent Information/MD 210 Concept Hydraulic Report 092414 full report.pdf

The following questions were received November 26, 2014.

Question 65:
RFP Concept Plan Drawing UT-25 of 46 (plan sheet 147) shows proposed Noise Barrier System 4 crossing under PEPCO overhead lines Left of Sta. 110+/-. Drawing UT-27 of 46 (plan sheet 149) shows proposed Noise Barrier System 4 crossing under 2 separate PEPCO overhead lines Left of Sta. 680+/-. (Addendum 1 removed one of these crossing from the plan but both have been confirmed in the field.) Both these plan sheets have the note "No impacts to Verizon or PEPCO on this plan sheet." Wall heights in the RFP provided noise model are 10' to 18' at these crossings.

a. How did SHA determine there are no Verizon or PEPCO impacts at these crossings?

b. The Design Builder has to design Noise Barrier System 4 to meet the requirements of the RFP, and this may require the wall height at the 3 overhead crossing to increase. How can proposers determine if increased wall heights are required, and if this will impact overhead utility crossings?

c. The Microstation file mHC-0001_MD210.dgn provided with the RFP contains the statement at Station 690+00 "Existing ground cross sections from sta. 690+00 headed north are not accurate for final design. Contractor will be required to survey the existing ground from sta. 690+00 to the L.O.W. at the north end of the contract." If this statement is true how can bidders enter correct existing ground elevation to determine if Noise barrier System 4 impacts the overhead utility crossings?

Response 65:
Due to previously unidentified utility conflicts, portions of Noise Barrier System 4 will be realigned or removed as part of Addendum 4. The portion of Noise Barrier System 4 that was removed by Addendum 4 will be pursued under a different contract.

The proposed barrier systems (horizontal alignments and top of wall panel elevations) provided in the RFP meet the acoustical design requirements (line-of-sight and insertions losses) of the RFP. If the Design-Build Team chooses an alternative noise barrier design that meets the RFP but results in additional utility conflicts, any and all additional utility conflicts and relocations associated with such a design change would be the responsibility of the Design-Build Team.

The statement in mHC-0001_MD210.dgn is no longer valid. The statement was based on the survey information contained mTO-S000_MD210, which did not extend to the entire project limits. mTO-C007_MD210.dgn is a newer survey file that covers the project limits and includes areas north of 690+00. SHA's concept design was checked verses the newer, more accurate survey data and it was determined that the differences were negligible. The Concept Plans depict the mTO-C007_MD210.dgn topography.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 66:
The Microstation file mHC-0001_MD210.dgn provided with the RFP contains the statement at Station 744+50 "Existing ground cross sections from sta. 744+50 going north are not accurate for final design. Contractor will be required to survey the existing ground from sta. 744+50 to the L.O.W. at the north end of the contract." This station range is 7,200+/- feet, roughly 75% of the 9,450+/- feet of roadway work along MD 210.

a. Is this statement correct, and is it a Contract Requirement?

b. If so how does SHA know they are acquiring enough r-o-w and easement to construct the RFP design for the 75% of MD 210 without accurate cross sections?

c. If so how does SHA know the utility relocations being done by PEPCO, Verizon and others are out of the way of the RFP design for the 75% of MD 210 without accurate cross sections?

d. If so how does SHA know the noise model is correct for the 75% of MD 210 without accurate cross sections?

e. If so how does SHA know the environmental permits are adequate for the impacts caused by the RFP design for the 75% of MD 210 without accurate cross sections?

Response 66:
The above referenced statement made in mHC-0001_MD210.dgn is no longer valid. This statement was made based on the previous mTO-S000_MD210 survey file, which did not extend to the southern limit of the project. mTO-C007_MD210.dgn reflects the current topographic survey and extends to the entire project limits. Thus, the Design-Build team is not required to complete additional survey unless the Design-Builder finds it necessary for its final design and construction.

The Right-of-Way, Easements, Noise Model, Utilities, and Environmental Impacts were developed based on the latest survey (mTO-C007_MD210.dgn). The cross sections provided to the proposers are conceptual and for information only.

Question 67:
Do the Microstation files provided with the RFP contain any Contract Requirements that are not also listed in the RFP, or the documents listed in the RFP?

Response 67:
The Microstation files are provided as Additional Information only. All contract requirements are written in the RFP.

The following questions were received December 17, 2014.

Question 68:
Are as-built plans and inspection reports available for Retaining Wall 16228R0?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 68:
The as-built plans and inspection reports for Retaining Wall 16228R0 are posted on ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\ H - Conceptual Plan Sheets\14-MD 210 As-Builts\Retaining Wall 16228R0\

Question 69:
Please confirm the advance guide signs proposed on MD 210 for the Kerby Hill Road/Livingston Road exit indicated on the Sign Details sheet (SN-3) that are designated as C-1, C-2, C-3, C-4, C-5 and C-6 are required to be placed on overhead sign structures (i.e. cantilevers).

Response 69:
The signing with a 'C' designation shall be placed overhead.

Question 70:
Per RFP Section 3.12.05.01.02, "Exit direction guide signs and exit gore signs shall be provided along all approaches to the interchange as indicated in the prescriptive signing layouts." Please provide prescriptive signing layouts.
Response 70:
Sign details are provided in Concept Plan Sheet No. 62 (Drawing No. SN-3) for the layout of the guide sign panels. Sign placement shall be designed by the DBT according to the requirements of TC 3.12.05.02.

Question 71:
Please provide as-built and/or Structure Mark information for existing overhead sign structures located within the limits of the project.

Response 71:
Beginning from the Beltway moving south, the structure marks within the project limits are as follows:

- C-7 of PG50755173 – Structure Mk: C-45-30B; Span: 41' 0"
- OH-8 of P878-503-372 – Structure Mk: none (see 3805_001.pdf)
- OH-8 of PG5095173 – Structure Mk: OH-90-28A; Span: 87' 0"
- C-12 of PG5095173 – Structure Mk: C-45-28E; Span: 45' 0"
- DMS # 331 Structure ID #: 16449; (see 3804_001.pdf)
- OH-7 of PG5095173 – Structure Mk: OH-80-28A; Span: 74' 8"

Information the Administration for the above can be found in 3805_001.pdf and 3804_001.pdf and have been posted to ProjectWise at the following location:

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\

Question 72:
Per RFP Section 3.12.04.02, Traffic Control Device Design Request Forms have been prepared by the Administration. Please provide all applicable Design Request Forms. For reference, per RFP Section 3.12.07.01, the "traffic signals shall be designed as per the requirements outlined in the Design Request Form."

Response 72:
The Design Request has been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\G - Appendices\06- Traffic Control Device Design Request

Question 73:
RFP Section 3.10.01.01 "Guidelines and References" requires that the Design-Builder use SHA 2014 Pavement Design Guide as a reference. However, RFP Section 3.10.03.02.05.02 "Pavement Design Criteria – General" Parts A through C are sections from SHA 2006 Pavement Design Guide. Please confirm the correct sections to be used under Section 3.10.03.02.05.02 "Pavement Design Criteria – General" Parts A through C.

Response 73:
The table below contains the updated references for Section 3.10.03.02.05.02 "Pavement Design Criteria – General" Parts A through C. The RFP will be updated in a future Addendum.

Part	Old Reference (2006 Pavement Design Guide)	New Reference (2014 Pavement Design Guide)
A	VII	6.10
B	VI.B.1.3	4.07
B	X.C	4.07
C	X.C.	4.07

Question 74:
RFP Section 3.10.06.04 "Pavement Sections" provides minimum pavement sections for different roadway elements. What design CBR value was used to design the minimum HMA pavement sections?

Response 74:
The minimum pavement sections were designed with a subgrade resilient modulus (Mr) of 4,500 psi which approximately corresponds to a CBR of 3 based on the widely used correlation of Mr = 1,500*CBR.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 75:
RFP Section 3.10.01.01 "Guidelines and References" requires that the Design-Builder use SHA 2014 Pavement Design Guide as a reference. The SHA 2014 Pavement Design Guide utilizes new Performance Grade (PG) Binder Specification. However, the minimum HMA pavement sections provided for different roadway elements utilize old Performance Grade (PG) Binder Specification. Please confirm which Performance Grade (PG) Binder Specification should be used.

Response 75:
Spec 3.10.06 was revised by Addendum No. 1 to address the new asphalt mix designation. Use the latest 3.10.06 spec included in Addendum No. 1.

Question 76:
The boring logs do not indicate the geologic formation for the soil layers. The geologic formations for the various soil layers on the site are critical to perform the geotechnical analysis. Therefore we are requesting the geologic formations for all soil layers be provided.

Response 76:
The geologic formation names are not identified on the boring, but the lithology is included instead. The name of the geologic formation is not necessarily descriptive of the boring samples because there may be a variety of lithologies within each geologic formation name. The Maryland Geologic Survey 2003 mapping of Prince George's County has been posted to ProjectWise at the following location to assist in performing the geotechnical analysis:

pw://SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01/Documents/Design-Build/PG7005170/I - Design Files & Other Pertinent Information/Prince Georegs Co Geo 2003 MGS.pdf

The following questions were received December 24, 2014.

Question 77:
Is a Metes and Bounds Workmap that extends to the limits of right-of-way impacts available?

Response 77:
A Workmap Microstation file that encompasses the limits of right-of-way impacts has been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\D - Right-of-Way\02-Work Map Files\mMB-0002_MD210.dgn

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 78:
The floodplain impact permit as part of the Joint Federal / State MDSPGP-4 (from MDE and USACE), based on the Rev. 3 07-14-2014 Wetland Impact Plates included in the RFP on pages 67 through 97, does not appear to quantify all the 100 year floodplain impacts for the project. The required RFP requirements for drainage construction and construction access for NB04 and the northern limit of NB01 from 105+50 LT. to 115+00 RT. appear to be within the limits of the 100 year floodplain designation. In order to construct the project as outlined in the RFP, please provide a modified permit for our use.

Response 78:
The DBT is responsible for obtaining final approval of the Joint Federal/State MDSPGP-4 based on the final design impacts. The Concept Plans and RFP will be revised to eliminate most of the floodplain impacts at the north end of the project by removing the noise barrier from approximately ramp Sta. 105+00 LT to 110+00 LT. This section of noise barrier is being removed from the project due to newly discovered impacts to MNCPPC property. The revised plans will result in a small floodplain impact needed for the outfall adjacent to MD 210 SB Sta. 670+25. Revisions to the permit for the removal of the noise barrier will be obtained by the Administration. The Administration does not anticipate having this revision approved prior to the submittal dates for Technical and Price Proposals. The revised permit and associated files will be distributed to the proposers upon approval.

Question 79:
The Forest Impact Plans dated 10-15-2014 as basis of the forest impacts quantified by the permit included in the RFP on pages 65-66, do not appear to quantify the forest stand impacts for drainage construction and construction access for NB04 from 105+50 LT. to 113+00 LT. In order to construct the project as outlined in the RFP, please provide a modified permit for our use.

Response 79:
The forest impact plans dated 10/15/14, provided to the proposers, and used for the DNR review account for all impacts within the LOD as shown on the Concept Plans. The Concept Plans and RFP will be revised to eliminate impacts at the north end of the project by removing the noise barrier from approximately ramp Sta. 105+00 LT to 110+00 LT. This section of noise barrier is being removed from the project due to newly discovered impacts to MNCPPC property. Since the revised plans will result in fewer forest impacts, revisions to the permit will not be submitted by the Administration. The DBT is responsible for obtaining final approval of the permit based on the final design impacts.

Question 80:
Per Section 3.14.03.01.02, additional subsurface data is required for the design and construction of this project. Please provide the required criteria for determining the minimum spacing and depths of borings along the proposed retaining walls and noise barriers? Is there a maximum distance these borings can be drilled from the faces of the walls?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 80:
According to Section 3.11.03.06 Foundations, supplemental borings are to be taken in accordance with the Administration's PPM D-79-17(4) and there is some additional information in this Section concerning borings for bridges. The PPM states that borings are required every 75' for noise walls and retaining walls. This requirement can be reduced so that borings are spaced every 150' if the soil borings are found to be consistent in the area. As with the reduction of the bridge soil borings, a request to reduce the number of noise wall and retaining wall borings will need to be submitted in writing to the Administration and approved.

The following questions were received January 6, 2015.

Question 81:
Revised Page 130 issued with the addendum, under TC 2.09.03 requires the schedule to include 21 months for concurrent third party utility relocations to be completed after the DB completes advanced clearing and grubbing. This is in conflict with Page 338, TC 3.15.01.02 that says, "There is a 12-18 month relocation timeframe that will encompass all of PEPCO, Verizon, Level 3 and Comcast's relocations. The commencement of said relocation activities is contingent on the completion of the clearing and grubbing activities."

Response 81:
Page 130 under TC 2.09.03 will be revised by Addendum to reflect 18 months for concurrent third party utility relocations to be completed.

Question 82:
Revised Page 133 has omitted TC 2.10.01, and starts with TC 2.10.02.

Response 82:
TC 2.10.01 is included on page 132. TC 2.10.02 is unintentionally duplicated on page 132 and page 133. TC 2.10.02 on page 133 references the correct section: TC 3.20.08.04.03. This will be revised in an upcoming Addendum

Question 83:
Are all of the right-of-way plats available for the project?

Response 83:
All of the right-of-way plats (totaling 15) for the project have been issued and posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\D - Right-of-Way\04-Right-of-Way Plats\

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

The following questions were received January 12, 2015.

Question 84:
Can SHA provide as-builts and/or any design information on the existing large stormwater facility located at the end of Catone Ct. (approximately Sta. 707+00 LT.)? This existing facility currently outfalls upstream of the culvert extension at Sta. 707+50 LT., as well as upstream of proposed POI-17 and is not incorporated into the Conceptual SWM Report.

Response 84:
SHA has obtained as-built plans for the Livingston Woods facility from the Prince George's County Storm Drainage Maintenance Division, which have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\K - Stormwater Management & Surface Drainage Info.\03_87464A_01 - Livingston Woods.pdf

Question 85:
SHA stated in Response 64 that "An H & H analysis has been performed" but only the Concept Hydraulic Report was posted to ProjectWise. Can the Hydrologic Report also be provided to the design-build teams (specifically the "Revised Hydrologic Analysis Report" referenced in the MDE Approved Discharges Correspondence Letter dated April 2013 from the Concept Hydraulic Report?

Response 85:
The hydrology report (MD210_Hydrology_Report_April2013.pdf) has been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\ Design-Build\PG7005170\I - Design Files & Other Pertinent Information\

Question 86:
Can the HEC-RAS model and HEC-RAS files for Carey Branch used in the Concept Hydraulic Report be provided to the design-build teams?

Response 86:
The HEC-RAS files (MD210 RAS 092514.zip) have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\ Design-Build\PG7005170\I - Design Files & Other Pertinent Information\

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 87:
The Hydraulic model provided in Addendum 3 shows a hydraulic jump directly upstream of the existing Kirby Hill double-cell box culvert and the proposed culvert extension. The 100-year floodplain boundaries shown on the plans (existing and proposed) reflect this hydraulic jump but do not account for the ponding that may occur as a result of the backwater at the culvert opening. Has SHA and/or the regulatory agencies approved this interpretation of the hydraulic model and the subsequent floodplain boundary mapping at this location? If the culvert opening backwater is mapped, it will show the proposed locations of Abutment A and Pier No. 1 of Bridge No. 1630700 located within the 100-year floodplain. The Structure Specific Design Requirements on page 245 of the RFP state that "All portions of the structures shall remain outside of the 100 year floodplain of Carey Branch."

Response 87:
The Hydraulic model provided in Addendum 3 shows a hydraulic jump. This hydraulic jump is formed due to supercritical flow in the steep concrete-lined channel transitioning to subcritical flow as a result of the existing Kerby Hill Road structure acting as a control. SHA has reviewed and agrees with this modeling approach. This concept level report has not been submitted to MDE. Per TC Section 3.11.03.01.03 Hydraulic Analysis, The Design-Builder is to perform all hydrologic and hydraulic studies to secure MDE permit modifications and approvals for the proposed work.

With respect to Abutment A and Pier No. 1 of Bridge 1630700 being within the 100 year floodplain, please be sure to view the proposed 100 year floodplain in the concept level report rather than the existing 100 year floodplain. The 100 year floodplain based on the proposed condition in the concept level report does not reach Abutment A and thus meets the Structure Specific Design Requirements noted.

Question 88:
Please clarify the discrepancy between the endwalls shown at the upstream end of Culvert No. P-0394 on the structural plans and the roadway plans. The hydraulic model used the endwall shown on the structural plans for their analysis and this approach has a lower entrance coefficient than the existing endwall entrance. This may account for why the proposed 100-year floodplain is lower than existing conditions upstream of this culvert. It should be noted that Abutment A of Bridge No. 1630700 is within the existing 100-year floodplain shown on the RFP plans. The Structure Specific Design Requirements on page 245 of the RFP state that "All portions of the structures shall remain outside of the 100 year floodplain of Carey Branch." Does SHA agree with the interpretation of the model that the proposed floodplain is lower than existing at this location (and thus Abutment A would not be within the floodplain limits as shown)?

Response 88:
The proposed endwall shown on the structural plans is correct. Under the existing condition, the Kerby Hill Road structure has wingwalls parallel to the flow direction since they tie into the concrete-lined channel, thus the 0.7 entrance loss coefficient. For the concept proposed upstream structure extension design, 45° wingwalls were proposed that are modeled with the typical 0.5 entrance loss coefficient.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

With respect to Abutment A of Bridge 1630700 being within the 100 year floodplain, please be sure to view the proposed 100 year floodplain rather than the existing 100 year floodplain. The 100 year floodplain based on the proposed condition does not reach Abutment A.

Question 89:
Please provide the analysis files used for the MOT Option Evaluation Report and the Interchange Traffic Analyses Report. Please also confirm when the Final version of the MOT Option Evaluation Report will be provided.

Response 89:
The analysis files used for the MOT Option Evaluation Report and the Interchange Traffic Analyses Report have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\G - Appendices\04-Existing & Proposed Traffic Data\Synchro Files

Please note MOT Option Evaluation Report and the Interchange Traffic Analyses Report is conceptual. The Report will not be finalized, but is intended as preliminary information which may be considered in the development of the Design Builder's Transportation Management Plan. Per 3.16.05.01 of the RFP, the Design Build Team will be required to develop a final TMP.

Question 90:
RFP page 227, the last line in the table states "Lane Distribution – Left-Side Base-Widening and Shoulder Reconstruction." What is "Left-Side in this statement? If it is left of the baseline, what is the lane distribution percentage for the base widening right of the baseline? If it is left of the direction of travel, what is the lane distribution percentage for right of the direction of travel?

Response 90:
Left and right are relative to the direction of travel. The last two lines in the table refer to traffic distribution factors when there is more than one lane in the design direction. The factors for "Lane Distribution - Left-Side Base widening and Shoulder Reconstruction" refer to the lane distribution factors that shall be used when the base widening / shoulder reconstruction is located in the inside shoulder. The factors for "Lane Distribution – Rehabilitation Existing Pavement" refer to the lane distribution that shall be used for the rehabilitation of existing pavements and when the base widening / shoulder reconstruction is located in the outside shoulder.

Question 91:
RFP page 228, in the table under the "Flexible" column for Roadway Elements 2, 3 and 4, has values listed for "Minimum Modulus of Subgrade Reaction" and "Maximum Modulus of Subgrade Reaction (static)". Why are these listed for Flexible pavement?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 91:
This table will be revised as part of Addendum 4. All flexible pavement shall be designed based on the concept of the resilient modulus. All rigid pavement shall be designed based on the theory of modulus of subgrade reaction (static).

Question 92:
On RFP Concept Plan sheet 7 (TS-03 of 05) shows one mainline lane in each direction on "Pavement Rehabilitation" and 2 lanes in each direction on "Base Widening." The plan view agrees with this, for the stations listed on the typical. The table on RFP page 227 seems to state the Design-Builder has to design rehabilitated pavement for 80% of the traffic and 40% on the base widening pavement. Is this correct for the typical on TS-03? (i.e. 80% on the single lane of pavement rehabilitated and 40% on the 2 base widening lanes?)

Response 92:
As mentioned in response of Question 90, Lane Distribution - Left-Side Base widening and Shoulder Reconstruction refers to base widening located in the inside shoulder; and Lane Distribution – Rehabilitation Existing Pavement refers to base widening located in the outside shoulder.

Question 93:
Looking for the new files listed in the response to RFI 52, we see 3 directories have been created on Projectwise:

pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\
160225X0\
160226X0\
160227X0\

And we see under "Folder Properties" there are 12 to 17 files in theses directories, but we cannot see the files nor can we download them. We believe the "workflow state" for these files is set to "preliminary" and the Guest_PG700 user account does not have rights to access file set to "preliminary." Please change the workflow state of the file to "draft" or "review", or give the Guest_PG700 user account rights to "preliminary" files.

Response 93:
It appears there was a glitch with the properties for those folders, which has been fixed, and all files are now in the correct state and viewable by the "Guest_PG700" login.

Question 94:
Are there any other files for this project on Projectwise that proposers cannot see or access?

Response 94:
No. All files are in the review state and should be viewable by the "Guest_PG700" login.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

The following questions were received January 15, 2015.

Question 95:
Can SHA provide Microstation files of the Forest Impact Plans as provided in the RFP?

Response 95:
The Forest Impact Plan sheets and model file have been uploaded to the following location on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\15-Forest Impact Plans\

Question 96:
Will SHA provide the following files since they have not been posted in Project Wise:

pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\08-Potential SWM area file\

pw:\\shavmpwx.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\09-Conceptual SWM grading file\

Response 96:
The Potential SWM Area File is the same as the Concept Drainage File. The Concept Drainage File is located here on ProjectWise:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\10-Conceptual Drainage File\

A conceptual SWM grading file was not developed; therefore, a file will not be provided.

Question 97:
SHA has provided two different survey files (mTO-C007_MD210.dgn and mTO-S000_MD210.dgn) with large discrepancies in elevation between them. Why were two different surveys provided? Will SHA provide a description of the accuracy of each survey and which one the design build team should base their bid on?

Response 97:
mTO-C007_MD210.dgn is the current topographic file, which is a combination of ground survey and 10-scale LIDAR. This information is considered Engineering Data and the Administration will stand behind its accuracy.

mTO-S000_MD210.dgn was a previous survey from 2006 which was a combination of ground survey and photogrammetry data at 30-scale. SHA's design for the Concept Plans were developed using this survey data.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

SHA's concept design was checked verses the newer, more accurate survey data and it was determined that the differences were negligible. The Concept Plans depict the mTO-C007_MD210.dgn topography.

The following questions were received January 21, 2015.

Question 98:
Please refer to WSSC Standard Specification 02510 which states that WSSC will furnish water main pipe less than 14-inch, fire hydrants and valves. Will WSSC furnish these materials as part of this project or is it the Design-Builder's responsibility to furnish these materials?

Response 98:
Per the project specifications, Section 3.15.01.07.09.10 Materials, "The DBT shall furnish all material. The DBT will procure materials referred to in WSSC Manuals as "to be furnished by the Commission" from the latest WSSC Approved Manufacturers and Materials List or equals approved by WSSC."

Question 99:
Is PVC water mains permitted on the project? If so, are there any limitations on where PVC water mains may be used on the project? If PVC is permitted, will WSSC furnish the materials for water main pipe 12-inches or less or is the Design-Builder's responsibility to furnish the materials?

Response 99:
Water mains within SHA right-of-way shall be DIP, CL 54 or higher. PVC may be used within Prince George's County right-of-way, but will require prior approval by WSSC. It should be noted that the vast majority of the proposed WSSC water lines, as depicted in the Concept Plans, are within SHA right-of-way. Per Section 3.15.01.07.09.10 Materials, the Design Build Team will be responsible for furnishing **all** materials.

Question 100:
Please clarify which, if any, relocated water mains on the project required cathodic protection. If cathodic protection is required, please provide specific requirements for the cathodic protection required for each relocated water main.

Response 100:
Please reference ***WSSC Design Manual Part Three, Section 28. Corrosion Control*** for cathodic protection requirements.

Question 101:
Will WSSC furnish sanitary sewer manhole frames and covers or is it the Design-Builder's responsibility to furnish these items?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 101:
Per the project specifications, Section 3.15.01.07.09.10 Materials, "The DBT shall furnish all material. The DBT will procure materials referred to in WSSC Manuals as "to be furnished by the Commission" from the latest WSSC Approved Manufacturers and Materials List or equals approved by WSSC."

Question 102:
Is open cutting across MD 210, Kerby Road, and Livingston Road permitted for the installation of water, sewer, gas, storm drains, etc.? If open cutting is permitted, are permanent casings required for the sanitary sewer mains, water mains and/or gas mains? Are there any other specific requirements or limitations on open cutting across MD 210, Kerby Road or Livingston Road?

Response 102:
Open cutting across MD 210 is permitted provided that the Design-Build Team adheres to the lane closure schedule outlined in SP 104.01. WSSC water lines within MD 210 shall be constructed of DIP, CL 54 or higher and will not require casing. RCP storm drains will not require casing. Permanent casings are required for all other third party utility crossings. Steel plates will not be allowed on MD 210.

Open cutting across Kerby Hill Road and Livingston Road is permitted pending the approval of final Maintenance of Traffic plans for the installation work. Steel plates are permitted on Kerby Hill Road and Livingston Road, except from November 15th to March 15th. Open cut utility installation on a Prince George's County roadway will require a permit from the Prince George's County Department of Permitting, Inspection and Enforcement.

Question 103:
Will WSSC review fees be waived for this SHA project or is the Design-Builder responsible for the review fees?

Response 103:
WSSC review fees will be waived for this contract.

Question 104:
Please clarify the Design-Builder's responsibilities in regards to the proposed relocation of Level 3 facilities. Will Level 3's relocated facilities be relocated vertically to provide minimum cover and adequate protection for the Design-Builder's grading operations under both the existing and the final conditions? Will the Design-Builder be required to perform any grading work for the relocation of the Level 3 facilities by Level 3's contractor? Will the Design-Builder be responsible for providing special protection measures for these facilities during normal grading operations for the construction of the MD 210 improvements?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 104:
Level 3's relocated facilities will be installed at a depth that should provide adequate cover during the construction phase of the project. The extent of the Design Build Team's responsibility with respect to site preparation for Level 3 is included as part of the Advanced Clearing Permit. If the Design Build Team's activities come within 2 feet of Level 3' cable, coordination with Level 3 will be required to explore additional protection options. Per 3.15.01.15, the Design Builder's Utility Coordinator shall be required to "incorporate and accommodate utility relocations in the schedule and sequence of construction" and "assure adequate protection of utilities."

Question 105:
Please reference Contractor Question and Response No. 62 and the Concept Plans for Noise Barrier System 3/Retaining Wall No. 16463R0. Based on the information provided on the conceptual utility relocation plans and other information provided with the RFP, it is unclear how the existing utilities and/or relocated utilities (PEPCO, Verizon, and Level 3) can be sequenced and maintained when constructing Retaining Wall No. 16463R0, barring significant outages or temporary relocations. If the existing utilities are in place, there is insufficient room to construct the retaining wall and noise wall. If they are relocated, at a minimum, the relocated Verizon and Level 3 conduit and manholes will conflict with construction of the retaining wall foundations. Please provide additional information on how MSHA accounted for the utilities in regards to construction of Retaining Wall No. 16463R0 and Noise Barrier System 3.

Response 105:
The relocated utilities will be shifted an addition five (5) feet east of the proposed location shown in the concept plan to provide additional clearance from the noise wall and eliminate the conflict referenced.

Question 106:
Please provide the names and contact information of suppliers/fabricators that have MSHA pre-approved proprietary noise barrier systems meeting the LRFD design code. Also, please provide the limits on use for these proprietary noise barrier systems.

Response 106:
None of the SHA approved noise barriers were designed using the LRFD design specifications. Be advised the noise barriers on this project do not need to be designed in accordance with the LRFD specifications. Noise barrier design requirements will be updated as part of Addendum No. 5.

The limits on use for the SHA approved proprietary noise barriers are found on the SHA internet site for each proprietary noise barrier.

Question 107:
Please provide the names and contact information of all suppliers/fabricators that have submitted for review and approval a proprietary noise barrier system meeting the LRFD design code.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 107:
None have been submitted at this time.

Question 108:
It is our understanding that MSHA is in the process of developing their own standard and standard tall ground mounted and retaining wall mounted noise barrier standards meeting the LRFD design code. When does MSHA anticipate releasing these standards for use? Can MSHA provide the design criteria and design assumptions being used to develop these standards? Please confirm that no design consultants working on the standards development effort for MSHA are involved in this design-build pursuit.

Response 108:
New SHA standard noise barriers meeting the LRFD design code are under development but will not be finalized or approved in time for use on this project. It is anticipated that these revised standards will be issued sometime this year. The existing SHA noise barrier standards may be used for this project. Please see response 106. No consultants on any of the Design Build Teams are involved in the redesign effort for the noise barrier LRFD design standards.

Question 109:
Channel Protection Volume Calculations:
The method used in concept report to calculate channel protection volume is different from the one described in the "2000 Maryland Stormwater Design Manual". The SWM Design Manual describes a different elaborate method to calculate the channel protection volume by reduced RCN method. Please let us know if SHA has an agreement with MDE to use the method described in concept report for calculating channel protection volume. Please note that the channel protection required as per SWM Design Manual methodology would be more than what is shown in concept report.

Response 109:
The method of CPv has been revised in the latest SWM report. The revised SWM report was submitted to MDE on January 27, 2015. The concept was approved by MDE on January 30, 2015. The CPv method in that submittal matches the method show in the 2000 Maryland Stormwater Design Manual.

The revisions to the SWM report and the SWM Concept approval letter have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\K - Stormwater Management & Surface Drainage Info.\02-Concept SWM Report\2015-01-27 Revision

Question 110:
Variance Requests for Channel Protection:

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

The concept report includes variance requests for channel protection requirements. These variance requests use the channel protection volume as calculated by the method that is different from what is described in the "2000 Maryland Stormwater Design Manual". Please clarify that the method used in concept report to calculate channel protection is agreed and acceptable to MDE.

Response 110:
Please see the response to questions 109.

Question 111:
ROW needs for additional channel protection volume;
If channel protection volumes are calculated as per "2000 Maryland Stormwater Design Manual" then there would be additional need for storage. Please confirm that channel protection volume calculated by the method used in concept report is acceptable to MDE. If there is no agreement between SHA and MDE regarding the method used to calculate the channel protection in concept report then please clarify who will be responsible for ROW requirements to provide additional channel protection?

Response 111:
Right-of-way needs were based on the concept plans as provided. The revision to the CPv calculation has not changed the concept design. For information related to the channel protection methods, please refer to the response to question 109.

Question 112:
MDE approval for Concept SWM:
When is SHA expecting to have the SWM concept approved by MDE?

Response 112:
The SWM concept was approved by MDE on January 30, 2015. Please see the response to question 109.

Question 113:
Incorporating overtopping of Carey Branch in the Stormwater Analysis:
The concept hydraulic report shows that large storm events overtop the streambanks and part of the flow bypasses the MD 210 culvert and enters the drainage ditch in existing and proposed conditions. Has MDE been made aware of this situation and how it may impact the stormwater analysis of downstream study points?

Response 113:
MDE has reviewed the concept hydraulic analysis but has not been alerted of this situation specifically. It is generally understood that Carey Branch does overflow its streambanks. Detailed designs have not been completed for the area and detailed computations and final storm and hydraulics analysis are the responsibility of the Design-Build team.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 114:
3.15.01.06.01.2.b.i on RFP page 342 states "The key components of Pepco's relocation includes but, are not limited to…bore operations under MD 210…in the vicinity of the Kerby Hill Road/Livingston Road intersection. The DBT shall ensure that the proposed location for the bore operations and staging areas are adequately coordinated so as not to adversely impact the traffic patterns for the adjacent property owners."

a. What methods will PEPCO use to install these bores? What equipment will PEPCO use and what space does this equipment require? How much lay-down space does PEPCO require and where does this space need to be? Are jacking/receiving pits required? If proposers do not know the above information, how can proposers ensure that the proposed location for the bore operations and staging areas are adequately coordinated so as not to adversely impact the traffic patterns for the adjacent property owners? Will the DBT be able to dictate to PEPCO the location for the bore operations and staging areas, and PEPCO will have to use the areas the DBT gives them?

b. Same questions apply to Verizon's key relocations in 3.15.01.06.02.02.b.i on RFP page 343, and level 3's key relocations in 3.15.01.06.03.02 on RFP page 345.

Response 114:
Level 3: The approximate size of the bore pits will be 2'x4' with a lay-down area approximately 10'x20'. Per 3.15.01.06.03.02, the DBT will not dictate to Level 3, but will coordinate with them "so as not to adversely impact the traffic patterns for adjacent property owners."

Verizon: The approximate size of the sending pit is 10'x30' with a 10'x10' receiving pit. The lay-down area is not known at this point. More information will become available as Verizon's progresses with detailed design. Per 3.15.01.06.02.02, the DBT will not dictate to Verizon, but will coordinate with them "so as not to adversely impact the traffic patterns for adjacent property owners."

Pepco: The approximate size of the sending pit is 10'x30' with a 10'x10' receiving pit. The lay-down area is not known at this point. More information will become available as Pepco's progresses with detail design. Per 3.15.01.06.01.02, the DBT will not dictate to Pepco, but will coordinate with them "so as not to adversely impact the traffic patterns for adjacent property owners."

The proposed Pepco bore pit at approximate STA 725+75 will be shifted approximately 60' west of the initial location. The revised location will minimize the impacts to traffic patterns along Kerby Hill Road. This will be reflected in a future revision to the Advanced Clearing and Grubbing Plans.

Ultimately, it is the Design-Builder's responsibility to coordinate its final design and construction with the utility companies. All costs and risks to ensure the project utility relocations are coordinated and accommodated to meet the project schedule are the responsibility

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

of the Design-Builder and shall be considered in the development of its Technical Proposal and Price Proposal.

The following questions were received January 27, 2015.

Question 115:
Has the SHA Office of Structures – Structure Hydrology and Hydraulics Division reviewed and approved the delineation of the 100-year proposed floodplain upstream of the Double Cell Box Culvert under existing Kerby Hill Road and at the proposed Kerby Hill Road structure spanning Carey Branch as shown on the RFP concept drawings (PS-11 and PS-20)?

Response 115:
SHA Office of Structures – Structural Hydrology and Hydraulics Division has reviewed and approved the proposed 100 year floodplain delineated for the concept design.

Question 116:
We have reviewed the proposed floodplain provided on the RFP concept drawings (PS-11 and PS-20). If during final design, MDE and/or SHA Office of Structures – Structure Hydrology and Hydraulics Division disagree with the delineation of the proposed floodplain provided on the RFP concept drawings (PS-11 and PS-20) at the proposed Kerby Hill Road structure spanning Carey Branch, will the Design-Build Team be responsible for moving the structure outside of the updated 100-year floodplain?

Response 116:
Per 3.11.04.01.01.G, "All portions of the structures shall remain outside of the 100 year floodplain of Carey Branch." It is the responsibility of the Design-Build Team to develop 100 year floodplain limits based on their final design. If that proposed floodplain is in conflict with the proposed Kerby Hill Road structure spanning Carey Branch, the Design-Build Team will be responsible for moving the structure outside of the updated 100 year floodplain.

Question 117:
We understand the Design Builder has to perform the work in the Advance Clearing and Grubbing plan in order for PEPCO, VERIZON, and other utility companies to relocate their facilities. We understand once the advance clearing is complete, the utility companies have 18 months to complete their relocations. Is there any other work the Design Builder has to perform before the utility companies can start work in the field? Specifically does the Design Builder have to provide Maintenance of Traffic, temporary pavement, utility access roads, drainage improvements, stream relocation, dewatering, fence removal/replacement, or traffic barrier removal/replacement for the utility companies? (This question only pertains to the utility companies who are relocating their own facilities.)

Response 117:
The Design-Builder's responsibility related to third party utility relocations is as stipulated within the Request for Proposals. Any work to coordinate and accommodate the utility

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

relocations to meet the project schedule is the responsibility of the Design-Builder and shall be considered in the development of its Technical Proposal and Price Proposal. No additional work outside of what is stipulated in the Request for Proposals is required; however, any work which is provided by the Design-Builder to advance utility relocations may be beneficial in achieving the project schedule and/or "No Excuse Bonus".

Question 118:
We understand the intent of this Contract is to have PEPCO. Verizon and Level 3 relocate their own facilities at the beginning of this Contract, starting as soon as the Design Builder completes the advance clearing and grubbing work. We also understand the Design Builder is to avoid impacting relocated PEPCO, Verizon and Level 3 facilities. The Concept Utility Plans show several relocated facilities in conflict with existing traffic lanes, including:

Relocated Verizon Pole in Kerby Hill Road travel lane, Left of Sta. 66+25+/-.

Relocated PEPCO manhole in Kerby Hill Road travel lanes, Left of Sta. 66+00+/-.

Relocated PEPCO pole in existing parking lot, Right of Sta. 22-90+/-.

What is SHA's intent in these locations? Who is responsible for the Maintenance of Traffic work for installation of these utilities? Who is responsible for protecting the public from hitting these facilities during construction?

Response 118:
The relocated Verizon Pole in Kerby Hill Road travel lane, Left of Sta. 66+25+/- is no longer needed and will be removed from Verizon's relocations.

The relocated PEPCO manhole in Kerby Hill Road travel lanes, Left of Sta. 66+00+/- will require protection during the construction phase of said structure. The DBT must consider, coordinate and accommodate the necessary Maintenance of Traffic needs to facilitate the construction in its design and construction.

The relocated PEPCO pole in existing parking lot, Right of Sta. 22-90+/- will be removed and run underground eastward along Livingston Road and then cross over Livingston Road after the noisewall.

The Design-Builder is responsible for protection of facilities during the construction phase including safe maintenance of traffic for the traveling public.

The following questions were received January 29, 2015

Question 119:
RFP Section 3.11.04.04.02 states "Design of noise barrier elements shall be in accordance with AASHTO LRFD Bridge Design Specifications. Foundations shall be designed in accordance

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

with this performance specification." RFP Section 3.11.04.04.05 states "SHA Standard Details shall be utilized whenever possible. Any proposed deviation from the established standards shall be approved in writing by the Office of Structures."

a. The current MDSHA noise wall standards are based on the Strength Design Method (load factor design). We request that the LRFD design requirement be waived and the design of the noise barrier elements be based on the Strength Design Method.

b. As an option, please provide MDSHA Noise Wall Standards based on AASHTO LRFD Bridge Design Specifications.

Response 119:
Noise barrier design requirements will be modified as part of Addendum No. 5.

Please refer to the response to question 38 for the approval process for a non-standard noise wall.

Question 120:
If Class 54 Ductile Iron Pipe is used for the sanitary sewer crossings under MD 210, is it acceptable to eliminate the sleeves shown on the concept plans.

Response 120:
The DBT will be required to utilize **Class 54 DIP and sleeves** for sanitary sewer crossings.

Question 121:
If the sleeves cannot be eliminated, is the use of PVC Sewer pipe (inside the sleeves) as specified in WSSC Standard Specification 02530 permitted on the project?

Response 121:
PVC Sewer pipe is not acceptable within SHA right-of-way.

The following questions were received February 4, 2015

Question 122:
Drawing SR-02 (Sheet 61) of the Concept Plans depicts riffle grade controls to be installed at approximately STA 7+50 and STA 9+25 along the stream channel baseline. These on-alignment grade controls are not depicted in the plan view on Drawing SR-01 and are not encompassed within the LOD on the most recent environmental impact plates. Installing these controls would require a modification to the approved MDE/USACE Joint Permit Application. Is it the Administration's intent that these two in-stream structures be included in the contract?

Response 122:
The preliminary concept design included the in-stream structures in question. These in-stream structures in question will require a modification to the Joint Permit. It will be the DBT's

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

responsibility to design the stream relocation and the applicable in-stream structures, as needed. It will be the Design Builder's responsibility to obtain final approval from the required agencies.

Question 123:
Dwg. Nos. S01-9, S01-10, S01-11, and S01-12 of the Conceptual Plans state that the minimum steel section height is to be 42". Dwg. No. S02-5 states that the minimum steel section height is to be 56". The RFP does not stipulate a minimum steel section height requirement beside what would be required per AASHTO. Please clarify if the heights given on the Conceptual Plans are requirements of the contract.

Response 123:
The conceptual plans are not requirements of the contract. They were provided as a conceptual reference for the DBT's as to the depths that may be expected for the spans shown on the conceptual plans. The girder depths may be different from what is shown on the concept plans. The DBT's are required to meet the requirements of TC 3.11 and the guidelines set forth in 3.11.02.01.

Question 124:
Noise Wall 4 was realigned and shortened in Addendum No. 4. The realignment of the noise wall between Sta. 677+00 and Sta. 680+00 LT. appears to be behind a retaining wall. Please provide existing plans for this retaining wall so bidders may determine if caisson construction can occur in this location without affecting the stability of the wall. We believe this wall to either be 16229R0 or 16230R0.

Response 124:
The as-built plans for retaining wall 16229R0 have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\Retaining Wall 16229R0\

Question 125:
Along MD 210 from approximate Sta. 674+00 to Sta. 690+00 RT. an underground electric and telephone line appears within the utility Cadd file who's disposition is not called out in the RFP documents. These utilities will be in conflict with the construction. Please advise as to whether these utilities in fact do exist and if they do, what relocation activities and alignments will take place to avoid proposed improvements.

Response 125:
The existence of the underground line was confirmed by test pit. The line is an 18 pair communications cable in a 1 ½ inch sleeve owned by SHA. The communications line crosses MD 210 approximately 150 feet north of the Wilson Bridge Drive intersection, and connects onto the Pepco overhead poles in the southeast quadrant of the Wilson Bridge Drive intersection. The Design-Builder will be required to maintain the operation of this line and relocate it if required due to the project impacts.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

As-builts for the Wilson Bridge Drive traffic signal can be found on the SHA's website:

http://www.apps.roads.maryland.gov/SHAServices/SignalPlanLocator/plans/PDFs/pm210sL.pdf

The Construction Details associated with the above plans have been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\H - Conceptual Plan Sheets\14-MD 210 As-Builts\2036ConstructionDetails.pdf

Question 126:
Question 88 and the subsequent response deal with the extension of the upstream end of Culvert No. P-0394. The response indicates that the proposed endwall shown on the structural plans is correct and that the hydraulic models took into account the entrance loss coefficient of 45-degree wing walls. This appears to be contradictory to the geometric requirements within the RFP in TC Section 3.11.04.02.02 for Culvert C02 that state that the culvert extension shall tie into the exiting concrete channel, retaining walls and fence. In order for the existing retaining walls to remain and tie into the wing walls, wouldn't the wing walls need to be parallel to Carey Branch? Please clarify the intent.

Response 126:
The DBT is correct that the wingwalls need to be flared to produce the desired hydraulic effect. Per 3.11.04.02.02, the C02 extension needs to provide a tie in with the existing Carey Branch concrete channel, retaining wall and fence. The DBT needs to meet both requirements. The method for how this is accomplished will be determined by the DBT as part of their final design.

Question 127:
Addendum No. 3 revised IFB Section 3.18.01, 4. to define the sound-absorptive treatment requirements and their approximate locations. Per IFB Section 3.11.05.02. the highway side of all noise barrier panels shall be a fuzzy rake/double rake finish to match an adjacent noise barrier. This aesthetic finish cannot be applied to portions of the barrier with sound absorptive treatment. The sound absorptive treatment is typically formed or stamped depending on the absorptive material used. This means that a different finish will need to be specified and will have discontinuity between the reflective panels and the absorptive finish panels. In addition, no material specifications are provided as to what material is to be used for the absorptive treatment. Please provide clarification and guidance.

Response 127:
Section 3.11.05.02 will be revised as part of Addendum No. 7. The Design Builder is to match the finish of the reflective panels and the absorptive finish panels to the maximum extent practicable. Additionally, Addendum No. 7 will add a Special Provision for the material and construction requirements of the absorptive treatment panels.

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 128:
Please refer to TC Section 3.10.04.03 Repair of Damaged Pavement. This project will be performed over multiple construction seasons involving numerous traffic shifts where motorists will be crossing-over or traveling on longitudinal asphalt pavement joints. Please clarify the Design-Builder's cost responsibility for repair of fail pavement joints during the course of construction.

Response 128:
TC Section 3.10.04.03 states that it is Design-Builder's responsibility to repair damaged pavement. All the cost associated with repairing the failed pavement or pavement joints during the course of construction will be Design-Builder's responsibility.

Question 129:
In the RFQ, the ***2008 Standard Specifications for Construction and Materials*** are listed as Priority 1 Guidelines for Landscape (3.13.02.01, Table 1). The sections of the SSCM related to Landscaping, including the entire Category 700 and Section 920 of Section 900 are obsolete. Please provide the Special Provisions that replace the obsolete documents, or provide a ProjectWise link to their location.

Response 129:
Category 700 and Section 920 of Category 900 Special Provisions were included in the RFP.

Question 130:
Priority 14 in the Guidelines Table is listed as ***SHA Visual & Environmental Quality and Safety Criteria Review Guidelines***. It does not appear that a document by that name is available on the SHA website. Is this perhaps referring to the ***Maryland State Highway Administration Stormwater Management Site Development Criteria***? If so, please clarify and provide a link to the latest updated version of the reference that applies to this project. If not, could a copy of the document be provided on the ProjectWise site?

Response 130:
Yes, the *Maryland State Highway Administration Stormwater Management Site Development Criteria* shall replace the *SHA Visual & Environmental Quality and Safety Criteria Review Guidelines, June 2011*. The RFP will be updated as part of Addendum No. 6 to reflect this change.

The *Maryland State Highway Administration Stormwater Management Site Development Criteria* has been posted to ProjectWise at the following location:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\SDC_ReviewGuidelines_June 2011.pdf

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Question 131:
Section 3.13.04.03 Roadside Plantings, Design Intent, paragraph 2 of the RFQ states: "The Design-Build Team shall submit a site analysis plan indicating the planting opportunities for this category." No timeframe for submitting the site analysis is provided. Later in the same section, it is stated, "Density of plantings shall be approved by SHA according to the approved site analysis plan." Unless the site analysis plan is required prior to the submittal of proposal so that density can be determined, there is no way for the contractor to competitively estimate the landscape quantities required for the Roadside Plantings. Please provide clarification as to when the site analysis plan is required and how the Design-Builder should estimate the plant quantities required for this category of planting.

Response 131:
A site analysis plan is not required to be submitted to SHA prior to the submittal of proposals. Concepts are to be developed in the Preliminary Landscape Plans as indicated in section 3.13.03.01 A. A planting "Density" is not specified; however, plant material maximum spacing is provided in the Plant Material Table. The Design-Build team shall also "maximize planting whenever possible." in the Roadside Planting area.

Question 132:
In question and response number 78, SHA has stated that they are removing the noise barrier wall from approximately ramp Sta. 105+00 to 110+00 LT. Removal of the noise barrier system will result in not meeting the requirements of the RFP on page 395 which states "*The noise reduction provided by the noise barrier system at any benefited residence or benefited outdoor noise sensitive use (ONSU) is not reduced from that provided by the preliminary engineering barrier system.*" Please verify that SHA is aware of this discrepancy and that the Design-Build team should base their proposal on the barrier system design as modified by response 78.

Response 132:
Please see the responses to questions 65 and 66. Addendum No. 4 removed an additional length of Noise Barrier System 4. The RFP and the preliminary noise report were updated as part of Addendum No. 4 to account for this reduced wall length.

Question 133:
Section 3.09.09 of the RFP states that "Shared use paths and sidewalk at-grade crossings of side roads shall be located at signalized intersections." Please confirm that this should instead read "Shared use paths and sidewalk at-grade crossings of side roads shall be signalized when located at signalized intersections."

Response 133:
This statement has been removed from the RFP as part of Addendum No. 6.

Question 134:
Is there information not included in the RFP that provides the basis for the sizing and design of the realigned stream channel?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 134:
The sizing and design of the realigned stream channel shall be dictated by the Guidelines and References provided in Section 3.11.02.

The stream relocation concept was evaluated using hydraulic modeling to the extent practicable. The objectives of the conceptual realigned stream channel were to:

1. Provide a stable stream channel that meets shear stress criteria for the channel provided.
2. Have no significant increase in flooding (100-yr WSEL increases are less than 0.5 feet)
3. Provide a design that avoids using riprap or large stone through the entire reach.

This design provided is conceptual. It is the responsibility of the Design Build Team to perform a full Stream Relocation Design and acquire the necessary approvals as required by the RFP.

Question 135:
Will MDE require their recent Design-Build review approach of sequential reviews (i.e. MDE Plan Review Division will not review Final ESC Plans before Final SWM Plans are Approved)? Or will MDE review ESC plans concurrent with SWM plans and will approve Final ESC once Final SWM plans are approved?

Response 135:
SWM concept approval has been obtained which allows for the approval of advance stages of E&S. The SWM design has to advance to an appropriate level in order for the E&S to be approved. MDE has typically reviews ESC plans concurrent with SWM plans and has provided staged reviews prior to the Final SWM plans. The final SWM plans need to advance to a stage where the final approval of the ESC makes for good engineering judgment. Ultimate approval of ESC plans and SWM Design plans is detailed in the RFP.

Question 136:
Will MDE be requiring forebays for bioswales if the drainage area exceeds ½ acre to an inlet draining to the bioswale?

Response 136:
Regardless of drainage area size, all inlets that discharge into bioswales will require a forebay unless MDE makes a determination, at their sole discretion, that they are not required. It is the responsibility of the Design-Builder to receive final approval from MDE.

Question 137:
Several HPS luminaries (steel poles) are part of the existing exit ramp lighting from MD 210 NB to I-495 and will be impacted by construction on the north end of the project (Sta. 683+00). Page 287 states that impacted existing lighting is to be replaced with the same luminaire and pole type as the rest of the roadway in order to maintain consistency. However, page 289 states that "The D-B shall design and construct lighting that consists of LED cobrastyle luminaries...". Should only the impacted HPS luminaries within the project limits be replaced in-kind with HPS or

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

should they be replaced with LEDs as stated in the RFP? If the impacted HPS luminaries are replaced with LEDs, they will no longer maintain their own segment consistency. Or should the entire segment of HPS lighting for the exit ramp be designed and replaced with LEDs?

Response 137:
All impacted luminaries shall be replaced with LED cobrastyle luminaries as stated in the RFP. In a case where only a portion of a run of luminaries is impacted by construction, as is the situation along the NB MD 210 ramp to I-495, the Design Builder must upgrade the impacted poles to the LED cobrastyle luminaries as stated above. However, the Design Builder must also upgrade the rest of the lamps within the run of luminaries to LED lamps. The poles that are not directly impacted by construction within the run do not need to be replaced. The additional cost associated with the LED lamp upgrades shall be the responsibility of the Design Builder.

Question 138:
The September 2014 report, "Concept Hydraulic Analysis Report, MD Route 210 at Kerby Hill Rd./Livingston Rd. Interchange Improvements (Carey Branch), Prince George's County, Maryland, SHA Bridge Numbers 1630700 & 1603500, County Culvert No. P-0394, September 2014," references the following documents:

a. Preliminary Stream Morphology Letter Report (Letter Report) (KCI 2008)
b. Revised Hydrologic Analysis Report – April 2013
c. Concept HEC-RAS model/input files

Please verify whether or not these files are or will be available to the Design-Builder.

Response 138:
The Revised Hydrologic Analysis Report – April 2013 and Concept HEC-RAS model/input files have been available on ProjectWise. Please see the responses to questions 85 and 86.

The Preliminary Stream Morphology Letter Report has been posted to ProjectWise at the following locations:

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\MD210 Visual Assessment 2008.PDF

pw:\\SHAVMPWX.shacadd.ad.mdot.mdstate:SHAEDMS01\Documents\Design-Build\PG7005170\I - Design Files & Other Pertinent Information\MD210_Visual Assessment_Attachments 2008.pdf

Question 139:
Are the CAD surfaces (TIN) that are available on ProjectWise the same as the TIN developed by KCI for the stream (CAD surface (TIN) developed from field survey, photogrammetry, and 2008 LIDAR data)?

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

Response 139:
TIN surfaces were not developed based on the most recent survey. See response to question 97 for explanation of survey files. The TIN developed by KCI was based on the 2008 data and was determined to be acceptable based on a field assessment.

Question 140:
Is the fire hydrant on the east edge of the parking lot at the south end of the Wilson Tower Apartments, approximate MD 210 Sta. 722+00 201' rt. connected to the existing 12" water line on Kerby Hill Road at the valve at approximately MD 210 Sta. 727+25 145' rt.?

Response 140:
To the best of the Administration's knowledge, yes, the fire hydrant in question is connected to the existing 12 inch water line on Kerby Hill Road.

Question 141:
Please provide contract requirements for where epoxy coated reinforcement steel and Mix No 6 concrete is required for substructure units, retaining walls, and noise walls adjacent to roadways.

Response 141:
Paragraph 3.11.03.05.03.A on Page 239 states where Mix 6 concrete is required for substructure units, retaining walls and noise walls.

Paragraph 3.11.03.05.04.C on Page 240 states where epoxy coated steel is required.

Question 142:
Section 310.06.08 requires pavements to be a minimum 14" thick for frost depth. This is not reflected in the Roadway Element pavement sections provided. Please clarify this requirement.

Response 142:
Section 3.10.03.02.0503 discusses "Pavement Structure Drainage and Frost Protection" and refers to Section 3.10.06.

Section 3.10.06.08 has a requirement for a minimum 14" Frost Depth, mainly for MD 210 mainline, MD 210 Ramps, and MD 210 Shoulders.

The Asphalt Section for the following roadways is not 14" thick and is waived from the minimum 14" thick Frost Depth requirement:

- Livingston Road
- Kerby Hill Road
- Murray Hill Road
- Service Road
- Parking Lot
- Driveways and Bike Paths

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

The PCC Section for the following roadways is not 14" thick and is waived from the minimum 14" thick Frost Depth requirement:

- Murray Hill Road
- Service Road
- Parking Lot
- Driveways and Bike Paths

Question 143:
Confirm the existing median barrier does not meet the current "F" Shape barrier requirement and must be replaced.

Response 143:
As stated in the RFP, at a minimum, concrete barrier shall be installed in the median along MD 210 from Sta. 692+00 to Sta. 760+00. The Design-Builder is required to ensure that existing median barrier in all improvement areas meets latest AASHTO requirements and SHA standards. All concrete barrier warranted in improvement areas shall be 42" F-Shape as required by the RFP.

Question 144:
Can SHA extend the Q & A period for clarifications, if needed, for those questions still pending at the RFI deadline.

Response 144:
No, the Administration will not extend the timeframe for questions and responses; however, if the proposer notes any errors, omissions or discrepancies, it is the Proposer's responsibility to notify the Administration immediately. The Administration will address these errors, omissions or discrepancies to all Proposers at its discretion if the Administration believes there would be a material effect on the Proposals.

Question 145:
Has SHA confirmed that the 2:1 cut/fill slopes as shown on the cross sections will work with the existing Potomac Clay geology? If not, and additional ROW is required to flatten slopes, will SHA obtain this additional ROW?

Response 145:
As stated in the TC 3.14.03.02.02 Design of Fill Embankments and TC 3.14.03.02.06 Design of Permanent Cut Slope, geotechnical analyses of roadway slopes shall be performed to assess soil slope stability. A minimum safety factor of safety of 1.3 shall be provided under static loads for fill permanent embankment slopes for both global stability and surficial stability analyses. Permanent soil cut slopes shall be no steeper than 2H: 1V with a minimum factor of safety of 1.5 for global stability and surficial stability. If, however, the 2H: 1V slopes do not meet these requirements, it is the responsibility of the Design Builder to provide a design that meets the

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

project requirements within the project right-of-way. Refer to TC 3.05.04 Design Constraints for additional clarification.

Question 146:
On page 279 of the RFP, please clarify that contrast markings are only needed on the concrete bridge structure and that no special markings are required on the ramps.

Response 146:
Contrast markings shall be used on all Portland cement concrete pavement surfaces. For the purpose of the MD 210 ramps, they shall be considered part of mainline MD 210 and marked accordingly.

Question 147:
Are there any interconnect requirements for the proposed signal? (Page 264)

Response 147:
Please see Section 3.12.07.02.03 for interconnect requirements. The existing signal is interconnected to signals on either side of MD 210. The interconnect runs within a system along MD 210 from Wilson Bridge Drive to Old Fort Road. The proposed signal must be reconnected to the existing interconnect system, and will now serve as the northernmost interconnected signal along MD 210.

Question 148:
Page 428 states that the existing DMS and/or structure shall be reused. Has SHA confirmed that re-use of the DMS / structure is feasible and that the existing DMS sign and appurtenances will conform to current performance specifications, TC 3.23 in its entirety. If not, what is the responsibility of the Design-Builder?

Response 148:
It is the intention of the Administration to re-use the DMS and structure. The DMS is operational and should be able to be relocated. However, the Design Build Team must provide a working DMS sign to the SHA that conforms to TC 3.23, regardless of whether or not they are able to relocate the existing sign. The cost of relocating or replacing the existing sign will be the responsibility of the Design-Builder.

Question 149:
The Design-Builder is responsible to provide the advance clearing for the utility company relocations. During the relocation work, who will be responsible to maintain the E & S controls in accordance with the advanced clearing plans? If the utility company violates the LOD, who holds reasonability for this? Will this affect the incentive bonus for the Design Builder?

Response 149:
The Design-Builder is required to maintain the E&S control in accordance with the advance clearing plans and any modifications to the plan proposed by the Design-Builder. The utility

Contract No. PG7005170

MD 210 – Livingston Road/Kerby Hill Road Interchange

companies are aware of the LOD's being provided in the advanced clearing plans, and should be able to relocate within the area provided. If the utility company violates the LOD provided in the advance clearing plans, it will be the responsibility of the Design Builder to reestablish E&S controls. The utility companies will be required to obtain separate E&S permits based on their final designs, which should include any area outside of the advanced clearing plans. A utility company violating the LOD maintained by the Design-Builder could impact the Erosion and Sediment Control incentive bonus for the Design Builder.

Question 150:
The advance clearing plans do not show grading that will be required for the access road for the utility relocation work. Is SHA going to obtain the permits for this grading work?

Response 150:
The purpose of the utility access road is for future utility maintenance. The SHA will not obtain any permits for this grading work. The Design-Builder is responsible for all design and permitting related to the utility access road including any modifications it determines may be needed to the approved advance clearing plans. No modifications will be made by SHA to the advance clearing plans once the permit has been acquired.

Question 151:
Section 3.15.01.07.08.01(b) (pg 351) states that both the DBT and Washington Gas perform tie-ins to existing gas mains, please clarify.

Response 151:
Per 3.15.01.07.08.08.02, the DBT shall secure the services of a Washington Gas approved Contractor to perform the required work/tie-ins.

Question 152:
Per Section 3.11.04.03.04 C. 3) a friction angle of 34 degrees shall be used in the design calculations. As specified in Section 3.14.03.02.05 for Reinforced Fill Material is it acceptable to use the friction angle for AASHTO No. 57 Stone as determined by ASTM D 3080 or ASTM D 4767 in the design calculations for MSE Walls?

Response 152:
Section 3.11.04.03.04.C is for the design of MSE walls while Section 3.14.03.02.05 is for the design of reinforced slopes. Use a friction angle of 34 degrees for the design of MSE walls and use Section 3.14.03.02.05 to determine the friction angle for reinforced fill material in reinforced slopes.

2.09.02 Project Technical Elements & Approach

2.09.02 | PROJECT TECHNICAL ELEMENTS & APPROACH

In preparation, the Corman/JMT Design-Build Team (DBT) has reviewed the contract documents including the RFP section and the Scope of Work, guidelines, performance requirements, and design/construction criteria set forth throughout the RFP; attended the mandatory one-on-one meeting; visited the project site; and met with SHA to discuss several Alternative Technical Concepts (ATCs).

We clearly understand the project goals: (1) provide a safe facility and maintain mobility for all roadway users, (2) provide access control while minimizing delay to roadway users, (3) provide a facility that is able to be adequately maintained, and (4) minimize impacts to trees, floodplain elevations, and noise receptors. We also understand the objective of the schedule and SHA's desire to shorten the overall project delivery schedule. Over the past 4 months, in response to these goals and objectives, our DBT submitted 27 ATCs. Through this process, we have successfully improved the constructability and sequencing of many elements of the concept design. This has enabled concurrency of the construction in multiple areas of the project, taking what was once a linear project, building flexibility into the schedule and reducing the overall project duration.

PROJECT SEQUENCING

Through the ATC process many of the key elements of the concept plan have changed, therefore, ***a Key Element Exhibit has been included for reference on page 9***. This graphic includes three detailed sections showing ATCs 4, 12 and 23. Copies of the ATCs are provided in the appendix.

Primary ATC differences from the concept include:

- Reducing spans of Bridge S01 (ATC 4);
- Installing a precast arch culvert at Carey Branch, S03 (ATC 4);
- MSE Wall Abutments with vertical piles at abutments (ATC 6);
- Thickened noise wall panels to retain fill (ATC 7);
- Replacing CIP sections of RW7 with post and panel wall (ATC 12);
- Shifting noise wall alignment to avoid WSSC Relocations and drainage (ATC 13);
- Replacing noise barrier on bridge S01 with visual screening fence (ATC 14);
- Substituting the CIP section of RW3 with post and panel (ATC 23);
- Reducing number of thru lanes along MD 210 at Kerby Hill/Livingston Rd for MOT (ATC 25).

Benefits:

- ATC 7 simplified construction of RW7.
- ATC 6 enables corrugated metal pipe (CMP) sleeves to be installed to advance the median ramps and abutment work prior to driving piles.
- ATC 13 eliminated critical utility work from early stages.
- ATC 23 enables work to progress on utility relocations prior to installation of RW3 foundations per concept. Once utilities are moved, RW3 construction can proceed concurrent with median work.
- ATC 25 enables work in both the median and outside areas concurrently, rather than the median work being dependent on completion of outside utilities for traffic shift.

The project will be **sequenced in four phases** as follows and *as detailed on* ***our MOT Phasing Exhibits shown on pages 10-12:***

(1) Advance clearing, utility relocations, outside widening and construction of four slip ramps to facilitate right turns, stream relocation, arch culvert, partial S01 Bridge work;
(2) Concurrent median and outside walls and widening work, completion of bridge work;
(3) Completion of outside work;
(4) Mill and overlay.

***Utility Coordination and ensuring timely relocations*:** Even with our innovative MOT sequencing to enable multiple work locations, the DBT recognizes the difficulty and scope of the utility relocations required for this project. Without timely relocations, parts of the project cannot advance. As value added, we have engaged the services of Dale Kniffin of Utility Professional Services, Inc. (UP) to assist our team in the utility coordination efforts. Dale is successfully coordinating several large utility relocation projects with Corman including our Ft. Belvoir, Route 1 DB project, with many of the exact same utility owners as MD 210. Together, Dale, along with Corman Utility Coordinator, Michael Manoski and JMT Utility Engineer, Timothy Schott, will form our Utility Task Force Group (UTF).

Communication between the UTF and the utility companies is essential to maintain an agreed upon design and construction delivery schedule. Dale's prior experience with the various utility owners, provides a thorough understanding of each utility owners' needs and protocols and provides valuable experience to coordinate concurrent work schedules to maximize efficiency and expedite the relocation process. Weekly progress update meetings will be held to resolve any conflicts as soon as possible to avoid unnecessary delays. Our team will work with each utility company independently and concurrently to ensure that each utility company is continuously engaged on the project during both design and construction. The utility-provided designs will go through comprehensive conflict reviews to identify any and all potential areas of conflict, including confirmation of right-of-way (ROW) needs. Conflicts will be addressed and solutions presented to each utility company to find agreeable resolution. Every attempt will be made to reduce any in-field changes which could potentially delay construction progress. Mike will serve as the onsite utility coordinator for daily activities to monitor and coordinate the utility activities, addressing any issues immediately to reduce any delays caused by unforeseen work stoppages.

Our DBT has already started the utility coordination during the procurement stage through discussion with the various utilities. Upon notice of selection, the DBT will coordinate a utility coordination meeting with SHA and all involved utility companies to discuss design/construction delivery schedules. The UTF will review the most recent PEPCO, Verizon, Comcast, and Level 3 designs to make certain that they have been coordinated with the ROW acquisition limits, the MD 210 project design and other utility relocations. Additionally, the UTF will coordinate with Washington Gas and WSSC on the utility relocation design. Our DBT is carrying an allowance for miscellaneous re-designs for dry and wet utilities, as may be necessary to account for conflicts and solutions that arise with final plan development. As we have done on numerous projects, including the ICC, we have the expertise to assist the utility companies with activities such as jack and bore or conduit installation, either with self-performing the work or assisting to manage the subcontractors.

Since the utility relocations are such a large component of this project, our DBT worked diligently to refine work activities that are directly connected with utility relocations. This drove many of the decisions behind the creation and submission of our ATCs, primarily focused on sequencing the work for overall schedule efficiency and reduction. Below is our general sequencing and utility relocation approach. See the attached MOT Phase plans which provide further details on the project sequencing and utility relocations approach.

Phase I** (See Exhibit on Page 10)**: The general sequencing of work begins upon notice of selection and involves review and coordination of dry utility company designs, gas and wet utility designs, and early DB submission packages for line and grade, utility access grading, and designs for the slip ramps, roadway widening and RW3A as needed. The advance clearing is set to begin at NTP and take approximately 2 months to complete. After the clearing is progressed, we may construct a temporary RW3A wall, or provide adequate slope grading alongside the utility access road and parallel to RW3 that will better accommodate relocations of PEPCO, Level 3 and Verizon (*See detail on Key Project Element Exhibit on page 9).* Along with this concept, ATC 23 changed the foundation of RW3 to eliminate the large spread footing shown in the concept plans for RW3. The approved ATC and slope grading/RW3A construction allows the utility relocation work

to relocate without the need for RW3. This concept removes the RW3 construction from the critical path and advances the utility work which frees up the construction for slip ramp SR3 and associated road widening.

We anticipate needing to adjust the boring pit locations for the dry utilities crossing MD 210 at Kerby Hill Road to coordinate with the final design. These pits may need to be shifted south of the service station and utilize additional conduit or be accommodated near the indicated RFP locations with the need for MOT and pond adjustments. The jack and bore operations are slated for fall/winter of 2015 concurrently with Corman installation of water and sewer work along the SB 210 service road and SR1.

A portion of the water, sewer, and gas relocation is avoided by elimination of BMP 12 along Kerby Hill Road. We propose to have the gas relocation design finished by spring 2016 and begin the relocation work. SR-1 and associated road widening can be constructed with only a portion of the water/sewer/gas work complete, however, it is our goal to complete as much of the self-performed WSSC water/sewer and subcontracted gas work prior to opening the ramp. To reduce potential schedule impacts, at a minimum, we will install approximately 250′ of 36″ casing for the gas work that is in conflict with the road widening at SR1. In order to avoid schedule impacts from the gas relocation conflict at S01-Pier 1, we have revised the bridge design to a simple span structure. Removing Pier 1 eliminates the utility conflicts and associated schedule risk.

The existing service road profile will be adjusted to provide a compliant tie-in for the transition off of MD 210 to serve as SR-1. Although there are PEPCO poles in the vicinity, the DBT has been able to design SR-1 to avoid conflict with the existing poles. What makes advance construction of SR-1 and widening possible is ATC 12, which simplifies the construction of RW7 by employing the use of caisson foundations. SR-2, SR-3 and SR-4 and associated widenings are constructed in the spring and prior to the traffic shift into Phase II which is scheduled for June 2016. Once implemented, the median work area becomes available and Phase II work can proceed.

Other work planned for Phase I includes construction of culvert extensions C01 and C02, S01-Abutment A, Stream Relocation Work, S03 and Kerby Hill Road realignment. Approved ATC 4 allows the use of a precast arch at the Kerby Hill Road crossing of Carey Branch (S03). S03 construction will require a small portion of sewer relocation.

Phase II *(See Exhibit on Page 11)**:*** Switches traffic on MD 210 into a two thru-lane traffic pattern and closes the intersection to left turn movements. ATC 6 allows for the use of MSE abutments founded on vertical piles. This along with a 2-lane MOT configuration approved under ATC 25 and completion of the slip ramps, enables us to start the median ramp construction in summer 2016. With the use of CMP sleeves in the abutment fills, pile driving through MSE wall fills is eliminated as a concern and we are able to delay pile driving to provide adequate time for overhead relocations while at the same time construct MSE walls concurrent with overhead utility relocations. These overhead PEPCO relocations remain critical to completion of the bridges S01 & S02 and opening of the intersection. The use of the CMP sleeves/predrilling piles at Abutment C allows the existing waterline to remain in its current location as it will not be affected by the pile driving activity.

Concurrent with progressing work in the median, Level 3, Verizon, and PEPCO relocations will be completed. Since median work has started concurrently with utility relocation, by the end of the 18 month utility relocation window (approx. Feb. 2017), substantial savings to the overall project schedule durations is realized. Once the overhead lines at the intersection are relocated, the construction of RW3 will commence concurrently with the remainder of the median work and bridges. Other relocations along the outside of the NB and SB roadways, including completion of the gas relocations and self-performed water and sewer main relocations, are also slated for this phase. At the northern end of the project, WSSC 20″ water main and Level 3 relocations are avoided through use of ATC 13 (allows the re-alignment of noise wall 4) and associated redesign of the drainage system in the same area. This also eliminates the need for the portion of the utility access road and culvert extension.

Overhead signs, OH-7 and OH-8 will be completed in this phase with foundation work coordinated with the wall construction. Signalization and lighting will be coordinated and installed as the median ramps are advanced. The signal will be activated as soon as S01 is complete and traffic will be shifted onto Ramps A and B. This shift allows work to commence on RW7. This phasing-in of ramps will continue for ramps C and D, till all four ramps are open. All median ramp openings are independent of S02 completion. Once the overhead lines are cleared, Bridge S02 will be completed, however, the opening of this bridge will be tied to the completion of the approach roadway work on Livingston Road and requisite adjustments to Murray Hill Road. These improvements will require several interim traffic phases to tie into the Abutment "D." To facilitate the change in grade in the area, a temporary wire wall will be used to maintain access to SR-3 and Murray Hill Road. Completion of the south side of Livingston Road and Murray Hill Road is accomplished after required movements on the bridges are established and access by SR-3 is no longer needed. Work will also proceed on ancillary work such as grading and SWM BMP/Ponds along SB 210.

Phase III *(See Exhibit on Page 12)**:*** Shifts traffic adjacent to the permanent barriers along the newly constructed ramp walls in approximately December 2017. By the time traffic is shifted into the Phase III pattern, the utility relocations on the project are finished. The work to be finished is the completion of the outside widenings, Stage 2 of Livingston Road Improvements, Kerby Hill Loop Road, RW7, RW3, noise wall construction, median barriers and roadside finishes. The work adjacent to the apartment buildings, modifications to Wilson Bridge Road, and SWM will also be completed.

Phase IV: Removes the temporary concrete barrier (TCB) from mainline for final overlay. Work consists primarily of overlay and paving and completion of roadside finishes and landscaping.

MAINTENANCE OF TRAFFIC

The safe and efficient movement of motorists through active work zones and on SHA's roadway network is a principal mission of SHA. Regarding this project, vehicular traffic, including bus transit, pedestrian and bicyclist must be accommodated safely and efficiently during and after construction.

During construction, the DBT will evaluate work zone risks and strategies to mitigate them through transportation management strategies, such as an effective Transportation Management Plan (TMP); an Incident Management Plan (IMP); an experienced and knowledgeable MOT/Traffic Manager; communication with the public, community, and stakeholders; and safe and effective traffic control, including advanced and variable message signing. The MOT design will be in conformance with the RFP, including permitted lane closures for the safe and efficient passage of motorists.

Our proposed MOT plan minimizes major traffic shifts. To decrease the potential for drivers speeding through the work zone, police and speed camera enforcement will be encouraged. TCB will be used to provide a safe work zone for drivers and construction personnel. Enforcing safe pedestrian access through the work zone will require special attention. Safe pedestrian access will begin with a maintenance of pedestrian traffic plan that takes into account the existing pedestrian/bicycle traffic movements. MOT Plans that consider pedestrians/ bicycles will be developed with the goal of providing safe access through the work zone during construction.

In addition, the DBT will work with SHA and the Prince George's County Police Department on a motorist, pedestrian and bicycle education program in the surrounding community. Mitigation strategies during construction include clear delineated traffic patterns and pedestrian/bicyclist pathways. We will observe vehicular, pedestrian and bicyclist behavior during construction and adapt the traffic control devices and signage to coordinate with any non-conforming patterns that develop.

Included are three MOT graphics that depict three major traffic phases. A written description of each of the MOT phases is also shown. Phase IV is the final milling and overlay phase. Please refer to these graphics for additional details.

Through ATC 25, we have developed a MOT phasing plan that will allow MOT Phase II to be in a two lane configuration through the MD 210/Livingston Road/Kerby Hill Road Intersection. This two lane configuration will not prolong the full closure of the intersection, does not elongate detours, and maintains the required right turn access. Access to businesses/residences will be provided as required in the RFP. The benefit of ATC 25 is that it advances the median work by shifting traffic prior to completion of significant portions of utility relocations. The DBT recognizes it must be in compliance with the TMP for final approval and is committed to provide an aggressive, robust public outreach program to keep users informed of changes throughout the project corridor. This includes proactive communication with stakeholders, such as adjacent property owners; travelling public; surrounding communities; elected officials; WMATA; Prince George's Co. DPW&T, Executive Office, Council, Schools, Public Safety and Transit; so their concerns are heard and their needs are addressed. The DBT will also implement measures to improve motorist awareness and will coordinate with SHA and stakeholders with an education program in the surrounding community to educate them on the safe/ effective means for using the facility including bus stops and access through the work zones for pedestrians.

Below is the summary list of the primary benefits of our approach to designing and constructing:

- Early design packages for Phase I construction to support utility construction and selected portions of roadway widening and MOT slip ramps;
- Less major traffic shifts on mainline MD 210;
- Advancing critical path work simultaneously on dry utility relocations, median ramps and bridges;
- Simplified concrete construction of bridges, retaining and noise walls saving time and cost;
- Concurrent work by allowing access to median earlier – Closing the intersection mid-June 2016 and reopening it to left turns in approximately 16 months;
- Early project delivery – Completion Date of November 16, 2018.

MAINTENANCE BENEFITS

The DBT members have a longstanding history of delivering projects that are maintainable and sustainable and understand the proper design and construction of all project elements is a necessity to reduce future maintenance costs and for maintenance personnel to access and perform maintenance work safely. During design reviews, we will review material for compliance with SHA standards, low maintenance cost, replacement availability, and maintenance access. Our design and constructability reviews will include reviews of typical maintenance issues such as the following:

- **Pavement -** The flexible pavement design will require close collaboration with SHA's Office of Materials and Technology to ensure that the pavement design minimizes the need for long-term maintenance.
- **Structures -** The SHA Office of Structures (OOS) has a long history of providing the citizens of Maryland with aesthetically pleasing bridges designed and constructed in a manner that promotes longevity and low maintenance. Policies and Standards have been developed that promote these key components of Maryland structures. The DBT has extensive experience in the use of the policies and standards in our design and construction and will partner with OOS to gain acceptance of the structure designs, including bridges, retaining walls, culverts and noise walls required by this project.

  Our initial evaluation of the structures project requirements identified opportunities to incorporate many features that will reduce future maintenance by increasing the life cycle of structural elements, increase the ease of future maintenance activities, and not create a detriment to future maintenance. Specific features that will contribute to an increased design life while reducing maintenance include:
  - Epoxy coated reinforcement, which has a longer life cycle than black rebar and been proven effective as corrosion protection, will be used where applicable in accordance with RFP Sect. 3.11.03.05.04.
  - The DBT's innovative design of Bridge No. 1630700 reduces the bridge deck area and the number of bearings by over 40%, which substantially reduces initial cost/future maintenance costs for this bridge.

- LRFD will be used for the design of the bridges, which also contributes to its design life. The FHWA Highways for Life Program advocates for LRFD and promotes the following benefits associated with its use: state-of-the-art specifications that utilize the latest research and bridge knowledge; superior serviceability and long-term maintainability; and more robust structures with longer service lives and reduced need for major maintenance.
- The design of both bridges will incorporate SHA details that eliminate the expansion joints from abutments with fixed bearings and moves the expansion joints to behind the backwalls at abutments with expansion bearings. This increases the ease of future maintenance activities.
- Bridge No. 1630700 design incorporates a simple span bridge, eliminates a pier, and reduces associated maintenance of the pier.
- The use of a buried concrete arch culvert (S03) will reduce future maintenance.
- The use of concrete posts instead of steel posts for the noise walls will eliminate the possibility of corrosion from the steel elements and will reduce future maintenance.

- **Landscaping -** JMT's Landscape Architecture (LA) Team will develop Landscape and Reforestation plans. Two main considerations will define the planting design: 1) Maximizing available reforestation opportunities onsite, and 2) Providing landscapes that are context sensitive, environmental enhancements, low maintenance, and aesthetically unified throughout the project. The DBT will look to secure reforestation credits where possible for landscape beds and street trees working with SHA and MD DNR.

  JMT's LA Team prepared designs will utilize the plant lists provided in the RFP Book, will focus on the use of native species, and will create planting areas consistent with these five planting zones: (1) forest edge, (2) roadside plantings, (3) street tree plantings on Prince George's County Roads, (4) Reforestation Plantings, and (5) SWM Plantings. The DBT will look at creative solutions to the areas between the proposed sound barriers and the SHA Right-of-Way limits. Any plantings in these areas will need to consider the aesthetic needs of adjacent property owners, and accessibility for maintenance. Landscape designs will also need to consider the proposed utility relocations to ensure that vegetation does not impact overhead and underground utilities. The Reforestation site review states that there are 14.08 acres to be cleared and 7.23 acres available for on-site reforestation. Our team believes that the acreage to be cleared can be reduced by as much as 1.5 acres in the area between stations 714 and 722. This would reduce the reforestation requirements and assist in maintaining stability of the slopes along that section of the project.

- **Aesthetics and Sustainability -** The DBT prides itself in providing aesthetically-pleasing, context sensitive, and award winning projects. This project provides opportunities for the new infrastructure to assist in creating a positive identity for the surrounding communities. The Kerby Hill Road/Livingston Road Interchange has the opportunity of providing a visual gateway for the communities. The proposed retaining walls and sound barriers will also add to the overall project aesthetic in a way that can help create identity for the communities that will last for decades. These structures will be a constant reminder of SHA's commitment to these neighborhoods. The DBT is committed to incorporating site-specific aesthetic treatments as required by the RFP throughout the project that will enhance the experience of those living in the area as well as those passing through on foot, by bicycle, or by motor vehicle. These treatments will include both landscape and hardscape components that are functional, sustainable and context sensitive. The sustainability of the plant materials is critical to the long term success of the aesthetic enhancements to the project.

- **Stormwater Best Management Practices (BMPs) -** The DBT understands the importance of considering the long-term sustainability during the design of BMP facilities. The selection of BMP types takes into consideration the maintenance requirements, including access and materials. BMPs with low maintenance requirements and longer effective lives are given the preference over BMPs with moderate to high

maintenance costs. Our design ensures each part of the BMP facility is accessible by the equipment needed to maintain or rehabilitate the facility. Forebays to collect the sediments and attached pollutants included in our design. These forebay areas allow easier access and quicker, more efficient removal of sediments than cleaning the entire pond. Our design employs flatter slopes, less than or equal to 3:1, to the extent possible, which enables safer and easier access for SHA maintenance forces. The landscape design will emphasize the use of plant material that will ensure long-term growth, survivability and low maintenance.

To provide a facility that can be maintained requires that the constructed project be well documented. The DBT will provide complete facilities as-built plans of the built condition that meet the requirements of the SHA and be certified. For SWM facilities, we will complete and submit a SWM Facility As-Built that includes a Certification Package for each stormwater filtration facility.

The DBT will design the Stream Relocation/Restoration of Carey Branch to provide long-term stability of the design reach, thus limiting the maintenance required due to the impacts an unstable stream could have on structures, roadway embankment and utilities in the vicinity. The DBT will provide long-term channel stability through reductions in velocities, shear stress and stream power by creating a lower inset floodplain surface to redistribute bankfull and higher flows in a stable manner. In the long-term, creating a design which ties into the existing channel bed at the upstream end and the proposed culvert extension at the downstream end while following the natural slope of the valley, keeping flood flows oriented in a general down-valley orientation and keeping channel flows more uniform will have a higher success rate at achieving stability.

INNOVATION AND VALUE ADDED

The DBT has evaluated the Project Scope of Work and Performance Specifications to identify and understand the various project issues and risks. Our innovative approach to addressing key project elements is evident in the numerous ATCs developed and submitted to the SHA for the project. Our ATC development focused on maintaining the goals of the project, addressing the project issues, mitigating the risks, adding value, and providing reduced or eased maintenance benefits to the overall project execution and final product. Below are discussions of a select few of the ATCs being implemented by the team on the project that provide innovation, added value, and reduced long-term maintenance.

Exhibit 2-01: Select Few of the ATCs Being Implemented by the DBT

4	Proposes to replace the first two spans of Bridge No. 1630700 (Kerby Hill Road over MD 210 SBR) with a pre-cast concrete arch over Carey Branch in Span 1, and embankment in Span 2, saving construction cost and schedule. The use of a buried arch over Carey Branch reduces the SHA long term maintenance costs when compared to a bridge and provides SHA the smallest, least expensive, easiest to maintain, and most suitable structure for the required crossing.
6	Proposes the use of MSE Wall abutments on vertical piles that speeds up construction and eliminates the potential conflict during construction between the battered piles and the MSE wall. The benefits include a shorter bridge and associated reduction in future maintenance costs. It provides reduced abutment stem heights that enhance the aesthetics of both bridges. This ATC enables bridge construction to advance during overhead utility relocation work.
7	Proposes to reduce initial construction costs, expedite construction by using thickened precast panels for noise walls to retain fill resulting in a reduction to the future maintenance requirements since there is only one wall to maintain and not two. The use of precast elements and post and panel construction expedites construction of these critical wall systems and shortens project duration.
12	Proposes to replace cast-in-place portion of RW7 with a conventional post and panel wall by using thickened noise wall panels which eliminates construction of a separate cast-in-place retaining wall. This design builds flexibility into the project schedule, reduces cost, and shortens overall wall production

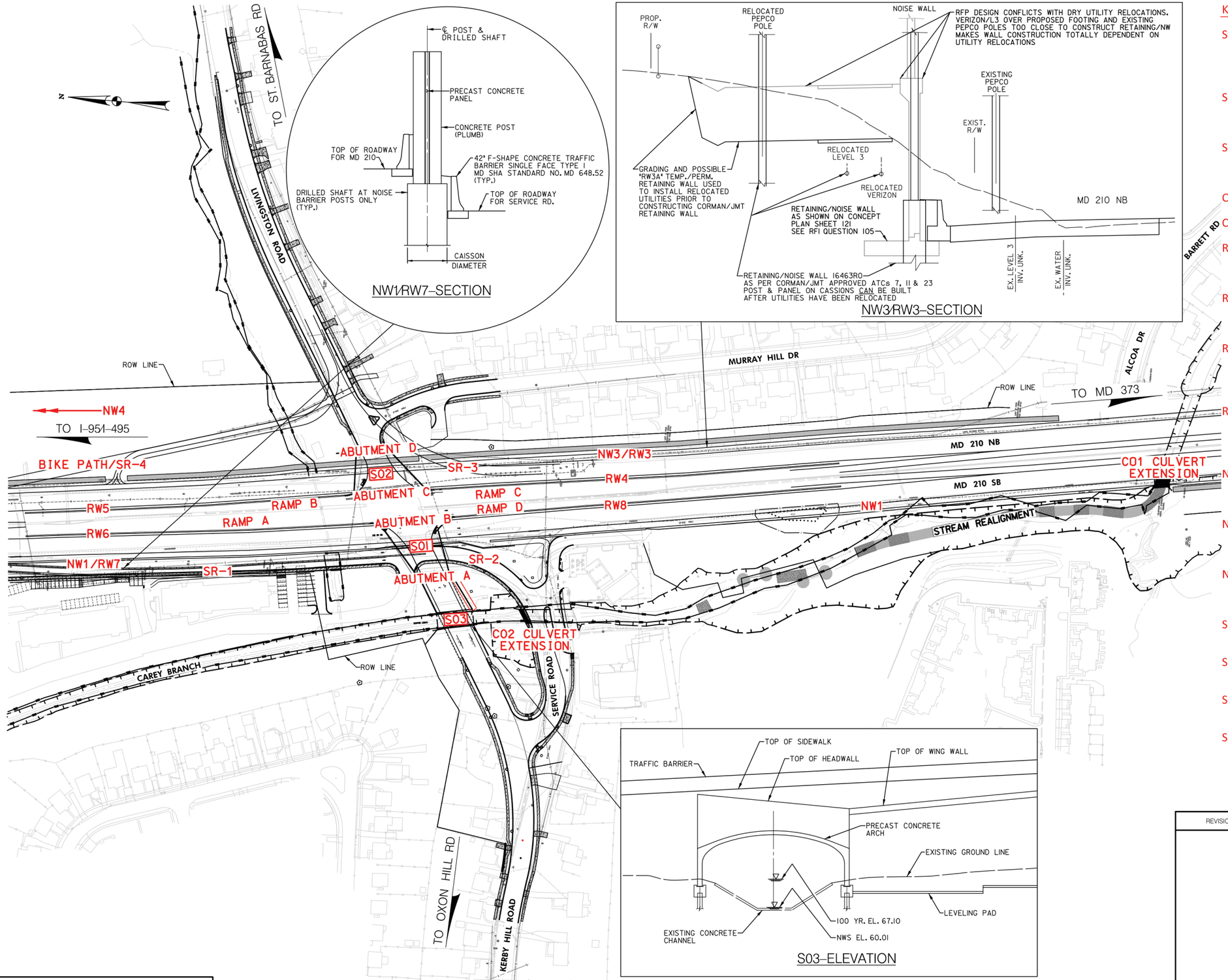
	schedule time. The changed foundation for RW7 enables widening SR-1 to be constructed in Ph. I, advance bridge work sooner and shifts RW7 to Ph. III. This contributes to better sequencing for the closure period of the left turns at the intersection. Future maintenance is reduced since there is only one wall to maintain and not two. Proposed concrete barriers are separate from the wall so future maintenance or upgrades are easier than integrated barriers shown in the RFP plans.
13	Although not considered an ATC, our team recognized the benefits to adjust locations of the proposed noise walls to avoid utility impacts and provide open drainage sections. There are long stretches of utilities being impacted by noise walls shown in the RFP plans, specifically, the newly installed 20″ WSSC water line along MD 210 NB north of Livingston Road. Relocating the noise wall away from the road and towards the ROW line eliminates stretches of impacts to these facilities. Goals of this ATC included reduction in initial construction costs by reducing the amount of concrete traffic barrier and closed drainage required, and cost and schedule savings of reduced utility relocations.
14	Proposes to eliminate the noise wall from the parapet of Bridge S01 (Kerby Hill Road over MD 210 SB) and provide the visual screening requirement with a modified Type I fence and visual screen slats. This results in a more aesthetically pleasing barrier than the standard structure mounted noise wall.
25	Proposes to reduce the number of through lanes along MD 210 in the area of the Kerby Hill/Livingston Road intersection. This ATC provides major benefits to the project schedule by shortening the critical path, allowing concurrent work of the dry utility relocations and the bridge and median ramp work rather than completion of the utility relocations prior to the bridge/median work. Provides a safer work zone for motorists and workers. See Maintenance of Traffic discussion above for additional details.

The DBT will provide the following elements that provide value added benefits that reduce maintenance requirements or facilitate future maintenance and construction activities of SHA and utility owners:

- Adjust design features, sequencing and construction methods that enable a reduction to utility impacts while providing requisite function and access to the facilities;
- SWM maintenance access away from MD 210 to provide a greater degree of safety for the maintenance crews, eliminates need for expensive barriers or removal of traffic barriers during maintenance operations;
- Use of native plantings in SWM facilities, which require less care and have a greater survival rate. The landscaping will blend into the native environment and provide wildlife habitat.
- Minimize forest clearing and realize incentives for reductions to forest impacts;
- Minimize environmental impacts to realize incentives for reduction to wetland/waterway impacts;
- Reduce and minimize long term SHA maintenance requirements of structures;
- Use of LED lighting for intersections reducing electricity usage and light fixture maintenance;
- Use of unique or innovative construction techniques such as precast elements;
- Adherence to utility company standards in design and construction to ensure facility meets utility company expectations for construction and maintenance.

The DBT has taken a proactive approach to reducing impacts to the environmental features throughout the project by reevaluating the concept design to determine what changes can be performed to reduce environmental impacts. The DBT will reduce impacts from the project by the following:

- Optimize the horizontal and vertical alignments and make adjustments that minimize environmental impacts without reducing the quality of the roadway corridor;
- Limit disturbance for installation of ESC devices, such as super silt fence, to 5 feet from toe of slope;
- Limit disturbances at pipe crossings by utilizing the existing pipes or box culvert for maintenance of stream flow during construction of the new crossing;
- State of the art design techniques for relocation;
- Identification of opportunities to reduce forest impacts.



KEY PROJECT ELEMENTS

KEY PROJECT ELEMENTS

S01 - KERBY HILL RD OVER SB MD 210 AND SERVICE ROAD (ABUTMENTS A & B)
SINGLE SPAN BRIDGE WITH MSE WALL ABUTMENTS ON VERTICAL PILES, FENCE BARRIER

S02 - LIVINGSTON ROAD OVER NB MD 210 (ABUTMENTS C & D)
SINGLE SPAN BRIDGE WITH MSE WALL ABUTMENTS ON VERTICAL PILES

S03 - KERBY HILL ROAD OVER CAREY BRANCH
PRECAST ARCH SUPPORTED ON H-PILES AND SHEETPILE CUTOFF WALL

C01 - BOX CULVERT EXTENSION AT MD 210 STA. 740 - 2 CELL

C02- BOX CULVERT EXTENSION AT SERVICE ROAD - 2 CELL

RW3 - NB MD 210 EAST SIDE (STA. 724 TO 737+40)
COMBINATION POST AND PANEL RETAINING WALL WITH NOISE BARRIER SYSTEM 3

RW7 - SB MD 210 WEST SIDE (STA. 711 TO 729+50)
COMBINATION POST AND PANEL RETAINING WALL WITH NOISE BARRIER SYSTEM 1

RW5/6 - NB AND SB MD 210 PARALLEL MSE/CIP MEDIAN RAMP WALLS NORTH OF INTERCHANGE (STA. 716+50 TO 724)
MSE WALLS WITH F SHAPE BARRIER TO SUPPORT RAMPS A AND B

RW4/8 - NB AND SB MD 210 PARALLEL MSE/CIP MEDIAN RAMP WALLS SOUTH OF INTERCHANGE (STA. 724 TO 733)
MSE WALLS WITH F SHAPE BARRIER TO SUPPORT RAMPS C AND D

NW4 - NB MD 210 EAST SIDE (STA. 677+24 TO 710)
NOISE BARRIER SYSTEM 4, POST AND PANEL NOISE WALL WITH F SHAPE BARRIER

NW1 - SB MD 210 WEST SIDE (STA. 671+90 TO 743+90)
NOISE BARRIER SYSTEM 1, POST AND PANEL NOISE WALL WITH F SHAPE BARRIER

NW3 - NB MD 210 EAST SIDE (STA. 724 TO 756+90)
NOISE BARRIER SYSTEM 3, POST AND PANEL NOISE WALL WITH F SHAPE BARRIER

SR1 - SLIP RAMP - SB MD 210 TO KERBY HILL ROAD
TEMPORARY EXIT RAMP FOR STAGING

SR2 - SLIP RAMP - EB KERBY HILL TO SB MD 210
TEMPORARY EXIT RAMP FOR STAGING

SR3 - SLIP RAMP - NB MD 210 TO EB LIVINGSTON ROAD
TEMPORARY EXIT RAMP FOR STAGING

SR4 - SLIP RAMP - WB LIVINGSTON ROAD TO NB MD 210
TEMPORARY EXIT RAMP FOR STAGING

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 210 AT KERBY HILL AND LIVINGSTON ROAD
INTERCHANGE IMPROVEMENTS

KEY PROJECT ELEMENTS

SCALE AS NOTED DATE FEB. 2015 CONTRACT NO. PG7005170

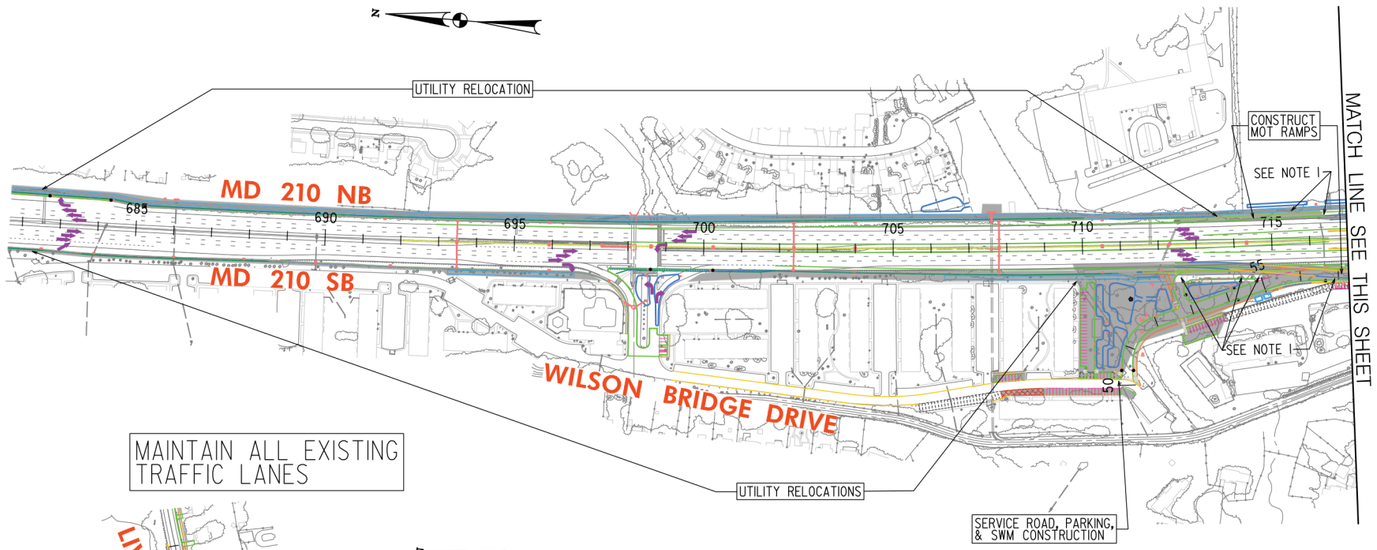
DESIGNED BY
DRAWN BY
CHECKED BY
F.A.P. NO.
COUNTY PRINCE GEORGE'S

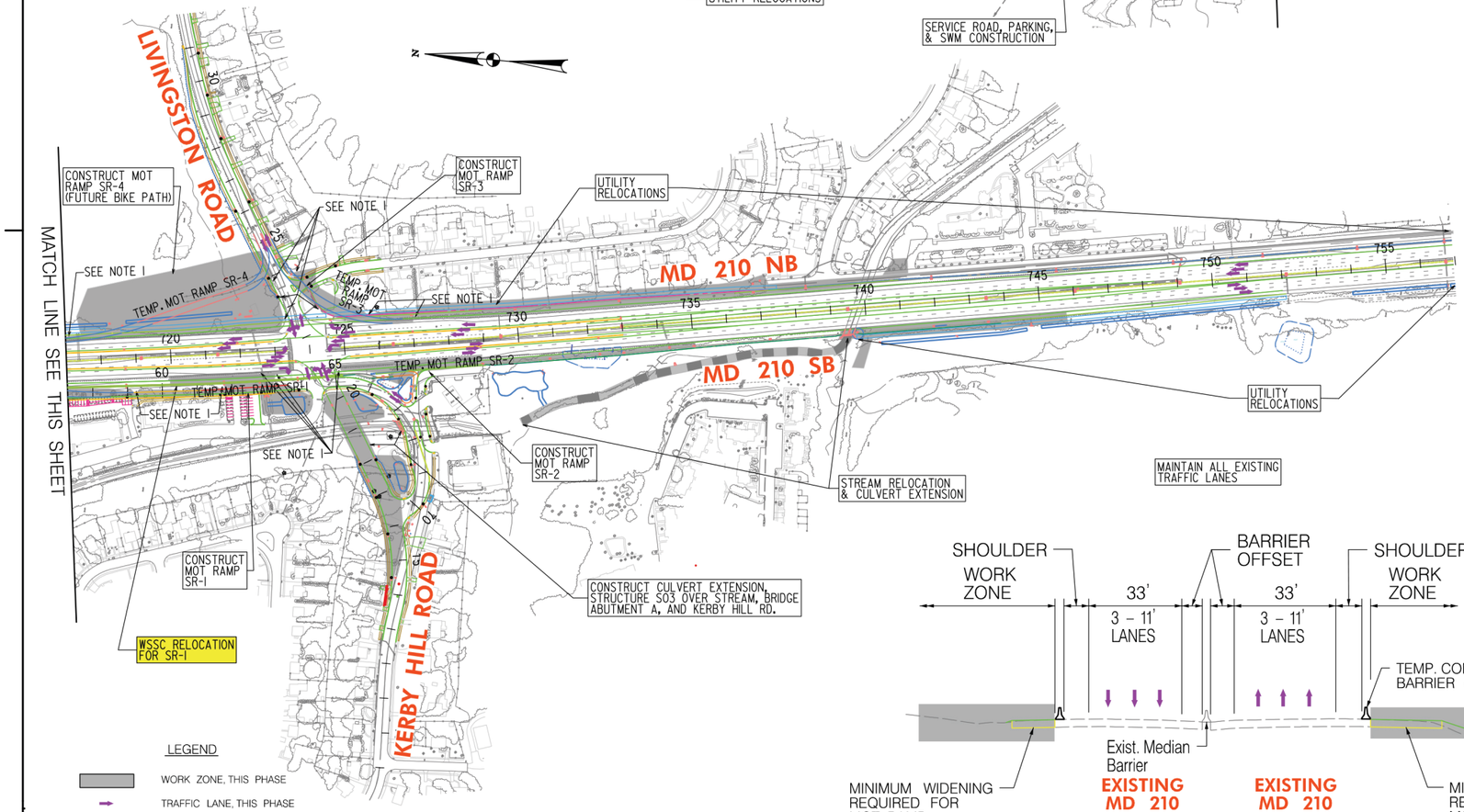
CORMAN CONSTRUCTION | JMT JOHNSON, MIRMIRAN & THOMPSON Engineering A Brighter Future

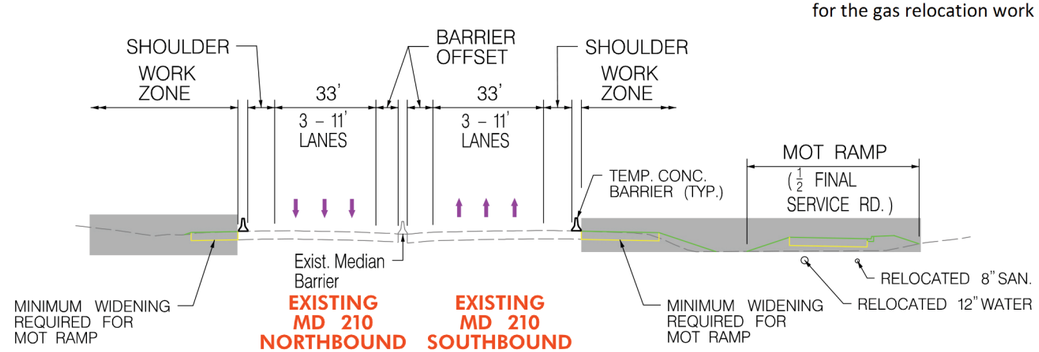
STRUCTURE INVENTORY NO.
SURVEY BOOK NO.

PLOTTED: Tuesday, February 17, 2015 AT 09:03 AM
FILE: Q:\SMD\140814_001_Design-Build_-_MD_21\CADD\pGN-BID-KeyPlan-Single Span-Contractor_MD210.dgn

BY: arnold







TYPICAL SECTION
NOT TO SCALE

400' 0 400' 800'
SCALE: 1"=400'

MOT PHASE I

Phase I will be approximately 9-12 months long and will commence with lane shifts towards the median in summer-fall 2015. All NB and SB lanes on MD 210 will be re-striped as 11' widths from Wilson Bridge Drive to station 741+00. Temporary concrete barrier (TCB) will placed on the shoulders in both directions. All movements are maintained in their current orientation during Phase I with exception of the merge from Kerby Hill RD onto SB MD 210. This movement is redirected 200' to the signalized intersection at Kerby Hill where vehicles will make a right turn onto SB MD 210 to allow for construction of the future SR2 slip ramp.

Work Activities:

The primary intent of Phase I is the partial MD 210 widening with permanent pavement and installation of temporary slip ramps to Kerby Hill Road and Livingston Road off of MD 210. Installing TCB through the construction zones in the summer-fall of 2015 allows segments of impacted utilities be constructed prior to pavement widening.

Slip Ramp Construction – Slip Ramps, SR1, SR2, SR3, SR4, will be constructed in Phase 1 to be utilized in Phase II. **SR1 -** permanent Service RD that parallels SB MD 210 from sta. 714-723 is constructed for right-off movement from SB MD 210 for Kerby Hill. Service RD grades are adjusted to provide the transition and retaining wall RW7 is built after the right-off movement is redirected over S01. **SR2 –** right off movement from Kerby Hill Road to SB MD 210. **SR3** - right-off movement onto Livingston RD from NB MD 210 and is aligned to clear abutment "D" construction. This temporary ramp may require several interim stages for adjacent construction, underside clearance and phasing in tie-in to Murray Hill Road. **SR4** provides the right-on movement from Livingston RD with the as designed RFP bike path that runs from sta. 723-718. The thickness/width are both augmented to meet the requirements. In conjunction with construction of slip ramps is partial permanent widening.

Phase I also includes construction of culvert extensions C01 and C02, S01 - Abutment A, Stream Restoration Work, S03 – Precast Arch at Carey Branch based on advanced design approvals. S03 construction will require a small portion of sewer relocation. This work is not critical until end of Phase II.

Utilities:

All PEPCO, Verizon and LEVEL 3 utility relocations can progress unimpeded by Phase I activities and conversely, these utilities do not impact Phase I construction. We will coordinate and work with the utilities on the jack and bore locations and work. We intend to perform the WSSC water and sewer relocations along the SB service road and S03 and install sleeves, at a minimum, for the gas relocation work in conflict areas of the widening and SR1.

NOTE 1: TEMP. MOT RAMPS WILL BE DESIGNED AND CONSTRUCTED TO AVOID EXISTING AND PROPOSED UTILITIES.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

MOT PHASE I

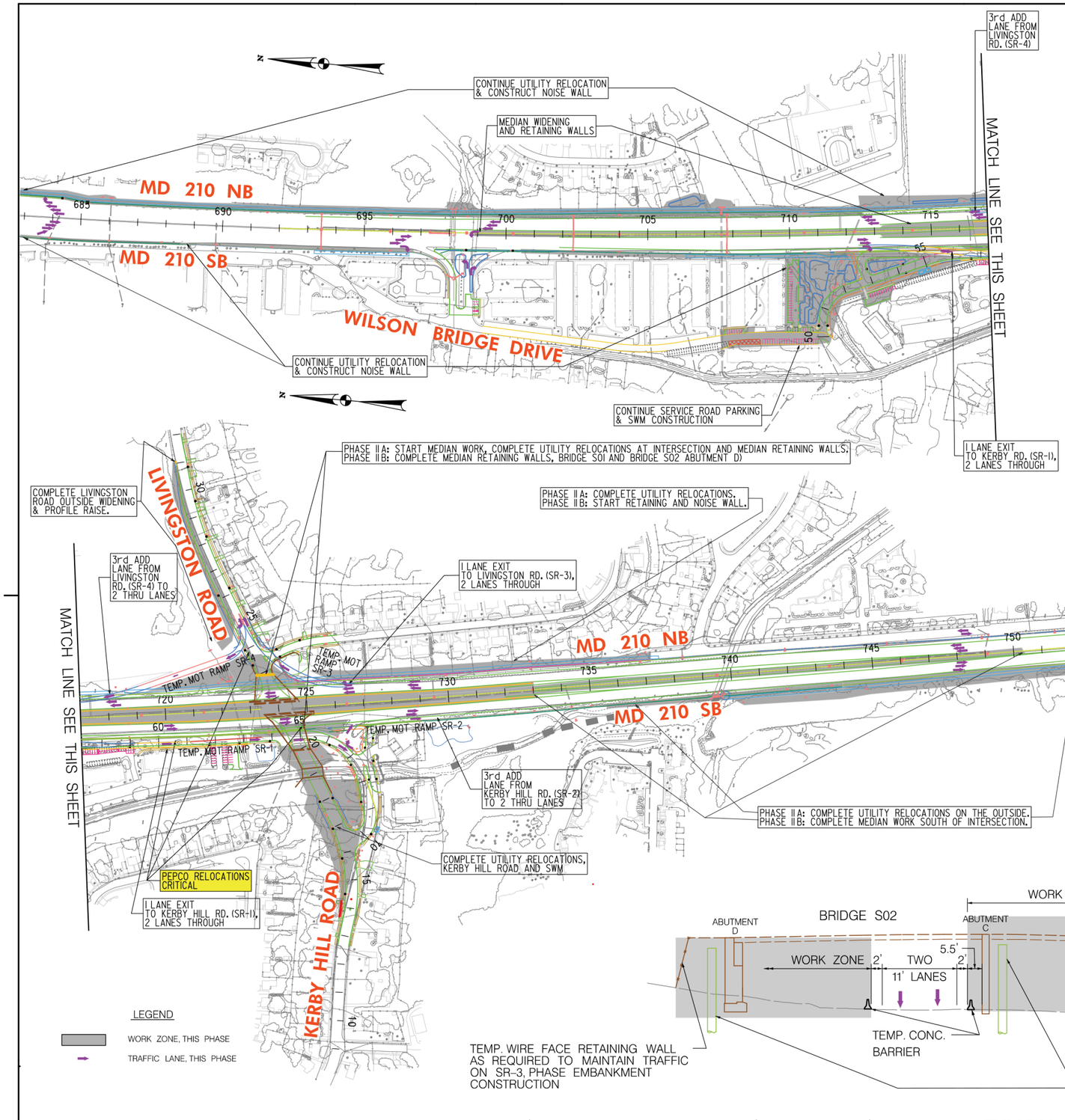
SCALE 1" = 400' DATE FEB. 2015 CONTRACT NO. PG7005170

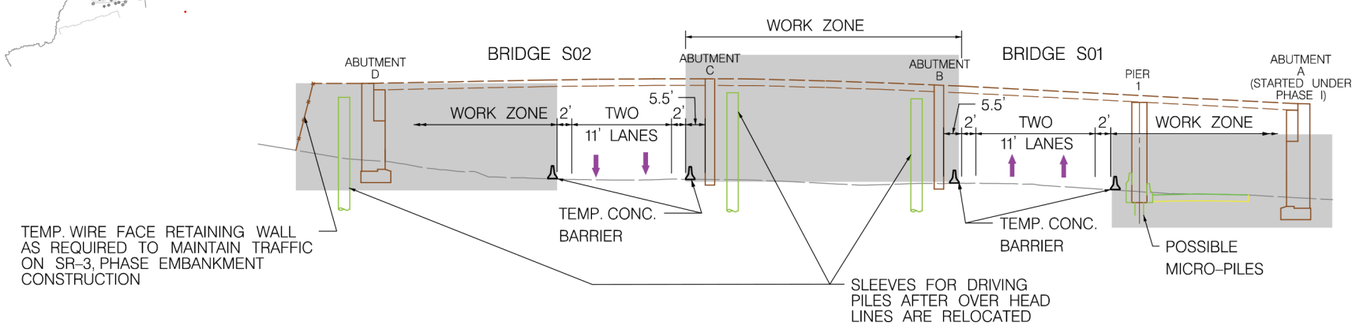
DESIGNED BY
DRAWN BY
CHECKED BY
F.A.P. NO.
COUNTY PRINCE GEORGE'S

STRUCTURE INVENTORY NO.
SURVEY BOOK NO.

PLOTTED: Tuesday, February 17, 2015 AT 09:07 AM
FILE: Q:\SMD\140814_001_Design-Build_-_MD_210\CADD\pMT-BID-P1-P2_MD210.dgn

BY: arnold





400' 0 400' 800'

SCALE: 1" = 400'

TYPICAL SECTION

NOT TO SCALE

MOT PHASE II

Phase II will be approximately 18 months in duration and will commence after the school year ends in June 2016. MD 210 through lanes are reduced to two lanes through the constructionszone from approximately sta. 710 to 738 with the use of TCB. MD 210/Livingston RD/Kerby RD intersection will be closed at the same time and the RFP detours implemented. Slip ramps, SR-1 thru SR-4, as constructed in Phase I will provide the right-in and right-outs as required.

MD 210 median ramps leading to the elevated intersection will come online at different times. The first two ramps to be completed will be Ramp A, SB MD 210 leading to S01 and Ramp B, leading onto NB MD 210. Opening these movements eliminate the need for the temporary slip ramp through the SB Service Rd and opens up retaining wall RW7 work. This phasing-in of ramps will continue till all four ramps are open. All median ramp openings are independent of S02 completion.

Movements tied to S02 will be the last ones to come online. The intricate phasing for the large fills at the Murray Hill Drive intersection and Livingston Road Improvements are the main drivers for not being able to complete this work earlier. A temporary wire wall is utilized to maintain SR-3 and Murray Hill Road during the bridge construction. Completion of the south side of Livingston and Murray Hill is accomplished after movements on the bridges are established and SR-3 is no longer needed.

Work Activities:

Work in the median and outside will be performed concurrently. This will include the construction of bridge structures S01 and S02, median ramp walls 5, 6, 4, and 8 and associated median ramps A, B, C, and D with signalization and F shape median barrier. Construction of abutments "B" & "C", along with the associated ramp walls in the median will begin immediately. Pile sleeves will be installed in the wall fills for pile driving at a later date while the overhead utilities are being relocated. Retaining wall RW3 be constructed and Noise Barrier Systems NW1, NW3 and NW4 will commence. RW7 will commence when right-in to Kerby Hill RD is shifted from SB service road to S01 via. the median. Work will also progress on ancillary work such as grading and ponds along SB 210 including the service road along Kerby Hill once S01 is open.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

MOT PHASE II

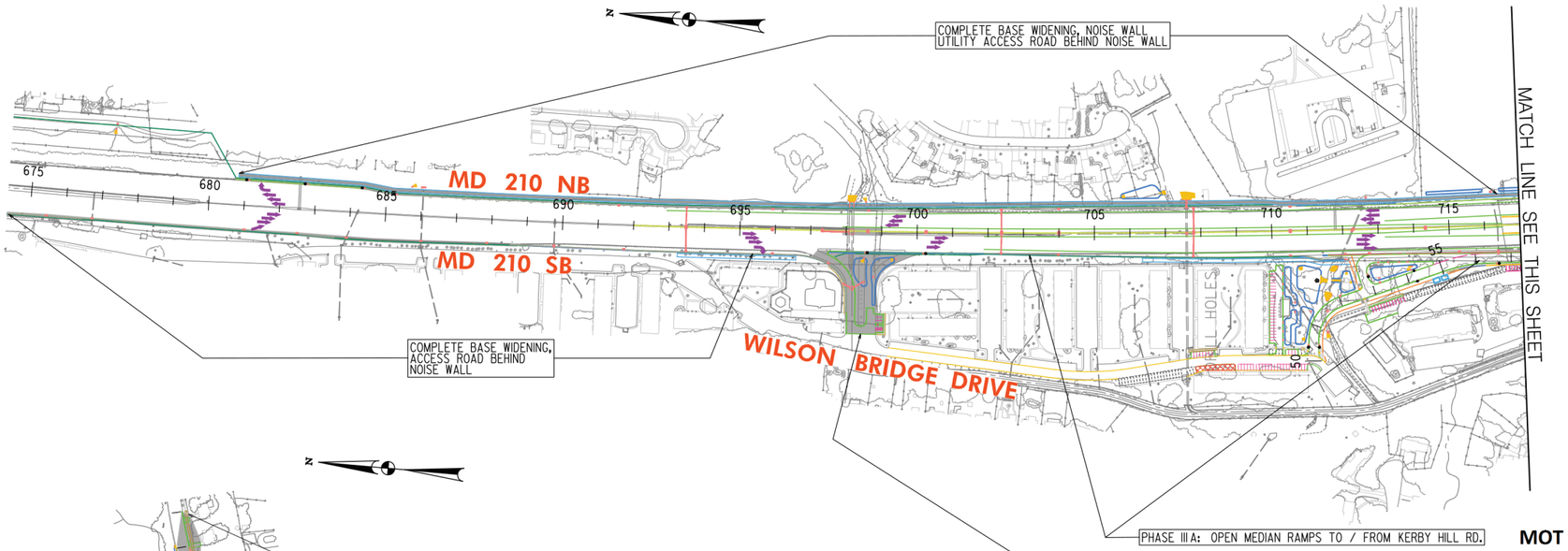
SCALE 1" = 400' ADVERTISED DATE FEB. 2015 CONTRACT NO. PG7005170

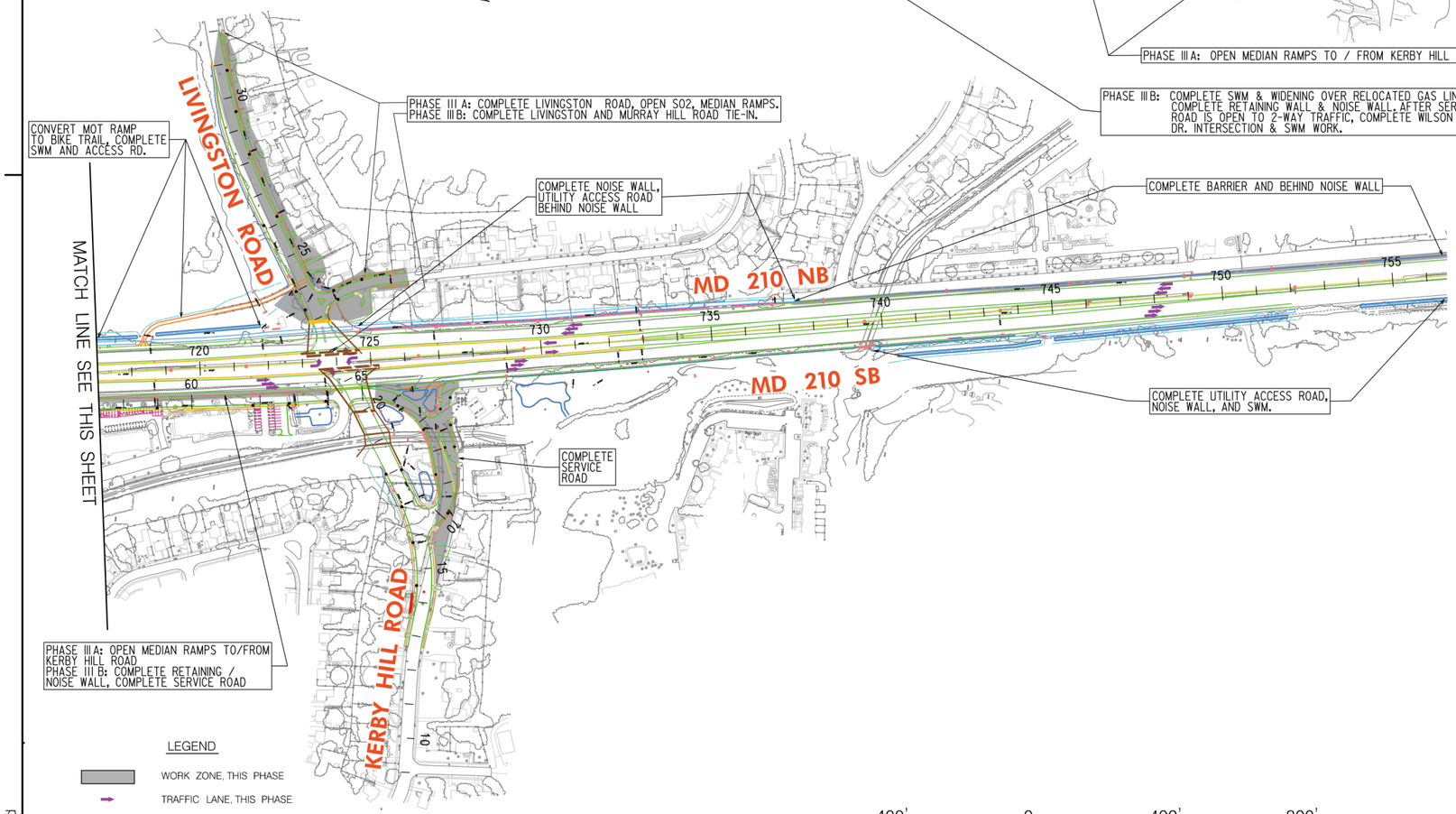
DESIGNED BY ____ COUNTY PRINCE GEORGE'S
DRAWN BY ____ LOGMILE ____
CHECKED BY ____ HORIZONTAL SCALE ____
F.A.P. NO. ____ VERTICAL SCALE ____

CORMAN CONSTRUCTION | JMT JOHNSON, MIRMIRAN & THOMPSON Engineering A Brighter Future

BY: arnold

PLOTTED: $DATETIME$
FILE: Q:\SMD\140814_001_Design-Build_-_MD_210\CADD\pMT-BID-P1-P2_MD210.dgn





MOT PHASE III

Phase III will commence when MD 210 traffic can be shifted adjacent to the permanent barriers along the newly constructed ramp walls approximately December 2017. This will enable completion of remaining outside work NB and SB.

Work Activities

Completion of shoulder widening and retaining wall RW7. Also included is the completion of the noise walls and permanent barrier wall, NB and SB service roads, mainline roadway patching, loop road and associated work along apartments SB west side, median barrier north of Wilson Bridge Drive, SWM and finishes such as signing, guardrail, sidewalks, and paths.

MOT PHASE IV

(Plan not shown.)

Phase IV will commence approximately July 2018 will consist of roadway patching, milling and overlay of the MD 210, pavement markings and landscaping.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 210 @ KERBY HILL RD/LIVINGSTON RD
INTERCHANGE IMPROVEMENTS

MOT PHASE III

SCALE 1" = 400' ADVERTISED DATE FEB. 2015 CONTRACT NO. PG7005170

DESIGNED BY
DRAWN BY
CHECKED BY
F.A.P. NO.
COUNTY PRINCE GEORGE'S
LOGMILE
HORIZONTAL SCALE
VERTICAL SCALE

BY: arnold

CORMAN CONSTRUCTION | JMT JOHNSON, MIRMIRAN & THOMPSON Engineering A Brighter Future

PLOTTED: $DATETIME$
FILE: Q:\SMD\140814_001_Design-Build_-_MD_21\CADD\pMT-BID-P1-P2_MD210.dgn

2.09.03 Project Schedule & Project Management

2.09.03 Project Schedule
& Project Management

2.09.03 | PROJECT SCHEDULE & PROJECT MANAGEMENT

A. DESIGN AND CONSTRUCTION SUMMARY SCHEDULE

The DBT has thoroughly evaluated the RFP documents, visited the site, attended the pre-proposal, Mandatory One-on-One, and ATC meetings, and has worked as a collaborative DB team over the past 4 months. Through this progression and ATC process, we developed a simplified solution to deliver the project through our Sequencing Plan. This narrative accompanied by our P6 Proposal Schedule *(pages 24-26)* explains how we will deliver a positive experience to SHA and stakeholders. **The DBT is committing to a project completion date of November 16, 2018, 215 days early, and achieves the RFP milestone.**

Project Milestones

Price Proposal Due	March 3, 2015
Notice of Selection (assumed)	March 17, 2015
ROW clearance	April 1, 2015
Notice to Proceed	June 1, 2015
Begin E & S for Advance clearing	June 1, 2015
Utility Relocations (18 months)	August 13, 2015 – February 10, 2017
Issue "early" IFC Documents	December 22, 2015
MOT Phase II (Close Intersection)	June 29, 2016
Open Intersection	October 11, 2017
MOT Phase III SB	October 17, 2017
MOT Phase III NB	December 1, 2017
Traffic – Final Configuration (Milestone 1)	June 20, 2018
Final Project Completion:	November 16, 2018

Calendars: Five project calendars were used in the schedule and include:

1. **"5 Day Workweek w/ Rain Days"** – Based on five working days per week and is used for construction activities and includes holiday restrictions and anticipated weather days.
2. **"Calendar Days"** – Based on seven days per week and is used for review periods.
3. **"TOYR"** – Based on TOYR for Stream Restoration work – Non-work period March 1 – June 15
4. **"Gas Relocation Calendar"** – Includes non-work period from October 1 – April 1.
5. **"Paving Calendar"** – Includes non-work period from December 22 – March 1.

Plan to Execute the Work: The work is scheduled for four primary phases with smaller interim phases for tie-in points and minor segments.
Phase 1 – Advanced Clearing, Utility Relocations Begin, Outside Widening/Slip Ramps/WSSC Relocations
Phase II – Shift Traffic for Median (Ramps/Bridges) and Outside Work (Walls/Roads/Utility) Concurrently
Phase III – Outside Improvements – Retaining/Noise Walls, Ancillary/Service Roads, SWM, Landscaping
Phase IV – Final Paving and Finishes

Our schedule approach is to perform selective widening work along the outside of southbound (SB) and northbound (NB) MD 210, WSSC water/sewer utility relocations, and construction of four temporary slip ramps (SR1, SR2, SR3, SR4) to accommodate right turn movements. This will enable the Livingston/Kerby Hill Road intersection to be closed, maintain two through lanes in each direction on MD 210 (ATC 25) and **open up work on the outside and median areas of the project concurrently.** This permits work to progress in multiple areas of the project prior to the overhead utilities being relocated **resulting in a shortened overall project duration**. Per the RFP, the DBT is expected to progress work from Notice of Selection (NOS). This date, March 17, 2015, has been set at 14 days after the bid date. At this point the critical items that need to begin immediately are utility coordination, utility designations/subsurface utility explorations, supplemental

field surveys, geo-technical work such as the boring plan followed by the field investigations, pre-permitting meeting, existing pipe inspections, and management and oversight meeting with SHA. Design work will begin with early packages for Phase I consisting of designs for WSSC sewer and water, Washington Gas, MOT, slip ramps, road widening, culverts, and stream restoration work. Other remaining project design packages will proceed concurrently with the early packages.

Advanced clearing per the RFP plans is set to begin at NTP, June 1, 2015, followed by utility relocation work for PEPCO, Verizon, Comcast and Level 3 and is dependent on SHA acquired MDE permit and ROW clearance. Phase I construction work is scheduled to begin in December 2015 and shifts to Phase II in June 2016, limiting the turning movements at Kerby Hill Road and Livingston Road to right-in and right-out. During Phase II the median ramps and bridges are constructed and traffic is restored to full use of intersection in October 2017, approximately 16 months after its closing. Traffic will be switched on SB MD 210 to Phase III after median Ramps A and B come on line and will allow critical path work to commence on RW7. Phase III (NB MD 210) will be shifted after the complex completion of the tie-ins at Livingston Road and Murray Hill Road. Once all outside work and a short section of median wall north of Wilson Bridge Road is complete, the final switch will be made to Phase IV for roadway patching, milling and overlay of mainline MD 210. We anticipate finishing the project November 16, 2018.

The critical path runs through:

- Notice of Selection
- Utility Coordination/Designation/SUE/Field Data/Test Hole Data Sheets
- Advanced Clearing and Grubbing for Utility Relocation
- Pepco, Verizon, Comcast, Level 3 Relocations
- Washington Gas Design, Approvals and Construction
- Construction of SR1
- Switch Traffic to Phase II
- Pile Driving at Abutments D, B and C and the Abutment Construction
- Bridge S02 and Traffic on New Approach Livingston Road at S02
- Interchange Open to all Movements
- Relocate Barriers for Southbound Phase III
- Retaining Wall RW7,NW1, Shoulder Improvements SB 727 to 743
- Interim traffic switch north of Wilson Bridge Drive and associated median work
- Traffic shift to Phase IV
- Patching, milling, overlay, striping of mainline MD 210 and Punchlist.

Benefits of Corman/JMT DB Approach: Through the ATC process, our DBT was able to provide a design and construction sequence to reduce the overall schedule by having concurrent work areas as shown. This was made possible by ATC 25 which maintains traffic in a 2-lane through pattern through the intersection. We streamlined many of the complex retaining wall designs with caisson founded post and panel wall construction. Our MSE abutments with vertical piles allows this work to advance prior to the completion of overhead lines with only the pile driving to complete once the lines are removed. The schedule is demanding, will require experienced Design and Construction Project Management Teams and high level staffing. We anticipate the project will require double shifting for the majority of all structural concrete work.

B. PROJECT MANAGEMENT

Design build is often the procurement method used when owners desire to shorten the overall project delivery durations. Effective communication and proactive coordination management is the heartbeat of this success. The DBPM is tasked with bringing together the team members into an integrated working unit, where each entity and each person realizes their importance to the overall project. This is accomplished through constant tracking of commitments and schedules and actively communicating the status. It becomes essential to have issue resolution ladders so no one issue can prevent forward motion. On this project, coordination with ROW acquisitions, utility relocations, MDE permits, public outreach stakeholders and the design approval process with all parties will require experienced design build professionals. Our DBPM, Scott Szympruch, PE, and DM, William E. Schaub, PE, have this experience and will have the appropriately assigned project management infrastructure to support this high level effort.

We have used our proven policies, procedures and best practice in developing our Project Management Plan (PMP), which guides our activities for the entire project from NTP thru final acceptance and defines the organizational structure, management approach and work execution to make this project a success.

Below are some of the elements of our PMP:

B.1 PROJECT COMMUNICATION PLAN

The key to success is communication between the parties involved: SHA, the DBT, review and regulatory agencies, and stakeholders. During design, the DBT will employ an internal partnering process that promotes an active dialogue between designers, construction personnel, subcontractors and suppliers in identifying and averting constructability issues. This process will enable the team to draw upon their strengths and experience and will instill a sense of team ownership. A three week look-ahead schedule will be developed and tracking sheets utilized to monitor design, design issues, right-of-way (ROW), utility impacts, and approvals.

Internal DBT Communications: During design, constructability reviews are crucial and will be performed by all parties to keep ahead of any existing field changes. Also, the DBT, subcontractors, and suppliers will review the plans to maximize cost effectiveness, material availability, and constructability. Construction Managers will provide formal review comments to the design team and comments and responses will be tracked through our collaboration software, "4projects". The DBT will internally review submittals for constructability and compliance with quality metrics before forwarding to SHA for review/approval.

Our team has an established resolution ladder to expeditiously deal with construction issues outside of scheduled meeting times, and at the level most responsible for the design or construction. Thus, when a design issue occurs that requires contractor resolution, a defined procedure is established to allow the designer to communicate with the appropriate contractor representative, be it the DBPM, the construction manager, or field personnel. Likewise, during construction when an issue arises the contractor will have a choice of personnel to resolve the issue with the appropriate design discipline. This will streamline communication and allow for quick issue resolution. Our process, will allow the resolution to be managed by the source and the person with the solution. Issues and resolutions will be logged and communicated to key contractor and design personnel.

Three week look-ahead schedules will be updated weekly during both the design and construction phases of the project, discussed at regular schedule meetings, and shared with SHA. To stay on track, the schedule will be constantly reviewed and maintained. Any deviations from the approved schedule will be discussed as part of both the internal weekly progress meetings and the monthly partnering process. Mitigation/recovery solutions will be identified and initiated at the appropriate meetings.

DBT/SHA Communications: The DBT will follow SHA's milestone review process throughout design and permitting. We will provide SHA with notice of pending submissions at least 14 days in advance, or as agreed

upon at the start of the project. Transmittals, including design submittals, shop drawings, and RFIs will be recorded and tracked. These will be linked with the CPM schedule to generate status update reports communicating the need for approvals and keep the project moving.

There will be informal and formal meetings with SHA to discuss design issues, utilities, ROW, MOT, design solutions and proposed details, construction means and methods, sequencing and strategies to minimize impacts to the construction schedule. We propose to use Task Force Group (TFG) meetings for ROW, utilities, geotechnical and other critical components of the project. The TFG approach will focus on the critical issues of the project assigned to the groups. TFG meetings will be held with various disciplines on an as needed basis and will document issues, decision needs and risk items which will be identified to the Management and Oversight (M&O) TFG. The M&O TFG, with the DB Project Manager at the head, is the central point of decision making and communication among SHA managers and key stakeholders involved in the project. The M&O TFG will serve as a conduit for disseminating critical project information and identifying issues. SHA. Corman and JMT will partner to reach prompt decisions and consensus on project issues while identifying risk exposures and avoidance with the common goal of advancing the project. To expedite the project, it will be crucial that SHA decision makers participate in the M&O TFG meetings. All TFG meeting agendas will address project decision requirements, risks, coordination, submittal and schedule reviews and decide on implementation paths with the common goal of advancing the project and mitigating risks. The TFG meetings may be incorporated into the regular weekly or monthly meetings, or held separately. To expedite the regulatory process, with SHA's concurrence, we would also invite the appropriate agency reviewers and stakeholders. This eliminates "surprises" during subsequent formal reviews. Formal submittals will be made per SHA policy through ProjectWise with hard copies provided as requested.

External Communication: The DBT knows the importance of public relations and keeping stakeholders informed on progress and potential impacts. **Our Public Relations/Outreach Coordinator, Ms. Odessa Phillip, PE of Assedo Consulting, LLC** will be the liaison between the DBT and SHA for public outreach efforts and with project and property stakeholders and the public to facilitate communication during design and construction. Odessa, a Prince George's County resident, worked with Corman in the same capacity on the ICC-A project. The outreach program will be specific to the project and stakeholder needs including: an SHA website, e-mail, mailers, 1-800 number, and as outlined in the Public Outreach Performance Spec, TC 3.21. A close relationship between SHA and the DBT for a steady stream of information to stakeholders is vital to project success. For example, since some of the proposed locations are literally in homeowners' backyards, it is imperative to communicate the construction schedule to keep residents informed. Equally important will be to hold regular meetings with the tenant associations and commercial establishments adjacent to the roadway. In addition to "Pardon Our Dust" meetings prior to construction and major MOT changes, Portable Variable Message Signs will communicate upcoming work zones to motorists, pedestrians, and bicyclists. Communication with community and public officials will be through the SHA.

B.2 COORDINATION MANAGEMENT PLAN

Equally important to communication for the success of this project is coordination between the many parties involved: SHA, DBT, review agencies, SHA ROW, utility owners, and stakeholders. This is based upon open and honest communication, frequent meetings, and updates. Construction sequencing will be a constant topic at the TFG meetings to review the proposed sequence, especially for the impact to motorists and pedestrians. Our site access and storage/laydown areas will also be reviewed for compatibility with the proposed sequencing. The DBT will hold the following internal weekly meetings, in additions to the TFG meetings discussed above, during design and construction:

- **Inter-disciplinary Design Review Meetings**, led by the Project Design Manager, William E. Schaub, PE and Design/Construction Integrator Lou Robbins, PE, DBIA to coordinate design disciplines;

- **Design Constructability Reviews**, led by the Design/Construction Integrator, Project Design Manager and Construction Manager, especially for MOT (vehicle and pedestrian), ESC, utility relocations, and access;
- **Pre-application Meeting** with SHA and permitting agencies;
- **Weekly/Monthly Schedule Meetings** to review the previous period's work and develop three-week, 30- and 60-day look ahead schedules during both the design and construction phases of the project;
- **Weekly Foremen Meetings** to discuss the schedule, staffing and material/equipment needs and project coordination;
- **Morning Huddles** with crews to set the safety and production goals for the day; and
- **Monthly Partnering Meetings** with SHA and appropriate stakeholders to identify and resolve issues.

The DBT will identify stakeholders with any pending/ongoing projects or sponsored events near the site and within the construction schedule. If these projects impact our progress or theirs, the DBT will immediately communicate with them to identify potential conflicts or impacts and work to find beneficial solutions.

At our internal weekly meetings, issues will be identified through the following tracking aids: ROW Acquisition Tracking showing progress of properties being acquired by SHA; Utility Protection Tracking spreadsheets during design and construction indicating location of utility impacts, mitigation status, responsibility of design relocation, including status, sorted by utility; Permit Progress Tracking spreadsheets showing permit requirements/commitments, sorted by review agency; Review and Approval Tracking spreadsheets of design and construction submittals; Shop Drawing Status Tracking spreadsheets; Material Submittal and Delivery schedules; Non-Conformance Logs by QC for design and construction; and RFI Logs.

4projects will provide document control for tracking each submission (including shop drawings and RFIs), including submission dates, comments, responses, and deadlines for follow-up action. All exchanges of information between the DBT and SHA will specifically be tracked via SHA ProjectWise. By linking the submittal and submission status logs with the CPM schedule, the DBT can generate reports that provide the current status of each submission and use them to identify and minimize any potential delays in the process. Active use of this tracking system by all team members will ensure that time-critical activities, materials with long lead times, utility coordination, and other urgent issues are promptly addressed to avoid potential delays.

Right-of-Way (ROW) acquisition clear date is a critical project schedule milestone that requires close attention so as not to adversely impact the project construction schedule. Should this milestone not be met for any reason, the DBT is committed to coordinating with SHA ROW staff as follows. Immediately upon notice of selection, we will establish a ROW task force group and request an initial meeting with SHA ROW staff. During the initial meeting, the group will review the current status of the ROW and develop a tracking list that will identify key parcels needed and key milestones of the acquisition process, such as appraisals and appraisal reviews, offers made, and expected clear dates and develop a priority listing. The tracking sheet will be reviewed during subsequent coordination meetings will continue on a bi-weekly basis until ROW is cleared. It should be noted that JMT's in-house Right-of-Way staff is experienced in SHA land acquisition procedures should assistance be needed with the task. Additionally JMT's in-house Right-of-Way staff is very experienced at utilizing SHA's Office of Real Estate Management system (OREMS) and can provide assistance on putting information in the system as well.

The DBT has already begun coordination with utility owners, Pepco, Verizon, Level 3, Comcast, Washington Gas, and WSSC, in the corridor to gain a better understanding of the requirements associated with their relocations. Our design and construction schedule has been carefully evaluated with the known utility information. We have provided innovative designs through the ATC process to avoid utility relocations and provide some flexibility in the schedule. Coordination efforts will continue throughout final design and during construction. We have a strong team of professionals to lead this effort comprised of value added, Dale Kniffin of Utility Professional Services, Inc., Mike Manoski of Corman and Tim Schott of JMT.

They will establish weekly TFG meetings with all utilities to track status of design and construction. Detailed reviews will be performed to assure conflicts are avoided. Mike will be on site daily to monitor progress and respond to concerns as they are found. Preconstruction coordination will occur so the relocation work can begin as soon as the advanced clearing and site preparation work is completed.

From a critical path standpoint, the stormwater management (SWM)/erosion and sediment control (ESC) permit from the Maryland Department of the Environment's (MDE) Plan Review Division will be of utmost importance. We will coordinate SWM and ESC designs and reviews between MDE and SHA-HHD from Notice of Selection to Project Closeout. We will utilize **our certified MDE Reviewer/ Expeditor, Mr. David Heckman, PE,** to oversee and review submissions prior to being sent to MDE. David will oversee plan development and provide that vital check for compliance before submitting. Upon Notice of Award or before if allowable, our process will include contracting SHA and MDE to set up a pre-permitting meeting to outline our approach to SWM and ESC, submission schedules, permitting timelines, and submittal requirements.

B.3 RISK MANAGEMENT PLAN

The DBT will employ the Construction Management Association of America (CMAA) endorsed approach to risk management through a "Risk Register" which includes a formal list of identified risks, potential project impacts, and mitigation strategies. A successful risk management process is robust because it considers risks throughout the project's life and delivery processes. The DBT's risk management process has already commenced, will continue throughout design/construction, and be dynamic as the team responds to changes in an organized and proactive way as issues unfold. The DBT will employ this five-step risk management approach:

1. **Identify** – names the risk, determines cause and effect, and categorizes it;
2. **Assess** – assigns probability, severity of impact, and determines response;
3. **Analyze** – quantifies severity, determines exposure, establishes tolerance level, and determines contingency (applicable during preliminary design and pricing);
4. **Manage** – defines response plans and actions, establishes ownership, and manages response (after NTP); and
5. **Monitor / Review** – monitors/reviews/updates risks, monitors response plans, updates exposure, analyzes trends, and produces reports (after NTP, during design and construction).

Risk analysis begins during the Proposal stage. From experience on similar projects, the following are risks most likely to occur and have a major impact on schedule, quality, safety and costs: *Indecision; Personal Preference; Poor documentation on decisions made; Poor flow of information and coordination among disciplines; & Minimal effort in clearly defining scope requirements for each party involved and following strict QA/QC protocols* .

The DBT proposes to use the "Task Force Group" approach to identify, manage and mitigate risks. TFG meetings will be held with various disciplines on an as needed basis. Risk items will be discussed, documented and identified to the Management and Oversight (M&O) TFG who will meet every month or more frequently if needed. The M&O TFG, which includes the DBT and SHA management, is a critical task force group that will monitor risks, schedule and address project issues promptly. The M&O TFG meeting agendas will address project risks, coordination, submittal and schedule reviews and decide on implementation paths with common goal of advancing the project and mitigating risks.

This open forum of discussion serves to clearly define project criteria, ensure the owner's intentions are met, address corridor-wide constructability issues, and provide consistency in design before becoming schedule-critical. Potential risks such as ROW acquisition, utility relocation, third party coordination,

MOT/pedestrian/bicyclist safety, environmental issues, scope creep, budget constraints, schedule overruns, unforeseen conditions and public outreach can all be efficiently and economically addressed during these meetings.

Risks will be identified and become apparent during this process and recorded on a project Risk Register. The DBT will access the key risk areas and measure the likelihood and impact. These risks will be ranked and the desired results will be established. The M&O TFG will develop options and solutions to mitigate or avoid same. A strategy will be selected and implemented. The risk will be monitored, evaluated, and adjusted accordingly to achieve the desired outcome and results. As the construction process evolves, new and unforeseen risk may be identified and will be resolved using the risk management techniques discussed above and will be addressed to the satisfaction of SHA. Practicing integrated risk management, continuous learning/communication is a corporate culture that the DBT plans to bring to the project and SHA from the corporate level to the front line operations, people and processes. Initially identified key risks and mitigation strategies are discussed below:

- **Utility Relocations and Coordination** are critical to the schedule. For this project, utility coordination is the responsibility of the DBT, with all dry utilities relocated by the affected utility and the DBT responsible to design/construct the Wash. Gas, Water and Sewer. We have successfully met this challenge in the past by:
  - Assigning a Utility TFG to schedule/coordinate utility relocation design and construction;
  - Holding regular coordination/partnering meetings with affected utilities;
  - Redesigning our improvement to minimize utility impacts or relocations, whenever possible;
  - Making identifying and resolving utility issues a priority through design phase;
  - Being ready to perform the design/relocations for the dry utilities with in-house design/constr. forces;
  - Discussing the utility status at all monthly M&O TFG, progress and partnering meetings.

  The DBT has communicated with utility owners in the corridor to gain a better understanding of the requirements associated with their relocations. Our design and construction schedule has been carefully evaluated and closely coordinated with utility companies. We have provided innovative designs that have avoided relocations and moved other critical relocations off the critical path. These efforts to date have provided an in-depth understanding of the phasing required to avoid utility conflicts if at all possible while minimizing potential schedule delays. These efforts will continue throughout final design and during construction. A **value added benefit** to our utility TFG is the addition of **Utility Professional Services, Inc.**, (Utility Pro's). Utility Pro's has extensive contacts and knowledge working with all utility owners in the corridor which will further aide in understanding and addressing the utility company requirements and schedule during design development and throughout construction. *See Project Sequence in Section 2.09.02 for additional utility discussions.*

- **Right-of-Way Acquisition (ROW)** clear date is a risk project schedule milestone that requires close attention so as not to adversely impact the project construction schedule. ROW clearance is to be provided by SHA by April 1, 2015, prior to issuance of NTP on June 1, 2015, and involves 91 affected parcels. Construction cannot begin in areas where ROW has not been cleared. We understand that flexibility is required to shift sequencing and relocate resources, as appropriate, to meet the ROW clearance progress and are committed to coordinating with SHA during this ROW acquisition. During the procurement phase, the DBT worked diligently to provide SHA with ATCs that help provide flexibility to SHA's concept design and schedule by developing a phased approach to open up concurrent work zones within the project limits. This allows work in other parts of the project to advance independently and concurrently rather than linearly as originally planned.

- **Transportation Management Plan (TMP) and Maintenance of Traffic (MOT)** is essential to providing a safe work zone for workers, drivers, general public, bicyclists and pedestrians and will be a key risk on this project. The DBT will develop an effective TMP and MOT plans during design to be used throughout construction to maintain the facility user safety; construction personnel safety; and to ensure continuous access to adjacent properties and transit stops. VMS boards will be utilized to alert the motorists to changes in traffic patterns. Barrels, concrete barriers or temporary impact devices will be installed to maintain a safe roadway. Police enforcement may be requested, as well as speed camera enforcement to encourage motorists to drive responsibility. Enforcing pedestrians to follow the rules will require special attention and signing to direct them safely around the work and traffic areas.

  Through ATC 25 (see Appendix), we have developed a MOT phasing that will allow MOT Phase II to be in a two lane configuration through the 210/Livingston Road/Kerby Hill Road Intersection. This will not prolong the full closure of intersection, does not elongate detours and maintains the required right turns. The benefit of the ATC is its implementation advances access to the median ramps and bridge structure work and reduces the overall project schedule. Access to businesses will be provided as required in the RFP. The DBT will provide a robust communication program throughout the corridor for all stakeholders for two way communication.

- **To maximize safety, avoid disruptions, minimize inconvenience, and meet community needs, the DBT will assist SHA to develop/implement an effective community outreach plan throughout design and construction**. Given the nature of our proposed traffic changes incorporated in ATC 25 of lane reductions through the Livingston/Kerby Road/MD 210 Intersection, the DBT will provide an aggressive, robust public outreach program that provides proactive communication with stakeholders, such as adjacent property owners; travelling public; surrounding communities; elected officials; WMATA; Prince George's County DPW&T, Executive Office, Council, Schools, Public Safety, and Transit; so their concerns are heard and their needs are met. The DBT will also implement measures to improve motorist awareness and we will coordinate with SHA and stakeholders with a pedestrian and bicyclist education program in the surrounding community to educate them on the safe and effective means for using the facility including bus stops during and after construction.

- **Geotechnical conditions encountered during construction carry the risk of significant delays.** Based on the Geologic Map of Prince George's County, MD the MD 210 project lies within a geological drainage divide created by existing Cary Branch on the east side of MD 210 that heads south towards its confluence with Henson Creek. As a result of the geological history, as confirmed by the test borings provided with the RFP, the geology along the project limits consists of river alluviums along the lower elevations and Potomac Group Clays along the eastern side of MD 210. The river alluviums consist primarily of medium dense to dense sands with varying amounts of gravel, silt and clay and layers of medium stiff to stiff clays. The clay portions of this layer appear to be over consolidated and should pose minimal risk to long term consolidation settlements from the placement of fills of the magnitude proposed for this project. The clay stratums, according to the existing borings, are not anticipated to be within the proposed cut slopes, but may be required to support fill slopes and can potentially impose risks associated with global stability.

The Potomac Group Clay soils in the area are highly over-consolidated. As a result, the Potomac Group Clays are considered very good for support of structure foundations. However, when these clays are encountered in slopes they can pose global stability risks. Also, the Potomac Group Clays typically have poor characteristics for the support of pavements. In addition to the above, perched water conditions are prevalent on the site due to more pervious sands overlying the more impervious clays. These perched water conditions can result in unstable slopes and need to be recognized and addressed. See photo of existing slope nails along the NB MD 210 East Slope.

Corman encountered almost the exact same conditions on our Route 1 job last year, where we excavated to a new grade in front of a slope with Potomac Clays. Because we took away dirt from in front of the Potomac face they became globally unstable and required installation of over a hundred steel beams needled into the slope to protect it from failing. The other solution was to construct a 6:1 slope which fell outside the ROW and was unacceptable. We also have a project in Piscataway, just a short distance from this project, where we are performing slope stabilization from a slide where the materials were over Potomac Clays. Our team is prepared to take special care in our designs to analyze for these situations and propose adequate solutions.

The DBT understands the complexity of evaluating and managing the geotechnical risks in the soil conditions expected and propose the following strategies to manage and mitigate the risk:

- Perform a thorough review of the existing geologic, geotechnical and roadway design and construction documents as well as the roadway maintenance history.
- Develop a thorough geotechnical planning report and perform a comprehensive subsurface investigation program to augment the existing subsurface data. This program will focus on specific soil and groundwater conditions within cut slopes, embankment foundations and roadway subgrades.
- Form a geotechnical task force group consisting of senior geological, geotechnical engineering, and construction and SHA personnel, experienced in working in the expected conditions. This task force will continue throughout construction to mitigate unforeseen soil and groundwater conditions that may be encountered. Our proactive approach, to include regular communication of construction staff with senior geological and geotechnical engineering personnel will assure that appropriate and timely modifications to the design and construction are made.

The DBT is committed to being very proactive to minimize the potential problems that may arise as we excavate and reach subgrade elevations and encounter marginal loose and wet soils. We will be prepared to implement drying and undercutting technics to bring subgrade to an acceptable stable condition, while advancing the project on schedule. Slopes will be flattened to maintain their stability. In areas of deep fills, we will stabilize the existing ground prior to placing fills to alleviate potential future settlement issues.

- **A major risk is acquiring environmental permits and approvals.** The key to securing permits in a timely manner is to understand and identify all affected resources early and create an outline showing the involved agencies and the relevant permits/approvals. Our team has developed an environmental approval/permit list for the project that identifies key milestone dates and submittal dates to ensure timely coordination and securing of all permits. We will review the approval/permit list during our kick-off meeting with SHA and the affected resource agencies to gain a complete understanding of permit requirements and will maintain regular and consistent level of communication from beginning to end of the project. From a critical path standpoint, the SWM/ESC permit from MDE's Plan Review Division will be the most important. Corresponding to our phased submittals, we will coordinate SWM and ESC designs and reviews between MDE and SHA-HHD from Notice of Selection to Project Closeout. The DBT will track the schedule

throughout the design and construction of the project to ensure that the schedule is met and that permits do not impact the project schedule.

- **The DBT will work to minimize environmental impacts beyond those shown in the approved Joint Permit Application and Reforestation Permit.** We anticipate that modifications to the Section 404 Authorization and the MDE Nontidal Wetlands and Waterways Permit will be required during final design. Our review of the reforestation permit indicates that impacts will be reduced and as such a revision would not be required. We will coordinate all efforts associated with these permits, directly with SHA's Environmental Programs Division, Landscape Architecture Division, and Landscape Operations Division, as applicable, for all submittals. Avoidance and minimization methods that focus on minimizing impacts to the environment will be given high priority. Potential increases in impacts will be thoroughly evaluated by the team to determine if they are unavoidable prior to requesting a permit modification. Throughout the design and construction the DBT will utilize a multi-disciplinary team approach to review the plans during final design to explore methods that result in an overall reduction to environmental impacts.

B.4 SCHEDULE MANAGEMENT

The DBT developed a preliminary schedule that progresses work in a way that provides the earliest completion time to meet the important completion dates. We will mitigate exposure to weather elements and create a final schedule after award that minimizes disturbances to stakeholders, motorists, and pedestrians. Our schedule is structured in a logical sequence that can be used as an effective management tool.

Upon Notice of Selection to the DBT, JMT will perform supplemental topographic surveys as required. The supplemental topography will be used to prepare the initial design packages. JMT will stake borings and advance the subsurface investigations. We will meet with the utility companies and SHA to coordinate important relocations and obtain the status of the ROW. Follow-up TFG meetings or conference calls will be held until all ROW is obtained and utilities relocated. Our team has extensive experience with mitigating and coordinating ROW issues should ROW clearance be delayed for any reason. Utility relocation by the utility owner has also been identified as an issue which could affect the schedule. Assigning a Utility Coordinator and TFG whose main role is to coordinate utility relocation and construction will facilitate staying on schedule. Our design engineering, submittal process, subcontract creation and execution, material procurement, and work plan formulations will start upon Notice of Selection. Key to success is coordinating the sequence of construction and separating the project into discrete submittal packages to meet the utility and ROW constraints actually encountered.

The technical design submittals will be tailored to specific needs for efficient design and construction. Our work packages, are divided into packages taking into account defined hold points in the schedule, such as ROW or permit approvals and a logical construction sequence of operations, such as roadway construction, traffic signal installation, signing, and pavement markings. Design packages to be submitted are defined as:

- **Initial Design-Line & Grade** will ensure that the design meets the contract requirements and basic project configuration. This submission will show the horizontal and vertical design and that existing field conditions are depicted properly, it will be used to begin coordination with SHA, appropriate agencies, utilities, etc.
- **Semi-Final and Final Design** will continue to complete the design as to confirm prior commitments, meeting the schedule, submission to approval agencies.
- **IFC Plans** are 100% complete, approved and "Issued for Construction."

Preparing action item lists after each meeting, assigning "issue advocates" to matters as they become known, and then giving them the tools and authority to solve it, is extremely successful in eliminating schedule or cost concerns. Assigning issue advocates and maintaining aggressive proactive application of the partnering principles, attendance at the M&O TFG meetings and embracing open communication, will enhance the desired partnership. The DBT will call or visit stakeholders, permitting agencies, and utility companies, as

soon as there is a question or issue. *Over-the-Shoulder* reviews will be the preferred method to coordinate as work progresses. One of the most important items in the DBT plan is ensuring timely reviews and submittals by regular progress design, construction, and Owner meetings. SHA staff and reviewers will be encouraged to join with us at our design and constructability review meetings to become a full team member, performing informal *Over-the-Shoulder* reviews, attending our task force meetings, and truly becoming our Partner. By doing this, our goal of "No Surprises" will be realized and the MD 210 project will be delivered on schedule and budget.

This DBT prides itself in solving construction and design issues rapidly without sacrificing the quality of the project. This Team will aggressively manage all aspects of this project. Should any item on the CPM Schedule show unacceptable progress – for any reason – a schedule recovery strategy will be developed and implemented immediately. At the same time, SHA will be apprised of the potential issue and brought in to agree / comment on the proposed Recovery Plan.

B.5 CHANGE MANAGEMENT

During construction, unanticipated field conditions could be exposed that impact the "Issued for Construction" drawings. Immediately upon discovery, our design and construction leaders will uncover pertinent facts and come up with suggestions for resolution. Regardless of who may be financially responsible; we will provide options for possible solutions. The DBT will recommend a solution for SHA review or meet with staff to discuss options and jointly arrive at an environmentally and cost-effective solution. We will look to mitigate any delay in the schedule by re-sequencing construction activities to minimize any additional costs. Should changes to the "Issued for Construction" drawings be required, the DBPM will notify the SHA liaison and, if appropriate, notify the applicable permitting agencies. The Project Procedures Manual and Quality Control Plans establish protocol and procedures for dealing with Requests for Information, Changes, and Non-Conformance Issues. JMT will handle design or plan revisions resulting from contract changes. They will certify the design meets the RFP and AASHTO and SHA design criteria with an authority to issue plan revisions to satisfy the design criteria. All changes to "Issued for Construction" drawings will be signed off by the Project Design Manager. Changes made to "Issued for Construction" drawings will have the revision number noted on the plans and be kept in ProjectWise. A separate folder of the revised CAD files will contain these revisions for future inclusion into as-built plans and specifications. The Corman Project Engineer will be responsible for document control of plans issued to the field personnel for construction.

For routine or minor changes to the "Issued for Construction" drawings, a set of as-built drawings will be maintained in the project office and incorporated into the final as-built drawings. These final as-builts will show the actual final construction, including field directed changes.

All DBT members will be instructed that proposed changes in project scope must be immediately referred to the DBPM who will make a preliminary assessment of whether such changes warrant further evaluation and verify acceptance of cost-responsibility by the DBT or by SHA. The DBPM will secure SHA authorization if such changes warrant exceptions to project requirements or if SHA will incur any cost responsibility. When scope changes are authorized by SHA, the DBPM will ensure the immediate adjustment of project costs, schedules and contract documents such as modifications to the "issued for construction" drawings" and recordation to the as-built plans. Change order requests, if required, will include the following information:

- the need/benefits for the change
- effect on other work packages
- schedule and cost impacts
- cost responsibility

field surveys, geo-technical work such as the boring plan followed by the field investigations, pre-permitting meeting, existing pipe inspections, and management and oversight meeting with SHA. Design work will begin with early packages for Phase I consisting of designs for WSSC sewer and water, Washington Gas, MOT, slip ramps, road widening, culverts, and stream restoration work. Other remaining project design packages will proceed concurrently with the early packages.

Advanced clearing per the RFP plans is set to begin at NTP, June 1, 2015, followed by utility relocation work for PEPCO, Verizon, Comcast and Level 3 and is dependent on SHA acquired MDE permit and ROW clearance. Phase I construction work is scheduled to begin in December 2015 and shifts to Phase II in June 2016, limiting the turning movements at Kerby Hill Road and Livingston Road to right-in and right-out. During Phase II the median ramps and bridges are constructed and traffic is restored to full use of intersection in October 2017, approximately 16 months after its closing. Traffic will be switched on SB MD 210 to Phase III after median Ramps A and B come on line and will allow critical path work to commence on RW7. Phase III (NB MD 210) will be shifted after the complex completion of the tie-ins at Livingston Road and Murray Hill Road. Once all outside work and a short section of median wall north of Wilson Bridge Road is complete, the final switch will be made to Phase IV for roadway patching, milling and overlay of mainline MD 210. We anticipate finishing the project November 16, 2018.

The critical path runs through:

- Notice of Selection
- Utility Coordination/Designation/SUE/Field Data/Test Hole Data Sheets
- Advanced Clearing and Grubbing for Utility Relocation
- Pepco, Verizon, Comcast, Level 3 Relocations
- Washington Gas Design, Approvals and Construction
- Construction of SR1
- Switch Traffic to Phase II
- Pile Driving at Abutments D, B and C and the Abutment Construction
- Bridge S02 and Traffic on New Approach Livingston Road at S02
- Interchange Open to all Movements
- Relocate Barriers for Southbound Phase III
- Retaining Wall RW7,NW1, Shoulder Improvements SB 727 to 743
- Interim traffic switch north of Wilson Bridge Drive and associated median work
- Traffic shift to Phase IV
- Patching, milling, overlay, striping of mainline MD 210 and Punchlist.

Benefits of Corman/JMT DB Approach: Through the ATC process, our DBT was able to provide a design and construction sequence to reduce the overall schedule by having concurrent work areas as shown. This was made possible by ATC 25 which maintains traffic in a 2-lane through pattern through the intersection. We streamlined many of the complex retaining wall designs with caisson founded post and panel wall construction. Our MSE abutments with vertical piles allows this work to advance prior to the completion of overhead lines with only the pile driving to complete once the lines are removed. The schedule is demanding, will require experienced Design and Construction Project Management Teams and high level staffing. We anticipate the project will require double shifting for the majority of all structural concrete work.

B. PROJECT MANAGEMENT

Design build is often the procurement method used when owners desire to shorten the overall project delivery durations. Effective communication and proactive coordination management is the heartbeat of this success. The DBPM is tasked with bringing together the team members into an integrated working unit, where each entity and each person realizes their importance to the overall project. This is accomplished through constant tracking of commitments and schedules and actively communicating the status. It becomes essential to have issue resolution ladders so no one issue can prevent forward motion. On this project, coordination with ROW acquisitions, utility relocations, MDE permits, public outreach stakeholders and the design approval process with all parties will require experienced design build professionals. Our DBPM, Scott Szympruch, PE, and DM, William E. Schaub, PE, have this experience and will have the appropriately assigned project management infrastructure to support this high level effort.

We have used our proven policies, procedures and best practice in developing our Project Management Plan (PMP), which guides our activities for the entire project from NTP thru final acceptance and defines the organizational structure, management approach and work execution to make this project a success.

Below are some of the elements of our PMP:

B.1 PROJECT COMMUNICATION PLAN

The key to success is communication between the parties involved: SHA, the DBT, review and regulatory agencies, and stakeholders. During design, the DBT will employ an internal partnering process that promotes an active dialogue between designers, construction personnel, subcontractors and suppliers in identifying and averting constructability issues. This process will enable the team to draw upon their strengths and experience and will instill a sense of team ownership. A three week look-ahead schedule will be developed and tracking sheets utilized to monitor design, design issues, right-of-way (ROW), utility impacts, and approvals.

Internal DBT Communications: During design, constructability reviews are crucial and will be performed by all parties to keep ahead of any existing field changes. Also, the DBT, subcontractors, and suppliers will review the plans to maximize cost effectiveness, material availability, and constructability. Construction Managers will provide formal review comments to the design team and comments and responses will be tracked through our collaboration software, "4projects". The DBT will internally review submittals for constructability and compliance with quality metrics before forwarding to SHA for review/approval.

Our team has an established resolution ladder to expeditiously deal with construction issues outside of scheduled meeting times, and at the level most responsible for the design or construction. Thus, when a design issue occurs that requires contractor resolution, a defined procedure is established to allow the designer to communicate with the appropriate contractor representative, be it the DBPM, the construction manager, or field personnel. Likewise, during construction when an issue arises the contractor will have a choice of personnel to resolve the issue with the appropriate design discipline. This will streamline communication and allow for quick issue resolution. Our process, will allow the resolution to be managed by the source and the person with the solution. Issues and resolutions will be logged and communicated to key contractor and design personnel.

Three week look-ahead schedules will be updated weekly during both the design and construction phases of the project, discussed at regular schedule meetings, and shared with SHA. To stay on track, the schedule will be constantly reviewed and maintained. Any deviations from the approved schedule will be discussed as part of both the internal weekly progress meetings and the monthly partnering process. Mitigation/recovery solutions will be identified and initiated at the appropriate meetings.

DBT/SHA Communications: The DBT will follow SHA's milestone review process throughout design and permitting. We will provide SHA with notice of pending submissions at least 14 days in advance, or as agreed

upon at the start of the project. Transmittals, including design submittals, shop drawings, and RFIs will be recorded and tracked. These will be linked with the CPM schedule to generate status update reports communicating the need for approvals and keep the project moving.

There will be informal and formal meetings with SHA to discuss design issues, utilities, ROW, MOT, design solutions and proposed details, construction means and methods, sequencing and strategies to minimize impacts to the construction schedule. We propose to use Task Force Group (TFG) meetings for ROW, utilities, geotechnical and other critical components of the project. The TFG approach will focus on the critical issues of the project assigned to the groups. TFG meetings will be held with various disciplines on an as needed basis and will document issues, decision needs and risk items which will be identified to the Management and Oversight (M&O) TFG. The M&O TFG, with the DB Project Manager at the head, is the central point of decision making and communication among SHA managers and key stakeholders involved in the project. The M&O TFG will serve as a conduit for disseminating critical project information and identifying issues. SHA. Corman and JMT will partner to reach prompt decisions and consensus on project issues while identifying risk exposures and avoidance with the common goal of advancing the project. To expedite the project, it will be crucial that SHA decision makers participate in the M&O TFG meetings. All TFG meeting agendas will address project decision requirements, risks, coordination, submittal and schedule reviews and decide on implementation paths with the common goal of advancing the project and mitigating risks. The TFG meetings may be incorporated into the regular weekly or monthly meetings, or held separately. To expedite the regulatory process, with SHA's concurrence, we would also invite the appropriate agency reviewers and stakeholders. This eliminates "surprises" during subsequent formal reviews. Formal submittals will be made per SHA policy through ProjectWise with hard copies provided as requested.

External Communication: The DBT knows the importance of public relations and keeping stakeholders informed on progress and potential impacts. **Our Public Relations/Outreach Coordinator, Ms. Odessa Phillip, PE of Assedo Consulting, LLC** will be the liaison between the DBT and SHA for public outreach efforts and with project and property stakeholders and the public to facilitate communication during design and construction. Odessa, a Prince George's County resident, worked with Corman in the same capacity on the ICC-A project. The outreach program will be specific to the project and stakeholder needs including: an SHA website, e-mail, mailers, 1-800 number, and as outlined in the Public Outreach Performance Spec, TC 3.21. A close relationship between SHA and the DBT for a steady stream of information to stakeholders is vital to project success. For example, since some of the proposed locations are literally in homeowners' backyards, it is imperative to communicate the construction schedule to keep residents informed. Equally important will be to hold regular meetings with the tenant associations and commercial establishments adjacent to the roadway. In addition to "Pardon Our Dust" meetings prior to construction and major MOT changes, Portable Variable Message Signs will communicate upcoming work zones to motorists, pedestrians, and bicyclists. Communication with community and public officials will be through the SHA.

B.2 COORDINATION MANAGEMENT PLAN

Equally important to communication for the success of this project is coordination between the many parties involved: SHA, DBT, review agencies, SHA ROW, utility owners, and stakeholders. This is based upon open and honest communication, frequent meetings, and updates. Construction sequencing will be a constant topic at the TFG meetings to review the proposed sequence, especially for the impact to motorists and pedestrians. Our site access and storage/laydown areas will also be reviewed for compatibility with the proposed sequencing. The DBT will hold the following internal weekly meetings, in additions to the TFG meetings discussed above, during design and construction:

- **Inter-disciplinary Design Review Meetings**, led by the Project Design Manager, William E. Schaub, PE and Design/Construction Integrator Lou Robbins, PE, DBIA to coordinate design disciplines;

- **Design Constructability Reviews**, led by the Design/Construction Integrator, Project Design Manager and Construction Manager, especially for MOT (vehicle and pedestrian), ESC, utility relocations, and access;
- **Pre-application Meeting** with SHA and permitting agencies;
- **Weekly/Monthly Schedule Meetings** to review the previous period's work and develop three-week, 30- and 60-day look ahead schedules during both the design and construction phases of the project;
- **Weekly Foremen Meetings** to discuss the schedule, staffing and material/equipment needs and project coordination;
- **Morning Huddles** with crews to set the safety and production goals for the day; and
- **Monthly Partnering Meetings** with SHA and appropriate stakeholders to identify and resolve issues.

The DBT will identify stakeholders with any pending/ongoing projects or sponsored events near the site and within the construction schedule. If these projects impact our progress or theirs, the DBT will immediately communicate with them to identify potential conflicts or impacts and work to find beneficial solutions.

At our internal weekly meetings, issues will be identified through the following tracking aids: ROW Acquisition Tracking showing progress of properties being acquired by SHA; Utility Protection Tracking spreadsheets during design and construction indicating location of utility impacts, mitigation status, responsibility of design relocation, including status, sorted by utility; Permit Progress Tracking spreadsheets showing permit requirements/commitments, sorted by review agency; Review and Approval Tracking spreadsheets of design and construction submittals; Shop Drawing Status Tracking spreadsheets; Material Submittal and Delivery schedules; Non-Conformance Logs by QC for design and construction; and RFI Logs.

4projects will provide document control for tracking each submission (including shop drawings and RFIs), including submission dates, comments, responses, and deadlines for follow-up action. All exchanges of information between the DBT and SHA will specifically be tracked via SHA ProjectWise. By linking the submittal and submission status logs with the CPM schedule, the DBT can generate reports that provide the current status of each submission and use them to identify and minimize any potential delays in the process. Active use of this tracking system by all team members will ensure that time-critical activities, materials with long lead times, utility coordination, and other urgent issues are promptly addressed to avoid potential delays.

Right-of-Way (ROW) acquisition clear date is a critical project schedule milestone that requires close attention so as not to adversely impact the project construction schedule. Should this milestone not be met for any reason, the DBT is committed to coordinating with SHA ROW staff as follows. Immediately upon notice of selection, we will establish a ROW task force group and request an initial meeting with SHA ROW staff. During the initial meeting, the group will review the current status of the ROW and develop a tracking list that will identify key parcels needed and key milestones of the acquisition process, such as appraisals and appraisal reviews, offers made, and expected clear dates and develop a priority listing. The tracking sheet will be reviewed during subsequent coordination meetings will continue on a bi-weekly basis until ROW is cleared. It should be noted that JMT's in-house Right-of-Way staff is experienced in SHA land acquisition procedures should assistance be needed with the task. Additionally JMT's in-house Right-of-Way staff is very experienced at utilizing SHA's Office of Real Estate Management system (OREMS) and can provide assistance on putting information in the system as well.

The DBT has already begun coordination with utility owners, Pepco, Verizon, Level 3, Comcast, Washington Gas, and WSSC, in the corridor to gain a better understanding of the requirements associated with their relocations. Our design and construction schedule has been carefully evaluated with the known utility information. We have provided innovative designs through the ATC process to avoid utility relocations and provide some flexibility in the schedule. Coordination efforts will continue throughout final design and during construction. We have a strong team of professionals to lead this effort comprised of value added, Dale Kniffin of Utility Professional Services, Inc., Mike Manoski of Corman and Tim Schott of JMT.

They will establish weekly TFG meetings with all utilities to track status of design and construction. Detailed reviews will be performed to assure conflicts are avoided. Mike will be on site daily to monitor progress and respond to concerns as they are found. Preconstruction coordination will occur so the relocation work can begin as soon as the advanced clearing and site preparation work is completed.

From a critical path standpoint, the stormwater management (SWM)/erosion and sediment control (ESC) permit from the Maryland Department of the Environment's (MDE) Plan Review Division will be of utmost importance. We will coordinate SWM and ESC designs and reviews between MDE and SHA-HHD from Notice of Selection to Project Closeout. We will utilize **our certified MDE Reviewer/ Expeditor, Mr. David Heckman, PE,** to oversee and review submissions prior to being sent to MDE. David will oversee plan development and provide that vital check for compliance before submitting. Upon Notice of Award or before if allowable, our process will include contracting SHA and MDE to set up a pre-permitting meeting to outline our approach to SWM and ESC, submission schedules, permitting timelines, and submittal requirements.

B.3 RISK MANAGEMENT PLAN

The DBT will employ the Construction Management Association of America (CMAA) endorsed approach to risk management through a "Risk Register" which includes a formal list of identified risks, potential project impacts, and mitigation strategies. A successful risk management process is robust because it considers risks throughout the project's life and delivery processes. The DBT's risk management process has already commenced, will continue throughout design/construction, and be dynamic as the team responds to changes in an organized and proactive way as issues unfold. The DBT will employ this five-step risk management approach:

1. **Identify** – names the risk, determines cause and effect, and categorizes it;
2. **Assess** – assigns probability, severity of impact, and determines response;
3. **Analyze** – quantifies severity, determines exposure, establishes tolerance level, and determines contingency (applicable during preliminary design and pricing);
4. **Manage** – defines response plans and actions, establishes ownership, and manages response (after NTP); and
5. **Monitor / Review** – monitors/reviews/updates risks, monitors response plans, updates exposure, analyzes trends, and produces reports (after NTP, during design and construction).

Risk analysis begins during the Proposal stage. From experience on similar projects, the following are risks most likely to occur and have a major impact on schedule, quality, safety and costs: *Indecision; Personal Preference; Poor documentation on decisions made; Poor flow of information and coordination among disciplines; & Minimal effort in clearly defining scope requirements for each party involved and following strict QA/QC protocols* .

The DBT proposes to use the "Task Force Group" approach to identify, manage and mitigate risks. TFG meetings will be held with various disciplines on an as needed basis. Risk items will be discussed, documented and identified to the Management and Oversight (M&O) TFG who will meet every month or more frequently if needed. The M&O TFG, which includes the DBT and SHA management, is a critical task force group that will monitor risks, schedule and address project issues promptly. The M&O TFG meeting agendas will address project risks, coordination, submittal and schedule reviews and decide on implementation paths with common goal of advancing the project and mitigating risks.

This open forum of discussion serves to clearly define project criteria, ensure the owner's intentions are met, address corridor-wide constructability issues, and provide consistency in design before becoming schedule-critical. Potential risks such as ROW acquisition, utility relocation, third party coordination,

MOT/pedestrian/bicyclist safety, environmental issues, scope creep, budget constraints, schedule overruns, unforeseen conditions and public outreach can all be efficiently and economically addressed during these meetings.

Risks will be identified and become apparent during this process and recorded on a project Risk Register. The DBT will access the key risk areas and measure the likelihood and impact. These risks will be ranked and the desired results will be established. The M&O TFG will develop options and solutions to mitigate or avoid same. A strategy will be selected and implemented. The risk will be monitored, evaluated, and adjusted accordingly to achieve the desired outcome and results. As the construction process evolves, new and unforeseen risk may be identified and will be resolved using the risk management techniques discussed above and will be addressed to the satisfaction of SHA. Practicing integrated risk management, continuous learning/communication is a corporate culture that the DBT plans to bring to the project and SHA from the corporate level to the front line operations, people and processes. Initially identified key risks and mitigation strategies are discussed below:

- **Utility Relocations and Coordination** are critical to the schedule. For this project, utility coordination is the responsibility of the DBT, with all dry utilities relocated by the affected utility and the DBT responsible to design/construct the Wash. Gas, Water and Sewer. We have successfully met this challenge in the past by:
  - Assigning a Utility TFG to schedule/coordinate utility relocation design and construction;
  - Holding regular coordination/partnering meetings with affected utilities;
  - Redesigning our improvement to minimize utility impacts or relocations, whenever possible;
  - Making identifying and resolving utility issues a priority through design phase;
  - Being ready to perform the design/relocations for the dry utilities with in-house design/constr. forces;
  - Discussing the utility status at all monthly M&O TFG, progress and partnering meetings.

  The DBT has communicated with utility owners in the corridor to gain a better understanding of the requirements associated with their relocations. Our design and construction schedule has been carefully evaluated and closely coordinated with utility companies. We have provided innovative designs that have avoided relocations and moved other critical relocations off the critical path. These efforts to date have provided an in-depth understanding of the phasing required to avoid utility conflicts if at all possible while minimizing potential schedule delays. These efforts will continue throughout final design and during construction. A **value added benefit** to our utility TFG is the addition of **Utility Professional Services, Inc.**, (Utility Pro's). Utility Pro's has extensive contacts and knowledge working with all utility owners in the corridor which will further aide in understanding and addressing the utility company requirements and schedule during design development and throughout construction. *See Project Sequence in Section 2.09.02 for additional utility discussions.*

- **Right-of-Way Acquisition (ROW)** clear date is a risk project schedule milestone that requires close attention so as not to adversely impact the project construction schedule. ROW clearance is to be provided by SHA by April 1, 2015, prior to issuance of NTP on June 1, 2015, and involves 91 affected parcels. Construction cannot begin in areas where ROW has not been cleared. We understand that flexibility is required to shift sequencing and relocate resources, as appropriate, to meet the ROW clearance progress and are committed to coordinating with SHA during this ROW acquisition. During the procurement phase, the DBT worked diligently to provide SHA with ATCs that help provide flexibility to SHA's concept design and schedule by developing a phased approach to open up concurrent work zones within the project limits. This allows work in other parts of the project to advance independently and concurrently rather than linearly as originally planned.

- **Transportation Management Plan (TMP) and Maintenance of Traffic (MOT)** is essential to providing a safe work zone for workers, drivers, general public, bicyclists and pedestrians and will be a key risk on this project. The DBT will develop an effective TMP and MOT plans during design to be used throughout construction to maintain the facility user safety; construction personnel safety; and to ensure continuous access to adjacent properties and transit stops. VMS boards will be utilized to alert the motorists to changes in traffic patterns. Barrels, concrete barriers or temporary impact devices will be installed to maintain a safe roadway. Police enforcement may be requested, as well as speed camera enforcement to encourage motorists to drive responsibility. Enforcing pedestrians to follow the rules will require special attention and signing to direct them safely around the work and traffic areas.

  Through ATC 25 (see Appendix), we have developed a MOT phasing that will allow MOT Phase II to be in a two lane configuration through the 210/Livingston Road/Kerby Hill Road Intersection. This will not prolong the full closure of intersection, does not elongate detours and maintains the required right turns. The benefit of the ATC is its implementation advances access to the median ramps and bridge structure work and reduces the overall project schedule. Access to businesses will be provided as required in the RFP. The DBT will provide a robust communication program throughout the corridor for all stakeholders for two way communication.

- **To maximize safety, avoid disruptions, minimize inconvenience, and meet community needs, the DBT will assist SHA to develop/implement an effective community outreach plan throughout design and construction**. Given the nature of our proposed traffic changes incorporated in ATC 25 of lane reductions through the Livingston/Kerby Road/MD 210 Intersection, the DBT will provide an aggressive, robust public outreach program that provides proactive communication with stakeholders, such as adjacent property owners; travelling public; surrounding communities; elected officials; WMATA; Prince George's County DPW&T, Executive Office, Council, Schools, Public Safety, and Transit; so their concerns are heard and their needs are met. The DBT will also implement measures to improve motorist awareness and we will coordinate with SHA and stakeholders with a pedestrian and bicyclist education program in the surrounding community to educate them on the safe and effective means for using the facility including bus stops during and after construction.

- **Geotechnical conditions encountered during construction carry the risk of significant delays.** Based on the Geologic Map of Prince George's County, MD the MD 210 project lies within a geological drainage divide created by existing Cary Branch on the east side of MD 210 that heads south towards its confluence with Henson Creek. As a result of the geological history, as confirmed by the test borings provided with the RFP, the geology along the project limits consists of river alluviums along the lower elevations and Potomac Group Clays along the eastern side of MD 210. The river alluviums consist primarily of medium dense to dense sands with varying amounts of gravel, silt and clay and layers of medium stiff to stiff clays. The clay portions of this layer appear to be over consolidated and should pose minimal risk to long term consolidation settlements from the placement of fills of the magnitude proposed for this project. The clay stratums, according to the existing borings, are not anticipated to be within the proposed cut slopes, but may be required to support fill slopes and can potentially impose risks associated with global stability.

The Potomac Group Clay soils in the area are highly over-consolidated. As a result, the Potomac Group Clays are considered very good for support of structure foundations. However, when these clays are encountered in slopes they can pose global stability risks. Also, the Potomac Group Clays typically have poor characteristics for the support of pavements. In addition to the above, perched water conditions are prevalent on the site due to more pervious sands overlying the more impervious clays. These perched water conditions can result in unstable slopes and need to be recognized and addressed. See photo of existing slope nails along the NB MD 210 East Slope.

Corman encountered almost the exact same conditions on our Route 1 job last year, where we excavated to a new grade in front of a slope with Potomac Clays. Because we took away dirt from in front of the Potomac face they became globally unstable and required installation of over a hundred steel beams needled into the slope to protect it from failing. The other solution was to construct a 6:1 slope which fell outside the ROW and was unacceptable. We also have a project in Piscataway, just a short distance from this project, where we are performing slope stabilization from a slide where the materials were over Potomac Clays. Our team is prepared to take special care in our designs to analyze for these situations and propose adequate solutions.

The DBT understands the complexity of evaluating and managing the geotechnical risks in the soil conditions expected and propose the following strategies to manage and mitigate the risk:

- Perform a thorough review of the existing geologic, geotechnical and roadway design and construction documents as well as the roadway maintenance history.
- Develop a thorough geotechnical planning report and perform a comprehensive subsurface investigation program to augment the existing subsurface data. This program will focus on specific soil and groundwater conditions within cut slopes, embankment foundations and roadway subgrades.
- Form a geotechnical task force group consisting of senior geological, geotechnical engineering, and construction and SHA personnel, experienced in working in the expected conditions. This task force will continue throughout construction to mitigate unforeseen soil and groundwater conditions that may be encountered. Our proactive approach, to include regular communication of construction staff with senior geological and geotechnical engineering personnel will assure that appropriate and timely modifications to the design and construction are made.

The DBT is committed to being very proactive to minimize the potential problems that may arise as we excavate and reach subgrade elevations and encounter marginal loose and wet soils. We will be prepared to implement drying and undercutting technics to bring subgrade to an acceptable stable condition, while advancing the project on schedule. Slopes will be flattened to maintain their stability. In areas of deep fills, we will stabilize the existing ground prior to placing fills to alleviate potential future settlement issues.

- **A major risk is acquiring environmental permits and approvals.** The key to securing permits in a timely manner is to understand and identify all affected resources early and create an outline showing the involved agencies and the relevant permits/approvals. Our team has developed an environmental approval/permit list for the project that identifies key milestone dates and submittal dates to ensure timely coordination and securing of all permits. We will review the approval/permit list during our kick-off meeting with SHA and the affected resource agencies to gain a complete understanding of permit requirements and will maintain regular and consistent level of communication from beginning to end of the project. From a critical path standpoint, the SWM/ESC permit from MDE's Plan Review Division will be the most important. Corresponding to our phased submittals, we will coordinate SWM and ESC designs and reviews between MDE and SHA-HHD from Notice of Selection to Project Closeout. The DBT will track the schedule

throughout the design and construction of the project to ensure that the schedule is met and that permits do not impact the project schedule.

- **The DBT will work to minimize environmental impacts beyond those shown in the approved Joint Permit Application and Reforestation Permit.** We anticipate that modifications to the Section 404 Authorization and the MDE Nontidal Wetlands and Waterways Permit will be required during final design. Our review of the reforestation permit indicates that impacts will be reduced and as such a revision would not be required. We will coordinate all efforts associated with these permits, directly with SHA's Environmental Programs Division, Landscape Architecture Division, and Landscape Operations Division, as applicable, for all submittals. Avoidance and minimization methods that focus on minimizing impacts to the environment will be given high priority. Potential increases in impacts will be thoroughly evaluated by the team to determine if they are unavoidable prior to requesting a permit modification. Throughout the design and construction the DBT will utilize a multi-disciplinary team approach to review the plans during final design to explore methods that result in an overall reduction to environmental impacts.

B.4 SCHEDULE MANAGEMENT

The DBT developed a preliminary schedule that progresses work in a way that provides the earliest completion time to meet the important completion dates. We will mitigate exposure to weather elements and create a final schedule after award that minimizes disturbances to stakeholders, motorists, and pedestrians. Our schedule is structured in a logical sequence that can be used as an effective management tool.

Upon Notice of Selection to the DBT, JMT will perform supplemental topographic surveys as required. The supplemental topography will be used to prepare the initial design packages. JMT will stake borings and advance the subsurface investigations. We will meet with the utility companies and SHA to coordinate important relocations and obtain the status of the ROW. Follow-up TFG meetings or conference calls will be held until all ROW is obtained and utilities relocated. Our team has extensive experience with mitigating and coordinating ROW issues should ROW clearance be delayed for any reason. Utility relocation by the utility owner has also been identified as an issue which could affect the schedule. Assigning a Utility Coordinator and TFG whose main role is to coordinate utility relocation and construction will facilitate staying on schedule. Our design engineering, submittal process, subcontract creation and execution, material procurement, and work plan formulations will start upon Notice of Selection. Key to success is coordinating the sequence of construction and separating the project into discrete submittal packages to meet the utility and ROW constraints actually encountered.

The technical design submittals will be tailored to specific needs for efficient design and construction. Our work packages, are divided into packages taking into account defined hold points in the schedule, such as ROW or permit approvals and a logical construction sequence of operations, such as roadway construction, traffic signal installation, signing, and pavement markings. Design packages to be submitted are defined as:

- **Initial Design-Line & Grade** will ensure that the design meets the contract requirements and basic project configuration. This submission will show the horizontal and vertical design and that existing field conditions are depicted properly, it will be used to begin coordination with SHA, appropriate agencies, utilities, etc.
- **Semi-Final and Final Design** will continue to complete the design as to confirm prior commitments, meeting the schedule, submission to approval agencies.
- **IFC Plans** are 100% complete, approved and "Issued for Construction."

Preparing action item lists after each meeting, assigning "issue advocates" to matters as they become known, and then giving them the tools and authority to solve it, is extremely successful in eliminating schedule or cost concerns. Assigning issue advocates and maintaining aggressive proactive application of the partnering principles, attendance at the M&O TFG meetings and embracing open communication, will enhance the desired partnership. The DBT will call or visit stakeholders, permitting agencies, and utility companies, as

soon as there is a question or issue. *Over-the-Shoulder* reviews will be the preferred method to coordinate as work progresses. One of the most important items in the DBT plan is ensuring timely reviews and submittals by regular progress design, construction, and Owner meetings. SHA staff and reviewers will be encouraged to join with us at our design and constructability review meetings to become a full team member, performing informal *Over-the-Shoulder* reviews, attending our task force meetings, and truly becoming our Partner. By doing this, our goal of "No Surprises" will be realized and the MD 210 project will be delivered on schedule and budget.

This DBT prides itself in solving construction and design issues rapidly without sacrificing the quality of the project. This Team will aggressively manage all aspects of this project. Should any item on the CPM Schedule show unacceptable progress – for any reason – a schedule recovery strategy will be developed and implemented immediately. At the same time, SHA will be apprised of the potential issue and brought in to agree / comment on the proposed Recovery Plan.

B.5 CHANGE MANAGEMENT

During construction, unanticipated field conditions could be exposed that impact the "Issued for Construction" drawings. Immediately upon discovery, our design and construction leaders will uncover pertinent facts and come up with suggestions for resolution. Regardless of who may be financially responsible; we will provide options for possible solutions. The DBT will recommend a solution for SHA review or meet with staff to discuss options and jointly arrive at an environmentally and cost-effective solution. We will look to mitigate any delay in the schedule by re-sequencing construction activities to minimize any additional costs. Should changes to the "Issued for Construction" drawings be required, the DBPM will notify the SHA liaison and, if appropriate, notify the applicable permitting agencies. The Project Procedures Manual and Quality Control Plans establish protocol and procedures for dealing with Requests for Information, Changes, and Non-Conformance Issues. JMT will handle design or plan revisions resulting from contract changes. They will certify the design meets the RFP and AASHTO and SHA design criteria with an authority to issue plan revisions to satisfy the design criteria. All changes to "Issued for Construction" drawings will be signed off by the Project Design Manager. Changes made to "Issued for Construction" drawings will have the revision number noted on the plans and be kept in ProjectWise. A separate folder of the revised CAD files will contain these revisions for future inclusion into as-built plans and specifications. The Corman Project Engineer will be responsible for document control of plans issued to the field personnel for construction.

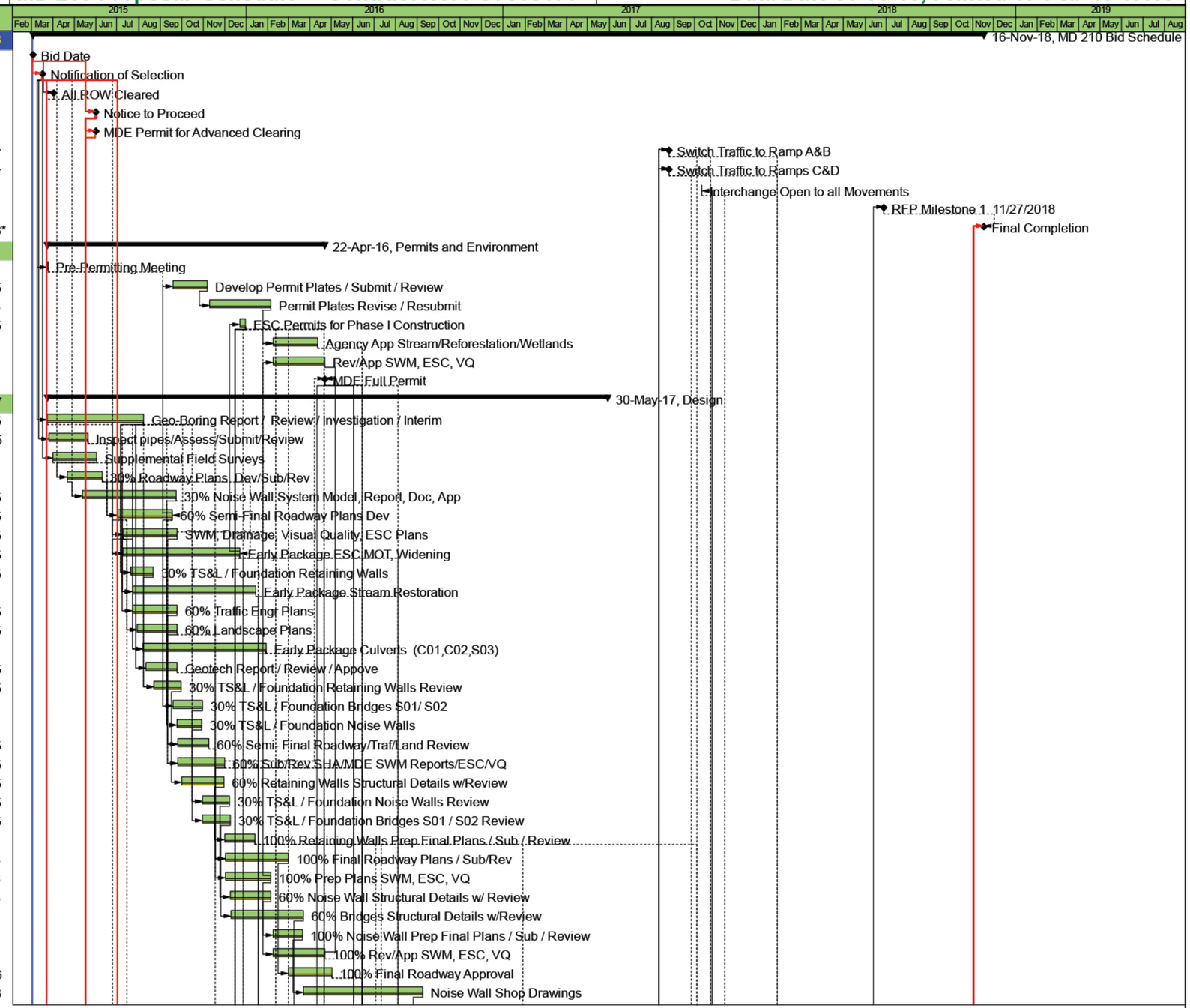
For routine or minor changes to the "Issued for Construction" drawings, a set of as-built drawings will be maintained in the project office and incorporated into the final as-built drawings. These final as-builts will show the actual final construction, including field directed changes.

All DBT members will be instructed that proposed changes in project scope must be immediately referred to the DBPM who will make a preliminary assessment of whether such changes warrant further evaluation and verify acceptance of cost-responsibility by the DBT or by SHA. The DBPM will secure SHA authorization if such changes warrant exceptions to project requirements or if SHA will incur any cost responsibility. When scope changes are authorized by SHA, the DBPM will ensure the immediate adjustment of project costs, schedules and contract documents such as modifications to the "issued for construction" drawings" and recordation to the as-built plans. Change order requests, if required, will include the following information:

- the need/benefits for the change
- effect on other work packages
- schedule and cost impacts
- cost responsibility

Corman Construction, Inc. — MD 210 Proposal Schedule — Contract No. PG7005170 — Data Date 03-03-15, Printed 17-Feb-15 17:19

Activity ID	Activity Name	Original Duration	Start	Finish
MD 210 Bid Schedule V0.0		**947**	**03-Mar-15**	**16-Nov-18**
A110	Bid Date	0		03-Mar-15
A120	Notification of Selection	0	17-Mar-15	
A130	All ROW Cleared	0		01-Apr-15
A100	Notice to Proceed	0	01-Jun-15	
A170	MDE Permit for Advanced Clearing	0		01-Jun-15
A160	Switch Traffic to Ramp A&B	0		25-Aug-17
A180	Switch Traffic to Ramps C&D	0		25-Aug-17
A210	Interchange Open to all Movements	0	11-Oct-17	11-Oct-17
A205	RFP Milestone 1 11/27/2018	0		26-Jun-18
A200	Final Completion	0		16-Nov-18*
Permits and Environment		**274**	**24-Mar-15**	**22-Apr-16**
EP100	Pre-Permitting Meeting	1	24-Mar-15	24-Mar-15
EP115	Develop Permit Plates / Submit / Review	35	18-Sep-15	06-Nov-15
EP125	Permit Plates Revise / Resubmit	60	10-Nov-15	05-Feb-16
EP210	ESC Permits for Phase I Construction	5	23-Dec-15	30-Dec-15
EP135	Agency App Stream/Reforestation/Wetlands	45	08-Feb-16	11-Apr-16
EP200	Rev/App SWM, ESC, VQ	54	08-Feb-16	22-Apr-16
EP190	MDE Full Permit	0		22-Apr-16
Design		**556**	**24-Mar-15**	**30-May-17**
D105	Geo-Boring Report / Review / Investigation / Interim	97	24-Mar-15	07-Aug-15
D120	Inspect pipes/Assess/Submit/Review	40	26-Mar-15	20-May-15
D100	Supplemental Field Surveys	45	31-Mar-15	02-Jun-15
D130	30% Roadway Plans Dev/Sub/Rev	35	21-Apr-15	09-Jun-15
D140	30% Noise Wall System Model, Report, Doc, App	94	12-May-15	23-Sep-15
D131	60% Semi-Final Roadway Plans Dev	55	01-Jul-15	17-Sep-15
D134	SWM, Drainage, Visual Quality, ESC Plans	55	09-Jul-15	24-Sep-15
D320	Early Package ESC,MOT, Widening	115	09-Jul-15	22-Dec-15
D330	30% TS&L / Foundation Retaining Walls	25	20-Jul-15	21-Aug-15
D310	Early Package Stream Restoration	120	23-Jul-15	14-Jan-16
D133	60% Traffic Engr Plans	45	23-Jul-15	24-Sep-15
D136	60% Landscape Plans	40	30-Jul-15	24-Sep-15
D300	Early Package Culverts (C01,C02,S03)	120	06-Aug-15	29-Jan-16
D110	Geotech Report / Review / Appove	45	11-Aug-15	24-Sep-15
D331	30% TS&L / Foundation Retaining Walls Review	40	22-Aug-15	30-Sep-15
D350	30% TS&L / Foundation Bridges S01/ S02	30	18-Sep-15	30-Oct-15
D340	30% TS&L / Foundation Noise Walls	25	24-Sep-15	29-Oct-15
D135	60% Semi- Final Roadway/Traf/Land Review	45	25-Sep-15	08-Nov-15
D390	60% Sub/Rev SHA/MDE SWM Reports/ESC/VQ	45	25-Sep-15	01-Dec-15
D332	60% Retaining Walls Structural Details w/Review	40	01-Oct-15	30-Nov-15
D341	30% TS&L / Foundation Noise Walls Review	40	30-Oct-15	08-Dec-15
D351	30% TS&L / Foundation Bridges S01 / S02 Review	40	31-Oct-15	09-Dec-15
D333	100% Retaining Walls Prep Final Plans / Sub / Rev	30	01-Dec-15	13-Jan-16
D410	100% Final Roadway Plans / Sub/Rev	60	02-Dec-15	29-Feb-16
D400	100% Prep Plans SWM, ESC, VQ	45	02-Dec-15	05-Feb-16
D342	60% Noise Wall Structural Details w/ Review	40	09-Dec-15	05-Feb-16
D352	60% Bridges Structural Details w/Review	70	10-Dec-15	22-Mar-16
D343	100% Noise Wall Prep Final Plans / Sub / Review	30	08-Feb-16	21-Mar-16
D430	100% Rev/App SWM, ESC, VQ	54	08-Feb-16	22-Apr-16
D420	100% Final Roadway Approval	45	01-Mar-16	02-May-16
D344	Noise Wall Shop Drawings	120	22-Mar-16	08-Sep-16

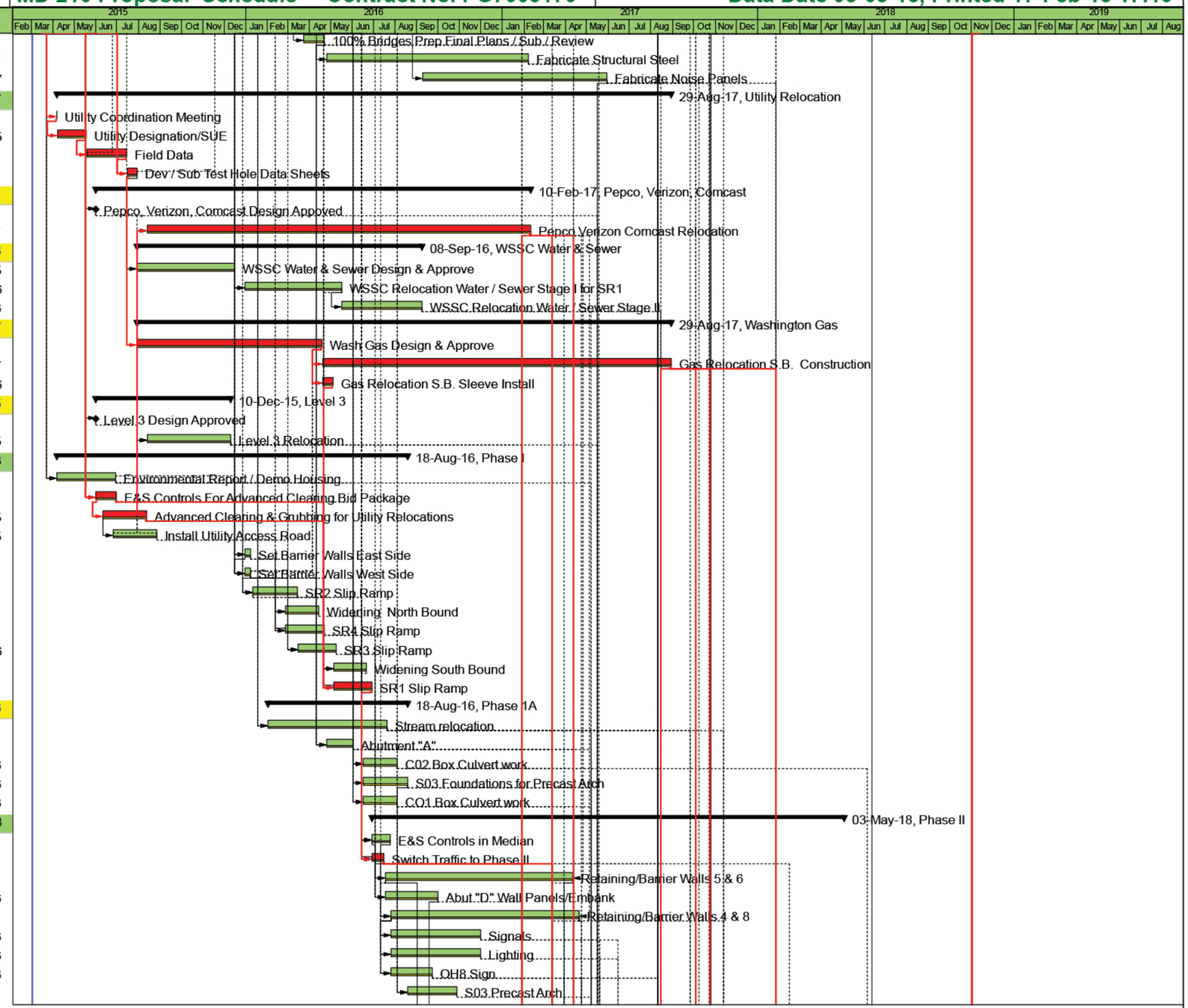


Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Primary Baseline | Remaining Work | Milestone

Page 1 of 3
Corman Construction, Inc.
TASK filter: All Activities
© Primavera Systems, Inc.

Corman Construction, Inc. | **MD 210 Proposal Schedule Contract No. PG7005170** | **Data Date 03-03-15, Printed 17-Feb-15 17:19**

Activity ID	Activity Name	Original Duration	Start	Finish
D359	100% Bridges Prep Final Plans / Sub / Review	23	23-Mar-16	22-Apr-16
D364	Fabricate Structural Steel	200	25-Apr-16	07-Feb-17
D354	Fabricate Noise Panels	180	09-Sep-16	30-May-17
Utility Relocation		610	06-Apr-15	29-Aug-17
U165	Utility Coordination Meeting	1	06-Apr-15	06-Apr-15
U175	Utility Designation/SUE	30	07-Apr-15	18-May-15
U185	Field Data	40	19-May-15	15-Jul-15
U125	Dev / Sub Test Hole Data Sheets	10	16-Jul-15	29-Jul-15
Pepco, Verizon, Comcast		621	01-Jun-15	10-Feb-17
ER410	Pepco, Verizon, Comcast Design Appoved	0		01-Jun-15
ER390	Pepco Verizon Comcast Relocation	548	13-Aug-15	10-Feb-17
WSSC Water & Sewer		283	30-Jul-15	08-Sep-16
ER300	WSSC Water & Sewer Design & Approve	95	30-Jul-15	15-Dec-15
ER190	WSSC Relocation Water / Sewer Stage I for SR1	80	31-Dec-15	16-May-16
ER200	WSSC Relocation Water / Sewer Stage II	80	17-May-16	08-Sep-16
Washington Gas		529	30-Jul-15	29-Aug-17
ER500	Wash Gas Design & Approve	180	30-Jul-15	18-Apr-16
ER400	Gas Relocation S.B. Construction	220	19-Apr-16	29-Aug-17
ER240	Gas Relocation S.B. Sleeve Install	10	20-Apr-16	04-May-16
Level 3		193	01-Jun-15	10-Dec-15
ER280	Level 3 Design Approved	0		01-Jun-15
ER290	Level 3 Relocation	120	13-Aug-15	10-Dec-15
Phase I		350	06-Apr-15	18-Aug-16
A2501	Environmental Report / Demo Housing	60	06-Apr-15	29-Jun-15
A1000	E&S Controls For Advanced Clearing Bid Package	20	01-Jun-15	30-Jun-15
A1100	Advanced Clearing & Grubbing for Utility Relocatio	40	11-Jun-15	12-Aug-15
A2301	Install Utility Access Road	40	26-Jun-15	27-Aug-15
A1200	Set Barrier Walls East Side	5	31-Dec-15	07-Jan-16
A1300	Set Barrier Walls West Side	5	31-Dec-15	07-Jan-16
A2201	SR2 Slip Ramp	35	11-Jan-16	14-Mar-16
A1900	Widening North Bound	30	26-Feb-16	14-Apr-16
A2700	SR4 Slip Ramp	35	26-Feb-16	22-Apr-16
A2600	SR3 Slip Ramp	35	15-Mar-16	09-May-16
A1400	Widening South Bound	30	05-May-16	21-Jun-16
A2101	SR1 Slip Ramp	35	05-May-16	28-Jun-16
Phase 1A		142	01-Feb-16	18-Aug-16
A1500	Stream relocation	45	01-Feb-16	20-Jul-16
A2750	Abutment "A"	25	25-Apr-16	01-Jun-16
A1600	C02 Box Culvert work	35	16-Jun-16	04-Aug-16
A1700	S03 Foundations for Precast Arch	45	16-Jun-16	18-Aug-16
A3500	CO1 Box Culvert work	35	16-Jun-16	04-Aug-16
Phase II		468	29-Jun-16	03-May-18
A2040	E&S Controls in Median	16	29-Jun-16	25-Jul-16
A2050	Switch Traffic to Phase II	10	29-Jun-16*	15-Jul-16
A2060	Retaining/Barrier Walls 5 & 6	160	18-Jul-16	11-Apr-17
A2270	Abut "D" Wall Panels/Embank	50	18-Jul-16	30-Sep-16
A2100	Retaining/Barrier Walls 4 & 8	160	26-Jul-16	20-Apr-17
A2130	Signals	80	26-Jul-16	30-Nov-16
A2140	Lighting	80	26-Jul-16	30-Nov-16
A2240	OH8 Sign	40	26-Jul-16	23-Sep-16
A2005	S03 Precast Arch	45	19-Aug-16	28-Oct-16



Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Primary Baseline | Remaining Work | Milestone

Page 2 of 3
Corman Construction, Inc.

TASK filter: All Activities

© Primavera Systems, Inc.

Corman Construction, Inc. | **MD 210 Proposal Schedule Contract No. PG7005170** | **Data Date 03-03-15, Printed 17-Feb-15 17:19**

Activity ID	Activity Name	Original Duration	Start	Finish
A2230	OH7 Sign	25	16-Sep-16	26-Oct-16
A2350	Livingston Rd. Stage 1 Improvement	40	03-Oct-16	06-Dec-16
A2120	RW3 Retaining/NW3 Noise Wall	155	13-Feb-17	20-Oct-17
A2110	Drive Pile & Abutment "D"	23	13-Feb-17	24-Mar-17
A2080	Drive pile & Abutment "B"	22	27-Mar-17	26-Apr-17
A2180	Pave Ramp "A & B"	15	14-Apr-17	05-May-17
A2280	S01 Super Structure	75	27-Apr-17	24-Aug-17
A2330	Drive Pile & Abutment "C"	22	27-Apr-17	01-Jun-17
A2190	Pave Ramp "C & D"	15	08-May-17	31-May-17
A2000	New Alignment of Kerby Hill Rd.	60	22-May-17	24-Aug-17
A2220	Noise Wall 04	101	31-May-17	06-Nov-17
A2290	S02 Super Structure	80	02-Jun-17	06-Oct-17
A2430	Open Ramps A & B	1	25-Aug-17	25-Aug-17
A2440	Open Ramps C & D	1	25-Aug-17	25-Aug-17
A2450	Traffic on New Alignment of Kerby Hill Road	1	25-Aug-17	25-Aug-17
A2380	Service Rd at Kerby Hill	60	29-Aug-17	05-Dec-17
A2460	Traffic on New Approach of Livingston Road	1	10-Oct-17	10-Oct-17
A2360	Livingston/Murray Stage II Improv	30	11-Oct-17	21-Nov-17
A2470	Interchange Open to all Movements	0	11-Oct-17	11-Oct-17
A2010	Widening NB, N of Livingston	80	07-Nov-17	03-May-18
Phase III		204	29-Aug-17	19-Jun-18
A2520	SWM Ponds	150	29-Aug-17	11-May-18
A2200	Noise Wall 01 672 to 698	75	29-Aug-17	03-Jan-18
A2510	Relocate Barriers SB for Phase III	5	11-Oct-17	17-Oct-17
A2250	RW7 Retaining Wall and NW1	122	19-Oct-17	15-May-18
A2210	Noise Wall 03 737 to 757	65	23-Oct-17	13-Feb-18
A2420	Shoulder Improvements @ NW 04	30	24-Oct-17	04-Dec-17
A2300	Noise Wall 01 700 to 712	51	08-Nov-17	09-Feb-18
A2500	Relocate Barriers-NB Phase III	5	27-Nov-17	01-Dec-17
A2340	Widening NB at RW3	40	04-Dec-17	04-Apr-18
A2310	Noise Wall 01 727 to 743	50	09-Feb-18	08-May-18
A2370	Complete Loop/Service Road	15	01-Mar-18	21-Mar-18
A2320	Shoulder Improvements SB 700 to 712	20	01-Mar-18	28-Mar-18
A2560	Shoulder Improvements SB 672 to 698	10	01-Mar-18	14-Mar-18
A2410	Shoulder Improvements SB 737 to 757	5	01-Mar-18	07-Mar-18
A2540	Shoulder Improvement along NW3	30	05-Apr-18	16-May-18
A2390	Shoulder Improvements SB 727 to 743	30	08-May-18	19-Jun-18
A2530	Switch traffic at Wilson Bridge Dr.	1	17-May-18	17-May-18
A2480	Median Wall N of Wilson Bridge	20	18-May-18	18-Jun-18
Phase IV		108	20-Jun-18	16-Nov-18
A2400	Traffic shift to Phase IV	5	20-Jun-18	26-Jun-18
A2490	Roadway Patching	20	27-Jun-18	27-Jul-18
A2150	Milling	25	30-Jul-18	06-Sep-18
A2160	Asphalt Overlay work	53	07-Aug-18	18-Oct-18
A2170	Striping	24	10-Sep-18	18-Oct-18
A2260	Punchlist / Closeout Project	19	18-Oct-18	16-Nov-18

Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Primary Baseline | Remaining Work | Milestone

Page 3 of 3

Corman Construction, Inc.

TASK filter: All Activities

© Primavera Systems, Inc.

2.09.04 Environmental Approach

2.09.04
Environmental Approach

2.09.04 | ENVIRONMENTAL APPROACH

Minimizing environmental impacts is a priority on all SHA projects. The DBT fully embraces this philosophy and our priorities extend to include reducing impacts to forests/trees, floodplain elevations, and noise receptors that are specific to this project. The DBT reviewed the recently approved Environmental Re-evaluation for the MD 210 project (approved by FHWA in Sept. 2014) and visited the site. A multi-disciplinary team of engineers, environmental specialists, and construction professionals conducted the site visit not only to assess the environmental features with respect to the proposed improvements but also to identify potential opportunities for avoidance and minimization measures (AMM) of impacts. The DBT will use a multi-disciplinary team approach to ensure that environmental, highway design and construction concerns are all considered in the formulation and refinement of potential design modifications and ATCs.

The DBT will work to minimize environmental impacts beyond those shown in the approved Joint Permit Application and Reforestation Permits. Modifications for these permits, which are anticipated, based on final design will be coordinated with SHA's Environmental Programs Division (EPD), Landscape Architecture and Landscape Operations Divisions, as applicable, for all submittals. Throughout our approach described below, we will continuously monitor and track impacts as the project progresses through design and construction.

UNDERSTANDING MAJOR ENVIRONMENTAL FEATURES

The major environmental features for the project include: *Carey Branch and other unnamed waterways; wetlands and their buffers; 100-year floodplains; woodlands and specimen trees; and potentially hazardous waste.* As with all SHA projects one of the most important aspects for designer and contractor is to work together to assure that all unavoidable environmental impacts are minimized to the extent practicable. The recently completed Re-Evaluation of the 2004 FEIS indicates that Segment 1 impacts include 14.08 acres of forest, 0.05 acres of wetland, 0.13 acre (5,663 SQ FT) of wetland buffer, 1,912 LF of stream, and 2.2 acres of floodplain. Below is a list of opportunities for further AMM to those shown in the RFP:

- Reconfiguration of Noise Wall 4, which will reduce forest impacts;
- Minimizing clearing near Kerby Hill Road/MD 210 for a reduction of approx. 1.5 acres of forest impact;
- Eliminating pipe extensions to reduce linear footage of stream impact;
- Tightening Limit of Disturbance (LOD) where possible to avoid temporary stream impacts.

In addition, we will endeavor to further identify where minimization may be possible. These efforts will include reducing the LOD whenever possible thru design or revising our proposed means or methods. The DBT will as part of our constructability reviews confirm all feasible measures have been taken to minimize impacts. Environmentally-sensitive features will be identified and protected using orange construction fence before any personnel or equipment enters the area. An Environmental Compliance Report will be produced each quarter and submitted to SHA. It will track and confirm compliance with each environmental commitment (as presented in the Record of Decision for the entire corridor), as well as track impacts to forest stands, individual specimen trees, streams, wetlands and their buffers, and 100-year floodplains.

Forest and tree resources are the most prevalent and sensitive environmental features along this corridor. Therefore, as a first order of work, team members led by JMT's Project Landscape Architect, Mr. Jon Conner, PLA, LEED AP and our Project ISA Certified Arborist, Steve Mayes from Carroll Tree Service will complete an on-site assessment of forested areas and individual trees, including specimen trees, per the Roadside Landscape and Reforestation Design Performance Specs and conduct an in-depth review of the RFP Forest and Tree Impact Plans. The DBT will complete a Tree Impact AMM Report. It should be noted that the greatest concentration of impacts to forest resources appears to exist adjacent to northbound MD 210. Our DBT will concentrate our efforts on this area as it will afford the greatest opportunities for impact reduction. Further forest impact minimization efforts could include: root pruning adjacent to areas to be cleared; redesign of highway, drainage or roadside features away from existing features; steepening of slopes to minimize

clearing; demarcating environmental features with fencing and signing; and using geosynthetic matting to prevent damage to adjacent root systems.

Mitigation for forest and individual tree impacts is regulated by the Maryland Reforestation Law. While the RFP dictates the order of precedence for the location of reforestation (within the LOD first and off-site mitigation second), our team will make every effort, primarily through design refinements and scrutiny of all roadway, drainage, stormwater management (SWM), erosion and sediment control (ESC), and utility relocation designs, to reduce forest impacts and to maximize the amount of potential on-site reforestation.

For unavoidable impacts, mitigation design and implementation will be in conformance with the RFP, the Reforestation Site Review Approval, and the supplied Forest Impact Plans, which also specify zones of reforestation and re-vegetation within the project limits to mitigate anticipated impacts.

The concept design has successfully minimized impacts to wetlands and Waters of the Unites States (streams); however, further reduction of impacts to wetland buffers and Waters of the United States will be a priority. Stream impacts will be self-mitigated through on-site relocation and restoration. Where impacts cannot be avoided through innovative design or construction methods, protecting these resources will be paramount during construction through implementation of BMPs, such as super silt fence and sand bags to maintain the 2 year flood requirement. The Carey Branch Stream impacts will be minimal due to changing the design by shifting the proposed stream to the west to allow construction without impacting the flow of the stream. This design will eliminate the need for a pump around which eliminates the threat of a heavy rain exceeding the pump's capacity which would cause flooding and excessive erosion. Adherence to in-stream time of year restrictions (March 1st to June 15th inclusive) for construction and redundant control measures will also minimize potential water quality impacts downstream of the project area.

The DBT's primary approach to protect the project's environmental features is based upon feature awareness. This begins at the design level with design disciplines fully invested in not only minimizing direct impacts, but also to preventing secondary impacts. For example, our water resources engineers will endeavor not to place stormwater BMPs next to wetlands, recognizing the danger of interrupting groundwater hydrology with low pond bottoms or underdrain outlets. Design elements adjacent to environmental features are subjected to secondary QA/QC review by design and construction personnel to ensure that all opportunities for stewardship have been employed and that secondary impacts are avoided.

The same approach applies to construction staff with everyone aware of properly demarcating environmental features and LOD by using orange construction fence, flagging, multi-lingual wetland and tree protection identification signage, etc. Protecting resources is accomplished using the approved plans, constant communication and coordination with EPD, and/or an Independent Environmental Monitor (IEM), should SHA elect to assign one, and, possibly, extra protection such as redundant sediment controls, additional fencing around trees, and timber or geosynthetic matting to prevent damage to adjacent root systems and construction equipment from becoming trapped in soft areas. Scheduling of work also takes into account environmental influences such time-of-year restrictions for in-stream construction from 3/1 to 6/15 inclusive.

Hazardous and regulated materials were identified in each of the six structures to be demolished. Certified Industrial Hygienist (CIH) Michele Twilley, DrPH, CIH with Aria Environmental (AE) will prepare a Health and Safety Plan (HASP) describing the safe work practices and work area controls required for the successful remediation of the buildings prior to demolition. The HASP will follow EPA and OSHA guidelines and will incorporate relevant regulatory requirements for asbestos, lead in construction, and universal and hazardous waste including OSHA's "Lead in Construction" standard. Dr. Twilley has 27 years of experience in construction and has worked with Corman Construction in a similar capacity on the Hampstead Bypass (MD 30) and the Intercounty Connector contracts A and B (MD 200) and other public works projects in the mid-Atlantic region.

PERMIT ACQUISITION/COMPLIANCE

PERMITS	**USACE** Sect. 404 (CENAB-OP-RMN MD SHA/MD 210 Corridor Study Project: 2008-1510); **MDE** Nontidal Wetlands and Waterways Permit (14-NT-0174/201460761); MDE - ESC/SWM; **MD DNR Forest Srv.** Reforestation Site Review Permit; **MDE** NPDES/NOI; **MDE/EPA** Hazardous Waste Generator Permit; and **FAA** Notice of Proposed Construction or Alteration (Form 7460-1).

The key to securing, modifying, and complying with environmental permits is to understand and identify resources early and create an outline showing involved agencies and the relevant permits. Once POC for environmental permit stakeholders are identified, we will request a kickoff meeting with the permitting agencies and SHA to develop a complete understanding of their permit requirements. We will maintain a high level of communication with the agencies from that kickoff meeting forward. The meetings will also provide an opportunity to review the project's environmental performance spec. and NEPA commitments, conditions of the USACE Section 404 Authorization (CENAB-OP-RMN MD SHA/MD 210 Corridor Study Project: 2008-1510) and the MDE Nontidal Wetlands and Waterways Permit (14-NT-0174/201460761), as well as to identify any areas of concern SHA or other agencies may have regarding environmental compliance.

The DBT will coordinate with SHA's Forester throughout the design and construction process to ensure that the construction adheres to the requirements outlined in the Reforestation Law Project Review Form located on page 66 of the RFP. This form indicates that this phase may clear 14.08 acres of forest land. DNR's approval includes conditions requiring 7.23 acres of on-site reforestation, and 6.85 acres of off-site reforestation, both of which must occur within one year of completion of construction. The DBT will work collaboratively with SHA to further minimize forest clearing and provide the maximum amount of reforestation on-site that is feasible. Every effort will be made to reduce or minimize resource impacts during construction, thereby reducing or eliminating the need for modifications to existing permits. Requests for modifications will be made to the appropriate SHA division before submitting to the permitting agencies. From a critical path standpoint, the SWM/ESC permit from MDE's Plan Review Division will be the most important. We will coordinate SWM/ESC designs and reviews between MDE and SHA Highway Hydraulics Division (HHD) from NOA to Project Closeout. Our certified MDE Reviewer/Expeditor, David Heckman, PE will oversee and review submissions prior to being sent to MDE. David will oversee plan development and provide that vital check for compliance before submitting. Upon NOA, our permit process will include:

- Contacting SHA and MDE to set up a pre-permitting meeting to outline our approach to SWM and ESC, submission schedules, permitting timelines, and submittal requirements;
- Coordinating with FAA and if required, conduct a Part 77 analysis to determine effect the project could have on Navigable Airspace. Preparation of Form 7460-1, as required;
- Reviewing adequacy of the Advanced Clearing Permit with Utility Company requirements for early relocation work and obtaining modifications to the permit as needed.
- Preparing and submitting early package for Phase 1 MOT;
- Submitting a Concept SWM Report, along with ESC plans for the clearing and grubbing;
- Obtaining approval of any deviations from the Concept SWM Report by SHA prior to submitting to MDE;
- Submitting our SWM and ESC plans, computations, and reports concurrently to SHA-HHD and MDE
- Obtaining BMP numbers for each structural BMP;
- Providing copies of correspondence to SHA as it is generated by MDE;
- Obtaining final SWM approval from SHA after approvals are granted by MDE;
- Submitting a completed NOI to satisfy NPDES general permit for construction activity (submitted early to obtain approval for construction for ESC and will be revised as the SWM is finalized; and
- Completing As-Built SWM Certifications.

We will work to minimize environmental impacts beyond those shown in the approved Joint Permit Application and will coordinate continuously with SHA's EPD, MDE, USACE, and MD DNR.

ESC PLAN AND APPROACH

The ESC plans will address initial disturbance, interim, and final stabilization stages, and will be coordinated with the construction staging and Traffic Control Plans. The phasing and sequence of construction (including grading, staging, stockpiling, and temporary/permanent stabilization) will be coordinated to minimize soil exposure. The plans will include a designated LOD, with station and offset, right-of-way, contours, general notes, controls (including details), and natural resources and floodplains. Stabilized construction entrances will be installed at all site access locations. Stabilization measures will be kept in place until a vegetative cover is established. Stone check dams will ensure non-erosive velocities in ditches. Ditch lining (soil stabilization matting preferred) will be selected based on the design velocity. Measures, such as dikes and swales will divert runoff to the sediment basins (or traps). Storm drain runoff will be diverted to sediment basins during construction. Drainage and phasing will be coordinated to maintain drainage during interim conditions. For any sediment traps, basins, or stone/gabion outlet structures, the plans will specify storage volumes, cleanout elevations, dewatering devices, modification of control structures, and conversion to SWM facilities following the construction phase. Innovative measures may be developed (with SHA/MDE concurrence) to reduce the potential for erosion and to minimize construction impacts.

After review by and addressing comments by our certified MDE Reviewer/Expeditor, David Heckman, PE, ESC plans will be submitted to SHA/MDE for review and approval and include complete plans, computations, and an ESC Report (including drainage area and soil maps). Computations will include volumes of earth disturbance and discharge velocities/quantities. Clearing and grading will not commence until approved by SHA/MDE and other agencies.

David Seeram will be our Erosion & Sediment Control Coordinator (ESCC) to ensure proper maintenance of the ESC devices with the superintendent. A routine schedule will be set up for inspections and meetings. Daily inspections of ESC devices will be performed by the ESCC. The superintendent will assign crews to perform the maintenance as noted in the inspections including cleaning out devices, repairing silt fence and LOD fence, etc. Proactive maintenance will be performed before storm events. The ESCC will inspect immediately following a storm event and work with the superintendent to assign crews to restore compliance as quickly as possible. This process will continue throughout until the ribbon cutting and SHA/MDE concurrence.

ESC compliance will be discussed at weekly schedule meetings. Key staff members of the DBT regularly participate in on-site inspections with our ESCC, SHA QA inspector or MDE inspector on its projects and will suggest this procedure on this project to avoid any miscommunication. A daily log book will record reviews by the DBT, SHA, and MDE.

To generate a successful program, the ESCC will develop a proactive team consisting of SHA's QA inspector, SHA's PE, SHA's ESC Jobsite Inspector, our project-wide Environmental Compliance Manager (ECM), design staff, CM, and Field Supervisors. Communication will be imperative to have a win-win ESC program. Education is a must! As such, all supervisors will hold valid "yellow card" certifications. Supervisors must know the importance and requirements of the program and understand SHA's QA field investigation report, including the three critical failure categories: **1)** All permits and approvals not obtained before beginning construction activities; **2)** LOD and environmental features not demarcated or construction outside of LOD; and **3)** project not in conformance with the ESC plan, schedules and contract documents. Additionally, we will provide specialized training to those involved with design and those field employees performing the construction. Project employees must know and understand the importance of ESC compliance and their individual responsibilities and recognizing and reporting problems immediately to a supervisor.

The DBT's goal is to be "A" rated for ESC compliance. This is achievable by having an effective, proactive ESC implementation program. Our ESCC will monitor and prepare reports for all ESC activities. The ESCC will coordinate with our ECM and work jointly with the Field Supervisors. He has the authority to re-direct

crews to attend to ESC needs. The ESCC will implement plans effectively, perform inspections, and properly install controls, in sequence, and per approved plans and permit restraints. He will inspect controls daily and keep detailed construction logs. He will coordinate maintenance of controls with the Construction Manager to assure timely repairs and maintenance of devices. The ESCC will facilitate weekly ESC compliance meetings, conduct pre and post-storm inspections, monitor subcontractor activities for compliance, coordinate any required corrective actions, and remove controls upon stabilization and with MDE inspector approval. Within 24 hours of an inspection by the SHA QA inspector, the ESCC will transmit the completed OOC-61 Form to the Corman Corporate Office and Executive Management as currently required of all projects.

Our design plans will minimize the LOD and we will look for ways to maintain as much existing vegetation as possible. If vegetation removal is required for construction, we will work quickly to re-establish the area with temporary or permanent vegetation by placing the appropriate soil amendments, placing topsoil, applying seed and mulch, and/or stabilization matting. Proposed paved areas will be stabilized quickly with aggregate base material. We will clearly demarcate the LOD, wetlands, buffers, Waters of the US, floodplains, and tree protection areas and will be especially vigilant near cultural/environmental resources. If our ESCC foresees a potential issue, he will alert SHA, ECM and Designers to discuss corrective actions before the problem arises.

MEASURES TO ENSURE COMPLIANCE WITH COMMITMENTS

All environmental commitments and compliance requirements from the NEPA Record of Decision and permits issued will be tracked in a Comprehensive Commitment Tracking and Wetlands/Waters Impacts Database for the project. The database will be updated bi-weekly and Compliance Reports will be generated on a quarterly basis. All personnel working on the project will undergo Environmental Compliance Awareness Training, which will address all of the environmental commitments as well as permit conditions.

Compliance during construction activities will be ensured through routine site inspections in addition to standard ESC inspections that must be performed following rain events. Pre-storm inspections will also be conducted to ensure that all perimeter controls/protective measures are in place and functioning as designed. Corman will designate an Erosion and Sediment Control Manager (ESCM) that holds an SHA Yellow Card.

Non-compliance issues are taken seriously and will be examined by the DBT's ECM to determine the cause, identify any environmental impacts and/or remediation measures that can be taken immediately to prevent additional impacts from occurring, and determine what actions must be taken to prevent future occurrences. There will be zero-tolerance and immediate dismissal will occur if it is determined that a worker has willfully or intentionally acted to violate any permit condition or environmental commitment. This will be clearly stated to all workers in the Environmental Sensitivity Training received prior to entering the job site.

Russell Ruffing will serve as our ECM. He will work with our design and construction staff and the IEM, if one is assigned. As a team member, Russ will spearhead the compliance effort with a three Phase Environmental Compliance Plan:

1. **Identifying environmental responsibilities:** List of commitments with reference to applicable permits.
2. **Design review with input for minimizing impacts:** Facilitate environmental commitment design issues.
3. **Construction compliance:** Educate construction team on environmental permit commitments; require daily coordination, inspection, and documentation of construction activities for plan and permit condition compliance; resolve construction conflicts; list and track commitments; prepare quarterly compliance reports; and work with the ESCC and field crews to implement approved plans.

Natural resources will be protected at all times and in conformance with the relevant environmental approvals, laws, and TC 3.20.07. We will design measures that maintain natural groundwater flows into Waters of the US/wetlands and preserve the source of hydrology to non-impacted wetlands. Sediment laden construction water or contaminated water from concrete wash-out pits will be treated by an MDE-approved dewatering device. Designs will include in-stream construction measures for the disturbed areas near waterways and/or

streams and may include measures, such as a culvert diversion, sand bag diversion, or fabric stream diversion. These efforts will be reviewed regularly by executive mgmt., and field and office staff are encouraged to provide suggestions that further enhance our Environmental Stewardship program.

The ESC design will address construction sequencing, staging, access, work areas, minimum stream flow requirements, maintenance of stream flow, and post-construction restoration. We will notify SHA 48 hours in advance of in-stream work, construct only in compliance with the MD mandated stream closure period for Use I waters, and conduct work to avoid/minimize fish mortality. Prior to any earth disturbing activity, we will stakeout/demarcate the LOD throughout the project. In areas adjacent to non-impacted wetlands and their buffers, temporary orange safety fence and prohibitive signage will be installed along the LOD and/or ROW. Construction personnel will be alerted to these designated protection areas and the importance of staying inside the LOD. Any specimen trees near or just outside the LOD will be provided with a buffer to avoid its removal or damage. We will stabilize and re-vegetate any land disturbed as required including same day stabilization requirements.

We will abide by the MOA between SHA, the FHWA, and the Maryland State Historic Preservation Officer regarding preservation of cultural resources. In the event that previously unidentified archeological resources are discovered during ground disturbing activities, we will immediately stop all work activities in the vicinity of the discovery and notify the SHA Project Engineer. Construction will resume upon notification from SHA that all necessary investigations have been performed and the site has been cleared of any potential resources.

TECHNIQUES, PRODUCTS, PRACTICES AND INNOVATION

The DBT has determined that major project benefits can be realized by adjusting the locations of some of the noise walls. The adjustments benefit the project schedule by deconflicting utility impacts. JMT has been performing noise wall designs for SHA for more than 25 years. The services include noise monitoring, impact analysis, noise barrier analysis, report writing, and noise barrier plan development. SHA has recently changed their noise barrier analysis method. The method is known as Level-Top Single-Drop. This analysis technique is a method to determine the top of noise wall elevation using the built in TNM line-of-sight calculation and level top noise wall segments. Then adjusting the top of noise wall elevation as necessary to achieve the desired noise reduction goal. JMT has used this method on multiple projects for the SHA and is very familiar with SHA's current policies and procedures for the design of the noise walls. This expert knowledge will ensure the adjusted locations meet SHA and environmental requirements.

Throughout the design development, the DBT will look for opportunities to AMM impacts to environmental resources. The DBT is aware of the need to minimize the LOD adjacent to environmental features. LOD can often times be minimized using innovative techniques, such as fiber logs instead of diversion berms or silt fence. We will walk the proposed LOD for further refinements prior to establishment of the LOD fencing.

The DBT will: balance cut/ fills to reduce off site hauling of materials and spoil material disposal; use ultra-low sulfur fuel and bio-degradable oils for equipment; and use Tier 2 and 3 equipment. In addition the DBT will salvage and re-use piling/form systems/form liners/timber mats/steel beams/guardrail/railing on subsequent projects as appropriate. The DBT looks for opportunities throughout the project to recycle the following: wood chips from clearing for mulch access paths in sensitive areas; demolition concrete and millings for stone construction entrances and haul roads; and use of water from dewatered ponds to control dust where appropriate. Whenever practicable, the DBT transmits information electronically to save paper.

SHA
State Highway
Administration
Maryland Department of Transportation

CORMAN
CONSTRUCTION

JMT
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®