

**Georgia Department of Transportation**  
**VOLUME 2**  
**Technical Provisions**  
**For**  
**Design, Build, and Finance Agreement**  
**I-285 & SR 400 Reconstruction Project**  
**Conformed Documents**  
**January 15, 2016**

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# 1 GENERAL

*Supplement the following to Section 1:*

## 1.1 Project Scope

The Project is being proposed to improve operational efficiency, enhance safety, reduce weaving maneuvers, and address current lack of ramp capacity at the interchange of I-285 and SR 400. The Project consists of the I-285 at SR 400 Interchange Reconstruction Project NHS00-0000-00(784), P.I. No. 0000784 ("Project P.I. No. 0000784") and the SR 400 Collector-Distributor (CD) Lanes NH000-0056-01(52), P.I. No.721850- ("Project P.I. No.721850-"), which are being combined into a single Project to achieve maximum efficiency, economic benefit, and cost-effectiveness.

Project P.I. No. 0000784 includes barrier-separated CD lanes along I-285 and SR 400, the reconstruction of existing ramps, and new flyover bridges, as well as the reconstruction and widening of existing bridges in the interchange area. "Braided" ramps are anticipated in the vicinity of Ashford Dunwoody Road, SR 400 and Roswell Road to eliminate conflicts between traffic entering and exiting SR 400 and traffic entering and exiting the Roswell Road and Ashford Dunwoody interchanges, while preserving the recently completed projects at both of these interchanges. Along SR 400, Project P.I. No. 0000784 includes approximately two (2) miles of improvements from Glenridge Connector north to Hammond Drive. This work shall tie into Project P.I. No.721850-.

Project P.I. No. 721850- includes:

- New northbound and southbound CD lanes along SR 400 from Hammond Drive to Spalding Drive that ties into Project P.I. No. 0000784;
- Reconstructing the existing bridge over SR 400 at Mount Vernon Road to accommodate improvements on SR 400 underneath;
- New northbound and southbound bridges to carry the CD lanes over Abernathy Road and to provide separated ramp movements in the area between Abernathy Road and Hammond Drive; and
- Improvements to the existing SR 400/Abernathy Road interchange.

Developer shall perform all work associated with the design, design-related activities, permitting and construction of the Project, as well as provide a portion of the project financing. In addition, Developer shall provide Right of Way (ROW) acquisition services.

## 1.2 Project Description

### 1.2.1 Other Considerations

Developer's Schematic Plan of Project shall illustrate the lane configuration to provide the Project's functionality. Developer's Schematic Plan of Project shall be consistent with the locations of grade separations, access points, and traffic flow patterns illustrated in the NEPA

Approval, Interchange Modification and Interchange Justification Reports. Any additions to the ROW and easements required for construction or operation of the proposed Project shall be illustrated on Developer's Schematic Plan of Project.

Developer acknowledges that certain components of Work, including certain signing, pavement marking, Intelligent Transportation System (ITS) components, buildings, and enclosed facilities necessary for operating the Project will be located outside the premises.

The design of the Project shall be in accordance with Volume 3 Manuals (Technical Documents) and the DBF Documents.

Developer shall not rely on the physical description contained herein to identify all Project components. Developer shall determine the full scope of the Project through thorough examination of the DBF Documents and the Project or as may be reasonably inferred from such examination.

### **1.2.2 Design and Construction Requirements**

Developer shall design and construct the Project, including all roadways and associated infrastructure necessary to provide the Project in accordance with Developer's Schematic Plan of Project, Environmental Approvals, and related design schematics as approved by GDOT and the Federal Highway Administration (FHWA). All Work shall be in compliance with the Technical Provisions.

Developer shall design all roadways in conformance with GDOT policies, guidelines, and manuals.

Design plans shall be prepared and assembled according to the respective design P.I. number (P.I. Number 0000784 or P.I. Number 721850-, as appropriate).

Developer shall coordinate with GDOT, SRTA, and adjacent Governmental Entities and other third parties, as appropriate, to determine the design criteria, standards, and specifications of those components of Work that Developer will construct but are to be maintained by others. For components of Work that potentially or actually impact the infrastructure of any Governmental Entity or third-party entity, Developer's design shall conform to the design requirements of such entity.

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## 2 PROJECT MANAGEMENT

*No additional requirements.*

### 2.1 Schedule Requirements

#### 2.1.1 General Schedule Requirements

*No additional requirements.*

#### 2.1.2 120 Day Schedule Requirements

*No additional requirements.*

#### 2.1.3 Project Baseline Schedule

*Supplement to Section 2.1.3 and replace the WBS minimum requirements with the following:*

The WBS minimum requirements are:

#### 1 Project Name

##### 1.1 Project Management

- 1.1.1 Administration
- 1.1.2 Bonds and Financing
- 1.1.3 Insurance
- 1.1.4 QA/QC
- 1.1.5 Contract Milestone Deadlines

##### 1.2 Design (by P.I. number)

- 1.2.1 Environmental
  - 1.2.1.1 (By subsections determined by Developer w/GDOT concurrence)
- 1.2.2 Roadway
  - 1.2.2.1 (By subsections determined by Developer w/GDOT concurrence)
- 1.2.3 Drainage
  - 1.2.3.1 (By subsections determined by Developer w/GDOT concurrence)

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## 1.2.4 Structures

1.2.4.1 (By subsections determined by Developer w/GDOT concurrence)

### 1.2.4.1.1 Bridge

1.2.4.1.1.1 (By Bridge Number)

### 1.2.4.1.2 Retaining Wall/Noise Wall

1.2.4.1.2.1 (By Retaining Wall/Noise Wall)

### 1.2.4.1.3 Building

1.2.4.1.3.1 (By Building)

## 1.2.5 Railroad

1.2.5.1 \_\_\_\_\_RR

1.2.5.2 \_\_\_\_\_RR

## 1.2.6 Landscape and Aesthetics

1.2.6.1 (By subsections determined by Developer w/GDOT concurrence)

## 1.2.7 Traffic

1.2.7.1 (By subsections determined by Developer w/GDOT concurrence)

1.2.7.1.1 Signing

1.2.7.1.2 Traffic Signal Systems

1.2.7.1.3 Roadway Illumination

## 1.2.8 ITS

1.2.8.1 (By subsections determined by Developer w/GDOT concurrence)

## 1.2.9 Traffic Management and Controls During Construction

1.2.9.1 (By subsections determined by Developer w/GDOT concurrence)

## 1.2.10 Reserved

## 1.2.11 QA/QC

1.2.11.1 (By subsections determined by Developer w/GDOT concurrence)

### 1.3 ROW Acquisition

#### 1.3.1 State Proposed/State Acquired ROW

##### 1.3.1.1 (By Parcel Number)

#### 1.3.2 State Proposed/Developer Acquired ROW

##### 1.3.2.1 (By Parcel Number)

#### 1.3.3 Developer Proposed/Developer Acquired ROW

##### 1.3.3.1 (By Parcel Number)

### 1.4 Utility Adjustments

#### 1.4.1 (By Utility Owner)

##### 1.4.1.1 Negotiate Agreements

##### 1.4.1.2 Locate Existing Utilities

##### 1.4.1.3 Prepare Utility Assembly

##### 1.4.1.4 Construct Utility Adjustment

### 1.5 Construction

#### 1.5.1 Mobilization

#### 1.5.2 Roads

##### 1.5.2.1 (By subsections determined by Developer w/GDOT concurrence)

##### 1.5.2.1.1 Local Roads

###### 1.5.2.1.1.1 Erosion Control

###### 1.5.2.1.1.2 Earthwork

###### 1.5.2.1.1.3 Pavement, Pavement Markings

###### 1.5.2.1.1.4 Traffic Control Plan (TCP)/Maintenance of Traffic (MOT)

###### 1.5.2.1.1.5 Other Roadway Appurtenances (Barriers, Guardrail, Impact Attenuators)

###### 1.5.2.1.1.6 Fencing

1.5.2.1.2 Mainlines and Ramps

1.5.2.1.2.1 Erosion Control

1.5.2.1.2.2 Earthwork

1.5.2.1.2.3 Pavement, Pavement Markings

1.5.2.1.2.4 TCP/MOT

1.5.2.1.2.5 Other Roadway Appurtenances (Barriers, Guardrail, Impact Attenuators)

1.5.2.1.2.6 Fencing

1.5.2.1.3 Reserved

1.5.3 Drainage

1.5.3.1 (By subsections determined by Developer w/GDOT concurrence)

1.5.3.1.1 Cross Culverts

1.5.3.1.1.1 (By location)

1.5.3.1.2 Local Roads

1.5.3.1.2.1 Trunk-line

1.5.3.1.2.2 Inlets and Laterals

1.5.3.1.3 Main-lanes and Ramps

1.5.3.1.3.1 Trunk-line

1.5.3.1.3.2 Inlets and Laterals

1.5.3.1.4 Crossing Streets

1.5.3.1.4.1 (By Street)

1.5.4 Structures

1.5.4.1 (By subsections determined by Developer w/ GDOT concurrence)

1.5.4.1.1 Bridges

1.5.4.1.1.1 (By Bridge Number)

- 1.5.4.1.1.1.1 Foundations
- 1.5.4.1.1.1.2 Substructure
- 1.5.4.1.1.1.3 Superstructure
- 1.5.4.1.2 Retaining Walls
  - 1.5.4.1.2.1 (By Retaining Wall Number)
- 1.5.4.1.3 Noise Walls
  - 1.5.4.1.3.1 (By Noise Wall Number)
- 1.5.5 Reserved
- 1.5.6 Landscaping
  - 1.5.6.1 (By subsections determined by Developer w/GDOT concurrence)
    - 1.5.6.1.1 Trees and Shrubs
    - 1.5.6.1.2 Seeding and Sodding
    - 1.5.6.1.3 Plants and Ground Cover
- 1.5.7 Traffic Related Elements
  - 1.5.7.1 (By subsections determined by Developer w/GDOT concurrence)
    - 1.5.7.1.1 Sign and Sign Support Structures
      - 1.5.7.1.1.1 Mainlines and Ramps
      - 1.5.7.1.1.2 Frontage Roads
      - 1.5.7.1.1.3 Crossing Streets
    - 1.5.7.1.2 Traffic Signal Systems
      - 1.5.7.1.2.1 (By location)
    - 1.5.7.1.3 Roadway Illumination
      - 1.5.7.1.3.1 Mainlines and Ramps
      - 1.5.7.1.3.2 Frontage Roads
      - 1.5.7.1.3.3 Crossing Streets



1.5.7.1.3.3.1 (by Crossing Street)

1.5.8 ITS

1.5.8.1 (By subsections determined by Developer w/GDOT concurrence)

1.5.8.1.1 Conduits

1.5.8.1.2 Closed Circuit Television (CCTV)

1.5.8.1.3 Vehicle Detection

1.5.8.1.4 Changeable Message Signs (CMS)

1.5.8.1.5 Lane Control Signals

1.5.9 Traffic Control During Construction

1.5.9.1 (By subsections determined by Developer w/GDOT concurrence)

1.5.9.1.1 Traffic Management Strategy/All Stages

1.5.9.1.2 Traffic Control and Signing

1.5.9.1.3 Temporary Detours

1.5.10 Reserved

1.5.11 Buildings

1.5.11.1 (By subsections determined by Developer w/GDOT concurrence)

1.5.11.1.1 (By Building)

1.6 Operations During Construction

1.6.1 Project Patrols and Inspections

1.6.2 Traffic Control and Incident Management

1.6.3 Policing

1.6.4 Power Costs

1.7 Maintenance During Construction

1.7.1 Roadway

1.7.2 Drainage

- 1.7.3 Structures
- 1.7.4 Pavement Marking, Object Markers, Barriers, Delineators
- 1.7.5 Guard Rail, Safety Barrier, Impact Attenuator
- 1.7.6 Signs
- 1.7.7 Traffic Signal Systems
- 1.7.8 Lighting
- 1.7.9 Fences and Noise Walls
- 1.7.10 Roadside Management
- 1.7.11 ITS
- 1.7.12 Buildings
- 1.7.13 Incident Response
- 1.7.14 Customer Response

#### 2.1.3.1 *Logic Requirements*

*No additional requirements.*

#### 2.1.3.2 *Calendar Requirements*

*No additional requirements.*

### **2.1.4 Narrative Requirements**

*No additional requirements.*

### **2.1.5 Project Schedule Update Requirements**

*No additional requirements.*

### **2.1.6 Project Baseline Schedule Revisions**

*No additional requirements.*

### **2.1.7 Schedule Display Requirements**

*No additional requirements.*

### **2.1.8 Extension of Contract Time**

*No additional requirements.*

## **2.2 Quality Management Requirements**

### **2.2.1 Document Management**

*No additional requirements.*

### **2.2.2 Quality Management Plan Submittal Requirements**

*No additional requirements.*

### **2.2.3 General Management Plan Requirements**

*No additional requirements.*

### **2.2.4 Quality Management Plan Structure**

*No additional requirements.*

### **2.2.5 Nonconformance Report (NCR) System**

*No additional requirements.*

#### **2.2.5.1 Role Definitions and Order of Review**

*No additional requirements.*

#### **2.2.5.2 Disposition Options**

*No additional requirements.*

#### **2.2.5.3 Corrective Action**

*No additional requirements.*

#### **2.2.5.4 Workflow States**

*No additional requirements.*

### **2.2.6 Quality Terminology**

*No additional requirements.*

### **2.2.7 Quality Management Updates**

*No additional requirements.*

### **2.2.8 Responsibility and Authority of Developer Staff**

*No additional requirements.*

### **2.2.9 Design Quality Management Plan**

*No additional requirements.*

### **2.2.10 Record Drawings and Documentation**

*No additional requirements.*

### **2.2.11 Construction Quality Management Plan**

*No additional requirements.*

## **2.3 Joint Project Inspection**

*No additional requirements.*

## **2.4 Requirements for GDOT Offices and Equipment**

*Supplement the following to Section 2.4:*

At a minimum, except where noted elsewhere in the DBF Documents, Developer's Key Personnel and major task managers and GDOT shall co-locate in one building in Fulton or DeKalb County, centrally located to the Project within two (2) miles of the approximate center of the I-285 and SR 400 Interchange until Final Acceptance, to facilitate Project coordination and daily communication.

## **2.5 Web-Based Project Management Program**

*No additional requirements.*

## **2.6 Project Meeting Requirements**

*No additional requirements.*

### **2.6.1 Weekly Meeting Requirements**

*No additional requirements.*

### **2.6.2 Bi-weekly Meeting Requirements**

*No additional requirements.*

### **2.6.3 Monthly Meeting Requirements**

*No additional requirements.*

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### **3 PUBLIC INFORMATION AND COMMUNICATIONS**

#### **3.1 General Requirements**

*No additional requirements.*

#### **3.2 Administrative Requirements**

*No additional requirements.*

##### **3.2.1 Public Information and Communications Plan**

*No additional requirements.*

##### **3.2.2 Project Information Coordinator**

*No additional requirements.*

##### **3.2.3 Reserved**

*No additional requirements.*

##### **3.2.4 Public Meetings**

*No additional requirements.*

##### **3.2.5 Monthly Public Information and Communications Reporting**

*No additional requirements.*

##### **3.2.6 Emergency Event Communications**

*No additional requirements.*

##### **3.2.7 Public Information**

*No additional requirements.*

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## 4 ENVIRONMENTAL

### 4.1 General Requirements

*Supplement the following to Section 4.1:*

Developer shall comply with all Environmental Laws, regulations, and policies set forth by the Governmental Entity with jurisdiction over the construction activities associated with the Project as described in the Environmental Approvals, including the NEPA Approval.

Any changes to the Project as described in the NEPA Approval may require Developer to reassess impacts and submit information to GDOT for incorporation into reevaluation reports and studies. Developer cannot complete the NEPA document or reevaluation. GDOT shall be responsible for completing and resubmitting NEPA documentation and may procure consultant services that are independent from Developer to complete the documentation necessary to obtain Environmental Approvals. Developer shall follow all pertinent policies and procedures as described in the 23 Code of Federal Regulations (CFR) 771, 23 CFR 772, 23 CFR 774, and the *GDOT Environmental Procedures Manual*. Developer shall be responsible for coordination with GDOT and FHWA to ensure that appropriate environmental documentation and compliance are being followed. GDOT will provide the costs to prepare and finalize the NEPA Re-evaluation documents for FHWA. Developer shall be responsible to prepare and pay for supporting documentation for any design changes proposed by Developer that differ from the NEPA Approval at the time of the Proposal Due Date.

Limits of the Project and the State Proposed ROW will be described in the NEPA Approval. NEPA Approval is included in Attachment 4-1.

### 4.2 Environmental Approvals

*No additional requirements.*

#### 4.2.1 Responsibilities Regarding Environmental Studies

*Supplement the following to Section 4.2.1:*

*The following applies to P.I. No. 0000784:*

Developer shall ensure that no construction-related activities (such as the use of easements, staging, construction, vehicular use, borrow or waste activities, sediment basin, and trailer placement) other than those shown on the approved plans occur within the boundaries of the resources described in the Environmental Commitments table.

Developer shall obtain GDOT approval for any design changes or modifications that may alter impacts to a resource, including but not limited to: waters of the United States, state buffers, cultural resources, protected species and habitat, noise abatement, and/or air quality. If the

design change or modification is approved, Developer is responsible to provide the revised plan sheet(s) and information related to the changes for incorporation into any required NEPA Re-evaluation documentation.

*The following applies to P.I. No. 721850-:*

Developer shall ensure that no construction-related activities (such as the use of easements, staging, construction, vehicular use, borrow or waste activities, sediment basin, and trailer placement), other than those shown on the approved plans occur with the boundary of the resources described in the Environmental Commitments table.

Developer shall be responsible to obtain GDOT approval for any design changes or modifications that may alter impacts to a resource, including but not limited to: waters of the United States, state buffers, cultural resources, parks and recreational facilities, protected species and habitat, noise abatement, and/or air quality. If the design change or modification is approved, Developer is responsible to provide the revised plan sheet(s) and information related to the changes for incorporation into any required NEPA Re-evaluation documentation.

#### **4.2.2 GDOT Review and Approval of Environmental Permits**

*No additional requirements.*

### **4.3 Comprehensive Environmental Protection Program (CEPP)**

*No additional requirements.*

#### **4.3.1 Environmental Management System (EMS)**

*No additional requirements.*

#### **4.3.2 Environmental Compliance and Mitigation Plan (ECMP)**

*Supplement the following to Section 4.3.2:*

- Environmental Commitments Table
  - Community Resources
    - Developer shall coordinate with the Springmont School (formerly the First Montessori School of Atlanta) on any necessary timing restrictions for construction within five hundred (500) feet of the school to ensure minimal impacts to special events at the school (such as standardized testing periods, outdoor events, and celebratory events) during project construction.
    - Sandy Springs Apartments – Approximately 0.16 acre of underground easement required for construction and maintenance of a concrete retaining wall. No disturbance would occur on the surface of the property, but parking would be temporarily prohibited in the area of the easement

during construction of the retaining wall and temporary construction fencing would be installed around the easement area on the parking lot.

- C.T. Spruill Cemetery
- Clean Water Act – Sections 404 and 401: Waters and wetlands of the United States

*Supplement the following to Section 4.3.2:*

GDOT will transfer 2816.85 stream credits from other projects to P.I. No. 721850-Project. Developer shall purchase all of the remainder of stream credits, wetland credits, and buffer credits that will be required for the Project.

- Clean Water Act – Section 402

*No additional requirements.*

- Georgia Vegetative Buffer Variance

*No additional requirements.*

- Endangered Species Act and Fish and Wildlife Coordination Act

*No additional requirements.*

- State Listed Species and Unregulated Habitat

*Supplement the following to Section 4.3.2:*

Developer shall adhere to Special Provision 107.23G at all times. Special Provision 107.23G shall be updated as necessary.

- Migratory Bird Treaty Act

*Supplement the following to Section 4.3.2:*

Developer shall adhere to Special Provision 107.23G at all times. Special Provision 107.23G shall be updated as necessary.

- Noise

*Supplement the following to Section 4.3.2:*

- GDOT will obtain any necessary variances, special permits, or approvals pertaining to noise. Developer shall not be responsible for obtaining any variances, special permits, or approvals from any Governmental Entities for construction that occurs during nighttime hours and/or on Sunday. Developer shall be responsible for public notification to and involvement with Governmental Entities per GDOT guidelines and in accordance with



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Section 3 Public Information and Communications. Two (2) weeks minimum advance notice of nighttime or Sunday construction activities is required.

- Water Well Impacts and Requirements

*No additional requirements.*

- Cultural Resource Studies

*Supplement the following to Section 4.3.2:*

Section 4(f) Resources

- Allen Park
- Murphy Candler Park
- Historical Boundaries – Developer shall include eligible historic boundaries for all resources listed in the Environmental Commitments table on the plans. No construction shall occur within the historic boundaries unless approved by GDOT and appropriate agencies with jurisdiction. The following resources are located in the Project's vicinity:
  - Fair Oaks Manor Historic District;
  - Garrison House;
  - Coldstream Subdivision Historic District;
  - Hamilton House;
  - Allen House;
  - Hardin House;
  - Lake Island Estates Historic District;
  - Comora House;
  - Boone House – Approximately 0.14 acre of State Proposed ROW required along the northeast corner of the boundary for the extension of an existing culvert;
  - Marchman Estates Historic District;
  - Copeland Road Historic District – Approximately 0.2 acre of State Proposed ROW required from along the northern edge of the property in the Mosaic Apartments complex for extension of an existing box culvert and reconstruction of its associated head wall. Approximately two (2) to three (3) nearby parking spaces in the vicinity of the culvert would be temporarily impacted during construction. An additional approximately 0.07 acre of State Proposed ROW and 0.07 acre of permanent easement required from along a wooded slope behind two apartment buildings in the Mosaic Apartments complex for staging and clearing activities associated with construction of a retaining wall at the property's northeast corner;

- Mountain Creek Road Historic District – Approximately 0.09 acre of State Proposed ROW required for the extension of a box culvert and reconstruction of its head wall in the vicinity of a nearby creek. Approximately 0.02 acre of permanent easement required in the southeast corner of the property for staging and clearing activities associated with construction of a proposed retaining wall;
- Glenridge Forest-Hammond Hills Historic District – Approximately 0.06 acre of State Proposed ROW required for the extension of a box culvert and reconstruction of its head wall in the area of Long Island Creek, along with the construction of a retaining wall and associated paved ditch. Approximately 0.29 acre of permanent easement required from along most of the southern edge of the property for construction and maintenance of the proposed retaining wall;
- Sherrell-Colton Drive Historic District – Approximately 0.15 acre of State Proposed ROW and approximately 0.13 acre of permanent easement required along the northern edge of the property for construction of a bridge, retaining wall, and paved ditch;
- Shanks House;
- Clementstone Estates Historic District;
- Oak Forest Hills Historic District – Approximately 0.02 acre of State Proposed ROW required for the extension of an existing box culvert and reconstruction of its associated head wall. Approximately 0.03 acre of permanent easement required for staging and clearing activities for construction of a retaining wall along the south side of I-285 within the Existing ROW;
- Georgetown Subdivision Historic District; and
- Gainsborough Historic District.

- Public Involvement

*No additional requirements.*

### **4.3.3 Environmental Protection Training Plan**

*No additional requirements.*

#### **4.3.3.1 EPTP Scope and Content**

*No additional requirements.*

#### **4.3.3.2 EPTP Participation**

*No additional requirements.*

#### **4.3.3.3 EPTP Schedule**

*No additional requirements.*

#### **4.3.4 Hazardous Materials Management Plan**

*No additional requirements.*

##### **4.3.4.1 Underground Storage Tank and Hazardous Waste Site Investigation Procedure**

*No additional requirements.*

#### **4.3.5 Communication Plan**

*No additional requirements.*

#### **4.3.6 Construction Monitoring Plan**

*No additional requirements.*

#### **4.3.7 Recycling Plan (RP)**

*No additional requirements.*

### **4.4 Environmental Personnel**

*No additional requirements.*

#### **4.4.1 Environmental Compliance Manager**

*No additional requirements.*

#### **4.4.2 Environmental Training Staff**

*No additional requirements.*

#### **4.4.3 Environmental Compliance Inspectors**

*No additional requirements.*

#### **4.4.4 NEPA Specialist**

*No additional requirements.*

**4.4.5 Cultural Resource Management Personnel**

*No additional requirements.*

**4.4.6 Natural Resource Biologist**

*No additional requirements.*

**4.4.7 Water Quality Specialist**

*No additional requirements.*

**4.4.8 Air Quality Specialist**

*No additional requirements.*

**4.4.9 Noise Specialist**

*No additional requirements.*

**4.4.10 Hazardous Materials Manager**

*No additional requirements.*

**4.5 Required Submittals**

*Supplement the following to Section 4.5:*

Developer shall submit the CEPP for GDOT approval.

## 5 RIGHT OF WAY (ROW) – DEVELOPER ACQUISITIONS

### 5.1 General Requirements

Supplement the following to Section 5.1:

Developer shall acquire all State Proposed/Developer Acquired ROW and easements required for the Project as shown in Table 5-1 below.

**Table 5-1 – Right of Way Acquisition Table**

<u>PI No.</u>	<u>Parcel No.</u>	<u>Owner</u>	<u>Title/Date</u>	<u>Possession Date</u>	<u>State Proposed/ State Acquired</u>	<u>State Proposed/ Developer Acquired</u>
0000784	2	DONNELLAN SCHOOL INC THE				X
0000784	3	DONNELLAN SCHOOL INC THE				X
0000784	4	DONNELLAN SCHOOL INC THE				X
0000784	5	MOSAIC FALLS PROPERTY, LLC				X
0000784	6	COTTON FINANCE LLC				X
0000784	7	WALTER H. NIXSON, JR.				X
0000784	8	VALERIE N. FORRESTER				X
0000784	9	DANIEL C. & JANETTE L. HOBBS				X
0000784	10	BELLSOUTH CELLULAR				X
0000784	11	GLENRIDGE HEIGHTS HOMEOWNERS ASSN, INC				X
0000784	12	BTIC GLENRIDGE LLC				X
0000784	14	HIGHWOODS KC GLENRIDGE LAND LP.		12/31/2016	X	
0000784	16	HOSPITAL AUTHORITY OF FULTON COUNTY		12/31/2016	X	

<u>PI No.</u>	<u>Parcel No.</u>	<u>Owner</u>	<u>Title/Date</u>	<u>Possession Date</u>	<u>State Proposed/ State Acquired</u>	<u>State Proposed/ Developer Acquired</u>
0000784	17	HOSPITAL AUTHORITY OF FULTON COUNTY		12/31/2016	X	
0000784	18	HOSPITAL AUTHORITY OF FULTON COUNTY		12/31/2016	X	
0000784	19	MORRISON MANAGMENT SPECIALISTS INC,		12/31/2016	X	
0000784	20	CARAM PROPERTIES, LLC		12/31/2016	X	
0000784	21	PERIMETER CROSSING GA LLC		12/31/2016	X	
0000784	24	JMC LHI LLC		12/31/2016	X	
0000784	29	EDWARD L. & MARY COPELAND				X
0000784	30	MAX ANTINAZI				X
0000784	31	ALISON LESTER & KENDRICK JOHN CARGO				X
0000784	32	CHARLES T. OR CAROL A. CHRISTENSEN				X
0000784	33	GWYN M. RING				X
0000784	34	CAROL REYNOLDS				X
0000784	35	ANNE K DAY				X
0000784	36	CITY OF SANDY SPRINGS				X
0000784	37	BRIJ M KAPOOR				X
0000784	38	ALEX B. & STEPHANIE F. BRYANT				X
0000784	39	THOMAS C. & SUZANNE L. OUELLETTE				X
0000784	40	BILL HUFF, JR.				X
0000784	41	DOUGLAS C. & SIBYL T. SCALES				X
0000784	42	GLORIA G. SHATZEN				X

<u>PI No.</u>	<u>Parcel No.</u>	<u>Owner</u>	<u>Title/Date</u>	<u>Possession Date</u>	<u>State Proposed/ State Acquired</u>	<u>State Proposed/ Developer Acquired</u>
0000784	43	DENNIS L. & NANCY S. JOHNSON				X
0000784	44	MATTHEW P. STEIN				X
0000784	45	JOHN L. & LUCRETIA V. BOSSERT				X
0000784	46	JANE E. MCCUNE				X
0000784	47	HAMMOND HILLS SWIM & TENNIS ASSOC INC				X
0000784	48	HAMMOND HILLS SWIM & TENNIS ASSOC INC				X
0000784	49	HAMMOND HILLS SWIM & TENNIS ASSOC INC				X
0000784	50	FOUR I S L L C.				X
0000784	51	GLENRIDGE FOREST CIVIC ASSOC.				X
0000784	52	5730 GLENRIDGE PARTNERS, LLC				X
0000784	53	SGCP Lakeside LLC		12/31/2016	X	
0000784	54	SGCP Lakeside LLC		12/31/2016	X	
0000784	55	GLENRIDGE FOUR HUNDRED PROP. INC.		12/31/2016	X	
0000784	56	CEP PLAZA PARTNERS		12/31/2016	X	
0000784	58	FULTON COUNTY		12/31/2016	X	
0000784	59	CONCOURSE OWNER V/VI LLC.		12/31/2016	X	
0000784	60	CONCOURSE OWNER II LLC		12/31/2016	X	
0000784	61	AG-APG PALISADES PROPERTY OWNER, LLC		12/31/2016	X	
0000784	62	AG-APG PALISADES PROPERTY OWNER, LLC		12/31/2016	X	

<u>PI No.</u>	<u>Parcel No.</u>	<u>Owner</u>	<u>Title/Date</u>	<u>Possession Date</u>	<u>State Proposed/ State Acquired</u>	<u>State Proposed/ Developer Acquired</u>
0000784	63	CITY OF DUNWOODY		12/31/2016	X	
0000784	65	CITY OF DUNWOODY		12/31/2016	X	
0000784	67	DUNWOODY CROWN TOWERS, LLC.				X
0000784	68	HINES ATLANTA LIMITED				X
0000784	69	DUNWOODY DEVELOPEMENT AUTHORITY				X
0000784	70	56 POB LP				X
0000784	71	1455 LINCOLN PARKWAY, LLC.				X
0000784	72	AG-APG PALISADES PROPERTY OWNER, LLC		12/31/2016	X	
0000784	73	HINES ATLANTA LIMITED				X
0000784	74	DUNWOODY DEVELOPMENT AUTHORITY				X
721850-	11A	NORTHSIDE HOSPITAL INC		06/30/2016	X	
721850-	11B	EXW BARFIELD LLC		06/30/2016	X	
721850-	14	WINTER 8 LLC		06/30/2016	X	
721850-	21	NOBLE I HY ATLANTA, LLC		06/30/2016	X	
721850-	23	NORTHPARK LAND ASSOCIATION, LTD.		06/30/2016	X	
721850-	24	MARTA		06/30/2016	X	
721850-	25	MARTA		06/30/2016	X	
721850-	25A	SERRANO CONDOMINIUM		06/30/2016	X	
721850-	30	MARTA		06/30/2016	X	
721850-	33	VEF V ATLANTA OFFICE PORTFOLIO SPE		06/30/2016	X	



<u>PI No.</u>	<u>Parcel No.</u>	<u>Owner</u>	<u>Title/Date</u>	<u>Possession Date</u>	<u>State Proposed/ State Acquired</u>	<u>State Proposed/ Developer Acquired</u>
		LLC				
721850-	34	MARTA		06/30/2016	X	
721850-	35	BT PROPERTIES LLC		06/30/2016	X	
721850-	38	BT PROPERTIES LLC		06/30/2016	X	
721850-	39	SANDRA M. MADARIAGA		06/30/2016	X	
721850-	40	MARTA		06/30/2016	X	
721850-	42	MARTA		06/30/2016	X	
721850-	43	MARTA		06/30/2016	X	
721850-	44	MARTA		06/30/2016	X	
721850-	60	GATES DUNWOODY 164, ET AL		06/30/2016	X	
721850-	65	WEST FAIR HOMEOWNERS ASSOCIATION INC		06/30/2016	X	

\*These are anticipated dates. Developer shall verify possession through the Department before entering upon this property for any reason.

**5.2 Administrative Requirements**

*No additional requirements.*

**5.3 Developer’s ROW Scope of Services**

*No additional requirements.*

**5.4 Responsibilities of Developer**

*No additional requirements.*

**5.5 Responsibilities of GDOT**

*No additional requirements.*

**5.6 GDOT Project Monitor/Reviewer**

*No additional requirements.*

## **5.7 Responsibilities of the Office of the Attorney General**

*No additional requirements.*

## **5.8 ROW Acquisition Plan**

*No additional requirements.*

## **5.9 Schedule and Review Procedures**

*No additional requirements.*

## **5.10 Acquisition Process Summary**

*No additional requirements.*

## **5.11 Developer Conflict of Interest**

*No additional requirements.*

## **5.12 Meetings**

*No additional requirements.*

## **5.13 Documentation and Reporting**

*No additional requirements.*

## **5.14 Pre-Acquisition Activities**

*No additional requirements.*

### **5.14.1 ROW Plans and Engineering**

*No additional requirements.*

### **5.14.2 Title Services**

*No additional requirements.*

## **5.15 Appraisals**

### **5.15.1 Appraisal Services**

*No additional requirements.*

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## **5.16 Acquisition Activities**

### **5.16.1 Developer Responsibilities during ROW Negotiations**

*No additional requirements.*

### **5.16.2 Developer Responsibilities during Relocation Assistance**

*No additional requirements.*

### **5.16.3 Developer Responsibilities during Closings**

*No additional requirements.*

### **5.16.4 Developer Responsibilities for Condemnation Support**

*No additional requirements.*

### **5.16.5 Developer Responsibilities for Clearance of ROW**

*No additional requirements.*

### **5.16.6 Developer Responsibilities for Property Fencing**

*No additional requirements.*

## **5.17 Advanced ROW Acquisition**

*No additional requirements.*

## 6 UTILITY ADJUSTMENTS

### 6.1 General Requirements

*Supplement the following to Section 6.1:*

A number of existing Utilities are located within or in the vicinity of the Existing ROW and State Proposed ROW, some pursuant to statutory rights, written permission and some pursuant to property rights. Several of those existing Utilities will need to be relocated or otherwise adjusted in order to accommodate the Project. This Section 6 establishes procedures and requirements for Utility Adjustments including processes such as coordination with Utility Owners, administration of the engineering, construction and other activities necessary for Utility Adjustments, and required documentation.

Regardless of any existing rights of GDOT or the Utility Owners, Developer shall cause all Utility Adjustments necessary to accommodate construction, operation, maintenance, and/or use of the Project by use of the Master Utility Adjustment Agreement (Developer Managed) as provided in Volume 2 Attachment 6-3. Developer shall pay for all Utility Adjustment Work costs. Temporary utility services needed by Developer prior to Final Acceptance to design and construct the Project shall be the subject of separate agreements between Developer and Utility Owners. All work and coordination related to service points required as part of the Project will be the responsibility of Developer. Developer shall be responsible for any required permits and inspections prior to connection by the Utility Owner. GDOT will not be responsible for issuing any self-inspection certification for the Project.

Developer shall perform all Utility Adjustments in accordance with *GDOT's Utility Accommodation Policy and Standards Manual*, this Section 6, and all requirements as set forth in the DBF Documents.

#### 6.1.1 When Utility Adjustment is Required

*Supplement the following to Section 6.1.1:*

Utilities owned by Colonial Pipeline shall not be relocated. Developer shall design Project in accordance with the requirements of Section 6.2.1 such that no relocation of Utilities owned by Colonial Pipeline are required. Utilities owned by Colonial Pipeline shall be protected at all times to avoid damage. Developer is responsible to coordinate with Colonial Pipeline and obtain any necessary or required approvals. Developer shall be responsible for all costs associated with Colonial oversight of Developer's construction activities, including costs for Colonial site representatives.

#### 6.1.2 Certain Components of the Utility Adjustment Work

*No additional requirements.*

##### 6.1.2.1 Coordination

*Supplement the following to Section 6.1.2.1:*

Any Utility Owner claiming the existence of a prior right with respect to a Utility Adjustment shall be responsible for and have the burden of establishing such claim. In such case, a Utility Owner shall be required to provide Developer with all supporting documentation to substantiate its prior right claim with respect to a Utility Adjustment. In the event Developer and Utility Owner are unable to reach agreement with respect to a prior right claim within thirty (30) days from Utility Owner's submission to Developer of the supporting documentation, then Developer may submit such information to GDOT for GDOT's determination of the existence of the Utility Owner's prior right. Any such determination by GDOT under Article 7, Section 7.5.4.2 of the DBF Agreement shall be made within sixty (60) days of GDOT's receipt of Developer's submission.

Coordination and other specific requirements when working in the vicinity of Colonial Pipeline are outlined in Volume 2, Technical Provisions Attachments, Attachment 6-4.

#### **6.1.2.2 Betterments**

*No additional requirements.*

#### **6.1.2.3 Protection in Place**

*No additional requirements.*

#### **6.1.2.4 Abandonment and Removal**

*No additional requirements.*

#### **6.1.2.5 Service Lines and Utility Appurtenances**

*No additional requirements.*

#### **6.1.2.6 Early Adjustments**

*Supplement the following to Section 6.1.2.6:*

GDOT is coordinating with Colonial Pipeline to extend the casing pipe on Colonial's petroleum pipeline on the outside of both the NB and SB lanes of SR 400 to enable widening of the roadways. The casing pipe will be extended to the existing limits of GDOT Right of Way. Developer shall coordinate with Colonial Pipeline per Section 6.1.2.1 for protection of the pipeline and other specific requirements.

### **6.1.3 Reserved**

### **6.1.4 Agreements between Developer and Utility Owners**

*No additional requirements.*

#### 6.1.4.1 *Master Utility Adjustment Agreements*

*No additional requirements.*

#### 6.1.4.2 *Master Utility Adjustment Agreement Amendments*

*No additional requirements.*

### 6.1.5 Recordkeeping

*No additional requirements.*

## 6.2 Administrative Requirements

*No additional requirements.*

### 6.2.1 Standards

*No additional requirements.*

### 6.2.2 Communications

*No additional requirements.*

#### 6.2.2.1 *Communication with Utility Owners Meetings and Correspondence*

*No additional requirements.*

### 6.2.3 Utility Adjustment Team

*No additional requirements.*

### 6.2.4 Real Property Matters

*No additional requirements.*

#### 6.2.4.1 *Documentation of Existing Utility Property Interests - Affidavits*

*No additional requirements.*

#### 6.2.4.2 *Acquisition of Replacement Utility Property Interests*

*No additional requirements.*

#### 6.2.4.3 *Relinquishment of Existing Utility Property Interests*

*No additional requirements.*

#### 6.2.4.4 *Quitclaim Deeds*

*No additional requirements.*

#### 6.2.4.5 *Georgia Utility Permit*

*No additional requirements.*

#### 6.2.4.6 *Documentation Requirements*

*No additional requirements.*

### **6.3 Design**

#### **6.3.1 Developer’s Responsibility for Utility Identification**

*No additional requirements.*

#### **6.3.2 Technical Criteria and Performance Standards**

*No additional requirements.*

#### **6.3.3 Utility Adjustment Preliminary Plans**

*No additional requirements.*

#### **6.3.4 Utility Work Plans**

*No additional requirements.*

##### 6.3.4.1 *Plans Prepared by Developer*

*No additional requirements.*

##### 6.3.4.2 *Plans Prepared by the Utility Owner*

*No additional requirements.*

##### 6.3.4.3 *Design Documents*

*No additional requirements.*

##### 6.3.4.4 *Certain Requirements for Underground Utilities*

*No additional requirements.*

##### 6.3.4.5 *Utility Work Plan*

*No additional requirements.*

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## **6.4 Construction**

### **6.4.1 Reserved**

### **6.4.2 General Construction Criteria**

*No additional requirements.*

### **6.4.3 Inspection of Utility Owner Construction**

*No additional requirements.*

### **6.4.4 Scheduling Utility Adjustment Work**

*No additional requirements.*

### **6.4.5 Standard of Care Regarding Utilities**

*No additional requirements.*

### **6.4.6 Emergency Procedures**

*No additional requirements.*

### **6.4.7 Utility Adjustment Field Modifications**

*No additional requirements.*

### **6.4.8 Switch Over to New Facilities**

*No additional requirements.*

### **6.4.9 Utility As-Built Standard**

*No additional requirements.*

### **6.4.10 Maintenance of Utility Service**

*No additional requirements.*

### **6.4.11 Traffic Control**

*No additional requirements.*

## **6.5 Deliverables**

*No additional requirements.*



**6.5.1 Reserved**

**6.5.2 Utility Work Plan Submittals**

*No additional requirements.*

**6.5.3 Reserved**

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## **7 RIGHT OF WAY (ROW) – DEVELOPER PROPOSED/DEVELOPER ACQUIRED ROW**

### **7.1 General Requirements**

*No additional requirements.*

### **7.2 Administrative Requirements**

*No additional requirements.*

#### **7.2.1 Revised ROW Acquisition Plan - Developer Proposed/Developer Acquired ROW Submittals**

*No additional requirements.*

#### **7.2.2 Developers ROW Properties Scope of Services**

*No additional requirements.*

#### **7.2.3 Responsibilities of Developer**

*No additional requirements.*

#### **7.2.4 Developer Conflict of Interest**

*No additional requirements.*

#### **7.2.5 Meetings**

*No additional requirements.*

#### **7.2.6 Documentation and Reporting**

*No additional requirements.*

#### **7.2.7 Responsibilities of GDOT**

*No additional requirements.*

#### **7.2.8 Responsibilities of the Office of Georgia Attorney General**

*No additional requirements.*

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## **8 GEOTECHNICAL**

### **8.1 General Requirements**

*No additional requirements.*

### **8.2 Design Requirements**

#### **8.2.1 Subsurface Geotechnical Investigation by Developer**

*Supplement the following to Section 8.2.1:*

Developer shall conduct Bridge Foundation Investigations (BFI) for all new bridge construction and/or bridge widening. Developer shall conduct Wall Foundation Investigations (WFI) for all new walls. All investigations shall be consistent with the Load and Resistance Factor Design (LRFD) requirements for foundation and geotechnical design.

#### **8.2.2 Pavement Design**

*No additional requirements.*

### **8.3 Construction**

*Supplement the following to Section 8.3:*

Expanded Polystyrene (EPS) is permitted for use as a lightweight fill in lieu of soil fills in high embankments. Lightweight fill may also be placed in lieu of soil fills where the roadway profile will be raised or widened over existing culverts, minimizing the adverse impacts to existing culverts that were not originally designed for the higher soil fill loads.

Developer shall take precautions to not expose EPS to petroleum products during construction until Final Acceptance. The EPS system shall be designed with protective measures such as adequate cover, concrete slabs, membranes or other protection as required to ensure no damage to the system from petroleum leaks or spills near the EPS system. EPS design shall be checked for internal stability and other aspects of design related to pavement, installation, and specification details. Final design and details will be subject to review by GDOT.

### **8.4 Deliverables**

*No additional requirements.*

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## **9 SURVEYING AND MAPPING**

### **9.1 General Requirements**

*No additional requirements.*

### **9.2 Administrative Requirements**

*No additional requirements.*

#### **9.2.1 Property Owner Notification**

*No additional requirements.*

### **9.3 Design Requirements**

*No additional requirements.*

#### **9.3.1 Units**

*No additional requirements.*

#### **9.3.2 Survey Control Requirements**

*No additional requirements.*

#### **9.3.3 Conventional Method (Horizontal and Vertical)**

*No additional requirements.*

##### **9.3.3.1 Horizontal Accuracy Requirements for Conventional Surveys**

*No additional requirements.*

##### **9.3.3.2 Vertical Accuracy Requirements for Conventional Surveys**

*No additional requirements.*

#### **9.3.4 Reserved**

#### **9.3.5 Right of Way Surveys**

*No additional requirements.*

##### **9.3.5.1 Accuracy Standard**

*No additional requirements.*

### **9.3.6 Survey Records and Reports**

*No additional requirements.*

## **9.4 Construction Requirements**

### **9.4.1 Units**

*No additional requirements.*

### **9.4.2 Construction Surveys**

*No additional requirements.*

## **9.5 Deliverables**

### **9.5.1 Final ROW Surveying and Mapping**

*No additional requirements.*

### **9.5.2 ROW Monuments**

*No additional requirements.*

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## **10 GRADING**

### **10.1 General**

*No additional requirements.*

### **10.2 Preparation within Project Limits**

*No additional requirements.*

### **10.3 Slopes and Topsoil**

*No additional requirements.*

### **10.4 Deliverables**

*No additional requirements.*

#### **10.4.1 Released for Construction Documents**

*No additional requirements.*

## 11 ROADWAYS

### 11.1 General Requirements

*Supplement the following to Section 11.1:*

Developer shall replace to original condition any temporarily disturbed parking spaces located within the ROW easements that are disturbed due to construction activities.

### 11.2 Design Requirements

*Supplement the following to Section 11.2:*

Developer shall design the Project in accordance with the design criteria included in Attachment 11-8.

Developer shall base the design of 1) P.I. 0000784 on the Interchange Modification Report (IMR) approved by FHWA as included in Attachment 11-3a; and 2) P.I. 721850- on the approved Traffic Report: P.I. 721850-: SR 400 CD System included in Attachment 11-3b. No reconfiguration of exits and entrances and/or reduction of weaving distances along freeway mainline and CD lanes are allowed for the Project.

No alterations of Project begin and end construction limits are allowed.

#### Design Criteria Order of Precedence

The following requirements shall be adhered to for the design of the Project. The plans provided in the Reference Information Documents are provided for reference only and may contain or conform to some but not all of the design requirements herein. In the event of any conflict, ambiguity, or inconsistency among the following design criteria, the order of precedence, from highest to lowest, 1 being higher than 2, shall be as follows:

1. Allowable Design Exception(s)/Variance(s) as set forth in Section 11.2.3;
2. Select Design Criteria as set forth in Volume 2, Section 11.2;
3. Volume 2 and Volume 2 Attachments (Technical Provisions);
4. Volume 3 and Volume 3 Attachments (Programmatic Technical Provisions); and
5. Volume 3 Manuals (Technical Documents).

#### 11.2.1 Typical Section(s) and Pavement Design

Refer to Table 11-1 for a summary of allowable pavement design locations. For Pavement Design Numbers 1, 3, 5, 7, 10 and widening areas in Pavement Design Number 2, Developer must refer to Attachment 11-4a (Asphalt and Concrete Pavement Design) for approved pavement designs. For areas under Pavement Design Numbers 2 except widening areas, 4, 6, 8 and 9 described in Table 11-1, Developer is allowed to design and construct different pavement designs than the ones listed in Attachment 11-4a with a maximum depth of Aggregate Base Course of 16” and based on Soil Support Values (SSV) up to 3.5.

Table 11-1: Allowable Pavement Design Locations

Pavement Design Number <sup>1</sup>	Description	Asphalt Option	Concrete Option
1	I-285 Mainline Widening or Reconstruction	Match Existing Type	Not permitted
2	SR 400 Mainline Widening or Reconstruction south of I-285	Match Existing Type	Not permitted
3	SR 400 Mainline Widening or Reconstruction north of I-285	Not permitted	Match Existing Type
4 and 5	I-285 and SR 400 System to System Ramps and CD Lanes (CD alignments, or alignments connecting the mainline to a CD, or connecting a CD to a CD)	Yes <sup>2</sup>	Yes
6 and 7	I-285 Service Ramps (Alignments with a terminus at a service interchange on I-285)	Yes <sup>2,3</sup>	Required <sup>3</sup>
8 and 9	SR 400 Service Ramps (Alignments with a terminus at a service interchange on SR 400)	Yes <sup>2,3</sup>	Required <sup>3</sup>
10	Abernathy Road and Mt. Vernon Highway	Match Existing Type	Not permitted

1. Refer to Attachment 11-4a.
2. The minimum length of asphalt sections located between concrete sections for system and service ramps shall be 2,000 linear feet plus/minus 100 linear feet. These sections include segments between two bridges (measured from beginning/end of approach slabs), between two sections of concrete pavement, or between a bridge and concrete pavement section.
3. For service ramps with lengths greater than 2,000 linear feet (measured from physical gore at the freeway section and radius return at the ramp terminal), the minimum length of concrete shall be 2,000 linear feet measured from the radius return toward the freeway. Asphalt may be used in portions of the ramp outside of this requirement.



The Project does not propose reconstruction of existing pavement on I-285. Developer shall micro-mill and inlay existing asphalt pavement on I-285 to correct pavement markings impacted by the Project.

For widening and/or reconstruction along existing pavement of I-285 and SR 400, Developer shall match the existing pavement type.

Service interchanges include Roswell Road, Glenridge Drive, Peachtree Dunwoody Road, and Ashford Dunwoody Road along I-285; and Glenridge Connector, Hammond Drive, Abernathy Road and entrance ramps from the North Springs MARTA Station along SR 400. Ramps to service interchanges with lengths less than 2,000 linear feet shall be concrete. For service interchanges with ramp lengths greater than 2,000 linear feet (measured from physical gore at the freeway section and radius return at the ramp terminal), the minimum length of concrete shall be 2,000 linear feet measured from the radius return toward the freeway. Asphalt may be used in portions of the service ramp outside of this requirement.

For system ramps, CD Lanes and service ramps, the minimum length of asphalt sections located between concrete sections shall be 2,000 linear feet plus/minus 100 linear feet. These sections include segments between two bridges (measured from beginning/end of approach slabs), between two sections of concrete pavement, or between a bridge and concrete pavement section.

For widening and reconstruction of Mt. Vernon Highway, Developer shall match the existing asphalt pavement. Developer shall mill and inlay and/or use leveling, as needed, for existing pavement that is to be retained to match the existing pavement type.

For widening and reconstruction of Abernathy Road, Developer shall match the existing asphalt pavement. Developer shall mill and inlay and/or use leveling, as needed, for existing pavement that is to be retained to match the existing pavement type.

Existing asphalt auxiliary lanes along SR 400 between Hammond Drive and Abernathy Road may not be used as a full depth shoulder or travel lane. Developer shall adhere to Attachment 11-9 Pavement Reinforcing Fabric Strips Detail for placement of pavement reinforcing fabric strips.

The proposed values for the “Normal Cross-Slope” on SR 400 Mainline listed in Attachment 11-8 shall apply as follows:

- i. There shall be a maximum width of two (2) lanes on either side of the crown point at the normal cross slope.
- ii. For lanes beyond the two (2) lane limit noted in (i), the normal cross-slope requirement shall be two and one-half percent (2.5%).
- iii. For full-depth reconstruction of SR 400, the normal cross-slope requirement shall be two percent (2%) for a maximum width of two (2) lanes on either side of the crown point. Lanes beyond the two (2) lane limit shall be at two and one-half percent (2.5%).
- iv. For widening of SR 400, the normal cross-slope requirement shall match the existing cross-slope until the maximum (2) lane limit is achieved, in which case the additional lanes shall have a normal cross-slope of two and one-half percent (2.5%).

### 11.2.2 Additional Roadway Design Requirements

*Supplement the following to Section 11.2.2:*

Developer shall design and construct all new roadways and bridges to accommodate future managed lanes project (PI 0001758) including elevated bi-directional managed lanes (two in each direction) along I-285 and future managed lanes connections to SR 400 North and Perimeter Center Parkway. See Attachment 11-7 for a schematic of locations to be preserved. See also Section 13.2.1.1 for additional requirements regarding the braided ramp bridge east of Roswell Road. Transverse crossings (for example - culverts, drainage pipe, utilities) are permitted; however, Developer shall not construct any permanent appurtenances, including, but not limited to, drainage structures (inlets, manholes, junction boxes, etc.), hand holes, lighting, ITS equipment, duct bank, conduits and/or pull boxes within locations preserved for future managed lanes.

Developer is not required to design or construct drainage facilities to accommodate the future managed lanes.

Developer shall provide black (color FS 27038) guardrail per PCID standards for new or replacement guardrail on local streets.

Developer shall assist GDOT with inspection, if requested by GDOT, of existing pavement to be retained and/or existing pavement adjacent to new construction within the Project, including providing staffing and resources for the inspections, including but not limited to, maintenance of traffic, providing escort vehicle, clearing debris, and adequate room for the inspection activities.

Crash cushions/impact attenuators for all locations requiring crash cushions/impact attenuators shall be designed and installed as low maintenance and/or self restoring attenuators. Proposer shall use products listed on the GDOT Qualified Products List (QPL) QPL-64 such as the SCI Products, Inc. SCI-100GM or the Traffix Devices, Inc. Compressor. Other products meeting the requirements of low maintenance and/or self-restoring attenuators may be acceptable, provided they are listed on the QPL prior to installation on the Project and have received an NCHRP 350 acceptance letter from FHWA.

### 11.2.3 Allowable Design Exception(s)/Variance(s)

Design exceptions and design variances are included in Attachment 11-1 for reference at this time and are subject to GDOT and FHWA approval before they may be incorporated into the Project. Developer will be allowed, at Developer's option, the design exceptions and design variances in Attachment 11-1 for the design of the Project to meet the schematic of design provided in the NEPA Approval; provided that such design exceptions and design variances are prepared and stamped by Developer's Engineer of Record and are submitted to GDOT and FHWA for approval.

Developer, at Developer's option, may incorporate known deviations, as Attachment 11-1b Known Design Deviations in Concept Plans, into the design of the Project, subject to the following conditions: the deviations may be incorporated if the alignments and conditions are as shown in the costing plans; and the deviation is the minimum condition as shown in the table and cannot be further reduced (e.g., if the length of curve in the deviation condition is 700 feet, the length of curve cannot be reduced to less than 700 feet, and will not be considered as meeting the deviation condition).

#### **11.2.4 Visual Quality**

*No additional requirements.*

#### **11.2.5 Permanent Lighting**

*Supplement the following to Section 11.2.5:*

Developer shall design and install highway lighting on the highest bridge deck within the interchange.

High mast lighting is not required for the Project. However, Developer shall provide an interchange lighting study incorporating lighting for GDOT review and approval that includes layouts, designs, modeling and details as deemed necessary by GDOT to demonstrate that Developer's design for the Project does not conflict with nor preclude the reasonable installation and maintenance of future interchange lighting. Lighting study shall include recommendations for features to be installed in the Project to minimize retrofit for installation of complete interchange lighting under a future project.

Underpass lighting shall be required in accordance with the *GDOT Design Policy Manual*. Developer shall submit nighttime and daytime illumination studies for each underpass/overpass where proposed construction will impact the existing and/or proposed illumination. The study shall detail the lighting requirements in accordance with the *GDOT Design Policy Manual* and *RP-22-11: Recommended Practice for Tunnel Lighting*. For the purposes of the illumination studies, all underpasses shall be treated as vehicular tunnels. Upon GDOT acceptance of the illumination studies, Developer shall design and construct all underpass lighting, required in the illumination studies, per *GDOT Design Policy Manual* and *RP-22-11: Recommended Practice for Tunnel Lighting*.

All existing lighting impacted by construction shall be replaced in kind; refer to Volume 3 Manuals for PCIDs' Special Provisions.

For additional lighting requirements on Mt. Vernon Highway refer to Section 13.2.9.

#### **11.2.6 Related Transportation Facilities**

*Supplement the following to Section 11.2.6:*

Developer shall design and construct all new roadways and bridges to accommodate the planned expansions or updates of Related Transportation Facilities per Attachment 11-2 of Volume 2 as of NTP1. Additional Project information can be found as designated in the latest editions of the following Atlanta Regional Commission (ARC) regional and local transportation plans:

- ARC Regional Transportation Plan (RTP):

<http://www.atlantaregional.com/transportation/regional-transportation-plan>

- ARC Transportation Improvement Program (TIP):

<http://www.atlantaregional.com/transportation/transportation-improvement-program>

- ARC RTP and TIP supporting documents:

<http://www.atlantaregional.com/transportation/regional-transportation-plan>

Developer shall also coordinate with the appropriate Governmental Entities who have jurisdiction for the above TIP and other projects listed in Attachment 11-2 to determine the extent of the accommodation.

### 11.3 Deliverables

*No additional requirements.*

### 11.4 Construction Requirements

*Add the new Section 11.4:*

For all asphaltic concrete, when materials or construction are not within the tolerances specified in Sections 400 and 402, deductions shall be made in accordance with the applicable requirements of Sections 106, 400 and 402. The deduction will be determined by the following formula:

Deduction (per ton) = (1 - Pay Factor) X Assumed Unit Price/Ton [Refer to chart below]

Material	Assumed Unit Price/Ton
Asphalt Concrete 12.5 mm PEM	\$90.30

Asphalt Concrete 12.5 mm SMA	\$94.43
Asphalt Concrete 12.5 mm Superpave, Polymer Modified	\$86.38
Asphalt Concrete 19 mm Superpave	\$64.86
Asphalt Concrete 25 mm Superpave	\$62.07

Developer shall also replace 6,660 square yards (SY) of existing SR 400 mainline pavement and base course. The locations of the pavement to be replaced are included in the following Table 11-2. Replacement pavement sections shall match existing pavement sections. Developer shall coordinate with GDOT as required. Drainage structures and all ancillary features located within the pavement replacement areas shall be retained.

Table 11-2: SR 400 Pavement Replacement (PCC pavement except as noted)

Location	Lane*	Location Description**	Quantity (SY)	Remarks
1	NB 1, NB 2, NB 3 and NB 4	South of I-285 at the beginning of PCC and end of Asphalt Pavement	320	Replace first two slabs on all four lanes at the PCC/Asphalt Joint
2	NB 1 and NB 2	Starting south of I-285 at a distance 360 feet of PCC and end of Asphalt Pavement	240	Replace three slabs on each lane
3	NB 1	Starting just South of existing Hammond Drive Bridge	240	Replace lane 1 slabs
4	NB 3, NB 4 and NB 5	Two slabs on each of the lanes just south of approach slab of the existing SR 400 Bridge over Abernathy Road	240	Replace two slabs on each lane
5	SB 3	All slabs starting from the beginning of the existing PCC pavement south of I-285 to a point 1600 feet north of northern approach slab of the existing SR 400 SB bridge over I-285	2,630	

Location	Lane*	Location Description**	Quantity (SY)	Remarks
6	SB 4	All slabs starting from the existing painted gore of SR 400 south exit to I-285 west beginning up to a point 1600 feet north of northern approach slab of the existing SR 400 SB bridge over I-285	1,550	
7	SB 1 and SB 2	All slabs starting from the beginning of the existing PCC pavement south of I-285 to a point 200 feet north of northern approach slab of the existing SR 400 SB bridge over I-285	800	
8	SB 3	One slab north of approach slab of the existing SR 400 Bridge over Abernathy Road	40	Replace one slab
9	All Ramps	All ramps between I-285 and SR 400	N/A	All ramps to be replaced and reconstructed per RFP and Costing Plans Criteria. Quantity calculated as new pavement.
10	NB 1 thru NB 4 and SB 1 thru SB 4	Asphalt Pavement Replacement	N/A	Beginning 500 linear feet south of the PCC pavement. Pavement section shall be based on Section 11.2.1 and Attachment 11-4a. Asphalt pavement outside of the 500 linear feet section but within the limits for the Project to be milled and inlayed.. Quantity calculated as new pavement.
Sub-total			6,060 SY	
Contingency (10%)			600 SY	

Location	Lane*	Location Description**	Quantity (SY)	Remarks
Total			6,660 SY	

Notes:

\* Lanes are designated as NB for northbound and SB for southbound. Numbers represent the lane count starting from the center and counted outwards. For example, NB 1 will represent northbound lane immediately next to the inside shoulder.

\*\* Exact location of the slab replacements to be jointly verified by GDOT and Developer prior to commencement of work.

## 12 DRAINAGE

### 12.1 General Requirements

*No additional requirements.*

### 12.2 Administrative Requirements

#### 12.2.1 Data Collection

*No additional requirements.*

#### 12.2.2 Coordination with Other Agencies

*No additional requirements.*

### 12.3 Design Requirements

*Supplement the following to Section 12.3:*

Developer shall upgrade the following substandard culverts regardless of whether the design and construction of the Project proposes to utilize or impact these facilities:

- SR 400 Collector/Distributor Lanes – P.I. No. 721850- – SR 400 approximately Station 498+64 Left – Outlet end of an existing Double 5'x4' box culvert,
  - Regrade stream channel to fill scour hole and restore stream channel bottom. Place stream channel stabilization per GDOT's Drainage Manual and FHWA's HEC-23 at this outlet and immediately downstream.
  - Remove and reconstruct wingwalls, parapet, and apron. Apron shall include an energy dissipator if the velocity discharged from the culvert is greater than the velocity in the downstream natural channel for the design flow.
- I-285 at SR 400 Reconstruction - P.I. No. 0000784 - I-285 approximately Station 965+30 - Existing 48" RCP crossing Interstate 285,
  - Replace the 48" pipe crossing Interstate 285 from the upstream end paved ditch to the downstream end paved ditch.
  - At the downstream end of this crossing, Developer shall design and construct erosion control protection per Volume 3 Manuals.

If Developer's proposed design incorporates the extension of the existing forty-eight inch (48") pipe located at Station 965+37 +/-, offset 250' +/- left of I-285, Developer shall remove and replace the last three (3) segments of the existing pipe prior to extension of the pipe culvert.

Developer is permitted to use underground detention only at locations as specified in the stormwater detention recommendations memo or post-construction stormwater report, both included in the RIDs. Developer shall demonstrate to the satisfaction of GDOT the following conditions are met prior to installation of any underground detention system:



- Hydraulic study shows there is no risk of flooding along the roadway.
- Design provides adequate safeguards against clogging.
- Design provides inspection and maintenance access outside of travel lanes.
- Design has been reviewed and approved by GDOT Bridge Office.
- BMP specific inspection and maintenance plan prepared by Developer is consistent with Section 5 of GDOT's Stormwater System Inspection and Maintenance Manual.

Developer shall design the Project to ensure a 0.00' rise outside the ROW upstream of the ramps and MARTA rail tracks at the Marsh Creek Tributary 5 crossing of SR-400 On-Ramp NB R5 Station 1298+89 Right.

Developer shall limit any proposed increase in the base flood elevation upstream of SR 400 over Marsh Creek to less than 0.40 feet outside the ROW and coordinate with City of Sandy Springs to obtain a variance from the City's floodplain ordinance.

Developer shall provide compensation for storage capacity per City of Dunwoody Ordinances anywhere this may apply on the Project.

Developer shall design and construct the Project to achieve a less than 0.01 foot rise outside the ROW at I-285 over North Fork Nancy Creek and North Fork Nancy Creek Tributary to satisfy City of Dunwoody Ordinances. This rise shall be achievable with the floodplain impacts shown in the Costing Plans and using the anticipated updated model with an expected FEMA approval by the end of 2015.

### **12.3.1 Surface Hydrology**

*No additional requirements.*

#### **12.3.1.1 Design Frequencies**

*No additional requirements.*

#### **12.3.1.2 Hydrologic Analysis**

*No additional requirements.*

### **12.3.2 Storm Sewer Systems**

*No additional requirements.*

#### **12.3.2.1 Pipes**

*No additional requirements.*

#### **12.3.2.2 Municipal Separate Storm Sewer System (MS4)**

*Supplement the following to Section 12.3.2.2:*

Within limits of P.I. No. 721850-, Developer shall not be responsible for MS4 Permit Section 4.2.5.1(a) requirements.

Developer shall design and construct non-MS4 related post-construction stormwater detention facilities within limits of P.I. No. 721850- SR 400 CD Lanes from the vicinity of Hammond Drive and Abernathy Road to North of Spalding Drive.

Developer shall be responsible for compliance with all MS4 requirements within limits of P.I. No. 0000784 I-285/SR 400 Interchange.

All detention facilities designs shall allow for reasonable access by maintenance vehicles for maintenance purposes.

Developer shall submit to GDOT a signed and sealed Post-Construction Stormwater Report prepared per the GDOT Drainage Manual for each P.I No 0000784 and P.I. NO 721850-. GDOT will provide these reports to EPD for compliance with the permit and EPD will have ninety (90) Days to review. These reports may be submitted as whole documents for each project or phased to best accommodate constructible segments.

#### 12.3.2.3 *Gutter Spread/Ponding*

*No additional requirements.*

### 12.3.3 Hydraulic Structures (Culverts/Bridges)

*No additional requirements.*

#### 12.3.3.1 *Method Used to Estimate Flows*

*No additional requirements.*

#### 12.3.3.2 *Design Frequency*

*No additional requirements.*

#### 12.3.3.3 *Hydraulic Analysis*

*No additional requirements.*

#### 12.3.3.4 *Riverine Bridge/Bridge Culvert Design*

*No additional requirements*

#### 12.3.3.5 *Bridge Deck Drainage*

*No additional requirements.*

#### 12.3.3.6 *Drainage Report for Hydraulic Structures*

*No additional requirements.*

## **12.4 Construction Requirements**

*No additional requirements.*

## **12.5 Deliverables**

*No additional requirements.*

## 13 STRUCTURES

### 13.1 General Requirements

*No additional requirements.*

### 13.2 Design Requirements

#### 13.2.1 Design Parameters

*Supplement the following to Section 13.2.1:*

Proprietary structural design software may be used in lieu of the GDOT specific computer software programs. Alternative software programs may be used to design the following structural elements:

- Prestressed concrete beams;
- Steel girders, both curved and straight;
- Concrete decks;
- Bridge substructure, including end bents and intermediate bents;
- Foundations, including pilings and drilled caissons; and
- Bearings.

Structural analysis software may be used to perform complex analysis or finite element modeling of bridges and bridge elements.

Developer may utilize spreadsheets or MathCad type programs to develop "hand calculations" for repetitive design elements.

All software, spreadsheets and MathCad output shall be present in design documentation so that it can be verified to be compliant with design requirements by an independent checker. For hand calculations developed using software, the input, formulas (with code references shown) and output shall be provided so that it can be verified. Proprietary software output shall not be a "Black Box" type output and all code checks shall be visible to be verified by an independent checker. GDOT may require further verification of results of any design software using GDOT bridge design programs, hand calculations or structural analysis software.

Use of any software does not relieve the designer of their responsibility to perform required QA/QC of designs performed using this software. "Bugs" or errors that exist in the proprietary software "out of the box" that produce errors in the final design or construction will be the responsibility of Developer.

INROADS output and Microsoft Excel spreadsheets may be subject to verification of results using GDOT bridge geometry program.

### 13.2.1.1 *Horizontal and Vertical Clearances*

New bridges constructed over SR 400 shall provide a minimum vertical clearance of seventeen feet (17'-0"); new box girder bridges shall be seventeen feet, six inches (17'-6"). Straddle bent substructure elements over SR 400 shall provide a minimum vertical clearance of seventeen feet, six inches (17'-6"). Temporary vertical clearances shall be no more than six inches (6") below the proposed minimum vertical clearances, but no less than existing vertical clearances.

No work is included on the existing Spalding Road bridge over SR 400. The existing clearance is to be maintained, and no increase in vertical clearance over the existing SR 400 travel lanes is required.

The bridge east of Roswell Road, where Ramp DE312 crosses over Ramp DE202 as shown in the Costing Plans for P.I. Number 0000784, must accommodate the proposed CD lanes and a future barrier-separated ramp. Typical section shall be a clear width of 70.5 feet from face of barrier to face of barrier, comprised of a 4' inside shoulder, 2@12' lanes, 10' shoulder, 2.5' barrier, 4' shoulder, 16' lane, and 10' outside shoulder.

New bridges over Peachtree Dunwoody Road shall accommodate Lake Hearn Drive at Peachtree Dunwoody Road Intersection Improvements (as listed in Attachment 11-2).

### 13.2.1.2 *Bridge Design Live Loads and Load Ratings*

*No additional requirements.*

### 13.2.1.3 *Seismic Design*

*No additional requirements.*

### 13.2.1.4 *Fatigue Design*

*No additional requirements.*

## **13.2.2 Bridge Decks and Superstructures**

*Supplement the following to Section 13.2.2:*

Concrete used for the bridge deck shall have a minimum twenty-eight- (28) day design strength of 4,000 pounds per square inch (psi) as required by American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) 5.4.2.1 and shall be permitted to use a strength up to a maximum of 4,500 psi.

Cast-in-place concrete decks may utilize partial-depth precast concrete panels in lieu of full-depth deck and metal stay-in-place forms. The panel shall be designed to be part of the deck and to accommodate the permanent design loads. Panel width is limited to eight feet (8'-0") from beam flange to beam flange. Panel shall have sufficient bearing on the beam flange to allow ease of placement and allow the beam and deck to act as a composite section.

Precast concrete beams may be designed using concrete with  $f'_c$  equal to 9,000 psi up to and including 10,000 psi, and can be utilized in accordance with the High Performance Concrete requirements of Special Provisions 500 and Special Provision 865. All beam designs are subject to review by GDOT prior to Final Acceptance.

Unpainted weathering steel is permitted for use on bridge superstructure with the following conditions:

1. Paint weathering steel superstructure a minimum of one and one-half (1½) times the beam depth away from the centerline (CL) of a joint;
2. Painting scheme shall be aesthetically consistent, i.e., partial painting of beams shall not present to the travelling public a pronounced visual difference when compared with the unpainted portion.

The use of ASTM A709 Grade 50W Steel and Grade HPS 70W Steel is permitted for steel bridge superstructure. Both steel types are considered weathering steel and shall be painted as required by the provisions of this RFP.

Maximum girder spacing for plate girder and precast concrete beam span bridges shall be ten feet six inches (10'-6").

New steel girders shall be a gray finish color. Gray shall be Federal Standard (FS) 595C color number FS36622.

Steel girders on existing steel girder bridges that are to be modified or widened shall be painted No. 3B, Green per Table 8 of *GDOT's Standard Specifications*, Section 870.

Intermediate diaphragms shall be used on all beams for spans greater than forty feet (40') in length.

In lieu of utilizing the GDOT standard details for edge beams, Developer may optimize the edge beam design to meet the site-specific conditions for the bridge under design. The revised edge beam design and details are subject to review and acceptance by GDOT. The minimum edge beam depth shall be not less than 2'-0" measured from the bottom of the deck.

### **13.2.3 Bridge/Retaining Wall Foundations**

*Supplement the following to Section 13.2.3:*

A709 Grade 50 steel may be used for steel H-piles for end bent and pile footings. It shall not be used for pile bent substructure. Developer shall provide a drivability analysis with their preferred driving system to determine when piles may be damaged during driving. Specified driving criteria shall be developed based on drivability and shall include a refusal provision.

Auger Cast Piles (ACP) are acceptable for use for bridge foundations provided that the site conditions, geotechnical analysis, and evaluation results support their use at a particular location.

Developer shall include the planned geotechnical exploration for the list of bridges and the types of soil profiles considered and not considered. The specification must include detailed information concerning the pile testing program, and the type of testing and number of tests that would be used. Pre- and post-production pile testing shall be in accordance with the recommendations of FHWA *Geotechnical Engineering Circular No. 8*. Developer shall use static load testing of the piles to determine the nominal pile resistance. Static testing may be supplemented with Rapid Load Tests or Dynamic Load Tests as a means to calibrate and verify static load test results. A minimum of 10% of the production piles shall be tested. The final ACP testing program, The final ACP specification and details will be subject to review and acceptance by GDOT. The ACP contractor (including subcontractors) shall submit their experience with ACP design and installation. They shall also provide a description of the anticipated QA program for the piles.

Rammed Aggregate Piers (RAP) may be used for ground improvement at Mechanically Stabilized Earth (MSE) retaining walls to reduce settlement and settlement waiting periods. Use of RAP is not allowed in any other case. RAP design is subject to review by GDOT. Developer shall provide a description of the additional testing required for the pre-installation and post-installation phases. The QA process will be important for successful installation and performance.

RAP may require additional geotechnical exploration and results shall be available prior to the design to verify installation procedures and design parameters.

Developer shall provide the specification for the installation of RAP. The specification shall include a section that addresses quality construction procedures for testing of the aggregate materials.

GDOT will determine the number of Modulus tests required on nonproduction RAP test sections. The number of tests GDOT will require will be determined during construction and will be based on the variation of loads and/or soils along the structures.

#### **13.2.4 Bridge Railing and Barriers**

*Supplement the following to Section 13.2.4:*

All new bridge and roadside barriers shall be constant slope face type (S-Type) barrier on all new bridges on I-285 and SR 400, and shall include both sides. A transition barrier from S-Type to Jersey Barrier shall be installed when tying to existing Jersey Barrier. If an existing bridge or roadway with Jersey Barrier is being modified or maintained, then Jersey Barrier may be used upon approval from GDOT.

Refer to Attachment 13-1 Bridge over Interstate Fencing Details. This detail shall also apply to bridges over SR400.

#### **13.2.5 Retaining Walls**

*Supplement the following to Section 13.2.5:*

A thinner MSE Wall panel than what is shown in the *GDOT Standard Specifications* (seven inches [7"]) may be utilized to take advantage of material and weight savings. MSE Wall panels have a minimum thickness of five and one-quarter inches (5¼").

Developer may use a larger MSE wall panel than what is shown in the *GDOT Standard Specifications*, subject to acceptance by GDOT.

Developer shall submit the MSE wall panel shop drawing for review and acceptance by GDOT.

Refer to Section 15.3 for aesthetic requirements.

### **13.2.6 Aesthetics**

*Supplement the following to Section 13.2.6:*

Refer to Section 15.3 for additional aesthetic and hardscape requirements.

### **13.2.7 Sound Barriers**

*Supplement the following to Section 13.2.7:*

Refer to Section 15.3 for aesthetic requirements.

The maximum elevation of sound barriers on bridges shall be limited to twelve (12) feet above the bridge deck.

Sound barriers exceeding the limitations identified in Volume 3 Section 13.2.7 attached to MSE retaining walls require special design and details for free-standing barriers and are subject to the approval of GDOT. An example detail for a free-standing barrier is included in the RIDs.

### **13.2.8 Drainage Structures/Culverts**

*No additional requirements.*

### **13.2.9 Sign, Illumination, and Traffic Signal Supports**

*Supplement the following to Section 13.2.9:*

Under-bridge lighting shall not be mounted to any portion of bridge superstructure, including the decks or bridge beams.

Design and install pedestrian scale lighting on the Mt. Vernon Bridge over SR 400. Bridge lighting fixtures shall be installed on blisters (refer to the Costing Plans), and conduit shall be installed inside the handrail. Work also includes but is not limited to coordination with Georgia Power and coordination of lighting agreement.

Refer to Section 11 for additional lighting requirements on bridges. All structures shall be designed to accommodate light standards where specified in Section 11.



**13.2.10 Widening, Modification or Rehabilitation of Existing Structures**

*Supplement the following to Section 13.2.10:*

Existing bridges shall be repaired and/or rehabilitated in accordance with the recommendations listed in this section. Developer shall perform the recommended widening, modification, rehabilitation, replacement, or repairs to each existing bridge as described in the following Table 13-1. GDOT's repair recommendation memo is available in the RIDs. Bridges not listed in this section are not eligible for rehabilitation as part of the Project.

Table 13-1: Bridge Widening, Modification, Rehabilitation, Replacement, and Repairs

Bridge ID	Bridge Location	Recommendation	Repair/Rehabilitation Description
ID 121-0445-0	Mt Vernon Hwy over SR 400/US 19	Replace bridge	Full replacement requiring new super and sub. New piers/foundations, no reuse of existing elements. New bridge to include sidewalks, "Texas rail" barrier and dark green (FS 14036) vinyl chain-link fence. Coordination with City of Sandy Springs is required.
ID 121-0121-0	SR 400/US 19 over Abernathy Road	Replace bridge	Full replacement requiring new super and sub. New piers/foundations, no reuse of existing elements. Architectural enhancements to elements (e.g., exterior rail face treatments) visible from Abernathy Road. Sidewalks and lighting under the bridge. Coordination with City of Sandy Springs is required.
ID 121-0245-0	I-285 over Lake Forest Drive	Widen bridge and replace existing deck	Widen bridge for additional lanes in eastbound and westbound directions. New steel beam depth shall not be less than twenty-four inches (24"). Widening shall not reduce existing vertical clearance over Lake Forest Drive (sixteen feet and one and a half inches [16'-01 1/2"]). If necessary, bridge shall be raised to achieve vertical clearance. Replace existing concrete bridge deck for remaining portions of eastbound and westbound bridges.
ID 121-0246-0	I-285 over Glenridge	Replace bridge deck	Replace existing concrete bridge deck for eastbound and westbound bridges.

	Drive		Existing minimum vertical clearance shall be maintained.
ID 121-0247-0	I-285 over SR 400 NBL	Replace bridge deck	Replace existing concrete bridge deck for eastbound and westbound bridges. Existing minimum vertical clearance shall be maintained.
ID 121-0248-0	I-285 over Peachtree Dunwoody Rd	Replace bridge deck	Replace existing concrete bridge deck for eastbound and westbound bridges. Repaint existing steel beams. Existing minimum vertical clearance shall be maintained.
ID 121-0244-0	I-285 over Long Island Drive	Add sound barriers	Sound barriers are required to be attached to the existing bridge along EB and WB sides. Limit sound wall height to twelve feet (12') (steel panels). Existing minimum vertical clearance shall be maintained.

Deck replacement shall be full removal of the existing concrete deck down to the top flange of the steel or concrete girders and replacement with a new concrete bridge deck including, but not limited to, all appurtenances such as deck joints and barriers.

As permitted by the *GDOT Bridge and Structures Design Manual*, widened and rehabilitated portions of existing bridges, originally designed using the *AASHTO Standard Specifications for Highway Bridges*, 17th Edition or earlier version, may use the 17th Edition for the widening/rehabilitation design, and are not required to adhere to LRFD specifications.

Existing metal handrail removed from any of the bridges to be replaced or rehabilitated shall be salvaged and stored with GDOT.

Existing rolled steel beams removed from any bridge being demolished or rehabilitated that are twenty-seven inches (27") deep or less shall be salvaged and stored with GDOT.

Coordinate with the District 6 Engineer for the Metro-Atlanta area storage location for salvaged items.

**13.2.11 New Bridges Required in Lieu of Culvert Extensions.**

A new bridge shall be constructed in lieu of extending the existing culvert at the locations shown in Table 13-2.

Table 13-2: Locations of New Bridges Required in Lieu of Culvert Extensions

Bridge # and Location	Feature Intersected	Existing Culvert size
Bridge 5- 285 EB Ramp to Ashford-Dunwoody Road, just west of Perimeter Center Parkway	Un-named Creek	Double 96" Box Culvert
Bridge 8- 285 EB CD to Ashford-Dunwoody Road, under Perimeter Center Parkway	Perimeter Creek	Double 96" Box Culvert
Bridge 10- 285 EB Ramp to Ashford-Dunwoody Road, under Perimeter Center Parkway	Perimeter Creek	Double 96" Box Culvert

**13.2.12 Use of GDOT Standard and Details**

*No additional requirements.*

**13.3 Construction Requirements**

*Supplement the following to Section 13.3:*

Refer to Section 18 for Traffic Control requirements related to bridge construction.

Accelerated bridge construction methods may be utilized to construct new bridges and rehabilitate or replace existing bridges on the project. The chosen method(s) is subject to review by GDOT to ensure compliance with project specifications as well as no adverse safety and schedule impacts to the travelling public.

**13.3.1 Concrete Finishes**

*No additional requirements.*

**13.3.2 Structure Metals**

*No additional requirements.*

**13.4 Final Bridge Inspection Prior to Service Commencement**

*No additional requirements.*

**13.5 Deliverables**

*No additional requirements.*

# 14 RESERVED

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## **15 LANDSCAPE AND HARDSCAPE ENHANCEMENTS**

### **15.1 General Requirements**

*No additional requirements.*

### **15.2 Administrative Requirements**

#### **15.2.1 Reserved**

#### **15.2.2 Landscape and Hardscape Enhancement Plans**

*No additional requirements.*

#### **15.2.3 Personnel**

*No additional requirements.*

### **15.3 Design Requirements**

*No additional requirements.*

#### **15.3.1 Landscape and Hardscape Enhancement Principles and Strategies**

*No additional requirements.*

#### **15.3.2 Walls**

*Supplement the following to Section 15.3.2 of Volume 3:*

Sound Barriers shall have a light gull gray ashlar stone finish appearance on the front and back sides.

Retaining walls shall be a plain concrete finish. MSE wall panels shall be a light gull gray ashlar stone finish.

Light gull gray shall be Federal Standard (FS) 595C color number FS36440 and as approved by GDOT.

All visible wall panels shall have a graffiti-proof coating. Graffiti-proof coating shall meet the requirements of *GDOT Standard Specifications* Section 838.

#### **15.3.3 Bridges and Other Structures**

*Supplement the following to Section 15.3.3 of Volume 3:*

Construct the “Texas” rail barrier (closed panel) on the following bridges consistent with other bridges located within the PCID: Mt. Vernon Highway over SR 400 (both sides).

Construct the “Texas” rail barrier pattern (closed panel) along the outside of the following bridges (outside faces of outermost bridges, visible to the side street): SR 400 CD over Abernathy Road; I-285 CD over Glenridge Drive; and I-285 CD over Peachtree Dunwoody Road.

Provide nine (9) gauge black (except as specified otherwise elsewhere) vinyl coated two-inch (2") security chain-link fence on the tops of each side of the bridge barrier on bridges that accommodate bicycles and/or pedestrians, and on bridge deck areas requiring security fencing on bridges that do not accommodate bicycles and/or pedestrians. The height of the vertical fence on the bridge shall be ten feet (10'), measured from the top of the bridge deck to the top of the fence. Refer to the Costing Plans for location(s) of the security fence.

Chain-link fence mounted to the top of the retaining wall barrier or coping shall be black vinyl-coated fencing. The fencing locations shall be coordinated with Perimeter Community Improvement District (PCID) and City of Sandy Springs officials.

Chain-link fence on Mt Vernon Hwy shall be dark green (FS 14036).

Refer to Section 16.3.8.4 for location(s) and requirement(s) of decorative mast arm and decorative pedestrian pole assemblies.

### **15.3.4 Trees, Shrubs, and Other Plant Materials**

*Supplement the following to Section 15.3.4:*

Preserve existing landscaping to the maximum extent practical. In areas where existing landscaping is disturbed by the Work, replace all landscaping with similar type(s), caliper(s), species and planting pattern(s) as those impacted or as coordinated with the PCID. This includes but is not limited to hawthorn and cherry autumnalis trees.

Developer shall coordinate with PCID (in conjunction with the cities of Dunwoody and Sandy Springs), to the greatest extent possible, to minimize future efforts of PCID to install landscaping. The coordination shall include, but is not limited to minor grading to minimize future efforts, with emphasis to providing flatter slopes within the interchange areas to facilitate future landscaping. PCID may prepare a landscaping plan for use in coordinating with Developer.

For P.I. No. 721850- only:

Developer will retain existing vegetation, where feasible in accordance the Section 201 “Clearing and Grubbing Right of Way” of the GDOT Standard Specifications of Construction, in all areas of the Project where retaining walls and/or noise barriers are not proposed to buffer affected property owners from proposed travel lanes.

### **15.3.5 Lighting**

*Supplement the following to Section 15.3.5:*

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Developer shall replace all pedestrian scale lighting fixtures impacted by construction in-kind.

All new pedestrian scale lighting must conform to PCID (if located within PCID boundary) or City of Sandy Springs standards.

#### **15.3.6 Control Buildings**

*No additional requirements.*

#### **15.3.7 Intersection Hardscape**

*No additional requirements.*

#### **15.3.8 Miscellaneous Concrete Paving**

*No additional requirements.*

### **15.4 Construction Requirements**

*No additional requirements.*

### **15.5 Deliverables**

*No additional requirements.*

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## 16 SIGNING, PAVEMENT MARKING, SIGNALIZATION

### 16.1 General Requirements

*No additional requirements.*

### 16.2 Administrative Requirements

#### 16.2.1 Meetings

*No additional requirements.*

### 16.3 Design Requirements

#### 16.3.1 Final Design

*Supplement the following to Section 16.3.1:*

For signing purposes, the Project interchanges shall be classified as Category A Major, per Section 2E.32 of the *Manual on Uniform Traffic Control Devices (MUTCD)*.

#### 16.3.2 Permanent Signing and Delineation

*Supplement the following to Section 16.3.2:*

Developer shall use and comply with general notes provided in Attachment 16-2, including but not limited to, all sheeting requirements shown.

Arrow-per-lane signs shall follow letter and numeral size requirements for Category A Major Interchange in the MUTCD.

All overhead sign structures shall be spaced a minimum of eight hundred feet (800') apart unless otherwise approved by GDOT.

All existing overhead sign panels within the Project shall be replaced with new overhead sign panels in accordance with the MUTCD and *GDOT Signing and Marking Guidelines* unless otherwise approved by GDOT. Any existing signs shall be removed if no longer valid based on proposed design. All existing sign support structures no longer supporting a sign(s) shall be removed.

Developer shall design new overhead sign structures per Section 638 of the *GDOT Standard Specifications*, and replace existing overhead sign structures where the existing sign structures cannot support the proposed sign panel configurations.

Developer may reuse existing overhead sign structures upon GDOT's acceptance. In this case, Developer shall verify and demonstrate existing overhead sign structures have sufficient



structural capacity to support proposed sign panel configurations per Section 638 of the *GDOT Standard Specifications*.

All signs along CD Lanes shall be designed and installed based on Freeway classification in accordance with the MUTCD and *GDOT Signing and Marking Guidelines*.

Modified Intermediate Enhanced Reference Location (D10-5m) signs shall be required along all CD lanes as well as all system-to-system interchange ramps. These signs shall be spaced at 0.1 mile intervals. These signs shall generally follow the designs in Attachment 16-1, Modified Intermediate Enhanced Reference Location Signs. GDOT is currently coordinating with emergency services providers on the conceptual signage design and placement. “Back to back” signs visible from both directions are under consideration. Developer shall coordinate with GDOT and the emergency services providers in developing the final design and location of the signage. Developer shall be responsible for final design, placement and installation of the Enhanced Reference Location Signs.

Developer shall design and install any guide signs that are required as a result of the Project. These signs include but are not limited to advance guide signs, supplemental signs, exit direction signs, and interchange sequence signs. This also includes replacing any signs that no longer provide correct information or guidance due to the Project.

At Developer's, option, Developer may use existing sign structures that were not installed as part of P.I. No. M004201 and P.I. No. M004202 (refer to RID for existing plan information). Sign structures are located at District 7, Area 2 construction office located at 1269 Kennestone Circle, Marietta, GA 30066. Developer is responsible to ensure that sign structures meet GDOT Standard Specifications for Developer's intended application. Developer is responsible for coordinating pickup, delivery, modifications that may be required, and installation of these sign structures.

Design and install double-faced internally illuminated street signs on all mast arm assemblies for each road name using the PCID logo (if located within PCID boundary) or the City of Sandy Springs logo. Design and installation must also be in accordance with Special Provision 647.

Hospital signs shall be required on the following approaches: along I-285 WB for the Peachtree-Dunwoody Road exit, along I-285 EB for the Glenridge Road exit, and along SR 400 NB and SR 400 SB for the Glenridge Connector exit. Additional hospital signs shall also be required along the applicable collector-distributor roads between the freeway exit and the exit from the collector-distributor to the above mentioned roads. Signs shall be designed and installed in accordance with GDOT Signing and Marking Guidelines and the MUTCD.

### **16.3.3 Project Signs – Outside the Existing ROW and State Proposed ROW**

*No additional requirements.*

### **16.3.4 Reserved**

### **16.3.5 Specific Service Signs**

*Supplement the following to Section 16.3.5:*

Developer shall coordinate any changes to blue logo signs with GDOT’s LOGO Sign Program manager.

**16.3.6 Sign Support Structures**

*No additional requirements.*

**16.3.7 Permanent Pavement Marking**

*Supplement the following to Section 16.3.7:*

All pavement marking along CD Lanes shall be designed and installed based on Freeway classification in accordance with the MUTCD and *GDOT Signing and Marking Guidelines*.

**16.3.8 Permanent Signalization**

*Supplement the following to Section 16.3.8:*

Traffic signals and lighting shall have separate metered boxes.

Design and install signal heads and pedestrian heads per PCID (if located within PCID boundary) or the City of Sandy Springs standards.

Refer to Table 16-1 below for guidance on locations of decorative mast arm (including luminaires) and decorative pedestrian pole, and lighted street name sign assemblies.

Table 16-1: Decorative Mast Arm (including luminaires) and Decorative Pedestrian Pole, and Lighted Street Name Sign Assemblies Locations

<b>Location</b>	<b>Description</b>
Hammond Dr at SR 400 Ramps (NB and SB)	<ul style="list-style-type: none"> <li>• Install decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
Mt. Vernon Hwy at Crestline Parkway	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles</li> </ul>
Mt. Vernon Hwy at Barfield Rd	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
SR 400 at Abernathy Rd Ramp (NB)	<ul style="list-style-type: none"> <li>• Install decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
SR 400 at Abernathy	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> </ul>

Rd Ramp (SB)	<ul style="list-style-type: none"> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
Abernathy at Peachtree Dunwoody Rd	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
Abernathy at Glenlake Pkwy/Barfield Rd	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to, decorative mast arm assembly with luminaires, lighted street name signs with PCID logo and decorative pedestrian poles.</li> </ul>
Roswell Rd at I-285 Ramps	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to green coated mast arm assembly, standard street name signs, and standard pedestrian poles.</li> </ul>
Glenridge Dr at I-285 Ramps	<ul style="list-style-type: none"> <li>• Install decorative mast arm assembly, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>
Peachtree Dunwoody Road at I-285 Ramps	<ul style="list-style-type: none"> <li>• Install decorative mast arm assembly, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> <li>• Coordinate design and installation with the Improvements to Peachtree Dunwoody Road at Lake Hearn Drive project.</li> </ul>
Peachtree Dunwoody Rd at Lake Hearn Dr	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> <li>• Coordinate design and installation with the Improvements to Peachtree Dunwoody Road at Lake Hearn Drive project.</li> </ul>
Ashford Dunwoody Rd at I-285 Ramps	<ul style="list-style-type: none"> <li>• If impacted replace in-kind.</li> <li>• This includes but is not limited to decorative mast arm assembly with luminaires, lighted street name signs with PCID logo, and decorative pedestrian poles.</li> </ul>

If an intersection not listed above is impacted by the Project, then Developer shall install at each location decorative mast arms with luminaires, lighted street name signs, and decorative pedestrian poles as per Section 16.3.8.4 unless otherwise approved by GDOT.

16.3.8.1 ***Traffic Signal Requirements***

*Supplement the following to Section 16.3.8.1:*

Existing ramp meters will be required to be replaced at the following locations:

- Roswell Road EB on-ramp to I-285;
- Roswell Road WB on-ramp to I-285;
- Glenridge Drive WB on-ramp to I-285;
- Peachtree Dunwoody Road EB on-ramp to I-285;

- Ashford Dunwoody Road EB on-ramp to I-285; and
- Ashford Dunwoody Road WB on-ramp to I-285.

All ramp meters shall be designed and installed in accordance with GDOT details and guidelines.

#### 16.3.8.2 *Traffic Signal Timing Plans*

*No additional requirements.*

#### 16.3.8.3 *Traffic Signal Permit*

*Supplement the following to Section 16.3.8.3:*

Developer is responsible for obtaining a signal modification permit (or signal modification permit revision) for all impacted signals within the Project. Developer will prepare the permit application and submit to GDOT for review. GDOT will review and coordinate with the local governments for final approvals. Developer should allow three (3) months for the local governments to process the permits after receipt from GDOT.

#### 16.3.8.4 *Traffic Signal Support Structures*

*Supplement the following to Section 16.3.8.4:*

Maximum allowable length of mast arms is sixty-five feet (65'). Developer shall coordinate with locals to obtain a variance for locations with mast arm lengths greater than sixty-five feet (65').

Mast arm assemblies with mast arms greater than sixty-five feet (65') shall adhere to the following requirements:

- A Design Variance recommended by the Engineer of Record (EOR) shall be submitted to GDOT for Approval. The EOR shall be a Professional Engineer licensed in the State of Georgia and whose area of expertise includes transportation structures.
- The Local Government shall provide a letter to the Department formally accepting responsibility for liability and maintenance for mast arms included in the Design Variance that fail during service (after Final Acceptance).
- Mast arm signal poles and foundations shall be designed in accordance with *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, 5th Edition, 2009 with Interims.
- Column-to-base-plate or mast-arm-to-flange socket connections shall be fillet-welded socket connections. Fatigue Category I shall be used in determining the Fatigue Importance Factors.
- The EOR shall review and approve the required shop drawings.

All signal heads and street signs must be attached to mast arm assemblies.

Ensure traffic signal mast arm support structures consist of a tapered pole, tapered traffic signal mast arm, luminaire arm (if required), anchor bolts, and base plate. Ensure cross-section of the

pole support, the traffic signal mast arm, and the luminaire arm are round. Multisided tubes are not acceptable.

Provide structure manufacturer's design calculations and submittal drawings. Ensure the structure is designed in conformance with AASHTO standard specifications, 1994 edition, incorporating a wind velocity of 80 mph with a 1.3 gust factor, and includes mast arm, pole, base plate, and anchor bolt analysis. Increase tube drag coefficients to include the effects of fluted shapes. Ensure maximum loads and stresses are determined for the most critical wind direction. Analyze the pole in its final deflected position per Section 1.3.3(A)(2), at the arm to pole connection(s) and at the pole base. Also, at the mast arm connections, the pole is considered to be compact when the diameter/thickness ratio (D/t) does not exceed 52 for ASTM A595 Grade A, or ASTM A572 Grade 55 tubes. Provide maximum arm and pole loads, stresses and combined stress ratios (CSR) for the specified loading combinations, as well as maximum top of pole dead load rotation. Limit dead load stresses at welded connections to 20 kilopounds per square inch (ksi).

Form the round poles from tubes conforming to ASTM A595 Grade A or ASTM A572 Grade 55, with minimum yield strength of 55 ksi, and have a constant linear taper of 0.14 in/ft. Ensure the shaft is one piece, and contains no circumferential welded butt splices. Laminated tubes are not permitted. Ensure the pole has a reinforced handhole with cover located approximately one foot (1'-0") from the pole base. Provide a decorative pole top ball cap with each pole, secured in place with set screws. Ensure the pole is hot dip galvanized and finish painted dark green as specified in the contract documents.

Form round mast arms from tubes conforming to ASTM A595 Grade A, or ASTM A572 Grade 55, with a minimum yield strength of 55 ksi, and have a constant linear taper of 0.14 in/ft. Ensure round mast arms up to fifty feet (50') in length are manufactured and shipped in one piece. Ensure the round mast arms are a curved style with a five-foot (5') rise or as specified. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide an end decorative ball cap on each arm, secured in place with set screws. Mast arm must be secured to pole using clamp-type connection. Ensure the mast arm is hot dip galvanized and finish painted as specified in the contract documents.

Ensure base plates shall conform to ASTM A36. Integrally weld plates to the tubes with a telescopic welded joint and ensure plates are hot dip galvanized and powder coated as specified in the finish specifications.

Ensure anchor bolts conform to the requirements of ASTM F1554 Grade 55. Ensure the upper twelve inches (12") of the bolts is hot dip galvanized per ASTM A153. Supply each anchor bolt with two (2) hex nuts and two (2) flat washers. Ensure the strength of the nuts is equal to or exceeds the proof load of the bolts.

Provide a "Renaissance" style AC1, or comparable, cast aluminum decorative base for each pole. The base shall be the clamshell type. Ensure the base halves are split equally and fitted to provide a maximum seam width of 0.06 inches. Ensure the base halves are factory assembled

before shipment by means of internal lugs cast into the base and secured with stainless steel hardware.

#### Galvanizing:

- **Surface Preparation Directions:** Ensure prior to being incorporated into an assembled product, steel plates three-quarters inch (0.75”) or more in thickness are blast cleaned when required to remove rolled-in mill scale, impurities and nonmetallic foreign materials. After assembly, mechanically remove all weld flux. Degrease by immersion the iron or steel product in an agitated 4.5%-6% concentrated caustic solution elevated to a temperature ranging from 150 to 190 degrees Fahrenheit. Pickle by immersion in a heated sulfuric acid solution of 6%-13% concentration, with a controlled temperature between 150-190 degrees Fahrenheit. Rinse clean from any residual effects of the caustic or acid solutions by immersion in a circulating fresh water bath. Ensure final preparation is accomplished by immersion in a concentrated zinc ammonium chloride flux solution heated to 130 degrees Fahrenheit. Maintain the solution’s acidity content between 4.5-5.0 pH. Air dry the assembly to remove any moisture remaining in the flux coat and/or trapped within the product.
- **Zinc Coating Directions:** Ensure the product is hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A153 (hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810-850 degrees Fahrenheit. Ensure the entire product is totally immersed with no part of it protruding out of the zinc bath. This is to limit the risk of trapped contaminants containing chlorides and reduce the risk of bare spots (bare spots can occur when flux on the steel surface is burned away by heat of the first dip). Do not double dip. Ensure the maximum aluminum content of the bath is 0.01%. Skim flux ash from the bath surface prior to immersion and extraction of the product to assure a debris-free zinc coating.

#### Top Coating:

- **General Requirements:** Ensure the powder coat finish standardly consists of a Urethane or a Triglycidyl Isocyanurate (TGIC) Polyester Powder. Acceptable alternative is a Super Durable Powder is also available which provides a minimum of three (3) times the gloss retention, color retention, and ultraviolet light (UV) resistance compared to the standard powder coatings. The Super Durable Powder is only stocked in Valmont standard colors. Other Super Durable Powder colors may be made available upon factory request.
- **Surface Preparation Directions:** Ensure the exterior steel surface is blast cleaned to Steel Structures Painting Council Surface Preparation Specification No. 7 (SSPC-SP7) requirements utilizing cast steel abrasives. Prior to the powder application, preheat the zinc-coated substrate to a maximum temperature of 450 degrees Fahrenheit for a minimum of one (1) hour. Ensure all exterior surfaces are cleaned and coated with a Urethane or TGIC Polyester Powder or a Super Durable Powder (when required) to a minimum dry film thickness (DFT) of 2.0 mils (0.002”). Apply the powder coating electrostatically and then cure in a gas fired convection oven at a temperature range of 350-400 degrees Fahrenheit. Ensure the thermosetting powder resin provides both

intercoat as well as substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Quality Control: Ensure the powder coating facilities, and the galvanizing facilities, are owned and operated by the pole manufacturer. Ensure both facilities are located at the same manufacturing plant to ensure a quality coating system.

Packaging: Prior to shipment, wrap small poles in 3/32"-thick laminated scrim foam. Cradle larger poles in a one-inch (1.0") rubberized foam base.

## **16.4 Construction Requirements**

### **16.4.1 Permanent Signing and Delineation**

*No additional requirements.*

### **16.4.2 Permanent Pavement Marking**

*No additional requirements.*

### **16.4.3 Permanent Signalization**

*Supplement the following to Section 16.4.3:*

Existing signal heads, signal cabinets, and other signal-related equipment that is impacted are to be taken down and returned to their respective owners, e.g. City of Sandy Springs, City of Dunwoody, or GDOT. Prepare a list of equipment, location and respective owner for GDOT approval. Provide a minimum of seventy-two (72) hours' advance notice.

## **16.5 Deliverables**

*No additional requirements.*

### **16.5.1 Permanent Signing and Delineation**

*No additional requirements.*

### **16.5.2 Permanent Pavement Marking**

*No additional requirements.*

### **16.5.3 Permanent Signalization**

*No additional requirements.*

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## **17 INTELLIGENT TRANSPORTATION SYSTEMS**

### **17.1 General Description**

This section addresses the requirements for the GDOT Intelligent Transportation System (ITS) including requirements for traffic surveillance, detection, traveler information dissemination, communication, and maintenance during construction.

The improvements, infrastructure, and responsibilities for ITS are described below.

#### **17.1.1 ITS**

This work includes, but is not limited to, ITS, communication network, power, structures, and other required elements within the ROW required to accommodate the Project. The ITS includes, but is not limited to, Changeable Message Signs (CMS); Microwave Detection Systems (MDS); Closed Circuit Television (CCTV); Pan Tilt Zoom (PTZ) cameras; Variable Speed Limit Signs (VSLs); Communication Hub Buildings; heating, ventilating, and air conditioning (HVAC) systems; and the communication network including duct bank and the fiber backbone.

#### **17.1.2 Reserved**

#### **17.1.3 Transportation Management Center (TMC) Improvements**

Transportation Management Center (TMC) Improvements shall be managed by GDOT and implemented by the TMC System Integrator (SI) (TMC SI), also referred to as the NaviGator ITS Contractor. The TMC Improvements include, but are not limited to NaviGator system and software modifications, integration services, and other related improvements as necessary to connect, communicate with, and operate ITS.

Developer is responsible for ensuring that all software it incorporates for any aspect of the Project is compatible with software used by GDOT as provided in the Technical Provisions. Prior to using any software or version of software not in use by GDOT, Developer must obtain written acceptance from GDOT. In addition, Developer shall provide to GDOT, at Developer's cost, any software, licenses, and training necessary to ensure that GDOT is able to implement compatible usage of all software utilized by Developer. "Compatible" shall mean that Developer-provided electronic file(s) may be loaded or imported and manipulated by GDOT using its software with no modifications, preparation, or adjustments. All electronic information submitted to GDOT shall be in native format or, if not available, legible.

Developer is responsible for ensuring that the civil infrastructure is in place, in accordance with established milestone dates, and for coordination of work as required to allow for the TMC SI to complete its software development, installation, and integration responsibilities with Developer-installed devices.

#### **17.1.4 Reserved**

### **17.2 Design and Construction Requirements**



The ITS Layout included in the RIDs identifies potential ITS infrastructure locations to be removed or relocated and preferred locations for new ITS infrastructure.

Developer is responsible for determining the number and specific locations of all ITS components to meet the requirements as outlined in the *GDOT ITS Strategic Deployment Plan* (SDP) for the Level I of ITS deployment and the *ITS Design Manual* for design requirements. Developer has flexibility to offer alternatives for GDOT to consider; however, the locations identified on the ITS Layout shall be the minimum amount of devices and infrastructure to meet the traffic management needs of the Project.

Developer shall prepare a preliminary and final ITS Plan including network communication schematic diagrams and specification for review and acceptance by GDOT to ensure adequate planning of the ITS implementation and components' consistency and compatibilities with adjacent GDOT System Infrastructure. The plan, at a minimum, shall provide horizontal and vertical plan location, proposed equipment, proposed structures, and types of materials for the entire ITS System Infrastructure. Developer shall follow the *GDOT Navigator ITS Design Manual* for ITS design.

Developer shall conduct all work necessary to design, procure, furnish, install, integrate (as defined in this section and associated specifications), and maintain ITS infrastructure on the Project, including but not limited to: electrical power, fiber optic communications, ITS cabinets, maintenance access, junction boxes, and conduits, all in accordance with GDOT standards and specifications and Special Provisions contained herein. Each ITS device, regardless of its purpose, provided by Developer, shall support, at a minimum, National Transportation Communications for ITS Protocol (NTCIP)-compliant interface protocols so that integration of each device/controller with NaviGator is more efficiently supported.

Developer is responsible for surveying and locating the existing GDOT's and local agencies' ITS equipment, including but not limited to: all fiber trunk lines, conduit and duct banks, Communication Hubs, drop fiber and electrical lines, as well as ITS devices. Developer shall coordinate with and provide assistance to GDOT or affected local agency as requested regarding GDOT's (or local agency's) performance of preventative maintenance, responding to problem notifications, making repairs or upgrades, and repairing ITS devices or communications damaged during construction.

If the Project impacts a Continuous Count Station (CCS) that collects traffic data for GDOT, Developer shall notify GDOT at 404-347-0701 two weeks prior to beginning of construction activities. GDOT will coordinate with the owner of the equipment, who will be responsible for salvaging for future use.

### **17.2.1 Closed Circuit Television (CCTV) Subsystem**

#### **17.2.1.1 *CCTV General Requirements***

- CCTV shall be designed in accordance with the *ITS Design Manual*;
- CCTV shall be furnished, installed, integrated, and tested in accordance with the following *GDOT Standard Specifications* and Special Provisions:

- Section 682 – Electrical Wire, Cable, and Conduit;
- Section 935 – Fiber Optic System;
- Section 936 – Closed Circuit Television (CCTV);
- Section 939 – Communication and Electrical Equipment; and
- Section 940 – NaviGator Advanced Transportation Management System Integration.

#### 17.2.1.2 *CCTV Applications*

ITS CCTV cameras are used to monitor real-time traffic conditions along the roadway and provide real-time information to support:

- Incident verification and management;
- Highway Emergency Response Operator (HERO) dispatching; and
- Traffic surveillance and traffic control, including any traffic signals, and ramp meter management.

Additionally, dedicated ITS CCTV cameras are used to monitor GDOT CMS, i.e., to verify overhead CMS messages and to monitor CMS light-emitting diode (LED) performance to support maintenance management.

#### 17.2.1.3 *CCTV Design Requirements*

CCTV cameras shall be Type B CCTV Systems with external Type B Video Encoders (in cabinet) as specified in Special Provision Section 936 - Closed Circuit Television (CCTV).

The ITS CCTV system shall be designed to provide overlapping, continuous coverage between adjacent cameras of the Project.

ITS CCTV shall be installed at locations acceptable to GDOT, to provide overlapping and continuous coverage that eliminates blind spots and gaps. Early in the preliminary design schedule, Developer shall submit for GDOT review the respective evidences that the CCTV design provides coverage as described above. The evidence shall be field video or a 3-dimensional (3D) view of the Project as viewed from Developer's proposed camera mounting heights above the roadway. The evidence shall cover the entire Project Limits and include all possible sight obstructions, including, but not limited to vegetation, existing signs, proposed signs, relocated signs, bridges and overpasses, and vertical and horizontal alignments.

CCTV poles shall be of sufficient height to mount all GDOT CCTV cameras at nominally fifty feet (50') above the roadway surface. CCTV cameras and MDS units may be mounted on the same poles. The joint-use poles shall be designed to meet the CCTV camera's mounting height of fifty feet (50') above the roadway. Cameras shall not be mounted in excess of fifty-four feet (54') above the base of the pole or the area where a bucket truck can park for maintenance of the camera. At no time shall the distance between the bucket truck parking location and the camera require a bucket truck arm length of greater than seventy feet (70'). If CCTV cameras are connected to overhead sign trusses, the maximum fifteen-foot (15') tubular extension shall be

connected to the sign structure upright and not to any truss portion of the structure. Tubular extensions shall meet the minimum vibration requirements described herein.

Any pole or upright with a CCTV camera mounted to it shall be designed to be rigid with minimum vibration due to wind. Total deflection at the CCTV camera mounting height shall meet the requirements set for strain poles for ATMS applications per GDOT Standard Specifications Section 639 - Strain Poles for Overhead Sign and Signal Assemblies. Developer shall include deflection design calculations in the required structure design submittals.

#### 17.2.1.4 *CCTV Detailed Technical Requirements / Specifications*

GDOT CCTV technical requirements including submittals, materials, construction, and testing are described in Special Provision Section 936 – Closed Circuit Television (CCTV). CCTV integration is described in Section 940 – NaviGator Advanced Transportation Management System Integration.

All GDOT CCTV cameras shall be PTZ pressurized dome cameras meeting requirements described in Special Provision Section 936 – Closed Circuit Television (CCTV).

#### 17.2.1.5 *CCTV Implementation Requirements*

For CCTV subsystems that are replacements for removed/relocated CCTV, Developer shall furnish, install, integrate, test, and make available for GDOT's use prior to deactivation and removal of the existing CCTV. All replacement CCTV equipment shall be new. No relocation of existing equipment is permitted as a part of this Project. Replaced and removed devices shall be provided to GDOT.

Consistent with the Approved Traffic Management Plan, Developer shall coordinate return of salvageable equipment with GDOT State ITS Engineer.

All salvaged equipment should be placed on pallets, containing a list of materials with the description of each item, their condition, and equipment serial numbers. Developer shall deliver salvaged equipment to the Traffic Signal Electrical Facility (TSEF) located at 935 East Confederate Avenue SE, Building 5, Atlanta, GA 30316-2531.

Camera system assemblies shall be installed on new concrete strain poles unless installed on existing or other sign structures.

Developer shall include milestones for replacement CCTV and new traffic monitoring CCTV installation in the Critical Path Method (CPM) Schedule.

Developer shall prepare and implement a CCTV integration plan for GDOT's approval. The integration plan shall meet the requirements of *GDOT Standard Specifications* Section 940 – NaviGator Advanced Transportation Management System Integration.

Regardless of the line of sight verification during design, Developer shall be responsible for constructing GDOT CCTV camera systems meeting their respective coverage requirements. If

after completion of all CCTV, roadway lanes and structures, signs, CMS, etc., GDOT discovers any roadway segment not meeting the coverage requirements, Developer shall modify the CCTV placement, as necessary, to meet the coverage requirements. The modification could include but is not limited to raising or lowering camera mounting heights, additional CCTV installations, or other solutions presented by Developer and approved by GDOT. No additional payment will be made to Developer for meeting the CCTV coverage requirements.

## **17.2.2 Detection Systems**

### **17.2.2.1 *Detection System General Requirements***

Vehicle Detection Systems (VDS) to be installed for this project shall be MDS. Existing VDS impacted by the project shall be replaced with new MDS. All MDS shall be able to collect volume, speed, and lane occupancy data and transmit that data to GDOT TMC except as modified herein:

- MDS shall be designed in accordance with *ITS Design Manual*;
- MDS shall be located in general conformance with the ITS Layout included in the RIDs;
- MDS shall be furnished, installed, integrated, and tested in accordance with the following *GDOT Standard Specifications*:
  - Section 937 – Detection System;
  - Section 682 – Electrical Wire, Cable, and Conduit;
  - Section 935 – Fiber Optic System;
  - Section 939 – Communication and Electronic Equipment; and
  - Section 940 – NaviGator Advanced Transportation Management System Integration.

All MDS shall be high-definition (HD) microwave vehicle detectors.

### **17.2.2.2 *Detection System Applications***

The Project includes MDS applications as described below:

- MDS: MDS data output are used by GDOT to support travel time calculations and to support incident detection and verification algorithms. Travel time messages are posted to overhead CMSs based on data collected from the MDS.

### **17.2.2.3 *Detection System Design Requirements***

MDS and MDS poles, detector mounting heights, setbacks, power, communication cabling, surge suppression, and cabinets shall be designed to meet the manufacturers' specifications in addition to *GDOT Standard Specifications* Section 937 – Detection System. Developer shall include evidence of coordination with the MDS manufacturer(s) with the preliminary plans Submittal.

### **17.2.2.4 *Detection System Technical Requirements / Specifications***

MDS technical requirements are described in Section 937 – Detection System.

#### 17.2.2.5 *Detection System Implementation Requirements*

Developer shall furnish, install, integrate, and test a complete MDS implementation meeting *GDOT Standard Specifications* and Special Provisions. Developer shall provide all necessary configurations of the MDS in accordance with GDOT requirements and manufacturer requirements. All GDOT MDS shall be the latest hardware, software and firmware provided by the manufacturer. The MDS shall be compatible with GDOT operating systems at the time of installation.

For GDOT MDS subsystems, Developer shall furnish, install, integrate, test, and make available for GDOT's testing and verification, and resolve any installation and configuration issues prior to Final Acceptance. All MDS equipment shall be new. No relocation of existing equipment is permitted as a part of this Project. Developer shall prepare and implement MDS testing plan for GDOT's approval. The testing plan shall meet the requirements of *GDOT Standard Specifications* Section 937 – Detection System.

ITS MDS shall be fully integrated and tested by Developer. The testing and integration plans for MDS shall include test procedures to verify the MDS meet GDOT requirements.

### 17.2.3 Changeable Message Sign Subsystems

#### 17.2.3.1 *General Changeable Message Sign Requirements*

All CMS design shall meet the following requirements:

- CMS shall be designed in accordance with the latest *ITS Design Manual*;
- CMS shall be located in general conformance with the ITS Layout included in the RIDs;
- CMS shall be furnished, installed, integrated, and tested in accordance with the following *GDOT Standard Specifications* and Special Provisions:
  - Section 631 – Permanent Changeable Message Signs,
  - Section 682 – Electrical Wire, Cable, and Conduit;
  - Section 797 – Hub Building;
  - Section 939 – Communication and Electronic Equipment; and
  - Section 940 – NaviGator Advanced Transportation Management System Integration.

#### 17.2.3.2 *CMS Applications*

Walk-in, overhead CMS are used to provide travelers with information on travel times, traffic incidents, road conditions, weather conditions, and vehicle alerts such as Amber Alerts. CMS will be controlled from the GDOT TMC.

#### 17.2.3.3 *CMS Design Requirements*

General: All CMS shall be full-color, full matrix LED displays. All CMS, along with associated controllers and software, shall be capable of displaying both text and MUTCD and GDOT-approved graphical images and shapes. Full-color CMS shall display, at a minimum, the colors prescribed in the MUTCD, section 1A.12. CMS that are required to show graphics or display twelve-inch (12") or smaller font sizes shall have a pixel pitch of twenty (20) millimeters (mm).

Each CMS will require a new structure to be designed and constructed by Developer.

Overhead CMS: Overhead CMS shall be provided with walk-in housing and be capable of displaying three (3) lines of eighteen-inch (18") characters with twenty-one (21) characters per line. The center of each overhead CMS shall be aligned over the middle of the lanes under the CMS.

#### 17.2.3.4 *CMS Technical Requirements / Specifications*

GDOT CMS technical requirements are described in GDOT Special Provision Section 631 – Permanent Changeable Message Signs.

#### 17.2.3.5 *CMS Implementation Requirements*

For CMS that are replacements for removed existing CMS, Developer shall furnish, install, integrate, and test prior to deactivation and removal of the existing CMS. All replacement CMS equipment shall be new. No relocation of existing equipment is permitted as a part of this Project. Consistent with the Approved Traffic Management Plan, Developer shall coordinate return of salvageable equipment with GDOT State ITS Engineer.

All salvaged equipment should be placed on pallets containing a list of materials with the description of each item, its condition, and equipment serial numbers. Developer shall deliver salvaged equipment to the Traffic Signal Electrical Facility (TSEF) located at 935 East Confederate Avenue SE, Building 5, Atlanta, GA 30316-2531.

No CMS installation shall be allowed prior to the availability of power. Each CMS shall be fully functional under local control within seventy-two (72) hours of sign mounting. Integration and testing shall be completed as scheduled according to the approved CMS Integration Plan and CMS Testing Plan.

Developer shall prepare and implement a CMS Integration Plan for GDOT's approval. The CMS Integration Plan shall meet the requirements of *GDOT Standard Specifications* Section 940 – NaviGator Advanced Transportation Management System Integration.

Developer shall prepare and implement a CMS Testing Plan for GDOT's approval, which shall meet the requirements of GDOT Special Provision Section 631 – Permanent Changeable Message Signs.

### 17.2.4 Variable Speed Limit Sign Systems

#### 17.2.4.1 *VSL System General Requirements*

Existing Variable Speed Limit Sign (VSLS) systems impacted by the project shall be replaced with new systems. VSLS shall be designed according to Attachment 17-2 – Variable Speed Limit Sign System and meet the following requirements:

- VSLS shall be designed in accordance with *ITS Design Manual*;
- VSLS shall be located in general conformance with the ITS Layout included in the RIDs;
- VSLS shall meet the requirements of the following *GDOT Standard Specifications*:
  - Section 682 – Electrical Wire, Cable, and Conduit;
  - Section 935 – Fiber System;
  - Section 939 – Communication and Electronic Equipment; and
  - Section 940 – NaviGator Advanced Transportation Management System Integration.

#### 17.2.4.2 *VSLS System Applications*

The Project includes VSLS applications, as described below:

- VSLS: VSLS are used by GDOT to manage traffic flow.

#### 17.2.4.3 *VSLS System Design Requirements*

VSLS and VSLS support structures, mounting heights, spacing, power, communication cabling, surge suppression, and cabinets shall be designed to meet the manufacturers' specifications in addition to Attachment 17-2 – Variable Speed Limit Sign System.

#### 17.2.4.4 *VSLS System Technical Requirements / Specifications*

VSLS technical requirements are described in Attachment 17-2 – Variable Speed Limit Sign System.

#### 17.2.4.5 *VSLS System Implementation Requirements*

Developer shall furnish, install, integrate, and test a complete VSLS implementation that meets *GDOT Standard Specifications* and Special Provisions. Developer shall provide all necessary configurations of the VSLS in accordance with GDOT requirements and manufacturer requirements. All GDOT VSLS shall be the latest hardware, software, and firmware provided by the manufacturer. The VSLS shall be compatible with GDOT operating systems at the time of installation.

For GDOT VSLS subsystems, Developer shall furnish, install, integrate, test, and make available for GDOT's testing and verification, and resolve any installation and configuration issues prior to Final Acceptance. All VSLS equipment shall be new. No relocation of existing equipment is permitted as a part of this Project. Developer shall prepare and implement a VSLS Testing Plan for GDOT's approval. The plan shall meet the requirements of Attachment 17-2 – Variable Speed Limit Sign System.

VSLS shall be fully integrated and tested by Developer. The testing and integration plans for VSLS shall include test procedures to verify the VSLS meet GDOT requirements.

**17.2.5 Communications Network**

Developer shall design, furnish, install, integrate, and test the communication network for the ITS.

Table 17-1 below lists the existing Hub building(s) that may be impacted by the Project. Developer shall construct the proposed replacement Hub building(s) in a location acceptable to GDOT. Hub buildings shall meet the requirements of Special Provision Section 797 – Hub Buildings (Attachment 17-3) and the Project specifications.

Table 17-1 Existing Hub Buildings

HUB	Owner/Occupant	Existing Location	Status
HUB B	GDOT	I-285 @ Roswell Rd	Existing

**17.2.5.1 Communication / Network General Requirements**

Developer shall design, furnish, install, integrate, and test the fiber optic backbone and laterals for the ITS as shown on the ITS Network Diagram (Attachment 17-1), as provided in Volume 2, and as follows. The backbone shall be single-mode fiber optic cable. The long haul and distribution networks shall be Internet Protocol (IP) over Ethernet. Communication drops to local ITS cabinets shall also be single-mode fiber optic cable and IP over Ethernet. Communication between the ITS cabinets and the local devices attached to the cabinet shall be designed, furnished, and installed by Developer based on the requirements of the device or devices.

Developer shall verify that all existing ducts anticipated to be used by Developer are open, with no blockages, water, or breaks. Damaged conduits shall be replaced or new duct banks installed around the blockage at no additional cost to GDOT.

Developer shall not install a duct bank under any paved surface except when crossing ramps or other travel lanes, unless otherwise specified. In instances where areas preserved for managed lanes (see Attachment 11-7) conflict with the proposed installation of ITS duct bank conduit, Developer may install ITS conduit duct banks under the paved shoulder subject to GDOT review and approval. New conduit duct banks shall be installed approximately ten (10) feet inside the ROW where feasible. Where vegetation or other obstructions hinder installation of the duct banks approximately ten (10) feet from the ROW line, Developer may modify the duct banks' location for GDOT review and approval.



Developer shall design all required conduit and cable crossings of travel lanes to connect to the ITS that are to be placed in the median. GDOT will not provide any additional compensation for conduit and cable crossings.

#### 17.2.5.2 *Communication Network Design Requirements*

The communication infrastructure and network shall be designed in accordance with the GDOT NaviGator *ITS Design Manual*.

Developer shall conduct a communication network design kick-off meeting with GDOT prior to beginning design efforts. Developer shall utilize the kick-off meeting to confirm GDOT communication network requirements.

When conduit or duct banks are installed under roadways or shoulders for lateral crossings, the conduit and duct banks shall be installed by directional boring as shown in ITS detail drawings.

No fiber optic, other data communication, or composite cable shall be installed in the same conduit as an electrical power service cable.

The communication network for the ITS shall be designed to be end-to-end: from the field device to the NaviGator TMC including the ITS cabinets and existing Communication Hub Buildings.

Design considerations shall include: cabinet dimensions, communication shelf slots, network bandwidth capacity, conduit capacity, backbone fiber availability, and electrical circuit capacity.

The fiber optic backbone shall be designed as shown on the ITS Network Diagram (Attachment 17-1). All ITS data shall be aggregated to one (1) gigabit (Gb/s) backbone network at designated Communication Hub buildings at locations shown on the ITS Layout included in the RIDs and within existing Communication Hub Buildings.

All fibers installed under the Project shall be terminated at Communication Hubs or termination points as designated for the GDOT networks. This shall include terminating each fiber to a rack-mounted fiber distribution center. Developer shall provide patch cords for each connection between fibers at a termination fiber distribution center.

Developer shall determine the link loss budget analysis for all fiber optic links.

Developer shall design a backbone communication system with fiber optic cables installed along the Project area. Lateral drop cabling shall be used to reach GDOT.

General design criteria elements for ITS networks are as follows:

- Provide an IP Ethernet-based system with a fully redundant architecture, allowing automatic, self-healing, and cutover of data flow to a secondary path or segment in the case of a primary equipment failure or fiber break. The ITS communication system backbone shall be rated for a gigabit (Gbps) transfer rate, minimum. ITS field switches

shall be rated for a one gigabit (1Gbps) uplink transfer rate, minimum. Downlink ports at the field switches shall be 10/100BaseT.

- Provide Network Switch, Layer 3 Gig-E to connect the local ITS system to the GDOT wide area network (WAN) at the existing and proposed Communication Hub location(s). The Layer 3 network switch shall be designed with adequate 1Gbps and 10/100BaseT ports to support the network architecture and design.
- Provide field network switch, Layer 2 10/100BaseT in each ITS cabinet to support connectivity of the ITS devices connected to the cabinet. Each Layer 2 switch will be designed with adequate ports to support communication with all devices connected to the cabinet. A minimum of four (4) spare ports shall be provided.
- Each field network switch shall provide a primary and secondary fiber path from the field cabinet to the Communication Hub.
- The fiber layout for GDOT ITS shall provide a daisy-chain. The daisy-chain shall be confirmed with GDOT during the preliminary design. The maximum number of Layer 2 field network switches forming a network path between an end device (ITS) and a Communication Hub-based data aggregating Layer 3 network switch shall not exceed eight (8). The calculated data throughput assigned to any subnetwork path shall not exceed one-third of the path's throughput capacity.
- New devices and existing devices shall not be assigned within the same network path or otherwise daisy-chained to avoid possible inconsistencies in communication protocols.
- Unless specified in the ITS Network Diagram (Attachment 17-1), Developer shall determine the quantity of fibers required for the backbone communication system and local connectivity. Developer shall provide all calculations required to support the design determination and include capacity for 100 percent (100%) system expansion. Developer shall provide 100 percent (100%) spare fibers that shall be continuous along any section of the Project and continuous from end to end of the Project. The number of fibers shall be rounded up to the next largest standard fiber cable size; e.g., if the calculation determines that forty (40) fibers are needed, eighty (80) shall be provided rounded up to ninety-six (96), which is the nearest standard cable size.
- All drop fiber shall be twelve- (12) fiber single-mode cables.
- The new Communication Hub Building shall be designed to meet all GDOT design guidance and construction specifications. The Communication Hub Building (including but not limited to the building, foundation, conduit cutouts and entrances, air conditioning systems, fencing, grounding, paving, vertical and overhead cable runways and trays, electrical service, electrical conductors, and electrical pull boxes) will be designed to meet all the requirements shown on ITS Detail ITS-13 Hub Details, *GDOT Standard Specifications* Section 939 – Communication and Electronic Equipment, and Special Provision (SP) 797– Hub Buildings (Attachment 17-3).
- The exterior dimensions of the Hub Buildings shall be twenty-four by sixteen feet (24' x 16'). The interior building height shall be nine-foot, six-inch (9'-6") measured from the finished floor to the finished ceiling.
- Developer shall populate the Hub Building floor with four-post equipment racks that meet the following requirement:
  - Removable doors and sides;
  - Lockable and reversible front and rear doors;

- Forty-two (42U) height minimum; and
- Thirty-nine inch (39") overall depth minimum.
- The Hub Buildings shall be designed so that the air conditioning units are installed on the roof of the Hub Building.
- The layout of the Communication Hub Buildings shall be designed for the equipment racks to be installed on the long dimension of the Communication Hub Building. Developer should consult GDOT prior to assigning racks for fiber distribution centers (FDC) and equipment.
- The design will ensure that one (1) row of equipment racks can be installed, powered, and cabled. The Communication Hub Building will be designed to enclose an equipment rack, electrical and fiber cable management, and a service technician work table and two (2) chairs.
- The Communication Hub Building shall be designed to include lightning protection, grounding to five (5) ohms or less, and surge suppression.
- The Hub Building shall be enclosed by fencing that meets the requirements of *ITS Design Manual* and *GDOT Standard Specifications*.

### 17.2.5.3 *Communication Network Implementation Requirements*

The communication network shall be furnished, installed, integrated, and tested in accordance with the *GDOT Standard Specifications* and Special Provisions.

All fiber optics used in this Project shall be outside plant (OSP) single-mode fiber. Developer shall provide fiber optic cables for trunk lines and drop lines, FDCs, patch panels, splice enclosures, and fiber optic cable splices, as required, to connect each ITS equipment cabinet, each Communication Hub Building, and ITS elements to the backbone communication system.

Either field terminated or pre-terminated drop cable assemblies shall be used for all drop fibers from the fiber optic trunk line to the ITS cabinet or device.

Underground splice enclosures shall be furnished and installed at all trunk line splices and at all locations where drop fibers are installed.

Rack mounted FDC shall be furnished and installed in all field cabinets and Hub Buildings. FDCs shall be fitted with LC-Connectors. No pre-terminated FDC is allowed.

Developer shall furnish and install all equipment, cabinets, cabling, and electronic devices needed to connect the backbone fiber to the Layer 2 and Layer 3 Ethernet switches, and to connect all ITS devices to the Layer 2 switch in the local ITS cabinet.

## 17.2.6 ITS Electrical Service (Power) Requirements

### 17.2.6.1 *ITS Electrical General Requirements*

Developer shall coordinate with the electrical power companies and provide electrical power for all ITS included in the Project. Developer shall pay all costs for providing electrical power

service. In addition, Developer shall pay all electric service recurring costs for the ITS until Substantial Completion.

### 17.2.6.2 *Electrical Design Requirements*

#### 17.2.6.2.1 *General Electrical Design Requirements*

Developer shall ensure electrical power is designed based on the electrical service loads at each location where power is required. Electrical service, wire sizes, transformers, surge suppression, meters, grounding, lightning protection, and uninterruptable power supply (UPS) are all considered part of the electrical power systems.

At locations where electrical power service is provided to GDOT, Developer shall ensure that the electrical power company installs an electrical usage meter, for GDOT equipment.

Developer shall design electrical loads for all ITS cabinets, Hub Buildings, and ITS Devices. Developer shall provide electrical power calculations to GDOT for review and approval during the design. Power calculations shall include power loading, transformers, and conductor sizes based on National Electrical Code (NEC) standards. In no case shall electrical service provided at a location be less than 120 volt, 20 amps alternating current (AC). Electrical load at each ITS shall be based on a factor of two (2) times the calculated load based on the equipment being provided for that cabinet to allow for future expansion and use of maintenance tools.

In addition to other requirements referenced herein, electric pull boxes shall be spaced not more than five hundred feet (500') apart. No fiber optic or other data communication or composite cable shall be installed in the same conduit as an electrical power service cable.

Developer shall install mechanical theft deterrent devices in all Project electrical conduits and electrical pull boxes to prevent the removal of electrical wiring and to prevent unauthorized access. The theft deterrent devices typically consist of a rubber stopper mechanical device that compresses against the electrical wiring and prevents the wires from being easily pulled through the conduits. Developer shall also install electrical pull box lids that contain locking mechanisms that work with the use of cams to prevent unauthorized access.

Voltage design drop calculations shall comply with the suggested limits defined in NEC Article 210.19 (A) (1) Informational Note #4 and NEC Article 215.2 (A)(1)(b) Informational Note #2. These calculations shall define all service points, circuits emanating from those points, details of all loads on all circuits, the nominal voltage on each circuit, the voltage drop for each link of each circuit, the percent voltage drop for each circuit, and the wire size selected for each link of each circuit. These calculations shall include sizing and ratings of all circuit breakers, transformers, fused switches, and transfer switches planned for installation. These calculations shall be submitted with the preliminary and final design Submittal and with each subsequent Submittal with all data appropriately updated. An allowance of 9.0 amps shall be included at the end of the circuit for a convenience outlet. Where Transformers are used, they shall be provided with  $\pm 2.5\%$  and  $\pm 5\%$  voltage taps. These taps shall not be used to fulfill the voltage drop and wire-size requirements of these minimum technical requirements.

Where circuits run both north and south from a power service point, separate circuits, each with its individual circuit breaker, shall be provided. A main disconnect circuit breaker shall be provided at each power service point.

#### *17.2.6.2.2 Lightning Protection Design Requirements*

All CCTV, CMS, and MDS poles and structures (including sign structures with ITS) shall be designed to include lightning protection systems per the requirements of Attachment 17-4 – Surge Protection Systems and Devices and as described herein. The top of the lightning rod shall be at least two feet (2') above the highest point or top of any and all ITS devices attached near the top of the pole or shall be mounted within a sixty- (60) degree cone of protection measured from the top of the lightning rod, whichever provides more protection for the ITS device.

Each ITS cabinet, ITS pole, and Hub Building shall have an exterior earth-ground ring consisting of a system of ground rods connected to a ring of a #2 AWG, stranded bare copper ground wire. For ITS cabinets and ITS poles, the earth ring shall consist of a minimum of two (2) ground rods. For Hub Buildings, the earth ring shall consist of a minimum of four (4) ground rods. Ground rods shall be placed at least forty feet (40') from adjacent ground rods. When ground rod adjacent installations are within one hundred feet (100') of one another, the rings shall be connected with #2 AWG stranded bare copper ground wire. Each site shall include lightning protection, which shall also be connected to the site's earth-ground ring. The ground system shall be measured and documented with a resistance of five (5) ohms or less.

When new ITS devices are placed on an existing structure, the structure's lightning protection system shall be updated by Developer to the lightning protection requirements for new structures.

#### *17.2.6.2.3 Grounding Design Requirements*

To facilitate testing and periodic retesting of the grounding array at each ITS pole, ITS cabinet, Hub Building, etc., Developer shall design the grounding system so that the top of all grounding rods is installed in an Electrical Service Type 2 Pull Box. The grounding conductor shall be designed to be exothermically connected to the ground rod at an elevation of twelve inches (12") below ground line. All ITS equipment and enclosures located at a Communication Hub site shall conform to the latest adopted NEC for bonding and grounding. Grounding arrays shall be designed to be interconnected for cabinets, poles, lightning systems, etc., that are within forty feet (40') of one another. The actual locations of buried connections and ground rods should be accurately shown in the as-built plans.

When new GDOT devices are placed on an existing structure, the grounding system shall be updated by Developer to current specifications. Grounding shall meet the minimum requirements of NEC.

#### *17.2.6.2.4 Uninterruptable Power Supply (UPS) Design Requirements*

For ITS locations, Developer shall design Uninterruptable Power Supply (UPS) to meet the requirements in the *ITS Design Manual, GDOT Standard Specifications* Section 939 – Communication and Electronic Equipment, and the following:

- UPS shall be designed for all new Hub Buildings to support GDOT equipment; and
- Developer shall designate space within the Hub Buildings for the installation of the GDOT UPS.

#### 17.2.6.3 *Electrical Implementation Requirements*

Developer shall furnish, install, and test the electrical systems as required to meet the power and UPS demand of each Communication Hub location, and ITS Cabinet Location. Developer shall furnish, install, and test the electrical services as required by *GDOT Standard Specifications*, the approved plans, and herein.

At locations where electrical power service is provided to ITS cabinets and devices, Developer shall ensure that the electrical power company installs an electrical usage meter, and shall ensure all voltage being provided to the cabinet is in accordance with Developer’s approved electrical design calculations. Developer shall test the power from the electrical service disconnect, to the transformer, to the meter(s), and into the cabinets.

For the ITS, Developer shall furnish and install all components of the electrical power systems to ensure complete and functioning systems, from equipment cabinets to and including devices. The electrical systems shall be furnished and installed to include all required device power supplies, grounding, lighting protection, and surge suppression. Surge suppression shall be furnished and installed on both ends of any underground electrical cable or composite cable carrying electrical power to any device to protect against surges induced from a lightning strike on the ground.

### **17.3 Testing and Acceptance**

Developer shall submit test plans to GDOT for review and acceptance.

Developer testing of specific ITS technologies, electrical components, communication network and infrastructure, Communication Hubs, and equipment cabinets shall follow the test requirements in the following related sections in the *GDOT Standard Specifications* and Special Provisions:

- Section 631 – Permanent Changeable Message Signs;
- Section 682 – Electrical Wire, Cable, and Conduit (Multi-cell and Continuous Flexible Conduit System);
- Section 797 – Hub Building;
- Section 935 – Fiber-Optic Cable;
- Section 936 – Closed Circuit Television (CCTV);
- Section 937 – Detection System;
- Section 939 – Communication and Electrical Equipment;

- Section 940 – NaviGator Advanced Transportation Management System Integration

ITS, Communication Hub, and Communication Network testing and Final Acceptance processes are to be conducted according to the applicable *GDOT Standard Specifications*, Special Provisions, and as described herein.

### **17.3.1 Reserved**

## **17.4 Warranty**

Developer shall provide all warranties as set forth in the DBF Agreement and specified in the *GDOT Standard Specifications*, Special Provisions, and contained herein. In the event of conflicting warranty periods between the above, the longest warranty period identified shall be provided by Developer. All warranties shall commence upon Final Acceptance. Any additional costs incurred by Developer to meet the warranty requirements shall be the sole responsibility of Developer.

### **17.4.1 Protection of Existing ITS**

Developer shall ensure the existing ITS (both GDOT's and local agencies') are protected from damage.

If necessary, any disruption to the existing ITS shall be planned and coordinated with GDOT (or affected local agency) and shall meet the requirements per the Project Specifications.

### **17.4.2 Existing System Inventory**

Developer shall conduct the field survey and provide a complete inventory of all ITS components and infrastructure within the Project limits within thirty (30) Days of NTP1. The inventory shall include the ownership, components and infrastructure to be removed and replaced, to be removed and relocated, and those to be left in place.

### **17.4.3 ITS Locates**

Developer shall be required to locate the electrical and fiber optic conduits and cables within the construction limits. Developer shall obtain available ITS as-built and location information from GDOT and related local agencies upon NTP2 and shall be fully responsible for locating all existing, temporary, and new ITS infrastructure and facilities until Final Acceptance. Developer shall be responsible for providing ITS locates requested by other consultants, contractors, and/or utility companies within forty-eight (48) hours of receiving requests from GDOT or from any other source from NTP2 to Final Acceptance. Developer shall notify GDOT of the date and location of each Locate Request and the date by which the locate was completed.

Developer shall fully cooperate with all utility owners during the design, survey, and construction activities of the Project. Developer shall call Georgia 811 a minimum of forty-eight (48) hours and a maximum of ninety-six (96) hours before any excavation work.

#### **17.4.4 ITS Preventative Maintenance**

GDOT (and their respective maintenance contractors) and local agencies will continue to provide routine and on-call maintenance for all ITS equipment within the Project area during the contract period. Developer shall cooperate with GDOT or affected local agencies by accommodating access to the site for their maintenance contractor to perform routine or on-call maintenance.

#### **17.4.5 ITS Repair and Replacement**

Throughout the construction period until Final Acceptance, Developer shall notify GDOT or affected local agencies of any damage to the existing ITS field element or infrastructure that is caused by Developer, either due to the negligence or direct action of Developer, as soon as possible. GDOT (or their respective maintenance contractors) or local agencies will repair or replace the damaged ITS field element or infrastructure. Developer shall be responsible for the total repair or replacement cost along with all fines per Volume 1, Exhibit 18.

Developer shall provide GDOT TMC with continuous and uninterrupted CCTV coverage of the entire Project during construction. If any existing ITS element or infrastructure needs to be taken out of service due to construction-related relocation or interruption or as required by the Project specifications, Developer shall provide GDOT or affected local agencies a written notice at least seventy-two (72) hours in advance before taking control of the device(s). Any impacted devices shall be replaced with an equivalent device in new condition or per the Project specifications. All replacement devices are subject to the testing and acceptance requirements specified in the Project specifications.



## 18 TRAFFIC CONTROL

### 18.1 General Requirements

*No additional requirements.*

### 18.2 Administrative Requirements

#### 18.2.1 Transportation Management Plan

*Supplement Section 18.2.1 with the following:*

The Transportation Management Plan (TMP) shall also include, but is not limited to, the following:

- Procedures and performance measures for Developer to assist GDOT and law enforcement in reaching the goal of clearing non-injury incidents, pursuant to O.C.G.A § 40-6-275 and O.C.G.A § 40-6-276, from the construction zone travel lanes within 20 minutes of 1) authorization from law enforcement; or 2) when Developer and/or GDOT becomes aware of the incident;
- Procedures to evaluate reaching a goal of construction period speed band in which 75% of vehicles traveling through the construction zone will be within five (5) miles per hour of the posted construction zone speed;
- Procedures for monitoring impacts during the construction period;
- Provisions for validating baseline speeds prior to construction; and
- Provisions for real-time 24-hour traffic monitoring in the construction zone(s).

### 18.3 Design Requirements

#### 18.3.1 Traffic Control Plans

*Supplement Section 18.3.1 with the following:*

Prior to starting Work north of the North Springs MARTA overpass on SR 400, Developer shall temporarily relocate the existing ingress and egress signing associated with the existing SR 400 flexible lanes hard-running shoulders to northerly of the construction area, subject to GDOT acceptance. Existing signing shall be left in place as long as practical until it interferes with construction.

Existing hospital signs on the Project shall be maintained until conditions require a change in location or legend content. When a change is required, existing hospital signs may be modified and/or continued to be used if the required modification can be made within existing sign borders using design requirements (legend, letter size, spacing, border, etc.) equal to that of the existing signs. Differing legend designs shall not be mixed in the same sign. When an existing hospital sign is in conflict with work to be performed, the Developer shall remove the conflicting sign

and reset it in a new, non-conflicting location which has been approved by the GDOT Project Engineer.

Interim hospital signs: When it is not possible to utilize existing signs, either in place or relocated, Developer shall furnish, erect, maintain, modify, relocate, and remove new interim hospital signs and all necessary temporary wayfinding signage in accordance with the Plans or as directed by the GDOT Project Engineer. Interim hospital signs that may be required in addition to, or a replacement for, existing hospital signs shall be designed and fabricated in compliance with the minimum requirements for these types of signs in the MUTCD.

Permanent hospital signs: The installation of new permanent hospital signs shall be accomplished as soon as practical to minimize the use of interim hospital signs.

All MOT shall be designed for maximum speed allowed on the facility minus reductions per SP 150. For I-285 and SR 400, the maximum speed allowed is 65 mph and the allowable reduction is 10 mph, so the MOT shall be designed for 55 mph on I-285 and SR 400. MOT for I-285 and SR 400 shall be designed for 55 mph for the Project.

Developer shall coordinate with GDOT TMC regarding VSL speed display during construction.

18.3.1.1 **Roadway Guidelines**

*Supplement Section 18.3.1.1 with the following:*

Table 18-1: List of Major and Minor Crossing Streets

CROSSING STREET	MAJOR or MINOR CLASSIFICATION
Roswell Road @ I-285	Major
Glenridge Drive @ I-285	Major
Peachtree Dunwoody Road @ I-285	Major
Perimeter Center Parkway @ I-285	Major
Ashford Dunwoody Road @ I-285	Major
Johnson Ferry Road @ SR400	Major
Glenridge Connector @ SR400	Major
Hammond Drive NE @ SR400	Major
Mount Vernon Highway @ SR400	Major

Abernathy Road NE @ SR400	Major
Spalding Drive @ SR400	Minor
Lake Forest Drive @ I-285	Minor
Long Island Drive NW @ I-285	Minor
Lake Hearn Drive NE	Minor

*18.3.1.1.1 Design Parameters for Traffic Control*

*No additional requirements.*

*18.3.1.1.2 Allowable Shoulder/Lane/Roadway Closures and Traffic Stage Changes*

*Supplement Section 18.3.1.1.2 with the following:*

No lane closures are allowed except as described below.

1. I-285 (all lanes not including ramps and CD lanes).

Special activities are described in Table 18-2. General allowable lane closures described in this Section shall govern if the work activity is not included in Table 18-2.

Table 18-2: Special Activities

<i>Type of Work Activity</i>	<i>Minimum number of lanes in each direction shall remain open</i>	<i>Number of Restrictions per Work Activity</i>
Micro-Mill and Overlay I-285 Mainline	Two (2) travel lanes	N/A
I-285 Mainline Bridge Deck Replacement	Two (2) travel lanes	Three (3) weekends closures* per bridge deck per travel direction
Bridge girder setting over I-285 Mainline EB or WB	Two (2) travel lanes	Two (2) nightly closures per structure per direction or one (1) weekend closure* per structure per direction
Bridge demolition over I-285 or over SR 400	Two (2) travel lanes under the structure	Eight (8) nightly closures per direction or four (4) weekend closures* per direction

<i>Type of Work Activity</i>	<i>Minimum number of lanes in each direction shall remain open</i>	<i>Number of Restrictions per Work Activity</i>
Overhead Cantilever Construction over I-285 Mainline EB or WB	Two (2) travel lanes	One (1) nightly closure per structure per direction

\*Allowable weekend closures for reduced lanes to supplement Table 18-2 shall be Friday night to Monday morning 11:00 p.m. to 5:00 a.m.

General allowable lane closures are as follows:

- Single lane closures will be allowed between the following hours:

Monday through Friday	8:00 p.m. to 6:00 a.m. nightly
Friday Night to Monday Morning	8:00 p.m. to 6:00 a.m.

- Multi-lane closures (i.e., more than one lane on multiple lane roadways provided that a minimum of three (3) adjacent lanes in each direction remain open at all times) will be allowed between the following hours:

Monday through Friday	9:00 p.m. to 5:00 a.m. nightly
Friday Night to Saturday Morning	9:00 p.m. to 9:00 a.m.
Saturday Night to Sunday Morning	9:00 p.m. to 9:00 a.m.
Sunday Night to Monday Morning	8:00 p.m. to 5:00 a.m.

Shoulder closures will be allowed any hour unless otherwise noted as Special Events or Holidays. Inside and outside shoulder closures will not be allowed at the same time.

2. SR 400 (all lanes not including ramps and CD lanes).

A minimum of two (2) adjacent travel lanes in each direction shall remain open to the traveling public at all times.

Single Lane closures will be allowed between the following hours:

Monday through Friday	8:00 p.m. to 6:00 a.m. nightly
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Friday Night to Monday Morning	8:00 p.m. to 6:00 a.m.
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Multi-lane closures (i.e., more than one lane on multiple lane roadways) will be allowed between the following hours:

Monday through Friday	9:00 p.m. to 5:00 a.m. nightly
Friday Night to Saturday Morning	9:00 p.m. to 9:00 a.m.
Saturday Night to Sunday Morning	9:00 p.m. to 9:00 a.m.
Sunday Night to Monday Morning	8:00 p.m. to 5:00 a.m.

Shoulder closures will be allowed any hour unless otherwise noted as Special Events or Holidays. Inside and outside shoulder closures will not be allowed at the same time.

3. All ramps/CD lanes

A minimum of one (1) travel lane shall remain open for all ramps and CD lanes unless otherwise noted in this Section 18. If the travel lane is reduced to one (1) lane, an overall minimum horizontal width for shoulder and lane opening shall be eighteen feet (18').

Major Crossing Street ramp closures are permitted; however, Developer shall provide for access for Emergency Service Providers at all times at the Peachtree Dunwoody and Glenridge Drive ramps. Developer shall not close ramps to and from consecutive interchanges in the same travel direction at the same time. Major Crossing Street ramp closures shall be minimized where possible, and will be allowed between the following hours:

Monday through Friday	9:00 p.m. to 5:00 a.m. nightly
Friday Night through Monday	9:00 p.m. to 5:00 a.m.

Shoulder closures will be allowed any hour unless otherwise noted as Special Events or Holidays. Inside and outside shoulder closures will not be allowed at the same time.

4. All other roadways

Developer shall ensure all streets and intersections remain open to traffic to the greatest extent possible by constructing the Work in stages. Developer shall maintain access to all adjacent streets and shall provide for ingress and egress to public and private properties at all times during the term of the Project.

A minimum of one (1) travel lane in each direction shall remain open unless otherwise noted in this Section 18. If the travel way is reduced to one (1) lane in each direction, an overall minimum horizontal width for shoulder and lane opening shall be twenty-four feet (24'); for one-way roads, the minimum horizontal width for shoulder and lane opening shall be sixteen feet (16').

Short term multi-lane closures and long term closures in each direction shall be submitted for review and acceptance by GDOT.

Developer shall submit detour plans for any complete closures for review and acceptance by GDOT.

Major Crossing Street closures are permitted; however, Developer shall provide for access for Emergency Service Providers at all times at the Peachtree Dunwoody and Glenridge Drive ramps. Adjacent interchange ramps shall not be closed at the same time in order to minimize the distance necessary for any temporary detour. Major Crossing Street closures shall be minimized where possible, and will be allowed between the following hours:

Monday through Friday	9:00 p.m. to 5:00 a.m. nightly
Friday Night through Monday	9:00 p.m. to 5:00 a.m.

Shoulder closures will be allowed any hour unless otherwise noted as Special Events or Holidays. Inside and outside shoulder closures will not be allowed at the same time.

5. Long-term shoulder closures

Long-term shoulder closures will be allowed on one (1) shoulder with GDOT approval in areas where there is an inside and an outside shoulder. The shoulder opposite of the closed shoulder shall have a minimum width of eight feet (8'). Shoulder closure will be allowed for a maximum of one hundred and eighty (180) Days and a maximum distance of one (1) mile. There should be at least one (1) mile between long-term shoulder closures. Long-term shoulder closure is defined as any shoulder closures lasting longer than times allowed in Section 18.3.1.1.2. Long-term shoulder closures are not subject to Special Events and Holiday Restrictions in Section 18.3.1.1.2.6.

6. Special Events and Holidays Restrictions

No lane closures or traffic restrictions are allowed from 12:00 p.m. on Wednesday immediately preceding Thanksgiving Day to 11:00 p.m. on Sunday immediately following Thanksgiving Day. This includes, but is not limited to flagging operations, pace operations, shoulder closures, lane closures, multi-lane closures, ramp closures, or any construction-related activity that may negatively impede or influence traffic.

From the Sunday immediately following Thanksgiving Day to the first Business day after New Year’s Day, lane closures will only be allowed between the following hours:

Monday through Friday	11:00 p.m. to 5:00 a.m. nightly
Saturday	11:00 p.m. to 7:00 a.m.
Sunday	11:00 p.m. to 7:00 a.m.

No lane closures or traffic restrictions are allowed from 12:00 a.m. on Friday to 12:00 a.m. on Sunday over the Georgia “Back to School” Sales Tax Holiday weekend usually held in late July/early August; actual dates are determined by the Georgia State Legislature. This includes, but is not limited to flagging operations, pace operations, shoulder closures, lane closures, multi-lane closures, ramp closures, or any construction-related activity that may negatively impede or influence traffic.

7. Winter Maintenance Requirements

GDOT will be responsible for winter maintenance of snow removal, de-icing operations, or sanding of lanes that are open to traffic within the corridor. Developer shall be responsible for any other winter maintenance required. If snow removal, de-icing, or sanding has occurred when a lane is not open to traffic, the Developer, prior to opening the lane to traffic, shall request GDOT to provide snow removal, de-icing, or sanding.

GDOT is not responsible for damage or disruption to any facilities or construction during winter maintenance operations. This includes but is not limited to temporary ramps, temporary structures, construction related activities or equipment, pavement, traffic devices, etc.

18.3.1.2 *Other TMP Requirements*

*No additional requirements.*

**18.4 Construction Requirements**

*No additional requirements.*

**18.4.1 Developer Responsibility**

*Supplement Section 18.4.1 with the following:*

Milled surfaces cannot remain as driving surfaces after lane closures are removed and lanes are opened to traffic.

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For median construction work adjacent to the interstate where there is a difference in elevation four inches (4") or greater, Developer shall install temporary barrier wall(s) to separate the work zone from the travel lanes at all times until the following conditions have been met:

- Installation of the permanent concrete barrier; or
- The difference in elevation is reduced to two inches (2") or less.

#### **18.4.2 Access**

*No additional requirements.*

#### **18.4.3 Detours**

*No additional requirements.*



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## **19 MAINTENANCE UNTIL FINAL ACCEPTANCE**

### **19.1 General Requirements**

*No additional requirements.*

#### **19.1.1 Reserved**

#### **19.1.2 GDOT Obligation to Repair**

*No additional requirements.*

### **19.2 Construction Maintenance Limits Plans**

*No additional requirements.*

## 20 BICYCLE AND PEDESTRIAN FACILITIES

### 20.1 General Requirements

*Supplement Section 20.1 of Volume 3 with the following:*

Developer shall coordinate the Elements of this Project and shall not preclude existing and planned trails and other facilities of local and county administrations for pedestrians and cyclists as shown in Volume 2, Attachment 20-1, Related Transportation Facilities for Bicycles and Pedestrians.

### 20.2 Design Requirements

*No additional requirements.*

#### 20.2.1 Bicycle Facilities

*Supplement the following to Section 20.2.1:*

Developer shall design and construct an AASHTO- and ADA- compliant shared-use bicycle/pedestrian path in the general location shown in Attachment 20-2. Attachment 20-2 is a conceptual location and may be adjusted by Developer as long as the requirements of this Section 20.2 are met. This path shall provide for an at-grade connection to the sidewalk at Johnson Ferry Road, and also connect with Peachtree Dunwoody Road. The path shall connect with the existing sidewalk network on the west side of Peachtree Dunwoody Road, north of the WB I-285 to NB SR 400 ramp.

Design and construction requirements shall include:

- Minimum twelve-foot (12') width plus two-foot (2') graded shoulders clear zone on either side
- Minimum ten-foot (10') vertical clearance under roadways and 17'-0" over roadways
- Minimum of five feet (5') separation from outside of path clear zone to any adjacent roadway outside edge of shoulder; this five-foot dimension includes the physical barrier. Barrier side facing path shall meet GDOT and AASHTO requirements for barriers adjacent to shared use paths.
- Path surface material to be 5-inch thick Portland Cement Concrete (PCC)
- Lighting
- Nine (9) gauge black vinyl coated two-inch (2") security chain-link fence on both sides of the path at the outside edge of the shoulder from entry at Peachtree Dunwoody Road to entry at Johnson Ferry Road. Height of fence shall be 6-feet measured from the surface of the path. Connect fence to bridge/tunnel fencing at bridge/tunnel abutments. Provide 10-foot high fencing (measured from the surface of the path) with enclosed top of envelope where path crosses over roadways.
- Signage (24" x 36" metal mounted on steel post) at path entrance at Peachtree Dunwoody Road that indicates "No Exit until Johnson Ferry Road"

- Signage (24" x 36" metal mounted on steel post) at path entrance at Johnson Ferry Road that indicates "No Exit until Peachtree Dunwoody Road"
- Other design requirements and details as shown in Attachment 20-2. Developer is not required to provide CCTV cameras or wi-fi coverage along the shared use path.

Developer shall provide a clear area for an approximate 24-ft wide opening on the west side of Glenridge Drive under I-285 as depicted in Attachment 20-3. Developer shall provide a minimum of sixteen feet (16') vertical clearance at the face of any required retaining wall. A minimum 10'-0" offset from the Back Face Paving Rest (BFPR) to the face of any required retaining wall shall be provided. Four inch (4") depth concrete slope paving shall be placed between the retaining wall and the back of the existing sidewalk.

Except as noted above in this Section 20.2.1, Developer shall accommodate in Developer's design, but not construct nor acquire additional ROW for, Related Transportation Facilities for Bicycle and Pedestrian projects provided in Attachment 20-1. Additional information of the proposed projects can be found in the following regional and local transportation plans:

- *Atlanta Regional Commission (ARC) Bicycle Transportation & Pedestrian Walkways Plan:*  
<http://www.atlantaregional.com/transportation/bicycle--pedestrian>
- *ARC Regional Transportation Plan:*  
<http://www.atlantaregional.com/transportation/regional-transportation-plan>
- *ARC North Fulton Comprehensive Transportation Plan (CTP):*  
<http://atlantaregional.com/transportation/studies/north-fulton-ctp>
- *Adopted Sandy Springs Bicycle, Pedestrian and Trail Plan (Dec. 2014):*  
<http://www.sandyspringsga.gov/city-services/transportation-infrastructure/roadways/bicycle-pedestrian-trail-plan>
- *PCIDs Commuter Trail System Final Report:*  
<http://www.perimetercid.org/factsheets/PCID-Commuter-Trail-System-Final-Report.pdf>

Developer shall also incorporate areas and locations in Developer's design plans identified in the Costing Plans as reserved for future bicycle (and pedestrian) facilities.

### **20.2.2 Pedestrian Facilities**

*No additional requirements.*

### **20.2.3 Final Design**

*No additional requirements.*

## **21 RESERVED**

## 22 SOUND BARRIERS

### 22.1 General

*Supplement the following to Section 22.1:*

Sound barriers shall be a sound reflective type unless otherwise accepted by GDOT.

Refer to Section 15.3.2 for sound barrier finish requirements. Refer to Section 13.2.7 for sound barriers installed on bridges and walls.

Stage the Work such that priority is placed on constructing sound barriers as early as practical.

Where practical, Developer shall not remove existing sound barrier until new sound barrier is constructed. Where existing sound barriers are proposed to be removed prior to construction of new sound barriers, alternative noise abatement measures shall be provided subject to GDOT review and acceptance prior to construction.

Developer shall construct the sound barriers listed in Attachment 22-1, Sound Barriers Tables. Sound Barriers shall meet or exceed the decibel reduction for the listed applicable receptors in the Environmental Approvals.

Stationing, heights and offsets shown in Attachment 22-1 are based off the Costing Plans, and may change based on Developer's design alignments. Any sound barrier locations changes due to Developer design alignment changes must meet or exceed noise abatement levels for all applicable receptors listed in the Environmental Approvals. The Developer shall provide written technical justification for any sound barriers location adjustments. These proposed sound barrier location adjustments are subject to approval by GDOT. Any approved proposed changes will be analyzed by GDOT to determine if they meet Environmental Approvals. Final noise wall heights/elevations will be set by the GDOT performed noise abatement analysis.

Developer shall align sound walls and grade to provide for maintenance vehicle accessibility in front of and behind walls wherever feasible. Access doors and vehicle envelopes shall be 10-feet wide by 12-feet high.

## 23 SUBMITTALS

### 23.1 General

*No additional requirements.*

### 23.2 Design Submittals and Progress of Design Work

*Supplement the following to Section 23.2:*

Developer shall provide Project Submittals detailed in Table 23-1: Master Submittal List below. Each required Submittal shall be delivered to GDOT in conformance with the review times provided below. The times provided are specifically for the review period required for GDOT to comment and GDOT to subsequently accept if all requirements of the DBF Documents are met. Accuracy, completeness, and time spent to address GDOT comments are the responsibility of Developer.

#### ABBREVIATIONS FOR TABLE

ASC	Point File for Survey Data
AR	As Required
DTM	Digital Terrain Model
FS	Full-size paper – meets GDOT Plan Presentation Guide
HC	Hard Copy – 8 ½" x 11" unless otherwise noted
HS	Half-size paper – meets GDOT Plan Presentation Guide
MP	Microsoft Project
MS	MicroStation File – Electronic
NTP	Notice to Proceed
PAS	Per Approved Schedule
PDF	Adobe PDF – One complete file and individual plan sheet files meets GDOT Electronic Plans Process

Table 23-1: Master Submittal List

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
<b>Volume 1</b>						
	1	Various Payment and Administrative Submittals and Forms	AR, PDF	As Specified	As Specified	As Specified
EXB 7	1	Schedule of Values	AR, PDF	1	Within 10 Days of execution of Agreement	30
<b>Volume 2</b>						
11	2	<b>Design Exceptions or Design Variances</b>	<b>AR, PDF</b>	<b>1</b>	<b>Within 60 Days from NTP 1</b>	<b>60</b>
11	2	Illumination Study	AR, PDF	1	Per approved Submittal Schedule	30
<b>Volume 3</b>						
2	3	Schematic Plan of Project	AR, PDF	1	At time of proposal submission	NA
23	3	Construction Phasing Plan and Submittals Schedule for each construction phase (coordinate with ROW Acquisition Plan)	AR, PDF	1	Within 30 Days from NTP 1	30

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
23	3	Submittal Schedule	AR, P6, PDF	1	Within 30 Days from NTP 1	30
23	3	Design Submittal Guide / Index	AR, PDF	1	Prior to first design submittal	14
23	3	Updates to Design Submittal Guide / Index	AR, PDF	1	Updates required with subsequent submittals	14
2	3	Interim (optional) Design Submittal(s)	AR, PDF	1	Per approved Submittal Schedule	14
23	3	Design and Construction Quality Records	AR, PDF	1	Always auditable; Submit at project completion	NA
23	3	Design Review meeting minutes	AR, PDF	1	Within 7 days of Design Review meetings	7
<b>Management Plans</b>						
2	3	<b>Project Management Plan and any updates</b>	AR, PDF	1	See Section 2 of Volume 3	30
2	3	Design Quality Management Plan	AR, PDF	1	Within 30 Days from NTP 1	30
2	3	Project Construction Quality Management Plan	AR, PDF	1	Within 60 Days from NTP 1	30



Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
2	3	Safety Plan	AR, PDF	1	See Section 2 of Volume 3	30
2	3	Project Quality Management Plan	AR, PDF	1	Within 30 Days from NTP 1	30
2	3	Transportation Management Plan	AR, PDF	1	Within 120 Days from NTP 1	30
2, 3	3	Updates to the Public Information and Communications Plan (PICP)	AR, PDF	1	Within 30 Days from NTP 1	30
2, 4	3	Comprehensive Environmental Protection Plan (CEPP)	AR, PDF	1	Within 120 Days from NTP 1	30
2	3	Joint Project Inspection Documentation	AR, PDF	1	Within 180 Days from NTP 1	30
2	3	Demolition and Abandonment Plan	AR, PDF	1	Within 180 Days from NTP 1	30
2	3	Landscape Enhancement Plan and Hardscape Enhancement Plan	AR, PDF	1	Within 90 Days from NTP 1	30
2	3	Construction Maintenance Limits Plan	AR, PDF	1	Within 150 Days from NTP 1 or Prior to start of a construction phase	30
2	3	Monthly Status Reports (includes cost,	AR, PDF	1	Monthly	NA

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
		schedule, quality, status, etc.)				
2	3	Developer Internal Quality Audits	AR, PDF	1	As needed	NA
2	3	Developer Non-Conformance Reports	AR, PDF	1	As needed	NA
<b>Schedules</b>						
2	3	Preliminary Baseline Schedule	AR, FS, HS, P6, PDF	1, 3, 1	With Proposal	14
2	3	120 Day Schedule	AR, HS, P6, PDF	3, 1, 1	Within 30 Days of NTP1	14
2	3	Project Baseline Schedule	AR, HS, P6, PDF	3, 1, 1	Within 90 Days from NTP 1	30
2	3	Revisions to Project Baseline Schedule	AR, HS, P6, PDF	3, 1, 1	As required	5
2	3	Monthly Status Schedule Update	AR, PDF HS,	1	Monthly	NA

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
<b>Existing Infrastructure</b>						
2	3	Pre-Construction Photos and Videos	AR, PDF	1	Within 180 Days from NTP 1, prior to construction	30
<b>Environmental</b>						
4	3	GDOT-Led Governmental Approvals	AR, PDF	1	As needed, per the approved Submittal Schedule	Table 4-1
4	3	Section 404, CWA, permit	AR, PDF	1	**	Table 4-1
4	3	Water Quality Certification (concurrently with the USACE Nationwide Permit)	AR, PDF	1	**	Table 4-1
4	3	Applications to Regulatory Agencies, Application revisions, supplements	AR, PDF	1	As needed	***
<b>Utilities</b>						
5	3	ROW Acquisition Plan within 30 days of NTP1	PDF	1	NTP1 + 30 Calendar Days	14
6	3	Supplemental verification of Overhead/Subsurface Utility Engineering	AR, MS	1	NTP (1) + 45 Calendar Days (Or as Determined by State Subsurface	NA

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
		(SUE) Investigations – QL-B	PDF		Utilities Engineer at the SUE Kick-Off meeting which is concurrent with the first utility coordination meeting)	
6	3	SUE Utility Impact Analysis “UIA”	AR, PDF	1	NTP 1 + 120 Calendar Days (Or as Determined by State Subsurface Utilities Engineer at the SUE Kick-Off meeting which is concurrent with the first utility coordination meeting)	NA
6	3	Overhead/Subsurface Utility Engineering (SUE) Investigations – QL-A	AR,MS,PDF	Plans: 2 for each Utility Owner +3 for Dept. and MS files	UIA + 45 Calendar Days	NA
6	3	Overhead/Subsurface Utilities Engineering (SUE) Information to Utilities for Review (URPN Letter 1a – SUE Submit to Utility Companies Revise)	FS,HS,PDF, MS	Plans: 2 for each Utility Owner +3 for Dept. and MS files	NTP 1 + 5 Calendar Days (Or as Determined by District Utilities Engineer at SUE Kick-Off meeting)	5 days for Dept. + 30 days for each Utility Owner

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
6	3	Relocated Utility Plans (URPN Letter 2 – 2nd Submission Letter (Existing and Proposed) )	FS,HS,PDF, MS	3, 1	Concurrently w/ Accepted SUE Verification by Utility Owner	5 days for Dept. + 90 days for each Utility Owner
6	3	Utility Retention Request	AR, PDF	1	As needed	14
6	3	Preliminary Utility Status Report (URPN Letter 6 – Notice to Proceed with Permit)	HC, PDF	Agreement s: 3 hard copy, 1 electronic pdf Plans: 2 for each Utility Owner + 3 for Dept. and MS files	NTP 1 + 180 Days  Concurrently w/ Accepted Relocated Utility Plans	10 days + 5 days
6	3	Utility Plans/Agreements	Plans/	1, 3, 1, 1		Agreeme nts: 30

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
		(Utility NTP Letter)	Agreements HS,PDF,MS			days for Dept. + 60 days for each Utility Owner  Plans: 30 days
6	3	Utility A/O Claims of Real Property Interests	AR, PDF	1	See Section 6 of Volume 3	14
6	3	Utility Adjustment Field Modification Procedure	AR, PDF	1	Prior to submittal of any Utility Work Plan	14
6	3	Utility As-Built Plans	FS, HS, PDF, MS	1	Concurrently w/Accepted Construction As-Built Plans	Plans: 30 days Department 30 days for Utility Owners

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
6	3	All Utility Meeting Minutes	AR, PDF	1	Within 7 days of Utility Meeting	7
<b>Geotechnical</b>						
8	3	Geotechnical Reports	AR, PDF	1	See Section 8 of Volume 3	30
8	3	Soils Reports	AR, PDF	1	See Section 8 of Volume 3	30
8	3	Blasting Plan	AR, PDF	1	As needed	30
<b>Survey</b>						
9	3	Survey Control Package	AR, PDF, ASC,	1	Per the approved Submittal Schedule	30
9	3	Property Owner Notification Letters	AR, PDF	1	As needed	10
9	3	Bound Field Notes	AR, PDF	1	Prior to Project Completion	14
9	3	Topographic Mapping	AR, PDF, DTM,	1	See Section 9 of Volume 3	14
<b>Grading/Roadway</b>						

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
11	3	Vibration Control Plan	AR, PDF	1	See Section 11 of Volume 3	14
<b>Lighting/Electric/Power</b>						
11,17,21	3	Preliminary Lighting/Electrical Plans (60%)	AR, PDF	1	Per the approved Submittal Schedule	14
11,17,21	3	Final Lighting/Electrical Plans (100%)	AR, PDF	1	Per the approved Submittal Schedule	14
11,17,21	3	Electrical Power Calculations	AR, PDF	1	See Section 17 of Volume 3	14
17,21	3	Electrical System Operations and Maintenance Manuals	AR, PDF	1	See Section 17 of Volume 3	14
17,21	3	Electrical System Training Plan	AR, PDF	1	See Section 17 of Volume 3	14
11,17,21	3	Electrical Design Voltage Drop Calculations	AR, PDF	1	See Section 17 of Volume 3	14
<b>Drainage</b>						
12	3	Drainage Design Report (Phased)	AR, PDF	1	Per the approved Submittal Schedule	30
12	2	Storm Sewer Drainage Report(s)	AR, PDF	1	Per the approved Submittal Schedule	14



Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
12	3	Annual Outfall Inspection Report	AR, PDF	1	Within 30 days of Annual Developer Inspection	30
12	2	Post-Construction Stormwater Report	AR, PDF	1	Per the approved Submittal Schedule	Table 4-1
<b>Structures/Bridges</b>						
13	3	Preliminary Bridge Layouts	AR, FS, HS, PDF	2, 6, 1	**	14
13	3	Preliminary Wall Layouts	AR, FS, HS, PDF	2, 6, 1	**	14
<b>13</b>	<b>3</b>	<b>Final Bridge Plans</b>	<b>AR, FS, HS, PDF</b>	<b>2, 6, 1</b>	<b>**</b>	<b>30</b>
<b>13</b>	<b>3</b>	<b>Final Wall Plans</b>	<b>AR, FS, HS, PDF</b>	<b>2, 6, 1</b>	<b>**</b>	<b>30</b>
<b>Signing, Pavement Marking and Signalization</b>						
16	3	Preliminary Permanent Signing Unveiling Plan	AR, PDF	1	120 Days prior to open to traffic	21

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
16	3	Final Permanent Signing Unveiling Plan	AR, PDF	1	60 Days prior to open to traffic	14
16	3	New Sign requests	AR, PDF	1	As needed	14
16	3	Overhead Sign Support Structures Concept Plans	AR, PDF	1	Per the approved Submittal Schedule	14
16	3	Overhead Sign Support Structures Final Plans	AR, PDF	1	Per the approved Submittal Schedule	14
<b>ITS, Network</b>						
17/21	3	ITS Workshop	AR, PDF	1	Following approved Preliminary Grading/Roadway Plans (60%), prior to Prototype ITS design efforts	NA
17	3	3D Visualization (ITS) Model	AR,	1	Per the approved Submittal Schedule Prior to Preliminary Plans	30
17/21	3	Site Acceptance Checklist (Initial)	AR, PDF	1	Per the approved Submittal Schedule With Final Design Plan Delivery	30
17	3	ITS Maintenance and Repair Plan	AR, PDF	1	30 Days from NTP 1	30

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
17/21	3	Site Acceptance Checklist (Final)	AR, PDF	1	60 days prior to turnover of devices associated with <u>Volume 1 Exhibit 9, Item 1.</u>	14
17	3	User Manuals	AR, PDF	1	120 days prior to End-to-End Testing.	60
17	3	Training Plan	AR, PDF	1	90 Days prior to End-to-End Testing	45
17	3	Operational Performance Test Report – Part II (all other ITS sites)	AR, PDF	1	45 Days Prior to End-to-End Testing	30
17	3	Final As-Builts	AR, FS, HS, PDF	2, 6, 1	30 Days After to Substantial Completion	60
17	3	Manufacturer Equipment Documentation/Manufacturer Warranties	AR, PDF	1	256 Days prior to Substantial Completion	14
<b>Traffic Control</b>						
18	3	Traffic Management Plan	AR, PDF	1	Within 120 Days from NTP 1	30
18	3	Traffic Control Plans (each Phase)	AR, PDF	1	Per the approved Submittal Schedule	14

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
18	2 & 3	GP lane closure or reduced widths	AR, PDF	1		30
<b>Additional Submittals</b>						
23	3	Preliminary Plans (60%) (complete set)	AR, FS, HS, PDF	6, 10, 1	**	30
23	3	Interim Design	AR, FS, HS, PDF	6, 10, 1	**	14
<b>23</b>	<b>3</b>	<b>Final Plans (100%) per Construction Phase (complete set)</b>	<b>AR, FS, HS, PDF</b>	<b>6, 10, 1</b>	<b>**</b>	<b>45</b>
23	3	Notice of Intent (NOI) with final/signed Erosion Control Plans	AR, PDF	1	**	14
23	3	Shop Drawings	AR, PDF	1	**	14
23	3	Temporary Works – where public safety may be affected	AR, PDF	1	**	14
23	3	Plan Revisions During Construction	AR, PDF	1	**	14

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
23	3	Record Drawings (As-Built Plans) per Construction Phase	AR, FS, HS, PDF	6, 10, 1	**	14
2	3	Initial Project Design Data Book	AR, HC, PDF	3, 1	Within 30 Days from NTP 1	30
2	3	Updates to Project Design Data Book (Preliminary Plan Submittal)	AR, HC, PDF	1, 1	Include with Preliminary Plans Submittal	30
2	3	Updates to Project Design Data Book (Interim Design and other Design Submittals )	AR, HC, PDF	1, 1	Include with Design Submittal	14
2	3	Updates to Project Design Data Book (Final Plans Submittal)	AR, HC, PDF	1, 1	Include with Final Plans Submittal	45
2	3	Updates to Project Design Data Book (Plan Revisions During Construction)	AR, HC, PDF	1, 1	Include with Plan Revisions During Construction	14
2	3	Final Project Design Data Book	AR, HC, PDF	3, 1	Include with Record Drawings (As-Built Plans) Submittal	14

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
23	3	Drainage Plans	AR, FS, HS, PDF	2, 6, 1	**	30
23	3	Hydraulic and Hydrology Report	AR, PDF	1	**	30
23	3	Landscaping and Permanent Erosion Control Plans	AR, FS, HS, PDF	2, 6, 1	**	14
23	3	Temporary Erosion Control Plans	AR, FS, HS, PDF	2, 6, 1	**	14
23	3	Draft Design Specifications, Reports, Whitepapers, etc.	AR, PDF	1	**	14
23	3	Final Design Specifications, Reports, Whitepapers, etc.	AR, PDF	1	**	14
All	All	Meeting Minutes	AR, PDF	1		5
<b>Rail</b>						
24	3	ROW Encroachments	AR, PDF	1	*	30

Section	Volume	Submittal Item	Format	Quantity	Delivery Date	Review Period* (Days)
24	3	Draft Railroad Agreement	HC	1	*	30
24	3	Final Railroad Agreement	HC	1	*	30
24	3	Operational Safety Plan	PDF	1	*	30
24	3	Excavation and shoring Plans	AR, HS	PDF, 1	*	30
24	3	Demolition Plans	AR, HS	PDF, 1	*	30
24	3	Erection Plans	AR, HS	PDF, 1	*	30
24	3	Blasting Plans	AR, HS	PDF, 1	*	30
24	3	Flagging Plans	AR, HC	PDF, 1	*	30

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\*Review period is the period required for the generation of comments or the review time to determine the sufficiency of the document and the state or status of the document per Section 23.3. Multiple review periods shall be planned for "Accepted by GDOT" status.

If a Submittal is not listed, the review time shall be thirty (30) days.

\*\* Based upon the accepted Baseline Schedule

\*\*\* Time of review will be based upon actual impact to Project

\*\*\*\* See Technical Provisions

**BOLDED** = requires FHWA review and approval



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**23.2.1 Construction Phasing and Additional Submittal Requirements**

*No additional requirement.*

**23.2.2 Staged Design Submittals**

*No additional requirement.*

**23.2.3 Changes to Accepted and Released for Construction Submittals**

*No additional requirement.*

**23.2.4 Presentation Requirements**

*No additional requirement.*

**23.3 Submittals Process**

*No additional requirement.*

**23.3.1 Required Participants of the Process**

*No additional requirement.*

**23.3.2 Process**

*No additional requirement.*

**23.4 Shop Drawings and Temporary Work Submittals**

*No additional requirement.*

**23.4.1 General**

*No additional requirement.*

**23.4.2 Work Items Requiring Shop Drawings**

*No additional requirement.*

**23.4.3 Schedule of Submittals**

*No additional requirement.*

**23.4.4 Style, Numbering, and Material of Submittals**

*No additional requirement.*

23.4.4.1 ***Drawings***

*No additional requirements.*

23.4.4.2 ***Other Documents***

*No additional requirements.*

**23.4.5 Submittals and Copies**

*No additional requirements.*

23.4.5.1 ***General***

*No additional requirements.*

23.4.5.2 ***Developer-Originated Design***

*No additional requirements.*

23.4.5.3 ***Temporary Works***

*No additional requirements.*

23.4.5.4 ***Formwork and Scaffolding***

*No additional requirements.*

23.4.5.5 ***Other Miscellaneous Design and Structural Details  
Furnished by Developer in Compliance with the Contract***

*No additional requirements.*

**23.4.6 Processing of Shop Drawings**

*No additional requirements*

23.4.6.1 ***Developer Responsibility for Accuracy and Coordination  
of Shop Drawings***

*No additional requirements.*

23.4.6.2 ***Scope of Review by the Engineer of Record***

*No additional requirements.*

23.4.6.3 ***Special Review by the Engineer of Record of Shop  
Drawings for Construction Affecting Public Safety***

*No additional requirements.*

### **23.4.7 Other Requirements for Shop Drawings for Bridges**

*No additional requirements.*

#### **23.4.7.1 *Shop Drawing for Structural Steel and Miscellaneous Metals***

*No additional requirements.*

#### **23.4.7.2 *Shop Drawing for Concrete Structures***

*No additional requirements.*

#### **23.4.7.3 *Special Construction Submittals***

*No additional requirements.*

#### **23.4.7.4 *Shop Drawings Requiring Transit Agency Coordination***

*No additional requirements.*

### **23.4.8 Modifications on Construction**

*No additional requirements.*

## **23.5 As-Built Plans**

*No additional requirements.*

### **23.5.1 Reserved**

## 24 TRANSIT

### 24.1 General Requirements

*Supplement the following to Section 24.1:*

In the DBF Documents, the term “Transit Agency” shall be understood to mean the MARTA-owned passenger service infrastructure, including rail and vehicular assets, as well as bus line operations within the impacted corridor.

The Project corridor is in the vicinity of Metropolitan Atlanta Transit Authority (MARTA) North Red Line tunnel segment under GA 400 (west of the Medical Center Station) and aerial structure over I-285 (east of the Medical Center Station). Regular (fifteen- [15] minute headways) passenger service runs from 5:00 a.m. through 2:00 a.m. at typical speeds of fifty-five (55) mph. Also included are the areas along GA 400 northbound under the public vehicular access North Springs Station fly-over ramp bridge and on-ramp as well as adjacent to the southbound off-ramp Mechanically Stabilized Earth (MSE) wall.

### 24.1 Transit Agency Design Standards

#### 24.1.1 Design Railroad Live Load

*No additional requirements.*

#### 24.1.2 Design Lateral Pressures for Railroad Live Load Surcharge

*No additional requirements.*

#### 24.1.3 Clearances

*No additional requirements.*

##### 24.1.1.1 *Permanent Clearances*

*Supplement the following to Section 24.2.3.1:*

MARTA will allow a minimum vertical/horizontal clearance of five (5) feet to the tunnel structure for GDOT-approved highway loads. MARTA will allow a minimum horizontal clearance of one (1) foot and a minimum vertical clearance of five (5) feet to the aerial line super and sub-structure. The minimum clearances to the fly-over ramp will follow GDOT bridge structure standards. New structure locations are to be reviewed with MARTA Engineering personnel.

##### 24.1.1.2 *Temporary Clearances*

*No additional requirements.*

#### **24.1.4 Crashwalls**

*Supplement the following to Section 24.2.4:*

GDOT-approved traffic barrier separation shall be used at the aerial line structure and fly-over ramp structures.

#### **24.1.5 Drainage**

*Supplement the following to Section 24.2.5:*

The drainage system from all of the MARTA structures will be coordinated with MARTA Engineering for proposed modifications.

#### **24.1.6 Erosion Control**

*No additional requirements.*

#### **24.1.7 Utilities**

*Supplement the following to Section 24.2.7:*

Developer shall coordinate with MARTA Engineering to verify the location of the MARTA Electrical Service (MES) power conduit duct bank and other MARTA utilities.

Developer shall coordinate with MARTA and Georgia Power on relocation requirements, and Developer shall be responsible for coordinating the relocation of the MES lines if impacted. Georgia Power will develop the relocation design(s) and construct the relocation(s) on behalf of MARTA. Developer shall be responsible for all costs including, but not limited to: locating, coordinating design of and/or relocating MARTA MES lines; and acquiring any additional easement(s) or replacement easement(s) necessary for the relocation of the MARTA MES lines.

#### **24.1.8 Miscellaneous**

*No additional requirements.*

### **24.2 Project Work Affecting Transit Agency Operations**

#### **24.2.1 Agreements**

*No additional requirements.*

##### ***24.1.1.3 Permanent Transit Agency ROW Encroachment Agreement(s)***

*Supplement the following to Section 24.3.1.1:*

Transit Agency ROW encroachment will be evaluated and processed (if required) via MARTA real estate office.

**24.1.1.4 Transit Agency License Agreement(s)**

*No additional requirements.*

**24.1.1.5 Transit Agency Right of Entry Agreement(s)**

*No additional requirements.*

**24.2.2 Operation Safety**

*No additional requirements.*

**24.3 Construction Requirements**

**24.3.1 General**

*No additional requirements.*

**24.3.2 Track Clearances**

*No additional requirements.*

**24.3.3 Temporary Excavations**

*Supplement the following to Section 24.4.3:*

Developer shall review temporary excavations adjacent to MARTA structures with MARTA Engineering and shall provide location/details of loadings for review. Excavations undermining MARTA structure will not be allowed.

**24.3.4 Excavation for Structures**

*Supplement the following to Section 24.4.4:*

Developer shall review excavations adjacent to MARTA structures with MARTA Engineering and shall provide location/details of loadings for review. Excavations undermining MARTA structure will not be allowed.

**24.3.5 Demolitions, Erection, Hoisting**

*Supplement the following to Section 24.4.5:*

Impact to MARTA structures due to demolition shall not be allowed.

### **24.3.6 Blasting**

*Supplement the following to Section 24.4.6:*

Developer shall coordinate any blasting within two thousand, five hundred (2,500) feet of MARTA structures with MARTA Engineering and shall provide monitoring of affected structures.

### **24.3.7 Maintenance and Repair of Transit Agency Facilities**

*No additional requirements.*

### **24.3.8 Storage of Materials and Equipment**

*Supplement the following to Section 24.4.8:*

Flammable/explosive materials will not be allowed to be stored under nor above MARTA structures.

### **24.3.9 Cleanup**

*No additional requirements.*

## **24.4 Damages**

*No additional requirements.*

## **24.5 Flagging Services**

### **24.5.1 When Required**

*Supplement the following to Section 24.6.1:*

Flagging shall be required for any access to MARTA wayside areas.

### **24.5.2 Scheduling and Notification**

*Supplement the following to Section 24.5.2:*

Developer shall notify and coordinate with MARTA Engineering on construction activities scheduled adjacent to MARTA structures or for track access allocation, providing at least thirty (30) days' notice.

### **24.5.3 Payment**

*Supplement the following to Section 24.6.3:*

Developer shall reimburse MARTA for use of a flagging crew based on a daily basis.

#### **24.5.4 Verification**

*No additional requirements.*

### **24.6 Transporting Materials and Equipment Across Tracks**

*No additional requirements.*

### **24.7 Work for Benefit of Developer**

*No additional requirements.*

### **24.8 Cooperation and Delays**

*No additional requirements.*

### **24.9 Safety Guidelines**

#### **24.9.1 Guidelines for Personnel on Transit Agency ROW**

*Supplement the following to Section 24.10.1:*

MARTA requires personnel accessing wayside to attend and pass a four (4) hour wayside training course.

#### **24.9.2 Guidelines for Equipment on Transit Agency ROW**

*Supplement the following to Section 24.10.2:*

Equipment/vehicles accessing MARTA wayside shall be approved by MARTA Safety.

### **24.10 Insurance Requirements**

*No additional requirements.*

#### **24.10.1 Developer's Liability Insurance**

*Supplement the following to Section 24.11.1:*

**CERTIFICATE HOLDER** for Developer's liability insurance as described in Volume 3 as follows:

MARTA

2424 Piedmont Road NE

Atlanta, GA 30324



**24.10.2 Transit Agency Protective Liability Insurance**

*Supplement the following to Section 24.11.2:*

**NAMED INSURED** for Transit Agency Protective Liability Insured as described in Volume 3 as follows:

MARTA

2424 Piedmont Road NE

Atlanta, GA 30324

**24.10.3 Evidence of Insurance**

*Supplement the following to Section 24.11.3:*

*NOTICE TO: COPY NOTICE TO:*

Risk Manager State Utilities Engineer

Georgia Department of Transportation

MARTA

One Georgia Center, 10th Floor, Office of Utilities

2424 Piedmont Rd

600 West Peachtree Street NW

Atlanta, Georgia 30324

Atlanta, Georgia 30308

and

Georgia Department of Transportation

One Georgia Center, 19th Floor, Office of Innovative Program Delivery

600 West Peachtree Street NW

Atlanta, Georgia 30308

**24.10.4 Subletting**

*No additional requirements.*

**24.10.5 Cancellation**

*Supplement the following to Section 24.11.5:*

*NOTICE TO:*

Risk Manager

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MARTA

2424 Piedmont Rd

Atlanta, Georgia 30324

*COPY NOTICE TO:*

State Utilities Engineer

Georgia Department of Transportation

One Georgia Center, 10th Floor, Office of Utilities

600 West Peachtree Street NW

Atlanta, Georgia 30308

and

Georgia Department of Transportation

One Georgia Center, 19th Floor, Office of Innovative Program Delivery

600 West Peachtree Street NW

Atlanta, Georgia 30308

### **24.11 Failure to Comply**

*No additional requirements.*